

ON REASONABLE COSTS OF HOSPITAL SERVICES

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Since its inclusion in the Medicare Bill, the term "reasonable cost" of hospital service has become a word-fact. If an idea is named it is often automatically considered to exist, particularly if enough people repeat the name often enough for it to assume the illusion of reality. Many are bothered with the "reasonable" part of the term, but surprisingly few are concerned about what the word "cost" really means when applied as a measurement of hospital expenses incurred in rendering patient service.

Any consideration of the implications of classifying hospital costs, whatever the descriptors may be, must start with a review of the hospital cost picture over a period of time. Table 1 presents hospital expenses per patient day over the past 21 years. Limiting the discussion to costs in non-federal, short-term general and other special hospitals, it can be seen from Table 1 that the overall increase of almost 413 per cent per patient day over the period studied represents a considerable increase in the cost of a basic commodity. Some of the burden of increased per diem expenses was offset by the fact that patients stayed in the hospital for shorter lengths of time. Though expenses per patient day increased 95.5 per cent from 1946 to 1952, expenses per patient stay for this same period increased but 72.9 per cent. From 1953 to the present, however, these two measures increased at about the same rate, 141 per cent as compared with 140 per cent, due to stabilization of length of stay, so every increase in per diem costs in the most recent period of time is a real increase of the cost of hospitalization to the patient or third party.

TABLE I. ABSOLUTE VALUE OF TOTAL EXPENSES PER PATIENT DAY AND PER PATIENT STAY IN NON-FEDERAL, SHORT-TERM GENERAL AND OTHER SPECIAL HOSPITALS

	<i>Per Patient Day</i>	<i>Per Patient Stay</i>
1946	\$ 9.39	\$ 85.57
1947	11.09	90.15
1948	13.09	114.35
1949	14.33	119.39
1950	15.62	127.26
1951	16.77	138.73
1952	18.35	148.00
1953	19.95	158.47
1954	21.76	169.67
1955	23.12	179.77
1956	24.15	186.11
1957	26.02	198.13
1958	28.27	214.67
1959	30.19	235.66
1960	32.23	244.53
1961	34.98	267.37
1962	36.83	279.91
1963	38.91	299.61
1964	41.58	320.17
1965	44.48	346.94
1966	48.15	380.39

Source: Hospitals, Guide Issues.

THE DEVELOPMENT AND CHARACTERISTICS OF HOSPITAL COSTS

To place these numbers in their proper perspective, a consideration of the general subject of hospital costs must be undertaken, including the basic definitions, derivations and limitation of hospital costs, cost trends and the use of cost data. Hospital costs are different from hospital expenses even if both are often divided by the same denominator and expressed as cost or expense per patient day. Expenses are just what the term means—all the money paid out to operate the institution. Costs are expenses 1. specifically classified by a standard chart of accounts, 2. allocated directly or distributed to service units according to a uniform method of apportionment and 3. transformed into unit costs by dividing them by consistently defined and generally accepted units of service.

Hospital costs have been and are notoriously gross measurements of actual expenses occurred in rendering services. Costs per patient day,



the average cost of a day's care in a hospital for a period, must still be viewed with skepticism particularly when comparing the costs of one hospital with those of another, until it is determined how the above three standards are met. First and probably most important, just what categories of cost does the average patient-day cost include? Is allowance made for depreciation and interest expense? Does the per diem cost include nursing education expenses and medical education expenses? Does it include expenses incurred in the operation of an emergency room or outpatient department?

The second limitation of hospital cost analyses is that apportioned cost, that is, cost not directly pinned to the patient's bed or his unit of service, is a very substantial proportion of total costs. Although standard methods of apportioning these costs have been recommended, these distributions are on a much broader basis than is usually found in manufacturing or other nonservice industries. Strict adherence to uniform apportionment is therefore critical.

