

AN INVESTIGATION INTO THE USE OF ACCOUNTING
BASED MANAGEMENT PLANNING AND CONTROL
TECHNIQUES IN SELECTED OKLAHOMA
HOSPITALS

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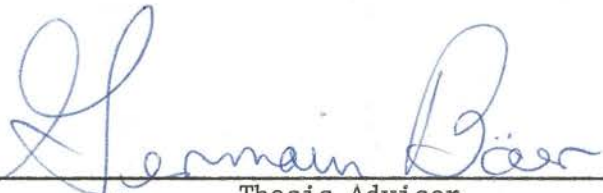
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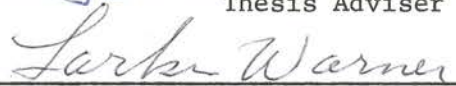
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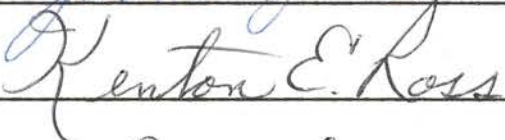
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PREFACE

This study is concerned with the way in which management accounting techniques are used in hospital planning and control. The primary objective is to provide insight into the practice of cost planning and control in hospital management. Results presented are based on an analysis of empirical data gathered in field interviews in selected Oklahoma hospitals.

The author wishes to express his appreciation to his major adviser, Dr. Germain Boer, for his constant guidance and encouragement throughout this study.

Appreciation is also expressed to the other committee members: Dr. Kenton Ross, Dr. James Jackson, and Dr. Larkin Warner for their consideration and assistance.

A special thanks is given to Mr. John Gavras, Director of Finance for the Oklahoma Hospital Association for his invaluable assistance in selecting the sample and organizing the field work for this study. Mr. Gavras made implementation of this study possible. In addition, appreciation is extended to the members of hospital management for their efforts in supplying data for this study. Thanks also to Mrs. Jean Lee for her assistance in typing and reproducing the final copies.

Finally, special gratitude is expressed to my wife, Myrna, for her understanding, encouragement, and many sacrifices.

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CHAPTER I

INTRODUCTION

Nature of the Problem

National health care expenditures are assuming an increasing position of importance in the United States economy. The cost for health care reached \$75 billion (7.4% of Gross National Product) for fiscal 1971 with expenditures for such care increasing at a significantly faster rate than the cost of other goods and services (66,3). The average cost of health care increased by 40% between 1966 and 1971 while the average cost of all goods and services increased by less than 26% (23,27).

Hospital costs, which represent the largest single item in the health care expenditures, almost doubled between 1966 and 1971. Total hospital expenditures reached \$29.6 billion or 39.5% of total health care expenditures of \$75 billion in 1971. Hospital costs rose at an average annual rate of 16.3% from 1966 to 1970, with a slightly lower increase, 13.6%, for 1971 (72,H-11). Concern about such rapid increase in costs, coupled with an increased awareness of medical care deficiencies, has generated a great deal of discussion about the medical care industry and how its costs should be controlled. Proposals range from minor modifications of existing health care practices and facilities to the virtual revamping of our entire health care delivery system. Most

health care analysts agree that major changes must be forthcoming if quality health care is to be available to all who need it.

The hospital industry has long been characterized by a lack of concern with its productive and managerial efficiency (23,37). The prevailing philosophy among health care managers has been that the patient is entitled to the best possible treatment available regardless of the cost involved (72,H-11). Medical services are viewed as a professional service, and efforts at cost control are considered an interference in the performance of such service. Management accounting planning and control techniques, along with industrial engineering techniques, historically have been viewed by most hospital managers as being inconsistent with the objectives of the medical profession.

Until recently, it seemed that most of the deficiencies in the provision of health care were due to a shortage of capital. Health care managers believed most of the problems could be overcome by allocation of more funds to health care. Beginning in 1966, the federal government started to pump large amounts of public money into medicare and medicaid programs. The increased funding, however, has not resulted in a proportionate increase in medical care provided. It has served, rather, to contribute to the already existing inflationary trend.

A study completed by Edward Kaitz in Massachusetts in 1966 found little justification for the hospital industry's lack of concern about production and efficiency controls (45). In fact, Kaitz concluded that the community hospitals he studied could be regarded as problem-solving organizations with all the need for the technology, innovation, and managerial planning and control techniques required of any highly complex, short-production-cycle industry group. Based on his study in

1966, Kaitz predicted accurately the inflation that was to take place in subsequent years to 1970. The key recommendation coming from his study was stated as follows:

This author would strongly urge that the hospital industry adapt to its needs some of the standards of efficiency developed by the profit-oriented sector of the economy. Productive efficiency and medical effectiveness are compatible goals (45,98).

Comments appearing in a recent accounting publication devoted to health care issues discussed applications of contemporary accounting techniques to hospital financial management. One author cited the ". . . lack of adequate cost control measures. . ." (67,8) as a major cause of hospital care inflation. Another article on hospital financial planning served to illustrate the slowness of the industry to adopt a technique management accountants would consider an absolute necessity for cost control: ". . . many hospitals have recently begun to develop annual budgets and to compare the results of their operations against such budgets (25,17)." Savings possible from application of methods-measurement were mentioned by another author.

In our experience, methods measurement programs in hospitals and other health care facilities have typically achieved savings of from 10 to 35% of the payroll cost of the personnel covered by these programs (23,35).

Such statements indicate both an awareness of problems existing in hospital cost control and a recognition that certain management accounting techniques developed in the profit oriented sector can be applied in hospital management.

If new ideas and techniques are to be incorporated into the hospital planning and control process, managers must: (1) be made aware of,

(2) become interested in, and (3) be encouraged to implement relevant techniques as they become available.

The Objectives of the Study

The primary objectives of this study are: (1) to determine the state of the art of accounting based management planning and control techniques in selected Oklahoma hospitals, and (2) to promote the introduction into hospitals of contemporary management accounting techniques by an examination and description of the management environment in which they are used. The specific objectives of the study can be stated as follows:

1. To determine the extent to which the selected management accounting techniques are currently accepted and applied in a selected sample of "community" hospitals in Oklahoma.
2. To review the extent to which the selected management accounting techniques used in the hospitals selected, differ from those advocated in current literature on hospital management accounting.
3. To identify the dominant factors influencing the use or nonuse of management accounting techniques in hospital management.

Significance of the Study

A preliminary review of literature disclosed numerous articles concerned with the rising cost of health care. Many authors were highly critical of the absence in hospitals of available management planning and control techniques. However, the literature review provided almost no empirical evidence about the extent to which management accounting

techniques are being used. The work by Kaitz in 1966 is the only empirical study disclosed in the literature survey that deals with the management environment and its effect on cost behavior. His study, however, determined neither the extent to which management accounting techniques were being used nor the particular circumstances surrounding the use or nonuse of such techniques.

This study provides empirical evidence about the use of management accounting techniques in community hospitals in Oklahoma. The empirical description provides insight into the economics of the "community" hospital segment of the industry.

The sample of hospitals selected for the study was deliberately biased toward a particular segment of the hospital industry. Therefore, no statistically valid generalizations about the hospital industry as a whole can be inferred from the findings. Similar empirical studies of community hospitals in other geographical areas, and empirical studies of non-community hospitals can be combined with this study to provide a data base capable of generating valid generalizations relevant to managerial efficiency in the hospital industry.

The description of management accounting planning and control techniques applicable to cost control in hospitals should stimulate hospital managers to investigate further. Empirical evidence showing how contemporary techniques are being used and how well the users are satisfied with the results could further interest hospital managers in the implementation of techniques considered necessary to strengthen an industry weakened by the lack of such techniques in practice.

Research Methodology

The initial phase of the study consisted of a review of the literature on management accounting planning and control techniques. The purpose of this review was to determine the extent of prior research and to identify the more common contemporary practices and procedures developed and used in industrial organizations. A further search of the literature pertaining to hospital financial management was conducted to identify management accounting planning and control techniques applicable to hospital management. The review of hospital financial management literature served to identify management accounting techniques applicable to the hospital industry.

Using the information gathered in the review of literature, a set of questions was developed to serve as an interview guide for personal interviews. Field testing of the initial interview guide was done through interviews with a financial manager in each of two different hospitals. Changes and a few additions were made accordingly. The final interview guide is included as Appendix A in this study.

A copy of the interview guide along with a letter of introduction was sent to the hospital accountants and hospital managers selected for personal interviews. This approach was chosen to allow the persons interviewed sufficient lead time to accumulate the information requested and therefore better utilize the time allocated to the interview. Telephone contacts were made the week following the mailing of the letter of introduction and the interview guide to arrange a time for the personal interview. The reasons for using personal interviews to gather data were to overcome some of the communication problems created by a questionnaire and to enable the researcher to explore

particular responses in depth. Also, this approach enabled the researcher to explore the circumstances surrounding the use of the various management accounting techniques.

The population from which the sample was drawn included 132 "community" hospitals in Oklahoma with a capacity of 11,050 beds. The sample selection process deliberately attempted to produce a biased sample of hospitals that included those hospitals more apt to be using contemporary management accounting techniques. This study assumed that the larger hospitals (in terms of bed capacity) would be the most productive source of information for the study for two reasons:

- (1) as the size and complexity of an organization increases, the need for delegation of authority and sophistication of the reporting system increases; and
- (2) as organizations grow, they tend to accumulate both the financial resources and the management personnel necessary for experimenting with newer techniques as they become available.

The sample was determined by selecting from the membership list of the Oklahoma Hospital Association the community hospitals having 150 beds or more. The Finance Director for the Oklahoma Hospital Association was then asked to review this list of the larger hospitals to identify those more apt to make a positive contribution to the study. He is familiar with the Oklahoma hospital industry because of his continuing personal contact with hospital managers throughout the state and because of his statistical research into the economics of the industry in the state.

The hospitals and financial managers included in the formal sample population for the study displayed the following characteristics.

TABLE I
CLASSIFICATION OF SELECTED HOSPITALS BY BED SIZE

NUMBER OF BEDS	NUMBER OF HOSPITALS
Less than 200	4
201 - 300	3
301 - 400	2
401 - 500	2
More than 500	<u>2</u>
TOTAL	13

Table I shows the number of hospitals included in each size category. For instance, three of the hospitals had between 201 and 300 beds available for use. Included in the sample were a total of 4,150 beds out of a statewide total of 11,050 beds in the community hospital category. Of the 4,150 beds, 1,350 were located in Tulsa, 1,500 in Oklahoma City and the remaining 1,300 in smaller cities located throughout the state of Oklahoma.

Approximately 50% of the hospital financial managers contacted had been employed by the present hospital for less than five years. The

other 50% had worked at the same hospital for five years or more, with eighteen years being the longest span of service by one individual in one hospital.

The level of formal education attained by the financial managers interviewed ranged from less than a four year degree to the Master of Hospital Administration. Eight percent had less than the four year degree, 46% held the bachelor's degree and 46% held the master's degree.

The field work for the study consisted of interviews with hospital financial managers, both accountants and members of administration, in the hospitals included in the sample. Where possible, copies of reports used in the hospital, procedure manuals, and organization charts were obtained for analysis and to lend support to the data gathered in talking to the persons interviewed.

Upon completion of the field interviews, the data collected was reviewed and organized for presentation in the study.

Organization of the Study

The second chapter of this study contains a description of the health care industry, including the national hospital industry and the "community" hospital segment of the Oklahoma hospital industry.

The third chapter is devoted to an orientation to the community hospital as a complex organization, both in terms of services provided and in terms of administrative organization. The relevancy of management accounting to the operation of such a complex organization forms the basis of chapter four.

Chapters five, six and seven are used to present the data gathered in the field interviews. Chapter eight includes the study's summary, conclusions and recommendations.

CHAPTER II
STRUCTURE OF HEALTH CARE SERVICES AND
THE HOSPITAL INDUSTRY

Introduction

Several statements were made in the preceding chapter concerning the more rapidly increasing cost of hospital care in particular. This study proposed an investigation into a particular segment of the hospital industry as a start toward improving a deficient data base for the hospital industry. In order to further build the framework for the study, it was necessary to establish more of the relevant facts concerning the health care industry and the segment of the hospital industry included in the formal sample population. It is the purpose of this chapter, therefore, to expand the basis for the statements previously made through a review of selected literature relevant to the health care field, the hospital industry and the Oklahoma hospitals from which the formal sample was drawn.

Structure of Health Care Services

General Statistics

The position of national health care and expenditures for such care are increasing in importance in the U. S. economy. Expenditures in the United States for health care reached \$75 billion for fiscal

1971. This represented an increase of \$7.2 billion over fiscal 1970 and the continuation of a long series of increases in total expenditures for health care. The acceleration in expenditures is apparent from data presented for selected years in Table II.

TABLE II
AGGREGATE AND PER CAPITA NATIONAL HEALTH
EXPENDITURES, WITH PERCENT OF GROSS
NATIONAL PRODUCT, SELECTED FISCAL
YEARS, 1928-29 THROUGH 1970-71

Fiscal year	GNP in billions	Amount in millions	Per capita	Percent of GNP	% Gain in GNP	% of Gain in health expense
1928-29	\$ 101.0	\$ 3,589	\$ 29.16	3.6	-	-
1934-35	68.7	2,846	22.04	4.1	(32.)	(21.)
1939-40	95.1	3,863	28.83	4.1	38.	37.
1949-50	263.4	12,028	78.35	4.6	177.	211.
1954-55	379.7	17,330	103.76	4.6	44.	44.
1959-60	495.6	25,857	141.64	5.2	31.	49.
1964-65	655.6	38,892	197.81	5.9	32.	50.
1965-66	718.6	42,109	211.64	5.9	10.	8.
1966-67	771.4	47,860	237.93	6.2	7.	14.
1967-68	827.0	53,563	263.49	6.5	7.	12.
1968-69	898.4	59,939	292.01	6.7	9.	12.
1969-70	953.2	67,770	326.78	7.1	6.	13.
1970-71	1,008.5	75,012	358.05	7.4	6.	11.

Source: (66,5).

The proportion of Gross National Product (GNP) spent for health care reached 7.4% in fiscal 1971. This compares unfavorably with

countries such as Sweden and Britain which devote only 5 percent and 4 percent of their GNP respectively to medical care (24,130).

Despite these comparatively large expenditures, and

. . . contrary to popular belief, the U. S. is well down the list in the rankings of countries as to effectiveness of health care. It ranks 14th in infant mortality, 12th in maternal mortality, and 18th in male life expectancy (72,H-11).

The high quality of health care available to some individuals is not available to all on an equal basis. For example, a black mother in New York City is four times as likely to die in childbirth as a white mother. A black baby born in New York City is three times as likely to die before his first birthday as is a white middle-class baby (71,32). Much of the differential in access to health care can be traced to either lack of finances or nonexistent facilities or both. The majority of Americans are covered by some form of health insurance, but many are not. Over 25 million Americans have no health insurance at all. Of those covered, over 1/3 are not covered for services rendered in the hospital and over 1/2 are not covered for medical services received in a doctor's office. Medicare covers less than 1/2 the health costs of those over 65 years of age (71,33). In fact, many Americans are not covered by health insurance; and, even those covered must pay a large part of their medical expenses when sickness or injury occurs. Even with an elaborate health insurance industry and increasing federal participation, many citizens face financial difficulties when forced to submit to the health care system.

Health care expenditures increased at an average annual rate of 12.6% for the fiscal years 1966 through 1970. The increase for fiscal 1971 was slightly less (10.7%) than the previous 5-year average, but

was nearly double the increase in GNP (5.8% for 1971) (66,3). Per capita health care expenditures reached \$358 in fiscal 1971. The components of health care spending for 1971 are shown in Table III.

TABLE III
COMPONENTS OF NATIONAL HEALTH CARE
EXPENDITURES FOR 1971

	Total (in millions)	Percent of total
Hospital care	\$29,628	39.5
Physicians services	14,245	19.0
Dentists services	4,660	6.2
Research and medical facilities	5,533	7.4
Drugs and drug sundries	7,470	10.0
Eyeglasses and appliances	1,915	2.6
Nursing-home care	3,365	4.5
Other	8,196	10.9
	<u>\$75,012</u>	<u>100.1</u>

Source: (66,7)

Hospital care represents the largest single item of expenditure, totaling \$29.6 billion or 39.5% of the total. Expenditures for the hospital care segment of health expenditures rose at the rate of 16.3% per year from 1966 to 1970. The increase for 1971 was slightly lower, 13.6% (due in part to a smaller gain in GNP for fiscal 1971 (72,H-11)).

Smaller though still significant increases occurred in the following selected categories in fiscal 1971 (66,4).

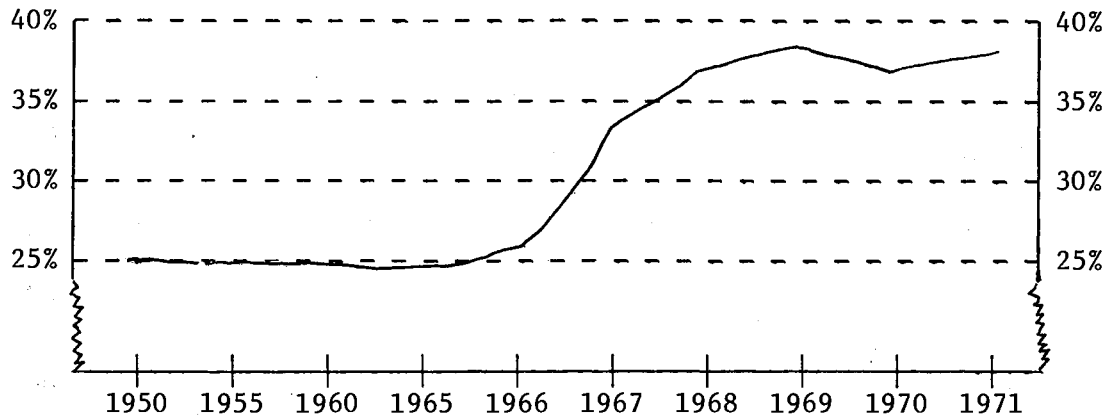
	<u>% increase</u>
Physicians services	9.9
Dentist's services	9.8
Drugs and drug sundries	7.2

Expenditures on hospital care not only represent the largest single item in the health care bill, but also the one increasing the fastest. Hospital costs have risen nearly 95% for the years 1966 through 1971, with increases nearly as large predicted for the years ahead (71,32).

Sources of Financing Health Care

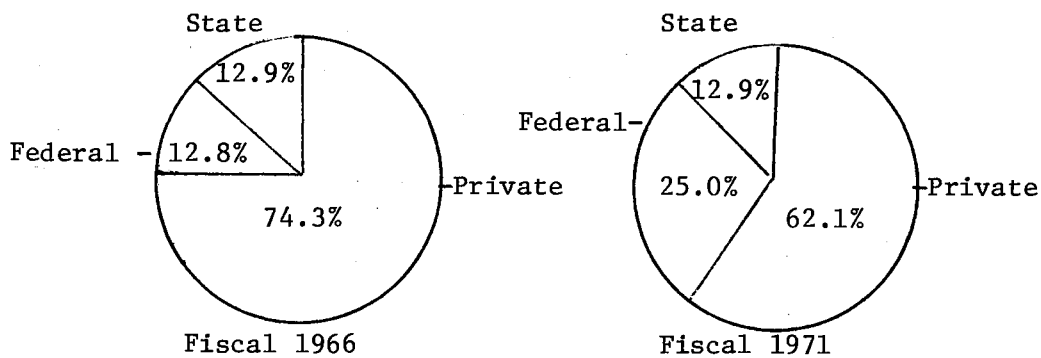
Financing of health care comes from two sources, the private sector and the public sector. For the most part, private expenditures represent payments by private consumers or by private insurers in their behalf. The public sector is comprised of the Federal government and State and local governments. The public sector share of health care financing remained fairly stable at about 25% from 1950 to 1966 as shown in Figure 1.

In 1966 with the advent of Medicare and Medicaid, the public sector share began to rise, until in fiscal 1971, it had reached 38% of the total health care bill. Since Medicare and Medicaid are federal programs, a higher proportion of the public sector burden has been shifted to the federal government by the increase in these programs. For instance, in fiscal 1971 two-thirds of the public sector share was furnished by federal funds while in 1966 the proportion was only one-half. Figure 2 diagrams this change in proportion. The amount spent under the Medicare program -- nearly \$8 billion in 1971 -- primarily accounts for this shift (66,8).



Source: (66,5)

Figure 1. Proportion of Total Expenditures for Health Care Financed by the Public Sector



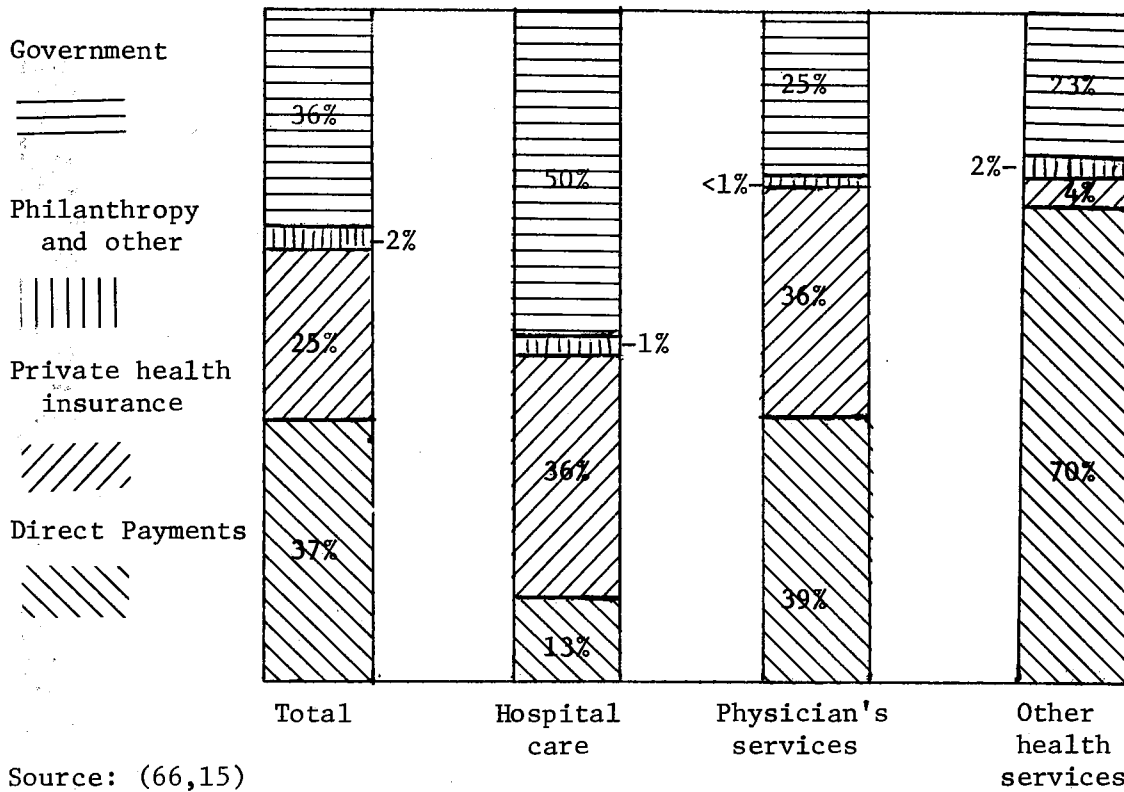
Source: (66,8)

Figure 2. Participation of Federal, State, and Private Parties in Health Care Financing

Out of total government expenditures on health care of \$25.6 billion in fiscal 1971, federal funds supplied \$16.5 billion or 64.3 percent. The remainder (\$11.1 billion or 35.7 percent) came from state and local government sources. The increasing participation of the

public sector in health care financing since 1966 is seen by many as one of the major reasons for the rapid increase in the cost of health care (55,96). Efforts of the federal government in extending medical coverage to millions of Americans not previously covered resulted in large injections of federal money into the health care industry. This had some unforeseen effects. Many people who needed medical treatment now could afford it. In seeking treatment, a large increase in demand was placed on existing medical facilities that were not prepared to meet such a demand. As a result, wages and salaries of hospital personnel rose rapidly, hospitals struggled to expand bed capacity, and inflation in the cost of health care services occurred. The portion of the increase in expenditures that can be attributed to inflation as opposed to a catching up of substandard conditions in wages and facilities is open to debate. The size and trend apparent in health care expenditures, however, is unmistakable. Expenditures on health care services have expanded rapidly both in dollar volume and in percent of GNP. At the same time, millions of Americans still do not have access to adequate health care services (71,32).

The distribution of personal health care expenditures, by source of funds and type of expenditures for fiscal 1971 is given in Figure 3. As shown, private health insurance accounted for 25% of the total health bill in fiscal 1971 while direct payments by consumers comprised 37% of the total. It can be seen from Figure 3 that even with the federal Medicare and Medicaid programs and state Blue Cross programs, over 1/3 of the total health care bill is still paid by the patient when treatment is required.



Source: (66,15)

Figure 3. Distribution of Personal Health Care Expenditures by Source of Funds and Type of Expenditures, fiscal year 1971

Nearly two-thirds of the total amount expended for personal health services in fiscal 1971 was paid for by third parties (governmental sources and private insurance companies) under contract to the consumer of health services. This well developed third party payment system has been the subject of considerable controversy concerning its effect upon the cost of health care and the efficiency with which such services are provided. The third party payment system functions primarily through the reimbursement of the hospital's cost of providing a service. In essence, hospital costs are reimbursed if they can be supported through acceptable accumulation procedures, or by reference to what others are

doing. The various Blue Cross-Blue Shield plans and group insurance policies have provided inflationary thrusts by using this cost-pass-through mechanism (24,81). In addition, the current system of paying doctors on a piecework basis for medical care encourages prescribing more elaborate care than is needed (24,80). As a result, "The financial distortions, the inequities, and the managerial redundancies in the system are of the kind that no competent executive could fail to see, or would be willing to tolerate for long." (43,79). Though differences of opinion exist concerning the reasons for rapid increases in health care expenditures, the upward trend of these costs is clearly illustrated by the graph in Figure 4.

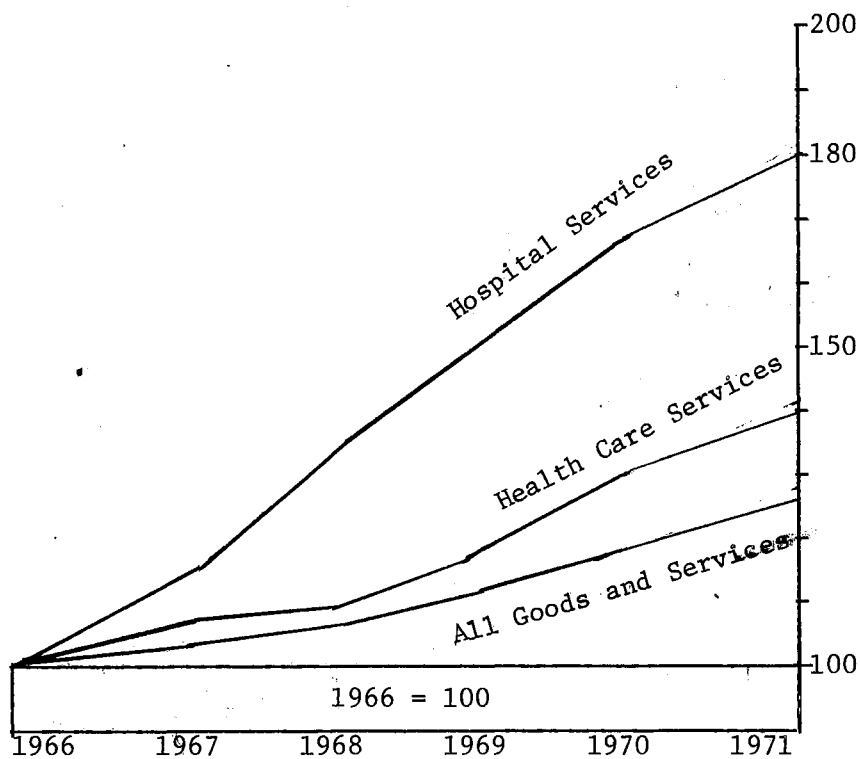


Figure 4. The Rising Cost of Health Care

As this graph shows, the average costs for health care services has risen faster than those for all goods and services, and the gain in average cost of the hospital care has been far ahead of the other health services.

