TOWARD A MORE CONTEMPORARY PUBLIC UNDERSTANDING OF THE TEACHING HOSPITAL

Council of Teaching Hospitals

May,1979

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SPRING MEETING

May, 1979

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Discussion of the role, organization, and operation of teaching hospitals in this country creates debate, misunderstanding, and genuine uncertainty. These institutions are frequently viewed as providers of the most complex and highest quality care; as world leaders in clinical research and technological discovery; and as suppliers of the nation's medical and health professionals. At the same time, they are accused of being ivory towers, unresponsive to community needs, demeaning to patients, excessively expensive, and concerned only with their reputations among the medically elite.

There also appears to be a lingering perception that teaching hospitals are a distinct set of institutions with uniform goals and functions that differ markedly from those of non-teaching hospitals. This stereotype has portrayed teaching hospitals as large, urban, publicly or philanthropically supported institutions which provide tertiary hospital care to the critically ill and outpatient services to the poor, often at no charge. While these generalizations undoubtedly fit a number of teaching hospitals, the list of descriptors is not equally applicable to all teaching hospitals. More importantly, it can be argued that these commonly stated features are not the truly definitive teaching hospital characteristics.

The confusion over the definition of a teaching hospital is manifested frequently when public policies affecting these hospitals are being formulated. The term has been inconsistently and randomly applied by hospitals, associations, and regulatory agencies depending on their own perspectives, immediate needs and the issues in question.

The fact is that the adjective "teaching" has done very little to accurately describe what differentiates the teaching hospital population from its non-teaching counterpart.

As an attempt to stimulate broader discussion of what constitutes the essential characterics of a teaching hospital, this paper addresses three major topics: (1) the evolution of the teaching hospital; (2) the characteristics which fundamentally distinguish teaching hospitals from non-teaching hospitals; and (3) the diversity among those hospitals to which the "teaching" label can be applied.

Depending on whose definition is used, there are as many as 1600 teaching hospitals in this country. This paper will focus primarily on the approximately 400 major teaching hospitals which compose the membership of the Council of Teaching Hospitals (COTH). As illustrated in the tables in the Appendix of this paper, even this narrow focus does not eliminate differences in institutional purpose, ownership, size, and operation. By outlining both the ways in which COTH members are alike and yet different, the paper will provide a framework for consideration of the implications of public policy alternatives related to health care reimbursement, health planning, and national health insurance.

EVOLUTION OF TEACHING HOSPITALS: SOME RESULTING MISCONCEPTIONS

Prior to the 1960's, the following four characteristics could be accurately attributed to the large majority of teaching hospitals:

- large, urban facilities geographically close to or physically attached to medical schools;
- recipients of substantial financial support from government (state and local) appropriations or philanthropic donations;

- providers of a large volume of emergency and outpatient services to the indigent population; and
- providers of specialty care employing the latest medical technology available.

While the public's conception of teaching hospitals has not changed dramatically in the past two decades, teaching hospitals have evolved significantly. Some of these characteristics no longer apply to some institutions, and many of the characteristics do not apply to hospitals that more recently have adopted medical education as a mission. Thus, the traditional teaching hospital definition that at one time described a relatively small and homogeneous set of institutions is now being inaccurately used by many to describe a large and diverse group of hospitals.

Understanding the changing environment and characteristics of teaching hospitals requires ar understanding of the growth and evolution of medical schools and medical education during this same time period. Since 1960, the following events have occurred:

- The number of medical schools increased from 87 in 1963 to 123 in 1978. Many of these schools have been started without construction of or affiliation with a major tertiary care center (10).
- Medical school enrollment doubled from 30,288 in 1960 to 60,456 in 1977 (10).
- The number of full-time medical school faculty went from 11,224 in 1960 to 44,762 in 1977. The clinical faculty increased at an even greater rate, increasing from 7,201 to 33,059 during the same period (7,10).
- The number of hospitals affiliated with medical schools jumped from 517 in 1966-67 to 1,168 in 1975-76 (6).

- The number of intern and residency positions filled in 1960 totaled 37,562 compared to 62,478 in 1977 (6).

- NIH support for research training was $61.4 million in 1960, $196 million in 1969, and $147.6 million in 1976 (7).

- There has been significant curriculum reform which has shifted some of the emphasis from specialty training to primary care.

- Allied health programs have substantially increased with a total of 2,903 programs being offered in 1978; of the total, 57% were sponsored by hospitals and clinics (6).

- Third party reimbursement for professional medical services, particularly Medicare and Medicaid, have brought about substantial change in medical school funding with medical service plans accounting for 13.9% ($541 million) of medical school revenues in 1976 compared to 4.1% ($48 million) in 1967 (6).

- Federal grants and contracts for research in medical schools totaled $390 million in 1967 and $746 million in 1976 (6).

All of these events in medical education have created a profoundly different environment for the teaching hospital. Changes in the content and volume of medical education have created increased demands for clinical training facilities and programs. There are more students, residents, and clinical fellows receiving more types of training in more complex and lengthier programs. There is also a growing general concern for continuing medical education and the tendency to turn to teaching hospitals as a logical place to receive this education.

With this brief explanation of the trends in medical education, it is appropriate to review the four characteristics which were suggested as no longer providing an adequate characterization of teaching hospitals. First, consider the perception that teaching hospitals are large, urban facilities, geographically close to the medical school. A number of them are, but this is an incorrect generalization. Population migration,

emphasis on primary care training experiences, and costs of construction and operation in inner cities have stimulated medical schools to seek hospital affiliations with smaller hospitals located in suburban and rural areas. Many of the "community-based" medical schools rely heavily on community hospitals that have recently begun participation in medical education programs.

The second conception is that government appropriations (state and local) and philanthropy represent the leading sources of support for teaching hospitals. The data suggest this common view is erroneous. For example, third party payors and self-pay patients accounted for 81.2% of the revenue for all university-owned teaching hospitals in 1977. When only the state university hospitals are considered, 74.3% still came from these sources. Furthermore, state and local government appropriations to university-owned hospitals have declined from an average of 31.6% of total revenues in 1971 to 11.4% in 1977 (5). Philanthropy as a source of revenue is also declining. One indication of this trend is that philanthropic donations as a source for construction funds in teaching hospitals dropped from 29% in 1968 to 14% in 1977 (2,8). A second measure is that private philanthropy as a percent of national health expenditures declined from 6.0% in 1966 to 3.4% in 1975(13). The decrease in government appropriations and philanthropy suggests that teaching hospitals are financed in much the same way as community hospitals -- by patient care revenue.

The third misconception is that teaching hospitals provide an abnormally high volume of emergency and outpatient services, primarily

to patients who cannot pay. Statistics reveal that in 1977, the 323 non-federal COTH members accounted for 18.7% of the beds in the country, provided 18.2% of the emergency visits and 31.3% of the hospital-based outpatient visits (1). Thus, teaching hospitals do not provide a disproportionate amount of emergency care. They do assume a relatively greater percentage of outpatient services, but they are by no means the only institutional source of outpatient care.