Even though the service unit "patient day" has been standardized, when one leaves this measurement and attempts to find uniformly accepted definitions of an "outpatient visit" or a "laboratory examination" or "surgical operation" to determine unit costs based on these services, consistent agreement among hospitals soon fades.

One fundamental limitation in interpreting hospital costs is the difficulty of using an average cost at all. Within the hospital one finds "very expensive patients" and some "fairly inexpensive patients." Since costs are not kept on an individual patient basis, but are allocated from departmental expense, substantial effects on the average cost figures could result from completely different mixes of patients.¹

To further confound or complicate an already murky measurement, the problem arises of variation in services offered by hospitals. This is the factor that has been confusing the hospital size-cost relationship, which has attempted to determine "the economically sized hospital" based on cost figures. Are large hospitals just "different" from small hospitals, offering a different pattern of services and probably catering to a different mix of patients, or is the mere size of the hospital an important determinant of hospital costs?

In reviewing the development of uniform cost accounting in hospitals, one is struck by two characteristics in its evolution, the comparatively recent interest in cost analysis and the variety of uses to which such analyses have been put.

The first known attempt at sophisticated unit cost finding is dated

1908, and appears in *The Forms of Hospital Financial Reports and Statistics*.² This little volume is interesting reading, not so much because it evokes a feeling of nostalgia for the days when patient-day costs were \$2.425 for private patients and 16 cents an outpatient visit, but to illustrate that even then attempts were being made to separate inpatient costs from ambulatory service costs.

Although references in the literature indicate that the first American Hospital Association publication on recommended accounting procedures appeared in 1922, it was not until 1935 that the Association published its first manual on a standard chart of accounts.³ That manual contained the basic charts of accounts recommended for hospitals, along with some basic statistical definitions of hospital service units, and did consider allocation of costs so classified between inpatient and outpatient departments. The manual was revised in 1940,⁴ 1950⁵ and 1961.⁶ Not until 1957, however, were these recommended statistics and accounts classified into a complete cost-accounting system through uniform apportionment to cost and service centers.⁷

Outside the official national association, local associations and even branches of the federal government promoted the notion of uniform cost accounting for hospitals and presented methods to accomplish this end. The United Hospital Fund of New York evidenced early interest in cost comparisons, and its manual,⁸ published in 1946, was the most complete available at that time. Probably the most important stimulant to uniform cost accounting was the E.M.I.C. reimbursement form developed by the Children's Bureau to pay hospitals for maternity services during World War II. A further explanation of this program will be attempted in a later section of this paper.

Attempts at refining cost data are under way at the present time, stimulated by a concern for improved management techniques and by the cost reimbursement policy of Medicare. At least one such refinement is specifically directed to the uniform derivation of critical cost and functional "indicators" by the Hospital Administrative Services (HAS) of the American Hospital Association. These indicators, both in terms of costs and labor hours, are directed at measuring departmental performance as well as the cost of units of service.

The degree of desired sophistication and standardization in a costing system depends upon how the derived information is to be used. A review of the available literature seems to indicate that cost analyses were undertaken 1. for internal control, 2. as a basis for setting rates, 3. for cost comparisons between hospitals and 4. in mounting special studies

of the costs of specific critical departments. No references are found in the early literature that use costs as direct reimbursement rates, nor, in any literature, about using costs as the criteria for the evaluation of specific hospital programs.

Obviously, if the primary use of cost information is internal, whether analyzing trends of or setting rates for one institution, the primary requirement for that information is simply that it be consistent over time. On the other hand, comparisons with other hospitals, if they are to be at all useful as indicators of relative operating efficiency, require that each hospital classify, allocate and apportion expenses the same way. The same uniformity is necessary if many hospitals are to be reimbursed by a single third party on the basis of costs.