The foregoing paragraphs indicate that expenditures for health care are increasing dramatically. Reasons advanced for this increase include: (1) extension of health care services to individuals not previously included, (2) development of more costly procedures in the treatment of patients, (3) injection of federal money into a system unable to absorb the increase in demand, (4) catching up of substandard salaries and wages earned by hospital personnel, (5) excessive costs due to lack of cost control incentives (cost-pass-through mechanism of third party payment system), and (6) inflation. Hospitals represent the largest single item in the health care bill and also the one that displays the most rapid increase in costs.

Structure of the Hospital Industry

General Statistics

In 1970, the American Hospital Association (AHA) registered 7123 hospitals with a total of 1,616,000 beds. Revenues were in excess of \$25 billion, and the industry employed the equivalent of over 2.5 million full time personnel, paying them wages in excess of \$15 billion.

The total invested in plant, equipment and working capital was over \$36 billion representing an average of \$22,000 for each of the 1.6 million beds then in place. The total invested in plant assets amounted to \$26.5 billion.

During 1970, the hospitals admitted a total of 31.8 million inpatients (77,447) for a broad range of treatment varying from simple custodial care to that requiring very expensive, medically sophisticated equipment used in highly technical procedures. The hospital business is, therefore, big business. It is the fifth largest employer group in the United States, and it is the largest of the service industries (45,5).

The AHA divides the hospital industry into community hospitals and non-community hospitals. A community hospital is defined as a "non-federal short-term general or other special hospital whose facilities and services are available to the entire community." (77,447).

The community hospital category includes the municipal hospital, the proprietary short-term hospital, and the voluntary, nonprofit organization found in most communities. From the viewpoint of the medical practitioner, the administrator, and the manager interested in the economics of medical care, this last category is the most important one. As shown in Table IV, of the 31.8 million admissions recorded in 1970, the community hospitals account for 29.3 million or 92%. This, therefore, is the more economically significant of the two industry groups defined. In 1970, the community hospital group included 5,859 hospitals with a bed capacity of 848,000. With 52% of the overall bed capacity, this group accounted for 92% of the admissions during 1970. As Table IV shows, the average length of stay was 8.2 days. Since community hospitals keep their patients an average of only 8.2 days, the average length of stay for non-community hospitals is considerably longer, the length of stay often running into months or more than a year.

TABLE IV
 UTILIZATION, PERSONNEL, AND FINANCES IN 1970
 OF ALL U. S. HOSPITALS AND NONFEDERAL
 SHORT-TERM HOSPITALS ONLY

	I	II	% of
	ALL U. S. HOSPITALS	NONFEDERAL SHORT-TERM GENERAL, AND OTHER SPECIAL ONLY	COL. II to COL. I
Hospitals	7,123	5,859	82.25
Beds	1,616,000	848,000	52.48
Admissions	31,759,000	29,252,000	92.11
Average Daily Census	1,298,000	662,000	
Occupancy	80.3%	78%	
Average Length of Stay		8.2	
Personnel	2,537,000	1,929,000	76.00
Personnel per 100 patients	196	292	
Total Expense (1000's)	25,556,000	19,560,000	76.54
Payroll Expense (1000's)	15,706,000	11,421,000	72.72
Total Expense per Patient Day	53.95	81.01	150.12
Payroll Expense per Patient Day	33.16	47.30	129.83
Total Assets	36,159,000	26,674,000	73.77
Plant Assets	26,575,000	18,132,000	68.23

Source: (77,447-448)

To the extent the community hospital deals with episodic illness, it can be regarded as a problem-solving organization, with all of the need for technology, innovation, and managerial planning and control techniques required of any highly complex, short-production-cycle industry group (45,8). As Table IV shows, the community hospital group employs 76% of the total full time equivalent employees for all U. S. hospitals. It is with this type, the community hospital as defined by the American Hospital Association, that this study is concerned. Unless otherwise stated, therefore, whenever the word hospital appears in the remainder of this study, it refers to the community type hospital.

Community Hospital Segment of the Hospital Industry

A description of the "average" short-term community hospital at this point will serve to orientate the reader to the type of organization under study. Using data from Table IV, the following description can be derived. Based on a total capacity of 848,000 beds and 5,859 hospitals, the "average" community hospital contains 145 beds. Using a 78% occupancy rate, an average bed size of 145 and a per patient day charge of \$81.01, the typical community hospital has an annual operating budget of \$3.34 million. This typical community hospital employs 329 full time equivalent persons, and pays those employees \$2 million in salaries. Payroll represents 58.4% of total expenses.

In terms of capital investment, the "average" 145 bed community hospital has an investment of \$3.1 million in plant assets and an investment of \$4.6 million in total assets. Since the figures quoted

represent historical cost, the current replacement cost, particularly for plant assets, is probably much higher.

Two conclusions that can be drawn from the foregoing statements are, hospitals incur large operating expenses and at the same time have a large investment in physical plant.

In any organization requiring an investment in plant of over \$3 million, replacement of facilities presents a major problem to management. This problem is particularly challenging in hospital management due to a rapidly changing technology that requires continual investment in facilities for replacement and expansion. The hospital must meet its investment requirements if it is to remain competitive and attractive to patients, doctors and other hospital personnel. However, the concept of recovering depreciation allowances in the hospital's pricing system has historically been frowned upon and the industry is particularly reluctant to declare facilities obsolete. The typical hospital faces a particular problem in that many of its older facilities have physical layouts that are not only outmoded for present day community oriented hospital care but also logistically expensive to operate. Increasing wage scales that cannot be compensated for by increases in worker productivity make the cost of operating these outmoded facilities excessive. Additions to hospital capacity are commonly made by building on to existing facilities. A New York hospital recently conducted a study showing that better architectural planning could cut a nurse's daily walking distance by as much as 50% (55,150). Since nurse's salaries typically account for 20 to 40% of a hospital's budget, the cost savings inherent in proper building design from this one item alone are considerable. In addition, operating rooms, cafeterias and

inventory storage that are remotely situated to the areas of use are often the consequence of haphazard expansion.

In summary, the hospital industry comprises an important part of health care services, with the community hospital more significant economically than the noncommunity hospital. The hospital industry is faced with rapidly rising costs due to increasing labor costs and operating inefficiencies along with continual demands for capital investment. A particular segment of the hospital industry contains the data base for this study. That segment is described in the following pages.

Oklahoma Hospital Industry Characteristics

Statistics on Oklahoma hospitals are gathered primarily through the efforts of three organizations. They are: The Oklahoma Chapter of the Hospital Financial Management Association, the Oklahoma Hospital Association, and the Oklahoma Blue Cross and Blue Shield. Most of the following statistics were made available through the efforts of these agencies.

Oklahoma has within its boundries 162 hospitals with a total of 17,539 beds. Out of this total, 132 hospitals with a total of 11,050 beds fall within the community hospital category.

There are two large metropolitan areas in Oklahoma represented by Tulsa and Oklahoma City. Tulsa has five hospitals with a total of 2,129 beds while Oklahoma City has ten hospitals with a total of 2,395 beds. The fifteen hospitals in these two cities contain approximately 40% of the total beds in community hospitals in Oklahoma. The remaining 117 hospitals with 60% of the beds lie outside these two metropolitan areas in smaller towns scattered throughout Oklahoma.

Table V shows the percent of total income received from each Prime Payer by type of service. For example, on medical cases, 21.2% of the total medical income was received from Blue Cross.

TABLE V
PERCENT OF INCOME FROM PRIME PAYERS
BY TYPE OF SERVICE

PRIME PAYER	MEDICAL	SURGICAL	OBSTETRICAL
Blue Cross	21.2%	24.3%	26.8%
Patient Paid	5.1	6.6	30.3
Title 19	11.0	9.5	17.3
County Welfare	1.0	.5	.7
Commercial Insurance	18.9	28.4	23.5
Workmen's Compensation	1.2	3.4	.0
Other	<u>2.1</u>	<u>2.0</u>	<u>1.4</u>
Total Without Medicare	60.5%	74.7%	100.0%
Medicare Part A	<u>39.5</u>	<u>25.3</u>	<u>.0</u>
Total All Payers	<u>100.0%</u>	<u>100.0%</u>	<u>100.0%</u>

Source: (30,12)

Oklahoma hospitals receive revenue from a variety of services as indicated in Table V. Notice, in particular, that Blue Cross and Medicare account for 50% to 60% of total reimbursement for medical and surgical services. These two agencies have been a primary moving force behind accounting practice in Oklahoma hospitals through record

keeping requirements necessary to support claims for reimbursement of costs.

Presumably, individual hospitals will display unique operating characteristics depending upon such things as location and size of the hospital. Table VI, which shows operating characteristics of a sample of Oklahoma hospitals for October, 1970, supports this presumption.

TABLE VI
VOLUME AND INCOME STATISTICS FOR OCTOBER,
1970 OKLAHOMA HOSPITALS

BED SIZE	0 - 140	141 - 220	221 - UP	TOTAL
Cases	9,979	3,767	7,708	21,454
Days	70,825	26,634	60,126	157,585
Length of Stay	7.1	7.1	7.8	7.3
Charges	\$4,353,830	\$1,911,821	\$4,983,699	\$11,249,350
Charge per Case	\$ 436	\$ 507	\$ 647	\$ 524
Charge per Day	\$ 61.5	\$ 71.8	\$ 83	\$ 71
Charges not Collected	\$ 607,707	\$ 195,064	\$ 701,160	\$ 1,503,931

Source: (30,21)

The patient days of care provided totaled 157,585 (total column for this month). When this total is related to the number of

admissions, 21,454, an average length of stay of 7.3 days is produced. The line entitled "Charges per Case" includes the total of all charges for an admission. Charges per case thus includes routine service charges, ancillary service charges, and personal charges. Dividing the charges per case by length of stay results in an average daily charge per day of stay in the hospital. This figure varied from a low of \$61.5 in the 0-140 bed category to \$83 in the 221-up bed category. The increase in costs with increase in size of the hospital could be predicted since many of the more sophisticated and expensive treatments and procedures are provided primarily by the larger hospitals. Charges totaled \$11,249,350 with a total of \$1,503,032 indicated as not collected. This represents a "loss" to the hospital of approximately 13% of total charges. This loss varies widely between hospitals, depending largely upon the type of services performed and the socio-economic circumstances of the patient. Failure of Blue Cross and Medicare to fully reimburse the hospital for charges billed also materially affects the "Charges not Collected" amount. Hospitals in Oklahoma reported charges not collected ranging from 5% to as high as 25% of total billings.

As previously stated, the community hospitals in Oklahoma form the population from which a sample was drawn to furnish data for this study. The discussion in this chapter has attempted to place the Oklahoma community hospital population in its proper perspective in relation to the problem area of health care services.

Summary

This chapter has dealt directly with the environment within which the community hospital functions. The entire area of health care

services has experienced rapid increases in resources consumed, both in terms of dollars and percent of Gross National Product. Expenditures on health care reached \$75 billion in 1971, amounting to 7.4% of Gross National Product.

The hospital industry is the largest component in health care expenditures, accounting for \$29 billion, or about 35% of the total. Hospital expenditures have increased faster than any other component of health care, with a similar trend predicted for the future.

The community hospital segment of the hospital industry accounted for 92% of the patients admitted to hospitals in 1971. Community hospitals are therefore the more significant of the two types of hospitals identified in the study.

It was a primary purpose of this chapter to place the community hospital in proper perspective to the health care field. From the discussion presented, the importance of the community hospital in the provision of medical care should now be evident.

Chapter III takes the discussion into the hospital for an understanding of the administrative complexity found in hospital management and to develop an appreciation for the diversity of services performed in a typical community hospital.

CHAPTER III

THE COMMUNITY HOSPITAL: A COMPLEX ORGANIZATION

Introduction

Stated briefly, the ultimate objective of the health care field should be the delivery, in an efficient manner, of quality medical care to all who need it. That this is no small task is evidenced by the annually increasing proportion of our resources expended for health care without attaining the sought for objectives of quality health care. Expenditures for hospital care accounted for \$29 billion out of total health expenditures of \$75 billion in 1971. In Chapter II, the discussion pointed out that the asset configuration of the hospital displays a large investment in physical facilities with a large annual operating budget. However, neither the specific services provided by the hospital nor the organizational structure within which such services are provided have been discussed. The purpose of this chapter is to illustrate the complexity of the hospital both in terms of operating management and in terms of services provided. This illustration will provide some insights into the hospital environment within which management accounting techniques must function.

Administrative Organization

Hospitals typically function under the direction of four management groups; the board of trustees, the medical staff, the nursing

staff, and the administrative staff. All are ultimately concerned with the care of the patient, but they are often involved in expensive conflict due to peculiarities existing in the hospital administrative structure.

The hospital, though similar in many respects to other business organizations, does not foster efficiency in the economic sense as does a profit oriented firm. It is administered by a governing board (board of trustees) and managed by a hospital administrator. The hospital typically functions in a composite line and staff form of organization in almost all aspects except medical practice. Doctors practice medicine in a committee staff organization relatively independent from, but within the hospital. The hospital administrator is responsible for the execution of board policy, but he cannot, under existing law, extend himself or his organization into the practice of medicine (45,11). On the other hand, doctors can exert a very real influence upon the operation of the hospital. The doctor decides on admitting the patient to the hospital (generally affecting the choice of hospital) and orders the services needed for treatment. It is the doctor, therefore, who is the active selector of hospital services provided rather than the patient. If a doctor is displeased with service or facilities, he may take his business elsewhere. The board of trustees (and administrator) are therefore in a dependent position to the medical staff and are often inclined to accede to its demands for technical equipment and personnel. "The patient--the person who pays the bill--is an unformed and inactive purchaser of hospital care." (45,14).

Further complicating hospital administration is the cost-based third-party payment system under which hospitals operate. In the

third-party system, a third party (private insurance company or Blue Cross, for example) pays a substantial portion of the hospital and medical expenses for the patient. The system thus involves: Party 1, the patient who receives the services; Party 2, the hospital or doctor who provides the services; and Party 3, the organization that pays Party 2 for the services provided to Party 1 (45,v). Payments are typically made on the basis of cost. This cost-based third-party payment system has been a key force motivating the steady and inordinate (compared to other goods and services) increase in hospital costs in the past 20 years (45,v). Within the constraints imposed by the doctor-hospital relationship and the cost-based third-party payment system, hospitals function as do other complex entities through delegation of authority and responsibility. A descriptive organization chart showing administrative responsibility along with functions assigned is shown in Figure 5. Technically, and legally, the board of trustees represents the community in which the hospital is located. It is responsible for setting policy, maintaining financial solvency and generally over-seeing administrative operations. The Board of Trustees is responsible for the qualifications of physicians admitted to practice in the hospital and makes all appointments to the medical staff as well as all other key people in the organization. Its authority, however, does not ordinarily extend to medical details; such matters are left to the medical staff. Most members of boards of trustees have neither the time nor knowledge to participate actively in hospital management (45,13). This responsibility is usually entrusted to the administrator.

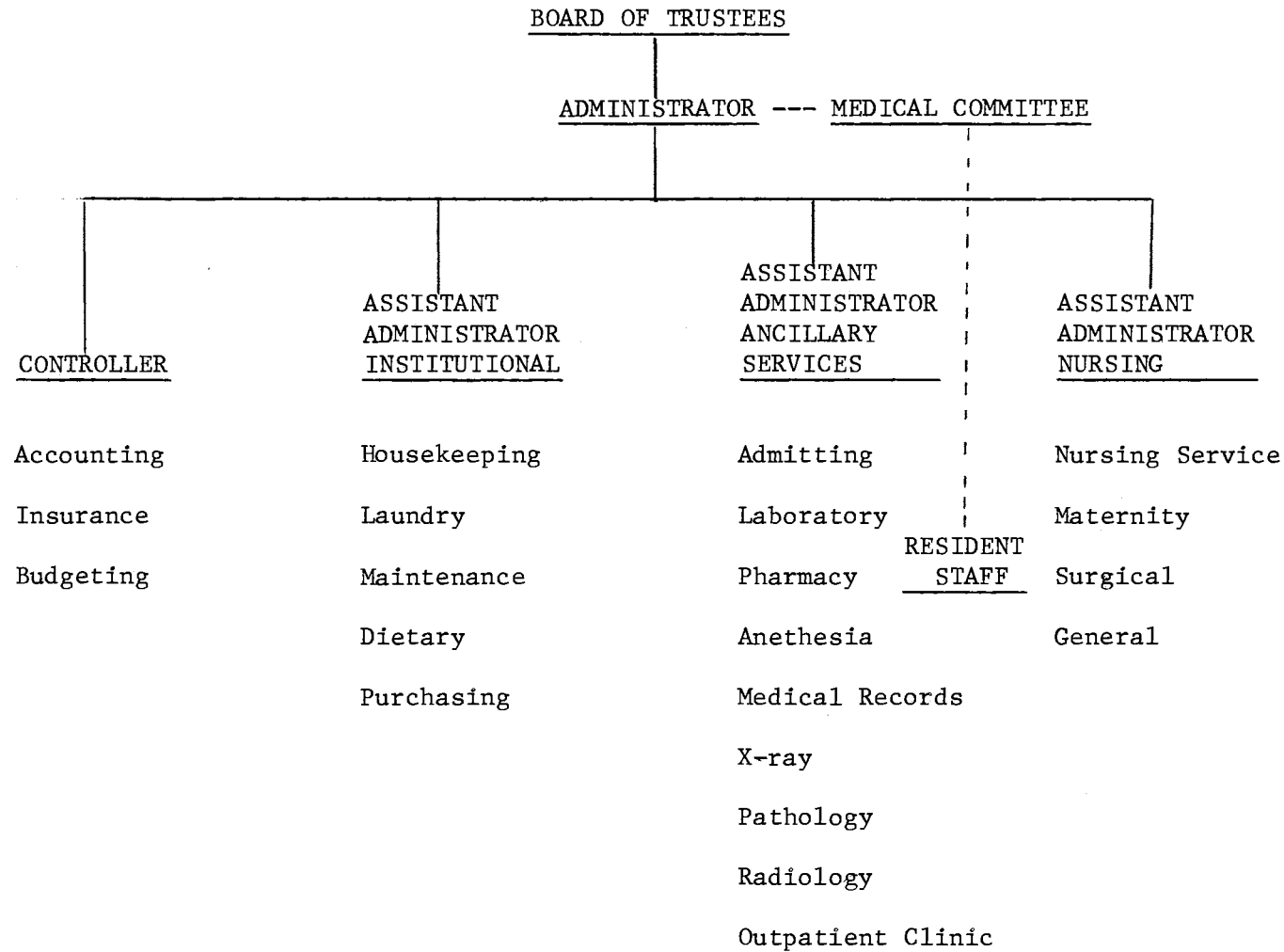


Figure 5. Organizational Responsibility in the Hospital

The hospital administrator is the person appointed by the board to integrate and coordinate the operation of the hospital. The administrator acts in an over-all executive capacity. He is directly responsible for the conduct of all internal affairs. To accomplish the goals of the hospital, the administrator must:

1. Establish a sound organization with clear lines of authority and responsibility for specific actions.
2. Develop techniques and methods which tie leaders of the hospital staff into a working group.
3. Coordinate activities so that the internal administration of the hospital operates effectively and efficiently.
4. Specify the functions of those working within the various departments.
5. Review existing policies.
6. Stay abreast of current trends and developments in the hospital industry so as to be able to provide for increased usefulness of the hospital in the future.
7. Delegate work in a manner best able to accomplish what is to be done.
8. Plan, persuade and manage in a continual ongoing process (75,41-46).

The administrator is a member of most of the administrative committees of the hospital and spends a great deal of time with committee meetings. The hospital administrator, then, is the person most knowledgeable about all phases of operations in the hospital. He is a full-time professional with wide perspective, given responsibility to

administer the total business of the hospital. He is directly responsible to the board (75,49).

In contrast, the medical staff sets its own medical and administrative policy subject to routine ratification by the board. Board interference in medical matters is usually kept to a minimum. The medical staff has little or no executive or administrative responsibility within the hospital. The actual care of a doctor's patients is left to the nursing staff which has the responsibility of carrying out the physician's orders and caring for the patient during his stay. The medical staff is headed by a medical committee which is chosen by the medical staff and which reports to the board of trustees.

Working closely with the doctor, the nurses are important in providing patient care. Nursing services includes a majority of the people who work in the hospital. Nursing personnel usually function under the authority and responsibility of a director of nursing who holds a position at the assistant administrator level. As a rule, the nursing staff is responsible not to the physician but to its own peer group.

Patient care and treatment usually requires (in addition to the services of the resident staff and nursing staff) general services; such as, admitting and medical records and specialized services; such as, laboratory, pharmacy, radiology, and operating facilities. The hospital is responsible for furnishing such services and usually employs the personnel necessary for providing these services. The doctors in charge of specialized services; such as, radiology and laboratory, may also be members of the medical staff. They usually are retained as hospital-based physicians, which means that they work

within the hospital using equipment furnished by the hospital, but are, in fact, independent contractors. They are usually paid on the basis of a percentage of gross billings for their particular department; a practice that does not encourage cost control.

The institutional staff is responsible for the nonmedical functions within a hospital. Its duties include housekeeping, laundry, maintenance, dietary and purchasing. Its authority, however, is extremely limited. It must provide services to the physician and support to the nursing staff, but neither interfere with, nor, as a rule, question the medical function and prerogatives of either group (45,13).

The controller (or chief accountant) is charged with the maintenance of an adequate accounting system to provide information for patient billing, to protect the hospital assets, and to provide relevant reports needed by the hospital management. The controller may function as a member of management at the assistant administrator level, or he may serve in a lesser position.

The important point in the above relationships is that health care and medical treatment are produced by the hospital in an environment that has discouraged the development of cost controls necessary for efficient hospital operation. Such controls would probably have been developed in a competitive environment similar to that found in the private sector.

The organizational structure in the typical hospital is such that although each of the four groups -- board of trustees, medical staff, nursing staff, and administrative staff -- is ultimately concerned with the care of the patient, each of these groups represents interests that are often involved in expensive conflict. While a more competitive

environment would encourage the implementation of efficiency measures as they become available, such encouragement has been lacking in the hospital industry.

Within the administrative organization described above, the four management groups function to furnish a wide range of medical and institutional services from hotel services; such as, room and board (under strict hygienic conditions) to facilities for such an involved procedure as open heart surgery. The following paragraphs will serve to illustrate the diversity of services offered by the hospital under study.

Services Provided

The modern hospital has developed into an extremely complex organization in terms of services provided. The purpose of this section is to illustrate this complexity through a discussion of the services provided by a typical hospital. This discussion will provide additional information about the environment within which management accounting techniques must function.

Broadly speaking, the short-term general hospital provides board and room facilities under strict hygienic conditions, and it also provides other elements of routine care; such as, nursing, dietary, laundry and housekeeping. In addition to such basic requirements, the hospital must maintain facilities for the numerous ancillary services that are necessary for the treatment of specific patient problems. The ancillary services provided by the hospital (especially laboratory, radiology and therapy) have expanded rapidly as newer, more sophisticated techniques, tools and procedures have been developed and implemented.

Patients no longer enter a hospital primarily to die, but rather to obtain diagnosis and corrective treatment from the medical professionals practicing within the hospital.

As newer, more economical methods of performing tests and procedures are developed, more patients can afford to purchase such services resulting in an ever-increasing demand. As a result, the typical ancillary services; such as radiology, radioisotopes, intensive care, clinical laboratories, surgery, recovery rooms, pulmonary therapy, gastroenterology and cardiac consultation are among the most highly profitable functions with a short-term general hospital (72,H21).

Not only do short-term general hospitals provide a wide range of services, but some have also developed extensive specialization within a service area. Today, for instance, an average of sixteen laboratory tests are performed on each inpatient, whereas twenty years ago, an average of four laboratory tests were performed (81,66). Table VII and the discussion following illustrates in more detail the diversity of services that may be offered in the short-term hospital under study.

In keeping with the accounting procedures developed by the American Hospital Association (45,22), hospital services may be divided into two categories, those offered to inpatients and those offered on a consulting or emergency basis to outpatients. The inpatient category can be further divided into routine services and ancillary (or special) services. The routine service category includes services normally required by all patients admitted to occupy a room. This category includes services similar to those customarily incurred in providing hotel-type accommodations, with the addition of dietary services, routine nursing and custodial care.

TABLE VII
CLASSIFICATION OF SERVICES IN THE SHORT-TERM
GENERAL HOSPITAL

I. Inpatient Services

A. Routine^a

1. Routine or ordinary care.
2. Intensive care.
3. Isolation Unit.
4. Psychiatrics.
5. Pediatrics.
6. Obstetrical and Gynecologist.

B. Ancillary or Special

1. Laboratory.
2. Radiology.
3. Radioisotope.
4. Delivery and Labor Rooms.
5. Operating Rooms.
6. Medical and Surgical Supplies.
7. Pharmacy.
8. Anesthesiology.
9. Inhalation Therapy.
10. Physical Therapy.
11. Occupational Therapy.
12. Speech Therapy.
13. Electrocardiography.
14. Electroencephalography.
15. Psychiatric Services.

II. Outpatient Services

A. Clinic

B. Emergency

^aIncludes: (1) Nursing, (2) Administrative and General, (3) Acquisition, operation, and maintenance of plant, (4) House-keeping, (5) Linen and laundry and, (6) Dietary services.

Accommodations are usually maintained to provide routine services in several categories of specialization. In this way, the patient may receive the level of care and attention requested by his doctor without unduly wasting facilities needed for more intensive care. For instance a patient recovering from minor surgery or a bone fracture will need primarily board and room service plus perhaps periodic visits by the nurse on duty. A patient suffering from a serious heart disorder, on the other hand, may need constant attention for 24 hours a day with emergency treatment facilities immediately available at all times. The patient is usually charged a daily rate for routine services with the amount depending upon the particular type of board and room services requested.

Most patients need more than board and room, however, and the hospital provides many special services. Two of the more obvious specialties of the hospital are: (1) the individualized care available in the form of nursing service, and (2) access to specialized equipment for diagnosis and treatment of specific patient problems. Particular attributes of nursing service and three of the specialized services (laboratory, radiology and emergency service) are discussed in the following paragraphs. The remainder of specialized services, while large in number, are relatively small in terms of revenue produced. For the sake of brevity, they are omitted from this discussion.