The fourth misunderstanding about teaching hospitals is reflected in the "specialty care" label that seems to be universally applied to them. Teaching hospitals are the settings in which most of the latest technology and procedures are developed and introduced. However, the emphasis on specialty care varies considerably by institution and is less pronounced than is generally thought to be the case. The reported increases in medical school enrollment, the increasing emphasis on primary care training, and the concern for redistribution of health manpower have led medical schools to deliberately seek affiliations with hospitals which are <u>not</u> specialty oriented. And contrary to the impression that teaching hospitals are more surgically-oriented than community hospitals, the ratio of operations to admissions at COTH hospitals in 1977 was 53% for COTH members compared to 50% for all hospitals (1). Thus, the presumption that all teaching hospitals are specialty and procedurally oriented does not seem to be true.

TODAY'S TEACHING HOSPITAL: DISTINGUISHING CHARACTERISTICS AND DIVERSITY

The previous section attempted to demonstrate that the traditional stereotype of teaching hospitals no longer adequately describes hospitals which have accepted an educational mission. Teaching hospitals are not necessarily large, urban hospitals; most of them do not receive primary support from public and philanthropic sources; not all of them provide a disproportionate volume of outpatient care; and they are not always specialty care centers.

If these characteristics no longer distinguish teaching hospitals from others, what are the significant descriptors of the contemporary teaching hospitals? One might begin by recognizing that the term "teaching hospitals" came about for a very good reason: all of these hospitals have had and will continue to have at least one characteristic in common -- some level of commitment to clinical medical education. In simplest terms, this commitment can be measured by the existence and size of the house staff. But this measure does not describe a homogeneous set of institutions. Teaching hospitals fall on a wide spectrum for almost any characteristic one wishes to use.

A useful although incomplete method of illustrating the functions of a teaching hospital was presented in a 1973 report of a COTH Task Force which examined reasons for higher costs in teaching hospitals. The report outlined 13 variables which are present in varying degrees in teaching hospitals. These include:

(1) the size of the intern and resident staff;

(2) the number of fellowship positions;

(3) the extent to which the full range of clerkships are offered to undergraduate medical students;

(4) the volume of research undertaken;

(5) the extent to which the medical faculty is integrated with the hospital medical staff in terms of faculty appointments;

(6) the nature of the affiliation arrangement;

(7) the appointment or employment of full-time salaried chiefs of service;

(8) the number of other salaried physicians;

(9) the number of special service programs offered;

(10) the level of complexity demonstrated by the diagnostic mix of patients cared for;

(11) the staffing pattern and ratios resulting from the distinctive patient mix;

(12) the scope and intensity of laboratory services; and

(13) the financial arrangements and volume of service rendered in outpatient clinics and emergency rooms.

This list is useful in that (1) it recognizes that the commitment to medical education is not the only variable that should be considered, and (2) it provides a framework for systematically examining variations among teaching hospitals. The major shortcomings of this approach are: not all of the variables apply to all teaching hospitals; the variables are not accompanied by quantitative ranges; and a checklist approach cannot adequately explain the unique operating environment of a teaching hospital.

To address some of the concerns with this and other previous definitions, this paper proposes five broad areas which differentiate teaching hospitals from non-teaching hospitals: multiple objectives, external controls, the medical staff, the pursuit of innovation, and cost and

financing. Each of these areas is first presented as a unifying characteristic followed by discussion of how teaching hospitals meet the criteria in varying degrees.

Multiple Objectives

Multiple objectives as a unifying characteristic

Teaching hospitals are committed to at least three major objectives: providing patient care, training health professionals, and conducting clinical research. While the presence of these multiple objectives make the teaching hospital unique, the interdependent and competing demands of these activities are most responsible for creating an institution significantly different from the single purpose community hospital.

The importance of these interrelationships was aptly noted in a speech by the former Administrator of the Health Care Financing Administration, Robert Derzon, when he stated: ". . . (hospitals entering into affiliations) have an obligation to support medical education as a goal in itself. It is a commitment to invite a new spouse, not just a guest, in the house . . . " He continued later: "The fortunes of the school and the hospital are completely interlocked and interdependent. One cannot succeed if the other fails. One cannot be great if the other is only good." (21)

Thus, it is not just the presence of three major objectives that distinguishes teaching hospitals. It is also the necessary commitment that accompanies each objective as well as the ongoing monitoring of that commitment that creates a unique organizational setting. The

level of commitment to these objectives is maintained by many factors, the most important being those physicians who have joint appointments (and loyalties) in the hospital and medical school. It is the day-to-day patient care, teaching, research, and administrative activities of these individuals, particularly at the department and clinical chief levels, that keep the system in balance.

Diversity in Priority of Objectives

While teaching hospitals share three common objectives, they vary widely on the priority given to each of these missions. These differences are likely to become more apparent as cost containment and planning programs proceed. Based on their perspectives of these objectives, teaching hospitals fall into three groups.

The first group includes hospitals which regard their service and educational missions as inseparable, first-order objectives. Neither mission is subordinate to the other when the institution defines its role or plans its future. A second group of hospitals at the other extreme includes those which view their educational mission as a distinct and separable addition to their patient care mission. These hospitals are primarily concerned with the impact of educational programs on the quality of care and institutional prestige; clinical education is clearly viewed as an accessory or option which could be deleted if necessary. The final category, the middle group, includes hospitals which are less clear about the relationship between their teaching and service missions. In many cases, these hospitals wish to be viewed by the public as being in the first category, but they still separate the patient care

and educational components of institutional decision-making. For this group of teaching hospitals, restricted operating and capital resources pose a real dilemma: the hospital must choose between its perceptions and its present practice.

One important measure of priority of the educational mission is the number and types of residency programs offered. Teaching hospitals can be placed on a continuum: at one end are teaching hospitals supporting residents in virtually all of the clinical specialties and subspecialties; at the opposite end are hospitals providing only a three-year residency in a single discipline. This diversity is present among COTH members: general hospitals have from four residency programs to well over 20; specialty hospitals usually have the full range of programs consistent with their special objectives.

A second measure of the priority of missions is the community expectation of the role of the hospital. At one end of this spectrum the public may view the hospital as a regional or national specialty care center operating in a stable, somewhat insulated, academic environment in which clinical research, new technology, and education can proceed with maximum effectiveness. In this case, the hospital sees itself as a center of tertiary care excellence. Their physicians are active in national and professional associations and are supported by competitive grants and contracts. The hospital is able to attract highly qualified residents. The hospital's performance is evaluated relative to national and international standards. On the other end of this spectrum, the public may view the hospital as a community resource

meeting first and foremost the full range of basic health care needs of the local population. In this instance, the hospital's medical staff think of themselves as private or group practice physicians first and voluntary or part-time teachers second. COTH members are located at all points on the spectrum. However, it must be noted that a very real dilemma exists for many teaching hospitals: they are caught in the schizophrenic position of trying to be responsive to the local community while maintaining a reputation as a nationally recognized tertiary care facility.