A few excerpts from Davis and Rorum illustrate the prevailing attitude toward the use of cost data before World War II. "A carefully planned system of cost analysis would be of immense benefit to a superintendent not only in the control of hospital expenditures, but also in the enlistment of public support. . . . If the total costs of each hospital service were determined separately, unit costs could be calculated for board and room, x-ray service, etc. and these costs compared with existing fees.⁹

"Cost per patient day could be regarded as an accurate measure of hospital efficiency, if all hospitals were to calculate this quantity according to the same formula. Unfortunately no uniformity is followed in hospital accounting.¹⁰

"The public's interest in hospital care requires that some fees be established at levels presumed to cover only portions of their respective costs. The very low daily rates in most hospital 'wards' are evidence of this public policy, for these rates are presumed to be lower than the costs of services to which they apply."¹¹

Of particular importance is the last excerpt because it represented the feeling of many in the hospital field before the days of "cost reimbursement." Hospitals feared that if they were paid full cost for services they would lose their charitable immunity, their nonprofit status.

The first important service benefits, cost-based reimbursement program was the Emergency Maternity and Infant Care (E.M.I.C.) Program of the Children's Bureau, from April, 1943, through December, 1946. It is impossible to overemphasize the influence of this war-time, temporary, emergency program on the subject of this paper and on subsequent federal legislation. Fortunately, an accurate, objective rec-

ord of the total experience of this program is presented in a monograph by Sinai and Anderson.¹² Rereading this report now, when the implementation of Medicare is at the top of everyone's priority list, gives one an almost frightening feeling of *deja vu*.

The program was characterized by the provision of a direct comprehensive service benefit (covering physicians and hospital services), without a means test, under quality controls, where reimbursement was paid directly to the providers by a varying fee schedule for physicians and through a cost reimbursement formula for hospitals.

Without negating the importance of the first four characteristics, indeed it is recommended that all reread this monograph, an overview of the cost reimbursement principle and its derivation, its application, its acceptance and the problems associated with its administration is central to any consideration of reasonable costs.

The then radical principle of payment to hospitals based on the costs of service emerged from the previous experience of the Children's Bureau in administering certain sections of Title V of the Social Security Act. As stated by Sinai and Anderson, "Out of the experience with maternal and child care and especially with the program for crippled children, certain policies had emerged with respect to hospitals. Thus the Bureau was in position to initiate hospital payments with certain background of 'know how'."¹³

In fact, the principle of cost reimbursement was established in May, 1942, when the Bureau was operating under its "B Fund" of Title V of the Social Security Act (the first Emergency Maternity and Infant Care appropriation was not passed until March, 1943). A memorandum to state health agencies, under a section dealing with rates of payment for hospital services, states that such service will be based on "the actual per diem cost of operating the hospital, to embrace all costs of care while mother and newborn infant are in the hospital, including delivery room, laboratory service, drugs, and so forth, except the medical services of the attending physician. Hospital care for sick children should also be paid on a per diem cost basis."¹⁴ The specific definition of per diem cost was clarified three months later; a definition that was refined in a series of memoranda to the various state health departments, who were functioning as overseers of the quality criteria and as the "fiscal intermediary" between the hospitals and the Bureau.

The reimbursable cost report, which reflected the final refinements of the Bureau's cost reimbursement approach, became effective July 1,



1944. A review of the derivation of the per diem cost is illustrative of the way total costs are classified into reimbursable and nonreimbursable costs. The exclusions begin with research expense and medical education expense. Unfortunately, the Sinai-Anderson monograph does not review examples of completed statements; it would be interesting to determine how many hospitals deducted anything on this line and how much was deducted by those hospitals that did enter a value.

On the other hand, salaries and maintenance expense of house staff and "other" physicians were included. However, the pattern was set. The authors, in commenting on the exclusions, pointed out, "Certain features of this basis of hospital payment are prominent. . . . Excluded are the costs of research and education. . . . Since the principle of reimbursable cost appears to be spreading, its application on the above basis should serve to direct public attention to the need of a more stable support of hospital research and education . . ." ¹⁵

Other deductions are also worth noting. The deduction of depreciation was not a true deduction; it served to clear the books for a later overall allowance of ten per cent of the per diem cost. It is probable that this allowance was also presumed to cover bad debts as well as miscellaneous deductions.

