

# CRITICAL CARE ALERT®

*A monthly update of developments in critical care and intensive care medicine*

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## Do Hospitalist Teaching Services Provide Cost-Effective Care?

ABSTRACT & COMMENTARY

**I**ncreasing evidence suggests that a hospitalist model is an effective means to provide care for acutely ill patients. However, prior studies have not evaluated how the involvement of house staff affects efficiency of this model. Over a 12-month interval, Hackner and associates prospectively identified all Medicaid patients  $\geq 18$  years of age who were cared for by a hospitalist teaching service ( $n = 477$ ) or private physicians ( $n = 1160$ ) at 1 medical center. Patients were excluded if their attending physician was a pediatrician, psychiatrist, or if they were admitted for a major surgical procedure.

The hospitalist service was comprised of 4 teams. Each team consisted of 1 attending physician and 4 second- or third-year residents. Each team admitted patients every 4 nights and rounded on a daily basis with the hospitalist attending. Hospitalist physicians spent  $\geq 50\%$  of their time in direct inpatient clinical activities, were paid a flat fee for their services, and did not receive a bonus based on cost or service reductions. Nonhospitalist patients were cared for by a variety of private providers, most of whom spent  $< 25\%$  of their time in direct inpatient clinical activities.

Overall median length of stay (LOS) was 4 days for the private patients vs. 3 days for hospitalist cases ( $P < 0.0001$ ). Median total costs per case were \$4853 for private patients vs. \$4002 for hospitalist cases ( $P < 0.0001$ ). Private patients were older (56 vs. 53 years;  $P < 0.0001$ ), more likely to be female ( $P = 0.04$ ), and African-American ( $P < 0.004$ ). However, neither African-American ethnicity nor gender had a significant correlation with LOS. Severity of illness accounted for differences in LOS within the population as a whole, but it did not account for the difference in LOS between private and hospitalist patients.

To explore the relationship between age and LOS, patients were stratified by age. Only patients  $\geq 65$  years of age showed statistically significant reductions in both LOS ( $P < 0.0001$ ) and total cost ( $P = 0.002$ ). There were no significant differences between group differences in ICU costs, mortality, interfacility transfers, or 30-day hospital readmission rates. However, there were differences in some cost centers. Median pharmacy costs per case were higher for private patients

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(15.2% of total costs) than for hospitalist cases (12.7%) ( $P = 0.03$ ). Imaging costs were also higher for private patients (12.7% of total costs) vs. hospitalist cases (11.3%) ( $P = 0.009$ ). Subspecialty consultation rates were 37.6% for private patients and 16.6% for hospitalist cases ( $P < 0.0001$ ). With increasing age, consultation rates increased for private patients from 29.5% to 42.9% without a significant increase for hospitalist cases (Hackner D, et al. The value of a hospitalist service. Efficient care for the aging population? *Chest*. 2001;119:580-589).

■ **COMMENT BY LESLIE A. HOFFMAN, PhD, RN**

Findings of this study suggested that a hospitalist with an active teaching role can provide care that results in lower LOS, costs, and consultation rates compared to private control subjects with a similar insurance payor (Medicaid). Demographic variables did not appear to account for the observed differences. When costs of major service and ancillary therapies were examined, no between group differences were found for laboratory services, blood bank services, or pathology. However, pharmacy and imaging costs were lower for hospitalist cases.

In addition, there were more subspecialty consultations in private patients.

This difference was particularly pronounced for patients  $\geq 65$  years of age. As age increased to older than 65 years, there were significant increases in total costs, LOS, and consultations. However, this increase was much smaller for hospitalist cases. In fact, the lower subspecialty consultation rate among older patients appeared to be a key efficiency factor for the hospitalist. Patients older than 65 years typically qualify for Medicare, in addition to Medicaid. It is possible that this change in payor status prompted a different pattern in regard to consultations, test ordering, and medication choices that increased costs. Conversely, lack of access to an alternate payor may have restricted consultations, tests, and medication choices for younger patients.

The effect of payor source on practice patterns is a highly controversial, but important area, which needs further study. Regardless, findings of this study suggest that hospitalist services can provide cost-effective care for older Americans, a group that represents a rapidly increasing population. Further, the study suggests that academic (teaching) interests do not negatively affect the efficiency of care. Rather, they have a positive effect. ❖

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## Wall-Mounted Gel Dispensers Improve Compliance with Hand Antisepsis Guidelines

ABSTRACT & COMMENTARY

**Synopsis:** Availability of rinse-free alcohol gel from wall-mounted dispensers resulted in a 32.8% increase in the rate of hand antisepsis 2-6 weeks after installation. At 10-14 weeks after installation, the increase was 43.9% over baseline. Ancillary personnel had the highest rate of compliance (83.5%), followed by nurses (56.9%) and physicians (43.7%).