External Controls

External Controls as a Unifying Characteristic

Another aspect of teaching hospitals that separates them from other hospitals is the extent to which numerous diverse outside agencies and organizations influence the content and operation of hospital programs. All hospitals are confronted by HSAs, the JCAH, PSROs, third-party reimbursement policies, and issues arising in the local community. But teaching hospitals are subject to the standards and constraints of these bodies and many more. At the strategic planning level, decision-making may be influenced by (43):

- medical education priorities set by the medical school;
- research priorities established by medical schools, NIH or foundations;
- changes in medical school enrollment and curriculum stimulated by legislative initiatives;
- medical school department chairmen who oversee much of the training of graduate and undergraduate students;
- state efforts and initiatives designed to increase state control over the number, types, location, and financing of residency programs;

- overall university policies which may influence teaching hospital management; and

- government appropriations for special service programs which establish guidelines for providing health care to the indigent population.

At the day-to-day operational level, teaching hospitals are also subject to policies set elsewhere. These include such factors as:

- NIH site visits;

- LCGME policies and Residency Review Committee standards;

- salary arrangements with medical school faculty that are frequently under medical school controls;

- adjustments in bed and resource allocations related to expanding educational needs of medical school departments;

- personnel policies that may be set by universities and their faculties;

- demands of other hospitals participating in integrated residencies; and

- institutional review board policies protecting human subjects involved in research.

All teaching hospitals are affected by many of these external forces. Some create problems; others represent opportunities; and many create conflicts and contradictory incentives for hospital management.

Diversity in Extent of External Controls

Not all teaching hospitals are subject to the same number and types of external controls. The 63 university-owned (of which 42 are state-owned) and the 41 municipal COTH members are the teaching hospitals subjected to the greatest number of policies not under the hospital's direct control. The university may appoint a vice-president of health affairs with line responsibility for the hospital; it may design and

provide centralized computer and purchasing services; and it may determine personnel policies such as salary scales and fringe benefits for hospital employees. Local government may control a municipal hospital's budget; it may appoint the hospital's board; and it may even set fee schedules for outpatient services to the poor.

A second group of COTH members on the other end of the scale have far fewer related organizations influencing their policies and operations. These hospitals are very similar,in this regard, to non-teaching community hospitals. They are still subject, however, to all the external reviews that come with having medical education as an institutional objective. They are also influenced by medical staff who have medical school appointments and consequently may be sympathetic with medical school priorities that may not be consistent with those of the hospital. However, these hospitals are dramatically different from the university-owned or municipal teaching hospitals. They have fewer direct administrative ties to other organizations; and they are not formally subject to operational policies determined by an associated institution.

Organization of Teaching Hospitals and the Medical Staff Structure

Organization and Medical Staff Structure as a Unifying Characteristic

A third set of issues which differentiates teaching hospitals from their non-teaching counterparts falls under the general **concept** of organization. Much of the literature in this area has addressed questions about organizational relationships between teaching hospitals and the medical school/university (22,33). Such questions include:

- To whom should the hospital director report?
- To what extent should the teaching hospital be a formal part of the university governance structure?
- Should a vice-president for health affairs be appointed by the university? If so, should the vice-president serve in a line position over the hospital, medical school and other health professional schools, or should he serve as staff to the president of the university?
- Can one individual be effective as both the vice-president and the dean of the medical school?

These are difficult and important questions. However, these issues are of direct interest to only the 63 university-owned hospitals and a smaller number of other teaching hospitals. Therefore, these broad inter-organizational structure issues are not really the focus of the distinguishing organizational features in teaching hospitals generally.

What then is different about the organization of teaching hospitals? It is the size and complexity of the medical authority and accountability structure which create a different operating environment. One way to illustrate the significance of this issue is to examine data related to the size of teaching hospital medical staffs. In 1973, the American Hospital Association surveyed a sample of 595 teaching hospitals to compile data related to medical staff characteristics.* The survey revealed that the overall ratio of the size of the staff for teaching hospitals compared to non-teaching hospitals was 3.9/1. For institutions having more than 500 beds, teaching hospitals had an average of 467

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* This sample was taken from the approximately one-fifth of all U.S. short-term hospitals which are considered teaching hospitals based on AHA-listed approvals for residency training programs and affiliations with medical schools.

physicians compared to 270 for non-teaching hospitals (34).

The aggregate number of physicians, however, only begins to explain the uniqueness of the medical staff organization. The differentiation and interaction of competing, often overlapping groups of physicians create an understandably complex decision-making process. This is quite different from a non-teaching hospital whose medical staff is likely to have a more uniform voice in hospital policy. Discussion of the medical staff organization can best be accomplished by differentiating the hospital's physicians into three groups: (1) the medical staff, (2) the medical school department chairmen, and (3) the house staff.

(1) Medical Staff

In addition to the previously mentioned size of the staff, there are two other distinguishing attributes of the medical staff worth noting. The first is that teaching hospitals are more formally departmentalized and far more likely to have full-time appointed clinical service chiefs who are compensated for their administrative responsibilities by the hospital. The American Hospital Association survey cited above also gathered data on the presence of such individuals. While that survey employed a very broad definition of a teaching hospital, it found that 30% of the teaching hospitals surveyed had hospital-compensated chiefs of internal medicine compared to only 3% for non-teaching hospitals (34). The 30% figure is undoubtedly much higher for COTH members which, in general, are more formally departmentalized than other teaching hospitals.

The second distinctive characteristic of the medical staff is the presence of two very different types of physicians: the full-time medical

school salaried teaching physicians and the non-teaching community physicians. These are not actually two distinct groups but extremes on a continuum. At one extreme, the physican may receive his entire pre-negotiated salary from the medical school; he has a strong interest and involvement in teaching or research; and his efforts are dedicated to furthering the scholarly efforts of his clinical discipline. At the opposite end of the spectrum is the community physician; he does little teaching and receives no compensation from the medical school or hospital; and his first priority is care for his patients. Among those falling between these two poles is the part-time physician who may receive some compensation for his teaching services. It is the presence of these different types of physicians which lead to the so-called "town-gown" problems.

(2) Medical School Department Chairmen

A second unique dimension of the medical authority structure in teaching hospitals is the hospital interface with medical school department chairmen. This group of physicians impact hospital operations because it is at the medical school department -- hospital service department level where most affiliations are initiated and maintained. In the relatively horizontal structure of the medical school, the department chairmen serve critical roles as professional and administrative leaders of relatively autonomous units. In fact, medical school performance is often considered a reflection of the strength of the department chairmen. The medical school department scheme often has considerable influence on hospital departmental operations. In some cases, the department chairman may serve jointly as hospital service chief. In other cases,

a different individual may serve as service chief, but the department chairman may still retain control of the medical education function, and, as a result, influence hospital resource allocation decisions. It is also not unusual for a community teaching hospital to realign its departmental structure to parallel that of the medical school. This suggests that the teaching hospital is cognizant of the importance and influence of the medical school department chairman, not only as a leader, but also as a resource generator and user (research and patient care), as a recruiter, and as a contributor to national recognition.