It was the deduction of the estimated value of donated or voluntary services that caused the real problems. This meant that those hospitals where a portion of the services were being provided by the religious could not charge equivalent salaries for donated services, which in other kinds of hospitals would have to be purchased. Only maintenance expense of religious orders was allowed. When the Children's Bureau, the Veterans Administration and the Office for Vocational Rehabilitation jointly agreed to pay for hospital services on a revised reimbursement formula in 1947, a limit of \$75 a month, to be paid to the mother house for each sister on duty in the hospital, was included in the reimbursement formula.

In spite of these restrictions and deductions, and even though the Bureau never could, for example, enforce its requirement for an independent audit of the hospital's expense statements, this revolutionary idea of payment of cost was well accepted by hospitals. In 1944, the Board of Trustees of the American Hospital Association approved the Bureau's reimbursement system ¹⁶ and a 1947 editorial in *Hospital Management* stated, "This rule was so reasonable, and yet so entirely unusual, that it struck hospital people everywhere as one of those wonder-

ful things which somebody should have thought of much earlier; and it naturally resulted in a general demand everywhere that all governments do the same thing."¹⁷

It is a bit surprising, therefore, that the Commission on Hospital Care in its report of 1947, did not directly endorse or recommend the principle of cost reimbursement. Though it was stated that "hospital care for indigent patients should be provided in both voluntary and governmental hospitals. Basic services should be purchased at rates *related* to cost and adequate to maintain a high quality of hospital care, etc."¹⁸ Later in the report, when considering patterns of Blue Cross payments to member hospitals, the following appears: "Cost of service is a third method of payment. This method is not in general use because of the unwillingness or inability of hospitals to make available actual costs of furnishing hospital service. Also because of the lack of uniformity in the accounting methods used by member hospitals, costs are not comparable."¹⁹

Though the cost reimbursement idea has steadily expanded since this early example, through its acceptance by many state and local governmental units and by many Blue Cross Programs, it is interesting to note that today with "reasonable cost" written into the Medicare Bill, many in the hospital field consider everyone's hospital costs except their own open to question.

The real paradox in the history of hospital costs is that as interest rose in cost reimbursement, little, if any, comparative cost information was developed as an administrative or research tool. It can still be said that "the researcher into hospital cost must be prepared to face at least two difficulties. . . . The second difficulty is more common to research in general: data series are not always consistent across hospitals or consistent within a single hospital over time. Furthermore, many of the series necessary for research have not been collected."²⁰

The medicare reimbursement formula negotiated by the Social Security Administration and the hospitals was an equitable one within the framework of reasonable costs for services received. One could state that the ratio of costs to charges, rather than average cost, presumes a broader knowledge than is now available of the actual costs to care for a patient over 65 years of age in a hospital. Although the density of ancillary services per patient day is probably less on the average for the elderly patient, it may well be that each of these services "costs" more²¹ or that routine services, including nursing services,²² cost more for a patient over 65 than for a patient under that age.

This very problem came up in the congressional hearings on the E.M.I.C. Program when Representative Hare noted that he had received some complaints that it was unfair for hospitals to receive the average per diem for E.M.I.C. patients because the costs for these patients, being almost all maternity patients, were probably higher than for the average patient. Miss Lenroot in answering this question states that she would be glad to consider a per diem cost for maternity patients only if hospitals could give data and isolate the costs of maternity care patients from those of general care patients. It was obviously impossible to do so then, and not too many hospitals in the United States could do it in 1966.