**Source:** Earl ML, et al. Improved rates of compliance with hand antisepsis guidelines: A three-phase observational study. *Am J Nurs*. 2001;101(3):26-33.

Although it is common knowledge that the hands of health care workers can carry disease-causing organisms from one patient to another, compliance with hand antisepsis guidelines remains poor. During the past decade, rinse-free alcohol-based antiseptic gels that



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require neither soap nor water have been developed as an alternative means of hand cleansing. Earl and colleagues postulated that ready access to such gels would increase rates of compliance with hand antisepsis guidelines.

The study was conducted in 2 units, a 20-bed SICU and 13-bed MICU, located in a university-affiliated tertiary care facility. Phase I established baseline rates of compliance. During 30 days of observation, 1090 episodes were observed that required hand antisepsis and compliance was 39.6%. Subsequently, in Phase II, 73 gel dispensers (Kimcare Instant Hand Sanitizer, Kimberly-Clark Corp.) were installed inside and outside patient rooms, and observations were conducted to establish the short-term effect of the intervention. During 25 days, 1091 episodes were observed that required hand antisepsis, and the overall rate of compliance increased 32.8%. Rate of hand antisepsis increased significantly ( $P < 0.001$ ) in the SICU. Rates also increased in the MICU but not significantly ( $P = 0.09$ ). Slightly more than half of all observed instances of hand antisepsis involved the use of gels (62.8% nursing personnel, 61.6% physicians, 52.4% ancillary personnel). Gel dispensers located in the hallways were 30 times more likely to be used than those mounted inside patient rooms.

Phase III was conducted 10-14 weeks after the dispensers were installed to test long-term effects of the intervention. Over 30 days, 834 episodes were observed that required hand antisepsis. Compliance increased an additional 8.4% to 43.9% above baseline. In all phases of the study, ancillary personnel had the highest compliance with hand antisepsis (83.5%), followed by nursing personnel (56.9%) and physicians (43.7%).

#### ■ COMMENT BY LESLIE A. HOFFMAN, PhD, RN

Waterless alcohol-based hand hygiene products are available in a variety of different formulations, including gels, rinses, and foams. In Europe, where they are known as hand gels, they have been used in health care facilities for many years. Typically containing an alcohol compound plus an emollient, gels are thought to work against microorganisms by denaturing proteins, thereby destroying cell walls. When used at full strength, they are the most effective and fastest way to reduce microbial counts on the skin. Reluctance to use these gels largely results from the belief that they are drying to the skin, but studies reveal that they are actually less drying than soap and water cleansing.

In this study, the simple action of placing gel dispensers inside and outside of patient rooms increased compliance with hand antisepsis 43.9% above baseline (soap and water only). More importantly, this increase was sustained over the 3-month observation interval.

While the study lacks blinding, knowledge of the study did not appear to be a factor motivating improved rates of hand antisepsis. Compliance rates were determined by 5 observers, all public health graduate students, who recorded episodes of patient contact and noted whether hand washing occurred. Observation sessions were scheduled at varied times of the day and night in order to obtain an accurate representation of all shifts. Unit managers, but not unit staff, were informed about the purpose of the study. If asked, the observers stated they were conducting an infection control study for the epidemiology unit.

Several findings suggest that convenience may have been the primary factor motivating change. Sinks in patient rooms were located a distance from the bed area. Gel dispensers were placed in convenient locations on the wall next to each bed and just outside the door. Of note, gel dispensers located outside the room were 30 times more likely to be used than those inside the room were. Finding a sink and washing the hands with soap and water requires more time than using a conveniently placed gel dispenser. Findings of this study support that gel dispensers placed at opportune locations—eg, inside and just outside patient rooms—may be a practical method of encouraging hand antisepsis by ICU personnel and, thereby, reducing nosocomial infection rates. ❖

## Cost-Effectiveness of Percutaneous Tracheostomy

ABSTRACT & COMMENTARY

**Synopsis:** *In 80 selected adult ICU patients who needed long-term airway access for ventilatory support and were randomized to tracheostomy technique, percutaneous dilational tracheostomy was performed more quickly and at significantly lower patient charges than surgical tracheostomy. There were no differences in the complications or other outcomes examined in the 2 patient groups.*

**Source:** Freeman BD, et al. A prospective, randomized study comparing percutaneous with surgical tracheostomy in critically ill patients. *Crit Care Med*. 2001;29:926-930.