When the department chairman has a joint appointment in an affiliated hospital, complicated loyalty questions arise. The often cited allegiance problems are related to balancing his/her effort among teaching, research, patient care, and administration. The situation is actually more complicated. The most serious schizophrenia is created by basic differences in the inherent organization characteristics of the hospital and those of the medical school. On the one hand, the hospital must be organized bureaucratically to meet, in a timely fashion, "production goals" and the fast-paced demands of patients, third-parties, and physicians. Hospital departments must work closely together to meet patient care needs on a 24-hour basis. On the other hand, medical schools are organized with relatively autonomous departments to accommodate less routine, sporadic demands. Faculty members generate research funds, develop educational programs, and do their work with less dependence on other individuals and departments in the institution. The chairman is caught in the middle of these two very different organizational environments. The implication for the teaching hospital is that chairmen, when donning

their hospital hats, will retain some of the medical school value system and behavior. This can result in conflict with some of the hospital's greatest concerns: cost containment, effective resource allocation, efficient patient care scheduling, utilization review, and inter-departmental communication and cooperation.

(3) House Staff

The third physician group in teaching hospitals that is a common and distinguishing feature in teaching hospitals is the house staff. This group more than the others is illustrative of the complexity of medical staff organization. They occupy a tenuous position that results in some of the following dilemmas:

- they are asked to assume gradually increasing responsibility for patient care but are constantly told that they are still students;
- they are students yet contribute considerably to the teaching of medical students;
- they are encouraged by the full-time medical school faculty to participate in important clinical decisions yet reminded by voluntary teaching physicians that a patient is subject only to his own orders;
- they are learning and providing care to a patient population that is no longer always separable into non-paying "house staff patients" and paying "private patients";
- they are the most homogeneous physician group in the hospital, but have the least well-defined and understood responsibilities; and
- they are loyal to each of their various disciplines, but recognize that the quality of one residency program is limited by the level of the quality of others on which it is dependent.

Thus, the house staff is caught in the middle of a number of issues. More significantly, they are the focus of what might be the critical

issue arising from the multiple medical authority structure: who is accountable for the care of the patient when so many and different types of physicians are actively treating the same patient? While there may be one attending physician overseeing a patient, other members of the medical staff, clinical faculty, and house staff order tests, perform surgery, provide treatments, and offer consultations. It is not always clear which individual assumes primary responsibility. This situation is perhaps the best example of the end result of the complexity and uniqueness of the medical authority structure in teaching hospitals.

Diversity in the Medical Staff Structure

Many of the varying medical authority structures have been touched on in the above paragraphs, but will be summarized briefly here. Teaching hospitals vary significantly in their relationships between the hospital medical staff and the medical school faculty. At one extreme, all members of the medical staff are simultaneously faculty members, appointment to one institution is contigent upon acceptance by the other, and loss of standing at one results in removal from the other. Each of these faculty-medical staff physicians clearly faces the role identity and loyalty problems previously discussed. At the other extreme is the hospital medical staff composed mostly of physicians practicing in the general community. To support the medical education program, some of these physicians have clinical faculty titles, but for this purpose they typically report to a hospital-employed director of medical education or hospital service chief and earn virtually all of their professional income from patient fees. The final group of hospitals has a mixed

medical staff: while many of the physicians are community-based practitioners, some are salaried hospital employees whose selection necessitates the approval of the medical school. While the salaried physicians may have some of the loyalty and identity problems typical of the practicing faculty, their fellow medical staff members clearly identify most closely with the community and its patients.

The Pursuit of Innovation

Innovation as a Unifying Characteristic

As biomedical research is constantly developing new techniques for medical practice, medical education programs are constantly being revised to reflect the contemporary state-of-the-art. For the medical education program to attain its objective, it must have access to the latest medical techniques and technologies. The hospital serves a complementary role by developing and furnishing these resources, and in its own right, accepts innovation as a major institutional goal. What is unique about teaching hospitals in this respect is their need to acquire new services, staff, and equipment in the absence of complete and final evidence of their cost effectiveness or efficacy.

The simultaneous advances being developed in all fields of medicine force each specialty and subspecialty to constantly demand new services, staff, and equipment. In most teaching hospitals, the sum of these demands exceeds the ability to gather capital and introduce change. At the same time, it should be noted that innovation is not always synonomous with advances in technology or specialty care. Teaching hospitals have also taken on new responsibilities in other evolving health care

practices. For example, many teaching hospitals have accommodated changes in medical school curriculum by establishing new programs such as family practice residencies. They have sponsored new ambulatory clinics or surgical centers. They have established productive management contracts with community hospitals. Finally, a number of teaching hospitals have established large HMOs serving diverse populations. The pursuit of innovation in general introduces the problems accompanying constant change and heightens the problems of goal conflicts among organizational subunits in teaching hospitals.

Diversity in Degree of Innovation

The degree to which teaching hospitals accept the pursuit of innovation as an institutional priority varies dramatically. This is particularly true when innovation is most narrowly defined by the existence of specialty care services. Teaching hospitals are located at all points along the continuum of intensity and scope of services. At the one extreme are tertiary care centers providing the most complex subspecialty services to patients who are severely ill or who present significant complications. Many of these patients are referred by physicians and hospitals at a considerable distance from the teaching hospital. At the other extreme are primary and secondary care hospitals caring for the immediate and relatively uncomplicated medical problems of a patient population that resides around the hospital. In between these extremes are the majority of teaching hospitals.

Cost and Financing of the Teaching Hospital

Cost and Financing as a Unifying Characteristic

The previous sections of the paper have focused on institutional objectives, external expectations, the medical staff, and innovation as unifying features of all teaching hospitals. These issues are undoubtedly the most important distinguishing inherent characteristics. Nevertheless, observers, critics and others in responsible positions would not be raising questions about teaching hospitals were it not for a fifth aberrant characteristic -- high costs. The high costs of teaching hospitals are the subject of a variety of reports ranging from newspaper editorials to Ph.D. dissertations. Unfortunately, none of these provide an acceptable scholarly explanation of why teaching hospital costs should be higher.

It is necessary to recognize that teaching hospital costs are uniformly higher than those of non-teaching hospitals of similar size by almost any commonly-used yardstick -- total cost, per diem cost, cost per admission or cost per case for a particular diagnosis. Moreover, it is essential to note that no matter how efficient or well managed a teaching hospital is, it is unlikely that these costs will ever be lower than those of other hospitals.

Why is this true? The first and easiest answer is the most commonly cited unique cost of teaching hospitals -- education. Leaving aside for a moment debate over the "teaching effect" as an alleged contributor to excessive ordering of lab tests and X-rays, excessive lengths of a stay, and a general decline in productivity, there are

legitimate direct cost differences in teaching hospitals which are specifically attributable to education. At a minimum, these include:

- house staff stipends and benefits:
- compensation for physicians supervising residents and teaching medical students;
- the salary of the director of medical education or other individuals who perform this function;
- the costs of any meals, laundry, and lodging provided to students, residents, or fellows; and
- the costs of any educational space, equipment, and supplies.

These costs can be substantial. The average percentage of total expenditures of COTH members in 1978-79 going to house staff stipends and benefits was approximately 4.0%. The projected national expenditure for this category reached $1 billion in 1979 (4). No careful study of the total costs of physician supervision has been made, but when these costs are added to those of the house staff, one can safely estimate that as much as 6% of the teaching hospital direct budget expenditures may be attributable to the costs of medical education. However, it has been argued, although not yet fully substantiated, that some of these costs are offset by the relatively low costs of resident services which, if performed by a physician or other health professional in a non-teaching setting, would be higher.