CONNECTICUT'S COST EXPERIENCE

A detailed review of the pattern of increasing hospital costs in one state where cost data are both available and consistent will illustrate the severity of this problem. Connecticut was the first state to apply the cost reimbursement idea as the basis of reimbursement for inpatient services rendered to state and town welfare clients. As a consequence, beginning in the late 1940's, a uniform chart of accounts and separation of inpatient costs from outpatient costs were adopted by the 35 general, short-term hospitals in the state. As confidence in, and acceptance of, the validity of the data increased, inpatient costs were divided into routine (room and board costs) and special service costs. Later these were subdivided into non-maternity, maternity and newborn costs. A review of these costs is presented below.

As seen in Table 2, overall costs per patient day have increased 78 per cent over the last ten years, from \$28.80 in 1957 to \$51.25 in 1966. Routine bed and board costs increased by 66.6 per cent and special service costs increased by 94.8 per cent.

When the special service costs are examined further, the increased cost in that area becomes even more evident. Special service costs are further subdivided into direct and indirect costs. The direct costs reflect those expenses clearly assignable to the ancillary services; the indirect costs are those general operating and administrative expenses allocated to special services such as heat, light, power, housekeeping and general administrative expense. Table 3 reveals that direct special service costs increased by 107.7 per cent over the ten-year period. The indirect costs, on the other hand, increased at about the same rate (66.5 per cent) as routine room and board expenses (66.6 per cent).

TABLE 2. ACTUAL AND RELATIVE INCREASE OF COSTS—ROUTINE, SPECIAL SERVICES AND TOTAL COSTS PER PATIENT DAY, 35 CONNECTICUT HOSPITALS

	<i>Cost of Routine Services Per Patient Day</i>		<i>Cost of Special Services Per Patient Day</i>		<i>Total Cost Per Patient Day</i>	
		<i>Relative Increase</i>		<i>Relative Increase</i>		<i>Relative Increase</i>
1957	\$17.13	100%	\$11.66	100%	\$28.80	100%
1958	18.67	109	12.99	111	31.66	110
1959	19.29	116	13.82	118	33.10	115
1960	20.04	117	14.62	125	34.67	120
1961	20.48	120	15.71	135	36.19	126
1962	21.95	128	16.86	145	38.81	135
1963	23.00	134	17.95	154	40.95	142
1964	24.49	143	19.14	164	43.63	152
1965	26.29	154	20.57	176	46.86	163
1966	28.54	167	22.72	195	51.25	178

Source: Connecticut Hospital Association

TABLE 3. COST PER PATIENT DAY SPECIAL SERVICES, DIRECT AND INDIRECT COSTS, 35 CONNECTICUT HOSPITALS

	<i>Cost of Special Services (Indirect Cost) Per Patient Day</i>		<i>Cost of Special Services (Direct Cost) Per Patient Day</i>	
		<i>Relative Increase</i>		<i>Relative Increase</i>
1957	\$3.47	100%	\$ 8.20	100%
1958	3.56	103	9.43	115
1959	3.73	108	10.08	123
1960	3.55	103	11.07	135
1961	4.22	122	11.49	140
1962	4.51	130	12.35	151
1963	4.77	138	13.18	161
1964	4.96	143	14.17	173
1965	5.20	150	15.37	188
1966	5.78	167	16.94	207



TABLE 4. COST PER NON-MATERNITY, MATERNITY AND NEWBORN PATIENT DAY CONNECTICUT HOSPITALS

	<i>Cost Per Non- Maternity Patient Day</i>	<i>Relative Increase</i>	<i>Cost Per Maternity Patient Day</i>	<i>Relative Increase</i>	<i>Cost Per Newborn Patient Day</i>	<i>Relative Increase</i>
1960	\$34.43*	100%	\$36.51**	100%	\$12.60**	100%
1961	35.99	105	37.76	103	13.33	106
1962	38.40	112	42.43	116	14.99	119
1963	40.45	118	45.45	125	16.16	128
1964	43.13	125	48.44	133	17.21	137
1965	46.33	135	52.30	143	18.61	148
1966	50.66	147	57.84***	158	21.28***	169

* 35 Hospitals.