This randomized clinical trial was carried out at Barnes Jewish Hospital in St. Louis by investigators in the surgery, anesthesiology, and medicine departments at Washington University. Its purpose was to determine the cost-effectiveness of percutaneous dilational tracheostomy (PDT) in comparison with surgical

tracheostomy (ST) in critically ill patients who required elective placement of a long-term airway. Patients were excluded if they had been ventilated for less than 1 week, were hemodynamically unstable, required more than 40% oxygen and/or 5 cm H<sub>2</sub>O of positive end-expiratory pressure (PEEP), were coagulopathic, or had difficult neck anatomy. PDT was performed at the patient's bedside in the ICU; ST was done in the operating room.

Eighty patients were enrolled. The PDT and ST groups were similar in terms of age (about 65), gender, duration of intubation and ventilatory support prior to the procedure (13 vs 16 days, respectively), APACHE II scores (17 vs 18), and primary diagnosis leading to prolonged respiratory failure. There were no significant differences in ICU length of stay (24 vs 28 days) or hospital length of stay (50 vs 44 days). Four patients who underwent PDT required conversion to ST. Overall mortality was 22% in the PDT patients vs. 45% in the ST patients, although this difference was not statistically significant ( $P = 0.06$ ).

In terms of cost-effectiveness, the primary focus of the study, PDT was performed more quickly than ST (means, 20 vs 42 min, respectively),  $P < 0.001$ . Mean hospital charges were \$1569 for PDT and \$3172 for ST; equipment and supply charges were \$688 vs. \$1526, and professional charges were \$880 vs. \$1647, all differences significant at  $P < 0.001$ . Freeman and colleagues conclude that they consider PDT to be the procedure of choice for establishing elective tracheostomy in the appropriately selected patient requiring long-term mechanical ventilation.

#### ■ COMMENT BY DAVID J. PIERSON, MD, FACP, FCCP

This study found no differences in complications or other outcomes in PDT vs. ST, and it documented statistically significantly lower patient charges in the PDT group. Although it is the largest randomized clinical trial of PDT yet reported, its size is still modest in terms of conclusions about complications. Illustrating this is the fact that the 22% vs. 45% mortality rates in the 2 patient groups were not different at the  $P < 0.05$  level. It is also important to emphasize that only relatively stable patients requiring relatively modest support were included. Although the patients are referred to throughout the paper as being critically ill, I doubt that they would have been listed as “critically ill” in most hospitals. Only patients requiring 40% oxygen and 5 cm H<sub>2</sub>O PEEP or less, with no signs of active infection, were studied. Patients whose need for long-term airway access was in the context of being “chronically critically ill” with ongoing sepsis or acute respiratory distress syndrome would not have qualified. Patients with difficult neck anatomy were also excluded. Thus, this study covered long-term ventilation patients, such as those typically sent to long-term acute

care facilities or regional weaning units, and the reported results might not apply to the “chronically critically ill” patient needing a tracheostomy.

It should be pointed out that charges, not costs, were compared in this study, and that the observed differences were due primarily to having to go to the operating room for ST. As Freeman et al acknowledge, if both procedures were performed in the OR the cost differences would likely disappear. Also not dealt with in this multidisciplinary study in which surgeons performed all procedures was the issue of turf, an important consideration in some institutions. PDT has been widely touted as an intensivist's procedure, and who should be performing tracheostomy—by any technique—remains controversial.

Although PDT has been associated with some complications that are unlikely to occur with ST, such as paratracheal insertion, tracheal laceration, pneumothorax, and loss of airway, a recent meta-analysis by Freeman et al concluded that PDT is associated with fewer complications overall than ST.<sup>1</sup> Although the cost/charge issue can be debated, the weight of evidence seems undeniable at this point in favor of PDT as relatively easy, quick to perform, no more dangerous, and cheaper than ST, at least for the kinds of patients included in this study. Whether PDT would be cheaper than and as safe as ST in chronically critically ill patients has not yet been determined. ❖

#### Reference

1. Freeman BD, et al. A meta-analysis of prospective trials comparing percutaneous and surgical tracheostomy in critically ill patients. *Chest*. 2000; 118:1412-1418.

## Long-Term Quality-of-Life Outcomes in ARDS

ABSTRACT & COMMENTARY

**Synopsis:** *In this study of 132 survivors of an episode of ARDS, somatic and neuropsychiatric symptoms were common. ARDS survivors had poorer quality of life than a comparison group of patients with cystic fibrosis.*

**Source:** Angus DC, et al. Quality-adjusted survival in the first year after the acute respiratory distress syndrome. *Am J Respir Crit Care Med*. 2001;163:1389-1394.