Nursing Service

The function of nursing service is primarily to provide continued and efficient nursing care to all patients. Nursing presents the largest service or department within the hospital, typically accounting

for between 20% and 40% of the hospital budget (54,79). Nursing service typically functions under the direction of a Director of Nursing at the Assistant Administrator level. The Director of Nursing is typically a registered nurse who assumes general supervision of hospital patients and nursing procedures. She is responsible for admitting patients on arrival (both inpatients and emergency) and maintaining an adequate nursing staff. The latter includes securing, employing, supervising, and discharging personnel in nursing service. The director of nursing is a member of the administration and is actively involved in the planning and control process of management.

The hospital is usually segregated into clinical units of perhaps 50-100 beds each. Functional responsibility for each of the clinical units is delegated to a Head Nurse (usually a registered nurse who has met the state requirements as to education and experience, has passed an examination and is licensed to practice nursing as an RN). The head nurse's role is primarily to assure good patient care within her clinical unit. She is responsible to the Director of Nursing, but must work with the doctor, the patient, the patient's family, the social worker, the nutritionist, the clergyman, therapists and nurses who are assigned to work in her clinical unit. The Head Nurse is therefore required to be proficient as a hostess, clerk, coordinator, administrator of patient care, and supervisor and teacher of the nursing staff. The Head Nurse may administer treatment directly to the patient, as may the Director of Nursing, but most of the actual patient care is performed under the supervision of the Head Nurse by the other registered nurses, licensed practical nurses and nurse's assigned to a particular clinical unit. A Licensed Practical Nurse (LPN) is one who has met specific

education and experience requirements, passed a state administered examination and has been issued a license to practice as an LPN. LPN's may, within a registered nurse's or doctor's discretion, perform bedside nursing duties that may include such technical duties as intravenous fluid therapy, venipuncture or catheterization. Nurse's aides must possess the qualities necessary to carry out assigned patient care functions as food service, handling equipment and supplies, and messenger duties.

The staffing requirements for a single clinical unit for a 24-hour period might appear as shown in Figure 6.

	1st Shift	2nd Shift	3rd Shift	TOTAL
Head Nurse	1	-	-	1
Registered Nurse	2	3	2	7
Licensed Practical Nurse	3	2	2	7
Aides	2	2	1	<u>5</u>
				20

Source: (9,92-93).

Figure 6. Daily Nursing Personnel Requirements

One of the biggest barriers to efficient staffing for nursing service is the inability to adjust staffing levels to short-term fluctuations in patient load. Nursing facilities must be performed 24 hours a day regardless of whether occupancy runs low or high. In addition, professional nurses are in relatively short supply and can thus

ask for and receive steady employment. This imposes a fixed cost upon the hospital that cannot easily be avoided if adequate nursing facilities are to be maintained for a normal demand. Some relief from the burden of this fixed cost has been effected in larger hospitals by switching nurses temporarily from low demand areas to high demand areas within the hospital (23,36). Volume of activity in nursing service is measured in the number of hours or days of service rendered by each category of nursing service employee (70,37).

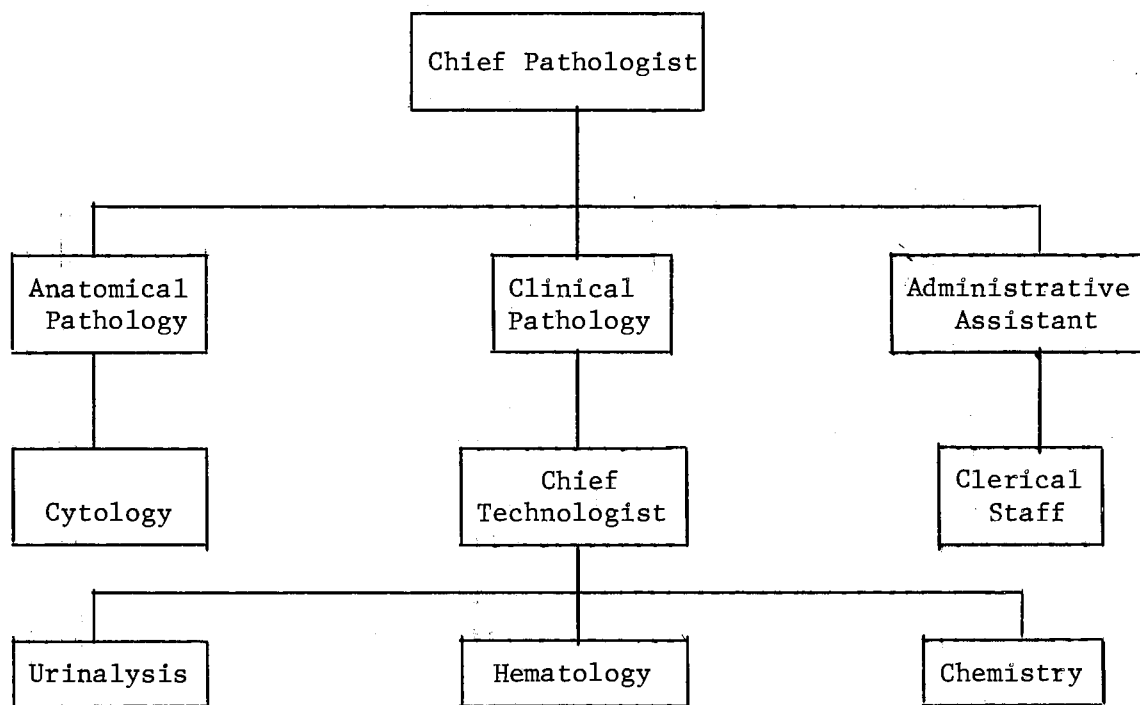
Laboratory

A hospital offers laboratory services because the medical staff needs them for conducting the tests necessary for proper patient care, including both diagnosis and treatment. In addition, the laboratory may be responsible for monitoring the various areas of the physical plant to insure a "clean" pathogen-free environment. The laboratory is important in terms of activity since it may account for 10 to 15% of a hospital's revenue and 6 to 10% of its cost. Markups on direct cost often run 75% or more making the laboratory a net contributor to hospital profits.

The laboratory is directed by a doctor who has specialized in pathology. His staff members are medical technologists who perform the various tests requested by the doctors practicing in the hospital. The organizational framework within which the laboratory staff functions is illustrated in the abbreviated organization chart shown in Figure 7.

The chief pathologist is a hospital-based physician who contracts to provide services to the hospital, but he does not report to the hospital administrator. He is a member of the medical staff, and works

closely with that group. His duties quite often include more than supervision of the various testing done in the laboratory. He may also be involved in teaching, research, autopsies and consulting. The chief pathologist's compensation is normally based on a percentage of the gross billings for laboratory services.



Source: (8,178)

Figure 7. Laboratory Organization Chart

Most laboratories are divided into sections according to areas of specialization as shown in Figure 7. Assuming sufficient volume, a pathologist will be in charge of clinical procedures and another in

charge of anatomical procedures with both responsible to the chief pathologist. The administrative assistant has responsibility for the various nonmedical procedures necessary for proper functioning of the laboratory; such as, the accumulation and reporting procedures required in requesting, performing and reporting the results of the laboratory work.

The urinalysis and chemistry sections are involved in the analysis of urine and blood respectively. Together they may account for as much as 50% of the procedures performed in the laboratory and employ the same share of the laboratory staff (20,9). Routine urinalysis tests are performed on all patients admitted to accredited hospitals and are frequently repeated during a patient's stay. Diseases of the kidneys, liver and bladder are disclosed by such urinalysis procedures. Many of the most frequently requested urine tests can be performed by personnel with a minimum of training, while others must be made by medical technicians.

Blood chemistry involves the analysis of either whole blood or blood serum to identify and measure specific properties. A large number of tests involving blood specimens are well established with accepted "normal" values determined. It is in this area of the laboratory that automation perhaps has had its greatest impact. One laboratory reported that it handled 29,600 tests per person per year in its automated chemistry section while handling only 4,000 tests per person per year in its nonautomated routine chemistry section.

Hematology is involved with identification and measurement of the cellular elements of blood; in particular, it is concerned with red, white and differential cell counts, and with hematocrit measurement.

It accounts for nearly 40% of the requests for laboratory service and employs around 25% of the laboratory staff. Although automation has had its effect on the Hematology section of the laboratory, much of the work remains manual in nature requiring processing by specially trained technologists (20,14). Recently an autoanalyzer for hematology tests has been developed, and this machine may well reduce the number of personnel required in hematology.

Cytology is a branch of biology that deals with the structure, function and life history of cells. A specialist in this area usually works closely with the pathologist since tissue specimens for analysis usually are obtained by autopsy and surgical removal. Cytology also includes examination of specimens of blood, natural excreta and discharges from wounds. Although automatic processing equipment is available for specimen preparation, most of the work requires the services of a pathologist.

The laboratory requires a large number of tasks in addition to the actual performance of laboratory procedures. In response to a request for a test procedure, the patient must be prepared, the sample of blood, urine, etc., actually taken, the sample transferred to the lab, the test performed, and the results recorded and transmitted to the patient's record. Sufficient supervision and quality control are prerequisites at all stages of the process. While time may not be a parameter in most test procedures, time is a vital factor in other cases where treatment might be withheld until the results of certain tests are known. Some laboratory facilities usually are kept available on a 24-hour basis, with the trend being toward operations for 24 hours a day, 7 days a week. Laboratory output is usually measured by the

number of tests performed, classified according to the type of test performed (79,43).

Radiology

The radiology department is responsible for taking, processing, examining and interpreting x-ray films and fluorographs used primarily in diagnostic procedures for digestive and urinary systems ailments. X-rays have the ability to penetrate different materials and contrast their densities in the form of a picture on film or screen. The doctor is thereby able to identify specific problems by "seeing" abnormal shapes, growths or densities. The radiology department may also be responsible for radiation therapy using either x-rays or radioisotopes or both. Almost all short-term general hospitals have radiology departments, with 26% having radioisotope facilities (57,16).

Most radiation therapy whether x-ray or isotope is basically a tissue destroying procedure primarily directed at the control or elimination of cancer. The storing and usage of x-ray machines and radioactive substances requires technically trained personnel using particular care to avoid accidents or misapplications.

The radiology department requires relatively large spaces and expensive built-in equipment. Technologic advances in radiation application result in rapid obsolescence and frequent replacement of the complex and expensive equipment.

The joint Commission on Accreditation of Hospitals requires that x-rays be interpreted by physicians "competent" in the field. This requirement is normally interpreted as meaning a physician who is trained as a radiologist and who has received approved post graduate

training, or experience, or both. The head of the x-ray department, therefore, is normally a doctor who has specialized in radiology. He functions at the level of a department head as a hospital-based physician. This means that he works within the hospital, using equipment furnished by the hospital. He is also a member of the medical staff. An organization chart for the radiology department might look like the one in Figure 8.

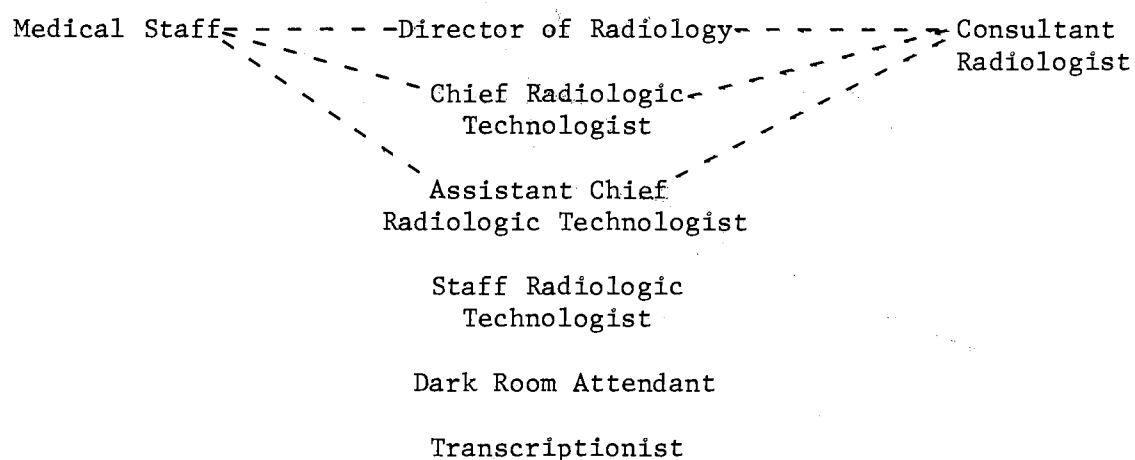


Figure 8. Organization Chart for Radiology Department

The radiology department functions in a line and staff relationship primarily under the direction of the director of radiology. The medical staff may function in an advisory position as may one or more consulting radiologists who have specialized in specific areas of radiology. While responsibility for the radiology department rests with the director of radiology, each of the other groups help to

oversee the correct application of radiologic procedures. The duties of the personnel include more specific tasks toward the bottom of the chart with the duties of the transcriptionist narrowed primarily to recording procedures.

The radiology department represents one of the more lucrative of the hospital's operations, often contributing from 20 to 30% of the hospital's net revenues from a markup of 80 or 90% on cost. The chief radiologist usually receives compensation computed as a percent of gross billings by the radiology department similar to the pathologist in the laboratory. Volume of service in the radiology department is measured by:

1. The number of x-ray films taken of each classification of patients. This may be subclassified by the type of examination; such as, chest plates, gastrointestinal studies, dental films, etc.
2. The number of fluoroscopic examinations (79,42).

Outpatient Department

The outpatient department serves to offer many of the same services to outpatients as are available to inpatients. The primary difference between the two categories is that in the outpatient category, the services are rendered without the patient receiving lodging. This department's original purpose was to provide treatment on an emergency basis when treatment was not available through normal channels. The need for emergency treatment facilities still exists since, "accidents are the major cause of death for persons older than age five. They claim 110,000 lives and cause 52 million injuries yearly." (22,31).

The increasing reliance of medicine on technology, with the need for access to expensive equipment for patient treatment has resulted in a tendency toward increasing use of hospital outpatient services and away from treatment in a doctor's office. Doctors often send patients to the hospital's outpatient department for testing. In addition, more patients are seeking treatment in outpatient departments. The result has been a large increase in the volume of services performed in the outpatient department and a change in the type of service performed. Many outpatient departments function as clinics to a greater degree than as emergency facilities.

Public opinion, and in some cases public statute, require that injured persons have access to treatment facilities when required. This means that most hospitals must maintain emergency facilities 24 hours a day, 7 days a week regardless of the volume of patients treated. The result is a relatively large amount of fixed cost in the form of salaries for the necessary physicians and nursing personnel. A study covering emergency departments in Chicago found that doctors and nurses in those departments spent an average of 27% of their time on patient care and the remaining 73% on nondirect patient services including; standby time, charting, cleanup and other miscellaneous odd chores (12,5). The high proportion of fixed cost in the outpatient department has resulted in a relatively expensive unit for the hospital to operate. At the same time, a large proportion of the patients it serves come from low income areas with the result that collections are seldom sufficient to cover even the direct costs of operating this department, and the department typically draws upon other areas of the

hospital for financial support. Volume of service in the outpatient department is measured in terms of number of patient visits (79,22).

Data Collection and Processing Characteristics

As the preceding discussion indicates, the hospital is a complex organization in terms of both administrative organization and patient care provided. The hospital is also complex in terms of its data collection, processing and retention requirements. The accounting system functions to provide: (1) financial data for patient care and billing; (2) financial data for reporting and reimbursement negotiations with third parties; and (3) information relevant to efficient management by hospital managers. Each of the above needs impose particular requirements upon the accounting system within the hospital. A discussion, at this point, of the objectives and attributes peculiar to the hospital accounting system will aid in understanding the hospital as a functioning entity. The following paragraphs, therefore, present a discussion in each of these areas.

Patient records must be maintained for each patient entering the hospital, and these records are usually retained until that individual dies. The record must contain up-to-date medical data for diagnosis and treatment, and it must include financial data for billing purposes. The patient's medical and ethnic history is usually obtained at the time of admission. Events occurring during the patient's stay are posted as they occur. Data concerning the patient's progress is thereby available for diagnosis to determine treatment. The hospital often accumulates patient data in a file system consisting of a folder for each patient. Under this system, the burden of keeping permanent

records and insuring access when needed may become a major task. Some hospitals have progressed to the point of using the computer's capabilities to help eliminate inefficiencies in posting patient data and to make the records more easily accessible. For example, one hospital in the study uses a computer for data storage with access to the computer through terminals at several strategic points throughout the hospital. Information called for can be presented either visually (by means of cathode ray tubes) or printed out depending upon the instructions given the computer. With this system, the doctor has access to the latest data on his patients before making his daily rounds, and the billing department can present the patient, upon discharge, an up-to-date statement for services rendered.

The hospital must accumulate financial data to use in reporting to outsiders on the financial position of the hospital and the results of operations by management. The objective here is primarily one of maintaining solvency in financial matters to insure continual operations.

Under the third party payment system, within which hospitals operate, reimbursement by negotiation is common. This approach usually means that the hospital must be able to support, with relevant cost figures, amounts billed for reimbursement. The two principle third party reimbursing agencies are the State Blue Cross organizations and the federally sponsored Medicare. Together these two agencies typically account for two-thirds or more of a hospital's billings. Both Blue Cross and Medicare have specific guidelines to follow in determining which hospital costs qualify for reimbursement. As a rule, such reimbursement is based on full cost including necessary direct costs and a proportionate share of indirect costs. Determining cost for

and a proportionate share of indirect costs. Determining cost for these agencies thus involves allocation of such costs as administrative costs and depreciation of fixed assets. The American Hospital Association refers to the process of determining full costs as "Cost Finding," which is defined as:

. . . the apportionment or allocation of the costs of the nonrevenue producing cost centers to each other and to the producing centers on the basis of the statistical data that measure the amount of service rendered by each center to other centers. The purpose of general cost finding is to determine the total or full costs of operating the revenue producing centers of the hospital (16,1).

Specific objectives of cost finding are stated as:

1. to provide full cost information as a basis for establishing rates for services and for assessing the adequacy of existing rates;
2. to provide information for use in negotiating reimbursement contacts with contracting agencies, and in determining the amount of reimbursable cost;
3. to provide information for reports to hospital associations, governmental agencies, and other external groups;
4. to provide information for use in managerial decision making in areas other than rate setting (16,1).

The emphasis in the first three objectives is upon relating costs to output for purposes of reimbursement and reporting. This type of information provides input to the patient record and reimbursement functions through charges for services rendered, and also provides input to the reporting function through statements prepared for outside parties. The reporting procedures required by Blue Cross and Medicare (with refusal to pay costs unless supported) have had a big impact in this area of hospital accounting. Most hospitals now keep adequate records to verify costs billed to patients. Many hospital managers,

however, are quite verbal in their objections to both the volume of records and time required for preparing Blue Cross and Medicare reports.

The fourth objective ties cost finding in with managerial planning largely through management's obligation for reporting to outside parties and planning for financial stability in hospital financial management. Effective overall managerial planning is dependent upon different concepts requiring different accumulation procedures than those utilized in full cost determination. The role of the accounting system in the planning and control functions of management forms the discussion of Chapter IV. It is sufficient to say, therefore, at this point, that cost finding procedures are helpful to management in very few cases. Hospital managers must consider total costs in computing charges to patients for services rendered. When patients pay less than the direct costs of providing a service (as is usually the case in obstetrics and emergency, for instance), then other patients must pay more than the direct costs of the services they receive in order for the total hospital revenues to cover total costs.

Hospitals, in order to survive, must generate sufficient revenue to cover hospital costs. Cost data must be accumulated and identified with users in a manner consistent with insuring that adequate resources are available to meet operating and expansion commitments. This represents no small task. A short-term general hospital may have available some two thousand billable items -- tests, procedures, and so forth -- in addition to drug prescriptions (28,107). Charges for all of the items used must eventually be included in one of some twenty independently organized revenue producing centers within the hospital. A

revenue center, as used here, refers to a service or department for which the patient pays a specific charge. The laboratory, for instance, is a revenue center since the patient's bill includes specific charges for laboratory services. Examples of other revenue centers within the hospital are; board and room services, radiology, emergency service, and numerous therapy services. Most revenue centers are also responsible for a number of specific costs. The hospital also contains many nonrevenue departments, each functioning in a service capacity to the revenue centers. A nonrevenue department is called a cost center and may be defined as, "a responsibility segment within the hospital to which certain expenses can be directly traced." (9,92). For example, the nursing station is a cost center because certain expenses can be directly related to a specific nursing station, and the head nurse can directly control these expenses. Costs charged to cost centers are customarily identified with the revenue center(s) benefiting from the activities of the cost centers. Thus, individual nurses salaries are charged to the particular nursing station they are assigned to; costs for a number of stations are assigned to the floor on which they are located; costs for a number of floors make up the cost of nursing service, which becomes a part of the revenue center's daily charge for room and board.

In support of the revenue centers, the hospital may contain some fifty to one hundred identifiable cost centers, all of which function to provide services to one or more of the revenue centers.

Ideally, each revenue producing department should have a rate structure which covers those costs that can be directly attributed to such revenue centers and also makes a contribution to indirect costs

and profit (47,24). Ideal conditions, however, do not exist at present and services; such as, maternity and emergency, continue to lose money and be subsidized by services; such as, laboratory and radiology.

Differences Within the Community

Hospital Category

While the description set forth in this chapter is necessary for an understanding of the hospitals under study, it must be recognized that significant differences do exist between individual hospitals in the short-term category. A hospital develops out of a need to care for the sick and injured in a community. Needs differ between communities, and very few hospitals follow the same pattern of organization. Administration develops out of the needs of a particular hospital at a particular time; administrations, therefore, differ.

Some of the differences that may affect operations (staffing requirements, operating costs, and patient care) are:

1. Size (measured in number of beds).
2. Age and efficiency of building design.
3. Patient mix.
4. Mix of specialists and general practitioners.
5. Management ability.
6. Availability and quality of personnel.
7. Type, size, and location of community.
8. Mix of patient care, research and education.
9. Traditions of proper medical care among physicians.
10. Diagnostic and treatment services available.
11. Different levels of amenities in the physical plant, staffing and appointments (12,4).

Such differences may indeed be used to support differences in costs between hospitals, thus limiting the use of industry-wide averages for cost control and billing procedures. These differences between hospitals, however, cannot be used to justify a substandard managerial reporting system. The individuality of hospitals imposes an obligation upon the accounting profession to expend extra effort on the development of management accounting planning and control techniques to aid health care managers in attaining the objectives of efficient application of quality health care.

Too often, facilities are purchased by a hospital due to doctor demands or are maintained for prestige purposes when adequate facilities for such services exist in nearby hospitals. Examples of such redundant facilities can be found in under-utilized laboratories, seldom used open heart surgery facilities, and in-house dietary kitchens when better or cheaper facilities are available. For example, a study of redundant facilities in Philadelphia, Pennsylvania, found 17 hospitals with open heart surgery facilities. Pressure from the Pennsylvania insurance commissioner on the Pennsylvania Blue Cross organization resulted in cutting that number to four (33,36). The extra facilities were not only costly, but in many cases, outdated and inefficient in terms of equipment and techniques.

The hospital board of directors or administrators are continually faced with decisions requiring commitment of resources. The results of making decisions based on insufficient information are twofold: (a) to drive up costs unnecessarily due to lack of cost control and repetition of facilities, and (b) to make cost allocation and billing procedures difficult to accomplish.

Summary

The purpose of this chapter has been to further an understanding of the community hospital through a discussion of the particular attributes of this type of organization. The community hospital has been shown to be a complex organization both in terms of administration and services provided.

The community hospital's complexity in terms of administration is due, in large part, to the position of influence held by the doctor without a concurrent economic responsibility for costs incurred. Also contributing materially to inefficiency in hospital operations is the cost-based third party reimbursement system that offers no economic incentive to the hospital to control costs.

The community hospital offers a wide range of services to patients from sale of medications to such sophisticated operations as open heart surgery. These services are offered to patients having a wide range of socio-economic backgrounds. Many of the hospital's patients are therefore unable to pay for extensive hospital care.

The hospital is faced with the dual problems of providing care to all who need it, and at the same time obtaining sufficient revenues to cover operating expenses and provide for expansion in patient care facilities as technology dictates. This leads to special problems in financing and cost control since, over the longrun, profits must be adequate if the hospital is to be self-sustaining.

The accounting system must provide sufficient, relevant information to managers to enable them to fulfill their objective of maintaining a self-sustaining entity.

Attributes of the management function in hospitals and particular accounting needs of hospital managers provide the topic for Chapter IV, which follows.

CHAPTER IV

MANAGEMENT AND THE FUNCTION OF MANAGEMENT ACCOUNTING

Introduction

Management in any kind of business entity is an art. The practitioner must have the skill and the ability to diplomatically and effectively manipulate people and equipment in order to achieve desired results. In any but the smallest business, effective management without reliable accounting information is impossible. Managing a hospital (with its administrative complexities) presents an especially difficult task. The managerial complexities existing in hospital management impose a special obligation upon the accounting profession, and a challenge to the management accountant in particular, to furnish sufficient, relevant information for informed decision making.

In the absence of relevant information upon which to base managerial decisions, efficient use of resources is impossible. Inefficient use of resources represents a substandard condition and a tenuous position for the hospital industry.

The purpose of this chapter is twofold: (1) to review the process of management, with its dependence upon a flow of relevant information for informed decision making; and (2) to furnish support for the contention that management accounting techniques are as necessary for

efficient management in the nonprofit hospital industry as they are in the profit oriented business sector.

The Process of Management

Advances in management have been one of the most significant characteristics of Twentieth Century industrial technology (53,1). The process of management, therefore, has been, over the years, the subject of a large and continually growing literature. The functions managers perform have been classified by various authors in a number of different ways. Basic similarities, however, exist between the various classifications -- with the more important differences arising from the combination of several functions into one (and vice versa) or because of different points of view being taken by the author. "Regardless of the different levels of functional aggregation taken, management is seen almost without exception as performing two basic functions of planning and control." (1,43).

Planning, as one of the functions of the manager, involves the selection from among alternatives of enterprise objectives, policies, procedures, and programs. Planning is thus decision making affecting the future course of an enterprise. It is an intellectual process involving the conscious determination of courses of action by managers who base their decisions on purposes, facts, and considered estimates (48,71-93).

Four steps or elements are found to be present in all planning activities. These four elements are:

1. Recognizing and defining the problem.
2. Searching for alternative solutions.

3. Evaluating the alternative solutions.
4. Selecting an alternative based on the results of evaluation (1,45).

Each of these steps of the planning process requires sufficient relevant information to make a rational decision. A brief discussion of the information requirements in each of the four steps as identified by the American Accounting Association (1,46-47) follows.

Recognizing and defining the problem requires an information system that first enables management to identify problems (both current and potential) and then isolates the particular conditions involved for analysis and understanding. Much of this type of information must come from a control system designed to furnish information for planning as well as control.

Searching for alternative solutions requires information on the structure and processes involved in the particular problem area and on the interactions of this area with other parts of the organization. The linking of one alternative to others is greatly facilitated by proper structuring of the information system.