** 34 Hospitals.

*** 33 Hospitals.

Source: Connecticut Hospital Association.

The proportion of the total costs accounted for by the *direct* special service costs rose from 28 per cent in 1957 to 33 per cent in 1966.

In 1960, the Connecticut hospitals began to order their costs by non-maternity patient day costs and maternity patient day costs, costs per newborn day having been considered separately since 1957. To reset these cost figures, as opposed to those above, which considered costs over ten years, the general baseline figure of an increase in total costs per patient day was 47.9 per cent over the seven-year period. Table 4 reveals that though the non-maternity day costs had increased by 47.1 per cent over the seven-year period, cost per maternity day increased by 58.3 per cent and cost per newborn day by a factor of 68.8 per cent. Though approximately 47 per cent of the increase in the latter two categories would reflect general salary increases, the additional 11.2 per cent and 20.7 per cent increase in relative costs cannot be explained by advances in medicine, since the practice of delivering babies and caring for them have not changed that much over the seven-year period. Maternity admissions fell from 58,626 to 55,190 during the same seven years, and one hospital closed its maternity service.

The Connecticut cost data are presented for two reasons: first, to illustrate the increasing size of the problem the federal government faces with the Medicare reimbursement based on reasonable cost, and second, to examine the cost data to determine the course of action with a significant payoff to reduce this federal commitment.

The data support findings by others,²³ that increases in hospital costs, averaging more than six per cent annually for the past ten years, reflect an increase in general operating expenses—primarily personnel expenses, increases in wages and increases in the number of personnel per bed. In addition, a five per cent yearly increase for the 30 per cent of hospital costs reflects use of new, and the increasing use of old, ancillary services. All of this has occurred without an increase in productivity, as measured by standard econometric model.

Implications derived from the maternity-newborn data point out special factors operating in the costs of this clinical service.²⁴

With the passage of Medicare, increasing hospital costs became a national concern rather than one of an occasional state insurance commission or Blue Cross Plan, as was the former rule. Many of these confrontations on the state level—in Michigan, New Jersey and New York, for example—did produce programs designed to attack the problem of escalating hospital costs.

Though many of the recommendations of these various studies were included in the Medicare law, the first year of experience with Medicare has been characterized by a preference to deal with the mechanics of paying reasonable costs rather than a concern toward controlling them. It is hoped that after the “year of the accountant” has passed, several years will be devoted to the examination of basic reimbursement policies. The following three-point program is offered to assist in these considerations: it is felt that provisions should be made to monitor, partition and study hospital costs; to make maximum use of the medicare utilization review process, and to coordinate federal and state planning efforts toward developing an integrated medical care delivery system.

MONITORING HOSPITAL COSTS

At this time, little valid, carefully controlled, comparative cost data are available as a basis for policy formation, research or administrative decision. The nearest approximation of such data is that gathered by the Hospital Administration Services of the American Hospital Association. The data are limited, however, particularly in consideration of outpatient expense, and it is not possible to determine cost indicator information by clinical services, such as obstetrical service as separate from the general medical and surgical service. The Connecticut data reveal that newborn and maternity patient day costs behave differently than do general medical and surgical costs.

Basic operational data are lacking on hospital costs detailed enough to monitor the system, refined enough to derive performance standards, or of sufficient accuracy to permit sophisticated multivariate analysis. It is hoped that the National Center for Health Services Research and Development will address itself to this question.

