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CRITICAL CARE MEDICINE

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presidential address

Crisis and challenge

Past presidential addresses have covered a wide variety of subjects dealing with such diverse topics as certification of special competence in critical care medicine, rapid technologic advances in medicine, resource allocation, moral and ethical dilemmas, and spiraling costs of intensive care in the United States. In the last year, practitioners of critical care medicine have been faced with a new challenge. For purposes of reimbursement, diagnosis-related grouping (DRG) of patients was undertaken and will be phased in by governmental third-party payers within the next 3 yr. Undoubtedly, other third-party payers will follow suit. Health maintenance organizations and preferred provider designations will have similar effects.

Alteration in reimbursement practices will lead rapidly to conflict with our current practice. Until recently, reimbursement practices in the United States rewarded inefficiency. For example, hospitals received greater compensation for patients being treated in a critical care unit than for providing the same care in a standard ward bed. For reimbursement purposes, there is little question that a patient sustaining severe chest trauma causing lung contusion and paradoxical chest wall motion would best be treated by tracheostomy, sedation, and prolonged controlled mechanical ventilation. Recent evidence suggests that such aggressive therapy may be associated with increased morbidity and prolonged length of stay compared to more conservative therapy. Debate concerning appropriate therapy for other medical problems could be viewed in a similar fashion. In institutions where critical care bed limitation is not a frequent problem, many patients may have a prolonged length of stay just because the critical care bed is available. For example, a patient undergoing an uncomplicated saphenous vein-coronary artery bypass grafting procedure frequently remains in the ICU for 3 or 4 days postoperatively. Patients undergoing similar procedures in large university centers, where critical care beds are at a premium, may receive similar postoperative care for less than 48 h. Increasing technology has led to further examples of inefficient critical care administration. In some institutions the presence of a thoracotomy tube or even a simple iv infusion is sufficient justification for transferring a patient to a critical care unit. Clearly, cost-based reimbursement justifies the purchase of iv infusion pumps to a much greater extent than does the addition of nursing personnel to adjust the infusion rate manually. The infusion pump is classified as a patient charge item; the nurse is not.

Advances in technology also have detrimental effects on critical care, particularly by encouraging a de-emphasis on the importance of clinical observation. For example, students frequently fail to recognize signs of respiratory distress in tachypneic patients when the chest x-ray appears normal and the arterial oxygen tension is adequate. To some extent, technologic advances have replaced the carefully conducted physical examination.

In no area of the hospital has blind acceptance of technical advances been accepted with relatively little documentation of efficacy as in the critical care environment. Routine orders for postoperative pulmonary prophylaxis are common. Yet, as we are all aware, millions of dollars were expended in worthless intermittent positive-pressure breathing treatments before such therapy was scrutinized and abandoned, only to be replaced by incentive spirometry, again with little documentation of efficacy.

Critical care units in many smaller and community hospitals often have few qualified physicians with expertise in critical care administration and medical direction. All too often, the responsibility for administrative direction of the critical care unit is diffused through nursing and hospital administration, and the medical care of the patient consists of multiple subspecialist consultations to the primary physician, who may have little or no expertise in the management of critically ill patients.

In an effort to cajole various medical specialties, multiple ICUs have sprouted in diverse areas of the hospital. Frequently, shared services such as respiratory therapy, invasive monitoring services, and laboratory have had to increase staffing in order to provide rapid response time in these geographically separated areas. As alluded to earlier, when utilization of beds has warranted, hospital administrations have responded by building more ICUs, or by converting relatively low-cost ward beds to more expensive intensive care beds.

In larger hospitals, bed expansion and geographical separation of ICUs often cause a widely fluctuating patient census, which in turn leads to inappropriate staffing patterns. A unit may have far too many nursing

staff during periods of low census, or an inadequate nurse-to-patient ratio during periods of increased census. This type of staffing imbalance can impair ward care; the ICU may be the only place where accurate intake and output records can be maintained, or where hourly vital signs may be recorded. In an extreme case, a hospital may be able to provide only ambulatory or intensive nursing care. Often, hospitals may be so heavily supplied with critical care beds that adequate monitoring for the truly critically ill patient may not be possible. Although resources might be available to provide intensive monitoring of a few patients, the relative equality of a large number of ICU beds may make expenditure for modern monitoring techniques for all of them too costly a proposal. Therefore, care of each critically ill patient must sink to a common degree of mediocrity.

In the past, our cost-based reimbursement system has rewarded inefficiency. Not much longer!