The process of evaluating the alternatives selected is closely linked with the search for the alternatives themselves but involves more detailed and explicit consideration of the effect of each alternative on the organization. It is at this state that decision models and quantitative techniques play their most important role and where the demands for quantitative information are the greatest.

Selection of an alternative follows the evaluation process. When the problem can be specified in detail and the evaluation model is both pertinent and complete, then the choice of an alternative logically follows from the evaluation. Often, however, conditions are less than

ideal and one or more of these conditions is not fulfilled. Selection of an alternative solution then becomes far from automatic. It is in these cases that managerial judgment is applied and qualitative factors are merged with the quantitative results of the evaluation process.

The data needed in each of the planning stages are determined by the types of decision models used in the planning process. Different approaches to evaluating alternatives require different information in different forms. In addition, as the models become more sophisticated and as the evaluation process becomes more complete, the demand for quantitative information increases. This imposes additional requirements of a more explicit nature on the information system, to generate and communicate more quantitative information at the evaluation stage, thus replacing, to an extent, qualitative information at the selection stage (1,48).

Planning is not an end of itself; it is a means to an end, the end being a desired action. Consistent attainment of desired actions requires consideration of the control process.

The Control Process

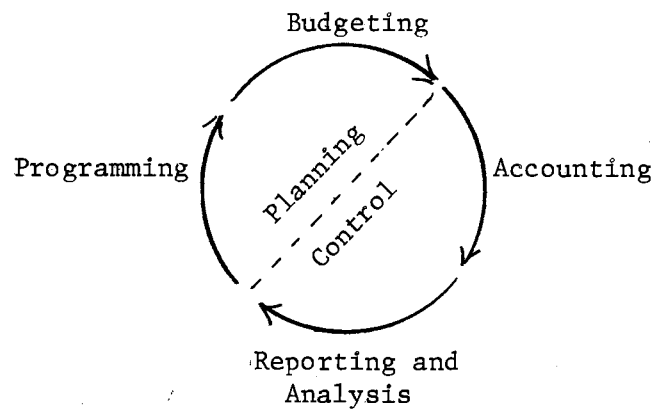
Control involves the process of insuring that the alternatives chosen are accepted and the plans for implementing them are carried out. A plan, however carefully prepared, is of no consequence unless something happens or is accomplished because of that plan. Planning needs to be linked with control. It is a primary function of the accounting system to disclose what happens as a result of the planning decision.

In his work on planning and control systems, Professor Anthony identified the functions of managers as falling into one of three categories: "Strategic planning," "management control," and "operation control." (2,15-18). Strategic planning is identified as,

. . . the process of deciding on objectives of the organization, on changes in these objectives, on the resources used to attain these objectives, and on the policies that are to govern the acquisition, use and disposition of these resources (2,24).

Management control is defined as, "the process by which managers assure that resources are obtained and used effectively and efficiently in the accomplishment of the organization's objectives." (2,27). Operational control is defined as, "the process of assuring that specific tasks are carried out effectively and efficiently." (2,69). Planning appears to be dominant in strategic planning, while both planning and control are part of management control. Control appears dominant in operational control where the emphasis is on specific tasks with decisions essentially objective in nature.

The accounting system serves as the communicator of information that enables the management process to become an integrated whole consisting of interrelated parts for; (1) deciding on plans and programs, (2) deciding on budgets that are consistent with these programs and communicating these decisions to those responsible for implementing them, and (3) accounting for and reporting the resources that were actually used. This reporting provides feedback which affects future planning decisions. These decisions in turn generate data for future planning and control. The resulting cycle of planning and control becomes a continuous stream of decision making typical of entity management. Such an organization can be pictured as in Figure 9.



Source: (2,388)

Figure 9. Sequence of Management Planning and Control Techniques

Programming and budgeting are representative of the planning stages of management while accounting, along with reporting and analysis are representative of the follow-up or control stages.

Practically all of the advances in management are founded upon the development of information systems which enable management to act intelligently rather than blindly. In the absence of reliable financial information provided by the accounting system, effective operation of any but a very small business is impossible (53,1). When the accounting system is designed in such a way that it assists and guides managers to make rational decisions and to act in a manner consistent with the overall objectives of the organization, then, and only then, has accounting contributed to the planning and control functions of entity management.

Accounting and the Management

Accounting Subsystem

An effective accounting system identifies, measures and communicates sufficient economic information to permit informed judgments and decisions by the users of information. Two somewhat different types of users are identified as external users (stockholders, government and other outside parties) and internal users (members of the management team engaged in conducting the operations of an entity).

External users have historically relied primarily upon progress type reports concerning the stewardship aspects of entity management. Such information is usually presented in a balance sheet and income summary stating an entity's current position and results of operations, respectively. Accounting for external users is primarily the objective of financial accounting. It consists largely of recording, accumulating and communicating historical data about a particular entity.

Internal users, while dependent upon a good showing in reports issued to external users, need additional data for internal planning and control. Managers must be concerned with future events that are yet under their control. The direction future events take will determine the success or failure of an entity. In order to plan and control, managers need information for; (1) non-routine decision making and formulating major plans and policies, and (2) use in planning and controlling routine operations. This is the area of management accounting. The major difference between financial accounting and management accounting lies in helping managers deal rationally with both the immediate and distant future. Its concern with the past is justified

only insofar as it helps prediction and satisfies reporting requirements. An effective management accounting system is based upon sound budgeting procedures. It includes data accumulation according to: (1) costs by responsibility centers, used for planning and controlling the activities of responsible supervisors; (2) full product costs, used for pricing and other operating decisions under normal circumstances; and (3) direct product costs, used for marginal pricing and other short-run operating decisions (3,42).

The provision of information to fulfill the needs of internal users is the objective of management accounting. In the broad sense, this includes any information useful to the manager in his planning and control functions. In any case, the primary test for a management accounting system is relevance to intended purpose (53,4).

The emphasis in this study is on the application of management accounting to management in the hospital industry. The following paragraphs serve to relate management accounting more closely to operating entities: first, in the profit oriented private sector; and secondly, in the "nonprofit" hospital sector.

The Role of Profits

The Profit Oriented Entity

The objective of profit maximization is generally accepted as one of the primary goals toward which the actions of business entity managers are directed. The rational manager seeks to obtain the maximum output of product for a given input, the minimum input for a given output or, if parameters do not exist on inputs or outputs, then the

manager utilizes the combination of inputs and outputs that maximizes net revenue to the entity.

The entity manager that produces a substandard output, uses more inputs than normal, or fails to make an acceptable profit, has failed to perform satisfactorily. The entity suffers in its ability to buy resources and frequently may not survive in a competitive environment. Each of these approaches emphasizes a relationship between inputs and outputs of a system and thus is concerned with the application of resources to their most productive use.

Successful application of resources to their most productive use is generally accepted as dependent upon a system of cost planning and control based on a relevant information flow. The discipline of management accounting comprises a large and generally accepted body of techniques and procedures designed to furnish relevant information to managers in planning and control. Such techniques as budgeting, performance reporting, contribution margin analysis, and standard costing have helped numerous profit oriented industrial firms operate efficiently. Without such techniques large, diversified companies could not operate effectively.

The Role of Profits in Hospital Management

The goal of profit maximization has not been so readily accepted for the nonprofit hospital industry. This is due in large part, perhaps, to a misconception about the meaning of a nonprofit status in the hospital industry and to constraints peculiar to the hospital industry. Suppliers of hospital care are largely nonprofit organizations only in the legal sense that the owners may not receive dividends. Hospitals

not only make profits, but the amount of profit has risen substantially over the years. Nonprofit hospital revenues in the United States have exceeded nonprofit hospital costs for each year from 1961-1969 except for 1962 (17,5). Furthermore, the excess of revenues over expenses (profits in the profit oriented firm) has risen over the period from 91 million dollars in 1961 to 400 million dollars in 1969. Stated in rates of return, nonprofit hospitals have earned from 1.39% in 1961 to 3.19% in 1969 on plant assets. The return based on revenues rose similarly from 1.94% in 1964 to 3.19% in 1969. Contrary to popular belief, therefore, hospitals do make profits, and those profits have risen over time. It has been further shown that hospital managers must realize net incomes in order to maintain an acceptable level of facilities. The investment in assets by hospitals rose from \$19.0 billion in 1961 to \$36.2 billion in 1970 (17,5). Most of this investment came about by applying profits that were not returned to owners, but rather retained in the business. The self-sustaining facility is one that attracts competent personnel and doctors which in turn requires an ever increasing inventory of sophisticated equipment for the doctor to use in patient care. Profits to the hospital industry thus serve the same purpose as retained earnings to the profit oriented corporation.

Hospitals as entities, however, differ in several important respects from many profit oriented entities. The more apparent differences are pointed out by the American Hospital Association in the following statement:

Hospital budgeting offers a type of challenge not generally found in a business enterprise. The nature of the service provided is such that the hospital must be ready to serve a variety of different needs on an around-the-clock basis. The need for standby facilities and above-average capacity staffing is likely to present problems different from those

faced by the business budgeter. For example, a department showing a net loss may not be eliminated solely on the basis of the loss.

In many cases the supply of services offered by the hospital is relatively inelastic. The acquisition of various types of facilities represents a reasonably long-range commitment of resources. The response to short-term fluctuations in demand for services cannot be immediate. In addition, the demand for services is usually determined and controlled to a large extent by physicians who are not employees of the hospital.

Economic theories of the business firm suggest that profit maximization is accomplished by maximizing efficiency and minimizing costs within the limits of the firm's ability to respond to changes in demand. In the hospital, however, effectiveness in the delivery of health care becomes of prime importance. It may be that maximizing effectiveness in the delivery of health care may preclude maximizing efficiency in the economic sense. However, within the parameter established for effective quality care, efficiency in terms of cost should be sought (10,2).

The statement recognizes that the hospital's objective of patient care may lead to inconsistencies with a profit maximizing management approach. A department, such as the emergency service which typically operates at a loss, may not be eliminated simply on the basis of that loss since public opinion may view emergency treatment as a primary function or obligation of the hospital.

Many of the expenses incurred in hospital management are fixed in amount. Facilities; such as, laboratory and radiology for instance, are not short-term commitments and therefore not easily adjustable on short notice. Professional personnel expect steady employment, and the hospital must meet this requirement in order to retain qualified individuals. The above differences present special problems. They do not, however, eliminate the need for concern over cost. The AHA recognized that efficiency in terms of cost, as well as the provision of quality care, should be an objective in hospital management.

Need for Rational Allocation of Resources

The validity of a management analysis of the "nonprofit" hospital industry is based upon the proposition that there is a need for a rational allocation of resources in all sectors of the economy. Neither the apparent nonprofit status of the hospital industry nor the special constraints within which hospitals must operate eliminates the need for this rational process (45,3). Within our society, a profit oriented business enterprise strives to produce an article or provide a service that enables it to show a profit or at least cover its expenses (18,5). The nonprofit hospital industry should similarly attempt to operate efficiently.

The performance of hospital management has historically been judged on the basis of effectiveness. Experience of recent years has shown that this is not a sufficient basis for evaluation of performance. Hospitals, as other users of resources, must also be held accountable for efficient operation. The criteria of effectiveness and efficiency are discussed more in detail in the following paragraphs.

Effectiveness versus Efficiency

Regardless of the type of entity within which a manager operates, he is responsible for getting his job well done -- the criterion of effectiveness. Effectiveness in the hospital industry may be measured in terms of number of patients admitted, number of patient meals served and number of prescriptions filled (69,49). Each of these contribute in some degree to the primary objective of patient care. Managers can be judged on the basis of such output measures without consideration of resources consumed in their production. In the real world of limited

resources, where resources have a value (cost to the user), however, effectiveness is not a sufficient indicator of managerial performance.

Rapid increases in the cost of providing health care have resulted in an increasing emphasis on efficiency as a matter of particular concern. Efficiency -- defined as the careful consumption of resources -- measures the ratio of output of a system to its inputs. Efficiency in hospital management may be measured in terms of number of admissions per admitting clerk, number of meals served per dollar of dietary expense, and prescriptions filled per man-hour in the pharmacy (69,49).

Since it is possible to emphasize output (effectiveness) without regard to input, it is equally possible to be effective without being efficient. Concentration on effectiveness without consideration of efficiency ignores the basic economic concept of scarcity of resources. In a competitive environment, the effective but inefficient firm does not long survive.

The hospital industry has long suffered from grossly deficient accounting systems. In the past and even today, in many hospitals, the financial manager was merely a financial recorder with two strikes against him: (1) he was historically oriented, and (2) he was led by the reporting needs of third parties. These combined to lead to accounting systems in the health care field that furnished little relevant information to managers in their planning and control functions.

Increasing attention, recently, has been focused upon the contribution that a well designed management accounting system can make toward helping internal management apply limited resources in the health care field to the more efficient uses. The function of the management accountant is to devise a system that will give managers at all levels

adequate and timely reports containing sufficient, relevant information to make informed decisions.

Management Accounting and the Hospital Manager

If today's hospitals are to operate efficiently, it is necessary for every department manager to become involved in and to understand the financial affairs of his department. In addition, he must clearly relate his efforts to the objectives of the whole hospital. Only in this manner can he understand and overcome the conflicts that may arise in a complex hospital environment.

All departments within a hospital exist to meet needs that exist in fulfilling the hospital objective of patient care. Individual managers are charged with specific tasks that vary widely from one another in terms of functions performed. Managers must know what is expected of them in these diverse duties and also realize that they are to be judged on their performance in meeting these expectations. Only in this manner can full effort be directed toward a common entity goal.

The extent to which managers accept the fairness of what is expected of them determines how much effort will be expended in striving to meet the expectations. Managers must be involved in the process of setting expectations that are to be met in order to be judged as performing satisfactorily. Only in this manner can individuals within an organization feel that the expectations are reasonable and used fairly. Expectations in business management are typically quantified in terms of units of product or dollars, and presented in the form of budgets. Budgets have an emotional impact upon those whose behavior is established by the terms or conditions that make up the budget. There is no

way to eliminate the emotional component of budgeting, but problems are minimized when managers participate in making up the budget (32,48). Accurate, dependable budgets require an intimate knowledge of department characteristics and behavior. Managers have been delegated authority and responsibility for their particular areas of activity and logically are the most knowledgeable about their particular area. They must, therefore, contribute to the budgeting process if it is to be successful. To leave such persons out of the budgeting process eliminates one of the primary sources of expertise in each area.

A recent study found one of the major problems in hospital management was a lack of effective coordination and communication between the various work groups within the hospital. The study identified a major contributor to the problem as a lack of accurate, rapid information flow (38,63).

Writers in the behavioral sciences have repeatedly shown that only when individuals are aware of their role within an organization and satisfied with the recognition received (monetary and/or other) for their efforts will they act in a manner consistent with both their individual goals and the enterprise goals.

The management accounting system functions as the formal communication network within an organization that ties the enterprise together as a unit. At the same time, relevant data is accumulated in reports for a multitude of separate entities, each contributing toward the entity objectives.

The management accounting system ~~must be~~ designed to develop financial reports which furnish individual managers with information concerning their particular area of responsibility. Only when

authority is accompanied by responsibility, can control be effective.

Attributes of an effective management accounting system are:

1. A sound organizational structure.
2. Relevant, reliable, statistical information.
3. An ability of managers to analyze and interpret accounting information.
4. Timely response in utilization of reports (27,7).

When each of the above requirements is met, the management accounting system provides for effective planning and control. The function of control is aided by accounting for current operating efficiencies and identifying deviations, revealing indications of impending problems, and disclosing possible methods or means of improvement.

Summary

Management is a vital function in the economic process of utilizing assets to produce specific outputs. The manager must both plan for attaining desired objectives and provide control to see that plans are carried out.

Managers provide for efficient allocation of such resources as are available through the planning function and provide for performance measurement of actual results through the control function. The planning and control functions interact to form the continuous process of entity management. Planning and control functions require the manager to be knowledgeable in his department and to know how his department fits in with the whole organization. Only in this manner can all segments contribute toward the entity objectives in the most efficient manner.

The nonprofit status of the hospital industry does not eliminate the need for hospital revenues to exceed costs. Such excesses are the

primary source of capital required for expansion in most hospitals. Nor can the special constraints discussed in this chapter eliminate the need for efficiency in the sense of cost control. Hospitals must account for the economic resources consumed in the provision of health care. Characteristics peculiar to the hospital industry, therefore, do not eliminate the need for an accounting system designed to furnish relevant information to hospital managers for their planning and control functions. Quite the contrary prevails. It can be argued that additional problems faced in hospital management impose special burdens on the accounting system to furnish relevant information to hospital managers. Efficient operation in hospital services is a prerequisite to continued access to resources needed for technological innovation and expansion of health care.

CHAPTER V

PREREQUISITES TO EFFECTIVE BUDGETING

Introduction

The literature survey presented in Chapter II disclosed many problems in the rising cost of hospital services. In Chapters III and IV the hospital as an organization was defined and the relevance of management accounting to hospital management was established. On the basis of those chapters, six management accounting techniques were chosen for a study of management accounting practices in the hospital industry. The selection was made on the basis of: (1) emphasis in current literature on such techniques as effective contributors to control of hospital costs, and (2) descriptive articles in hospital literature promoting application of the particular techniques to management accounting in the hospital industry. The six techniques are: (1) operating budgets; (2) capital budgets; (3) responsibility accounting; (4) contribution margin analysis; (5) cost-profit-volume analysis; and (6) standard costing. The discussion in Chapters V, VI, and VII centers around the use of these six techniques.

Chapter IV emphasized the continuous process of planning and control with the characteristic of interdependence of the two. That contention is not challenged by the method of presentation of data in Chapters V, VI, and VII. The objective of these three chapters is to

describe how modern management accounting techniques are used in the Oklahoma hospitals included in this study. For purposes of clarity, Chapter V contains a description of the influences affecting hospital planning up to preparation of the budgets. A description of the budget preparation sequence is presented in Chapter VI. Chapter VII describes control procedures and includes a discussion of the use of standard costing and cost-profit-volume analysis.

The practice of budgeting is relatively new in hospital management and a description of practice without some additional information about the circumstances surrounding budget use is of limited value. A portion of each interview with a hospital manager was devoted to gathering facts or descriptions considered helpful, or necessary to effective management control through budgeting. Factors considered relevant by the American Hospital Association and others for effective budgeting include: (1) a favorable environment; (2) a well developed organization of delegated authority and responsibility; (3) management involvement and commitment; (4) adequate statistical data for measuring inputs and outputs; and (5) a reasonable knowledge of cost behavior (10). Chapter V describes the practice of each of these prerequisites as indicated by the hospitals in the sample.

Prerequisites to Budgeting

Budgeting Environment

In the hospital industry, the environment has historically been one in which health care managers concentrated on providing the best possible care to patients regardless of cost. Hospital managers have,

therefore, concentrated their efforts upon obtaining modern sophisticated facilities to provide for professional care. As a result of these efforts, innovation in medical techniques has been one of the outstanding characteristics of the modern hospital.

Since World War II, however, hospital expenditures have risen much faster than expenditures on other goods and services, and the cost of hospital services is becoming a major consideration in hospital management decisions. Hospital managers are increasingly faced with a changing environment in which they must provide for cost increases exceeding increases in productivity. This exposes the manager in the typical hospital to the area of planning for control of costs. The manager must be proficient, not only in his area of speciality, but he must also acquire a proficiency in financial management as well. Many managers opposed the adoption of cost control measures on the grounds that they interfered with the provision of quality care, while other managers simply did nothing as costs continued to rise.

Hospitals in this country have been shown to be dynamic, developing systems that have effectively introduced and assimilated rapid and extensive change in medical technology (31,76). They must also be innovative in the area of management control techniques as well if they are to fulfill their function in extending health care to all who need it.

Perhaps no other factor is more conducive to innovation in an organization than the attitude of top management toward change. Successful managers within an organization respond and act in a manner consistent with the goals and objectives set by their superiors. This behavior pattern applies throughout an organization from the

bottom-most levels of management to the top. The behavior of managers throughout an organization is, in large part therefore, a product of their environment. The external environment clearly demands that hospital managers plan for controlling costs and managing resources efficiently. Prime forces in the demand for cost control and efficiency are the state Blue Cross groups and the federal Medicare program. This significant influence upon hospital development is largely beyond the influence of the manager within the hospital. Top management in the hospital, however, can develop an internal environment conducive to the operation of cost control measures necessary for the accomplishment of the hospital's objectives.

The hospital manager functions in response to the demands and rewards placed upon him by the system within which he functions. He quite often perceives specific forces as being predominant in their influence upon his actions. Identification of the dominant influences, as the manager sees them, is helpful in both describing conditions and directing efforts toward improving conditions. Identification of the signals having an effect upon the use of management accounting techniques is particularly relevant to the objectives of this study. Several questions designed to identify relevant influences upon the hospital manager's actions were, therefore, included in the study. The responses relevant to the environment within which the hospital manager works are presented in the following pages. The number of responses will differ according to the question asked since more than one response to a question may be applicable.

Specific occasions are often perceived as initiating specific actions. Managers were, therefore, asked to identify the occasion(s)

they considered to be the most prominent in the implementation of budgeting techniques in their hospital. The results are shown in Table VIII.

TABLE VIII
OCCASIONS CONTRIBUTING TO THE USE OF
MANAGEMENT ACCOUNTING TECHNIQUES

Occasions	No. of Responses
a. Specific problem	1
b. Change in accounting philosophy	5
c. Change in management attitude	10
d. Competition	3
e. Legal requirement	8
f. Industry wide technique	0
g. Other	0
	27

The responses indicated that the record keeping and reporting requirements imposed by Blue Cross and Medicare formed the initial push toward reliable accounting systems. Descriptive manuals published by the American Hospital Association were mentioned as being the most helpful at this stage in setting out methods for implementation of

recording and accumulation procedures. Closely following in terms of time sequence, but more significant in terms of influence on the accounting system, was a change in management attitude. Further inquiry into specific changes in management attitude typically disclosed a dominant manager at the level of administrator or associate administrator who had pushed hard toward establishing a cost conscious attitude in the management hierarchy in his hospital. A change in accounting philosophy also had an effect on initiating budgeting procedures but was viewed a lesser influence than either a change in management attitude or legal requirements.

In any given situation, a decision maker (manager) relies on various sources of information inputs. A knowledge of the more important sources in terms of influence on decision making is necessary in order to describe and understand the environment in which the manager functions. In order to pin down information sources for this study, the hospital managers were asked to identify the sources of information that influenced the application of budgeting procedures. The responses are shown in Table IX.

The responses indicate that the administrator was the primary agent for innovation in budgeting procedures. This response, along with the information in Table VIII, indicates that a change in management attitude most frequently furnished the push toward innovation in budgeting procedure, and the administrator was the most frequent source of information that had an impact on budgeting procedures.

Trade journals were found to be a relevant source of managerial information as were outside consultants. Workshops and trade institutes sponsored by the hospital and financial management groups were

mentioned by two of the managers as furnishing relevant information to the development of their management control system.

TABLE IX
SOURCES OF INFORMATION ABOUT MANAGEMENT
ACCOUNTING TECHNIQUES

Sources	No. of Responses
a. Trade journal	5
b. Administrator	9
c. Newcomer (accountant)	1
d. Outside consultant	3
e. Not known	1
f. Other	<u>2</u>
	21

Developments in recent years have resulted in the expansion of demand for occasional or periodic services of management specialists in particular areas of hospital financial management. Consultants provide expertise in a particular problem area without the hospital incurring the cost of an additional permanent position. This demand for consultants has resulted in a rapid expansion in the area of management services work by public accounting firms and others. Purchase of this type of service offers management not only an economical source of expertise

but also an objective, unbiased, or fresh viewpoint on the adequacy of the entire system. An outside management accounting consultant for purposes of this study includes any outside accounting professional who is paid for services that include recommendations concerning the hospital's accounting system. Not included are the accounting firms whose sole function is to perform audit work to satisfy legal requirements imposed by Blue Cross or Medicare.

This study, therefore, sought to determine the extent to which hospital managers relied upon outside management consultants for solving problems in the hospital. Tables X through XIII present the responses to questions regarding the use of outside consultants.

TABLE X
EXTENT TO WHICH PARTICIPATING HOSPITALS
ENGAGED OUTSIDE MANAGEMENT
ACCOUNTING CONSULTANTS

Extent	No. of Hospitals
a. Never	2
b. Once or twice	5
c. Frequently	6
	<u>13</u>

Table X shows the extent to which hospitals have sought aid from outside management accounting consulting firms as indicated from the

responses. Two of the hospitals had no contact with an outside consultant in an advisory position, while five had used such services only once or twice. Six hospitals, or slightly less than one-third of those included in the study, had frequent contact with such firms.

The role of the consultant may be quite dominant, or relatively minor, in its effect upon the hospital's system. In order to understand the role of the management accounting consultant, it is necessary to determine just how the consultant's services are utilized by hospital managers. Managers were asked to indicate their reasons for contacting an outside management accounting consultant.

TABLE XI
PURPOSE FOR WHICH THE OUTSIDE MANAGEMENT
ACCOUNTING CONSULTANT WAS ENGAGED

Purpose	No. of Responses
a. Review existing system	1
b. Install a new system	1
c. Improve existing system	4
d. Recommend solution to a particular problem	8
	<u>14</u>

Table XI indicates the responses given. Twelve of the fourteen responses indicated that the consultant was engaged to help in solving

a particular problem or to improve the existing system. Particular problems brought out in the interviews included such things as; advice on how to improve the speed with which reports are prepared for management review and analysis, advice on how to apply a particular technique, and advice on new applications of the computer to best serve management's objectives. In some cases the consultant had access to comparative type data deemed useful to hospital financial management.

Specifically mentioned by several managers was the HAS service offered by the American Hospital Association (14,4). HAS is basically an accounting service for participating hospitals. Participating hospitals submit basic operating data and receive the data in summarized form for analysis. Also received are summarized data for other hospitals participating in the service. The participating hospital, thus, has data for similar institutions that are useful for comparative purposes.

Hospital management may seek advice from external accounting sources for a variety of reasons. Knowledge of the philosophy of hospital managers in this respect can be an aid in both understanding how they function and also in choosing an approach aimed at more rapid implementation of management accounting techniques. Table XII indicates management's feelings as to why hospital management sought the services of an accountant not regularly employed by such hospital.

The most frequently mentioned reason was a lack of qualification on the part of the internal staff in a particular area of expertise. For instance, an accountant who has spent most of his time analyzing accounts receivable accounts and billing customers is most probably not qualified to direct the installation of a computer, nor does he have

the skills needed to do the programming necessary to produce the desired reports. He may not even be qualified to interpret such reports once they are prepared. Not only may the internal accountant not be qualified or have the ability but he may be biased in favor of his own work and unwilling or unable to seek out improvements. In this case, the outside consultant can be a valuable source of new ideas. In fact, the second most frequent response indicated the reason for seeking the services of an outside consultant was to obtain an objective viewpoint, unbiased by involvement in the actual procedures of the system under review. Of lesser importance, according to the data gathered were "a shortage in the accounting staff," and "more economical to hire a part time expert." Several managers interviewed said that they looked upon the outside consultant primarily as a source of new ideas.