PARTITIONING HOSPITAL COSTS

Even before Sinai began to divide consumer costs from costs to which at least public attention should be drawn, Davis and Rorum were considering what costs the public should be responsible for, as opposed to the hospital. They stated, "The data for analysis of hospital costs would enable the hospital superintendent to show clearly which of the various services were not self-supporting from patients' fees . . . the need for public funds may be traceable directly to the cost of education for student nurses."²⁵ These authors were a little more specific in other references. "It is the public's responsibility to remove from the superintendent that portion of the economic burden resulting from the community's demand for hospital care and from the unwise investment of that community in plant and equipment."²⁶

Another cost study specifically points out, "The Committee believes that a hospital is ethically justified in maintaining a nursing school only if it is desirous and capable of providing an effective program of nursing education and if it can secure for this purpose adequate financial means. The Committee further believes the hospital is justified in expending hospital funds for its schools up to a point where the cost of the school is no greater than the value of the nursing service rendered by the school."²⁷

Later consideration of the separation of patient care expenses from non-patient care expenses were not so definitely expressed. In 1962, McNerney, *et al.*, stated, "Although education costs are incurred for the benefit of the entire community, these may be properly included in the cost of care in view of the significant amount of services rendered by the trainees."²⁸

This study went on to recommend that almost all the points at issue in the E.M.I.C. formula, i.e., depreciation, dollar value of services by members of religious orders, research expense (with some controls), education costs, both nursing and medical, should be included in reimbursement formulas as reasonable costs.

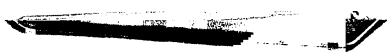
Regardless of inclusion or exclusion in reimbursement formulas, hos-

pital costs must be partitioned into what Pollack²⁹ has classified as Hospital Community Services and Patient-Centered Services, since as this report points out, "Certain hospital services benefit the community as a whole, rather than the individuals who use the hospital." The committee then goes on to recommend payment by the community as a whole of various costs of services to the community. This recommendation is taken up in chapter six of the report, which points out serious obstacles to implementing this recommendation and recommends that only certain carefully selected costs be shifted; those that promise that the shift can, in fact, be accomplished. Specifically, one of the committee's recommendations is for payment from state revenue to voluntary hospitals for the support of nursing schools in voluntary hospitals.

Before going into the consideration of this recommendation, it might be well to review how the hospital got into the "education business" in the first place. Hospitals have historically regarded themselves as institutions with a triple mission—patient care, education and research. It was considered correct to spend income from patient care to achieve the other two goals because of the presumed direct relationship between the quality of patient care and the quality of the educational and research programs. In other words, if a hospital had any ongoing programs in medical education and was the seat of medical research, it was therefore a better hospital and the patients should be expected to pay a "premium" for this quality.

As noted above, the E.M.I.C Program deleted costs of research from its reimbursement formula. The recent availability of research funds, primarily from the National Institutes of Health, has resulted in a situation, where little of the patient income dollar is now being spent on research. It may be possible under the Heart, Stroke and Cancer Program to pick up some of the medical education expense in certain of the hospitals. Both these programs were reflections of public concern that medical research and education were not receiving sufficient emphasis or funds under past arrangements—whatever the sources of funds happened to be. A byproduct of these programs is that perhaps less underwriting of these activities will take place with the fees paid by the consumers of hospital services.

Viewing the problem of nursing education expense in this frame of reference, one might question whether the concern of public policy might better be directed toward the overall problem of nursing education, and specifically to the question of whether nursing education should continue to be seated in the hospital at all. The arena of hospital



costs is not a proper place to determine the future of nursing education. Nursing education today should be undergoing as radical a revision as are the educational programs in engineering and other professions considered critical by the public. As long as most of the nurses are being trained in hospitals outside the mainstream of professional education, this reevaluation will not occur, nor will the needs of the nation for nurses (particularly for different kinds of nurses) be met.

The nursing profession and the hospitals have been playing with this question for years. As yet the public is confused between the claims of the nurses that any "true" professional education must take place in an academic locus,³⁰ and the claims of the hospitals that if they depended entirely upon university education programs for nurses, they soon would not have enough trained manpower to care for their patients. Would not the isolation of these costs from within the more general patient day costs focus public attention on the problem and eventually free the consumer of hospital care from being the sole contributor to this expense?

