

APPLICATION OF MANAGEMENT THEORIES IN THE DEVELOPMENT  
OF CRITERIA TO ASSIST IN SOLVING IDENTIFIED PERCEIVED  
PROBLEMS OF THE CHIEF BUSINESS OFFICER IN SELECTED  
UNIVERSITY MEDICAL CENTERS

BY

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Abstract of Dissertation Presented to the  
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The purpose of this study was to develop a set of criteria to be used as a framework to assist in solving the major problems faced by chief business officers in academic medical centers.

The first phase of the study involved the identification of the problems as perceived by the chief business officers. This was accomplished through the use of an open ended questionnaire in which eighteen academic medical centers participated.

Once the problems had been identified a search of the available literature was conducted in order to develop a tentative set of criteria. The literature specifically dealing with medical centers yielded a paucity of information. Therefore, literature from the areas of business administration, educational administration and hospital administration was also incorporated in the review for tentative criteria.

Once the tentative list of criteria was developed it was submitted to a four member panel, knowledgeable in the area of business affairs in academic medical centers. The panel consisted of two medical center chief business officers (practitioners), one chairman of a Department of Hospital Administration (academician), and one Vice President for Health Affairs (chief executive officer). They reviewed the criteria with respect to their theoretical feasibility in academic medical centers. They responded by either agreeing with the criteria as written, offering a revision or totally disagreeing with the criteria, based on a stated rationale. Based on their responses a finally revised set of criteria was established.

It was observed by the writer that the areas of least revision by the panel were Physical Plant Operation, Personnel Services, Purchasing and Auxiliary Services. The areas of greatest revision and disagreement were Financial Accounting and Budget Preparation and Control.

The findings of this study indicate that the finally revised criteria, as opined by the panel were theoretically feasible to be used as a framework to assist in solving the major problems faced by chief business officers in academic medical centers.

## CHAPTER I INTRODUCTION

The chief business officer of a university is that person whose responsibility it is to insure that the business and financial functions are carried out in accordance with the guidelines of the governing board. In reference to these business and financial functions, the National Association of College and University Business Officers (NACUBO) has stated that the direct, primary functions of the chief business officer are:

- management of all financial operations of the institution, including design of the systems, preparation of reports, conduct of financial analyses, and provision of appropriate controls and audits
- participation with the president and the chief academic officer in preparation of the institutional budgets
- management of the physical plant, routinely in its operation and maintenance and, with other officers, in planning, design and construction decisions
- management of personnel programs
- management of purchasing, stores, and property control systems, and
- management, or financial control within institutional policy, of auxiliary enterprises and service departments. (1974, p.7)

An integral part of general university business affairs is that of medical center business affairs at those universities with such centers. Don Young, Chairman of the Group on Business Affairs, Southern Region of the Association

of American Medical Colleges stated:

There are numerous commonalities between the business affairs of the university in general and the medical center. Both are concerned with periodic accounting and reporting, budget preparation and control, and maintenance of the physical plant. Both have similar as well as unique problems. I feel the uniqueness of the problems of the chief business officer in the medical center revolve around such items as the various funding techniques for medical students, adaptability between the instruction function and that of dealing with a variety of patients, and having the necessary supplies and equipment for training as well as patient care even when budgets may be severely limited.  
(Note 1)

Norwood (1972) stated, "during the last five years there has emerged a new professional to join the ranks of all others who contribute to the administration of the American Medical Center" (p.5). He was referring to the medical center business officer. Kutina (1974) alluded to the emergence of the medical center business officer when he wrote:

The 114 academic health centers in the United States are remarkably diverse, complex, and extensive enterprises. Their total expenditures in fiscal year 1970-71 were in excess of \$1.7 billion. They were in the process of educating 40,487 students seeking the M.D. degree, another 27,225 interns and residents, plus 15,285 graduate students in the biological sciences. Full time faculty employed by these institutions numbered 26,504. It is obvious that in the aggregate academic health centers in this country are a major industry with a unique and critical role in relation to the welfare of society. There is no doubt in this author's mind that they warrant and require specialized modern managerial techniques, and present many challenging problems to the management scientist. (p.2)

There has been little or no research undertaken to identify the problems that Kutina mentions even though there appears to be some commonality of problems between the

university in general and the medical center. There is reason to suspect that there are at least enough commonalities in the body of literature that are applicable to university business affairs in general. These commonalities may have some applicability to the issues or problems in medical center business affairs.

The chief business officer in the medical center must deal with a wide range of individuals with diverse backgrounds. Specific examples include (a) physicians who play a dual and sometimes a triple role including those of academic medical professor, practicing professional physician and medical administrator; (b) hospital administrators; (c) nurses and other health related professionals; (d) national insurance agents; (e) architects and contractors and (f) the very essence of the institution, the students. Several authors, including Nance (1966), Russell (1967), and Davis (1956) have indicated that the chief business officer must be a person of absolute honesty, integrity, great vision, and possess the ability to get along with people. It is to this person, specifically the chief business officer of the university medical center, that this study was undertaken.

### The Problem

#### Statement of the Problem

The focus of this investigation was to establish criteria to be used as a framework to assist in solving

the major issues faced by chief business officers in selected university medical centers. Specifically, answers to the following sequented questions were sought:

1. What are the problems in the following seven major areas as perceived by the chief business officer: (1) financial accounting, (2) budget preparation and control, (3) physical plant, (4) personnel services, (5) purchasing, (6) auxiliary services, and (7) other areas of concern, i.e., grants management, systems and procedures?
2. From a review of the literature what are criteria that are useful in developing a framework to assist in solving the major issues faced by chief business officers?
3. What is the validity of these criteria from selected chief business officers, scholars in the field, and chief medical administrators?

#### Delimitations

1. Data for identifying the perceived problems of the chief business officers were confined to members of the Association of American Medical Colleges - Group on Business Affairs, who chose to participate. The determination of problem areas was confined to data gathered through an open ended questionnaire. The questionnaire was completed by 18 chief business officers selected from the various regions in the country comprising the Group on Business Affairs.
2. The development of criteria was confined to those related to the problems identified in the questionnaire. A search of the literature in Educational Administration, Hospital Administration, and Business Administration was used in deriving the criteria.
3. The validation of the criteria was confined to judgments provided by a panel consisting of two chief business officers, one scholar in the field of administration, and a medical center chief executive.



### Limitation

The limitation of the study may be found in the fact that the respondents may not be aware of all the perceived problem areas.

### Justification of the Study

Young (Note 1) as stated in the introduction of this study indicated there were some unique problems relating to the chief business officer of a medical center. However, there have been no previous studies which have attempted to identify the problems.

Dozier (1973) commenting on the role of the chief business officer stated:

The chief business officer is more under the gun to provide sophisticated services and to stretch the effectiveness of available dollars than he has ever been. New management concepts for college and university business officers have evolved, and automated computer supported systems for accounting and other functions are rapidly becoming the order of the day. (p.1)

The overall importance of the chief business officer and business office in general to the academic community was stated by Elmore (1970):

Few can argue with the fact that the business office today is the chief source of fiscal advice not only to the president, but also to the governing board. We have graduated from bookkeepers to managers with, in most cases, responsibilities and opportunities for service broader in scope than our brothers in business. Centralized purchasing and personnel departments are coping with a volume of state and federal regulations that stagger the imagination. Sophisticated boards and legislatures are demanding modern systems and business programs, including planned program budgeting and planning models. The role of our institutions in educating vast numbers of students, in community affairs, and in research, has forced the business office to employ the most capable

personnel available and to utilize the most up-to-date advances in the areas of computers and business equipment. Our physical plant, with its laboratories, air conditioning, and problems connected with vehicle parking, traffic control and power distribution requires the highest managerial and engineering skills. Finally, and of greatest importance, the business office has the responsibility for creating an economic climate and a service organization that will assist the institution in the fulfillment of its academic goals. (p.4)

The academic goals mentioned by Elmore have taken on a significant meaning in regard to medical centers. Most centers started with only a medical school and a participating hospital. According to Pellegrino (1975) these centers may include as many as eight different professional schools, affiliations with a half dozen or more hospitals, academic relationships with community colleges, regional programs and other community organizations. Relating specifically to the business problems in medical centers, Pellegrino stated:

Budgets and physical facilities have paralleled the growth in size and complexity of programs. These may in many instances equal those of the entire university or even surpass them. These budgets consist of funds from sources external to the university, and in large part their use is dictated by demands often only indirectly related to the needs of the rest of the university. The management of these funds requires a familiarity with intricacies of third party payers, clinical practice funds, and billing and collection from a wide range of consumers - all problems of a different genre than those familiar to university business officers. (p.224)

The rapid growth of university medical centers in both physical facilities and budgets has created a demand for criteria to evaluate proposed solutions to the unique problems of the chief business officer. This study attempts

to provide the criteria helpful in developing a framework to assist in solving the identified problems and at the same time contribute to the growing body of knowledge dealing with chief business officers in academic environments.

#### Assumptions

There are three obvious but essential procedural assumptions involved in conducting the investigation, these are as follows:

1. The chief business officer practicing in the field of university medical center business affairs is in a position to have a realistic view in order to identify perceived problems.

2. The writer, in summarizing the data from the survey, was able to identify similar perceived problems in spite of differences in wording by the respondents.

3. The selected jury had the expertise in business affairs relating to university medical centers to determine the soundness of the initial set of criteria developed from the literature.

#### Definition of Terms

Association of American Medical Colleges--Group on Business Affairs. A professional organization dealing with the policies, programs, and problems of American medical colleges. The group on business affairs was formed in 1967 to provide a forum for discussion of mutual problems related

to the administrative and fiscal affairs of medical schools. In addition the group provides educational programs for business officers in order to strengthen and extend their administrative and management capabilities.

Auxiliary services. One of the direct, primary functions of the chief business officer involving the management and or financial control of such enterprises as bookstores, housing operations, student unions, and radio and T.V. stations. Those auxiliaries specifically related to medical centers include animal quarters, bio-electronic shops, and instrumentation.

Budget preparation and control. One of the direct, primary functions of the chief business officer involving such things as dissemination of yearly budget worksheets to unit heads, projected annual income, periodic status reports to unit heads, and control of costs.

Chief Business Officer. That medical center official who is directly responsible for the financial operations, budget, physical plant, non academic personnel, purchasing, auxiliary enterprises and other functions as determined by his job description, as well as for purposes of this study being the voting member of the Group on Business Affairs (AAMC) from his or her institution.

Criteria. Standards on which judgments or decisions may be based. As used in this study they are derivations from the literature made by the writer and validated by the panel.

Financial accounting. One of the direct, primary functions of the chief business officer involving such areas as the basic bookkeeping functions of the institution, preparation of periodic reports, design and maintenance of the accounting system, and payments for the services and supplies.

Panel. Those persons who will validate the criteria derived from the literature to be used as a framework to assist, in solving the major issues faced by chief business officers in university medical centers. The panel will consist of two chief medical center business officers, one scholar in the field of administration and a chief executive of a university medical center.

Perceived problems. The awareness of something difficult to solve. As used in this study they refer to those perceived problems or issues of chief business officers in university medical centers that are derived from the questionnaire.

Personnel services. One of the direct, primary functions of the chief business officer including such things as employment of non-academic personnel, information and service relating to staff benefits, training programs, salary plans, fringe benefit packages, and where applicable union contracts and negotiations.

Physical plant. One of the direct, primary functions of the chief business officer including such things as facilities operation and maintenance and participation with

other officers in planning, design, and construction decisions.

Purchasing. One of the direct, primary functions of the chief business officer involving such things as the routine of requisitions and purchase orders for goods and services, bid policies and procedures, and the supervision of stores.

University Medical Center. Those academic enterprises consisting of a school of medicine plus the interfacing components of its umbrella university and affiliated hospitals included to the extent that these components either supply resources which are required to produce the output program for which the medical school is responsible, or to the extent that they consume resources which the medical school supplies (Kutina, 1974, p.1).

Validation. Supported by generally accepted authority. As used in this study it refers to the judgment as rendered by a panel.

#### Review of Authoritative Opinions Relative to Educational Business Management

In conducting the review of literature and research related to this study, the writer concentrated on the business management of higher education. However, where appropriate, other levels of educational business management were incorporated into the literature review.

In order to develop an understanding of the major functional areas of responsibilities of medical center business officers, a review of the literature and research contained herein includes both empirical investigations and authoritative opinions in six areas.

1. Financial accounting
2. Budget preparation and control
3. Physical plant
4. Non-academic personnel services
5. Purchasing
6. Auxiliary services

#### Financial Accounting

In attempting to arrive at a workable definition of accounting, Scheps and Davidson (1970) stated, "accounting is the means through which financial data necessary to the efficient administration of colleges and universities are recorded, classified, and reported to institutional officers, controlling bodies, and the general public" (p.3). Another concept of accounting and financial reporting was discussed by Chambers (1968) "reporting the income and outgo of dollars and showing where the money goes and what value is obtained for the dollars expended" (p.47). Chambers also made the point that accounting as found in colleges and universities is somewhat specialized when he stated:

Accounting is an exacting profession. Mastery of its technicalities requires years of study and practice. College and university accounting is a specialized branch, or might perhaps better be called a separate profession. This is because the main body of

accounting knowledge and techniques has been developed for use in private business wherein the dollar profits or losses usually quickly determine the fate of the enterprise; whereas in higher education nearly all the institutions are either public or private nonprofit corporations, in whose operation monetary gains to private individuals are interdicted. (p.49)

In discussing the requisites of a satisfactory accounting system, Russell (1967) felt:

Three general characteristics are requisite to a satisfactory accounting system: (1) the system must safeguard the funds of the institution; (2) it must yield the information that is necessary for administrative control; (3) it must be as simple as possible. (p.50)

Expanding on the characteristics as mentioned by Russell is an objective in an accounting system of providing information to assist (1) management in the effective allocation and use of resources and (2) the general public, investors, creditors, and others in evaluating the effectiveness of management in achieving organizational objectives (NACUBO, 1974).

Wattenbarger (1972) alluded to the aforementioned objective when he stated:

. . . the development of soundly based record keeping systems is essential . . . When the chief fiscal officer learns to carry out this responsibility with a high degree of skill, he will make his most important contribution. (p.284)

Commenting on a sound record keeping and accounting system Miller, Madden, and Kincheloe (1972) stated:

Accurate accounts serve several purposes: (1) They represent a prudent control upon public funds. Such accounts, accurately audited periodically, give assurance that public servants handling the funds have done so honestly in accordance with the will of



the people and the laws of the state. (2) They also serve as a protection to the custodian of funds, for he has objective proof of his faithful performance whenever he may be challenged. (3) Such accounts provide the basis for reporting to the public on the condition of the schools and their needs. They provide the basis for filling out reports to the state or to federal agencies entitled to such information. (4) Accurate accounts provide the basis for analyzing the business practice with an eye to making improvements in it. (p.319)

Furthermore, Nelson and Purdy (1971) in discussing recommended practices in accounting stated:

1. Encumbrances should be posted daily and not less frequently than weekly, and it should be possible to examine purchase orders and contracts issued since the last posting of encumbrances so that the business administrator may determine the exact status of any account immediately.
2. Financial reports should be given to principals and branch heads regarding their supply accounts on a monthly basis.
3. A monthly financial statement showing budget appropriations, transfers into or out of the account, expenditures, encumbrances, and unencumbered balances should be supplied the board. Likewise, budgeted receipts, receipts to date and a revised estimate of receipts should be shown. (p.105)

Fund accounting is used to satisfy the requirements to account properly for the diversity of resources and their uses in colleges and universities. According to NACUBO, (1974):

Fund accounting is the manner of organizing and managing the accounting by which resources for various purposes are classified for financial accounting and reporting purposes in accordance with activities or objectives as specified by the donors, with regulations, restrictions, or limitations imposed by sources outside the institution or with directions issued by the governing board . . . A fund is an accounting entity with a self-balancing set of accounts consisting of assets, liabilities, and a fund balance, separate accounts are maintained for each fund to insure observance of limitations and restrictions placed on the use of resources. (p.178)

In order for the chief business officer and other administrators to control their expenditures and stay within the limits of their appropriations and use of resources the accounting system should be based on the accrual method as opposed to the cash method. In discussing the accrual method Morphet, Johns, and Reller (1974) stated:

Under accrual accounting (1) estimated revenues are counted as available when earned, even though the cash has not been received, but estimates are adjusted periodically for gains or losses, (2) as soon as contracts or purchase orders are signed, the obligations so incurred are charged immediately to the account affected as encumbrances and when the corresponding bill is paid, the procedure is to credit the account with the original encumbrance and charge the final payment to it. (pp.479,480)

The cash basis on the other hand shows only income actually received during a fiscal period and only expenses paid during a fiscal period. Under the cash basis there are no provisions for encumbrances and herein lies the weakness of the cash basis as it relates to college and university accounting. In order to reflect all income earned even though not necessarily received and all expenses incurred even though not necessarily paid for it is a necessity that the financial statements of the college or university be prepared from an accrual basis accounting system.

The preparation of financial statements from the accounting records comes under the purview of the chief business officer (Morphet et al., 1967). Financial statements should be understandable, commenting on this point Priscilla (1970) stated:

After internal procedures are decided and financial statements are prepared, financial officers of colleges and universities must be certain that their statements are not presented in such a manner that only a trained financial analyst could begin to understand them. (p.55)

Wilkinson (1973) addressing himself to the topic of college and university financial statements quoted some of the college trustees where he is treasurer, "we don't understand your financial reports. We've never understood them. Further we don't understand financial reports of other colleges and universities either." Wilkinson's reply was "that he could sympathize with the expressions of the trustees and revealed he didn't understand the financial reports and he had been writing them" (p.1). Wilkinson felt the businessman was entitled to more than the traditional college financial statements (balance sheets of six to eight pages, changes in fund balances, and current funds, revenues, expenditures, and other charges) when he stated:

The businessman is not looking for an earnings-per-share at his alma mater. He knows there is no profit or loss in a non profit institution. But he is entitled to something more meaningful than the so-called current funds "surplus" or "deficit" which has been foisted on the gullible public for years as the answer to "how did the university do?" The treasurers report should show readily and distinctly whether the university ended the year with more or less tangible resources than it had at the beginning, and in what form, whether buildings, endowment or working capital. (p.1)

Wilkinson's contribution in attempting to make college and university financial statements more understandable to laymen lies in the fact that he presented consolidated finan-

cial statements as well as traditional audited statements in generally accepted fund accounting format in the annual report. To show the businessman what happened between balance sheet dates, a consolidated change in fund balances statements puts it all together. Wilkinson said:

The balance sheet includes all transactions, not just those selected to run through the current funds. The consolidated changes in fund balances statement can be supplemented with a quick history of major fund groupings to provide some appreciation of the recent years' changes within the university's "equity". Finally elements from the consolidated balance sheet and the changes in fund balances statement might be combined to give management and the businessman a kind of consolidated cash flow. (p.3)

Wilkinson was advocating supplemental statements, he was not recommending abandonment of fund accounting principles. In regards to the balance sheet for greater understanding, Priscilla (1970) felt that it should not contain any more than two pages, as opposed to the traditional six to eight pages.

