

— *Special Articles* —

Critical care—Beyond the ivory tower: The presidential address from the 23rd Educational and Scientific Symposium of the Society of Critical Care Medicine

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For many, I suspect most of us, when the terms intensive care or critical care are used, a very specific vision comes to mind. It involves a modern intensive care unit (ICU), with all its specialized monitoring and support equipment, populated by critically ill patients who are simultaneously dependent on, and at risk from, that equipment for their very lives. More importantly, that mental image includes a multi-disciplinary team based in the unit and managing the care of the patients in the unit. Often, the team is led by an intensivist, with particular expertise and commitment to the management of critically ill patients. The unit is managed by physician and nurse directors, each of whom have specialized training and expertise in critical care and are actively involved in the daily management of the unit. The team also include housestaff, respiratory professionals, pharmacists, social workers, and, occasionally, ethicists and chaplains.

The patient's attending physician is usually an important part of the team and has a role in collaboratively determining the daily therapeutic plan and continuing contact with the family. Through the smooth operation of this team, efficient critical care is delivered. The team is charged with implementing the daily plan of care for each patient. Triage and discharge planning occur continuously. The ICU attending physician, participating in the care of all of the patients in the unit, has an overall perspective that

allows for knowledgeable and timely admission and discharge decision-making.

THE TEAM MODEL OF CARE

For brevity's sake, I will refer to this type of organization of ICU resources and care delivery as the "team" model of care. It is the model actively espoused by the Society of Critical Care Medicine (SCCM) for the delivery of critical care. The model is supported by the available literature. However, it is clear (1) that mortality rates vary widely among institutions, from 50% to 158% of predicted mortality. The demonstration project of the American Association of Critical-Care Nurses of the late 1980s produced a mortality rate that was half of the predicted mortality rate (2).

The elements contributing to such excellent performance are:

- a) The presence of a medical director with significant authority over patient care decisions and admission/discharge decision-making.
- b) A high level of nursing sophistication and a strong collegial relationship between nurses and physicians.
- c) The use of standardized protocols, rather than variation in therapy, depending on the biases of individual physicians attending individual patients.

What these studies (1, 2) describe is the good outcome realized when critical care resources, most importantly, human resources, are appropriately organized and applied.

In many of America's ICUs today, critical care is not organized in this team fashion. Take, for example, the high-tech community hospital with more than 300 beds, with one or more ICUs, performing major high-tech procedures. In most of these hospitals (with some notable exceptions), the organization of care in the ICUs has evolved directly from the organization of the medical floors. Individual physicians, who may or

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may not have expertise in the management of the critically ill, admit patients and care for them in the ICU. There is not an ICU-based physician team.

Efficiency of care breaks down when traditional rounding techniques are applied to critically ill patients. That is, the traditional practice of individual physicians attending individual patients in individual ICU beds results in regimens of care that vary markedly, despite similar disease states from bed to bed. Standardization of protocols is nearly impossible in this environment. Physicians are not immediately available for emergencies. Care is often determined over the phone. Multiple consultants become involved, leading to multiple sets of orders, and often multiple conflicting orders. Formalized rounds on all ICU patients do not occur, since each patient has a different physician, each of whom may be in the unit at different times during the day. The nurses are told to call various doctors for various problems, depending on the organ system involved. During off-hours and weekends, someone who does not know the patient covers for each of the doctors. All too often, there is no one physician coordinating the care of the patient. The nurse is left to sort out conflicting orders and plans requiring multiple calls and explanations to various physicians, at best an inefficient process of care, at worst, chaos. In my opinion, it is a tribute to the knowledge and commitment of the nursing staff that the mortality rate is as low as it is in many of these institutions. There may or may not be an ICU director. The Joint Commission on Accreditation of Healthcare Organizations requires that there be an appropriately qualified medical director. However, it is clear that in many of these institutions, the director serves more as a director on paper than as a director in fact.