This is not the place to discuss the future role of the professional nurse, the proper seating of nursing education programs or the curriculum content of these programs. Public concern in this area is beginning to be reflected in legislation. The Nurse Training Act of 1964 provides grants-in-aid for construction, grants toward the operating expenses of schools planning to improve the quality of their nursing education programs, and grants for traineeships. The federal government is now paying nursing education costs in its Medicare reimbursement formula, thus underwriting about 30 per cent of the net costs of many hospital nursing schools. Nursing schools seated in colleges or universities are not eligible for these funds. Separation of these expenses from the reimbursement formula would permit general tax funds to be used in a directive way to influence the total system of nursing education.

STUDYING HOSPITAL COSTS

Little in this area remains to be added to the recent review of hospital costs studies by Lave.³¹ The Connecticut cost data referred to earlier was studied in an attempt to relate variations among hospitals in cost per available bed day to a set of independent variables representing selected characteristics of these same hospitals. The characteristics selected were: 1. size of the hospitals as measured by admissions, beds in service and average daily census; 2. utilization as measured by per

cent occupancy; 3. patient turnover as measured by discharges per bed and average length of stay; 4. quality as measured by a facilities and education index and a local price index as measured by average annual wage per employee.

Comparing such analyses of maternity and non-maternity costs, the effect of utilization as measured by per cent of occupancy in both of these services was clearly indicated. In fact, using this factor alone explained some 53 per cent of variation in cost per non-maternity available bed day in the 35 hospitals in Connecticut. The same factor explains up to 57 per cent of the variability in cost per available bed day in the maternity service.

This finding, though it agrees with some theoretical hypotheses of Klarman,³² is contrary to the findings in the McNerney study³³ which states, "no consistent relationship was demonstrated between occupancy and cost."


Such lack of agreement is not unusual in this field and points up the absolute necessity for further studies if the implications of payment based only on reasonable costs are to be understood.

UTILIZATION REVIEW PROCESS AND AREA WIDE PLANNING

One wonders if too much concern is being directed toward the essentially limited area of hospital costs, expressed as cost per patient day, whether that cost be reasonable or unreasonable. The acute general hospital bed is rapidly becoming the most precious of community resources. At an investment cost of around \$35,000 a bed and an annual operating cost of 12 to 15 thousand dollars a bed, it is obvious that the use of this expensive commodity must be considered a critical resource allocation problem.

The problem must be attacked in at least two ways. The first is to control the proper use of this resource: the fact that the right patient is in the right bed at the right time for the right period of time, and furthermore that he is receiving the correct kind of care while he occupies that bed. These, in essence, are the goals of the Utilization Review Process which now has the force of law, having been included in Medicare under Title XVIII A.

Various attempts have been made in the past to achieve these goals, in the AID program of New Jersey, for instance, and in various Blue Cross utilization review programs. It is evident, however, from the study of some of these plans that in spite of fairly sophisticated cen-



tralized information gathering processes, without strong reinforcement and commitment at the local level the desired utilization pattern will not be achieved.³⁴ This places the burden of proof—that the right patient is in the right bed at the right period of time and is receiving the care—on the shoulders of the medical staff of each institution.

Evidence³⁵ indicates that though hospitals have responded to the utilization review requirement of Medicare, much remains to be done in this area. A stepped-up review of what happens to a patient once he is in a hospital would be much more effective if it were coupled with a pattern of medical practice that has demonstrated that fewer patients needed to be admitted in the first place.³⁶

The second approach in allocating this precious resource is through total medical delivery system planning to be certain that new resources will flow into the system at a rate and kind needed to achieve maximum utilization of old and new facilities.

These two approaches are somewhat divergent, because, on the one hand, if the right patient must be in the right bed, and, on the other hand, these beds must be utilized to their full capacity, the number of beds available must, in the future, be balanced with the demand.

These two attacks, therefore, consider hospital costs not as the price of a unit of a service, but as the cost of decreased units of service per unit of population served. This may be the only way to assure the delivery of hospital services at a reasonable cost.

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