#### Budget Preparation and Control

One definition of a budget was defined as "an itemized, authorized, and systematic plan of operation, expressed in dollars, for a given period" (NACUBO, 1974, p.157). According to Nance (1966, p.9) budgeting is a widespread financial activity. He felt budgeting was an opportunity to enhance one of the few direct and regular participations between faculty and administration. One important aspect of budgeting is an efficient system of controls (Nance, 1966, p.9). Dozier (1973) also mentioned the control aspect when he said:

Fiscal controls are essential in operating a college or university. The budget of an institution is a statement in financial terms of its program. It is also one device for establishing controls. The chief business officer should have clearly developed policies and control devices to insure that expenditures are made by authorized persons and that budget limits are not exceeded. (p.11)

A further aid in control according to Morphet, Johns, and Reller (1974, p.479) is that there should be a centralized administration of the budget, no budget can be kept in balance if numerous persons make expenditures without pre-authorization. Bielen's (1974) research on guidelines for budget administration confirms Morphet et al. statement.

Budgetary procedures can be divided into three steps according to Russell (1967) when he wrote:

The first step, preparation, involves the making of the financial plan. The second step, adoption, is an act by the board of trustees or other controlling agency. The final step, execution and control, covers the management of the budget during the fiscal year to which it related. (p.73)

There was no uniformity found in the literature as of the time of this research (mid 1970's) as to when the budget preparation should begin. "An acceptable starting month would be eight to ten months in advance of the effective date of the budget," (Baker, 1970, p.52). Nance (1966) stated, "it is customary for an institution to take as much as 6 to 8 months in developing the budget for the approaching fiscal year" (p.9). Green (1973, p.3) felt that it was necessary to begin working on the upcoming fiscal year budget 12 to 16 months in advance of its adoption. During the preparation stage a number of events will need to take

place: a calendar of events - leading from the beginning of the formation of the budget to final adoption, instructions and forms to be filled out by heads of budgetary units, i.e., departments, divisions; consolidation of the budget by the business officer; review of the budget by a budget committee; submission of the budget to the president; president reviews and makes recommendations to the governing board or controlling agency; and approval but not necessarily as submitted by the governing board or controlling agency (Baker, 1970, pp.53-54).

In order to show the relationship of the chief business officer and the role of the business office once the budget has been approved and adopted (step two) Richardson, Blocker, and Bender (1972) stated:

. . . all subunits are informed of their allocation and are faced with the responsibility of living within them. The business office, on the other hand, is responsible for ensuring funds are available for expenditure requests. It need not exercise judgment on the relative importance of such requests. In a similar manner, priority determination is not the responsibility of the business office, but rather, a shared responsibility for all the officers concerned. In consequence, the business office emerges as a service function and not as a source of educational decisions. (p.147)

The third step in the budgetary procedures as previously mentioned by Russell was execution and control.

NACUBO (1974) stated:

Without good control, the value of a budget is seriously decreased, regardless of how accurately or how carefully it is prepared. One of the main purposes of budgetary control is to insure that expenditures do not exceed allocations . . . Budget control starts with those responsible for each

budgetary unit. The chief business officer has responsibility for overall budget control, including responsibility to call attention to major departures from budget estimates and to take appropriate follow-up action. The department chairman, however, has the primary responsibility for control of expenditures within his budgetary unit. (p.164)

Additionally, Nelson and Purdy (1971) stated:

It is not enough to have a good budget soundly developed, understood by all concerned, and balanced perfectly. It is of equal importance to exercise proper budgetary control. No purchase order should be issued until it is ascertained from the accounting branch that the necessary unencumbered balance in the budget appropriation account is available. No contract for employment should be issued until such information is likewise obtained. (p.93)

Bielen (1974) in stressing the importance of budgetary practices in community colleges, developed 17 guidelines relating to the administration and or control of the budget. The guidelines were developed in the following operational areas: reporting and record keeping; internal auditing; accounting; organization; purchasing; communication; attitude (psychological factors); and electronic data processing. Bielen (1974) observed that the "operationally feasible guidelines were more orientated toward centralization" (p.60). However, numerous applications do appear to be workable in a decentralized setting of budget administration.

#### Physical Plant

In a study of the role, scope, and functions of the chief business officer in 89 liberal arts colleges it was found that 85.4 per cent of the chief business officers had direct responsibility for maintenance of the physical plant (Knauth, 1955, p.41).

According to NACUBO (1974) the function of operation and maintenance of buildings, grounds, and other physical facilities of an educational institution should fall within the business administration of an institution. NACUBO (1974) in commenting on facilities operation and maintenance stated:

The physical plant organization is concerned fundamentally with timely service operations, maintenance, alterations, and related activity pertaining to the facilities portion of a total learning environment. For administrative purposes, the physical plant office should be organized according to functions . . . Normally there are at least six basic areas of responsibility in the physical plant office: administration, building and equipment maintenance, custodial services, utility systems, landscape and grounds maintenance, and major repairs and renovation. (p.109)

The maintenance of buildings and equipment includes such responsibilities as minor repairs for equipment and buildings, painting, and preventive maintenance that can be handled by full-time, skilled or semi-skilled physical plant employees. McRae (1974) developed six simple steps for starting a preventive maintenance program and concluded that "when fully implemented an effective PM program will reduce the breakdown maintenance work load, shifting it from when you have to do repair work to when you want to do it. Work that can be scheduled can be done more efficiently and at a lower unit cost" (p.42). Examples of employees in the maintenance and operation section include electricians, plumbers, painters, carpenters and skilled mechanics. Some of the considerations that should be observed when setting



up a maintenance program were stated by Davis (1959):

- Put maintenance on a scheduled, planned basis, rather than an intermittent breakdown basis
- Establish direct control of the maintenance labor force
- Guard against and eliminate overmaintenance as well as undermaintenance
- Insure corrective action before advanced deterioration requires major repairs
- Correlate the work force and the work capacity of each shop or work center with its assigned workload
- Determine what each job should cost for comparison with actual cost (cost accounting system). (pp.2-6)

Custodial care includes sweeping, mopping, waxing, dusting, refuse disposal and similar daily routines required to keep buildings in a clean, orderly and comfortable condition. In order to have an effective and efficient custodial staff many universities, for example, the University of Minnesota, Auburn, and Ohio State conduct an ongoing training program (Leverone, 1959).

The mechanical plant (heating, air conditioning, and utility systems) may supply services to the physical plant directly from raw energy sources or by acting in varying degrees as intermediary between existing outside utilities and the university complex (McKay, 1970). These services include such items as steam, chilled water for air conditioning, electricity, hot water for heating, compressed air, and storm and sanitary drainage. Calvin Green, a past National President of the Association of Physical Plant Administrators stated:

The mechanical plant is usually the most expensive section of the physical plant division in terms of operating costs. It involves the most complex machinery and equipment and its employees are the most technically orientated. Approximately 60 per cent of the professional engineers on the staff will be involved with work directly related to the mechanical plant. (Note 2)

As stated in a report, NACUBO (1974) felt that properly maintained, "attractively landscaped grounds will enhance the respect shown the institution by students, staff, and the general public" (p.113). NACUBO (1974) concluded that this responsibility required a large enough staff to maintain lawns, shrubbery, flower beds, walkways, parking areas, and to remove snow and perform similar duties. It appears appropriate that a campus master plan for landscape development and utilization be instituted. A NACUBO (1974) publication relevant to the point noted:

. . . the plan should be prepared by a landscape architect engaged especially for the purpose or by the institution's supervising architect. The master plan should include projections of the locations of future buildings, roads, parking lots, walkways, and playing fields and give consideration to sub-surface utilities and the practical aspects of maintaining all items in the most efficient manner. (p.113)

Other functions which may be a responsibility of the physical plant division include campus security: communications e.g. telephone service, mail service, transportation, and waste disposal.

#### Non-Academic Personnel Services

Personnel administration is a systematic approach to manpower recruitment, utilization, compensation, and development (NACUBO, 1974). The personnel office faces a

challenging role in the recruitment of non-academic employees due to the diversity of skills needed to operate a college or university. Wagner (1964) discussed this diversity when he said:

The non-academic personnel include staff for (a) general institutional development, public relations and publicity, fund raising, and special events, (b) academic-related activities, ranging from student recruitment to registration, and student services including housing, discipline or counseling, to medical care, (c) management of auxiliary accommodations, such as dormitories, dining rooms, campus store, and telephone service, (d) maintenance and custodial services for buildings and grounds, (e) purchasing, and (f) fiscal operations, including billing collections, and accounting, and the handling of budgetary detail, insurance, estates and bequests, and investments. A wide range of categories and qualifications is covered in this outline, involving trained and experienced specialists, administrative assistants, accountants, supervisors, maintenance force, maids, janitors, and other custodial or service staff. (p.18)

Some of the major personnel functions were discussed by MacLean (1972) when he stated:

College and university personnel people now are required to become experts in all kinds of things. We thought we had enough to do when we had to deal with employment, wage and salary administration, personnel records, computers, staff labor relations, retirement, insurance and other staff benefits, basic personnel policies, and training, to name some of the major items on the smorgasbord we faced just a few years ago . . . Now we are looking at such things as unemployment compensation, OSHA (Occupations Safety and Health Act), equal employment opportunity, faculty collective bargaining, and wage and hour laws. (p.30)

These newer areas of personnel administration were also discussed by Buckley (1973) when he wrote:

University personnel administration is becoming more centralized and coordinated on a university-wide basis. The complexity and diversity of the university as an organization as well as increased size and the development of the "megauniversity" are several influencing factors . . . In the personnel field, such activity includes development and expansion of programs such as affirmative action, unemployment compensation, and labor relations. (p.28)

The complex nature of personnel administration according to Morphet et al. (1967) "suggests that this office will be at least as important in the future as it has been, though its functions and functioning will be substantially modified". (p.412).

#### Purchasing

The basic objective of a purchasing department should be to identify, select, and acquire needed materials and services as economically as possible and within accepted standards of quality and service (NACUBO, 1974). Furthermore, NACUBO (1974) stated:

This should be done in a timely and organized manner that provides for essential accountability of university expenditures. Although the purchasing process should be a joint effort among the using department, purchasing department, and vendor, the purchasing department must have the final authority to conduct and conclude negotiations concerning prices and conditions of sale. (p.95)

The purchasing process was discussed by Richardson et al. (1972) when they wrote:

The purchasing process is both complex and time consuming. However, purchasing procedures can result in substantial savings to the institution. Of all aspects of purchasing, the development of bid specifications is probably the most complex. (p.152)

Ritterskamp, Abbot, and Ahrens (1961) concluded that purchases could be made without bids, with informal bids, and by formal bids. In discussing these items they said:

The reason for requesting quotations, whether formally or informally, is to set up the basis for an offer from a vendor which may be converted into an acceptance by issuance of the purchase order, a contract resulting. Informal bidding is often used when time is a very important factor. Informal negotiations may be handled by local or long distance telephone, telegraph or personal negotiation. Formal bids are used in public institutions where the amount of the purchase exceeds the limit set by law and in private institutions where the purchase is of appreciable cost. Formal bidding procedures are formally spelled out and tend to become detailed. (pp.64-65)

In order to acquaint the faculty and staff of the institution about purchasing procedures it has been found useful to summarize procedures in an attractive brochure (Walters, 1974). This brochure if put together properly can reduce the amount of routine contact of the various academic departments with the purchasing department, thus saving valuable time for regular purchasing procedures.

The normal purchasing procedures consist of a user department making its requirements known to the purchasing department, the purchasing department conducting negotiations for purchases, selecting suppliers, and issuing purchase orders.

#### Auxiliary Services

In almost all institutions of higher education there are certain activities or enterprises maintained that, while not a part of the educational program, are nevertheless essential to its success (Russell, 1967). These

enterprises can be grouped together under the general classification of auxiliary activities. Examples of auxiliary activities are residence halls, dining facilities, bookstores, infirmaries, animal farms and laboratories, student unions and printing shops. A common characteristic of auxiliary activities as stated by Russell (1967) was:

. . . the expectation that the income they produce will meet all expenditures occasioned by their operation. In this respect the auxiliary activities contrast with the educational program, which is normally expected to have some subsidy from tax appropriations, endowment, or other sources. (p.319)

The Association of American Medical College (AAMC)

(1972) stated:

During the late 1950's, college and university administrators began to recognize the existence of a series of major new factors in medical education which necessitated more sophisticated administration of business affairs . . . One of these factors was the increasing diversity of auxiliary enterprises, such as animal farms and laboratories, patient care units, research enclaves, etc. (p.49)

Because of the large number of auxiliaries on college and university campuses as well as the diversity of products and services offered by them NACUBO (1974) stated:

Each auxiliary enterprise must have clearly written, detailed administrative policies. Otherwise, confused operating procedures and overlapping authority may result. If an outside agency conducts the activity, the written policy is replaced by a legal contract or agreement. Such contract services may include the operation of food services, housing, hospital, and newspaper and other institutional printing. In such cases, the officer responsible generally serves as contract liaison between the institution and contract service agency. (p.103)

Finally, the operations of auxiliary activities should have separately drawn statements with supporting detailed schedules of revenues and expenditures for each enterprise (Dozier, 1973).

#### Generalizations

The chief business officer in university medical centers needs to have a combination of both general and specific knowledge in at least six functional areas. These areas are financial accounting, budget preparation and control, physical plant, non-academic personnel services, purchasing, and auxiliary services. The individual institution will determine the degree to which each chief business officer becomes involved with the six areas. These six areas and possibly others as derived from the questionnaire were used as a basis for the examination of problems and the development of criteria to be used as a framework to assist in solving the major issues and problems that were identified. An analysis of the membership of the Association of American Medical Colleges - Group on Business Affairs revealed that most of the chief business officers were concerned to a greater degree with two of the functional areas than the other four, those being grants management (financial accounting) and budget preparation and control (Himmelsbach, 1972, p.22).

#### Procedures

The procedures section is divided into three major

sections describing the conducting of the problem survey questionnaire, the development of criteria from the literature and panel validation of the criteria.

Conducting the problem survey questionnaire. This phase of the study involved the selection of the survey participants, administering the survey instrument, and interpretation of the survey questionnaire.

Selection of the survey participants. The participants were randomly selected and then contacted by telephone until 18 agreed to participate in the study. The participants were selected from among the chief business officers of the 116 institutions throughout the United States who are members of the Group on Business Affairs of the Association of American Medical Colleges.

Administering the survey questionnaire. The survey questionnaire (Appendix A) was briefly discussed during the telephone conversation with each willing participant. Examples of perceived problems were given by the writer at this time as an aid to the participants. The survey questionnaire was then mailed to the participant and included a stamped self-addressed return envelope to the writer. Follow up letters were sent if the questionnaire was not returned to the writer within two weeks of the date of initial mailing.

Interpretation of the survey questionnaire. The survey was interpreted in such a way as to arrive at the most frequently identified perceived problems under each major



functional responsibility as well as other areas of concern. Problems of a like nature or those stated in similar terms were restated into a single statement. In order to be considered for establishing criteria, a similar problem must have been identified by at least two chief business officers.

✓ Development of criteria from the literature. The initial criteria were developed from a review of the literature relating to hospital administration, educational administration, and business administration.

Panel validation of the criteria. This phase of the study dealt with the selection of the panel, instructions to the panel, and use of the responses from the panel.

Selection of the panel. The panel consisted of four members selected on the basis of their willingness to participate in the study. The four members included two practicing chief business officers from university medical centers, one scholar in the field of administration, and a chief executive officer of a university medical center. The panel was approved by the writer's supervisory committee.

Instructions to the panel. The panel was asked to review the criteria which the writer formulated. The criteria were placed in a format that required each panel member to determine if the criterion was applicable as stated or was in need of revision. The panel members were then required either to provide the revision or to determine that the criteria were totally inappropriate.

Use of the responses from the panel. Where appropriate changes to the criteria were made. The revised set of criteria were made available to all interested persons through the Journal of Medical Education which is the official publication of the Association of American Medical Colleges.

#### Organization of the Study

In Chapter II the perceived problems of the chief business officers as developed from the survey questionnaire are stated under the following headings: financial accounting, budget preparation and control, physical plant, personnel services, purchasing, auxiliary services and other areas of concern. In Chapter III criteria was established from the literature relating to educational administration, business administration, and hospital administration. These criteria are used as a framework to assist in solving the major perceived problems identified in Chapter II. Chapter IV contains the revisions to the criteria as put forth by the panel. Chapter V presents a summary of and general observations concerning this study.

CHAPTER II  
IDENTIFIED PERCEIVED PROBLEMS AS DEVELOPED FROM  
THE SURVEY QUESTIONNAIRE

In order to be considered as an identified perceived problem the problem must have been identified by at least two chief business officers. Those institutions participating in the survey are listed in Appendix B.

Problems of a like nature or those stated in similar terms have been restated into a single statement. Summarily, the survey revealed four perceived problems in Financial Accounting; four perceived problems in Budget Preparation and Control; three perceived problems in Physical Plant; three perceived problems in Personnel Services; two perceived problems in Purchasing; one perceived problem in Auxiliary Services; and four perceived problems in Other Areas of Concerns.