In addition to the very real costs of medical education, the intensity of care provided in teaching hospitals is generally acknowledged as an even greater contributor to differences in costs. The intensity factor can not be appreciated by merely taking inventory of the specialty care services available. Sicker patients requiring more

intensive care are referred to the teaching hospital. Thus, while a community hospital and teaching hospital both may have coronary care units, the teaching hospital is more likely to treat the patient who has more serious complications. Similarly, a teaching hospital and a large community hospital may both have burn units, but the teaching facility is likely to treat patients with the more severe burns. Finally, to the extent the regionalization of health care occurs with teaching hospitals at the referral hub, the intensity of the patient mix may be greatly increased resulting in even higher average costs for teaching hospitals.

Finally, it is worthwhile to note briefly several studies that have addressed the alleged over-utilization of services in teaching hospitals due primarily to the presence of house staff and other students. There is relatively little information available on this subject and much of what exists is either old or somewhat inconclusive. In a 1972 report on the University of Kansas Medical Center, Busby, et.al., found that "compared with the community hospitals, per case the medical center had 90% more laboratory tests, 95% more X-rays and 25% more electro-cardiograms." There was some control on the case mix in these comparisons but it wasn't as good as one would have liked (16).

The Commission on Professional and Hospital Activities (CPHA) has conducted several studies using 1972 and earlier data concerning length of stay and ancillary service utilization (17-19, 56). While several show longer stays in teaching hospitals the findings are not standardized for other variables -- for instance, diagnostic patient

mix, rural-urban location, occupancy rate, bed size, etc. -- which could help ensure that the findings are not spurious. Moreover, CPHA has not established any more than a dichotomous variable for the scope of teaching programs. Thus, differences which might be present between hospitals which engage only in medical student teaching, those with small house staff programs and those with large house staff programs are not available to support the conclusions on the impact of the educational variables.

A study done at George Washington University Hospital which compared its utilization and costs with that of a local proprietary hospital stated that in contrast to previous reports, duration of stay was shorter at that University Hospital (51). This study was also quite carefully done in the sense that only patients with the same diagnosis were used for comparison. However, the increased frequency of diagnostic tests in the university hospital was striking, accounting for 56% of the difference in total charges between the two hospitals. These differences would have been even greater had charges for medical consultations and invasive procedures been included. The authors report, "While the greater use of laboratory tests and X-rays reported in other studies may have reflected more severely ill patients being admitted to teaching hospitals, that does not appear to be a major factor here."

On the basis of these reports, one might conclude that there may be some basis for the allegation that there is higher utilization of the ancillary services in teaching hospitals as a result of the presence of house staff programs, but there is mixed evidence concerning the

allegedly increased patient length of stay. An additional point to be remembered is that no study has measured the results of such comparisons against a "normative" standard of resource use by diagnosis which could be set by a panel of expert physicians. Therefore, it cannot be determined how much of the difference is due to under-utilization in one setting versus over-utilization in another.

A great deal of effort has been made to separate educational from patient care costs in teaching hospitals, particularly through the use of time and effort studies. The purpose of much of this effort has been to determine whether patient care services in these institutions (after excluding education) are provided at a reasonable cost. Unfortunately, many of the studies have lost sight of the fact that in addition to patient care, education is a tangible product of the hospital. One needs to recognize that teaching hospitals are financing and producing two very real products - immediate service and future manpower.

Diversity in Financing and Costs in Teaching Hospitals

There are two specific financing issues that affect teaching hospitals in varying degrees. The first is the very real problem of inadequate financial support for services provided on an outpatient basis. Teaching hospital based outpatient departments have long been characterized as a principal financial "loss leader." A number of reasons have been set forth as causes for this situation. Among the more frequently stated causes are:

- private and public insurance payment programs provide insufficient or non-existent benefit coverage for ambulatory services;

- patients who are attracted to hospital outpatient departments are from low income groups and frequently have no insurance coverage or poor insurance coverage, and are unable to pay for services;

- involvement of house officers and medical students in the delivery of ambulatory medical care reduces productivity, thus raising the "per visit" cost to the point where it is not fully reimbursable;

- the added education costs, coupled with the lower service productivity factor stated above further compound the problem; and

- accounting methods designed for inpatient purposes "over-allocate" cost centers to out-patient activity.

These problems are especially troubling at a time when the public is calling for more primary care physicians with more emphasis on training in ambulatory settings.

A second problem is that teaching hospitals are offered or asked to establish categorical or special service programs which are entirely dependent on foundation or governmental support. These programs often incur indirect expenses both beyond the amount provided by the funding source and not reimbursable by third parties. In addition, funding for the programs is available for a limited number of years, after which the institution must assume the full costs or discontinue the program, which in itself can add stress and costs to the hospital. Thus, the hospital is extremely vulnerable to the priorities of external funding agencies.

While there are differences in financing among teaching hospitals, costs incurred are a greater source of diversity than sources of financing. Consider some of the figures related to COTH membership:

- Total hospital expenditures ranged from $3,848,277 to $219,783,269 for 1977 with a mean of $44,778,873 for all non-Federal COTH members (2).

- Per diem expense for 1977 ranged from $114 to $649 with a mean of $277 for all non-Federal COTH members (2).

- The median value for house staff expenditures for COTH members in 1977-78 was $1.6 million per hospital, but the related figure for university-owned hospitals was $3.45 million (1).

- First year residents' stipends in 1978-79 ranged from $9,780 in one hospital to $19,240 in another (4).

These figures by themselves are striking evidence that although all members of COTH are all considered teaching hospitals, they are a very diverse group.

DISCUSSION

Teaching hospitals have five common features: (1) multiple institutional objectives, (2) numerous environmental and external controls, (3) a complex medical staff structure, (4) a pursuit of innovation, and (5) unique financial characteristics. However, each of these characteristics applies to teaching hospitals in significantly different degrees. In addition, each of these characteristics are interrelated. The hospital with education as a primary objective probably shares its physicians with a medical school, provides specialty patient services and subspecialty residency training, and looks across the nation to assess its relative performance. On the other hand, the primary care community hospital provides a limited number of residency programs in a setting where the hospital and its physicians are regarded primarily as community assets and are evaluated for their contributions to community needs. Occasionally,

one finds an unusual combination such as a tertiary care center where medical education ranks a distinct second or a primary care hospital trying to serve as a national demonstration project. In spite of these exceptions, the dimensions differentiating teaching hospitals are generally interrelated.

The purpose of this paper has been to demonstrate that teaching hospitals in the United States and COTH members specifically have some broad common characteristics, but they have unique local histories and have evolved according to available resources and opportunities. They are thought of as teaching hospitals for different reasons at different times depending on the perspective of the individual organization, hospital, and the issue in question. Thus, it is difficult to define common needs, to generalize about priorities, and to take shared, mutually beneficial actions in the face of broad questions of public policy. Although this paper has not provided the answers to this dilemma, it hopefully serves as a framework for further discussion of how teaching hospitals as a group can more beneficially and productively respond to public expectations and proposed legislative health care reforms.