In this article, angus and colleagues from the University of Pittsburgh present an interesting and

rather eye opening analysis on long-term outcome of patients admitted to the ICU with the acute respiratory distress syndrome (ARDS) as their primary problem. These 200 patients were enrolled during a previous study that looked at effects of inhaled nitric oxide (NO) in patients with ARDS. Patients were enrolled into the study if they met the consensus criteria for ARDS. Patients who had sepsis, multiple organ dysfunction syndrome (MODS) or a high risk for developing it, septic shock, severe head injury, or with severe immunocompromise were excluded. Although the original study was performed to look at effects of inhaled NO, data regarding quality of life and function prior and after the episode of ARDS were also prospectively collected. The analysis of these data is presented in this article.

Health-related quality of life (HRQL) was measured using quality of well-being (QWB) at 6 and 12 months after enrollment. QWB assesses quality of life in terms of function and symptoms. To assess premorbid functional status, the Karnofsky Performance Status index was used. When it was found that the control and therapy groups were similar in baseline characteristics and outcomes, all data were pooled.

Overall, these were young male patients with ARDS as their primary problem. More than half of the patients were medical (56%) and the others were surgical (20%) or trauma (24%). Out of 200, 132 patients survived to leave the hospital. By Kaplan-Meier analysis, 1-month survival was  $69.5 \pm 5\%$  and 6- and 12-month survival was  $55.7 \pm 3.7\%$ . Survivors were younger, had higher mean premorbid functional status, and lower mean APACHE II scores at enrollment than nonsurvivors. When the survival was multiplied by QWB to give a measure of quality-adjusted survival, the survival at 1 year was 36 quality-adjusted life years (QALY) per 100 patients with ARDS. Using sensitivity analysis, the best case scenario (no post discharge death) showed a 1-year QALY of 46, whereas, adjusting for lower quality of life during prolonged hospitalization, QALY dropped to 28, 24, and 21 (if quality was considered 0 during hospitalization).

When QWB was compared with a group of patients with cystic fibrosis (QWB  $0.76 \pm 0.035$ ), a chronic disorder with multisystem problems, patients with ARDS had much lower quality of life (QWB 0.6 at both 6 and 12 months). Age, sex, comorbidity, or APACHE II scores were not associated with HRQL as measured by QWB. There was weak association between premorbid functional status and QWB at 1 year. More than two-thirds of the patients had musculoskeletal symptoms, nearly half had respiratory symptoms, and nearly half of the patients had some elements of neuropsychiatric symptoms (depression, anxiety, or insomnia).

#### ■ COMMENT BY UDAY B. NANAVATY, MD

To a certain extent, this study confirms previous findings regarding ARDS outcomes. It has been shown that if you survive the acute events in ARDS, the mortality reaches a steady state. The teaching in ARDS is still that the longer you live, the longer you live. It has been previously shown that there may be some element of persistent respiratory dysfunction in some patients with ARDS, and that their symptoms tend to improve for up to 6 months and then reach a steady state as well. Such wide variety and such prevalence of symptoms 1 year after an episode of ARDS have not been well described, and this report is truly an eye opener as to the effect of this still highly fatal disorder. It is not clear as to how many patients developed other organ dysfunction during their hospital stay, how much of morbidity and mortality was truly attributable to ARDS, and how much could be attributed to other illnesses that complicate an often prolonged hospital course.

Additional information one might have sought, I suppose, includes the ventilation strategy used, any significant difference between survivors and nonsurvivors, and between survivors with full recovery and survival with persistent symptoms. The other striking finding is that compared to patients with cystic fibrosis, survivors of ARDS perceived their quality of life to be poorer. That is possible because the patients with ARDS may have had a much higher functional status. They may have had higher expectations for themselves when compared to patients with cystic fibrosis, who may have been better adjusted to their diseased state.

Beyond these minor limitations, this study raises an important issue in outcomes in critical care. Are 28-day or 30-day mortality rates adequate measures for outcomes? What are the mechanisms for the persistent symptoms found in these ARDS survivors? Does acute therapy affect these long-term disabilities? If we had thought that we knew the “optimal ventilation strategy” in ARDS to optimize the outcomes in ARDS, this study reminds us of the poet’s line, “miles to go before I sleep.” ❖

### *Special Feature*

## **Philosophies of an Intensivist: Lessons from Osler**

*By Stephen W. Crawford, MD*

**I**f dr. william osler were alive today, what kind of doctor would he be? Would he have specialized?

Would he have become certified in internal medicine? Would he have obtained subspecialty boards? In infectious diseases? Cardiology? I suspect he would have become a critical care physician.