Specifically the identified perceived problems were as follows:

Financial Accounting

1. In those Health Centers where the financial records are processed and maintained by the main campus there is too great a time delay in receiving necessary information for up to date reporting purposes.
2. The format of the reports as generated by the main campus is not in a meaningful format for internal and external reporting requirements of the Medical Center.
3. Where the main campus processes and exercises control of the final bill payment efforts to assure timely payments to vendors is meeting with limited success.

4. The accounting system has been designed to serve a University's total needs as opposed to the needs of the individual colleges within it. It is therefore difficult to obtain a clear picture of the Health Center's functions in program budget terms. As a consequence, the lack of program definition within the basic accounting structure makes it difficult to relate resources to programs and objectives.

#### Budget Preparation and Control

1. Extensive lead time required in submission of the budget to State authorities, often as much as fifteen months in advance of the beginning of the fiscal year.
2. Extensive multi-level review and approval of the budget.
3. Projecting annual income from local, state and federal sources.
4. The establishment of adequate guidelines at the time budget worksheets are distributed to deans and departmental chairmen for preparation of budget requests, thus eliminating poor understanding of forms and the budget process.

#### Physical Plant

1. Difficulties in accomplishing priorities with the main university physical plant department to have construction and alteration work completed within the framework of Health Center deadlines.
2. Determination of what should be charged to departments for maintenance and operation and that which should be funded by the physical plant department.
3. Control of physical plant costs and the determination of a unit cost for various services.

#### Personnel Services

1. State Personnel Plan is not adequately responsive to specialized needs of the vast array of health related positions.
2. Employee dissatisfaction when reaching the top of their pay ranges, thus allowing for no further merit increases.
3. Maintaining benefit programs which are competitive with those in the community and with other institutions.

### Purchasing

1. Required use of state contracts for certain items that can be obtained cheaper at local outlets.
2. Extensive lead time required in processing certain services, equipment, etc. that must use the bid procedure.

### Auxiliary Services

1. Determination of the optimum method of financing such services or animal facilities; machine shop; photography shop; and bioelectronic shop.

### Other Areas of Concerns

1. Poor property control both in terms of records and keeping up with the individual pieces of equipment.
2. Legal services required by the Health Center which are performed by the main campus can take many months, before responses are received to inquiries.
3. Development of adequate systems and procedures and promulgation of such written documents so that personnel affected by them are aware that such written procedures exist and can use and understand them.
4. Compliance with OSHA provisions.

CHAPTER III  
DEVELOPMENT OF THE CRITERIA FROM A  
REVIEW OF RELATED LITERATURE

The review of related literature provided the basis for the establishment of criteria. Specific answers to the identified problems as stated in chapter two were not sought because of the diversity among the one hundred and fourteen medical centers in the United States. Rather a theoretical base was used in the development of the criteria to assist in solutions in the six major functional areas of responsibility of medical center business officers. Numerous theories were researched including accounting theory, budgetary theory, personnel management theory, price theory, decision theory, information and communication theory and general systems theory.

Financial Accounting

In discussing Accounting concepts and principles Seawell (1975, p.22) felt that accounting is a service activity whose major function is the provision of qualitative information for use in economic decision-making by groups internal and external to the enterprise. Without this information, intelligent decisions cannot be made by managements, by providers of funds or by creditors, and chaotic conditions would prevail in all sections of our socio-economic environment.

In order to provide qualitative information Seawell (1975) said:

It is imperative that there be some reasonably uniform and generally accepted body of concepts and principles underlying the accumulation and communication processes of accounting. Only through the application of commonly observed rules and standards can the myriad and complex affairs of economic entities be recorded and reported in a meaningful and useful manner. Otherwise, the adequacy and reliability of the information generated by the accounting process would be open to question. There must be a consensus among accountants as to generally accepted accounting principles if the end product of accounting is to be understandable and useful to decision-makers. (p.22)

Better accounting - understandable and reliable accounting in which users can have confidence as a sound basis for planning and control - begins with the general acceptance of a body of basic concepts and principles as a theoretical foundation from which more specific and detailed accounting procedures and practices can be derived.

Hendriksen (1965, p.83) felt that the basic assumptions on which principles rest are postulates and that they should be few in number.

According to Webster's Third New International Dictionary (1961), the most relevant definitions of postulates appear to be (1) "a proposition advanced with the claim that it be taken for granted or as axiomatic," and (2) "an underlying hypothesis or assumption" (p.1773).

Chamber (1963) stated that postulates are "propositions enunciated without proof - either because no proof can be given, or because the assent of others to such propositions

can be reasonably expected - and used in the derivation of other propositions" (p.9).

Therefore, postulates are basic assumptions or fundamental propositions concerning the economic, political, and sociological environment in which accounting must operate.

The basic criteria for postulates were put forward by Hendriksen (1965) when he stated:

They must be relevant to the development of accounting logic; that is, they must serve as a foundation for the logical derivation of further propositions; and (2) they must be accepted as valid by the participants in the discussion as either being true or providing a useful starting point as an assumption in the development of accounting logic. (p.83)

Moonitz (1961) selected fourteen postulates as being relevant and basic although they do not necessarily represent a complete list of all the basic assumptions of financial accounting theory. The fourteen postulates are classified as one of three types: (1) generalizations regarding the economic and political environment of accounting; (2) propositions relating to the field of accounting; and (3) imperatives relating to the field of accounting. The fourteen postulates as selected by Moonitz (1961) were as follows:

#### The Environmental Postulates

Postulate A-1. Quantification. Quantitative data are helpful in making rational economic decisions, i.e. in making choices among alternatives so that actions are correctly related to consequences.

Postulate A-2. Exchange. Most of the goods and services that are produced are distributed through exchange, and are not directly consumed by the producers.



Postulate A-3. Entities (including identification of the entity). Economic activity is carried on through specific units or entities. Any report on the activity must identify clearly the particular unit or entity involved.

Postulate A-4. Time period. (including specification of the time period). Economic activity is carried on during specifiabile periods of time. Any report on that activity must identify clearly the period of time involved.

Postulate A-5. Unit of measure (including identification of the monetary unit). Money is the common denominator in terms of which goods and services, including labor, natural resources, and capital are measured. Any report must clearly indicate which money (e.g., dollars, francs, pounds) is being used.

Postulates Related to the Field of Accounting  
Postulate B-1. Financial statements. (Related to A-1). The results of the accounting process are expressed in a set of fundamentally related financial statements which articulate with each other and rest upon the same underlying data.

Postulate B-2. Market prices. (Related to A-2). Accounting data are based on prices generated by past, present or future exchanges which have actually taken place or are expected to.

Postulate B-3. Entities. (Related to A-3). The results of the accounting process are expressed in terms of specific units or entities.

Postulate B-4. Tentativeness. (Related to A-4). The results of operations for relatively short periods of time are tentative whenever allocations between past, present, and future periods are required.

#### The Imperatives

Postulate C-1. Continuity (including the correlative concept of limited life). In the absence of evidence to the contrary, the entity should be viewed as remaining in operation indefinitely.

Postulate C-2. Objectivity. Changes in assets and liabilities and the related effects (if any) on revenues, expenses, retained earnings, and the like, should not be given formal recognition in the accounts earlier than the point of time at which they can be measured in objective terms.

Postulate C-3. Consistency. The procedures used in accounting for a given entity should be appropriate for the measurement of its position and its activities and should be followed consistently from period to period.

Postulate C-4. Stable unit. Accounting reports should be based on a stable measuring unit.

Postulate C-5. Disclosure. Accounting reports should disclose that which is necessary to make them not misleading. (pp.52,53)

Littleton (1974) further confirms the previously mentioned postulates by indicating that practice is doing and that theory is explaining. The obligation of practice is to get things done and the obligations of accounting theory according to Littleton (1974) can be stated in several ways:

1. Help us to examine what has been done so that we can see the reasons which direct that treatment or suggest another
2. Help us to find interconnecting threads, reasons and objectives between ideas and ideals
3. Help us to weight alternative ideas, objectives and methods
4. Help us to be alert to relativity among ideas; to see that some ideas are more important than others; that some have strong ties to others while some are to be sharply distinguished
5. Help us to develop a capacity for working with ideas; to find ideas relevant to an issue, to resolve conflicts in ideas, to expand and amplify ideas
6. Help us to recognize the places where principles apply as easily as we arrange procedures to suit the circumstances. (pp.133,134)

Littleton is inferring that theory exists to serve practice even if it advances reasons against a familiar practice. A knowledge of theory does not limit the practitioner's duty to react according to the circumstances, but equips him to exercise independent judgement with confidence.

The general structure of accounting theory requires for its implementation a set of symbols and a framework in which ideas and data can be expressed and summarized. In discussing this point Hendriksen (1965) wrote:

The traditional framework that has served accounting well for many years includes double entry with the concepts of accounts, ledgers and trial balances and the presentation of accounting data in the form of financial statements that articulate with each other.

Postulate B-1 confirms the utility of this structure by stating that the results of the accounting process are expressed in a set of fundamentally related financial statements which articulate with each other and rest upon the same underlying data. (p.95)

To provide the most useful information for decision making, financial reports should articulate with each other primarily to make the information more understandable and useful for decision making.

Commenting on accounting information Zlatkovich (1966) stated:

Because of the great value of accounting information to external users, and because we have some knowledge of many users' needs, it is possible to develop significant accounting information even though the precise and total needs of each user for each decision are unknown. (p.20)

Bestable (1973, p.57) questioned whether accepted practices have the best goal or goals when the primary emphasis of collegiate accounting is placed on stewardship and fund accounting. Bestable was alluding to the fact that collegiate reports and financial statements are difficult to understand.

According to Price Waterhouse (1975):

There are several reasons why college financial statements are difficult to understand. The principal one stems from the traditional use of fund accounting concepts - a stewardship approach which recognizes that certain gifts and other income bear restrictions which must be observed. Each restricted gift is usually set up in a separate "fund" to insure that this accountability is maintained. Under this approach there can be as many funds as there are separate gifts, but typically, for reporting purposes, gifts with similar restrictions are reported together. Usually colleges report their funds in one of several groupings - current unrestricted, current restricted, endowment, plant,

loan, and annuity and life income. The difficulty with fund accounting is that the reader is faced with separate reporting of each fund grouping which obscures an overall picture of the college, because the reader is forced to focus on the transactions reported by the individual fund groupings one by one. (p.1)

Additionally, Sherry (1975) stated:

Since the focus of the future will be on cost control and utilization of facilities, the accounting system will assume a greater significance. If designed and used properly, it will prove to be of immeasurable benefit. It has been indicated that traditional fund accounting systems do not provide today's manager with relevant cost data. It is imperative that they be supplemented in order that today's manager can better focus on efforts to insure that a quality education is provided to all students consistent with the inescapable money constraints. (p.262)

A proposal to not merely supplement traditional collegiate reports, but one more appropriately to depict the financial status of the college as an entity, rather than as a combination of a number of independent funds has been promulgated by Price, Waterhouse and Co., the international accounting firm.

According to Price, Waterhouse (1975):

We propose a simplification of college financial statements by restructuring them. First, we propose combining all funds for reporting purposes into only two basic groupings: unrestricted and restricted. The restricted grouping would include all funds that bear legal restrictions - either current or non-current - and thus are amounts over which the board does not have full discretion as to use.

We suggest reporting these two fund groupings in a columnar approach, side-by-side with a total column so the reader can clearly see the overall picture of the institution. Finally, we propose using financial statement formats which parallel those used by profit-oriented entities to the maximum extent possible. Specifically, we suggest that the following three statements be used:

- Statement of Revenue and Other Additions and Changes in Fund Balances (Figure 1)
- Balance Sheet (Figure 2)
- Statement of Changes in Financial Position (Figure 3)

These three statements do not, of course, represent the only statements which trustees and others may want to see, and we suggest an example of an additional statement in Figure 4. We believe, however, that these statements do represent the basic financial statements trustees and other outside readers should be looking at and that where further detail is appropriate it should be provided in the notes or supplementary statements. In this way, the traditional detail associated with fund accounting can still be provided for those interested in seeing it without burdening the reader who is interested only in the overall financial picture of the institution. We would not anticipate any changes in bookkeeping procedures, since we are only discussing reporting structures. (p.2)

As soon as the financial information has been compiled it should be communicated to both internal and external users of the information. According to McCullen and VanDaniken (1975, p.10) accounting information should be understandable, timely, uniform and consistent. Elaborating upon the timeliness of accounting information, McCullen and VanDaniken (1975) wrote:

The more quickly accounting information is communicated to the users, the more likely it is to influence their decisions. The greater the delay in communicating, the greater the assurance that the information is correct. This implies that a trade-off may be necessary, i.e., some accuracy may be sacrificed in order to increase the timeliness of the information. Accounting is primarily concerned with providing historical information. Nevertheless, that information should be made available as quickly as possible. (p.11)

Also commenting on timeliness, Seawell (1975) stated:

The provision of accounting information should be timely, i.e., it should be communicated to users in time to be used as the basis for their economic decisions. If such information is not timely, it

STATEMENT OF REVENUE AND OTHER ADDITIONS, EXPENSES,  
AND CHANGES IN FUND BALANCES  
YEARS ENDED JUNE 30, 1975 AND 1974

	1975			1974
	<u>Unrestricted</u>	<u>Restricted</u>	<u>Total</u>	<u>Total</u>
<b>Revenue and Other Additions:</b>				
Tuition and fees	\$2,964,000		\$2,964,000	\$2,550,000
Governmental appropriations	700,000		700,000	600,000
Governmental grants & contracts	20,000	\$ 500,000	520,000	410,000
Private gifts, grants & contracts, other than endowment	650,000	415,000	1,065,000	680,000
Endowment gifts		1,850,000	1,850,000	600,000
Investment income	734,000	563,000	1,297,000	995,000
Realized and unrealized appreciation (depreciation) of investments	(100,000)	(415,000)	(515,000)	385,000
Auxiliary enterprises	1,910,000		1,910,000	1,650,000
<b>Total revenue and other additions</b>	<b><u>6,878,000</u></b>	<b><u>2,913,000</u></b>	<b><u>9,791,000</u></b>	<b><u>7,870,000</u></b>
<b>Expenses:</b>				
Instruction	3,491,000	489,000	3,980,000	3,625,000
Research	149,000	400,000	549,000	910,000
Public service	140,000	25,000	165,000	125,000
Student services	91,000		91,000	65,000
Scholarships	150,000	50,000	200,000	190,000
Auxiliary enterprises	1,347,000		1,347,000	1,441,000
Operation & maintenance of plant	220,000		220,000	200,000
General and administrative	691,000		691,000	649,000
Fund raising	226,000	12,000	238,000	180,000
<b>Total expenses</b>	<b><u>6,505,000</u></b>	<b><u>976,000</u></b>	<b><u>7,481,000</u></b>	<b><u>7,385,000</u></b>
<b>Excess of revenue and other additions over expenses:</b>				
Unrestricted (available for current operations)	373,000		373,000	(215,000)
Restricted (increases in endowment and other restricted funds)		1,937,000	1,937,000	700,000
Fund balances, beginning of year	43,232,000	12,017,000	55,249,000	54,764,000
Interfund transfers	322,000	(322,000)		
Fund balances, end of year	<b><u>\$43,927,000</u></b>	<b><u>\$13,632,000</u></b>	<b><u>\$57,559,000</u></b>	<b><u>\$55,249,000</u></b>

Figure 1

Source: Price, Waterhouse &amp; Co., 1975.

**BALANCE SHEET**  
**JUNE 30, 1975 AND 1974**

	1975			1974
	<u>Unrestricted</u>	<u>Restricted</u>	<u>Total</u>	<u>Total</u>
<b>ASSETS</b>				
<b>Current assets:</b>				
Cash	\$ 810,000	\$ 125,000	\$ 935,000	\$ 760,000
Short-term investments	900,000		900,000	1,391,000
Accounts receivable, net	228,000		228,000	178,000
Student loans, net, current		80,000	80,000	50,000
Inventories	352,000		352,000	272,000
Prepaid expenses	60,000		60,000	44,000
<b>Total current assets</b>	<u>2,350,000</u>	<u>205,000</u>	<u>2,555,000</u>	<u>2,695,000</u>
Investments (at market)	4,100,000	12,977,000	17,077,000	14,632,000
Student loans, net, long-term		550,000	550,000	400,000
Land, buildings and equipment, at cost, less accumulated depreciation of \$9,610,000 and \$8,790,000, respectively	40,410,000		40,410,000	39,305,000
<b>Total assets</b>	<u>\$46,860,000</u>	<u>\$13,732,000</u>	<u>\$60,592,000</u>	<u>\$57,032,000</u>
<b>LIABILITIES AND FUND BALANCES</b>				
<b>Current liabilities:</b>				
Accounts payable	\$ 583,000	\$ 100,000	\$ 683,000	\$ 483,000
Accrued expenses	150,000		150,000	100,000
Portion of long-term debt due within one year	100,000		100,000	50,000
<b>Total current liabilities</b>	<u>833,000</u>	<u>100,000</u>	<u>933,000</u>	<u>633,000</u>
Long-term debt	2,100,000		2,100,000	1,150,000
<b>Total liabilities</b>	<u>2,933,000</u>	<u>100,000</u>	<u>3,033,000</u>	<u>1,783,000</u>
<b>Fund balances:</b>				
Available for current use-- unrestricted	1,317,000		1,317,000	1,027,000
restricted		531,000	531,000	400,000
Board designated endowment	4,200,000		4,200,000	4,000,000
Other designated funds	200,000		200,000	100,000
Invested in plant assets	38,210,000		38,210,000	38,105,000
Endowment funds		11,230,000	11,230,000	9,667,000
Other restricted funds		1,871,000	1,871,000	1,950,000
<b>Total fund balances</b>	<u>43,927,000</u>	<u>13,632,000</u>	<u>57,559,000</u>	<u>55,249,000</u>
<b>Total liabilities and     fund balances</b>	<u>\$46,860,000</u>	<u>\$13,732,000</u>	<u>\$60,592,000</u>	<u>\$57,032,000</u>

Figure 2

Source: Price, Waterhouse &amp; Co., 1975.