TOWARD A MORE CONTEMPORARY PUBLIC UNDERSTANDING OF THE TEACHING HOSPITAL

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TOWARD A MORE CONTEMPORARY PUBLIC
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Appendix

Selected Characteristics of COTH Members

TABLE 1

Ownership

TABLE 2

Medical School Affiliation

TABLE 3

Bed Size

TABLES 4-6

Comparison of COTH with all Hospitals

TABLES 7-8

Services Offered

TABLES 9-10

House Staff

TABLE 11-12

Sources of Income for University-Owned Hospitals

TABLE 13

Comparison of COTH VA Hospitals with All Hospitals

TABLE 1

Number of COTH Members By Type of Ownership and Region

1976-77

Regions

Type of Ownership	Northeastern	Southern	Midwestern	Western	TOTAL
State	7	18	10	9	44
Municipal*	12	10	12	7	41
Church	14	7	17	3	41
Other, Non-profit	114	20	46	20	200
Veterans Admin.	18	26	17	13	74
Other**	1	3	0	1	5
Total	166	84	102	53	405

*Indicates City/County Hospitals, Hospital District.
**Military, Public Health Service.

SOURCE: COTH Directory Educational Programs and Services, 1978

TABLE 2

Number of COTH Members by Medical School Affiliation and Region

1976-77

Regions

Affiliation [1]	Northeastern	Southern	Midwestern	Western	TOTAL
University-owned [2]	17	19	15	12	63
Major [3]	123	53	70	30	276
Limited [4]	21	10	10	11	52
Unaffiliated	5	2	7	0	14
Total	166	84	102	53	405

[1] The types of affiliations are based on criteria used in the Directory of Residency Training Programs, 1978-1979.

[2] Hospital owned by a university (in several instances by an independently incorporated medical school).

[3] Major Clinical Facility - one in which medical students serve a required clerkship in at least one of the major clinical departments.

[4] Limited Clinical Facility - one in which medical students may serve irregularly scheduled electives, specialty clerkships, and/or outpatient clerkships or one wnich provides residency programs, but is not used for undergraduate clerkships.

TABLE 3

Bed Sizes of COTH Members

	Number of Hospitals
410 or Fewer Beds	112
411-520 Beds	104
521-745 Beds	100
746 or More Beds	91

Range: (67-2105 Beds)

TABLE 4

Comparison of COTH With All Hospitals* Listed in AHA Directory, 1977

Category	COTH	AHA	COTH as Percent of all U.S. Hospitals
Hospital Utilization			
1. Hospitals	323**	5,973	5.4%
2. Total Beds	182,596	973,866	18.7
3. Total Admissions	6,069,025	34,353,216	17.7
4. Inpatient Days	53,458,855	261,609,470	20.4
5. Average Daily Census	146,463	716,738	20.4
6. Percent Occupancy	80.2	73.6	-
7. Average Length of Stay	8.8	7.6	-
8. Emergency Room Visits	13,326,778	72,955,819	18.2
9. Outpatient Visits	41,112,498	131,281,999	31.3
10. Emergency Room Visits Per Bed	73	75	-
11. Total Surgical Operation	3,244,949	17,182,497	18.9
12. Surgical Operations % Admissions	53	50	-
13. Intensive Care Beds (Mixed)	6,831	35,394	19.3
14. Intensive Cardiac Beds	2,648	13,513	19.6
Personnel and Payroll			
1. Total Payroll	7,901,639	26,062,231	30.3
2. Total All Expenses	14,463,576	51,832,492	27.9
3. % Payroll/Expenses	54.6	50.3	-
4. Physicians, Full-Time Equivalent	14,911	28,533	52.3
5. Interns and Residents (FTE)	39,762	56,184	70.8
6. Total Personnel (FTE)	693,912	2,580,882	26.9

* Nonfederal Short-Term Hospitals.

** The difference between 416 COTH Members and the 323 reported here is due to "non-reporting institutions" and the fact that this Table excludes VA and other federal hospitals as well as long-term care facilities.

SOURCE: American Hospital Association Annual Survey of Hospitals, 1978

TABLE 5

COUNCIL OF TEACHING HOSPITALS AS
PERCENT OF ALL U.S. HOSPITALS*

		COTH Members			
		303 Reporting 1973	302 Reporting 1975	323 Reporting 1976	323 Reporting 1977
1.	Hospitals	5.1%	5.1%	5.4%	5.4%
2.	Total Beds	18.3	17.6	19.7	18.7
3.	Total Admissions	16.0	15.9	19.6	17.7
4.	Inpatient Days	19.2	18.7	20.6	20.4
5.	Average Daily Census	19.2	19.0	20.6	20.4
6.	Percent Occupancy	78.9	80.7	77.8	80.2
7.	Average Length of Stay	9.3	9.0	8.0	8.8
8.	Emergency Room Visits	16.0	18.6	20.5	18.2
9.	Outpatient Visits	21.0	28.5	31.3	31.3
10.	Emergency Room Visits Per Bed	63.0	77.0	78.0	73.0
11.	Total Surgical Operations	17.3	17.9	24.7	18.9
12.	Surgical Operations % Admissions	52.0	56.0	62.0	53.0
13.	Intensive Care Beds (Mixed)	17.6	19.4	20.2	19.3
14.	Intensive Cardiac Beds	17.0	18.1	19.6	19.6
15.	Home Care Visits		26.6	28.4	
16.	Intensive Care (Neonatal)			51.7	
1.	Total Payroll ($000s)	23.4%	27.6%	30.6%	30.3%
2.	Total All Expenses ($000s)	20.8	25.8	28.1	27.9
3.	% Payroll/Expenses	61.6	56.7	56.1	54.6
4.	Physicians, Full-Time Equivalent	42.5	49.1	52.4	52.3
5.	Interns and Residents (FTE)	60.5	66.9	64.8	70.8
6.	Other Trainees (FTE)	45.6	36.9	40.8	
7.	Total Personnel (FTE)	14.0	24.8	27.0	26.9

* Nonfederal COTH members only

SOURCE: American Hospital Association Annual Survey of Hospitals, 1974, 76, 77, 78

TABLE 6

SELECTED OPERATING STATISTICS -
COUNCIL OF TEACHING HOSPITALS, 1973-1977
Nonfederal, Short-term Hospitals

	Cost Per Admission				% Change 1973-1977
	73	75	76	77	
COTH Members	$1293	$1888	$1897	$2383	84%
All U.S. Hospitals	994	1165	1324	1509	52%
	Cost Per Day				
	73	75	76	77	
COTH Members	$ 139	209	236	271	95%
All U.S. Hospitals	128	151	173	198	55%
	Length of Stay (Days)				Change 1973-1977
	73	75	76	77	
COTH Members	9.3	9.0	8.0	8.8	- .5
All U.S. Hospitals	7.8	7.7	7.7	7.6	- .2
	Occupancy				
	73	75	76	77	
COTH Members	78.9%	80.7%	77.8%	80.2%	1.3%
All U.S. Hospitals	75.3%	74.8%	74.4%	73.6%	-1.7%

SOURCE: American Hospital Association Annual Survey of Hospitals, 1974, 76, 77, 78