In 1992, the Society of Critical Care Medicine provided guidelines for the definition of an intensivist and the practice of critical care medicine.<sup>1</sup> These guidelines include specific training, certification, devotion of time, procedural and technical skills, as well as service as a team leader and unit manager. The practice of critical care is “defined by the needs of the critical care patient.” These guidelines provide *quantifiable* requirements for the intensivist. However, I believe they are not complete in defining the *qualitative* aspects of an intensivist. Perhaps the intensivist is defined less by the place and type of work than by a fundamental approach to care.

Medical textbooks review the core knowledge base of critical care. The specialty residencies in internal medicine, surgery, and pediatrics teach physicians about acute organ failures, endocrinological emergencies, resuscitation, central line insertions, and other issues relevant to critical care. So why aren’t all these broadly-trained physicians “intensivists”? What is the difference between those specialists and intensivists? I think the fundamental distinction is not the knowledge base or ability to perform procedures. The distinction is one of philosophy. This philosophy allows the intensivist to render care and decision making in a manner distinct in rapidity and perspective.

I find that I tend to repeat common phrases to the physicians-in-training who I supervise. These aphorisms seem to summarize my philosophy toward critical care. I also realize that many of these aphorisms were earlier attributed to Osler. I want to share some of these with you.

### **The Routine Intensivist**

The intensivist is not necessarily the smartest and most sophisticated of modern physicians. Rather, in many ways the intensivist is the most simplistic. The intensivist is redundant and compulsive. Osler observed, “The chief function of the consultant is to make the rectal examination that you have omitted.”<sup>2</sup> The compulsive repetition by an intensivist of the review of organ systems, examination, and laboratory data converts the data to information that is useful in decision making.

Often an intensivist does not treat disease by a specific name. Often, appropriate treatments are ordered because the approach to the problems was correct, even if the name of the original disease was not identified.

The intensivist divides a problem into its smallest units and deals individually with each. The intensivist sorts problems into the least common denominators, simplifies the equations, approaches broad problems, and dissects and addresses the individual components. This is the “*simple(ton)*” approach: “*When the clinical problem appears complicated, divide it and treat each component separately.*”

An example of this approach is the patient with septic shock syndrome and multi-organ failure. Defining the final diagnosis in a single term, such as “toxic shock,” is not the relevant issue to the intensivist and is not crucial to the management in many instances. The important issues become the components of the problem: support of the blood pressure, the intravascular volume, renal function, cerebral blood flow and consciousness, ventilation, oxygenation, treatment of likely infection, etc. If proper care is given to each element, the outcome may be favorable. This approach stresses that many activities of the intensivist are not intrinsically curative, but rather, are supportive in nature.

### **The Starship Intensivist**

In David Gerrold’s sci-fi novel, *Voyage of the Star Wolf*, the starship cadets are taught at the academy that “The crisis isn’t the crisis itself. The real crisis is what you do before it and after it.”<sup>3</sup> The emergencies in the ICU are relatively simple to deal with since there are defined treatments for most of them that most physicians studied during training. These emergencies are not the crises. Dealing effectively with the problems at hand is distinct from preventing them. Similar to that of the primary care provider, prophylaxis is a major ingredient of the philosophy of the intensivist.

Dealing with a problem that is yet out of sight, and still over the horizon, is the goal of the intensivist. This is the “*avoid surprises (it’s not your birthday)*” approach: “*No complication should occur in the intensive care unit that you did not predict.*” The intensivist is not purely reactive, but rather proactive. The training of the intensivist should instill a constant vigilance that questions, “what problem will occur next?” This level of vigilance is neither intuitive nor reflexive (except among the most paranoid of us).