STATEMENT OF CHANGES IN FINANCIAL POSITION  
YEARS ENDED JUNE 30, 1975 AND 1974

	June 30, 1975			1974
	<u>Unrestricted</u>	<u>Restricted</u>	<u>Total</u>	<u>Total</u>
<b>Financial resources were provided by:</b>				
Excess of revenue and other additions over expenses	\$ 373,000	\$1,937,000	\$2,310,000	\$ 485,000
Add (deduct) items not affecting working capital:				
Depreciation	820,000		820,000	765,000
Unrealized (appreciation) depreciation of investments	200,000	265,000	465,000	(470,000)
Working capital provided by operations for the year	1,393,000	2,202,000	3,595,000	780,000
Issuance of long-term debt	1,000,000		1,000,000	
Proceeds from sales of long-term investments	400,000	2,180,000	2,580,000	1,070,000
Total resources provided	<u>2,793,000</u>	<u>4,382,000</u>	<u>7,175,000</u>	<u>1,850,000</u>
<b>Financial resources were used for:</b>				
Purchases of buildings & equipment	1,925,000		1,925,000	150,000
Reduction of long-term debt	50,000		50,000	50,000
Purchase of long-term investments	1,100,000	4,390,000	5,490,000	1,180,000
Increase in long-term student loans		150,000	150,000	50,000
Transfers between funds	(322,000)	322,000		
Total resources used	<u>2,753,000</u>	<u>4,862,000</u>	<u>7,615,000</u>	<u>1,430,000</u>
Increase (decrease) in working capital	<u>\$ 40,000</u>	<u>(\$ 480,000)</u>	<u>(\$ 440,000)</u>	<u>\$ 420,000</u>
<b>Changes in working capital:</b>				
<b>Increase (decrease) in current assets:</b>				
Cash	\$ 100,000	\$ 75,000	\$ 175,000	(\$ 75,000)
Short-term investments	119,000	(610,000)	(491,000)	250,000
Accounts receivable	50,000		50,000	25,000
Student loans		30,000	30,000	175,000
Inventories	80,000		80,000	(10,000)
Prepaid expenses	16,000		16,000	10,000
	<u>365,000</u>	<u>(505,000)</u>	<u>(140,000)</u>	<u>375,000</u>
<b>(Increase) decrease in current liabilities:</b>				
Accounts payable	(225,000)	25,000	(200,000)	50,000
Accrued expenses	(50,000)		(50,000)	(5,000)
Portion of long-term debt due within one year	(50,000)		(50,000)	
	<u>(325,000)</u>	<u>25,000</u>	<u>(300,000)</u>	<u>45,000</u>
Increase (decrease) in working capital	<u>\$ 40,000</u>	<u>(\$ 480,000)</u>	<u>(\$ 440,000)</u>	<u>\$ 420,000</u>

Figure 3

Source: Price, Waterhouse &amp; Co., 1975.



ANALYSIS OF FUNCTIONAL EXPENSES  
YEARS ENDED JUNE 30, 1975 AND 1974

	Instruction	Research	Public service	Student services	Scholarships	Auxiliary enterprises	Operation and maintenance of plant	General and administrative	Fund raising	1975 Total	1974 Total
Salaries and related benefits	\$3,258,000	\$361,000	\$100,000	\$65,000	\$	\$ 876,000	\$ 75,000	\$400,000	\$ 65,000	\$5,200,000	\$5,029,000
Professional fees	100,000	60,000				100,000		15,000	85,000	100,000	185,000
Supplies	25,000	1,000	5,000	19,000		5,000		90,000		350,000	400,000
Telephone & teletype	20,000	10,000	1,000			55,000	45,000	10,000	10,000	75,000	64,000
Heat	35,000	13,000	1,000	2,000		78,000	50,000	18,000	1,000	150,000	178,000
Electricity	5,000	2,000				3,000		20,000	1,000	200,000	170,000
Printing	1,000	1,000				1,000		20,000	25,000	55,000	100,000
Postage & shipping			2,000	1,000	\$200,000			35,000	34,000	75,000	60,000
Scholarships	480,000	50,000		1,000		164,000	50,000	65,000	10,000	820,000	765,000
Depreciation	56,000	1,000	56,000	3,000		65,000		18,000	7,000	206,000	248,000
Miscellaneous		50,000								50,000	
Expendable equipment		\$549,000	\$165,000	\$91,000	\$200,000	\$1,347,000	\$220,000	\$693,000	\$238,000	\$7,431,000	\$7,335,000
Total 1975	\$3,625,000	\$910,000	\$123,000	\$65,000	\$190,000	\$1,441,000	\$200,000	\$669,000	\$180,000		
Total 1974											

Figure 4

Source: Price, Waterhouse &amp; Co., 1975.

loses much of its value and causes delays in the making of critical decisions. (p.30)

In addition to presenting timely information another institutional obligation to its supporters both government and private, is to explain in a manner that is understandable where the money is being spent and what the money is producing. In order to meet these obligations institutions are, according to Grimshaw, Nolan and Brody, (1973, p.36) needing to acquire cost data in a different format than is now available. One of the currently promoted methods at the time of this research (mid 1970's) was an accounting system which provides cost information on a program basis, called program costing and budgeting.

The basic framework for a program costing and budgetary accounting system was presented by Grimshaw et al.

when they wrote:

Individual account numbers or groups of account numbers connote the various programs. The center digit of the number signifies the function (i.e. research, teaching, patient care, administration, and so forth) to which the department belongs. As an example, the Department of Medicine would have the following account numbers:

67060 Department of Medicine, teaching account  
67260 Department of Medicine, research  
67360 Department of Medicine, extension and public service

Within a function, separate programs can exist or the function itself can be considered a program. The hospital accounts are represented by the center digit "1", yet the entire function (i.e., the sum of all 1 center digit accounts) is considered the patient care program. In the College ("0" function), the Intern and Resident Program is represented by one account number. All Allied Health teaching activity is represented by the block of accounts (57001-57090). By using a flexible account numbering system, it is

accounts. For example, the Intern and Resident Program, the Allied Health Program, the Undergraduate Medical Program, and the Graduate School Program are together considered the instructional program, represented by the center digit "0". (1973, p.37)

A closing thought on Financial Accounting by Zlatkovich (1966, p.30) is that accounting does not now fulfill all the requirements that are made of it. This is evidenced by (1) "a growing body of accounting, financial and economic literature in which criticism of and controversies over accounting information are common; (2) the research efforts of organizations such as the American Accounting Association, the American Institute of Certified Public Accountants, and others seeking to improve accounting information; and (3) the increasing concern of governmental bodies, stock exchanges, and other groups with the adequacy of accounting information."

#### Identified Problems in Financial Accounting

1. In those Medical Centers where the financial records are processed and maintained by the main campus there is too great a time delay in receiving necessary information for up to date reporting purposes.
2. The format of the reports as generated by the main campus is not in a meaningful format for internal and external reporting requirements of the Medical Center.
3. Where the main campus processes and exercises control of the final bill payment efforts to assure timely payments to vendors in meeting with limited success.
4. The accounting system has been designed to serve a University's total needs as opposed to the needs of the individual colleges within it. It is therefore difficult to obtain a clear picture of the Medical

Center's functions in program budget terms. As a consequence, the lack of program definition within the basic accounting structure makes it difficult to relate resources to programs and objectives.

#### Criteria Derived from the Literature

1. A trade off may be necessary in the receiving of accounting information on a timely basis between the sacrificing of some accuracy and the increase of timeliness.
2. In order to provide the most useful information for decision making, financial reports should articulate with each other primarily to make the information more understandable and useful for decision making.
3. College financial statements should be restructured to depict the financial status of the college as an entity rather than as a combination of a number of independent funds.
4. Economic activity is carried on during specifiable periods of time thus time frames as expressed on vendor invoices should be adhered to by the disbursing authority on campus and not some central authority hundreds of miles from campus.
5. In order to meet the Medical Center's functions in program budget terms an accounting system which provides cost information on a program basis should be developed.

#### Budget Preparation and Control

Budgeting as a decision-making process can best be understood in terms of a system, which can be defined according to Miller (1965) as "a set of units with relationships among them" (p.200). Budgetary decision making consists of the actions of executive officials (both in a central organization, such as the governor's office or university president's staff and in departmental line units), legislative officials and organized interest groups.

Lee and Johnson (1973, p.19) felt that the actions and interactions of the relationships between the above mentioned executive and legislative officials could best be achieved by thinking in terms of complex systems.

Lee and Johnson (1973) stated:

A complex social system is composed of organizations, individuals, the values held by these individuals, and the relationships among these units and values. A system may be thought of as a network typically consisting of many different parts with messages flowing among the parts.

In a budgetary system, the outputs flowing from this network of interactions are budget decisions that will vary greatly in their overall significance. Not every unit of the system will have equal decisional authority or power. A manager of a field office for a state health department is likely to have less power to make major budgetary decisions than the administrative head of the department, the governor, the members of the legislative appropriations committee. Yet, each participant does contribute some input to the system. That field manager may alert others in the system to the rise of a new health problem and in doing so may have contributed greatly to the eventual establishment of a new health program to combat the problem.  
(p.19)

The concern for information on the programs as well as on resources, involving both outputs and inputs, reflects an increasing tendency toward a systems orientation in budgeting. Shortzberger (1972, pp.20-22) inferred that a system approach asks questions about the purposes of organized behavior and about how the operation of the system serves these purposes as opposed to viewing the budgetary process strictly from the standpoint of specific participants.

In addition to a systems theory, Ronen and Livingstone (1973, p.671) discussed the implementations of budgets for

motivation and behavior in the context of expectancy theory as developed in the psychology of motivation. Specifically Ronen and Livingstone (1975) in summarizing stated:

The literature on the effects of budgets on behavior is quite fragmentary and draws upon many diverse and partial areas of behavioral science. This is the case for the five general assumptions made in accounting with respect to budgets and behavior. These assumptions are:

- (A) that standards should be reasonably attainable,
- (B) that participation in the budgeting process leads to better performance,
- (C) that management by exception is effective,
- (D) that noncontrollable items should be excluded from budget reports, and
- (E) that budgetary accounting should be restricted to criteria measurable in monetary terms.

We then introduced an expectancy model of task motivation within which, with some refinement, it was possible both to reconcile the fragmentary and contradictory past research findings and to explain the five assumptions in a consistent manner.

Motivation, the dependent variable in the expectancy model, can be used as an indication of the probability that the task will be performed, given the ability of the subordinate. In other words, the probability that a task will be performed is a function of motivation and ability. To the superior it is important to assess this ability in order to both evaluate the merit of competing activities and to allocate effectively people to tasks. (pp.683,684)

Yet another theory discussed in relationship to budgeting is that of conflict theory. Research conducted by Pondy (1973, p.277) revealed that subgroup loyalties develop not only because of a common professional background of the subgroup members, not only because of a selective exposure to the business environment, not only because in-groups communication supports and reinforces subgroup goals, but also because each subgroup engages in competition with every other subgroup for an adequate share of the available

resources. Pondy's (1973) research revealed that two factors were sufficient for intergroup conflict to exist: subgroup loyalties and intergroup competition. Both factors were shown to be present in the budget-resource allocation process in the modern large corporation. The writer feels both factors are present in universities and academic medical centers in addition to corporations. Pondy (1973) concludes when he stated:

Budgeting can be viewed as a process of resolving intergroup conflicts. This finding has crucial implications for the design of budgeting systems. Not only must the system provide procedures for the rational, economic analysis of budget proposals, but it must also provide procedures for the resolution of intergroup conflict over scarce resources that will inevitably arise. (p.280)

Another budgetary theory which appears to be gaining momentum and acceptance is that of internal pricing. According to Minahan (1974, p.39) the theory made its formal appearance at a workshop sponsored by the Ford Foundation Research Program for administration in 1971 at the University of California at Berkeley. The workshop dealt with internal pricing mechanisms as a way of achieving optimal resource allocation for academic funds. Theoretically, it was proposed that the most effective way of increasing the price/cost efficiency of academic programs is to treat each academic department as a small business.

Minahan (1974) further elaborated on the internal pricing theory when he said:

Each department purchases from the college or university certain raw materials or resource inputs in the

persons of a given number of students. The purchase price for students is, of course, not a cash exchange but is actually a promissory note offered by the department to the administration with the commitment that the department will academically serve the interests of the students enrolled in its programs in a way that will at least adequately account for the expenditure of public monies. The department then manufactures an academic product the final value of which is determined by (a) the expense of the input (how much it costs in faculty salary for course instruction minus tuition and fees), plus (b) the expense of the process (the total cost of an academic curriculum including total staff salaries, student support, secretarial services, equipment and major capital expenditures, plus (c) the level of output as measured in total number of students instructed, matriculated or graduated from a program. Each department then wins a budget calculated according to the value of its output which is measured by (a), (b), and (c) internally in relation to other departments. The department then uses this budget to purchase more input resources and the process begins all over again. Theoretically, under this system each department has an incentive to reduce costs while maximizing output since it naturally wishes to maintain or increase its operating budget. (pp.39,40)

Additionally, Balderston (1974) stated:

Internal pricing is an approximation of the invisible hand of a market system as an alternative to the visible hand of administratively determined allocations. There is considerable interest in using this device in universities to stimulate managerial rationality in both the producer and the user of services. (p.229)

A word of caution is offered by Balderston (1974) when he said, "pricing approaches are potentially suitable for allocating some scarce resources within a university, but it might well be a mistake to try them for other allocations when higher-level coordination and guidance of the institution as a whole are directly involved" (p.229).

For additional information, see Breneman (1971) where he discussed the opportunities and the problems, including



some of the practical difficulties of implementation of an internal pricing system.

In the design of a budget system Baker (1972, p.39) felt that a budget is used for both planning and control. Therefore it is essential that a wholesome environment exist in the institution to insure successful use of the budget. Factors influencing this environment are according to Baker called "prerequisites" necessary to the establishment of a budgetary system. These prerequisites were listed by Baker (1972) when he wrote:

1. A set of well-defined policies and objectives.
2. A sound organizational structure, including involvement by all levels of management.
3. A responsibility accounting system.
4. A functionally classified system of accounts.
5. The accumulation of adequate statistical data, incorporating knowledge of significant trends.
6. An established budgetary fiscal year.
7. A formal reporting program. (p.39)

"Before the budget is started, it is necessary to determine the course of action to be used with all levels of management in coordinating the budget" (Pluhacek, 1972, p.31). He also felt that one of the first things that the budget coordinator should do is to make a complete outline of the people involved and what each of their duties will be.

Additionally, Seawell (1975) stated, "While the budget is a cooperative endeavor . . . a specific individual must be assigned the responsibility for developing the various inputs and integrating them into a coordinated master plan" (p.140).

In developing the plan Pluhacek (1972) said:

The budget coordinator should meet with all the department heads and explain their role in formulating the budget. He should have at least one year's historical data for each department so that each one has guidelines as to what is expected from it. (p.31)

Furthermore, Kaludis (1973) argues for an open, decentralized, budget-making process guided by a conception of institutional objectives and supported by an adequate system of financial information.

Balderston (1974) draws from Kaludis (1973) and concludes:

What is needed, then is a dialogue between the two valid perspectives: those of the decentralized operating units and of the central administration. One way to start from a semblance of realism is to have the central administration issue - for the forthcoming fiscal period - budget guidelines that include the preliminary forecasts of work-load changes, for each unit to use as a starting point in assembling its request. (p.215)

Scheps and Davidson (1970) indicated that there are two broad phases in the preparation of the budget: "(1) the estimation of expenditures, and (2) the estimation of revenue" (p.91).

In the state institution, Scheps and Davidson (1970) stated:

The predominant sources of revenue are appropriations by the state legislature, funds for sponsored programs, student fees, sales of organized activities relating to instruction, and auxiliary enterprises. Revenues from the last three sources may be estimated in advance with a reasonable degree of accuracy, but estimating the amount the legislature will appropriate presents difficulties. Usually the institution estimates as carefully as possible the revenues that are more or

less under its control, then forecasts the appropriation obtainable from the legislature. In some states, funds are dedicated to the college by constitutional provision, so that the total revenue can be estimated with greater accuracy. As regards legislative appropriations, the political situation may be a factor. Many states maintain budgetary departments which correlate needs of the various state agencies with anticipated revenues before budgets are presented to the legislature. In such conditions the state institution secures aid from the budget department in estimating legislative appropriations. (p.91)

In discussing the revenue budget for private institutions, Balderston (1974) wrote:

A private university does not have to run the gauntlet of master negotiation for its basic support budget. Some steps in the process are eliminated, because negotiation with the state is not required. But the private university faces two other requirements that are more demanding for it than the state institution. It relies proportionately more on extramural research funding and foundation grants than does the state-supported institution, and it is also more sensitive to variations in the income yield from endowments and in the income from tuition. Its revenue forecasting must therefore be very exacting. (p.218)

An additional revenue budget situation involves the academic medical center revolving around the charges for patient services. Howe (1972) researched this topic and said:

The first step in developing the revenue budget is to determine the adequacy of current rates in relation to budgeted costs after anticipated volume increases have been recognized. This is accomplished by dividing the current years revenue by the occasions of service (patient days, number of procedures, etc.) to arrive at the average revenue per unit produced. The average revenue is then multiplied by the estimated occasions of service for the budget year. The resulting figure is the revenue that current rates are expected to generate. If these revenues fall short of budgeted expenses, either the revenue figure or the expense figure should be adjusted. With or without formal budget procedures, it is possible to recognize the

value of these computations in rate setting. A problem encountered in establishing rates, and in budgeting as well, is estimating third party discounts, as well as determining how much actual net revenue a dollar increase in rates will generate. For beginning budgeting purposes, an overall percentage reduction based on previous experience will suffice. A refinement would be the application of an individual percentage to the estimated billings which will be made to each third party. Two amounts must be known to compute individual percentages for each third party - total discounts (already recorded) and gross billings. The latter amount is readily available for Medicare and Blue Cross patients, but not normally for other third party patients. (p.35)

Studies completed by Seawell (1975), Balderston (1974), and Groff (1972) indicate the entire budgetary cycle, that is, initial departmental requests up through the approval and adoption of the entire institutional budget by the governing body should take between five and eighteen months with the average around eight months.