TABLE XII
REASONS FOR ENGAGING AN OUTSIDE
MANAGEMENT CONSULTANT

Reasons	No. of Responses
a. Prefer outsider for objective recommendation	7
b. People in charge hesitant to change	0
c. Shortage in controller's staff	3
d. Lack of qualification by internal staff	8
e. More economical than hiring a permanent employee	3
f. Other	<u>2</u>
	21

The consultant's participation in the diffusion process of management accounting techniques could be either token or real, according to the effect his ideas or recommendations have upon subsequent developments. In order to answer this question, the managers included in the study were asked to indicate the degree to which the consultant's recommendations were followed. The responses are given in Table XIII.

TABLE XIII
EXTENT TO WHICH OUTSIDE MANAGEMENT
CONSULTANT'S RECOMMENDATIONS
WERE ADOPTED

Extent	No. of Responses
a. < 50%	3
b. > 50% < 75%	4
c. > 75%	<u>4</u>
	<u>11</u>

The responses indicated that managers felt the consultant's recommendations were followed (50%, or more of the time), in 8 out of the 11 hospitals using such services. In 4 of the 11 responses, the consultant's recommendations were followed 75%, or more of the time. Most of these higher percentages came from the hospitals recently adopting budgeting procedures. In only 3 of the 11 cases were the consultant's recommendations deemed unsuitable for adoption. Such high

acceptance by hospital managers seems to indicate a high degree of satisfaction with such services and implies that the management accounting consultant is a valid source of new ideas in the implementation and improvement of hospital management accounting systems.

In summary, the outside management accountant offers an unbiased source of new ideas and techniques to managers in the hospital industry. Results of the study indicate slightly less than one-half of the hospitals have used outside management accountants in a consulting capacity more than once or twice. When they did use them the hospitals were generally receptive to the new ideas, adopting them more than 50% of the time in eight out of the eleven hospitals covered.

Based on the results of the interviews, in the hospitals selected, relatively few of the techniques explored are being used extensively in Oklahoma hospitals. Insight into managerial behavior can often be gained through a knowledge of why certain techniques available have not been investigated and considered for implementation. Managers in this study were, therefore, asked why they had not investigated further into some of the management accounting techniques mentioned in the study. Their responses are shown in Table XIV.

It is of particular significance to managerial accountants that the most frequent response was, "Unaware of the techniques mentioned." Six of the twenty-one responses expressed such lack of knowledge. In view of the coverage in hospital literature in recent years of these techniques, one would suspect a lack of interest in, or incentive for, improving managerial cost systems by hospital managers. Almost 25% (five out of twenty-one) expressed a belief that managerial accounting techniques beyond those currently used in their hospital were not

applicable to hospital accounting. A typical comment was,

Since most costs are fixed in form of personnel, such procedures as flexible budgeting and cost-profit-volume analysis have very limited application. The cost of implementing such techniques would exceed the benefit derived.

Another impediment to innovation is apparent in the comment, "Standard costing might have application in some areas, but we are too busy to spend time developing it." Four managers indicated a problem with time pressure. Further emphasis on a lack of time for consideration was justified from observations during the interviews. Several interruptions occurred during some of the interviews. One interview with a controller was characterized by a half dozen interruptions taking approximately one hour and one-half out of an interview that ran for three hours.

TABLE XIV
REASONS FOR LIMITED USE OF MANAGEMENT
ACCOUNTING TECHNIQUES

Reasons	No. of Responses
a. Not applicable	5
b. Time pressure	4
c. Shortage in accounting staff	1
d. Satisfied with present system	1
e. Attitude of management	0
f. Lack of written material	4
g. Unaware of techniques	6
h. Other	0
	<u>21</u>

This writer found many proponents of managerial accounting techniques for hospital accounting in recent hospital journals. However, the study indicated that a lack of written material on specific techniques was also a reason for not being aware of such techniques. Although broader coverage should increase the awareness of approaches by management, these responses seemed to be more a handy excuse than a reason. The AHA has had available the Chart of Accounts since 1966, and most hospitals have adopted some form of this recommendation. This publication provides for accumulation of accounting data by direct costs and area of responsibility. In 1968, the AHA published Cost Finding and Rate Setting for Hospitals, and in 1971, Budgeting. These three publications alone furnish sufficient instructional material to provide for the most sophisticated system of management accounting found in the hospitals under study. Yet, of the hospitals included in this study, most were far behind the approaches presented in the AHA publications.

Management Involvement and Commitment

As hospitals evolve into complex, highly departmentalized entities, communication of objectives and coordination of activities increases in importance.

Managers, as individuals, have personal goals and objectives that affect themselves, their families and their profession. The hospital within which they function has both departmental and overall entity objectives. At any one point in time, many of the objectives (personal, departmental and entity) are compatible, but some are almost always in conflict with one another. In order for the hospital to function

effectively, the hospital managers must utilize a communication system that will enable all members of the management team to choose the mix of activities which will best satisfy the various objectives with a minimum of conflict. Communication to managers within an entity of the various objectives and motivations that exist among the management personnel is a necessity in any organization. In organizations displaying such extensive departmentalization and specialization as hospitals, this communication is particularly important and most effectively accomplished through the budgeting process.

Budget plans are quantified estimates of future activities. As used in managerial planning and control, they become standards against which actual results are later compared. The degree to which the actual results compare favorably with the planned amounts becomes the basis for measuring managerial performance. Meeting the budget is, therefore, a tangible measure of managerial success.

Budgets, then, stated in quantitative terms, furnish the financial objectives for the manager, the department and the hospital as a whole. Budgets, based on a reasonable knowledge of the personal, departmental and hospital objectives, communicate to managers a quantified financial objective for their department and for the hospital entity.

Persistent success in managerial control through budgeting requires management commitment toward meeting the objectives quantified in the budget (29,200). Commitment means that the manager accepts and believes in the standards of performance imposed upon him by the budget. Achieving and keeping manager commitment can be one of the most difficult problems faced in the budgeting process.

The manager strives for success when he feels that success is attainable and fair. If someone else other than the manager sets the standards of performance and the manager feels the standards are not fair, the result is often disappointment and frustration (32,48). Such emotional impact tends to impair performance on the part of the manager since he feels that acceptable performance is beyond his reach. Emotional involvement in budgeting cannot be eliminated but problems can be kept at a minimum if managers are encouraged to participate in setting their budgets and are given ample opportunity to explain variances from that budget (32,47-50).

Participation of managers in subordinate positions does not imply abdication of administrative responsibility on the part of top management. Quite the contrary applies. Top management can make budgeting work only through developing a cost-conscious, cooperative attitude toward budgeting control that permeates all levels of management.

In general, it has been shown that an organization tends to attract and retain managerial personnel whose ethical code and moral commitment are compatible with the actions of top management (29,200). A skeptical top management attitude can trickle down the hierarchy levels to the detriment of the entire hospital.

Top management should encourage each manager to set standards for his own work that are attainable. The resulting standards should represent the individual's best estimate of how much his departmental function should cost. Each manager should then be held accountable to his immediate superior for the costs and revenues under his control. In this process of preparing hospital-wide budgets, by passing estimates upward through the management hierarchy, the probability of

manager commitment is enhanced. While final responsibility for the hospital budget still rests with the administrator, each manager is responsible for the preparation and execution of his departmental budget. Successful budgeting, therefore, is dependent upon manager involvement and commitment throughout the hospital wherever control is exercised over the use of hospital resources.

While manager involvement and commitment can be described in reasonable detail, measurement of these two factors becomes somewhat difficult. Involvement in budgeting can be inferred from evidence indicating that a manager actually participated in preparing, reviewing and completing his departmental budget. Commitment, however, would be related to the degree that managers accept the budget and expend efforts toward achieving its objectives. This factor would be best indicated by the success in attaining budgetary goals and is beyond the scope of this study.

Questions were asked during the interviews to determine how managers were involved in the budgeting process. Table XV summarizes the responses in the eleven hospitals found to be using budgets.

Budgets are prepared in eight of the eleven hospitals (73%) with participation of managers from the departmental level through the board of trustees. In these cases, the budgeting process is most often directed by the accounting department with active participation of an associate or assistant administrator to lend authority to the process. In most cases, each departmental manager met on several occasions with the accountant to work out a preliminary budget. The preliminary budgets were then brought together and reviewed by means of a budget review committee, made up of various combinations of the administrator,

associate administrator, assistant administrator, controller (accountant), and in some cases, department heads. After discrepancies had been worked out, the budget was presented to the administrator who then reviewed it and presented it to the board of trustees for approval.

TABLE XV
MANAGERS PARTICIPATING IN BUDGET
PREPARATION

	No. of Hospitals ¹	%
Department managers, controller administrator and board of trustees	8	73
Department managers, controller, and administrator	2	18
Controller and assistant administrator	$\frac{1}{11}$	$\frac{9}{100}$
¹ Of hospitals using budgets.		

The board of trustees has the final authority to make changes in the budget but quite often goes along with the administrator's recommendations. In two of the hospitals, the managers who were interviewed felt that the board of trustees did not participate in the budget process. In only one hospital that used budgeting were the departmental

managers not active in the budgeting process. The controller and assistant administrator in this hospital drew up the entire hospital budget.

If budgets are to fulfill their role of a communicative device, or process, it would seem reasonable that managers receive a copy of the summarized hospital budget, once it has received final approval. Table XVI shows that this is not customarily the case in the hospitals under study. Only one hospital distributed a budget to all hospital management personnel.

TABLE XVI
DISPERSION OF THE BUDGET IN HOSPITALS

Question	Yes	No	Total
Are hospital management personnel furnished with copies of the budget plan?	11	0	11
If so, does their copy include data on:			
1. their area of responsibility only?	10		10
2. comprehensive hospital budgets?	<u>1</u>		<u>1</u>
	11		11

The reasons given for not distributing a summarized final budget in total ranged from: "Department managers are too busy to pay any attention to the financial affairs of departments other than their own.;" and "There would be no particular advantage in doing so.;" to "The financial affairs of departments other than the one a manager is in charge of are none of his business."

Responses to the questions regarding management involvement in the budgeting process indicate that most managers down to the department head level are involved in setting their own budgets. This involvement and awareness, in most cases however, is limited to their own department.

Organization for Cost Planning and Control

Only in the very smallest of entities can a single manager handle all of the necessary decisions for operation and survival. In order to accomplish goals, carry out plans and enable people to work effectively together, activities in most entities must be grouped logically. Grants of authority must be made and communicated so that conflicts and other frictions are minimized (49,205). As an entity grows, in size and age, specialization develops in the functions that make up the entity operation.

Organizing is the process of integrating the specialized functions in the manner best suited to accomplish both the individual's and the overall entity's objectives. This process includes both the grouping of activities and the assignment of authority and responsibility for carrying out the activities.

Organizations, thus, consist of groups of specialists having four characteristics: (1) they exhibit sustained collective action; (2) they are integral parts of a larger system; (3) they have specialized, delimited goals; and (4) they are dependent upon interchange with the larger systems (3,9).

The hospital, as an organization, consists of groups of specialists (i.e., doctors, nurses, administrators, fiscal workers, and so forth) working within the hospital. Each group is dependent upon the other groups since the hospital requires the services of many categories of specialists in order to function. The groups, as a whole, working together are able to carry out their specific functions to their own advantage while contributing to the effectiveness of other specialists.

Hospitals, as many other organizations, accomplish the necessary delegation of authority and responsibility through the process of departmentalization according to function. In a typical 300 bed hospital some 40 or more departments may exist that are responsible for patient revenues. Examples of these are: the laboratory, radiology, pharmacy and therapy. These departments generally are responsible, also, for costs within the department. When a department is thusly responsible for both revenues and costs it becomes identified as a revenue center. In addition, the typical hospital may have some 50 or 60 departments that are responsible for costs but not revenues. These departments are identified as cost centers.

Authority over and responsibility for the actions taken in each of the 60 cost centers and 40 revenue centers is assigned to specific managers within the hospital in order for the hospital to exist as a viable

working entity. Since the hospital has available some 2000 billable items representing a broad range of continually changing services, the hospital organization must be based on a sound functional framework that is periodically reappraised for validity of relationships.

In essence, hospitals are short cycle, production oriented entities. Hospital organization is typically line and staff, essentially the same as any other short cycle production entity, except for the unique role of the medical staff. The medical staff was shown in Chapter III to occupy a strong position of influence without a corresponding financial responsibility for its actions. With this qualification in mind, the medical staff is usually shown in an advisory position to the board of trustees in hospital organization.

As noted in Chapter III, hospital services fall logically into five categories; namely, doctors', nurses', auxiliary, institutional, and fiscal services. These are diagrammed in Figure 10.

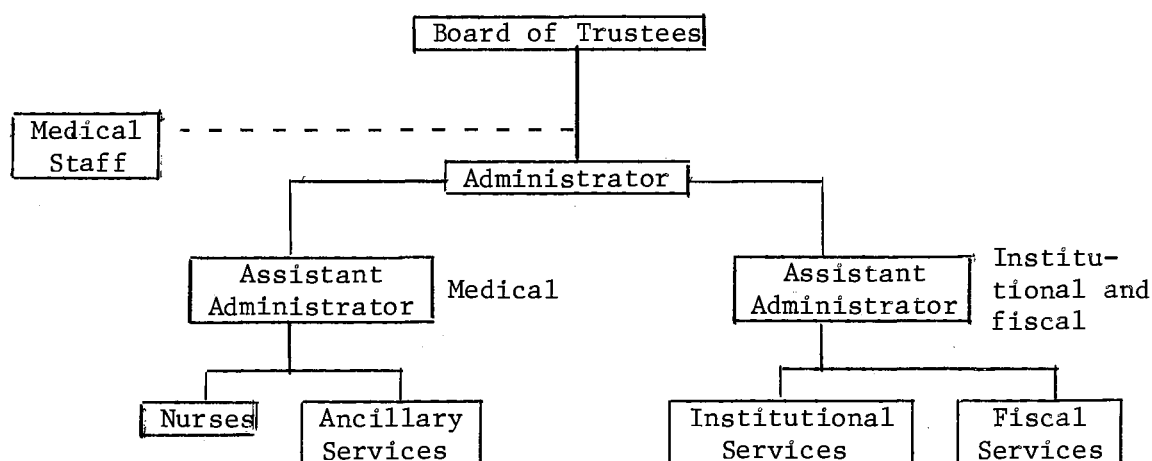


Figure 10. Functional Classification of Hospital Services

The functional organization might be developed as shown in Figure 10, with directors from nursing and ancillary services reporting to an assistant administrator in charge of medical services, and with directors from institutional services and fiscal services reporting to an assistant administrator in charge of institutional and fiscal services. The two assistant administrators report to the administrator, who in turn is responsible to the board of directors for operation of the hospital. The medical staff functions within the hospital under the approval of the board of trustees but is self-governing as to its actions.

In order to function effectively within the hospital, each manager must know what is expected of him. In other words, he must be aware of his specific area of authority and responsibility. This "awareness" is best communicated to all managers within the entity by means of an organization chart. The organization chart defines, in a tangible form, the relationship of each of the managers to one another and to the entity as a whole. Its primary function is to show each principal management position along with the authority, responsibility and accountability associated with each such position.

Development of an organization chart is the first step in designing a management accounting system. One of the essential ingredients of a management accounting system is cost control, which emphasizes budgeting (planning) and follow-up procedures (control) by area of responsibility. An organization chart is essential to an effective management accounting system since accounting data presented in reports are useful only to the extent they can be identified with the specific individuals controlling such items (9,92).

Because of the importance of a formal organization chart to management accounting, this study included questions about the existence of a formal organization chart and when it was last revised. The responses are given in Table XVII.

TABLE XVII
EXTENT OF ORGANIZATION CHARTS IN PRACTICE

Organization Structure Clarified By	Number of Hospitals	Revised in Last Year	Revised 1-2 Yrs	3 or more Yrs
Formal Organization Chart	13	7	4	2
Informal Organization Chart	-	-	-	-
No Organization Chart	$\frac{-}{13}$	$\frac{-}{7}$	$\frac{-}{4}$	$\frac{-}{2}$

All hospitals had a formal organization chart, and seven of the thirteen hospitals had revised their charts within the last year. Four had been revised between one and two years ago and two hospitals reported more than two years had lapsed since the revision of their organization charts. Both of these admitted their charts did not accurately represent the current organization, and therefore, needed revision.

The eleven hospitals reporting an organization chart revised within the last two years, about 85%, indicate an awareness on the part of the

Montoya, Marco.

South Dakota low income families and migration / [by Marco Montoya, Robert T. Wagner, and Robert M. Dimit]. — [Brookings] : Rural Sociology Dept., Agricultural Experiment Station, South Dakota State University, 1975.

ii, 25 p. : maps ; 28 cm. — (Bulletin - Rural Sociology Department, Agricultural Experiment Station ; 637)

I. Poor—South Dakota. I. Wagner, Robert T., joint author. II. Dimit, Robert M., 1922- joint author. III. South Dakota. Agricultural Experiment Station, Brookings. Rural Sociology Dept. IV. Title. V. Series: South Dakota. Agricultural Experiment Station, Brookings. Bulletin ; 637.

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hospital managers of the importance of specific assignment of duties and clarity of authority - responsibility relationships in hospital management. Such an awareness evolved as a necessity when the hospital developed into a complex organization in terms of both management and services offered. Increased emphasis on cost control through management accounting results in additional dependence upon well defined lines of authority and responsibility in the hospital.

In the process of the field study, several organization charts were obtained from the hospitals included in the study. Two of those are presented as Figure 11 and Figure 12 to aid in understanding how authority-responsibility relationships are communicated in the hospital.

Figure 11 represents an organization with revenues exceeding ten million dollars. The terminology used is representative of that frequently encountered in hospital discussions. Identified on the chart are 45 functional areas. Some of these, such as; radiology, pharmacy and dietary are quite large in terms of volume of service and revenue produced. Radiology or pharmacy, for instance, may produce one-half million dollars or more in revenue per year in this hospital.

This particular organization chart contained both the position and the manager's name holding the position (names have been removed to prevent identification of data with individual hospitals). No other hospital in the study followed such a procedure.

Figure 12 is presented to point out the different terminology that may be used in identifying positions. The upper level management positions use terminology familiar to the student of business. Once past the vice-president (associate administrator), the terminology reverts back to that commonly used in hospital literature.

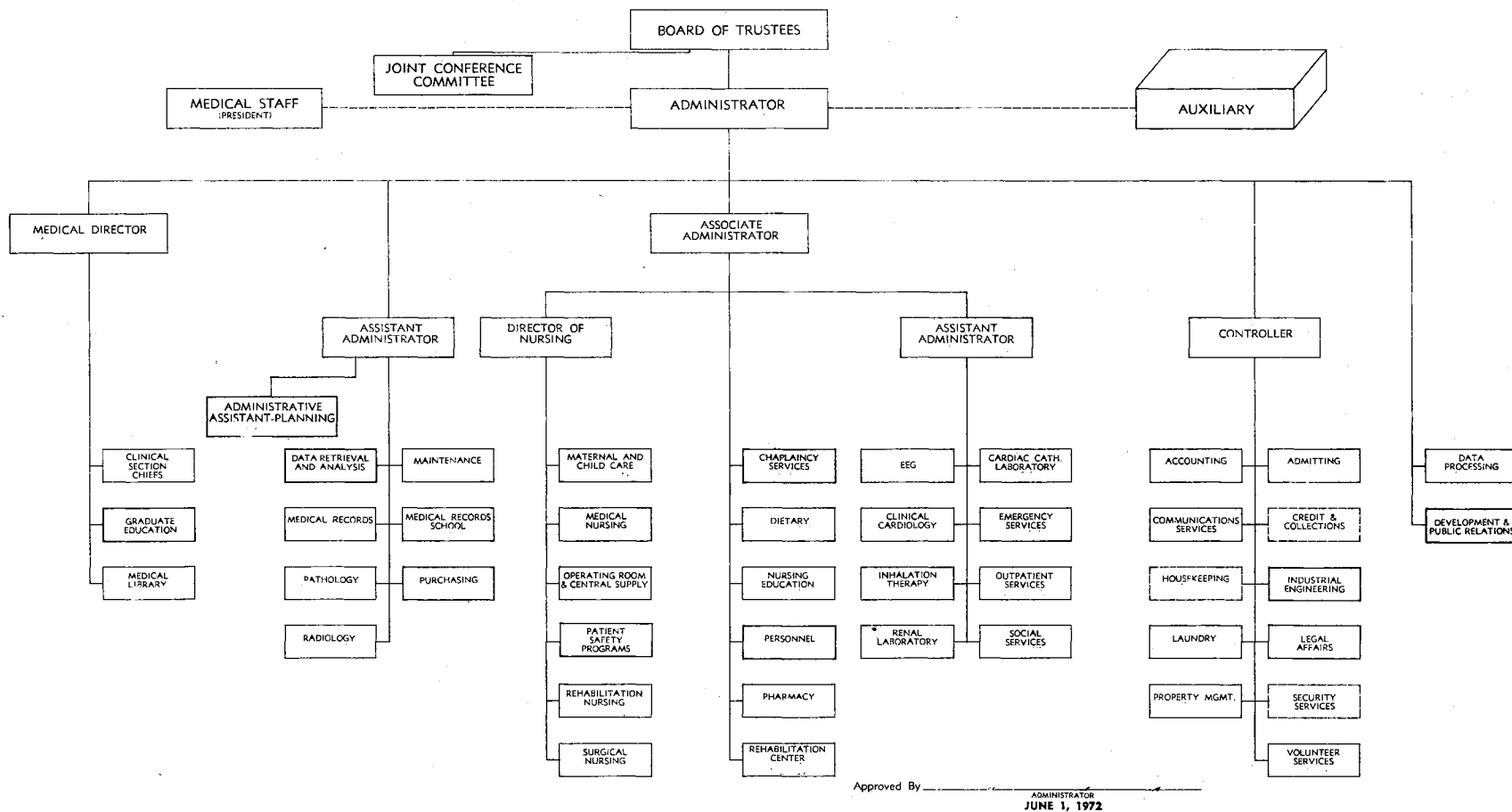


Figure 11. Organization Chart

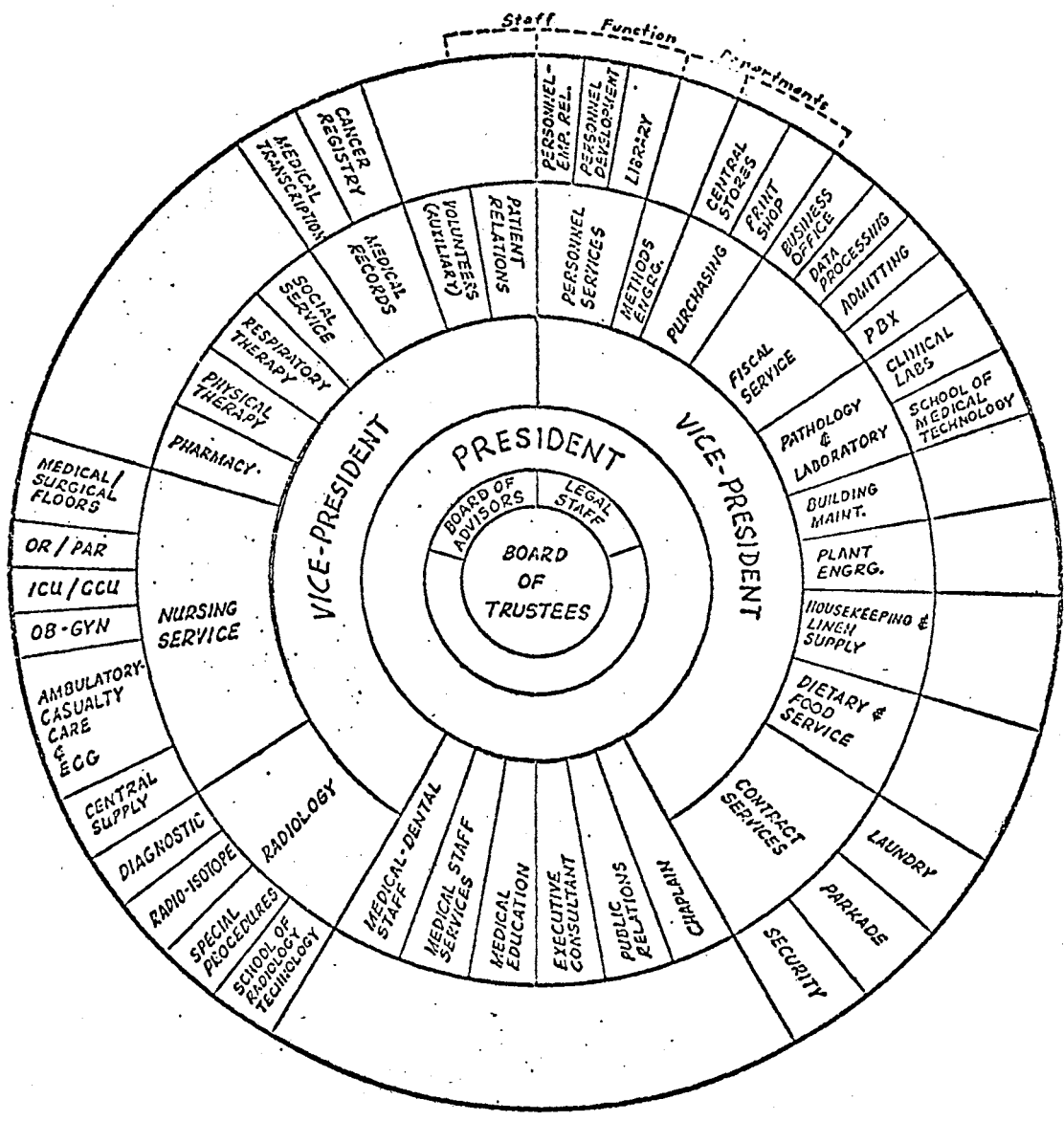


Figure 12. Organization Chart

From the foregoing it appears that in terms of function, hospital management works within a reasonably well designed organization of authority and responsibility with the organization chart used as the primary form of presenting and communicating those relationships.

Statistical Data Needs

Budgeting involves the projection of revenues and expenses into future accounting periods. Since revenues and expenses can be expected to vary with the volume of services provided, the starting point in actual budget preparation is an estimate of the volume of activity expected. As activity increases, so do revenues and to a lesser extent expenses. Revenues are normally estimated by multiplying units of output by unit sales price. The hospital industry does not have a reliable measure of output for either the individual departments or the hospital as a whole, and this limits the effectiveness of the budgeting process. Costs are usually estimated by adding together the fixed costs and variable costs for the level of activity expected. Hospital accountants are here, again, handicapped by the lack of a relevant measure of activity.

Volume of work performed in the hospital is most often expressed in terms of patient days of care provided. A patient day is defined as "the unit of measure denoting lodging facilities provided and services rendered to one inpatient between the census-taking hour on two successive days." (79,16). Thus, the hospital counting 100 patients at midnight on May 1 and 100 patients at midnight on May 2 has provided 100 patient days of care during this period. Patient days is the most readily available statistical unit and, at the present time, the one

providing the most information about the hospital operation as a whole (10,18). It is most often based on the census taken by each individual nursing station. Station totals are accumulated to form the overall hospital census. The hospital census multiplied by the time period involved results in the patient days of service provided.

Reliance upon patient days of care in work measurement and budgeting procedures may lead to false conclusions when the mix of levels of care varies as shown in Figure 13.