This vigilance requires an understanding of the pathophysiology at work in the patient: the predispositions to disease and the incidence of complications that attend the immunological and physiological status and local environment. At best, the intensivist recognizes that these predictions of future ill are tenuous prophecies. Thus, many intensivists assume that the safest is the “*assume ignorance*” approach: “*Assume that all*

*your diagnoses are incorrect and that all your treatments are inappropriate.*" This philosophical strategy heightens the vigilance, increases the awareness of inconsistencies in the physical examination or laboratory data, and engenders a constant reassessment of the situation. Also, this philosophy is not new. Osler stated, "Absolute diagnoses are unsafe and are made at the expense of conscience."<sup>2</sup>

### **The Timid Intensivist**

The appropriate approach for many situations in the intensive care unit is the "*don't just do something, stand there!*" approach. No treatment is often preferable to empirical treatment, or as Osler said, "Remember how much you do not know. Do not pour strange medicines into your patients."<sup>2</sup> Collecting additional information about a situation often leads to clarity in the diagnosis. The information may take the form of a biopsy or a chemistry result. Most importantly, this strategy permits additional time to pass for the diagnosis to become manifest, or for the condition to resolve.

This strategy of caution and therapeutic skepticism has its place in the setting of crises, as well as in less urgent conditions. In the ICU, the more urgent and critical the apparent emergency, the bigger should be the first step—backwards. The contribution of the intensivist to resolving a crisis is not necessarily the immediate application of technical skill. The value of the intensivist is the view and assessment of the circumstances. The proper role is in seeing the larger picture, prioritizing, directing the activities efficiently, and imposing a calm command to the crisis. Restraint in the face of impending doom is not inbred in most of us, but learned through years of practical experience, or more recently, taught in a critical care medicine training program.

### **The Empirical Intensivist**

For a given condition in the ICU a few interventions may be clearly appropriate, and many more are clearly wrong. A philosophy is necessary to cover the distance between these therapeutic extremes. In situations that do not have a proven effective treatment, empirical approaches are warranted. It requires confidence to recognize these situations when intervention clearly is either right or wrong. When the therapy is not known to be either, the intensivist recognizes that the approach must be empirical, that is, not based on controlled scientific research but purely experimental, speculative, and made on the basis of personal experience and biases. This requires the "*NO guts, no glory*" approach: "*There is no room in medicine for half-hearted empiricism.*"<sup>4</sup> When being pragmatic and applying therapy in

the absence of scientific data, it helps to be aggressive enough to affect a demonstrable response. Ideally, there should be objective, measurable end points by which to gauge the effect. If the treatment is based on experience alone, the intensivist should hope to learn something from the experience. Half-hearted attempts at experimental treatment are likely to benefit neither the patient nor the physician. The common example of this approach is the administration of "industrial" doses of glucocorticoids as a "last-ditch" attempt to treat a seemingly "hopeless" case.

### **The Guilty Intensivist**

Constant vigilance for complications by the intensivist is complemented by strong guilt. The appropriately guilty intensivist often takes the "*Guilt is good (or the 'I went to Catholic school')*" approach and assumes that any deterioration in the patient's condition is the intensivist's fault. Iatrogenicity runs rampant in the ICU. It is safest, and often correct, to assign deleterious changes in the patient's condition to ill-effects of treatments or medications. For example, the guilty intensivist removes the "bucking" patient from ventilatory support temporarily if necessary to evaluate for physiological problems, such as inefficient ventilation, insufficient tidal volume, or inadequate inspiratory flow rate. Sedation or neuromuscular blockade of the patient is used only after attempting to improve the "match" between the patient and the ventilator.

### **The Intensivist and Philosophy**

Many good physicians will recognize common aspects of their approaches to patient care. The strategies applied by the intensivist are not exclusive to the specialty and have been expanded upon more eloquently by Osler in his aphorisms.<sup>2</sup> The philosophical approach is important to critical care in the *degree*. The intensivist constantly is faced with crises that require immediate decision making with minimal information. A disciplined approach that is based on the most fundamental aspects of medicine is crucial. The basis for the actions of the intensivist are not distinct in substance from those of any good physician, but the degree to which the intensivist must adhere to the strategies is distinct. The margin for error and the time for empiricism are limited in the ICU, and, thus, the preformed philosophical underpinnings of the intensivist become the foundation for the patients' chances for survival. There must be firm ground on which to stand and decisively form diagnostic and therapeutic decisions. For the intensivist, this ground is marked with various approaches. These approaches are lined with extreme

vigilance, constant skepticism, repeated examination, guilt, and doggedness. The degree to which such approaches must be adhered is not intuitively obvious to or immediately obtained by all physicians. The intensivist-in-training should be shown the course. The goal of the academic intensivist is to make the way clear. From these analyses, generalizable approaches, a philosophy, are formed, used, and passed to the intensivist in training.