The SCCM's 1992 survey of ICUs in the United States (3) showed that in 76% of the nation's 7,400 ICUs, the medical director was *perceived* as supervising the ICU by those persons filling out the questionnaire; yet, in only 12% of those ICUs, did the director actually have admission or discharge decision authority. It is in these units, however, that 70% of the critical care in the United States is delivered—70%! If we are to make a difference in the delivery of critical care in America, it is into these high-tech community hospitals that the model of appropriately organized team critical care must be taken.

Studies (1–9) show that it is the appropriate organization and application of human resources, rather than the technical capability of individual practitioners, that seem to determine outcome. That concept is no surprise to members of this organization, but it is not well recognized within the medical or consumer

community. Even if it is recognized in the physician community, there are powerful forces that stand resolutely in the path of positive change. In my judgment, one of the trends of the next 5 years will be the transition of these high-tech community hospitals toward organized critical care, as per our team model. I think this trend will evolve not only because it is the right thing to do for the best patient care, but because it is the most cost-efficient and economical way to care for ICU patients. It is in the high-tech community hospitals where the need exists and where a large number of new jobs for graduating critical care fellows will develop.

THE NEW PARADIGM: UNIT-BASED TEAM ATTRIBUTES

Unit-based ICU teams have the following attributes:

- a) They facilitate admission and discharge decision-making.
- b) They allow for efficient collection of accurate data (appropriate diagnoses, etc.) to support quality improvement and cost-effectiveness analysis.
- c) They promote efficient patient transfer, in and out.
- d) They help to reduce conflicting orders.
- e) They reduce the number of physicians involved in a patient's management.
- f) They allow for smooth application of therapeutic protocols.

They are, in a word, more cost efficient. As in any situation where there are less confusion, fewer conflicts, and closer communication, the quality of the product is better—there is better outcome. More and more managed care providers are discovering that critical care delivered under SCCM's team model produces better outcome at less cost. With increasing frequency, they are seeking intensive care services that are organized in this manner for their health plans. So called "carve out" contracting for intensive care services is occurring now and will, I predict, occur with increasing frequency as the benefits in both quality of outcome, satisfaction of patients and their families, and reduction of cost are experienced.

While inpatient care overall diminishes, the expansion of this model of intensive care will become a growth industry. This growth will not be problem free, however. Often, powerful forces align against change.

Established referral patterns exist within medical staffs. Unit-based intensive care poses a direct threat to physicians who currently have lucrative consultation practices in the ICU and who not only do not want to lose them, but actively resist any change in the basic organizational format. It also requires a culture

change within the medical staff. Physicians in these institutions are accustomed to admitting patients to the ICU and calling consultant(s) of their choice to manage them. By implementing an ICU-based physician team that participates in the care of all patients in the ICU, that choice is removed or severely limited.

Attending physicians are at first fearful that they will be forced to work with an ICU physician team that they will find uncooperative or difficult to deal with. This concern is legitimate, and it places the responsibility squarely on the shoulders of the intensivist to demonstrate a truly collaborative practice with the attending physician who admits the patient. Indeed, successful intensive care operates this way wherever it is found.

Where evolution from a "nonteam" to a "team" form of critical care has happened, attending physicians subsequently find that their fears were unfounded. In retrospect, they see that the ICU team approach allows them more input and control over the process of care than they actually had when multiple consultants were making recommendations, writing orders, and communicating (or not) among each other. Patients and families are happier, since they receive regular, coordinated information from the attending physician or the ICU team, rather than uncoordinated, often differing opinions from various consultants. The result is that confusion is reduced.

The nursing process works more smoothly, since all questions are directed to the ICU physician team, which is present in the unit for reevaluation and follow-up as necessary—not down the street in the office or trying to manage care over the phone. Although fewer consultants are utilized, the coordination of input is better and potential conflicts are resolved on the spot, since the ICU physician team is always present for communication.

I believe that this evolution will happen. It is time for a new paradigm. There is much the SCCM can and should do, in my opinion, to help speed this evolution along.