Reimbursement based on DRG is likely to have a tremendous effect on the efficiency of critical care delivery. Although DRGs generally have been viewed negatively by most practitioners, DRGs may represent the greatest opportunity to the practice of multidisciplinary critical care medicine since the formation of the Society of Critical Care Medicine. There is no doubt that hospital administrators will cut costs, limit the use of ICUs, and reduce staffing and personnel costs by using lower-level nursing and technical personnel. Capital equipment expenditures may be severely curtailed and drug utilization critically reviewed.

Past experience has taught us that understaffing, inadequate equipment and nonphysician-directed critical care are inefficient, cost-ineffective, may lead to increased hospitalization, and may cause increased morbidity. This is our opportunity. The challenge is before us and it is our obligation to critically ill patients to respond appropriately. Only a physician well versed in the practice of critical care medicine can accomplish the task at hand.

Critical care physicians must ensure that hospital administration does not cut costs haphazardly to the patient's detriment; we must similarly ensure that the patient's treatment is as efficient as possible. Our future depends upon our ability to recognize the opportunity and respond to the challenge. The critical care physician, well versed in all aspects of multidisciplinary critical care, must guide administrators, primary care physicians and subspecialists in the proper direction. We must convince administration that decreased efficiency of critical care delivery will lead to a vicious cycle of increased morbidity, prolonged length of stay, and further increase in morbidity. The well-trained intensivist can ensure appropriate bed utilization. This will avoid widely fluctuating patient census and produce staffing patterns based on need, rather than on an average daily census figure. Appropriate staffing patterns and utilization of paramedical personnel to provide specialized care and monitoring can avoid territorial disputes and turf battles, and decrease personnel costs. Clearly, it is inefficient to utilize highly trained nursing staff for specialized procedures that can be adequately managed by technicians and secretaries. The TISS and APACHE scoring systems have provided the preliminary information for gradation in level of care. Many institutions with multiple, small, specialized ICUs will be able to increase efficiency by combining units, thus providing appropriate utilization of staff and avoiding the problems of shared services and equipment. Such efforts likely will alleviate problems of varying patient census, inefficient use of equipment and personnel, and ultimately, improve patient care.

What then are our responsibilities? What must we do to avoid the problems potentially created by the DRGs? First, we must ensure that expensive therapeutic modalities are efficacious. Current, high-cost technology must be scrutinized. Ineffective regimens must be abandoned and new modalities evaluated in clinical trials before being instituted in routine clinical practice. Therapeutic modalities must be used judiciously and appropriately. Antibiotic therapy, pulmonary artery catheterization, laboratory analysis, and many other diagnostic and therapeutic procedures which may be effective and, therefore, indicated in some patients, may be inappropriate in others. On the other hand, we cannot allow administrators to limit effective, but expensive, treatment without appropriate medical input. Recently, I was criticized by the utilization review committee of our hospital for obtaining 32 arterial blood analyses on a patient with severe chronic obstructive lung disease within a 3-day period. However, the $600 charge for laboratory analysis was cost-effective in consideration of the morbidity and increased cost that would probably have resulted had the patient required intubation and mechanical ventilation, which likely would have been the case with less-intensive observation and care during the first 3 days. Optimal utilization of technology, e.g., pulmonary artery catheterization, may similarly decrease morbidity and critical care utilization. On the other hand, indiscriminate application of such techniques actually may increase utilization of critical care inappropriately and decrease efficiency.

We must ensure proper use of critical care facilities. In fact, this responsibility, if properly administered, may be the key to the future. For example, in an institution where a critical care bed costs the hospital $500/day, the critical care specialist could receive adequate compensation for his services from the hospital by decreasing the average census of the ICU by only .55 patient/day, without ever billing a patient for pa-

tient care services. In some institutions, patients receive an average of 3 or 4 days of intensive care after aorto-coronary saphenous vein bypass grafting procedures. By decreasing the patient's stay to 2 or 3 days postoperatively, the critical care physician could justify his existence from a purely economic standpoint, even if only one procedure per day were performed.

In the future, the critical care physician must also be responsible for cooperative efforts between hospital administration, nursing administration, the medical director, and staff physicians. Obviously, this will require an extensive educational effort on the part of the critical care physician. Such educational efforts must be directed toward the hospital administration, nursing service, and the medical staff. Furthermore, because all specialty units have some services in common (for example, respiratory therapy, cardiovascular monitoring, and laboratory services), such shared services should be coordinated.

Only the well-trained, dedicated, critical care physician can accomplish the task at hand. The challenge has been made, the opportunity is right, and our response will determine our future.

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