One can be an excellent physician in the image of Osler without being an intensivist. However, one cannot be an intensivist without practicing medicine as diligently as prescribed by Osler. The mere acquisition of certain technical skills and practice within the confines of an ICU is not sufficient to warrant the label of an “intensivist.” The intensivist is first and foremost a physician in the Oslerian tradition. The academic intensivist should convey the true essence of the practice of medicine in the ICU which is one of degree; *medicine practiced intensively and with intensity.* ❖

### Acknowledgement

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## CME/CE Questions

23. Compared to private practitioners, use of a hospitalist teaching service with active participation of medical residents resulted in:
- a. a significant increase in length of stay.
  - b. lower costs for patients > 65 years of age.
  - c. a higher subspecialty consultation rate.
  - d. a significant increase in ICU costs.
  - e. All of the above

24. When rinse-free alcohol gel dispensers were mounted inside and outside patient rooms, ICU personnel:

- used gel dispensers inside the room more frequently.
- used gel dispensers outside the room more frequently.
- did not change rates of compliance with hand antisepsis.
- improved short-, but not long-term compliance with hand antisepsis.
- None of the above

25. Advantages of percutaneous dilational tracheostomy over traditional surgical tracheostomy performed in the operating room include:

- shorter procedure time.
- significantly lower mortality.
- faster weaning from ventilatory support.
- lower incidence of ventilator-associated pneumonia.
- All of the above

26. Which of the following patients needing long-term airway access would have been included in the study of Freeman et al on percutaneous vs. surgical tracheostomy?

- A 50-year-old man with a bull neck and history of difficult intubation
- A 22-year-old woman with ARDS, still requiring 50% oxygen and 10 cm H<sub>2</sub>O PEEP after 3 weeks
- A ventilator-dependent 42-year-old man with C2 spinal cord injury 4 days ago
- A 76-year-old woman with COPD unable to be weaned after 3 weeks but clinically stable on 35% oxygen
- All of the above

27. Out of 200 patients with the acute respiratory distress syndrome, how many survived to leave the hospital?

- 39
- 72
- 98
- 132
- 179

28. In comparison with a matched group of patients with cystic fibrosis, ARDS survivors:

- had poorer quality of life.
- were able to exercise longer on a treadmill.
- complained more often of dyspnea.
- were younger.
- had been ill for a longer period.

## CME/CE Objectives

After reading each issue of *Critical Care Alert*, readers will be able to do the following:

- Identify the particular clinical, legal, or scientific issues related to critical care.
- Describe how those issues affect nurses, health care workers, hospitals, or the health care industry in general.
- Cite solutions to the problems associated with those issues.

## In Future Issues:

Rocking Bed May Be As Effective As Prone Positioning

### End-of-Life Care Still Far From Satisfactory

*IOM report calls for thorough reorganization*

*By Julie Crawshaw*

Despite increasing publicity surrounding end-of-life care, a recent report says little has been done to alleviate serious end-of-life problems that will undoubtedly magnify as more Americans enter old age and approach death.

The panel that prepared the report, sponsored by the Institute of Medicine and the National Cancer Advisory Board, called for reorganizing virtually the entire US health care system to provide uninterrupted appropriate care for those dying from cancer.

The report recommends that the Centers for Medicare and Medicaid Services (CMS—formerly the Health Care Finance Administration) change reimbursement methods to expand payments for palliative care, including reimbursing physicians and caregivers for time spent meeting with pain experts, psychologists, and family members to organize pain relief.

Though this report focused on the plight of cancer patients, the situation isn't any better for those suffering from other terminal illnesses. Pain relief and other palliative care measures are too often elusive across the board, according to John G. Weg, MD, FCCP, professor of internal medicine, pulmonary and critical care medicine at University of Michigan Medical Center in Ann Arbor, Mich.

Weg, who has worked on end-of-life care issues for more than 30 years, says it simply isn't reasonable to put patients in intensive care when there's nothing left that can cure them unless there is a specific intercurrent problem that can be reversed. He says he feels strongly that it's critical to recognize when there is no longer a treatment that is likely to do any good.

"Telling patients 'I can't cure you' isn't the same as telling them you can't help them," Weg observes. "I think every physician has an obligation to make a patient as comfortable as possible. We can almost always control symptoms to a point acceptable to the patient."

Paul A. Selecky, MD, FCCP, director of the pulmonary department and head of the ethics committee at Hoag Memorial Hospital in Newport Beach, Calif, says there is a lack of physician understanding about how to deal with pain. "The vast majority of patients in the US die in a hospital," Selecky says, "yet the SUPPORT [Study to Understand Prognoses and Preferences, Outcomes and Risks of Treatment] study done a few years ago showed that even when using a nurse-clinician as an intervention, patients often die in significant pain."