TABLE 7

SELECTED SERVICES IN
NON-FEDERAL COTH MEMBER HOSPITALS
1973-1977

		COTH Members as a Percent of All Hospitals				Percent of COTH Members Having Service
		73	75	76	77	1977
1.	Genetic Counseling Service	-	-	58.3	59.7*	45.5**
2.	Burn Care Unit	44.5	47.1	48.9	51.0	23.8
3.	Organ Bank	41.0	52.3	51.0	44.4	21.9
4.	Open Heart Surgery	44.3	42.1	44.2	39.5	67.1
5.	TB & Other Respiratory Diseases Unit	-	-	40.4	36.4	18.2
6.	Neo-natal Intensive Care Unit	-	-	37.9	36.2	64.7
7.	Hemodialysis (Outpatient)	31.2	33.8	36.0	35.4	65.0
8.	Rehabilitation Inpatient Unit	30.6	31.6	32.2	31.3	33.7
9.	Hemodialysis (Inpatient)	31.9	31.6	32.0	30.7	79.2
10.	Psychiatric Outpatient Svcs.	30.7	30.6	31.1	30.2	69.3
11.	Psychiatric Consultation and Educational Services	-	-	29.8	28.6	60.7
12.	Rehabilitation Outpatient Services	29.8	28.7	29.0	27.7	59.4
13.	Psychiatric Partial Hospitalization	24.6	24.7	-	26.6	38.0
14.	Cobalt Therapy	26.2	25.1	25.9	26.1	64.7
15.	Clinical Psychology Svcs.	-	-	25.6	25.2	70.6
16.	Self-care Unit	28.5	22.8	11.1	25.2	9.6
17.	Psychiatric Inpatient Unit	20.0	20.7	22.0	21.7	70.9
18.	Radium Therapy	18.3	17.7	19.8	20.4	77.3
19.	Home Care Department	21.1	18.6	20.4	19.8	23.5
20.	Occupational Therapy Dept.	20.2	19.3	20.6	19.6	73.7
21.	Organized Outpatient Dept.	19.8	19.8	20.1	19.6	91.3
22.	Therapeutic Radioisotopy Dept.	19.3	18.4	19.5	19.5	83.9
23.	Psychiatric Emergency Svcs.	19.1	19.4	19.4	19.2	69.3
24.	Patient Representative Svcs.	-	-	17.4	17.2	61.6
25.	Speech Pathology Svcs.	-	-	18.4	16.8	75.2
26.	X-Ray Therapy	14.8	74.4	15.6	16.2	80.4
27.	Premature Nursery	11.7	12.3	13.6	14.4	79.2
28.	Intensive Care (Cardiac Care Only)	12.7	12.2	13.6	13.6	81.7
29.	EEG	12.5	11.4	11.6	10.9	96.6
30.	Histopathology Laboratory	10.3	10.2	10.9	10.3	94.7
31.	Social Work Department	10.8	10.1	10.5	10.1	98.1
32.	Diagnostic Radioisotope Facility	10.7	9.9	10.1	9.9	94.4

(Continued on page 2)

Page Two

	COTH Members as a Percent of All Hospitals				Percent of COTH Members Having Service
	73	75	76	77	1977
33. Pharmacy with Full-Time Pharmacist	-	-	7.5	8.3	98.1
34. Blood Bank	8.1	7.7	8.1	8.1	91.3
35. Intensive Care Unit (Mixed)	8.1	7.7	7.9	7.6	95.9
36. Physical Therapy Department	7.3	7.0	7.3	7.2	98.1
37. Respiratory Therapy Dept.	-	-	7.2	6.9	97.5
38. Emergency Department	6.0	5.9	6.3	6.3	95.3

* For example, 59.7% of all Genetic Counseling Services are located in COTH Member hospitals.

** For example, 45.5% of all COTH Member hospitals have a Genetic Counseling Service.

SOURCE: American Hospital Association Survey of Hospitals, 1974, 76, 77, 78

TABLE 8

PERCENT OF NONFEDERAL COTH MEMBERS
HAVING SELECTED SERVICES
1973 and 1977

		%COTH 1973	%COTH 1977	% Change
1.	Rehabilitative Outpatient Services	42	59	17
2.	Intensive Care Unit (Mixed)	81	96	15
3.	Psychiatric Inpatient Unit	63	71	8
4.	Hemodialysis (Inpatient)	73	79	6
5.	Hemodialysis (Outpatient)	59	65	6
6.	Psychiatric Emergency Services	65	69	4
7.	Psychiatric Outpatient Services	65	69	4
8.	Rehabilitation Inpatient Unit	30	34	4
9.	Occupational Therapy Department	71	74	3
10.	Social Work Department	97	98	1
11.	Psychiatric Partial Hospitalization	37	38	1
12.	Burn Care Unit	23	24	1
13.	Intensive Care (Cardiac Care Only)	81	82	1
14.	Emergency Department	95	95	0
15.	Physical Therapy Department	98	98	0
16.	Organ Bank	22	22	0
17.	Therapeutic Radioisotopy Facility	84	84	0
18.	Histopathology Laboratory	95	95	0
19.	Home Care Department	24	24	0
20.	Cobalt Therapy	66	65	(1)
21.	EEG	98	97	(1)
22.	Diagnostic Radioisotope	96	94	(2)
23.	Preamture Nursery	81	79	(2)
24.	Organized Outpatient Department	94	91	(3)
25.	Blood Bank	95	91	(4)
26.	Open Heart Surgery	72	67	(5)
27.	Self-care Unit	17	10	(7)
28.	X-Ray Therapy	88	80	(8)
29.	Radium Therapy	85	77	(8)

SOURCE: American Hospital Association Annual Survey of Hospitals, 1974, 78

TABLE 9

Nationwide House Staff Stipends for 1978-79 and 1977-78, by Year of Training

Year of Training	Number of Hospitals	Stipends			
		Lowest	Median	Mean	Highest
1978-1979 Nationwide					
1st Post-MD Yr	316	$ 9,780	$13,860	$13,904	$19,240
2nd Post-MD Yr	316	10,320	14,801	14,896	20,719
3rd Post-MD Yr	316	10,980	15,681	15,784	22,306
4th Post-MD Yr	316	11,627	16,465	16,646	23,878
5th Post-MD Yr	297	12,274	17,240	17,483	25,414
6th Post-MD Yr	232	12,800	18,104	18,436	26,998
1977-1978 Nationwide					
1st Post-MD Yr	336	$ 9,702	$13,100	$13,186	$18,424
2nd Post-MD Yr	337	10,320	14,000	14,152	19,833
3rd Post-MD Yr	337	10,980	14,808	15,017	21,126
4th Post-MD Yr	333	11,500	15,598	15,842	22,626
5th Post-MD Yr	318	12,000	16,400	16,644	24,090
6th Post-MD Yr	245	12,500	17,242	17,590	25,602

SOURCE: COTH Survey of House Staff Stipends, Benefits, and Funding, 1978

TABLE 10

Percentage Distribution of Funding Sources Used to Pay Hospital Costs of House Staff Stipends and Fringe Benefits, 1977-1978