In those institutions where the budgetary cycle involves more than twelve months a university may have to keep track, simultaneously, of up to four fiscal year budgets and their interrelations. Balderston (1974) identified the four as:

- (1) the most recently completed fiscal year, as a fully known and completed base;
- (2) the current fiscal-year budget, for control and administration in its own right and as a base for the following fiscal-year budget;
- (3) the preparation and defense of the following fiscal-year budget; and
- (4) the earliest indicators of developing issues for the second - following fiscal year. (p.218)

An interesting sideline and closing comment to the entire complex topic of budget preparation and control was made by Hicks (1972) when he said:

Despite all of the current popularity of program budgets, zero bases budgets, and the like, governors and their staffs are still mightily impressed with presentations which stress the following:

1. Enrollment increases, and funds reasonably required to handle additional undergraduate students, when the evidence is clear that the additional students will, in fact, materialize;
2. Funds required to keep pace with inflationary cost increases, where evidence is also offered that internal economies are being stressed to compensate for inflation;
3. Modest requests for programs which have substantial likelihood of increasing the economic competitiveness of the state, and
4. Anything closely related to expansion of medical, health or environmental education. (p.34)

Hicks is stressing the point that no matter how complex the budget document is, its likelihood of acceptance and approval may depend upon additional information not directly related to the budget document itself.

#### Identified Problems in Budget Preparation and Control

1. Extensive lead time required in submission of the budget to state authorities, often as much as 15 months in advance of the beginning of the fiscal year.
2. Extensive multi-level review and approval of the budget.
3. Projecting annual income from local, state and federal sources.
4. The establishment of adequate guidelines at the time budget worksheets are distributed to deans and departmental chairmen for preparation of budget requests, thus eliminating poor understanding of forms and the budget process.

#### Criteria Derived from the Literature

1. The entire process of budget formulation through adoption should be completed within a time frame that does not subject the institution to keep track of more than two different fiscal years at a time excluding biennial budgets.
2. There should be enough review levels of the budget to insure the expectancy of complying with it through superior-subordinate motivation and ability.

3. Under the adoption of internal price theory at the departmental level and college level, the necessity of multi-level budgeting review is negated due to treating each academic department as a small business, each department wins its budget according to the value of its output in relation to other departments.
4. In estimating revenue from state appropriations each state should establish a state level budgetary department which would, among other things, correlate the needs of the various state agencies with anticipated revenues and prepare estimated legislative appropriations.
5. Budget guidelines should be developed by the budget coordinator for the entire campus, the guidelines should be explained to each department head by the coordinator and at least one years historical data given to each department to be used as a starting point in assembling the new budget.

#### Physical Plant

There is evidence from the literature, (Andrew & Moir, 1970; Barnard, 1938; Griffiths, 1959; Simon, 1947; Tannenbaum, 1959) to suggest that decision theory can be applied to educational problems and priorities. If we consider the entire educational process of a university or academic medical center to be a system then the operation of the physical plant would be one of the many sub-systems. The physical plant as a sub-system may have use for the application of decision theory in many of the problems and priorities that it must face.

Etzioni (1971) wrote:

The systems framework assumes that some means have to be devoted to such non-goal functions as service and custodial activities, including means employed for the maintenance of the unit (organization) itself.  
(p.36)

In other words Etzioni is inferring that resources be allocated to activities that are only indirectly related to the organization's immediate social objective.

Simon (1947, p.4) stated, "the aim of decision theory is to increase the level of rationality of organizational decisions."

Griffiths (1959, p.74) said, "the specific function of administration is to develop and regulate the decision making process in the most effective manner possible."

Furthermore, Gibson, Ivancevich, and Donnelly (1973) wrote:

One way of viewing the entire organizational system is as a dynamic decision-making network. In this conceptualization managers decide first on broad objectives. The managers then engage in planning decisions to achieve these objectives. Managers are also engaged in organizational decisions in that they must design the most potentially efficient set of job and authority relationships for implementing the organization's plans. They must also develop control mechanisms so that acceptable limits of objective achievement are maintained. (p.187)

The decision theory as put forth by Simon (1960, pp.5-8) identified two types of decisions, programmed and non-programmed. He identified decisions that can be stated in terms of decision rules and concern situations that are well structured, often conceptually simple, and that occur routinely and repetitively. In contrast, nonprogrammed decisions are those that are ill-structured, typically complex in nature, and that occur once in a while and often involve major consequences.

Andrew and Moir (1970) offer a caution to Simon's theory when they said:

In the area of programmed decisions, there may be a tendency to make decisions automatically and without thought. What is needed is a method by which programmed decisions are reviewed from time to time to determine if the habitual courses of action are still the best in light of new developments. Another danger is using nonprogrammed methods on specific repetitive decisions. (p.15)

Griffiths (1959) included six steps in his concept of the decision making process:

1. Recognize, define and limit the problem. This starts the process in motion, and to an extent defines the boundaries within which the problem will be solved. Certain variables affect the success of this step:
  - a) Psychological variables - may cause the decision maker to ignore problems that threaten him,
  - b) Knowledge variables - how is the problem perceived, what background does the decision maker have, and
  - c) Semantic variables - here the words play a major role in how we perceive a situation.
2. Analyze and evaluate the problem. In this step an attempt is made to put the problem in proper perspective.
3. Establish criteria or standards by which solution will be evaluated or judged or acceptable and adequate to the need.
4. Collect data. The data should be relevant, that is either free from bias or with the bias clearly indicated.
5. Formulate and select the preferred solution.
  - a) The formulation of several solutions or decisions,
  - b) Weighing the consequences of each solution (assign probabilities), and
  - c) Selection of a single solution as most likely to succeed.
6. Put into effect the preferred solution. Implementation of the decision and any necessary modification as a result of feedback takes place in this final step. (p.94)



An aid in developing solutions to programmed type decisions was discussed by VanDusseldorp, Richardson and Foley (1971) when they wrote:

Rules for making decisions in recurring situations can be conveniently shown through decision tables. A teachers' salary schedule is a familiar form of a decision table. Through the use of decision tables, administrators can spell out rules for decisions. Other personnel can then use those rules to make individual decisions, in specific situations. For a decision table to be complete it must:

1. Account for all possible conditions, and
2. Show actions for all combinations of conditions that can possibly occur. (p.30)

In the determination of cost estimates for physical plant projects, Molnar (1975, p.26) felt there were three levels, those being, "ballpark guesstimates, unit cost estimate, and take-off estimates." The three represent a hierarchial structure from least accurate to most accurate.

Molnar (1975) felt managers must develop a technique that would permit them to perform confidently in an area frequently foreign to them when he stated:

The method recommended is the "unit-cost estimating". The first step is to develop a program that will provide the necessary itemization of the various segments of the project. The most important element of the "unit-cost estimating" concept is to determine the number of units involved. In all but the smallest and simplest project, there is need to develop at least a sketch or drawing, depending upon the magnitude of the work to be performed. The next most important element is to determine the unit cost. This can be done in any one of several ways:

- use of an estimating manual
- discussions with local vendors and contractors
- bids showing individual costs. (pp.27,28)

In addition to projects, funds must be expended to keep the physical plant in operating condition. Braun and

Jordan (1973) discussed a model developed for the purpose of estimating either the average direct cost or average full cost of departments. The model was conceptualized by members of the office of institutional planning at the University of Kentucky and first presented in an unpublished document in 1969. Relating the model to a physical plant operation, Braun and Jordan (1973) said:

Cost should be allocated on the basis of net assignable space. A standardized allocation rate is applied even though it is realized that M & O costs vary depending upon the type of space involved (e.g. classroom, laboratory and office) and the age of the structure in which it is located. (p.21)

An alternative to allocable costs is the system recommended by Scheps and Davidson (1970) who wrote:

Costs of ordinary recurring repairs to buildings and equipment should be considered current expenses and paid out of current funds (departmental), but disbursements for extraordinary repairs, replacements, and renewals should not be reported as current expenses. Disbursements of this nature should be made out of Funds for Renewals and Replacements and reported as part of the transactions of that fund group. (p.262)

It appears that there is more than one acceptable method of assigning or calculating costs of the physical plant for ordinary recurring repairs to buildings and equipment. The writer feels each institution should be aware of the alternatives and select the most appropriate one consistent with the accounting structure of the institution.

#### Identified Problems in Physical Plant

1. Difficulties in accomplishing priorities with the main university physical plant department in order to have

construction and alteration work completed within the framework of Medical Center deadlines.

2. Determination of what should be charged to departments for maintenance and operation and that which should be funded by the physical plant department.
3. Control of and the determination of a unit cost for various projects.

#### Criteria Derived from the Literature

1. The determination of project priorities should be based on a logical decision theory, employing the use of decision tables where appropriate, with conditions ranging from "life-threatening" to routine items.
2. Cost of ordinary, recurring repairs to buildings and equipment should be paid by the individual departments affected. Extraordinary repairs and replacements should be paid for by the physical plant.
3. Familiarity with estimating techniques is essential for the ability to determine unit costs of both minor and major projects and should be used in conjunction with internally or externally managed projects.
4. Programmed decisions should be renewed periodically to determine if the habitual course of action is still the best in light of any new developments.

#### Personnel Services

It has been indicated by Calhoon (1967, p.18) that a sound foundation for the management of personnel begins with basic philosophy and proceeds through concept, principle, policy and procedure. More specifically Calhoon (1967) stated:

A well-established philosophy is necessary in order to provide a framework of thought and attitude for administration. Philosophy establishes fundamental criteria for determining and shaping action. More specifically, in the management of personnel, philosophy integrates an organizations fundamental social, economic, and employee relations objectives. It encompasses the beliefs and convictions of

management, the ideas of what is right and logical in terms of broad perspective. (p.18)

McFarland (1968) took a similar approach to the study of personnel management when he wrote:

Organizations are stable social and technical systems which bring the factors of production together in a coordinated effort to achieve given ends. The human elements of the organization are the special concern of employee relations, but employee behavior must be studied in its relation to the structure of technology and the structure of the interrelationships among the organization's employees. Organization theory is that portion of behavioral science which seeks to understand and explain the characteristics and behavior of organizations and the nature of individual and group behavior within organizations. (p.24)

Yet another approach to the study of personnel management was discussed by French (1964) when he said:

A "process-systems approach provides a convenient way of studying personnel management. This approach utilizes a model of the organization (i.e. a way of visualizing the organization) and a model of the manager's job, which in turn permits the development of a model of personnel management. These models permit (a) a description of personnel management as a dynamic whole rather than as an aggregate of unrelated parts; (b) an analysis of the relationships between the various aspects of personnel management; (c) an analysis of the usefulness of different devices and practices in personnel management; and (d) an analysis of who should manage which aspects of personnel management. (p.44)

For a further discussion of various models see, (Homans, 1950; Katz & Kahn, 1966; Likert, 1967; Schein, 1965).

A comprehensive personnel management program will according to Millett (1972) include policies and procedures involving a number of important aspects. He stated:

A total systems approach incorporating a table of organization, with job descriptions and job classification, and procedure for training and development must be devised in such a way that the entire enterprise is well organized, but not inflexible. Set standards in wage and salary management, recruitment and placement, work supervision and evaluation, promotion, tenure and separation, fringe benefits, and safety and health will preclude many traditional problems. Finally, grievance procedures, retirement and collective bargaining are current issues requiring careful attention. (p.1)

Also discussing the systems approach McFarland (1968)

wrote:

The social system is a theoretical concept of utmost importance to employee relations, for it provides one of the scientific foundations on which researchers build their explanations of human behavior within the organization. Viewing corporations in this way has led to the discovery of key variables that influence the attitudes, actions, and decisions of managers and employees. Knowledge of an organization as a social system can help the executive toward better decision making and problem solving. (p.464)

Within the context of a total system point of view, we may postulate and observe the presence of subsystems. Treating personnel management as a subsystem of the larger, business affairs system, French (1964, p.53) felt that personnel management is comprised of a unique constellation of vital interdependent subprocesses, one of which is a compensation process. In discussing the philosophy of wages and salaries French (1964) said:

Externally, philosophy can take the direction of paying the highest possible level of wages and salaries consistent with an organization's objectives or at the other extreme regarding wage costs as a necessary evil, can slant toward keeping wages as low as possible without jeopardizing organizational stability. In between is a philosophy embodying resignation to paying prevailing wages and salaries, coupled with the recognition

that wages are an integral cost of competitive business. Internally, philosophy can also be of these three general degrees, with variants in between. (p.288)

Strauss and Sayles (1972) wrote:

Wage administration is a systematic procedure for establishing a sound compensation structure. By reducing inequities between employees' earnings, a good wage-administration program raises individual morale and reduces intergroup friction. It also sets wages high enough to permit the company to recruit satisfactory employees, motivates people to work for pay increases and promotions, reduces union and employee grievances, and enables management to exercise centralized control over the largest single item of cost: wages and salaries. (p.553)

A major element in the determination of what employees should be paid comes from wage and salary surveys. French (1964, p.244) infers that wage and salary practices of other firms have an effect on the selection, morale, and retention of employees, attention is ordinarily given to prevailing community or industry wage levels.

Grigsby and Burns (1962) said:

Most firms either participate in wage surveys and receive copies, or else they make their own. These surveys may be made by mail, telephone, or interview. (p.275)

Furthermore, relating specifically to educational institutions a compilation of 163 ways to save money, reduce costs or avoid problems in personnel administration was compiled in conjunction with the Conference on Confronting the Financial Crisis in May, 1972. Millet (Note 3) indicated that one of those ways was to use compensation surveys prepared by the U.S. Office of Education (HEGIS) and the College and University Personnel Association for national

market data on professional administrative positions. Also, relating to the topic under discussion and as an outgrowth of the conference was to view compensation as total compensation (cash plus benefits plus perquisites) and make internal and external comparisons on this basis, not just on the basis of cash alone. Review such practices as subsidized housing, sabbaticals, and faculty/staff travel.

As a concluding point to personnel management the topic of merit ratings warrants mentioning. Strauss and Sayles (1972) wrote:

In theory, merit ratings should relax the rigidity of job evaluation and should provide recognition for performance. It should also raise both productivity and morale, since employees who do a good job are rewarded. Employees may become demoralized when they reach the top of their range, particularly if there is little realistic chance of their being promoted to a higher ranking job. Under such circumstances there is often great pressure to raise the top of the range. (p.578)

The writer interprets Strauss and Sayles to be in favor of a "floating" top range thus decreasing the demoralized effect of an employee who has reached the top of their "fixed" pay range.

#### Identified Problems in Personnel Services

1. State Personnel Plan is not adequately responsive to specialized needs of the vast array of health related positions.
2. Employee dissatisfaction when reaching the top of their pay ranges, thus allowing for no further merit increases.
3. Maintaining benefit programs which are competitive with those in the community and with other institutions.

### Criteria Derived from the Literature

1. The central office of the state personnel classification office should have health professionals on their staff to act as liaison with the various state agencies employing personnel in health related occupations to insure timely, accurate, and fair classifications.
2. There should be an effective wage administration at both the institutional and state level. A viable and fair merit system should be established with a floating top range not a fixed dollar amount.
3. Frequent use should be made of authoritative wage surveys. These surveys should show local, state and national figures and be used by the wage administration when recommending wage rates.

### Purchasing

Cantor (1970) stated:

It is no longer satisfactory for the purchasing executive to be knowledgeable only about his own function. Before the purchasing executive can effectively select the systems options that are most meaningful for his business, he should undertake a preliminary study of business systems theory and the materials management concept. (p.10)

Another approach to the study of purchasing was discussed by McElhiney and Cook (1969) who took the approach using the economic theory of utility when they wrote:

Economists have long classified the characteristics which give goods usefulness into form utility, place utility, and time utility. Form utility is created by the manufacturer of a product. Place utility is created by moving a product from where it is not needed, and time utility by having it there when it is needed. Marketing specialists, also have spoken of the possession utility given to goods by transferring title in them to the ultimate user. The new cost frontier is concerned with people who produce place, time, and possession utility. (p.1)

Many terms for the new emphasis have been coined.

McElhiney and Cook (1969, p.1) have referred to them



variously as "business logistics, materials management, physical distribution and rhochrematics."

McElhiney and Cook (1969) concluded when they said:

Although purchasing is a primary logistic activity, the purchasing department does not initiate the logistics flow in a business enterprise. The flow is started by the user departments which need material to perform their functions. Specifications and requisitions are sent to the purchasing department and a series of activities is started which eventually involves the traffic, receiving, warehousing, inventory and other activities of the company. Thus, the purchasing department is one unit in a system which provides the physical supply of goods needed to operate a business. (p.3)

The advent of the systems approach to material management analysis will be speeded by two concurrent trends according to ("The Systems Approach", 1964, p.35): "The kind of competition that allows little room for inefficiency; the accelerating pace of technological change."

It appears that the major gain from a systems study is that facilities decisions will be tailored to the overall needs of the university - immediate and long range.

McElhiney and Hilton (1968) said:

A modern business firm is essentially an open system. It receives inputs from the environment, uses and operates on these inputs and finally produces an output which to some extent changes the environment. A business logistics system is a subsystem of the business enterprise, and every business enterprise has one, although it may be unrecognized and crudely developed. (p.62)

One team of experts, Mossman and Morton (1965) referred to the parts of a logistic system when they wrote:

The parts of the system are determiners, components, and integrators. The determiners are thought of as things outside the system which it must accept and

deal with. In logistics these would at least include suppliers, customers, and carriers. The term determiners is very appropriate because these people often determine the limits of what a logistics system can do. Components are the physical things of which the system is built; they include the people, buildings, machines and departments which have been arranged according to a plan and should operate according to a design. Integrators are the intangible factors which tie the components of the logistic system together. They are essentially the management activities and techniques which make the thing work. (p.15)

McElhiney and Hilton (1969) wrote:

The purpose, or objective of any business logistics system must be approximately the same as the purpose or definition of the entire field of business logistics itself. This definition is stated as "that phase of economic activity which concerns itself with assessing the need of goods and services for time utility and place utility and providing them with these utilities". (p.65)

A great deal of purchasing of both standard and special items is done on the basis of competitive bids. Heinritz and Farrell (1965) noted:

In governmental purchasing, which is very sensitive to charges of favoritism and patronage, which is specifically dedicated to the conservation of taxpayers' money, and where the buyer as a public servant must operate "in a goldfish bowl" for all to see, the bid system is usually mandatory. (p.147)

Benevelli (1969, p.148) said "a contract should be awarded to the lowest responsible bidder". He enumerated what he felt to be eight qualifications of a responsible bidder.