SOCIETY OF CRITICAL CARE MEDICINE'S ROLE IN THE CHANGE

Although there are studies (1–9) that support the evolution to organized, unit-based, team intensive care, there is not a conclusive, prospective, head-to-head comparison study, controlled for severity of illness and comparing cost and outcome, for team-based intensive care vs. another model. The SCCM should organize and seek funding for such a trial. Healthcare reform is pressing on—both at the government level and within the market place. It will not wait until we

get the trial done. That should not stop us, however, from actively influencing the evolution of healthcare reform using available data and our expert opinion. To that end, the SCCM will continue to be, and hopefully will become, even more active in the healthcare debate. We take on this responsibility not for publicity or to turn our back on our roots as an academic and educational society. We do it because we believe that the patient deserves the best care, and it is clear to us that for the patient to receive the best care, intensive care services must be appropriately organized and delivered.

As I have explained, currently in our high-tech community hospitals, in about 70% of the ICU beds in America, intensive care services are inappropriately organized. We can and should fix that.

There are those individuals who argue forcefully that, as a learned or academic society with our roots in education, we have no business becoming politically active—that, as a matter of fact, it is inappropriate. I understand and have great sympathy for that point of view. However, in the 24 years since the SCCM was formed, we have learned a great deal about what works and what does not work in treating the critically ill. We need to continue our responsibility and see that this knowledge is applied so that the system that evolves actually makes care better. This approach is not a departure from the principles on which the SCCM was founded. Rather, it is a vigorous return to support of those principles. It seems to me that, in recent years, we in the SCCM have lost our sharp focus on the patient. We have been distracted, first by the debate over critical care boards, followed by the development of Resource Based Relative Value Scale, reimbursement, and now healthcare reform, cost efficiency, contracting for services, capitation, and the like.

It is all too easy to become distracted from the central issue that caused the SCCM to be formed in the first place and which attracts people now. That is, the simple desire to improve the care of the critically ill and injured. That is what attracted me here in the first place, and my conversations tell me that is what attracts most of you. We need to draw attention back to the patient now, only in new forums—in the lecture hall yes, but also in the halls of Congress and in the arena of public opinion.

In 1994, and in the turmoil of healthcare reform, we do not have the luxury to be uninvolved, to stand back. If we are to be true to our vision, then it naturally follows that we must be involved. We must be involved as policy is shaped, not criticizing from the sidelines after the fact. It is an appropriate and necessary extension of the principles on which the SCCM

was founded that we work in whatever arenas are necessary to see that the healthcare system that evolves is the best possible for the patient.

Thus, you can expect the SCCM to be active on a number of fronts this year. I want to highlight a few of these areas for you.

Advocacy. You can expect to see more activist involvement in healthcare policy. I have already noted, but I want to emphasize, that we should not pretend to be the advocate for the patient if we are not willing to be or are unable to be an effective player in the healthcare reform debate. That does not mean just the SCCM leadership or the Public Policy Committee doing the work. I mean *everyone in the SCCM* needs to be involved. We will make it easy for you, we will support you individually and locally, but you must be active *this year*. What do I mean? Every senator, congressman, and/or their staffs should tour an ICU in their district. The culture shock of the ICU provides a powerful emotional impact on visitors and leaves a lasting impression. We have been successful in hosting such tours in a number of hospitals through the SCCM's Observer Program.

We have identified congressional leaders on key committees. We will be specifically targeting these individuals and we want them to tour at least one ICU in their home district and hear our message. I have asked Dr. Arthur Combs to head up this program in conjunction with the Key Contacts Program and the Public Policy Committee. We will provide staff support to coordinate the visit, information for your visitors to take with them, and fact sheets and talking points for you to address to get our message out. In addition, we will seek alliances with other organizations. I think it would be particularly powerful and effective if the SCCM and the American Association of Critical-Care Nurses, the two experts in the field of critical care, presented a joint proposal for critical care in health reform. Every other health interest group can be accused of lobbying for their own personal or financial interest. The alliance of the physician and nurse experts on behalf of critically ill patients sends a powerful message and works to diffuse the suspicion of personal interest. There is tentative agreement between the leadership of the two organizations to proceed, and I look forward to working collaboratively with our nursing colleagues with the same success that we have brought to our best-run ICUs.