Funding Source	Source of Revenue, in Per Cent	
	Residents	Clinical Fellows
Patient Revenues and General Operating Appropriations	73.56%	50.75%
State Appropriations Earmarked for House Staff Expenses	5.13	2.20
Municipal Appropriations Earmarked for House Staff Expenses	5.77	1.38
Veterans Administration Appropriations	2.30	1.33
Physician Fee Revenue	1.51	9.00
Medical School/University Funds	2.96	4.67
NIH	0.43	10.88
Federal Agencies other than NIH,VA	0.17	5.05
Endowment Income, Foundation Grants, Voluntary Agencies	0.45	8.78
Other	7.72	5.96
TOTAL	100.00%	100.00%
Number of Hospitals	262	135

SOURCE: COTH House Staff Survey of Stipends, Benefits, and Funding, 1978

TABLE 11

SOURCES OF INCOME BY TYPE OF CARE IN
UNIVERSITY-OWNED TEACHING HOSPITALS*
(In thousands of dollars)
Fiscal Years 1976 and 1977

Source	Fiscal 1977 (N = 57)+				Fiscal 1976 (N = 52)+			
	Outpatient		Inpatient		Outpatient		Inpatient	
	Amount	Percent	Amount	Percent	Amount	Percent	Amount	Percent
Blue Cross	$39,384	10.0%	$521,142	22.1%	$28,457	8.8%	$395,181	22.1%
Commercial Insurance	67,792	17.3	471,860	20.0	42,904	13.2	315,865	17.7
Self-Pay	87,109	22.2	186,086	7.9	80,088	24.7	124,156	7.0
Medicare	65,760	16.8	641,449	27.2	46,216	14.2	461,798	25.9
Medicaid	71,440	18.2	403,165	17.1	55,476	17.1	303,725	17.0
State Appropriations	17,838	4.6	49,835	2.1	28,854	8.9	85,811	4.8
County Appropriations	917	0.2	3,263	0.1	979	0.3	3,890	0.2
City Appropriations	7,937	2.0	4,754	0.2	145	<.1	0	0
Additional Welfare Payments	4,415	1.1	21,394	1.0	2,591	0.8	22,752	1.3
Other	29,838	7.6	53,656	2.3	38,629	11.9	72,322	4.0
TOTAL	$392,430	100.0%	$2,356,604	100.0%	$324,339	100.0%	$1,785,500	100.0%

* Data reported only for those hospitals able to separate income into inpatient and outpatient categories
\+ Income reported on an accrual basis

SOURCE: COTH Survey of University-Owned Teaching Hospitals' Financial and Operating Data, 1979.

TABLE 12

SOURCES OF INCOME* IN UNIVERSITY-OWNED HOSPITALS BY INSTITUTIONAL CONTROL (Public vs. PRIVATE SECTOR)
Fiscal Year 1977

Source	Public (N=42)+ Amount (in 000's)	Public (N=42)+ % of Total	Private (N=20) Amount (in 000's)	Private (N=20) % of Total	Total (N=62) Amount (in 000's)	Total (N=62) % of Total
Blue Cross	$ 273,751	13.8%	$ 296,340	23.3%	$ 570,091	17.5%
Commercial Insurance	361,485	18.2	205,629	16.2	567,114	17.4
Self-Pay	145,582	7.3	136,825	10.8	282,407	8.7
Medicare	389,037	19.6	344,555	27.1	733,592	22.5
Medicaid	305,772	15.4	186,267	14.7	492,039	15.1
State Appropriations	311,863	15.7	30,788	2.4	342,651	10.5
County Appropriations	15,102	.8	0	0	15,102	.5
City Appropriations	5,114	.2	7,684	.6	12,798	.4
Add'l. Welfare Payments	23,234	1.2	2,577	.2	25,811	.8
Workman's Compensation	7,384	.4	1,648	.1	9,032	.3
Overhead from Sponsored Programs	2,352	.1	1,005	.1	3,357	.1
Gov't. Contracts for Patient Care	(N=19) 24,980	1.3	(N=3) 4,263	.3	(N=22) 29,243	.9
Other	118,983	6.0	53,920	4.2	172,903	5.3
TOTAL	$1,984,639	100.0%	$1,271,537	100.0%	$3,256,176	100.0%

*Income reported on an accrual basis.
+Although the University of California Hospitals and Clinics at Davis, Irvine, Los Angeles, San Diego and San Francisco are considered voluntary, non-profit institutions, they are governed by the California State University's Board of Regents (a public body). Therefore, in order to provide consistency and facilitate comparison between these hospitals and similar respondents, the five were treated as publicly owned facilities for purposes of this survey analysis.

SOURCE: COTH Survey of University-Owned Teaching Hospitals' Financial and Operating Data.

TABLE 13

Comparison of COTH Veterans Administration Hospitals
With All Veterans Administration Hospitals, 1976

	VA-All	VA-COTH	COTH ÷All
	A. Hospital Utilization[1]		
1. Hospitals	138[2]	74	54%
2. Beds	73,151	51,195	70
3. Admissions[3]	906,602	686,139	76
4. Inpatient Days[3]	21,312,637	14,884,424	70
5. Average Daily Census	58,391	40,779	70
6. Percentage of Occupancy	80%	80%	—
7. Average Length of Stay	23.5	21.7	—
8. Outpatient Visits	12,593,634	9,935,640	79
9. Surgical Operations % Admissions	32	36	—
10. Intensive Care Beds	1,682	1,207	72
11. Intensive Cardiac Beds	411	303	74
12. Extended Care Beds	5,796	3,953	68
13. Inpatient Rehab Beds	1,044	1,005	96
	B. Personnel and Payroll[4]		
1. Total Payroll ($000s)	2,937,225	1,516,685	51.6
2. Total All Expenses ($000s)	4,370,372	2,361,727	54.0
3. % Payroll/Expenses	67.2	64.2	—
4. Interns & Residents Payroll ($000s)	106,548	90,489	84.9
5. Physicians, Full-Time Equivalent	7,728	4,380	56.7
6 Total Personnel, Full-Time Equivalent	176,142	108,456	61.6
	C. Special Facilities[1]		
1. Intensive Care Unit	140	73	52.1
2. Coronary Care Unit	94	59	62.8
3. Open Heart Surgical Facility	55	43	78.2
4. X-Ray, Cobalt, or Radium Therapy	78	56	71.8
5. Diagnostic Radioisotope	122	71	58.2
6. Therapeutic Radioisotope	122	50	41.0
7. Histopathology Laboratory	137	72	52.6
8. Blood Bank	135	64	47.4
9. Electroencephalography	103	73	70.9
10. Respiratory Therapy Department	134	69	51.5
11. Hemodialysis Treatment	52	50	96.2
12. Physical Therapy Department	138	73	52.9
13. Occupational Therapy Department	122	73	59.8
14. Rehabilitation Inpatient Unit	138	39	28.3
15. Psychiatric Outpatient	130	69	53.1
16. Psychiatric Partial Hospitalization	53	39	73.6
17. Psychiatric Foster & Home Care	85	27	31.8
18. Social Work Department	138	74	53.6
19. Home Care Department	35	33	94.3

[1] Comparisons include only General Medical & Surgical Hospitals.

[2] Includes 10 consolidated hospitals.

[3] Excludes 1-Day Dialyses.

[4] Includes 23 psychiatric hospitals and 11 independent clinics.

SOURCE: COTH Directory of Educational Programs and Services, 1978