Lintz (1969) in discussing the bid procedures of Los Angeles said:

Los Angeles is fortunate in that its charter provides that award shall be based on not only the lowest responsible bid, but also the lowest ultimate cost to the city. This provides us with considerable latitude

in recognizing true costs, in addition to the initial bid price. (p.145)

In concluding this discussion on purchasing Bolton (1969) wrote:

Most purchasing departments spend 80 per cent of their time buying low value, high use supplies that account for only 20 per cent of the dollars they spend. This waste of time, money and efficiency can be avoided through the use of a new purchasing technique: systems contracting. System contracting is simply a purchasing concept designed to help both buyer and seller improve the reordering of repeatedly used materials or services with an absolute minimum of administrative expense, but with adequate business controls. Systems contracting is a direct route to substantial savings in all areas in the procurement cycle - stores, accounting, purchasing, receiving and supply functions. (p.197)

Briefly outlined, systems contracting according to Bolton (1969) involves the following:

1. First the institution selects a supplier, or several suppliers if necessary. Then the company analyzes (1) the general categories of materials needed from each vendor, (2) the specific items within each category and (3) the varieties of each item.
2. The items are listed in a catalog for general distribution. The number of priced catalogs should be restricted to only those departments that need to know prices, i.e. Purchasing Accounting Auditing.
3. User departments prepare a requisition and send directly to vendor.
4. Vendor assigns an order number and indicates prices on requisition.
5. Original requisition is shipped back with supplies and serves as a packing slip. (p.200)

The systems contracting concept is designed to eliminate paperwork, order error, excess inventory and obsolescence; improve service and efficiency; save floor space, time and money; and free the purchasing department for more important functions such as value analysis and overall cost reduction.

### Identified Problems in Purchasing

1. Required use of state contracts for certain items that can be obtained cheaper at local outlets.
2. Extensive lead time required in processing certain services, equipment, etc., that must use the bid procedure.

### Criteria Derived from the Literature

1. Where state contracts are presently in force the purchasing director should evaluate the possibility of systems contracting for greater savings to all areas of the institution while at the same time promoting place, time, and possession utility.
2. In accepting a bid the purchasing department should consider not only the lowest responsible bidder but also the bidder who offers the lowest ultimate cost.
3. The purchasing department should be cognizant of time utility in the bid procedure and where appropriate use such devices as the telephone and telegram.

### Auxiliary Services

Allen (1967) stated:

Economic theory, as developed by contemporary writers, is divided into two major divisions. Microeconomics is the economics of small units and is concerned in large part with the firm as the basic economic unit. The heart of microeconomics is price theory. Macroeconomics is the economics of large units and is concerned with aggregates.

Price theory according to Ward (1967, p.3) "is the study of the reasons for and the consequences of using prices in economic decision making, and of the means by which prices are determined."

The fundamental problem with which price theory is concerned is the allocation of resources (Allen, 1976, p.362). He further said:

Man's wants are virtually unlimited, but the means available for satisfying his wants are limited. This creates the problem of scarcity and means that somehow it must be decided what will be produced, how it will be produced, and for whom it will be produced: in some way, choices must be made. There are essentially two methods by which resources may be allocated: either by force through the state, or possibly through tradition and precedent, or through the operation of the pricing system. (p.363)

Specifically discussing auxiliaries, Balderston (1974)

wrote:

Many auxiliary enterprises operate on the break-even principle, charging their individual or organizational clients enough to defray the operating costs and sometimes enough to cover depreciation and capital charges as well. This policy of self-funding through recharges makes the manager of the enterprise responsible for balancing income and expenses. But it does not guarantee that the service will be produced and delivered at an (unsubsidized) price that is as low as the open market price, because the university's service unit may not be operating at the most efficient scale. Also, university policy often accords an internal monopoly to the service unit, and this reduces the pressure for cost minimization. (pp.78,79)

According to Ward (1967, p.90) in discussing the monopoly, stated, "the monopoly maximizes its own profits by producing at the output at which marginal cost equals marginal revenue and the price it charges is the price at which that output will be bought by consumers."

Furthermore Allen (1967) said:

For a seller enjoying some degree of monopoly power, there is no unique combination of price and quantity supplied; for the monopolist the amount supplied depends not only on his marginal-cost curve but also on the shape and position of his marginal-revenue curve. (p.364)

Boulding (1955, p.77) defined marginal revenue as "the amount by which total revenue increases when one more unit

of the good is sold" and marginal costs as "the amount by which total cost increases when one more unit of the good is produced."

Besides using a price theory approach another method available is known as price strategy. Oxenfeldt (1975) explained the what and the why when he stated:

Price strategy is an explicit line of thinking and accompanying actions designed to achieve a stated objective by effective means. Its key elements are (1) a specific objective, (2) a nonobvious logic or line of thinking that would achieve that objective with particular effectiveness, and (3) a program of action that implements that line of thinking. It is almost self-evident that actions in business in general and in marketing and pricing in particular should be goal-oriented and that an executive should always take action for purpose. An executive should not only know clearly what he is trying to achieve but also be able to identify the most effective means available to him. (p.5)

What kinds of things should a price setter know and from what sources might he learn them? In very general terms, he should have a fairly deep understanding, according to Oxenfeldt (1975) of the following:

1. The many effects of a change in price on the various parties to the business process. Those parties include his colleagues, ultimate customers, suppliers and the government
2. The manner in which price differs from the other available ways to influence sales
3. The manner in which price changes interact with other marketing actions
4. The circumstances in which customers are most responsive to changes in prices
5. The difference between the initial impact of price changes and the longer-run effects. (p.11)

#### Identified Problems in Auxiliary Services

1. Determination of the optimum method of financing such services as animal facilities; machine shop; photography shop; medical illustrations; and bioelectronic shop.

### Criteria Derived from the Literature

1. A working knowledge of price theory is desirable when setting a pricing structure for auxiliary enterprises.
2. Price strategy when used by the auxiliary director should be goal oriented in terms of the entire institution.

### Other Areas of Concern

In addition to the previously mentioned theories and general discussions, the writer feels two additional areas bear merit for the diversified topic under consideration. These areas are the related subjects of information and communication theory.

Steiner (1969) said:

The cornerstone requirement for excellent information systems is understanding of each manager's needs for knowledge. Information is management information only to the extent a manager needs and wants it. Information is useful to a manager only in terms of his scale of values, his accumulated knowledge, his personal responsibility and the uses he has for it. (p.481)

Answering the question of what information does a manager need to manage effectively? Sanders (1974) stated:

A common need basic to all managers is an understanding of the purpose of the organization, i.e., its policies, its programs, its plans, and its goals. But beyond these basic informational requirements, the question of what information is needed can be answered only in broad general terms because individual managers differ in the ways in which they view information, in their analytical approaches in using it, and in their conceptual organization of relevant facts. (p.12)

Before informational needs of managers at different levels can be established, Steiner (1974, p.483) felt that

the organizational structure of a company and lines of authority and responsibility must be understood. This is particularly important when discussing an academic medical center with the overlapping responsibilities of physicians and administrators in the various schools or colleges and the teaching hospital(s).

Commenting on the difficulties of developing information systems, Cordiner (1965) said:

It is an immense problem to organize and communicate the information required to operate a large, decentralized organization... This deep communication problem is not solved by providing more volume of data for all concerned, by faster accumulation and transmittal of conventional data, by wider distribution of previously existing data, or by holding more conferences. Indeed the belief that such measures will meet the... (management information) challenge is probably one of the great fallacies in business and managerial thinking. What is required, instead, is a far more penetrating and orderly study of the business in its entirety to discover what specific information is needed at each particular position in view of the decisions to be made there. (p.102)

It appears therefore that the ultimate goal of information systems is to assure that all managers at all levels are suitably informed, on all developments which affect them.

Steiner (1969) felt there were three ways to tackle the task of redesigning information systems and explained them when he wrote:

The first is the spasm approach. This is a "quickie" examination of current systems, undertaken to spot obvious duplication or to add new sources and flows of information. These undertakings usually are fruitful but do not go far enough and are made too infrequently. A second approach is to mount a thorough - going study of information needs and the systems to meet them. The third is to charge a person or a staff with the responsibility to review



continuously the major information systems and to keep them up-to-date. The latter two methods are obviously the preferred ones. (p.491)

In order to maintain and keep current a viable information system, communication becomes extremely important.

Hall (1972) wrote:

Communication is most important in organizations and organizational segments that must deal with uncertainty, are complex, and have a technology that does not permit easy routinization. Both external and internal characteristics affect communication's centrality. The more an organization is people- and idea-oriented, the more important communication becomes.

In communicating the organization's policies and procedures the choice normally is between oral and written statements. Steiner (1969) said:

Arguments for recording policies in a policy manual or code book are strong. Executives obviously cannot execute policies to achieve objectives unless they know what policies are. Without written statements, policy obviously has to be communicated orally. This usually is considered a poorer means of transmission because of misinterpretation, incompleteness in expressing policy, and other short comings of oral communications. (p.274)

Additionally, Morphet, Jones and Reller (1974) in discussing policies and procedures said:

It (policy and procedure guide) serves to give each party involved a better understanding of his responsibilities and thus lessen misunderstandings...The development of too detailed a code that would result in rigid organization and operation should be avoided. A rigid organization which fails to recognize that the informal organization may be as important as the formal one is not likely to result in an effective educational system. (p.319)

In conclusion Steiner (1969) offers a number of guidelines for developing and using policies:

#### Relating to Environment and Organization

1. Policies should be in harmony with the economic, political, and social environment of the company.
2. Policies must reflect the internal organization of a business.
3. Policies predominantly must be based upon and effectively and efficiently guide the organization in achieving its network of aims.

#### Developing Policies

4. The locus of authority to make different type policies should be clear.
5. Participation in policy-making, as in planning, is likely to produce beneficial results.
6. Policies should be developed on the basis of as good a factual analysis as possible.
7. Policies should be stated as simply and unequivocally as possible and appropriate to the level of policy.
8. Policies should complement and supplement one another.
9. A policy should be comprehensive enough to cover a range of actions over a normal span of variations in business activity.

#### The Policy Structure

10. The policy structure should be based upon definitions of terms.
11. The policy structure should be reasonably comprehensive and cover major areas of importance.
12. The basic policy structure should be reasonably stable.

#### Documentation

13. Policies should be written and made available to executives who need to know what they are.
14. Policy manuals should be separated from management directives and standard operating procedures.

#### Policy Interpretation and Review

15. A suitable plan for educating management about the meaning of company policies should be developed.
16. Some procedures for testing compliance with policies should be established.
17. Policies should be reviewed systematically for obsolescence. (pp.281-284)

Steiner's guidelines although written with the private corporation in mind appear to have definite value for institutions of higher education, both public and private.

### Identified Problems in Other Areas of Concern

1. Poor property control both in terms of records and keeping up with the individual pieces of equipment.
2. Legal services required by the Medical Center which are performed by the main campus can take too long a time period before responses are received to inquiries.
3. Development of adequate systems and procedures and promulgation of such written documents so that personnel affected by them are aware that such written procedures exist and can use and understand them.
4. Compliance with OSHA provisions.

### Criteria Derived from the Literature

1. Capital equipment should be assigned property identification control numbers for accountability purposes with ultimate responsibility for the individual pieces of equipment residing with departmental heads.
2. A priority system should be developed between the medical center and campus attorneys in order to meet the time utility of legal inquiries.
3. There should be established a systems and procedures department within the medical center to review continuously major information systems and to keep them updated.
4. Promulgation of policies and procedures should be in written format and fall under the responsibility of the systems and procedures department.
5. Budgetary allocations should be made for a gradual phasing in on a priority basis in order that the institution comply with OSHA requirements.

### Summary of the Criteria Derived from the Literature

#### Financial Accounting

1. A trade off may be necessary in the receiving of accounting information on a timely basis between the sacrificing of some accuracy and the increase of timeliness.
2. In order to provide the most useful information for decision making, financial reports should articulate with each other primarily to make the information more understandable and useful for decision making.

3. College financial statements should be restructured to depict the financial status of the college as an entity rather than as a combination of a number of independent funds.
4. Economic activity is carried on during specifiabe periods of time thus time frames as expressed on vendor invoices should be adhered to by the disbursing authority on campus and not some central authority hundreds of miles from campus.
5. In order to meet the Medical Center's functions in program budget terms an accounting system which provides cost information on a program basis should be developed.

#### Budget Preparation and Control

1. The entire process of budget formulation through adoption should be completed within a time frame that does not subject the institution to keep track of more than two different fiscal years at a time excluding biennial budgets.
2. There should be enough review levels of the budget to insure the expectancy of complying with it through superior-subordinate motivation and ability.
3. Under the adoption of internal price theory at the departmental level and college level, the necessity of multi-level budgeting review is negated due to treating each academic department as a small business, each department wins its budget according to the value of its output in relation to other departments.
4. In estimating revenue from state appropriations each state should establish a state level budgetary department which would, among other things, correlate the needs of the various state agencies with anticipated revenues and prepare estimated legislative appropriations.
5. Budget guidelines should be developed by the budget coordinator for the entire campus, the guidelines should be explained to each department head by the coordinator and at least one years historical data given to each department to be used as a starting point in assembling the new budget.

### Physical Plant

1. The determination of project priorities should be based on a logical decision theory, employing the use of decision tables where appropriate, with conditions ranging from "life-threatening" to routine items.
2. Costs of ordinary, recurring repairs to buildings and equipment should be paid by the individual departments affected. Extraordinary repairs and replacements should be paid for by the physical plant.
3. Familiarity with estimating techniques is essential for the ability to determine unit costs of both minor and major projects and should be used in conjunction with internally or externally managed projects.
4. Programmed decisions should be renewed periodically to determine if the habitual course of action is still the best in light of any new developments.

### Personnel Services

1. The central office of the state personnel classification office should have health professionals on their staff to act as liaison with the various state agencies employing personnel in health related occupations to insure timely, accurate, and fair classifications.
2. There should be an effective wage administration at both the institutional and state level. A viable and fair merit system should be established with a floating top range not a fixed dollar amount.
3. Frequent use should be made of authoritative wage surveys. These surveys should show local, state and national figures and be used by the wage administration when recommending wage rates.

### Purchasing

1. Where state contracts are presently in force the purchasing director should evaluate the possibility of systems contracting for greater savings to all areas of the institution while at the same time promoting place, time, and possession utility.
2. In accepting a bid the purchasing department should consider not only the lowest responsible bidder but

also the bidder who offers the lowest ultimate cost.

3. The purchasing department should be cognizant of time utility in the bid procedure and where appropriate use such devices as the telephone and telegram.

#### Auxiliary Services

1. A working knowledge of price theory is desirable when setting a pricing structure for auxiliary enterprises.
2. Price strategy when used by the auxiliary director should be goal oriented in terms of the entire institution.

#### Other Areas of Concern

1. Capital equipment should be assigned property identification control numbers for accountability purposes with ultimate responsibility for the individual pieces of equipment residing with departmental heads.
2. A priority system should be developed between the medical center and campus attorneys in order to meet the time utility of legal inquiries.
3. There should be established a systems and procedures department within the medical center to review continuously major information systems and to keep them updated.
4. Promulgation of policies and procedures should be in written format and fall under the responsibility of the systems and procedures department.
5. Budgetary allocations should be made for a gradual phasing in on a priority basis in order that the institution comply with OSHA requirements.

CHAPTER IV  
REVISION OF THE CRITERIA BASED ON THEIR  
THEORETICAL FEASIBILITY BY THE PANEL

This chapter consists of two sections, the first is a brief synopsis of information relating to the panel members. The second section, and major portion of the chapter, depicts the agreement, recommendations for revisions and disagreement with the criteria based on their theoretical feasibility as cited by the panel members.

Brief Synopsis of Information Relating to the Panel Members

Two of the panel members were chief business officers in their respective academic medical centers, and were considered to be the practitioners of the panel. A third member of the panel was the Chairman of the Graduate Program in Hospital Administration at a major university, and was considered to be the academician on the panel. The fourth member of the panel was the Vice President for Health Affairs at a major academic medical center and was considered to be the chief executive on the panel.

The total combined years of experience of the panel in being associated with academic medical centers was seventy-two years.

Recommended Revisions of the Criteria  
by the Panel

In this portion of the chapter are presented the results of the submission of the criteria to the panel. In retrospect, these criteria were developed from the literature. The format of this chapter follows the format of the criteria submitted to the panel (Appendix C). The chapter is divided into the following operational areas:

- Financial Accounting
- Budget Preparation and Control
- Physical Plant
- Personnel Services
- Purchasing
- Auxiliary Services
- Other Areas of Concern

Each of these operational areas is divided into subsections containing first, the criterion as it appeared when sent to the panel (Appendix C); second, the recommendations of the panel; and third the finally revised criterion containing the suggested revisions.

If recommendations that substantively altered the criterion were made, the concurrence of three of the panel members, as interpreted by the writer, was required before the change was made. If three of the panel members agreed with the criterion as written and the other did not, the disagreement was noted but the criterion remained as written. If two panel members agreed with the criterion



as written and two disagreed with the criterion the writer revised the criterion to reflect both opinions.

For one of the criteria the panel members provided four differing opinions and allowed the writer no clear recommendation for the final criterion. In this case the writer deleted the criterion based on his interpretation of the view prevalently expressed by these persons.

Where revisions were recommended by any of the panel members that did not substantively alter the criterion, but as interpreted by the writer, added to clarity, they were incorporated into the criterion.

The following sections show the results of submission of the criteria to the panel.

#### Financial Accounting

Criterion 1. The criterion as developed from the literature was written as follows:

A trade off may be necessary in the receiving of accounting information on a timely basis between the sacrificing of some accuracy and the increase of timeliness.