<u>Month</u>	<u>Patient Days</u>	<u>Type of Service</u>	<u>Revenue per Unit</u>	<u>Total Revenue</u>
June	10	Obstetrics	\$110	\$1,100
	80	General Medical	40	3,200
	10	Extended Care	30	300
	<u>100</u>			<u>\$4,600</u>
July	20	Obstetrics	\$110	\$2,200
	80	General Medical	40	3,200
	0	Extended Care	30	-0-
	<u>100</u>			<u>\$5,400</u>

Figure 13. XYZ Hospital Activity by Type of Service

Notice that 100 patient days of care for the month of June results in revenues of \$4,600. For the month of July, however, 100 patient days of care result in revenues of \$5,400. The increased revenue in July is due to a decrease in the extended care category with an equal increase in the obstetrics category. A single statistic, patient days of service, does not give effect to this change in mix of patients. A

change in the mix of patients may affect the entire hospital by changing the demand for nursing care, laboratory, operating room facilities, therapy and other services. Patient days of service, therefore, while the most widely used statistic measuring hospital output, is of limited usefulness in workload measurement and budgeting procedures. It must be used with caution.

A subclassification of patient days can be used to improve the usefulness of this statistic. Patient days may be classified by type of accommodation to aid in preparation of the revenue budget, or by type of service to aid in estimating the demand for nursing service and other professional services; such as, the pharmacy and dietary departments (10,18). Certainly, most hospitals keep records of patient days by type of accommodation since patients are billed by type of accommodation furnished. Patient days of service, as a measure of activity, can be relevant to the head nurse of a particular nursing station in her budgeting process since the work load in a particular nursing station varies closely with the patient load. It may not mean so much, however, to other departmental managers; for example, emergency department visits are not related to patient days of care.

Each departmental manager needs an output measure in terms relevant to his department. A hospital-wide statistical measure; such as, patient days of care provided, or number of admissions is useful to the departmental manager only to the extent that it can be converted into work units for his particular department. Even though it is the most widely used and often the only measure of output in the hospital, patient days is of little value to many hospital departments. The laboratory manager may find, for instance, that his work load does not

vary consistently with the number of patient days provided from period to period. It has been suggested that the number of patient admissions is a better basis for predicting laboratory volume than patient days, since most laboratory tests are performed within the first few days of a patient's stay (8,184).

In summary, each hospital manager needs statistical workload measurements in terms relevant to his functional area in order to measure output and prepare meaningful cost and revenue reports for his segment of the hospital. Dissatisfaction with the patient day as a statistical measure is apparent from two statements appearing in a recent publication. According to one author, ". . . increased emphasis upon preventive medicine and outpatient services has made per diem costs even more inadequate for cost comparisons and reimbursement." (37,7). Another author stated, "Revenue and cost per patient day is an archaic method of reporting the fiscal financial picture of any institution." (7,15).

The American Hospital Association (AHA), recognizing the need for more refined measures of output, has recommended that workloads in the hospital be defined in terms of occasions of service that are relevant to each department in the hospital. A summary of the terminology recommended is shown as Table XVIII.

This represents an improvement over a single hospital-wide measure, but still falls short of an accurate departmental workload measure. For instance, the laboratory work load is measured in terms of number of tests performed without considering the complexity or cost of the numerous tests performed in the laboratory.

TABLE XVIII
SUMMARY OF OCCASIONS OF SERVICE

Department	Occasion of Service
Ambulance Service	Number of trips or calls made
Anesthesiology	(1) Number of patients served (2) Hours of administration and use
Basal Metabolism	Number of tests
Blood Bank	Number of 500cc units prepared for transfusions
Central Supply	Dollar value of processed requisitions
Delivery Rooms	Number of deliveries
Dietary	Number of meals served
Electrocardiology	Number of examinations
Housekeeping	Hours of service rendered to various departments
Inhalation Therapy	Number of hours oxygen is administered
Intern and Resident Service	Assigned hours of education and service
Laboratory	Number of tests
Laundry	Pounds or pieces of laundry processed
Linen Service	Pounds or pieces of linen processed
Maintenance of Personnel	Number of employees housed
Maintenance of Plant	Employee hours of service rendered
Motor Service	Number of miles traveled
Nursing Education	Number of students enrolled
Nursing Service	Hours or days of service

TABLE XVIII (Continued)

Department	Occasion of Service
Occupational Therapy	Hours of teaching and supervision
Operation of Plant	Thousands of pounds of steam produced, plus Pounds of ice manufactured, plus Kilowatt hours of electricity
Operating Rooms	(1) Number of operations (2) Hours of use
Pharmacy	Dollar value of prescriptions and requisitions processed
Physical Therapy	Number of treatments
Postoperative or Postanesthesia Recovery Rooms	Number of patient hours of service
Radiology:	
Diagnostic	1. Number of films taken 2. Number of fluoroscopic examinations
Therapy	1. Number of x-ray treatments 2. Number of radium implanations 3. Number of treatments by radioactive elements
Social Service	Hours of service

Source: (79).

One of the objectives of the field work was to determine how hospital managers measured and used levels of activity in the budget process. Responses indicated that patient days of service rendered and revenue earned per patient day are the primary statistics computed in

the typical hospital. For most of the hospitals, this statistic is used to measure the historical level of activity and to serve as the volume measure for budgetary purposes. Statistics as shown in Table XIX represent a typical means of communicating to departmental heads the level of activity used for budgeting purposes. When used to measure output and as a basis for budgeting, patient days are dependable only to the extent that relationships within the hospital are consistent across departments and from one period to the next.

A departmental manager upon receiving statistics as shown in Table XIX finds total patient days for 1971-72 to be 58,439. In budgeting for 1972-73, he is told to plan on the basis of the same number of days, 58,439. With adjustments for such items as wage changes, employee merit raises and price increases, the old budget simply becomes the new one for each department in the hospital.

While gearing the budgeting process to a total patient day figure, nine of the eleven hospitals reported that departmental managers measured output in their department in terms relevant to their area as proposed by the AHA. Departmental managers then computed a budget based on the overall patient day estimate and a knowledge of their departmental behavior in relation to historical patient day levels of service. In most cases, the task of estimating the total hospital level of activity was performed at the administrator or controller level of responsibility. Departmental managers, in conjunction with the controller, typically worked out any problem areas; such as, changing demand patterns that a department manager had reasons to believe would affect his level of activity.

TABLE XIX

ADULT PATIENT DAYS - 3 YEAR HISTORY

Year	November	December	January	February	March	April	May	June	July	August	September	October	Total
1. 1969-70	4,636	4,180	5,446	4,899	4,799	4,750	4,704	4,973	4,726	4,896	4,639	4,544	57,192
2. 1970-71	4,691	4,371	5,191	4,717	4,564	4,854	4,749	4,685	4,814	4,440	4,756	5,051	56,883
3. 1971-72	4,524	4,271	5,474	5,038	5,080	4,821	5,282	5,014	4,771	4,668*	4,698*	4,798*	58,439
TOTAL	13,851	12,822	16,111	14,654	14,443	14,425	14,735	14,672	14,311	14,004	14,093	14,393	172,514
3 Year Average	4,617	4,274	5,370	4,885	4,814	4,808	4,912	4,891	4,770	4,668	4,698	4,798	57,505

CENSUS PROJECTION TO BE USED FOR BUDGETING
FISCAL YEAR ENDING IN 1973

November	December	January	February	March	April	May	June	July	August	September	October	Total
4,524	4,271	5,474	5,038	5,080	4,821	5,282	5,014	4,771	4,668	4,698	4,798	58,439

* Projected using 2 year average

In only one hospital could evidence be found that statistics, defined according to the AHA occasions of service, were being computed and communicated to department managers. In this instance, managers were given data sheets as shown in Tables XX, XXI, and XXII.

Department managers, thus, had available historical data expressed in occasions of service relevant to the different departments in the hospital (Table XX). They also were given census projections expressed in patient days by nursing station (Table XXI), and the projected average daily census (Table XXII), for the budget period. Table XXII helps in planning for daily requirements.

The patient days projections by nursing station (Table XXI) provides a reasonable foundation upon which to base the nursing service and related budgets on a monthly basis. Since the projections are tied to a patient days measure, estimates of departmental workloads are reliable only to the extent that past relationships hold. Correlation tests performed on the data in Table XX to determine how closely patient days could be used to predict volume in the other areas showed that the relationships were not sufficiently stable to provide for accurate budgets. Statistics as presented in Table XX, by department, are necessary in the process of identifying the cost behavior patterns used in flexible budgeting procedures as discussed in Chapter VI.

Failure of the occasions of service approach to provide for differences between procedures or tests within a department has lead to several other propositions. The AHA has recently proposed a weighting system for occasions of service that takes into consideration the amount of personnel time devoted to a procedure, the level of skill required, and the amount and sophistication of the equipment required (10,22).

TABLE XX
STATISTICS
(for periods indicated)

	August	Sept.	October	Nov.	Dec.	January	Feb.	March	April	May	June	July
Patient Days, Adult & Pediatric	10,056	9,544	10,024	9,196	9,216	11,176	9,511	9,629	8,722	8,670	8,558	9,043
Patient Days, Extended Care	467	460	547	531	517	449	393	482	420	468	473	429
Newborn Nursery Patient Days:												
General Nursery	572	568	590	719	723	553	534	487	520	404	398	542
Low Birthweight Nursery	540	469	542	477	409	416	269	310	255	212	220	246
Total Nursery	1,112	1,037	1,132	1,196	1,132	969	803	797	775	616	618	788
Outpatient Department Visits	1,789	2,290	1,923	1,875	1,954	1,913	1,686	1,978	1,797	1,781	1,870	1,672
Cardio-Renal Lab Exams	62	62	72	73	81	85	64	82	67	61	40	39
Deliveries	168	164	164	174	175	153	154	142	135	113	107	160
Dismissals (Excluding Newborn)	1,345	1,293	1,310	1,211	1,183	1,367	1,195	1,207	1,238	1,167	1,182	1,263
Dismissals (Newborn)	181	153	162	175	173	158	153	139	134	122	101	151
Electrocardiograms	778	771	800	722	777	951	893	969	982	891	793	847
Electroencephalograms	97	73	84	72	68	74	53	68	65	51	78	74
Emergency Room Visits	2,042	1,877	1,960	1,753	1,730	1,837	1,479	1,660	1,772	1,936	2,000	2,019
Lab Exams (Including OPD)	32,736	31,593	34,801	32,651	31,064	35,475	32,442	32,672	36,994	30,262	31,250	35,115
Lab Exams (OPD)	2,856	2,341	2,650	2,776	2,587	2,490	2,543	3,333	3,072	3,019	3,339	2,832
PAR Hours	814	817	762	664	734	858	716	789	676	622	869	928
PAR Patients	622	584	565	455	517	586	515	554	559	467	588	566
Physical Therapy Treatments	1,458	1,397	1,409	1,257	1,501	1,486	1,272	1,128	1,021	1,500	1,445	1,565
Pounds of Laundry Processed	148,259	144,512	148,358	134,868	151,949	143,129	136,568	142,261	136,042	133,755	128,587	142,837
Surgery Hours	814	876	835	688	758	914	772	837	750	674	840	849
Number of Operations	741	701	715	584	607	703	641	644	661	541	712	690
X-Ray Exams - Diagnostic	3,087	3,180	3,243	2,968	3,022	3,420	2,622	3,381	3,218	3,176	3,177	3,032
X-Ray Exams - Therapeutic	530	427	460	372	287	455	557	438	482	459	387	371

TABLE XXI

CENSUS PROJECTIONS FOR 1972 BY NURSING
STATION PATIENT DAYS

	<u>Capacity</u>	<u>Jan.</u>	<u>Feb.</u>	<u>March</u>	<u>April</u>	<u>May</u>	<u>June</u>	<u>July</u>	<u>Aug.</u>	<u>Sept.</u>	<u>Oct.</u>	<u>Nov.</u>	<u>Dec.</u>	<u>Total</u>
1 North	31	868	812	790	690	713	675	775	790	720	775	690	713	9,011
2 North	26	574	522	558	510	527	480	465	496	570	558	510	403	6,173
3 North	44	1023	899	806	660	868	780	682	946	915	821	825	822	10,047
5 North	33	930	855	837	780	806	810	852	806	810	806	780	775	9,847
5 East-Burn	15	341	232	310	255	248	225	217	263	270	248	270	279	3,158
2 South	19	465	421	465	420	434	420	403	403	450	465	465	480	5,291
3 South	37	806	667	682	600	651	660	682	774	720	806	735	806	8,589
4 South	27	775	725	729	690	713	645	729	713	720	744	735	682	8,600
5 South	26	713	667	698	630	651	600	682	636	630	651	645	620	7,823
I.C.U.	8	201	174	170	180	155	165	186	217	195	186	180	217	2,226
C.C.U.	6	124	116	124	150	124	90	124	124	120	93	120	124	1,433
2 West	34	961	856	899	780	791	780	698	774	750	806	780	760	9,635
3 West	26	0	0	0	0	0	0	0	0	0	0	0	0	0
4 West	41	992	870	806	810	791	780	790	806	780	853	750	760	9,788
5 West	33	791	710	635	615	465	450	589	713	690	729	690	620	7,697
6 South 7 OB	61	1410	1290	1379	1275	1301	1335	1394	1425	1365	1410	1290	1270	16,144
Sub Total	467	10974	9816	9888	9045	9238	8895	9268	9886	9705	9951	9465	9331	115,462
E.C.F.	50	496	464	527	510	558	540	589	589	600	620	630	666	6,739
Rehab.	50	0	261	264	270	310	315	372	419	480	527	525	527	4,270
Total	567	11470	10541	10679	9825	10106	9750	10229	10894	10785	11098	10620	10524	126,521
Low B.W.	20	558	290	341	300	248	240	248	620	450	589	480	465	4,829
Newborn Nur.	30	403	551	527	510	465	420	496	620	570	620	750	806	6,738
		12431	11382	11547	10635	10819	10410	10973	12134	11805	12307	11850	11795	138,058

TABLE XXII

CENSUS PROJECTIONS FOR 1972 BY NURSING
STATION AVERAGE DAILY CENSUS

	<u>Capacity</u>	<u>Jan.</u> 28	<u>Feb.</u> 28	<u>March</u> 25.5	<u>April</u> 23	<u>May</u> 23	<u>June</u> 22.5	<u>July</u> 25	<u>Aug.</u> 25.5	<u>Sept.</u> 24	<u>Oct.</u> 25	<u>Nov.</u> 23	<u>Dec.</u> 23
1 North	31												
2 North	26	18.5	18	18	17	17	16	15	16	19	18	17	13
3 North	44	33	31	26	22	28	26	22	30.5	30.5	26.5	27.5	26.5
5 North	33	30	29.5	27	26	26	27	27.5	26	27	26	26	25
5 East-Burn	15	11	8	10	8.5	8	7.5	7	8.5	9	8	9	9
2 South	19	15	14.5	15	14	14	14	13	13	15	15	15.5	15.5
3 South	37	26	23	22	20	21	22	22	24	24	26	24.5	26
4 South	27	25	25	23.5	23	23	21.5	23.5	23	24	24	24.5	22
5 South	26	23	23	22.5	21	21	20	22	20.5	21	21	21.5	20
I.C.U.	8	6.5	6	5.5	6	5	5.5	6	7	6.5	6	6	7
C.C.U.	6	4	4	4	5	4	3	4	4	4	3	4	4
2 West	34	31	29.5	29	26	25.5	26	22.5	24	25	26	26	24.5
3 West	26	0	0	0	0	0	0	0	0	0	0	0	0
4 West	41	32	30	26	27	25.5	26	25.5	26	26	27.5	25	24.5
5 West	33	25.5	24.5	20.5	20.5	15	15	19	23	23	23.5	23	20
6 South 7 OB	61	45.5	44.5	44.5	42.5	42	44.5	45	46	45.5	45.5	43	41
Sub Total	467	354.0	338.5	319	301.5	298	296.5	299	317	323.5	321	315.5	301
E.C.F.	50	16	16	17	17	18	18	19	19	20	20	21	21.5
Rehab.	50	0	9	8.5	9	10	10.5	12	13.5	16	17	17.5	17
Total	567	370	363.5	344.5	327.5	326	325.0	330	349.5	359.5	358	354	339.5
Low B.W.	20	18	10	11	10	8	8	8	20	15	19	16	15
Newborn Nur.	30	13	19	17	17	15	14	16	20	19	20	25	26
		401	392.5	372.5	354.5	349	347	354	389.5	393.5	397	395	380.5

Another approach would use a weighting system to measure hospital productivity in terms of patient service units (7,15-16). Still another weighting system proposed would measure hospital productivity in terms of number of treatment degrees of service rendered (35,7-13). It appears that two conclusions can be drawn from the above: (1) current measures of some departmental workloads are insufficient; and (2) effort is being directed toward improvement.

In summary, it appears that development and implementation of statistical workload measures is needed for measurement of hospital activities and effective budgeting. In no case were measures available that gave effect to the complexity or sophistication differential between various procedures within a department. While the AHA and others are investigating such concepts as the relative unit of value, treatment degrees of service, and patient service units, no evidence of their use was found in the hospitals in this study.

Reasonable Knowledge of Cost and

Revenue Behavior

Basically, management accounting utilizes a system of cost control through budgeting, responsibility accounting, variance analysis, and contribution margin analysis. In order to utilize management accounting in the hospital, managers must have a reasonable knowledge of revenue and cost terminology and be able to identify the behavior patterns of each cost in response to changes in environmental conditions. Only with an adequate knowledge of accounting terminology and cost behavior patterns can the hospital manager participate in the budgeting and reporting process to the extent necessary for the application of

management accounting techniques. In addition, his ability to analyze and interpret performance reports is dependent upon an adequate knowledge of cost and revenue behavior patterns.

Management accounting utilizes relevant data accumulated in a meaningful form. A summary of accounting data accumulation requirements and subsequent management accounting applications is given in Figure 14.

- I. Revenues accumulated by area of responsibility
- II. Expenses
 - A. Accumulated in ledger accounts and identified with the specific functions supported
 - B. Assigned according to manager having control over expenses -- no allocation of nondirect expenses
 - C. Broken down into fixed, semifixed, semivariable, and variable components
- III. Revenues and expenses reported by area of responsibility to enable
 - A. Flexible budgeting
 - B. Responsibility reporting and variance analysis
 - C. Contribution margin analysis

Figure 14. Procedural accumulation and Analysis of Costs and Revenues

Identification of data by responsibility center is a prerequisite to application to management accounting procedures as shown in the following discussion.

Responsibility accounting has been defined as,

. . . a system of accounting that recognizes various responsibility centers throughout an organization and that reflects the plans and actions of each of these centers by allocating particular revenues and costs to the one having the pertinent responsibility (40,951).

Responsibility accounting, therefore, requires that costs (and revenues) be accumulated in accounts according to functional area and with subsequent assignment to the manager controlling such expenses. In this manner, each manager is assigned financial responsibility for the actions under his control. He is made responsible for the economic consequences of his decisions.

Such cost classification, by itself however, is not sufficient for adequate budget preparation. Since a budget, to be relevant, must apply to a particular level of activity, a knowledge of how costs behave in relation to changes in volume of activity is a prerequisite to effective budgeting. Four behavior patterns are usually identified for purposes of cost analysis. Costs may be fixed, variable, semifixed or semivariable according to their specific characteristics (8,162).

When assigned by area of responsibility and identified as to behavior patterns, cost then can be used in budgeting, responsibility reporting and contribution margin analysis as outlined below:

A. Budgeting (Flexible) as follows:

	80%	100%	120% of normal cap.
Fixes costs			
Semifixed costs			
Semivariable costs			
<u>Variable costs</u>			
Total			

B. Responsibility reporting and variance analysis as follows:

Budget	Actual	Variance
<u> </u>	<u> </u>	<u>Over (Under)</u>

C. Contribution margin analysis:

Revenues
Less: <u>Variable Expenses</u>
Marginal Income
Less: <u>Direct Fixed Expenses</u>
Contribution to nonrevenue departments

The field study was designed to disclose the extent of cost behavior knowledge used in management accounting in the Oklahoma hospitals included in the study. Those findings are presented in the following paragraphs.

Responses to questions during the interviews concerning the extent to which cost behavior patterns are identified are shown in Table XXIII.

TABLE XXIII
COST BEHAVIOR PATTERNS IDENTIFIED

	No. of Hospitals
Fixed and variable	3
Fixed, variable, semifixed, semivariable	4
Total cost only	<u>4</u>
	11

In four of the hospitals, no effort was made to classify costs by behavior patterns. In three of the hospitals, costs were identified as

fixed and variable. The remainder of those reporting (four) indicated an awareness that all hospital costs did not fit neatly into either fixed or variable categories and that a benefit could be derived by classifying costs into the four behavior patterns indicated in Table XXIII.

Since management accounting is founded upon the concept of identifying specific costs with specific individuals, the study sought to determine data accumulating practices relevant to responsibility accounting and contribution margin analysis. All eleven hospitals using budgets accumulated accounting data according to segments of the hospital and in each case, these segments were the same as those defined in the organization chart.

In response to questions concerning the use of contribution margin analysis, nine of the eleven hospitals accumulated costs and revenues according to area of responsibility, and thus, had data in a form usable for contribution margin analysis. A summary of the responses to these questions is presented in Table XXIV.

In four hospitals evidence could be found that a contribution margin figure was computed by department, but this figure was not passed on to department managers. The use of contribution margin analysis is discussed in Chapter VII.

The conclusion indicated by this inquiry into the extent of knowledge of hospital managers in the area of cost and cost behavior is simply that considerable development work has been accomplished in the past few years, but much more remains to be done. Considering that nearly all of the hospitals included in the study either had an in-house computer or access to one, accumulation and analysis of data are

far behind what they can be in most hospitals. The trend toward management accounting can get a push from improved knowledge of costs and cost behavior patterns. Management accountants, using the ability of the computer to process and store large volumes of data, can help in this respect. Identification of significant cost behavior patterns inherent to the data can be determined and then used to best advantage in the hospital's management accounting system.

TABLE XXIV
COST INCLUDED IN PERFORMANCE REPORTS

	No. of Hospitals
Report only those controllable costs and expenses at each level of responsibility	9
Differentiate between controllable costs and noncontrollable costs, but total costs are reported to each level of responsibility	0
Report costs in total without differentiating between controllable and noncontrollable cost	<u>2</u>
	11

Summary

This chapter has dealt with conditions influencing cost planning and control in the hospital. Concern over increasing costs for hospital care has brought about pressure from various agencies outside the

hospital to increase efforts at slowing the rise in the cost of hospital care. These pressures have prompted efforts by some hospital managers to plan for the implementation of budgeting procedures in the hospital industry. The results of the study indicated, however, that other hospital managers are not convinced that budgeting procedures are worthwhile in the hospital. As a result, some hospitals are far behind the more progressive ones in the study.

Most of the hospitals have a reasonably well designed organization of authority and responsibility relationships and have set these out in formal organization charts. Managers indicated on the organization charts from the department head level up through the board of trustees are, in most cases, involved in the budget process. The budget process, however, is hampered by a lack of reliable workload measures both for individual departments and for the hospital as a whole. Finally, managerial knowledge of cost behavior patterns in the hospitals included in the study falls far short of that prevailing in current hospital literature. Improvement in these areas could increase the effectiveness of cost planning and control in the hospital.

It was the purpose of this chapter to present a description of the financial management framework existing in the hospitals included in the study. With this orientation to the hospital environment, preparation of budgets can be approached. Chapter VI describes the sequence of events leading up to the final budgets.



CHAPTER VI

MANAGEMENT ACCOUNTING -- BUDGET PREPARATION

Introduction

Chapter V was concerned with a framework of prerequisites necessary for effective budgeting. This chapter builds on that planning framework by presenting a discussion of the sequence of events involved in preparation of the basic documents necessary for the planning and control techniques that comprise management accounting. These include operating budgets, capital budgets and cash flow forecasts.

The purpose of this chapter is to describe the process of budget preparation in hospitals as indicated by the sample population of Oklahoma hospitals. Included are summaries of practices as indicated by the hospitals interviewed, concerning operating budgets, capital budgets and cash flow forecasts.

As mentioned earlier, eleven hospitals in the study were found to be using budgeting procedures. The data presented in this chapter, therefore, are of necessity based on those eleven hospitals.

Budgeting Objectives

Efficient management is a major responsibility of all management levels in the hospital, and management accounting is a basic tool of the efficient manager. Since the budget forms the basis of management

accounting, it is the responsibility of both departmental management and hospital administration to prepare and utilize budgets in cost planning and control.

The AHA has identified four basic objectives of a complete budget program. The objectives are:

(1) to provide a written expression, in quantitative terms of the policies and plans of the hospital; (2) to provide a basis for evaluation of financial performance in accordance with the plans; (3) to provide a useful tool for the control of costs; and (4) to create cost awareness throughout the organization (10,3).

These objectives include the functions of planning, forecasting, and controlling hospital activities. This chapter is concerned primarily with the first objective of providing a quantitative statement of the policies and plans of the hospital. Completion of the budget program, (the use of reporting and evaluation procedures), is discussed in the next chapter.

The hospital administrator needs summarized data about the economic efficiency with which each of the major hospital segments is operating. Since hospital management must also combine and compare operations of many diverse duties or actions, the budgets they use must be expressed in a common unit of measure. So far, the dollar measurement is the only one that meets the requirement (3,115). One of the requirements of the budgeting process in the hospital, therefore, is to come up with a plan of action expressed in terms of dollars of cost and dollars of revenue. Even though quantitative units other than dollars may prove useful at lower levels of aggregation, dollar expression is necessary in the final analysis in order to compare the diverse activities in the hospital on a common basis.

In an attempt to better define the purpose of budgets, managers in this study were asked to identify specific objectives of the budgeting system in their hospital. The responses are shown in Table XXV.

TABLE XXV
MAJOR OBJECTIVES OF THE BUDGET SYSTEM

Objective	Responses
To control expenses	10
To assign responsibility	4
To force hospital managers to define goals	5
To motivate employees	4
To pressure employees to improve performance	<u>0</u>
	23

The most frequently mentioned objective was cost control with ten responses. It is interesting to note that no manager believed that the objective of the budget system was to pressure employees to improve performance. This could imply an excellent approach to the budget system by top management in the hospitals using budgets. It could also imply a realization by the managers interviewed that budgeting is a necessity for cost control.

Extent of Budgeting

Budgeting, as used in cost planning and control, implies the application of budget principles and procedures to all phases of the operation of an individual hospital, with the consolidation of all of the subdivision budgets into overall entity budgets. Budgeting for purposes of this chapter includes; operating budgets, capital budgets and cash flow forecasts.

Operating budgets are made up of estimates of revenues and expenses in those departments responsible for both. In departments responsible only for expenses, the expense budget becomes the operating budget to that unit. The operating budget for the hospital as a whole includes; revenues and expenses, along with the resulting effect on net income.

A capital budget, by definition, includes; capital expenditures, capital dispositions, and resources available for the budget period (10,1). No hospital in this study, however, indicated that they prepared a separate capital budget that met the above requirements. Capital requests were found, in most cases, to be an integral part of the departmental operating budget. For purposes of this study, therefore, the discussion of capital budgets will be incorporated into the discussion of operating budgets.