Project Impact. This is an ambitious project to develop a nationwide ICU database. Our aim is to develop more than just a registry—rather, a complete database, collecting data on literally thousands of ICUs and patients to support outcomes research, quality improvement activities, both locally and nationally,

and data for ICU management decisions locally in institutions that sign up for the program. Out of this program will come many of the answers that will allow us to embrace therapy that is efficacious and to delete those therapies that are not. To measure which critical care delivery systems (team or nonteam) produce the best results, and at what cost, will be a focus of the program. The content of the program has been developed and SCCM has contracted with a sophisticated software company, TriAnalytics (Bel Air, MD). We plan to begin beta testing this year.

Fundamentals of Critical Care Support Course. This course is intended to be taught to non-critical care practitioners and covers the principles of organ support in a manner similar to the way advanced cardiac life support addresses the fundamentals of circulatory maintenance. The content has been developed and ranges from metabolic support to central nervous system resuscitation. The manual, slides, and first batch of instructors have been prepared, and we are ready to roll. I would like to thank Dr. Phillip Dellinger, his development team, and René Arché and the SCCM office staff for the expert production of a program of which we will be quite proud and which will directly affect the level of care delivered to many patients.

Coalition With Industry. As many of you know, 2 years ago the Society sought to form a coalition with critical care-related industry to help direct the development of new technology toward truly needed advances in the care of critically ill patients. The Coalition is now a reality, and it is one you will be hearing much more from.

Intensive Care Unit Certification Program. Major strides have been made in the care of trauma patients through the courageous and farsighted certification program developed by the American College of Surgeons. I think it is time for the SCCM to step up, assume the responsibility, and put a similar certification program in place for critical care. We are the appropriate group to do it. We have the expertise. We have the relationship with other major involved groups, especially the Joint Commission on Accreditation of Healthcare Organizations, and we have already developed much of the content through our guidelines (10) and curriculum development work. Now all we need is the resolve and the funding to proceed.

International Involvement. In recognition that we live in a truly global community, and that there is much to be learned in interchange between countries and cultures, we will place renewed emphasis on the international involvement of the SCCM. We are open and accommodating to international membership in SCCM, as well as cooperative and supportive to

programming and exchange with other countries and cultures. We must not be so distracted by American healthcare reform that we isolate ourselves or make our meetings uninviting to those potential attendees to the meeting.

Education and Research. SCCM's commitment to education and research not only continues, but is renewed. Dr. Russell Raphaely (SCCM's past president) has requested a complete, thorough, and objective evaluation of our educational and scientific program. Through our annual symposium, as well as through the range of our other courses and publications, we want to present only the best in "state of the art" science, as well as comprehensive reviews of timely topics. We want to provide an environment where investigators desire to bring their best work, where the scientific breakthroughs are first presented, and, we want to sponsor more research through directly allocated SCCM funds.

It is as important today as it has ever been that we be a unified society; however, I have to sound a note of caution. We have grown very rapidly. As a matter of fact, we have doubled our membership over the past 3 years. We are now 7,800 members strong, with a retention rate of 90%. In many ways, that is wonderful. The expansion has allowed us to fund our broadened agenda and activities. But we also pay a price with such rapid growth. The sharp focus and clarity of purpose present among the 30 individuals who first came together 24 years ago to found the SCCM become blurred. Varying agendas arise. With the expansion in membership comes expansion of interorganizational politics and division. Our multidisciplinary nature—which, in many ways, is our greatest strength—with this division, becomes our Achilles heel. Whether you are a nurse or physician, internist or surgeon, you are here because of your specialty interest in critical care. Physicians, nurses, respiratory therapists and pharmacists—the shared vision of better care for critically ill patients unites us in a way that make our differences trivial.

As you pursue your SCCM activities, I want you to do so as a *critical care* practitioner—a critical care internist, a critical care surgeon, anesthesiologist, or pediatrician, a critical care nurse, critical care pharmacist or therapist, with the emphasis on *critical care*. With this emphasis, we pull together. If the emphasis is on the specialties, we weaken the whole and our efforts serve only to pull us apart. In this tumultuous time in health care, we most definitely need to be pulling together.

I look forward to the coming year. I am excited about our future and honored to be your President.

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