The panel in reviewing this criterion offered the following opinions as to the theoretical feasibility.

There was general agreement with the criterion if revisions were made. The revisions were to add the word "comprehensiveness" and to state the criterion in a more positive manner.

The following criterion resulted from and reflects the opinions of the panel:

The receipt of accounting information on a timely basis must be balanced against additional accuracy and comprehensiveness which would be gained with more time.

Criterion 2. The criterion as developed from the literature was written as follows:

In order to provide the most useful information for decision making, financial reports should articulate with each other primarily to make the information more understandable and useful for decision making.

The panel in reviewing this criterion offered the following opinions, as to the theoretical feasibility.

Three of the panel members agreed with the criterion as written. The fourth offered two revisions. The first being that "the highest level of reporting for a university is required to be in a format which is generally accepted, and generally understandable by persons who receive these reports as they compare and relate to those of other colleges and universities." The second revision dealt with the financial reports to the Vice President for Health Affairs or the Dean of the College of Medicine in which "the reports should attempt to identify particular matters which need management attention."

The following criterion resulted from and reflects the opinions of the panel:

In order to provide the most useful information for decision making, financial reports should articulate with each other primarily to make the information more understandable and useful for decision making at all levels of institutional management.

Criterion 3. The criterion as developed from the literature was written as follows:

College financial statements should be restructured to depict the financial status of the college as an entity rather than as a combination of a number of independent funds.

The panel in reviewing this criterion all agreed with the criterion as written. Therefore, the criterion remained unchanged.

Criterion 4. The criterion as developed from the literature was written as follows:

Economic activity is carried on during specifiable periods of time thus time frames as expressed on vendor invoices should be adhered to by the disbursing authority on campus and not some central authority hundreds of miles from campus.

The panel in reviewing this criterion offered the following opinions as to the theoretical feasibility.

Three of the panel members agreed with the criterion as written. The fourth agreed only under the assumption that there was a disbursing authority on the campus. Furthermore, the fourth panel member added that "the issue seems to be primarily one of being certain that those who have the responsibility for vendor relationships are fully aware of this responsibility and that it is handled consistently."

The following criterion resulted from and reflects the opinions of the panel:

Economic activity is carried on during specifiable periods of time thus time frames as expressed on vendor invoices should be adhered to by the disbursing authority on campus in a consistent manner and not some central authority hundreds of miles from campus.

Criterion 5. The criterion as developed from the literature was written as follows:

In order to meet the Medical Center's functions in program budget terms an accounting system which provides cost information on a program basis should be developed.

The panel in reviewing this criterion offered the following opinions as to the theoretical feasibility.

Three of the panel members agreed with the criterion as written. The fourth felt the statement was theoretically accurate, but as of this time felt "the definition of program continues to be so vague that it is not practical to implement."

The criterion, because of agreement of three of the panel members and the absence of clarifying revisions from the fourth, remained unchanged.

#### Budget Preparation and Control

Criterion 1. The criterion as developed from the literature was written as follows:

The entire process of budget formulation through adoption should be completed within a time frame that does not subject the institution to keep track of more than two different fiscal years at a time excluding biennial budgets.

The panel in reviewing this criterion all agreed with the criterion as written. Therefore, the criterion remained unchanged.

Criterion 2. The criterion as developed from the literature was written as follows:

There should be enough review labels of the budget to insure the expectancy of complying with it through superior-subordinate motivation and ability.

The panel in reviewing this criterion offered the following opinions as to the theoretical feasibility.

Three of the panel members agreed with the criterion as written. The fourth felt that the words "but no more than" be added to further clarify the criterion.

The following criterion resulted from and reflects the opinions of the panel:

There should be enough review levels of the budget, but no more than to insure the expectancy of complying with it through superior-subordinate motivation and ability.

Criterion 3. The criterion as developed from the literature was written as follows:

Under the adoption of internal price theory at the department level and college level, the necessity of multi-level budgeting is negated due to treating each academic department as a small business, each department wins its budget according to the value of its output in relation to other departments.

There were no similar opinions regarding this criterion other than three panel members totally disagreed with it and the fourth wanted it revised. One panel member felt there were two problems with it. The first problem relates to an underlying assumption, i.e. "that all departments on the campus are motivated toward the same objective - growth - which is not likely." The second problem noted was that "departments would be trying for a higher volume of production at the lowest possible cost,

and that the objective of the department is to educate not operate in a competitive market place." Another panel member indicated the difficulty was in determining "output". "Numbers alone are not sufficient, production of a physical therapist, physician, and hospital administrator are not the same." Another panel member felt the criterion was acceptable if the middle phrase were omitted.

As mentioned previously in a case such as this, the criterion resulted from an interpretation by the writer of the prevalent view expressed by the panel. The writer determined that the criterion was not appropriate as expressed by the views of the panel and therefore was deleted.

Criterion 4. The criterion as developed from the literature was written as follows:

In estimating revenue from state appropriations each state level budgetary department which would, among other things, correlate the needs of the various state agencies with anticipated revenues and prepare estimated legislative appropriations.

The panel in reviewing this criterion all agreed with the criterion as written. Therefore, the criterion remained unchanged.

Criterion 5. The criterion as developed from the literature was written as follows:

Budget guidelines should be developed by the budget coordinator for the entire campus, the guidelines should be explained to each department head by the coordinator and at least one year's historical data given to each department to be used as a starting point in assembling the new budget.

The panel in reviewing this criterion offered the following opinions as to the theoretical feasibility.

Two of the panel members agreed with the criterion as written. The other two agreed if revisions were made. The revisions were to delete "each department head" and replace with "all concerned" and to reword the last prepositional phrase.

The following criterion resulted from and reflects the opinions of the panel:

Budget guidelines should be developed by the budget coordinator for the entire campus, the guidelines should be explained to all concerned by the coordinator and at least one year's historical data given to each department as one component of the data base to be used in assembling the new budget.

#### Physical Plant

Criterion 1. The criterion as developed from the literature was written as follows:

The determination of project priorities should be based on a logical decision theory, employing the use of decision tables where appropriate, with conditions ranging from "life-threatening" to routine items.

The panel in reviewing this criterion all agreed with the criterion as written. Therefore, the criterion remained unchanged.

Criterion 2. The criterion as developed from the literature was written as follows:

Costs of ordinary, recurring repairs to buildings and equipment should be paid by the individual departments affected. Extraordinary repairs and replacements should be paid for by the Physical Plant.

The panel in reviewing this criterion offered the following opinions as to the theoretical feasibility.

Three of the panel members felt that the costs of ordinary recurring repairs should be paid for by a centrally administered fund within the Physical Plant Division. The panel split on the issue of extraordinary repairs and replacements. Two panel members felt these costs should be departmental responsibilities, however, one of these panel members clarified himself by referring to "elective renovations or alterations." The other two felt that the Physical Plant through a central fund should bear the cost.

The following criterion resulted from and reflects the opinions of the panel:

Costs of ordinary, recurring repairs to buildings and equipment should be paid for out of a fund centrally administered by the Physical Plant Division. Extraordinary repairs and replacements should also be paid for through a fund centrally administered by the Physical Plant Division. Elective renovations or alterations should be the responsibility of the individual department.

Criterion 3. The criterion as developed from the literature was written as follows:

Familiarity with estimating techniques is essential for the ability to determine unit costs of both minor and major projects and should be used in conjunction with internally or externally managed projects.

The panel in reviewing this criterion all agreed with the criterion as written. Therefore, the criterion remained unchanged.



Criterion 4. The criterion as developed from the literature was written as follows:

Programmed decisions should be renewed periodically to determine if the habitual course of action is still the best in light of any new developments.

The panel in reviewing this criterion all agreed with the criterion as written. Therefore, the criterion remained unchanged.

#### Personnel Services

Criterion 1. The criterion as developed from the literature was written as follows:

The central office of the state personnel classification office should have health professionals on their staff to act as liaison with the various state agencies employing personnel in health related occupations to insure timely, accurate, and fair classifications.

The panel in reviewing this criterion offered the following opinions as to the theoretical feasibility.

There was general agreement with the criterion as written if revisions were made. The revisions were to add the words "or other specialists" and to use salary surveys published by the Association of American Medical Colleges.

The following criterion resulted from and reflects the opinions of the panel:

The central office of the state personnel classification office should have health professionals or other specialists on their staff to act as liaison with the various state agencies employing personnel in health related occupations and should use published salary surveys from the Association of American Medical Colleges to insure timely, accurate, and fair classifications.

Criterion 2. The criterion as developed from the literature was written as follows:

There should be an effective wage administration at both the institutional and state level. A viable and fair merit system should be established with a floating top range not a fixed dollar amount.

The panel in reviewing this criterion offered the following opinions as to the theoretical feasibility.

Three of the panel members agreed with the criterion as written. The fourth felt that the criterion could prove unrealistic in its use of the word "viable".

The criterion, because of agreement of three of the panel members and the absence of clarifying revisions from the fourth, remained unchanged.

Criterion 3. The criterion as developed from the literature was written as follows:

Frequent use should be made of authoritative wage surveys. These surveys should show local, state and national figures and be used by the wage administration when recommending wage rates.

The panel in reviewing this criterion all agreed with the criterion as written. Therefore, the criterion remained unchanged.

### Purchasing

Criterion 1. The criterion as developed from the literature was written as follows:

Where state contracts are presently in force the purchasing director should evaluate the possibility of systems contracting for greater savings to all areas of the institution while at the same time promoting place, time and possession utility.

The panel in reviewing this criterion all agreed with the criterion as written. Therefore, the criterion remained unchanged.

Criterion 2. The criterion as developed from the literature was written as follows:

In accepting a bid the purchasing department should consider not only the lowest responsible bidder but also the bidder who offers the lowest ultimate cost.

The panel in reviewing this criterion all agreed with the criterion as written. Therefore, the criterion remained unchanged.

Criterion 3. The criterion as developed from the literature was written as follows:

The purchasing department should be cognizant of time utility in the bid procedure and where appropriate use such devices as the telephone and telegram.

The panel in reviewing this criterion offered the following opinions as to the theoretical feasibility.

Three of the panel members agreed with the criterion as written. The fourth felt that reference to the use of the "telephone and telegram" be deleted.

The criterion, because of agreement of three of the panel members and the absence of clarifying revisions from the fourth, remained unchanged.

### Auxiliary Services

Criterion 1. The criterion as developed from the literature was written as follows:

A working knowledge of price theory is desirable when setting a pricing structure for auxiliary enterprises.

The panel in reviewing this criterion offered the following opinions as to the theoretical feasibility.

Three of the panel members agreed with the criterion as written. The fourth felt that "the business officers are more concerned with having enough information in terms of the number of units produced and unit costs to determine that they are in fact being charged a fair price for the services received." The fourth panel member did not offer a revision to the criterion.

The criterion, because of agreement of three of the panel members and the absence of a clarifying revision from the fourth, remained unchanged.

Criterion 2. The criterion as developed from the literature was written as follows:

Price strategy when used by the auxiliary director should be goal oriented in terms of the entire institution.

The panel in reviewing this criterion offered the following opinions as to the theoretical feasibility.

Three of the panel members agreed with the criterion as written. The fourth felt the criterion was not "responsive to the real needs perceived by the business officers," and additionally, expressed the same concern as previously mentioned in Criterion 1 under Auxiliary Services.

The criterion, because of agreement of three of the panel members and the absence of a clarifying revision from the fourth, remained unchanged.

Other Areas of Concern

Criterion 1. The criterion as developed from the literature was written as follows:

Capital equipment should be assigned property identification control numbers for accountability purposes with ultimate responsibility for the individual pieces of equipment residing with departmental heads.

The panel in reviewing this criterion all agreed with the criterion as written. Therefore, the criterion remained unchanged.

Criterion 2. The criterion as developed from the literature was written as follows:

A priority system should be developed between the medical center and campus attorneys in order to meet the time utility of legal inquiries.

The panel in reviewing this criterion all agreed with the criterion as written. Therefore, the criterion remained unchanged.

Criterion 3. The criterion as developed from the literature was written as follows:

There should be established a system and procedures department within the medical center to review continuously major information systems and to keep them updated.

The panel in reviewing this criterion offered the following opinions as to the theoretical feasibility.

Three of the panel members agreed with the criterion as written. The fourth disagreed totally and indicated that the criterion might create more problems than it would solve.

The fourth panel member felt a good department head would automatically do this.

As indicated earlier if three of the panel members agree with the criterion as written and the fourth does not, the criterion would remain as written.

Criterion 4. The criterion as developed from the literature was written as follows:

Promulgation of policies and procedres should be in written format and fall under the responsibility of the systems and procedures department.

The panel in reviewing this criterion offered the following opinions as to the theoretical feasibility.

Three of the panel members agreed with the criterion as written but one of the three offered a note of caution. The caution being that care should be taken that personnel assigned to such a department are not those that have been unable to perform in other assignments. The fourth panel member felt the criterion should be revised by substituting "department head" for "systems and procedures department".

The following criterion resulted from and reflects the opinions of the panel:

Promulgation of policies and procedures should be in written format and fall under the responsibility of the systems and procedures department where such a department has been created. Otherwise the responsibility should be that of the department head.

Criterion 5. The criterion as developed from the literature was written as follows:

Budgetary allocations should be made for a gradual phasing in on a priority basis in order that the institution comply with OSHA requirements.

The panel in reviewing this criterion offered the following opinions as to the theoretical feasibility.

Three of the panel members agreed with the criterion as written. The fourth stated, "I don't think OSHA requirements should be gradually phased in."

The criterion because of agreement of three of the panel members remained unchanged.

#### Summary

The criteria were reviewed by four panel members knowledgeable in the area of business affairs in academic medical centers. They were asked to review the criteria commenting on their theoretical feasibility to be used as a framework to assist in solving major issues faced by chief business officers in academic medical centers. Their agreements, recommended revisions and disagreements were depicted as shown in the finally revised criteria.

There were only two criteria that evoked disagreement from more than one of the panel members. They all agreed with eleven of the twenty-seven criteria as they were written. There were seven more criteria in which three of the panel members agreed the criteria should remain as written. This caused eighteen criteria to remain unchanged after review by the panel members.

The remaining nine criteria had revisions which reflected the recommendations of the panel. Three of these criteria had only minor revisions and did not in the judgment of the writer substantively alter the criteria but merely added clarity. One of the criterion was deleted and the remaining five had substantive revisions and were from the following sections:

Financial Accounting  
Criterion 1

Budget Preparation and Control  
Criterion 5

Physical Plant  
Criterion 2

Personnel Services  
Criterion 1

Other Areas of Concern  
Criterion 4

The general comments made regarding the criteria by the panel members were that these criteria were theoretically sound and could be used as a framework to assist in solving major issues faced by chief business officers in academic medical centers.

#### Summary of Revised Criteria

##### Financial Accounting

1. The receipt of accounting information on a timely basis must be balanced against additional accuracy and comprehensiveness which would be gained with more time.
2. In order to provide the most useful information for decision making, financial reports should articulate with each other primarily to make the



information more understandable and useful for decision making at all levels of institutional management.

3. College financial statements should be restructured to depict the financial status of the college as an entity rather than as a combination of a number of independent funds.
4. Economic activity is carried on during specifiable periods of time thus time frames as expressed on vendor invoices should be adhered to by the disbursing authority on campus in a consistent manner and not some central authority hundreds of miles from campus.
5. In order to meet the Medical Center's functions in program budget terms an accounting system which provides cost information on a program basis should be developed.

#### Budget Preparation and Control

1. The entire process of budget formulation through adoption should be completed within a time frame that does not subject the institution to keep track of more than two different fiscal years at a time excluding biennial budgets.
2. There should be enough review levels of the budget, but no more than to insure the expectancy of complying with it through superior-subordinate motivation and ability.
3. In estimating revenue from state appropriations each state level budgetary department which would, among other things, correlate the needs of the various state agencies with anticipated revenues and prepare estimated legislative appropriations.
4. Budget guidelines should be developed by the budget coordinator for the entire campus, the guidelines should be explained to all concerned by the coordinator and at least one year's historical data given to each department as one component of the data base to be used in assembling the new budget.

### Physical Plant

1. The determination of project priorities should be based on a logical decision theory, employing the use of decision tables where appropriate, with conditions ranging from "life-threatening" to routine items.
2. Cost of ordinary, recurring repairs to buildings and equipment should be paid for out of a fund centrally administered by the Physical Plant Division. Extraordinary repairs and replacements should also be paid for through a fund centrally administered by the Physical Plant Division. Elective renovations or alterations should be the responsibility of the individual department.
3. Familiarity with estimating techniques is essential for the ability to determine unit costs of both minor and major projects and should be used in conjunction with internally or externally managed projects.
4. Programmed decisions should be renewed periodically to determine if the habitual course of action is still the best in light of any new developments.

### Personnel Services

1. The central office of the state personnel classification office should have health professionals or other specialists on their staff to act as liaison with the various state agencies employing personnel in health related occupations and should use published salary surveys from the Association of American Medical Colleges to insure timely, accurate, and fair classifications.
2. There should be an effective wage administration at both the institutional and state level. A viable and fair merit system should be established with a floating top range not a fixed dollar amount.
3. Frequent use should be made of authoritative wage surveys. These surveys should show local, state and national figures and be used by the wage administration when recommending wage rates.

### Purchasing

1. Where state contracts are presently in force the purchasing director should evaluate the possibil-

ity of systems contracting for greater savings to all areas of the institution while at the same time promoting place, time and possession utility.

2. In accepting a bid the purchasing department should consider not only the lowest responsible bidder but also the bidder who offers the lowest ultimate cost.
3. The purchasing department should be cognizant of time utility in the bid procedure and where appropriate use such devices as the telephone and telegram.

#### Auxiliary Services

1. A working knowledge of price theory is desirable when setting a pricing structure for auxiliary enterprises.
2. Price strategy when used by the auxiliary director should be goal oriented in terms of the entire institution.