A cash flow forecast is the summarization of expected revenues and expenses converted from an accrual basis of accounting to a receipts and expenditures basis, plus expenditures for, or receipts from, capital items transactions. The cash flow forecast summarizes the projected status of the hospital's cash account. It is used primarily to aid in keeping cash balances at an optimum level. When collections

are slow, or disbursements are large, the cash forecast can be an indispensable aid in planning. Most of the hospitals did not prepare a cash forecast. Four of them did, however, with the frequency varying from daily to semi-monthly.

Budgeting Sequence

The sequence of events leading up to the establishment of the annual budget begins with the formulation of long-range objectives and policies for the hospital. This is the function of the top level of management in the hospital, primarily the board of trustees and the administrator. Long-range objectives are the major goals of the hospital and include the provision of efficient patient care, along with expansion and improvement of facilities to meet future demands. Policies are the definite courses of action adopted to govern activities related to attaining the hospital's objectives.

Once the long-range objectives and policies have been determined, the next step is to communicate these objectives and policies to departmental managers who then become involved in the mechanical procedures necessary to arrive at completed budgets. The AHA has suggested the use of a budget manual circulated among the various managers to aid in understanding and to provide the consistency between departments that is necessary for consolidation of the numerous departmental budgets. The AHA recommendations for content of the manual are as follows:

The contents of the manual should include the scope and purpose of the budget program, and the authority, duties, and responsibilities of department heads for the preparation and enforcement of budget procedures. It should outline clearly the procedures for preparation, review, and revision

for the budget, as well as, the period covered and the procedures for approval. Samples of budget reports also should be included. A checklist relating to budget policy and preparation would be of considerable assistance to department heads in planning and forecasting.

Along with a budget manual, a budget calendar should be established presenting various deadlines that must be met for the total budget to be completed prior to the beginning of the fiscal year (10,14).

The purpose of the manual is to furnish written communication of the objectives of the budget program along with the policies of top administration, procedures to be followed by department managers, dates for completing various sections of the budget, persons available for assistance in budget preparation, relevant statistical data, forms for presenting preliminary budgets, and special points of concern or trouble areas that require special planning efforts.

Six hospitals in the study indicated the distribution of a budget manual to departmental managers as an aid in communicating and coordinating the budget process. The contents of the manuals generally included the basics proposed by the AHA. Most also included budget forms designed to help segment managers accumulate figures and submit preliminary budgets for review. Statistical data included in the manuals usually consisted of historical data for the particular department and a patient days estimate for the hospital as a whole. As pointed out in the previous chapter, better statistical measures than those currently used are needed.

The remaining five hospitals that use budgets communicate hospital objectives and policies, as well as, budgeting procedures to departmental managers at department meetings. They, thus, rely upon oral communication of the data that the other six hospitals communicated by means of the budget manual.

The number of revenue and expense centers identified in the hospital budgeting process varied. Analysis of hospital computer printouts disclosed a range in the number of revenue centers from a minimum of fourteen in one hospital to a maximum of 36 in another hospital. The number of cost centers identified ranged from a minimum of fourteen to a maximum of 96. Illustrations of the computer printouts are included in Chapter VII in the discussion concerning control procedures.

Respondents indicated that revenues and expenses were typically accumulated in ledger accounts and assigned according to areas of responsibility as proposed in the AHA's Chart of Accounts for Hospitals (15). Historical data as accumulated in the accounts for the previous year formed the starting point in preparing preliminary budgets for the forthcoming year. The historical data were adjusted for factors known to have an effect in the current year. The resulting figures formed the basis for the preliminary budget.

Revenue and expense budgets may be prepared for one level of activity (a fixed budget) or several levels of activity (flexible budgets). The objective of flexible budgeting is to provide a budget based on the actual level of output attained rather than a normal or expected level. Flexible budgeting in this manner provides the basis for meaningful variance analysis and can contribute materially to the hospital's system of cost control (9, 91-96). Installation of flexible budgeting requires identification of the four cost behavior patterns: fixed, variable, semifixed and semivariable. The manager must also know how to use the cost behavior patterns to build budgets representing ranges of activity apt to be attained during the budget period. Inquiries into the use of flexible budgeting in the hospitals in this

study indicated that most of the managers were aware of the technique but no one was using it. Comments mentioned varied from: "Since most hospital costs are fixed with ordinary levels of operation, we do not need flexible budgeting." to,

We are considering this technique since we may miss our estimate of activity. When we do, we need to know what costs should have been at the level attained in order to determine what corrective action, if any, is indicated when costs vary from the budget.

An awareness that all hospital costs are not fixed is apparent in the last comment. Since none of the hospitals included in the study used flexible budgeting, the following discussion is limited to the preparation of budgets for a single level of activity.

The budget manuals distributed to departmental managers typically included budgeting forms designed to be used throughout the hospital. This helped the manager in preparing the budget and also provided the necessary consistency between departments needed to consolidate them into one hospital-wide budget. Sample illustrations of budgeting forms utilized are shown in Figures 15 through 18. The use of each of these forms is discussed in the following paragraphs.

Operating Budget

Preparation of the revenue portion of departmental budgets usually consisted of projecting revenues from units of service predicted and current charges for such services. Revenues are directly related to volume and, therefore, sensitive to the level of activity actually attained. Most managers in this study indicated a belief that revenues were largely beyond the control of departmental managers while expenditures could be directly influenced by efforts of managers. Efforts in

the budgeting process, therefore, were largely devoted to the area of expenditures.

Three categories of expenditures were identified for budgeting purposes in the typical hospital. They are: salaries and wages, supplies and expenses, and requests for capital equipment. The largest of these is the salaries and wages category which accounted for 60 % or more of the total expense budget (10,26).

Salaries and Wages

Salaries and wages were accumulated by department and by position within the department. In larger institutions, positions were further identified by means of a code number. In any event, information sufficient to identify specific positions and employees was generally included in the departmental salary and wage budget. Hours and pay rate were combined for each employee to arrive at the base pay totals. Increases in salaries and wages expense frequently occurred due to events; such as, overtime work, or vacation replacements. These items were also included on the wages and salaries budget but separately shown for analysis purposes.

Computations for social security taxes along with other detailed calculations were usually performed in the accounting department. To a large degree, cost control in salaries and wages is dependent upon the manager being aware of the number and type of personnel employed together with wage rates paid. The format of the salaries and wages budget, shown as Figure 15, is designed to furnish that information. Upon completion of the salaries and wages budget, totals were carried to a departmental summary.

Departmental SALARIES Budget (or Forecast)

Dept. No. _____

October 1, 19 __, thru September 30, 19 __.

Department: _____

C. u.	Position Number	Title	Incumbent (Full Name)	Shift		Total Days	Total Hours	Salary Rate per hr	Salary Total \$ Rate	Total Days	Total Hours	Suggested Rate per hour	Total Salary \$ Rate	GRAND TOTAL SALARY for Year
				fr	to									

Dept. Audited by: _____ Date _____ APPROVED per _____, Department Head

Figure 15. -- Departmental Salaries Budget

Travel Requests

Figure 16 illustrates a travel budget form used in several hospitals included in the study. It represents an item by item approach to the travel budget and is of considerable interest to the management accountant.

TRAVEL REQUEST (Budget Use Only)

_____ (Department)	_____ (Name of Traveler)
_____ (Destination)	_____ (Name of Course - Conference, etc.)
_____ (Approximate Date of Travel)	_____ (Sponsor of Course, Conference, etc.)
_____ (Category - National, Regional, Local)	_____ (Estimated Cost)

JUSTIFICATION (If more space is needed, attach sheet)

Signature - Department Head

Figure 16. Budget Form for Travel Requests

As previously noted, most budgets were prepared on the basis of last year's historical data, adjusted for current expectations. Item budgeting by trip makes no reference to the prior year's expenses but rather requires a justification for each trip requested. This utilizes the concept of zero base budgeting in which the manager must justify each individual request (63,111-121). The work involved in such procedures would, no doubt, be large if efforts were made to extend zero base budgeting to the hospital as a whole. Several managers, however, expressed interest in such an approach with the area of nursing services mentioned as an excellent prospect for such implementation. Most of the managers questioned responded negatively when they thought about preparing a budget starting from any basis other than historical data. The total of the travel requests was carried to the summary sheet.

Capital Budget

Capital budgeting is viewed by managers in this study as primarily concerned with planning and controlling the replacement and addition of equipment within the hospital. Authority for purchase of capital items in one case varied directly with the level of responsibility held by an individual. Capital items in this hospital included those assets having a useful life of three years or more and a cost exceeding \$100. Department managers do not have the authority to purchase capital items as defined above. A manager at the controller level can authorize capital purchases up to \$1,000, while the administrator level approves capital purchases up to \$5,000. Any capital item costing more than \$5,000 must be approved by the board of trustees prior to approval. Another hospital indicated that approval was needed by the board of

trustees for purchases exceeding \$2,500. Such specific guidelines were not indicated by the remainder of the hospitals in the sample. The authority of departmental managers to buy capital equipment without approval was limited to minor items in all cases.

Departmental managers do, however, originate requests for capital purchases. Those requests are submitted in the budgeting process on forms similar to the one shown in Figure 17. The form provides for number and type of items desired, along with classification as to an addition, improvement, or replacement. Also required are the estimated cost and date of payment. Since the departmental manager may not be aware of current prices and payment dates, this section may be filled out by the purchasing or accounting department. Nearly all of the hospitals require the departmental manager making a capital request to justify, in writing, the purchase of the capital asset and rank it according to degree of necessity. The total of capital purchase requests was carried to the departmental budget summary.

Supplies and Expense

Supplies and expense included the balance of direct expenses charged to each department after providing for salaries and wages and capital purchase requests. The specific expense items included in this category varied by department. Examples are expenditures for; supplies, dues and subscriptions, drugs, food, postage, utilities, professional services, telephone, and others depending upon the department affected. Supplies and expenses were budgeted on a line item basis for direct expenses by department as proposed in the AHA's Chart of Accounts for Hospitals.

# Of Items	Description	* Priority	Additions	Improvements	Replacements	Estimated Cost		Estimated Date Of Payment
						Each	Total	
Disposal of Assets if Requests Approved:						Estimated Salvage		

* A-Urgent B-Essential C-Economically Desirable D-Generally Desirable

Figure 17. -- Capital Budget Request

The most recent year's experience was typically used as a basis in preparing the budget for supplies and expense. Adjustments were made for anticipated changes in the mix of supplies used, changes expected in service levels, and expected changes in price levels. Guidelines furnished to segment managers in the budget manual that related to expense projections were typically brief, offering little more than a word of caution to managers to be aware of the need for cost control. Budgeted supplies and expenses were typically accumulated on working papers as needed and transferred to the summary budget in summary form.

The number of categories listed on the departmental budget summary varied from the few appearing on the form in Figure 18, to as many as fifty-three on a departmental budget summary used in one of the sample hospitals. No one department typically incurred all of the fifty-three types of expense. Only those applicable to a particular department were used by that department.

The supplies and expense forecasts were posted to the departmental summary budget (Figure 18) to complete that document in a preliminary form. The department head, working closely with a fiscal officer up to this point, was usually responsible for preparation of the budget.

Budget Review

The process of budget review, beginning with the departmental preliminary budgets and continuing to acceptance by the board of trustees, varied from very little review to a four-stage process in one of the hospitals studied.

Department -- _____

1972 - 1973 PROJECTED BUDGET

	1 Nov	2 Dec	3 Jan	4 Feb	5 Mar	6 Apr	7 May	8 Jun	9 Jul	10 Aug	11 Sep	12 Oct	15 TOTAL
Revenue:													
-01 In Patient	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$
-11 Out Patient													
Total Revenue	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$
Expense:													
-01 Salaries	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$
-10 Social Security Taxes													
-12 Thrift Plan													
-30 Supplies - Medical													
-31 Supplies - Drugs													
-40 Supplies - Office													
-61 Repairs to Bldg & Equip													
-65 Travel													
-66 Dues & Subscriptions													
-71 Rental													
-99 Miscellaneous													
Total Expenses	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$

APPROVED BY: _____

Figure 18. Budget Summary

The elaborate procedure encountered included: a presentation of the budget by each departmental manager to the administrator to whom he reported for a detailed review; and a presentation to the working budget committee, composed of the controller, the chief accountant and the personnel director, where most of the budget adjustments were made. The budget was subsequently presented to the full budget committee, who considered only deviations from normal; and, finally, the budget was submitted to the board of trustees for approval.

Several methods of consolidating and presenting the budget were disclosed in the study. In some of the hospitals, all nonrevenue producing departments were reallocated to the producing departments and a net income (or loss) was presented for each surviving department. All net income figures were then combined for a final net income (or loss). In other hospitals, no effort was made to allocate the nonrevenue departments. In these cases, a gross margin (revenue less direct expenses) figure was computed for the revenue departments (in essence, the contribution margin figure discussed in Chapter VII) and this figure was extended and combined with the nonrevenue cost departments to arrive at a net income or loss figure for the hospital as a whole. In any event, the resulting consolidated budget was typically submitted to the administrator and, subsequently, to the board of trustees for approval.

Nearly all of the hospitals in the sample either had a computer in the hospital or subscribed to a computer service. All of those hospitals using budgeting in planning had access to a computer, and upon approval of the board of trustees, the budget was entered into the computer. Operating information was entered into the computer as it

became available, thus, hospital managers had access to data for income statements, balance sheets and the reports necessary for application of the control techniques discussed in Chapter VII.

Cash Forecast

Cash forecasting provides the means for focusing attention upon the short-run financing problems of the hospital. All cash transactions are summarized in a cash forecast. These include: collections from patients and any other sources, operating disbursements, payments for asset acquisitions and other disbursements. The beginning cash balance is adjusted to give effect to the above transactions to arrive at an estimated ending cash balance. Cash forecasts are an effective management technique in the management of cash. Only three of the thirteen hospitals included in this study indicated the use of cash forecasts. A weekly cash forecast is shown in Figure 19.

The time period covered by cash forecasts varied in the sample from daily forecasts to two months. The limited use of cash forecasts, indicated in the hospitals sampled, appeared inconsistent with the frequent complaint voiced by managers about the financial problems resulting from slow and uncertain payments by Blue Cross and Medicare. Perhaps more effort in the area of cash forecasting is needed.

Summary

This chapter presented a summary of the procedures used by the sample of hospitals studied in preparing budgets for hospital planning and control.

WEEKLY CASH PROJECTION REPORT

<u>Actual Amounts</u>	<u>OPERATING FUNDS</u>	<u>Projected Estimates</u>
\$	Actual Cash Balance	\$
	Monday Morning, / /	
	<u>Deposits:</u>	
	Medicare Remittance	
	Blue Cross Remittance	
	Welfare (DPW) Remittance	
	Accounts Receivable (Patients)	
	Miscellaneous Receipts	

	<u>Disbursements:</u>	
	Payroll Transfers	
	Taxes	
	Annuities	
	Deductions Paid	
	Emergency Checks	
	Professional Services	
	Student Stipends	
	Vendor Accounts Payable	
	Miscellaneous Payables (inc. Taxes)	
	Employee Group Hospitalization	
	Employee Group Life Insurance	
	Employee Retirement (Pension) Plan	
	Expense Advances	
	Recruiting Expenses Paid	
	Travel Expenses Paid (Routine)	
	Trusts Assessments	
	Notes Payable	
	Patient Refunds	
	Mother House (Sisters' Services)	
	Diocese	
	Investments Transfers	
	/ /	
\$	NET OPERATING CASH AVAILABLE	\$

BUILDING FUNDS:	
Actual Cash Balance Today	
\$ _____	PLUS Anticipated Deposits _____
	LESS Estimated Disbursements _____
	Projected Cash Balance \$ _____

Figure 19. Weekly Cash Projection Report

Procedures in about one-half of the hospitals were formalized to the extent that a budget manual was used to communicate budgeting goals, guidelines, and procedures to department managers and to coordinate the budget process across departments in the hospital.

Operating budgets emphasized the importance of payroll costs. A detailed personnel budget including job description, base pay, hours budgeted at base pay rates, overtime rate and hours of overtime budgeted, vacation pay and merit raises for each employee in the hospital was prepared by all hospitals using budgets.

Operating budgets were prepared for one level of activity only. Flexible budgeting was not used by any of the hospitals included in the study. Operating data were accumulated by area of responsibility to provide a basis for the control procedures discussed in Chapter VII.

Capital expenditure requests were an integral part of the operating budget in a majority of the hospitals.

CHAPTER VII

BUDGETING-CONTROL PROCESS

Introduction

The control process in budgeting as presented in this chapter consists primarily of the follow-up actions (both analytical and corrective) taken on the basis of information furnished by the management accounting reporting system.

The objective of this chapter is to describe the control procedures utilized in the Oklahoma Hospitals included in the study. The specific procedures discussed include; responsibility accounting, and contribution margin analysis. The use of cost-profit-volume analysis and standard costing is also briefly discussed.

Responsibility Accounting

As pointed out earlier, responsibility accounting utilizes accounting data classified by area of responsibility within the entity. A cost is controllable by a manager if the decisions of the manager directly affect the level of cost observed (19,249). The Chart of Accounts for Hospitals, available since 1966, recommends the adoption of responsibility accounting by hospitals and describes an accounting process designed to record and report only the direct, controllable costs for each responsibility center (16,1). Full costs are not shown in the departmental expense accounts of the hospital.

Data introduced in Chapter V showed that nine of eleven hospitals using budgets do identify and report controllable costs by area of responsibility. The remaining two do not.

The previous chapter discussed the sequence of events involved in the preparation of budgets for hospital segments and for the hospital as a whole. Under a responsibility accounting system, the direct costs presented in the budgets become the standard against which actual performance is measured. Applications of this comparison are a part of the control function of management accounting.

A simple example of a budget performance report is presented in Table XXVI. This report is for a single cost center, "Fiscal Services Administration," and includes the direct controllable costs only for Fiscal Services Administration. Data for two time periods are included, the current month and the year to date. Three different sets of figures are included for each time period. The first and fourth columns of the report represent budgeted amounts, derived as described in Chapter VI. The budget for this report was prepared for the expected level of activity. The second and fifth columns represent actual expenditures for each of the time periods. The third and sixth columns present the difference between the budget and actual amounts in each case. For instance, \$1,180 was budgeted for regular pay this month, while the actual cost was \$980. The difference between budget and actual is pointed out in the variance column, which shows that actual expenditures for regular payroll were under the budget by \$200. Looking further, the year-to-date actual expenditures were \$139 under the budget amount.

TABLE XXVI

BUDGET PERFORMANCE REPORT FOR THE
 PERIOD ENDING 12 /31/71

EXPENSE	-----CURRENT MONTH-----			-----YEAR-TO-DATE-----		
	BUDGET	ACTUAL	OVER OR UNDER-U	BUDGET	ACTUAL	OVER OR UNDER-U
900-00 FISCAL SERVICES ADMIN.						
REGULAR PAY	1,180	980	200U	5,900	5,339	561U
HOLIDAY PAY		54	54		163	163
VACATION PAY		163	163		435	435
	1,180	1,197	17	5,900	5,937	37
FEES - LEGAL & AUDITING				6,000	6,000	
PRINTING & COPYING	5	1	4U	75	44	31U
STOREROOM SUPPLIES	2	33	31	6	38	32
OTHER SUPPLIES	5	3	2U	25	11	14U
EQUIPMENT MAINTENANCE		31	31		31	31
DUES, SUBSCRIPTIONS, ADS,				10		10U
TRAVEL	150	4	146U	190	6	184U
	162	72	90U	6,306	6,130	176U
	1,342	1,269	73U	12,206	12,067	139U

All nine of the hospitals that use responsibility accounting also prepared a variance report for each responsibility center and for the hospital as a whole.

Inquiry into follow-up procedures indicated that four of the hospitals followed up on the variance report at a subsequent meeting of hospital managers in which the variances were discussed and explained. Three of the hospitals required a written explanation for unusual variances. The guidelines in one hospital indicated an explanation was due if the variance exceeded 5% of the budget amount. Two hospitals indicated that variances were discussed in private with individual managers and two reported that managers were rarely asked to explain variances.

In no instance did the study disclose any indication that numerical analyses were prepared to identify the reasons for the variance. Variances may occur due to changes in volume, mix, price, or cost of resources consumed and services provided by a department (8,189). Identification of the specific causes should be one of the primary objectives of variance analysis. Only when the manager knows what is wrong, or out of control, can he take the proper corrective action.

The responsibility accounting and reporting procedures as a management technique are intended to provide for measurement of managerial performance by comparing actual results attained with a carefully prepared budget or plan. When this management accounting technique is properly used, deviations in performance from normal are pointed out in the form of variances and analyzed for the purpose of pinpointing specific causes. The emphases in responsibility accounting and reporting is upon the performance of the manager.

Contribution Margin

The hospital has been described as a complex organization with as many as 50 segments responsible for both costs and revenues, and an additional 50, or more, segments that are responsible for costs only. These cost centers incur expenses necessary for the operation of the hospital but are not identifiable with any specific revenue segment. Profitability measurement of segments traditionally involves the allocation of common costs to revenue segments. One of the most difficult problems faced by the accountant is the allocation of these common costs. Cost Finding and Rate Setting for Hospitals represents a major effort by the AHA to aid in this difficult procedure (16). Allocation of common costs in the hospital, nevertheless, remains a process of arbitrary allocation.

The contribution margin approach provides a framework for evaluating manager performance by area of responsibility; and, in addition, it enables hospital managers to measure the economic efficiency of individual revenue centers without arbitrary allocation of common costs. Under this approach, only those revenues and costs that are directly associated with revenue departments are assigned to those departments. Reports for contribution margin analysis are simple to prepare since they utilize data accumulated in accounts according to the AHA Chart of Accounts for responsibility accounting.

The effect of each revenue segment upon the net income of the hospital is indicated by the contribution margin for that department. Departments with a positive contribution margin are contributing toward the recovery of common costs and net income, while those with a negative contribution margin work in the opposite direction.

Knowledge of the effect on net income resulting from the operations of departments can certainly be of value to the manager charged with obtaining sufficient revenues to cover total hospital costs (47,24-26). The contribution margin approach also provides a basis for managerial evaluation of segment operations since actual performance may be compared with the budgeted amount.

An awareness of the benefits available from computing a contribution margin figure by department was indicated in six of the nine hospitals reporting data by area of responsibility. However, reports acquired during the interview process indicated that a contribution margin figure was prepared and available to segment managers in only three of the hospitals studied.

A sample report for the laboratory showing direct revenue and expense for the latest month and for the year-to-date is shown in Table XXVII. This report contains the revenues for which the laboratory is responsible and the expenses that can be directly identified with the laboratory. The direct expenses are subtracted from the total revenue figure to arrive at a net gain or loss by the laboratory. The furthestmost column on the right shows an actual gain for the year-to-date of \$1,452,102, which is the amount "contributed" by the laboratory toward common hospital costs and net income. It is interesting to note that this amount represents more than a 100 percent markup on direct costs of \$1,281,410. Since the gain was computed by subtracting direct expense from direct revenue, \$1,452,102 is the contribution margin for the laboratory.

TABLE XXVII
PERFORMANCE REPORT

This Month			Year-to-Date	
<u>Budget</u>	<u>Actual</u>		<u>Budget</u>	<u>Actual</u>
225,000	265,693	Revenue	2,475,000	2,733,512
		Expenses:		
60,954	63,583	Salaries	670,494	670,960
2,600	2,600	Sisters Services	28,600	28,600
766	859	Special Services	8,426	8,365
00	20	Other Non-Taxable Salaries	00	220
3,170	2,954	Payroll Taxes	34,870	31,134
89	00	Library Stocks	979	37
14	00	Dues & Subscriptions	154	437
135	231	Drugs Used: Direct Purchase	1,485	1,773
45	72	Inventory Transfer	495	934
00	00	Interdepartmental Billings	00	5
10,583	14,640	Supplies: Direct Purchase	116,413	131,520
5,864	6,585	Inventory Transfer	64,504	66,809
146	969	Repairs and Maintenance	1,606	4,986
178	193	Telephone & Telegraph	1,958	2,264

TABLE XXVII (Continued)

This Month			Year-to-Date	
<u>Budget</u>	<u>Actual</u>		<u>Budget</u>	<u>Actual</u>
24,000	24,000	Professional Services	264,000	264,000
1,180	1,493	Purchased Services	12,980	18,202
375	364	Contracted Services	4,125	3,561
3,141	5,785	Equipment Rental or Leasing	34,551	43,279
00	132	Printed Forms: Direct Purchase	00	631
69	26	Internal Production	759	433
115	90	Seminars & Institutes	1,265	1,293
133	00	Travel (Transportation Only)	1,463	1,577
00	288	Reimburseables Clearing	00	288
00	00	Licenses, Fees & Permits	00	100
823	00	Research & Development	9,053	00
00	00	Miscellaneous	00	2
<u>114,380</u>	<u>124,884</u>	Total Expenses	<u>1,258,180</u>	<u>1,281,410</u>
<u>110,620</u>	<u>140,809</u>	Gain/(Loss)	<u>1,216,820</u>	<u>1,452,102</u>

Since this particular report contains budgeted as well as actual amounts, a comparison between the two can be made to determine how closely the laboratory performance conformed with the budgeted plan. The process of comparing budget with actual item by item is time consuming. The report would be of more value to the busy manager, therefore, if variances were printed in an additional column. Table XXVII is the detailed laboratory report received by the laboratory manager. A copy of this report also becomes part of the supporting data for summarized operating reports received by higher levels of management. In this particular hospital, all departmental gain or loss figures appear on a summarized profit and loss statement. Cost center totals are shown on the profit and loss statement as losses.

The illustrative report shown in Table XXVIII also represents a contribution margin approach to reporting operating data. It could be used to incorporate the variances from the budget that were not included in the report illustrated in Table XXVII. Caution against excessive reliance upon the figures in the over-under column must be exercised when analyzing this report. It is the size of the variance in relation to the budget, or base, that provides a meaningful indication of the size of a variance. A worthwhile addition to the report could be the presentation of variances in terms of percentages, computed by comparing the variance with the budget.

The report in Table XXVIII is received by the laboratory manager and forms the basis for analysis of his department. The contribution margin, in this case, is labeled as an excess of income over expenses.