#### Other Areas of Concern

1. Capital equipment should be assigned property identification control numbers for accountability purposes with ultimate responsibility for the individual pieces of equipment residing with departmental heads.
2. A priority system should be developed between the medical center and campus attorneys in order to meet the time utility of legal inquiries.
3. There should be established a systems and procedures department within the medical center to review continuously major information systems and to keep them updated.
4. Promulgation of policies and procedures should be in written format and fall under the responsibility of the systems and procedures department where such a department has been created. Otherwise the responsibility should be that of the department head.
5. Budgetary allocations should be made for a gradual phasing in on a priority basis in order that the institution comply with OSHA requirements.

## CHAPTER V SUMMARY AND GENERAL OBSERVATIONS

### Summary

The purpose of this study was to develop a set of criteria to be used as a framework to assist in solving the major issues faced by chief business officers in university medical centers. The resulting criteria were assessed as theoretically feasible by a four member panel, knowledgeable in the business operations of academic medical centers.

Eighteen academic medical centers in the United States of America participated in this study and are listed in Appendix B. An open ended survey questionnaire was used to identify the perceived problems by the eighteen academic medical centers as depicted in Appendix A. The survey revealed a total of twenty one perceived problems as indicated in Chapter II.

The review of related literature in Business Administration, Hospital Administration and Educational Administration as contained in Chapter III provided the basis for the establishment of the criteria. Specific answers to the identified problems as stated in Chapter II were not sought because of the diversity among the one hundred and fourteen academic medical centers in the United States. Rather a theoretical base was used in the development of the criteria.

Various theories were researched including accounting theory, budgetary theory, personnel management theory, price theory, decision theory, information and communication theory and general systems theory. A total of twenty seven criteria were developed from a review of the literature and are summarized at the end of Chapter III. Both the identified problems and resulting criteria were confined to the following areas:

- Financial Accounting
- Budget Preparation and Control
- Physical Plant
- Personnel Services
- Purchasing
- Auxiliary Services
- Other Areas of Concern

The criteria as developed in Chapter III were then submitted to a panel of four members knowledgeable in the area of business affairs in academic medical centers. The panel consisted of two practitioners, one academician and one chief executive officer of academic medical center. Appendix C depicts the format used for the revision of the criteria. The results of the review by the panel are depicted in Chapter IV and produced a revised set of criteria to be used as a framework to assist in solving the identified problems of chief business officers in academic medical centers. The revised set of criteria is found at the end of Chapter IV.

### General Observations

The writer observed that the areas of Financial Accounting and Budget Preparation and Control yielded the greatest number of perceived problems. The general trend of the problems in these two areas were of a more detailed nature as compared to the identified problems in the other areas of concern. It is the writer's feeling that the areas of Financial Accounting and Budget Preparation and Control are a more direct day to day responsibility of the chief business officer in academic medical centers, whereas the areas of Purchasing, Physical Plant Operation, Personnel Services and Auxiliary Services are more the direct responsibility of the main campus chief business officer. This is not to indicate that the chief business officers in academic medical centers do not have problems in these areas or responsibility for them. They do but as revealed from the survey of identified problems the problems in these areas are of a more general nature.

The review and revision of the criteria by the panel revealed the greatest number of revisions and individual disagreement within the areas of Financial Accounting and Budget Preparation and Control. This finding is consistent with the results of the survey questionnaire in which the participating institutions also identified the greatest number of problems in both Financial Accounting and Budget Preparation and Control. Specifically, one criterion (criterion 3) was deleted from Budget Preparation and

Control as evidenced in Chapter IV for the lack of any agreement on the part of the panel. This criterion specifically dealt with treating each department as an individual business in which the department wins its budget in relation to its own output compared to other departments. The panel, as interpreted by the writer, felt this to be anti academic and counter productive. This led the writer to observe that the greatest concerns and needed improvements for the overall business management of academic medical centers is in the areas of Financial Accounting and Budget Preparation and Control.

The writer felt that there was general agreement by the panel with the finally revised set of criteria; that the criteria were theoretically sound and could be used as a framework to assist in solving major issues faced by chief business officers in academic medical centers.

#### Recommendations for Further Research

The scope of this study involved eighteen of the 114 academic medical centers in the United States to determine perceived business problems. There are two recommendations for further research.

The first recommendation for further research is that the criteria as revised by the panel be evaluated as to their actual implementation in assisting to solve the identified problems. This kind of evaluation demonstrates the working practicality of the criteria.

The second recommendation is that further and more in depth research be conducted in what appears to be the two primary areas of concern of chief business officers in academic medical centers. These two identified areas are Financial Accounting and Budget Preparation and Control.



APPENDIX A

Survey of the perceived problems  
of the chief business officer in  
selected university medical centers

NAME: \_\_\_\_\_ TITLE: \_\_\_\_\_

INSTITUTION: \_\_\_\_\_

THE CHIEF BUSINESS OFFICER  
MAJOR AREAS OF RESPONSIBILITY

1. FINANCIAL ACCOUNTING

- Includes such areas as the basic bookkeeping function of the institution; preparation of periodic reports; design and maintenance of the accounting system; payments for services and supplies

PERCEIVED PROBLEMS:

## 2. BUDGET PREPARATION AND CONTROL

Includes such things as the dissemination of yearly budget worksheets to unit heads, projected annual income; periodic status reports to unit heads

PERCEIVED PROBLEMS:

### 3. PHYSICAL PLANT

Includes such things as routine maintenance and operation; participation with other officers in planning, design, and construction decisions

PERCEIVED PROBLEMS:

#### 4. PERSONNEL SERVICES

Includes such things as employment of non-academic personnel; information and service relating to staff benefits, training programs, salary plans, fringe benefit packages, and related matters; union contracts and negotiations

PERCEIVED PROBLEMS:

## 5. PURCHASING

Includes such things as the routine of requisitions and purchase orders; bid policies; supervision of stores

PERCEIVED PROBLEMS:

## 6. AUXILIARY SERVICES

Includes such things as financial control and or management of auxiliary enterprises and service units

PERCEIVED PROBLEMS:

## 7. OTHER AREAS OF CONCERN

Includes such areas as internal control; grants management; investment programs; systems and procedures; legal service; property control; and autonomy of medical center from parent university

PERCEIVED PROBLEMS:



APPENDIX B

Participating institutions  
in survey

1. Case Western Reserve University
2. Columbia University - College of Physicians & Surgeons
3. College of Medicine and Dentistry of New Jersey
4. Dartmouth Medical School
5. Medical University of South Carolina
6. Northwestern University Medical School
7. Pennsylvania State University - Milton S. Hershey Medical Center
8. University of Alabama System
9. University of Arizona
10. University of Arkansas
11. University of Florida
12. University of Maryland
13. University of Massachusetts Medical School
14. University of New Mexico
15. University of North Carolina
16. University of Pennsylvania Medical Center
17. University of Southern California
18. University of Vermont

APPENDIX C

Revised Criteria to Assist in Solving Problems  
Identified by the Chief Business Officer  
in Selected University Medical Centers

REVISED CRITERIA TO ASSIST IN SOLVING  
PROBLEMS IDENTIFIED BY THE CHIEF BUSINESS OFFICER  
IN SELECTED UNIVERSITY MEDICAL CENTERS

Financial Accounting

1. A trade off may be necessary in the receiving of accounting information on a timely basis between the sacrificing of some accuracy and the increase of timeliness.

\_\_\_\_\_ Agree as written

\_\_\_\_\_ Agree if revised as follows: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_ Disagree totally; Rationale as follows: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

2. In order to provide the most useful information for decision making, financial reports should articulate with each other primarily to make the information more understandable and useful for decision making.

\_\_\_\_\_ Agree as written

\_\_\_\_\_ Agree if revised as follows: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_ Disagree totally; Rationale as follows: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

- 3. College financial statements should be restructured to depict the financial status of the college as an entity rather than as a combination of a number of independent funds.

\_\_\_\_\_ Agree as written

\_\_\_\_\_ Agree if revised as follows: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_ Disagree totally; Rationale as follows: \_\_\_\_\_

\_\_\_\_\_

- 4. Economic activity is carried on during specifiable periods of time thus time frames as expressed on vendor invoices should be adhered to by the disbursing authority on campus and not some central authority hundreds of miles from campus.

\_\_\_\_\_ Agree as written

\_\_\_\_\_ Agree if revised as follows: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_ Disagree totally; Rationale as follows: \_\_\_\_\_

\_\_\_\_\_

- 5. In order to meet the Medical Center's functions in program budget terms an accounting system which provides cost information on a program basis should be developed.

\_\_\_\_\_ Agree as written

\_\_\_\_\_ Agree if revised as follows: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_ Disagree totally; Rationale as follows: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Budget Preparation and Control

1. The entire process of budget formulation through adoption should be completed within a time frame that does not subject the institution to keep track of more than two different fiscal years at a time excluding biennial budgets.

\_\_\_\_\_ Agree as written  
\_\_\_\_\_ Agree if revised as follows: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

\_\_\_\_\_ Disagree totally; Rationale as follows: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

2. There should be enough review levels of the budget to insure the expectancy of complying with it through superior-subordinate motivation and ability.

\_\_\_\_\_ Agree as written  
\_\_\_\_\_ Agree if revised as follows: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

\_\_\_\_\_ Disagree totally; Rationale as follows: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

3. Under the adoption of internal price theory at the departmental level and college level, the necessity of multi-level budgeting review is negated due to treating each academic department as a small business, each department wins its budget according to the value of its output in relation to other departments.

\_\_\_\_\_ Agree as written

\_\_\_\_\_ Agree if revised as follows: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_ Disagree totally; Rationale as follows: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

4. In estimating revenue from state appropriations each state should establish a state level budgetary department which would, among other things, correlate the needs of the various state agencies with anticipated revenues and prepare estimated legislative appropriations.

\_\_\_\_\_ Agree as written

\_\_\_\_\_ Agree if revised as follows: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_ Disagree totally; Rationale as follows: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

5. Budget guidelines should be developed by the budget coordinator for the entire campus, the guidelines should be explained to each department head by the coordinator and at least one years historical data given to each department to be used as a starting point in assembling the new budget.

\_\_\_\_\_ Agree as written

\_\_\_\_\_ Agree if revised as follows: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_ Disagree totally; Rationale as follows: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

#### Physical Plant

1. The determination of project priorities should be based on a logical decision theory, employing the use of decision tables where appropriate, with conditions ranging from "life-threatening" to routine items.

\_\_\_\_\_ Agree as written

\_\_\_\_\_ Agree if revised as follows: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_ Disagree totally; Rationale as follows: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_



2. Costs of ordinary, recurring repairs to buildings and equipment should be paid by the individual departments affected. Extraordinary repairs and replacements should be paid for by the physical plant.

\_\_\_\_\_ Agree as written

\_\_\_\_\_ Agree if revised as follows: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_ Disagree totally; Rationale as follows: \_\_\_\_\_

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3. Familiarity with estimating techniques is essential for the ability to determine unit costs of both minor and major projects and should be used in conjunction with internally or externally managed projects.

\_\_\_\_\_ Agree as written

\_\_\_\_\_ Agree if revised as follows: \_\_\_\_\_

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\_\_\_\_\_ Disagree totally; Rationale as follows: \_\_\_\_\_

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4. Programmed decisions should be renewed periodically to determine if the habitual course of action is still the best in light of any new developments.

\_\_\_\_\_ Agree as written

\_\_\_\_\_ Agree if revised as follows: \_\_\_\_\_

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\_\_\_\_\_ Disagree totally; Rationale as follows: \_\_\_\_\_

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#### Personnel Services

1. The central office of the state personnel classification office should have health professionals on their staff to act as liaison with the various state agencies employing personnel in health related occupations to insure timely, accurate, and fair classifications.

\_\_\_\_\_ Agree as written

\_\_\_\_\_ Agree if revised as follows: \_\_\_\_\_

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\_\_\_\_\_ Disagree totally; Rationale as follows: \_\_\_\_\_

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2. There should be an effective wage administration at both the institutional and state level. A viable and fair merit system should be established with a floating top range not a fixed dollar amount.

\_\_\_\_\_ Agree as written

\_\_\_\_\_ Agree if revised as follows: \_\_\_\_\_

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\_\_\_\_\_ Disagree totally; Rationale as follows: \_\_\_\_\_

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- 3. Frequent use should be made of authoritative wage surveys. These surveys should show local, state and national figures and be used by the wage administration when recommending wage rates.

\_\_\_\_\_ Agree as written

\_\_\_\_\_ Agree if revised as follows: \_\_\_\_\_

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\_\_\_\_\_ Disagree totally; Rationale as follows: \_\_\_\_\_

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Purchasing

- 1. Where state contracts are presently in force the purchasing director should evaluate the possibility of systems contracting for greater savings to all areas of the institution while at the same time promoting place, time, and possession utility.

\_\_\_\_\_ Agree as written

\_\_\_\_\_ Agree if revised as follows: \_\_\_\_\_

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\_\_\_\_\_ Disagree totally; Rationale as follows: \_\_\_\_\_

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2. In accepting a bid the purchasing department should consider not only the lowest responsible bidder but also the bidder who offers the lowest ultimate cost.

\_\_\_\_\_ Agree as written

\_\_\_\_\_ Agree if revised as follows: \_\_\_\_\_

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\_\_\_\_\_ Disagree totally; Rationale as follows: \_\_\_\_\_

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3. The purchasing department should be cognizant of time utility in the bid procedure and where appropriate use such devices as the telephone and telegram.

\_\_\_\_\_ Agree as written

\_\_\_\_\_ Agree if revised as follows: \_\_\_\_\_

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\_\_\_\_\_ Disagree totally; Rationale as follows: \_\_\_\_\_

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Auxiliary Services

1. A working knowledge of price theory is desirable when setting a pricing structure for auxiliary enterprises.

\_\_\_\_\_ Agree as written

\_\_\_\_\_ Agree if revised as follows: \_\_\_\_\_

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\_\_\_\_\_ Disagree totally; Rationale as follows: \_\_\_\_\_

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2. Price strategy when used by the auxiliary director should be goal oriented in terms of the entire institution.

\_\_\_\_\_ Agree as written

\_\_\_\_\_ Agree if revised as follows: \_\_\_\_\_

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\_\_\_\_\_ Disagree totally; Rationale as follows: \_\_\_\_\_

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Other Areas of Concern

1. Capital equipment should be assigned property identification control numbers for accountability purposes with ultimate responsibility for the individual pieces of equipment residing with departmental heads.

\_\_\_\_\_ Agree as written

\_\_\_\_\_ Agree if revised as follows: \_\_\_\_\_

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\_\_\_\_\_ Disagree totally; Rationale as follows: \_\_\_\_\_

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2. A priority system should be developed between the medical center and campus attorneys in order to meet the time utility of legal inquiries.

\_\_\_\_\_ Agree as written

\_\_\_\_\_ Agree if revised as follows: \_\_\_\_\_

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\_\_\_\_\_ Disagree totally; Rationale as follows: \_\_\_\_\_

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3. There should be established a systems and procedures department within the medical center to review continuously major information systems and to keep them updated.

\_\_\_\_\_ Agree as written

\_\_\_\_\_ Agree if revised as follows: \_\_\_\_\_

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\_\_\_\_\_ Disagree totally; Rationale as follows: \_\_\_\_\_

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4. Promulgation of policies and procedures should be in written format and fall under the responsibility of the systems and procedures department.

\_\_\_\_\_ Agree as written

\_\_\_\_\_ Agree if revised as follows: \_\_\_\_\_

\_\_\_\_\_ Disagree totally; Rationale as follows: \_\_\_\_\_

5. Budgetary allocations should be made for a gradual phasing in on a priority basis in order that the institution comply with OSHA requirements.

\_\_\_\_\_ Agree as written

\_\_\_\_\_ Agree if revised as follows: \_\_\_\_\_

\_\_\_\_\_ Disagree totally; Rationale as follows: \_\_\_\_\_

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## BIOGRAPHICAL SKETCH

Ian S. Easton was born in Banbury, Oxfordshire, England on May 25, 1941. His father is Thomas Russell Easton. He received his elementary education in Blackpool, Lancashire, England and Toronto, Ontario, Canada. He received his high school education in North Miami, Florida.

In August 1961 he entered the United States Army and served three years in the Corps of Engineers.

In December 1965 he received the Associate of Arts degree from Miami Dade Community College and entered the College of Business Administration at the University of Florida in January 1966, where he graduated in August 1967, with a B.S. degree in Business Administration. In August 1968 he received his Master of Education degree in Educational Administration.


In September 1968 he was employed by Maas Brothers, a major retail store chain in Florida, leaving in October 1969 to return to the University of Florida as the Manager of Student Accounts. Prior to leaving the University of Florida in January 1974 he had attained the Chief Accountant position. He is currently the Administrative Director of the Outpatient Services at Shands Teaching Hospital and Clinics.

He is married to Ann Phister Easton of Fort Thomas, Kentucky, and they have a daughter Jillian and a son John.

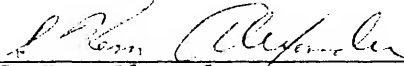


He is a member of the following organizations: Phi Delta Kappa; Kappa Delta Pi; Beta Alpha Psi; Alpha Kappa Psi; American Hospital Association, Florida Hospital Association, Association of American Medical Colleges - Group on Business Affairs; and the National Association of College and University Business Officers.

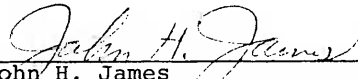
I certify that I have read this study and that in my opinion it conforms to acceptable standards of scholarly presentation and is fully adequate, in scope and quality, as a dissertation for the degree of Doctor of Philosophy.

  
James L. Wattenbarger Chairman  
Professor of Educational Administration

I certify that I have read this study and that in my opinion it conforms to acceptable standards of scholarly presentation and is fully adequate, in scope and quality, as a dissertation for the degree of Doctor of Philosophy.

  
S. Kern Alexander  
Professor of Educational Administration

I certify that I have read this study and that in my opinion it conforms to acceptable standards of scholarly presentation and is fully adequate, in scope and quality, as a dissertation for the degree of Doctor of Philosophy.

  
John H. James  
Associate Professor of Management

This dissertation was submitted to the Graduate Faculty of the College of Education and to the Graduate Council, and was accepted as partial fulfillment of the requirements for the degree of Doctor of Philosophy.

December, 1976

  
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