TABLE XXVIII
PERFORMANCE REPORT

ACCOUNT DESCRIPTION	YEAR TO DATE					
	ACTUAL	BUDGET	OVER-UNDER	ACTUAL	BUDGET	OVER-UNDER
448 LABORATORY						
INCOME:						
LABORATORY	130,215.00-	118,305.00-	11,910.00-	634,290.20-	597,847.00-	36,443.20-
TOTAL INCOME	130,215.00-	118,305.00-	11,910.00-	634,290.20-	597,847.00-	36,443.20-
EXPENSE:						
SUPERVISORY	7,629.35	7,212.00	417.35	39,407.24	37,129.00	2,278.24
CLERICAL & OTHER	26,674.39	29,953.00	3,278.61-	132,747.33	154,218.00	21,470.67-
CLERICAL & OTHER OT	735.28	.00	735.28	2,986.63	.00	2,986.63
VACATION PAY	704.11	.00	704.11	3,520.04	.00	3,520.04
HOLIDAY PAY	.00	.00	.00	4,955.09	.00	4,955.09
PROFESSIONAL SERVICE	35,289.68	32,357.00	2,932.68	169,732.76	162,913.00	6,819.76
SICK LEAVE	1,365.70	.00	1,365.70	2,905.22	.00	2,905.22
STUDENTS	1,079.10	1,349.00	269.90-	7,541.59	6,944.00	597.59
STUDENTS OVERTIME	.00	.00	.00-	.00	.00	.00
EMPL GROUP HOSP	928.20	750.00	178.20	4,626.55	3,750.00	876.55
MNTNC OF PERSONNEL	.00	37.00	37.00-	.00	185.00	185.00-
PAYROLL TAXES	1,858.69	1,682.00	23.31-	7,438.70	9,691.00	2,252.30-
FORMS	.00	500.00	500.00-	149.05-	2,500.00	2,649.05-
FORMS-PRINTED	180.60	83.00	97.60	574.15	415.00	159.15
FREIGHT	15.78	42.00	26.22-	56.38	210.00	153.62-
DUES & SUBSCRIPTIONS	.00	19.00	19.00-	18.00	95.00	77.00-
POSTAGE	114.23	52.00	62.23	349.75	260.00	89.75
REPAIR & MAINTENANCE	15.30	208.00	192.70-	173.24	1,040.00	866.76-
DRUG-INVENTORY TRANS	97.74	100.00	2.26-	333.58	500.00	166.42-
FOOD-INV TRANSFER	112.00	15.00	97.00	112.00	75.00	37.00
SUPP-DIRECT PURCHASE	11,675.31	8,990.00	2,685.31	54,406.40	45,263.00	9,143.40
SUPP-INVENTORY TRANS	695.02	500.00	195.02	3,071.13	2,500.00	571.13
TELEPHONE	686.99	283.00	403.99	2,413.46	1,415.00	998.46
EQUIPMENT RENTAL	398.96	583.00	184.04-	2,778.71	2,915.00	136.29-
CONTRACT SERVICES	5,048.69	2,999.00-	8,047.69	931.88	14,995.00-	15,926.88
TRAVEL	200.36	167.00	33.36	426.96	835.00	408.04-
MISCELLANEOUS	.00	.00	.00	154.83-	.00	154.83-
EMPLOYEE ACCIDENT	13.85	.00	13.85	102.70	.00	102.70
TOTAL EXPENSES	95,519.33	82,083.00	13,436.33	441,305.61	417,858.00	23,447.61
EXCESS OF INCOME AND EXPENSES	34,695.67-	36,222.00-	1,526.33	192,984.59-	179,989.00-	12,995.59-

Cost-Profit-Volume Analysis

Cost-profit-volume analysis consists primarily of studying the relationship between changes in volume and changes in profit. For instance; a rise in volume will ordinarily result in an increase in costs and an increase in profit, the amount of profit change depending upon the proportion of each sales dollar that is not consumed by the increase in costs. Cost-profit-volume decisions rely upon identification of fixed and variable expenses at each relevant volume level.

One way of illustrating the concept of cost profit volume analysis is with the breakeven chart shown in Figure 20.

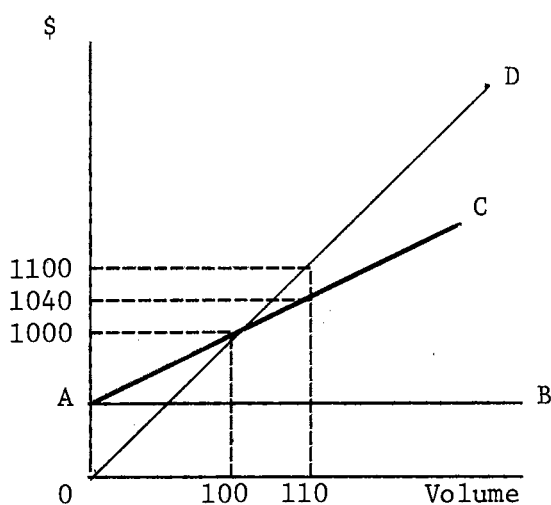


Figure 20. Breakeven Chart

Volume of activity is shown on the bottom horizontal axis with dollars of cost, revenue, and profit shown on the vertical axis. Total

revenue, fixed cost and total cost are represented by lines OD, AB, and AC respectively. Thus, at 100 units of volume, total revenue and total cost are equal at \$1,000. A rise in volume to 110 units results in total revenue of \$1,100, total cost of \$1,040, and a profit of \$60. Cost-profit-volume analysis shows that an increase in volume from 100 units to 110 units results in an increase in profits of \$60.

Cost-volume-profit analysis has many applications in industry. Among these are: decisions in pricing, cost alternatives, sales mix, sales promotion, and addition or deletion of product lines (40,57). Many hospital managers argue that volume of activity in the hospital is largely beyond the manager's control; thus, limiting the effectiveness of cost-profit-volume analysis in decisions concerning sales mix, sales promotion and addition or deletion of product lines in a particular department. However, cost-profit-volume analysis could furnish relevant information for pricing and cost analysis in areas; such as, the laboratory, pharmacy, dietary, and laundry. The hospital may frequently make decisions in these areas concerning additional work requests from outside parties, or offers by outside parties, to furnish such services to the hospital on a contractual basis. This study determined, however, that the use of cost-profit-volume analysis was very limited in hospitals and that most hospital managers were unaware of any way that the technique could be used in hospital management.

Standard Costing

The final management accounting technique explored, in this study, is standard costing. A standard cost has been defined as, "A carefully predetermined cost that should be attained. Usually expressed

per unit." (40,952). Standard costs are used in place of historical costs in the budgeting process. When actual performance is measured against the carefully set standard, meaningful variance analysis can be performed (8).

The use of standard costs can often result in clerical savings through elimination of the posting of actual costs to accounts for every purchase. The ledger accounts can be maintained in physical quantities only. Account balances can be determined at any time by multiplying physical quantities on hand by standard costs.

Standard costing also aids in producing faster reports for management and in providing relevant information for pricing decisions. At any point in the patient's stay in the hospital, for instance, quantities of services provided the patient can be quickly converted to dollars of cost when standard costs are used.

Standard costing has been proposed for various functions within the hospital including laboratory services, pharmacy, dietary and nursing. However, this study found no indication of standard costs actually in use in the hospitals studied. Several hospitals subscribed to the HAS service which publishes national cost and revenue averages for each of the hospital services. This service was utilized for comparative purposes only. The national averages computed were not entered into the hospital's accounts.

Summary

This chapter has built upon the budgeting framework established in Chapters V and VI. The purpose of Chapter VII was to present a summary of practices concerning the management control stages of the hospital

budgeting system. The specific techniques explored were: responsibility accounting, contribution margin analysis, cost-profit-volume analysis and standard costing.

The analysis of data indicated that controllable costs were reported by area of responsibility in nine of the eleven hospitals using budgets. Eight of these required an explanation of excessive variances from departmental managers as part of the control process. The follow-up procedures on variances did not include a numerical analysis of the components or causes of the total variance.

The contribution margin approach was not widely used, with only three hospitals reporting operating data in a contribution margin format.

The use of cost-profit-volume analysis and standard costing was practically nonexistent in the hospitals studied.

CHAPTER VIII

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

Summary

The cost of health care to Americans represents one of the most important components in the cost of living index, and hospital costs have accelerated at a faster pace than any other item of health care. As a result, many hospitals face a financial crisis. Among the factors contributing to the problem are: (1) an increasing demand for health care service due largely to increased financial involvement of the federal Medicare program and the state Blue Cross programs; (2) a trend toward the self-sustaining hospital; (3) a rising concern that hospital management is not as efficient as it might be; (4) a knowledge that millions of Americans do not have access to adequate health care facilities; and (5) an increasing cost of hospital personnel that has not been accompanied by proportionate increases in the productivity of personnel. All of these have forced new demands upon hospital managers to plan for the control of costs; thus, creating increased interest in the use of management accounting techniques.

The objective of management accounting is to furnish sufficient, relevant and timely information to managers to enable them to make informed judgments and effective decisions in the management of enterprise resources. To fulfill this objective, the management accountant

has accumulated a considerable body of concepts, techniques and procedures designed for communicating relevant economic data to managerial users. Use of such techniques in hospital planning and control is the concern of this study.

The first part of this study involved a review of the literature related to the health care field, the community hospital segment of the health care field, and the role of management accounting in cost planning and control. The second part of the study consisted of field work to determine the extent of practice in hospital management of six management accounting techniques selected on the basis of the library research. The six techniques were: (1) operating budgets, (2) capital budgets, (3) responsibility accounting, (4) contribution margin analysis, (5) cost-profit-volume analysis, and (6) standard costing.

The literature review disclosed that Americans spend more money on health care than any other nation in the world. Yet, the United States ranks fourteenth in infant mortality, twelfth in maternal mortality, and eighteenth in male life expectancy among the countries of the world. Expenditures on health care service reached \$75 billion in 1971, amounting to 7.4% of GNP. The hospital industry accounted for 35% of this total. The community hospital segment accounted for 92% of the patients admitted to hospitals in 1971. Obviously, the community hospital is an important element in the provision of adequate health care.

In the hospital industry most revenue was received from third parties who had received funds from patients in the form of insurance premiums or taxes. These third parties, including primarily Medicare and Blue Cross, have become increasingly concerned with rising hospital costs and are demanding tighter control of hospital costs than they

have in the past. These pressures have prompted efforts by some hospital managers to implement management accounting techniques that have proven effective in other business enterprises. Techniques based on the planning and control stages of the budgeting process have a particular application to cost planning and control. However, budgeting requires considerable time and effort in order to be successful and many hospitals have not put forth the effort required. Control procedures were especially weak in most hospitals with the result that the hospitals have been unable to effectively control costs.

No application of standard costing, for planning or controlling costs, was found in any of the hospitals studied; nor were cost-volume-profit analysis and breakeven analysis used by any of the hospitals studied. The lack of use of these tools may be caused, in part, by the rationale of the cost reimbursement mechanism which provides no financial reward to the hospital that is able to minimize its costs. Also influencing the extent of cost control in hospitals was the persistent belief among some hospital managers that an emphasis on cost control must detract from the quality of service rendered.

Conclusions

As a result of continuing demands for controlling costs and increasing efficiency in the hospital, some hospital managers are becoming aware of the role of management accounting in cost control. Many others are not.

Management accountants have developed many techniques and procedures, used successfully in profit oriented firms, that are also applicable to management in the hospital. Some of these techniques are

being used but, as a rule, not nearly to the extent necessary for efficient management of the hospital's resources.

Specific conclusions derived from the analysis of empirical data include the following:

1. Knowledge of modern management accounting applications in the hospital does not insure that they will be used by hospital managers in their planning and control decisions. The American Hospital Association furnishes literature on budgeting, responsibility accounting and variance analysis; while hospital journals provide literature on the use of contribution margin analysis, standard costing and flexible budgeting. Yet, few hospitals have progressed beyond budgeting by area of responsibility with oral explanations of variances.

2. The budgeting process in hospitals is hampered by the failure of hospital accountants to develop and present available data in a meaningful form. Hospital activity is too often measured by a single statistic, patient days, that is of little value to managers for measuring output in individual departments. Only one of the hospitals studied prepared a meaningful analysis of data to help managers prepare budgets.

3. Hospital managers know almost nothing about cost behavior patterns in their hospital. Flexible budgets are not used. The effectiveness of cost control is limited when variances between budgeted and actual performances are based on fixed budgets.

4. Cost planning and control in the hospital can be improved at a minimum of cost. In most hospitals, data are already accumulated by direct cost and area of responsibility, and most hospitals have access to a computer. Hospital managers are not using the capability of

available computers to develop meaningful trends and relationships from historical data. Nor, is any effort being made to apply statistical techniques to available cost data to identify the behavior patterns that make flexible budgeting feasible. Since most hospitals have access to a computer, the incremental cost of producing meaningful reports to management would be minimal.

Efficiency in the management of hospital resources is not currently up to the standard desired. Defective, sub-standard practices in cost planning and control must be improved.

Recommendations

Management Accounting Techniques

Several specific deficiencies in hospital management accounting were disclosed by this study. The following recommendations are presented as approaches to improving these deficiencies.

1. The management accountant should apply his information processing expertise toward improving the recording and analysis of historical operating data in the hospital. With the aid of the computer, the management accountant should:

- a. identify and measure basic cost behavior patterns; such as, fixed, variable, semifixed and semivariable;
- b. use the cost behavior knowledge to form a basis for developing flexible budgeting procedures;
- c. apply the cost behavior knowledge to practice through the use of relevant management accounting techniques. Only through an adequate knowledge of cost behavior can cost control techniques;

such as, standard costing, flexible budgeting and cost-profit-volume analysis be used with any confidence.

2. The use of variances between budgeted and actual performance needs to be refined. Reporting a total variance to a manager accomplishes little when the effects of changes in output, input, selling price and purchase cost are all included in one figure. The usefulness of variances in cost planning and control would be increased with the use of standard costs and flexible budgeting.

3. An increase in the exposure of the hospital manager to practical applications of management accounting techniques to hospital situations is needed. Three implications for the accounting profession are apparent here.

a. Accountants must learn more about the hospital industry to understand problems peculiar to hospital accounting.

b. Accountants must get involved in applying management accounting techniques to specific hospital management situations and thereby show the value of such techniques.

c. The accounting profession should continue supporting educational processes that spread an awareness of available cost control measures as widely as possible. This includes both an informative and a selling objective by:

- (1) expanding management advisory services;
- (2) emphasizing applications of management accounting to specific hospital problem areas;
- (3) continuing workshops and short courses oriented toward the hospital financial manager; and

- (4) increasing efforts by accountants, individually and collectively, directed at "selling" hospital management on the benefits to be gained by application of management accounting to hospital cost planning and control.

Recommendations for Further Research

Based on the analysis of empirical evidence gathered for this study, the following avenues for further research appear feasible.

1. The administrator is seen as a primary moving force in the development of the budgeting system in hospitals. Yet, little is known about the administrator as an individual, or how he develops a cost-conscious management environment in the hospital. A study to determine attributes peculiar to the innovative hospital administrator would be worthwhile.

2. Studies are made on the behavioral aspects of implementing budgets on people within the profit oriented enterprise. Similar studies, of the behavioral aspects of budgets on the groups of specialists comprising a hospital entity will provide insight into the budgeting process in hospitals; thus, hastening the implementation of effective budgeting.

3. Since this study, of necessity, was limited to a small segment of the hospital industry the data base is limited and conclusions about the hospital industry, as a whole, are tentative. Similar studies conducted elsewhere in the hospital industry could expand the data base sufficiently to support meaningful conclusions. Such studies are, therefore, recommended.

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APPENDIXES

APPENDIX A
INTERVIEW GUIDE

APPENDIX A

A STUDY OF ACCOUNTING BASED MANAGERIAL
PLANNING AND CONTROL TECHNIQUES USED
SELECTED OKLAHOMA HOSPITALS

Guiding Questionnaire for Personal Interviews

Series A

General Hospital Information (for the latest 12-month period).

A. Size

1. Beds _____
2. Admissions _____
3. Occupancy rate _____
4. Average length of stay _____
5. Full-time equivalent personnel _____
6. Total expense _____
7. Payroll expense _____
8. Number of patient days _____
9. Total assets _____
10. Plant Assets _____

B. Person Interviewed

1. Name _____
2. Position in the organization (title) _____

3. Education
- a. Selected college courses
 - b. B.A. or B.S.
 - c. M.H.A., M.A., M.S., or equivalent
 - d. Other (please specify)

4. Membership in professional organizations

- a. _____
- b. _____
- c. _____

5. How long have you worked for this hospital? _____

Series B: Use of an Outside Management Accounting Consultant

- B-1. How often has this hospital used the services of an outside management accounting consultant?
- a. Never
 - b. Once or twice
 - c. Frequently

If the answer to B-1 is never, disregard the remainder of Series B.

- B-2 The consultant was engaged primarily to do which of the following?
- a. Review the existing system.
 - b. Install a new system.
 - c. Improve the existing system.
 - d. Recommend a solution to a particular problem.

- B-3 Why did you seek the services of an outside management accounting consultant?
- a. Prefer an outsider to come in to make objective recommendations.
 - b. Reluctance on the part of people in charge to say what needs to be changed.
 - c. Shortage in the controller's staff.
 - d. Lack of required qualification by the internal staff.
 - e. More economical to call on an outside consultant than to hire a permanent management accountant.
 - f. Other (please specify).

- B-4. Approximately how often has hospital management decided to adopt the outside consultant's recommendations?
- a. Less than 50% of the time.
 - b. Between 50% and 75% of the time.
 - c. More than 75% of the time.

Series C: Accounting Based Managerial Planning and Control Techniques

- C-1. Cost-Volume Analysis
- A. Which of the following cost behavior patterns do you identify in your system?
- 1. Fixed
 - 2. Variable
 - 3. Semi-fixed
 - 4. Semi-variable
 - 5. Total cost only
- B. In your planning process, do you relate changes in cost to changes in volume of services performed?
- yes no
- C. Which method do you use in comparing cost to volume?
- 1. Graphical
 - 2. Mathematical
 - 3. Both
- D. How do you measure "volume of service performed" as used in cost analysis?
- E. How do you use the cost and revenue patterns derived by relating changes in cost to changes in volume in your hospital?
- 1. For rate setting
 - 2. For cost reimbursement
 - 3. For evaluating the addition or deletion of a service or department
 - 4. For comparison of costs in your hospital with costs in other hospitals
 - 5. For determining incremental costs relevant for outside work charging rates.
- C-2. Contribution Margin Reporting
- A. Does your hospital classify and report accounting data by segments of the organization?
- yes no
- B. Are those segments defined according to the lines of authority shown in your organization chart?
- yes no

- C. How many segments are identified? _____
- D. Does your hospital report segment contribution amounts to hospital managers?
 yes no
- E. What are the major applications of the contribution margin technique as practiced in your hospital?
 1. Cost control
 2. Cost reimbursement calculations
 3. To emphasize superior performance when it occurs
 4. Other (please specify)

C-3. Operating Budgets

- A. Do you use operating budgets in planning and control?
 yes no

If the answer to A is no, disregard the remainder of section C-3.

- B. Your budgeting process includes which of the following?
 1. Projection of revenues
 2. Projection of expenses
 3. Projection of both revenues and expenses
 4. Cash flow analysis
 5. Other (please specify)
- C. Operating budgets are prepared at which of the following intervals?
 1. one month
 2. 3 months
 3. 12 months
 4. More than 12 months (please specify)
- D. The budgets usually cover which of the following time periods?
 1. one month
 2. 3 months
 3. 12 months
 4. More than 12 months (please specify)
- E. Budgets are prepared for
 1. One level of activity
 2. Several levels of activity

- F. Who participates in setting the operating budgets?
- 1. Board of trustees and administrator
 - 2. Assistant administrator(s)
 - 3. Departmental managers
 - 4. The controller
 - 5. All of the above
 - 6. Other (please specify)
-
-
-

- G. What are the major objective(s) of the budget system?
- 1. To control expenditures
 - 2. To assign responsibility
 - 3. To force hospital management to define goals and quantify the means of attaining them
 - 4. To motivate employees
 - 5. To pressure employees to improve performance

- H. Do you prepare budget variance reports?
- yes no

- I. Are hospital management personnel furnished with copies of the budget plan?
- yes no

- If so, does their copy include data on
- 1. Their area of responsibility only.
 - 2. Comprehensive hospital budgets.

C-4. Capital Budgeting

- A. Does your hospital prepare capital budgets?
- yes no
- B. The capital budget(s) is(are) prepared in advance for
- 1. One year
 - 2. Two years
 - 3. Three to five years
 - 4. More than five years.
- C. What criteria do you use in making capital investment decisions?
- 1. Third party requirements (i.e., medicare, etc.)
 - 2. Accreditation by the state board
 - 3. Availability of cash
 - 4. Payback period
 - 5. Accounting average rate of return on investment

- 6. Discounted rate of return on investment (ROI)
- 7. Present value of the net cash receipts
- 8. Other (please specify)

D. Groups participating in capital investment decisions are

- 1. Board of Trustees
- 2. Other hospital management personnel
- 3. Controller
- 4. Doctors
- 5. Administrator

E. What are the major applications and objectives of your capital budgeting program?

- 1. Replacements only (cost savings)
- 2. Expansion and growth
- 3. Both replacements and expansion
- 4. Others (please specify)

F. Do you have a written policy on initiating requests for capital expenditures?

- yes no

C-5. Standard Costing

A. Do you use some form of standard costing in your hospital?

- yes no

If the answer to A is no, then disregard the remainder of section C-5.

B. How are the standard costs determined?

- 1. Technical engineering studies
- 2. Past historical cost
- 3. Expected future cost
- 4. From budgets prepared by managers of each segment
- 5. Other (please specify)

C. Do you use variance analysis to control operations and pinpoint responsibilities?

- yes no

D. In your hospital what are the major objectives of the standard costing technique?

- 1. To control cost
- 2. To measure performance
- 3. To provide data for costing services

- 4. To provide data for comparison of your hospital's cost performance with industry averages
- 5. To provide data for planning purposes

C-6

Responsibility Accounting

A. Do you have an organization chart?

- 1. Yes
- 2. No
- 3. Formal (i.e., in written form)
- 4. Informal

B. When was the organization chart last reviewed for necessary revisions?

- 1. Less than one year
- 2. One to two years
- 3. More than two years (please specify date)

C. Your performance reports are prepared in such a way as to:

- 1. Report only those controllable costs and expenses at each level of responsibility
- 2. Differentiate between controllable costs and uncontrollable costs, but total costs are reported to each level of responsibility
- 3. Report costs in total without differentiating between controllable and uncontrollable cost

D. What are the major objectives of responsibility accounting in your hospital?

- 1. Motivation--compensation
- 2. Control--fixing responsibility
- 3. Measurement of performance
- 4. Others (please specify)

E. Which of the following apply to your follow-up procedures for performance reports?

- 1. Performance of each department is compared with the other departments.
- 2. Managers are asked to explain deviations from performance at a performance review meeting.
- 3. Managers prepare written explanations of deviations from expected performance.
- 4. No follow-up procedures are used.

Series D: Reasons For Using or Not Using Each Technique Presented in Series C. To be answered for each technique (more than one response may be indicated for each question). Responses to this series will be explored during the interview.

If the technique is being used, questions D-1 through D-5 apply.

- D-1. When did your hospital start using the technique?
 a. Application has just started this year.
 b. Between 2 and 5 years ago.
 c. Between 5 and 10 years ago.
 d. More than 10 years ago.
- D-2. What occasion caused you to originally use this technique?
 a. To aid in solving a specific problem.
 b. Change in accounting philosophy (new controller).
 c. Change in management attitude.
 d. Competition factors.
 e. Legal requirements (Medicare, Medicaid, etc.).
 f. Industry-wide accepted technique.
 g. Other (please specify).
- D-3. What source suggested that you use this technique?
 a. Trade journal
 b. Administrator
 c. Newcomer
 d. Outside consultant
 e. Not known
 f. Other (please specify)
- D-4. How well satisfied are you with the results obtained by applying this technique?
 a. Extremely well satisfied
 b. Moderately satisfied
 c. Not satisfied
- D-5. In your opinion, this technique contributes to
 a. Cost minimization
 b. Relevant information for planning only
 c. Relevant information for control only
 d. Relevant information for both planning and control
 e. Rate setting for billing purposes
 f. Communication between operating segments
 g. Motivation
 h. Other (please specify)

If the technique is not being used, questions D-6 through D-9 apply.

- D-6. If you are not using this technique now, can you list some circumstances under which you might use it?
- a.
 - b.
 - c.
- D-7. If you have used this technique and then stopped, what were the main reasons for discontinuing its use?
- a. Too costly to operate
 - b. Too time consuming to work with
 - c. Lack of reliable data
 - d. Resistance by managers
 - e. Led to conclusions which were inconsistent with "service" philosophy of the hospital
 - f. Produced irrelevant information
 - g. Other (please specify)
- D-8. If you studied the technique and decided not to use it, why did you do so?
- a. Too costly to install and operate
 - b. Too complicated to understand
 - c. Potential savings from application were not apparent
 - d. Requires computer which is not available now in our hospital
 - e. Lack of available, written material on how to use it in hospitals
 - f. Resistance to change on the part of hospital management
 - g. Other (please specify)
- D-9. In case you have not investigated this technique, which of the following best describes your reason for not considering it?
- a. Not applicable to your hospital operation
 - b. Time pressure--too busy to think of applying any new technique
 - c. Shortage of accounting staff
 - d. Satisfied with the performance of the present system
 - e. Attitude of management toward changing system
 - f. Lack of written material on application to hospitals
 - g. Unaware of the technique
 - h. Other (please specify)

APPENDIX B

PRELIMINARY LETTER

APPENDIX B



Oklahoma State University

COLLEGE OF BUSINESS ADMINISTRATION

STILLWATER, OKLAHOMA 74074
(405) 372-6211 EXT. 258

December 7, 1972

Dear

Mr. Harold Nix, a doctoral candidate in the Department of Accounting, is doing his dissertation research under my direction. The subject of his study is the use of management accounting techniques in selected Oklahoma hospitals. The study will seek to determine both the extent to which these techniques are being used and the reasons for their use or non use.

The importance of management accounting techniques for efficient planning and control of organization expenses has long been recognized by industrial managers, and recent articles in the hospital literature indicate that many of the same techniques can be effectively used by hospital managers. However, almost no research has been done to determine the extent that hospitals use management accounting techniques or the circumstances in which these techniques have been found to be most useful.

The accompanying "Interview Guide" was constructed to help obtain information about how you are using management accounting techniques. Mr. Nix will call within the next week to arrange an interview with you so he can discuss the factors listed in this guide. Of course all of the information gathered by Mr. Nix will be confidential, and no hospital will be identified with any of the data reported in his study.

Mr. Nix will be contacting you shortly, and I hope you will be able to participate in this study.

Sincerely,

A handwritten signature in cursive script that reads "Germain Boer".

Germain Boer
Associate Professor
of Accounting

GB:kh/pf

VITA

Harold M. Nix

Candidate for the Degree of

Doctor of Philosophy

THESIS: AN INVESTIGATION INTO THE USE OF ACCOUNTING BASED MANAGEMENT
PLANNING AND CONTROL TECHNIQUES IN SELECTED OKLAHOMA HOSPITALS

Major Field: Business

Biographical:

Personal Data: Born in Ft. Collins, Colorado, June 18, 1931, the son of Mr. and Mrs. Ben M. Nix.

Education: Graduated from Colorado Springs High School, Colorado Springs, Colorado, in June, 1949; received the Bachelor of Arts degree in Business from Western State College, Gunnison, Colorado, in 1967, with a major in accounting; received the Master of Arts degree from Western State College, Gunnison, Colorado in 1969, with a major in Business; completed requirements for the Doctor of Philosophy degree at Oklahoma State University in December, 1973.

Professional Experience: Instructor in Accounting, Division of Business, Western State College, 1967-68; part-time instructor, Department of Accounting, Oklahoma State University, 1969-72; Assistant Professor, College of Business, Kansas State University, 1972-73.

Professional Activities: Certified Public Accountant, Colorado, 1972; member American Institute of Certified Public Accountants; member of the American Accounting Association; member of Beta Gamma Sigma; member of Beta Alpha Psi.