#### **Don't Wait for New Drugs; Change the System Now**

Joanne Lynn, MD, president of Americans for Better Care of the Dying (ABCD) and director of RAND Center to Improve Care of the Dying, says a big part of the problem is that many physicians are reluctant to discuss end-of-life measures with their patients. Lynn, who served as consultant to the IOM panel, says physicians and caregivers aren't using the knowledge already available to manage patients' end-of-life care.

"It isn't that we have to wait until a new molecular biology determines a better drug," Lynn says. "We have

pretty good drugs and decent ways of knowing how to support families and patients. The problem is implementation.”

Lynn agrees that the rates of untreated pain are still substantial, as are the numbers of patients who are just a few months from death but don’t realize they have a fatal illness and, thus, can’t plan to bring life to a decent close. “Modern medicine has created the opportunity to live a long time with a bad disease,” she says. “But we haven’t built a system to deal with that.”

In part, Lynn says, building an effective end-of-life care system means wholeheartedly engaging in quality improvement and reporting out those measures that really work because health care insurers and agencies demand visible proof.

She points out that some kinds of end-of-life care rearrangements are sufficiently substantial and visible to be tested in formal research—for example, she said, organizing 3 cancer centers one way and comparing them to 3 at which no changes were made.

“We could do that this year and know the results in 18 months,” Lynn says. “We could put patients suffering from diseases that are eventually going to prove fatal into a comprehensive care system like hospice that covers drugs and in-home services and try to make it a lower per day cost. Two years from now we’d know what works, what kind of good comes at what kind of price,” Lynn says. “In 3-5 years, we could build a reliable care system.”

### **Advance Directives:**

#### **Essential but Mostly Missing**

“One wonderful thing about the fact that most of us get to die slowly now is that you can anticipate what’s coming and make some reasonable plans,” Lynn says. But although advance directives are a major piece in end-of-life planning, most patients don’t use them. Those who do frequently use very vague, general phrases such as “when it’s clear I’m dying, please don’t put me on machines.”

“What is ‘clear’? What is ‘dying’? Does ‘on machines’ include insulin pumps and oxygen tubes or is it just dialysis and ventilators?” Lynn asks. “Every piece of phrasing needs interpretation.”

Even when patients know what they want to say, many don’t know how to say it, and physicians must help them to communicate clearly, says David Beyda, MD, medical director of the Phoenix (Ariz) Children’s Hospital pediatric critical care unit. “Simply taking time to sit and listen to a patient is what is needed,” he says.

Beyda suggests using videos of physicians who deal

with death and dying and talking to patients to educate medical students. “As we become more comfortable with death and the dying process, young physicians use us as role models to guide their behavior,” he says.

Lynn observes that as terminal illness progresses, many patients can develop increasingly specific directives but may prefer to spend what time and energy they have with family instead of making end-of-life decisions. “We need to involve the patient preferences and the family’s capabilities and the care system’s capabilities and craft the best support,” she says. “And that means a lot of communicating by everyone involved.”

### **Most Errors Occur in Transitions**

However, even the best possible advance directives are useless if no one knows what or where they are. Lynn points out that industrial engineers know what health care providers have been slow to learn—that most errors happen during transitions from one team to another.

“A hotshot team in the ICU and a hotshot team in the nursing home who don’t communicate and standardize procedures means advance care and treatment plans will be lost, knowledge about how this particular patient responded to a particular drug will be lost,” she says.

Lynn sees the increasingly large population of patients going back and forth between ICU and nursing homes as a set-up for disaster. “How many ICU personnel have even been in the local nursing home, or vice versa?” she asks. “Almost all the communication is between social workers and one-page discharge summaries. It’s a recipe for disaster, and it happens every day.”

What’s needed is for someone to assume responsibility for the gap. Now, physicians are responsible only for performance within their own little setting. Lynn says they should be responsible for all the incoming and outgoing patients until the patient is safely ensconced in the next place and all the way from when they were safely ensconced at the last one. “For really sick people, it isn’t enough just to write a comprehensive discharge plan of care,” she says.

Indeed, to fill the void, ABCD has developed a set of agendas—promises Lynn says the medical community ought to be able to make to a very sick patient.

They are:

1. Provision of evidence-based medical care.
2. No symptoms will be allowed to become overwhelming.
3. Patient ability to plan ahead to avoid emergencies.
4. Patient ability to shape care plan to preferences.
5. There will be no gaps in care from one provider type

to another.

6. Family issues will be taken seriously and weighed in the decision making.
7. Care system will be arranged to help patient live fully despite the disease.

“These are all pretty obvious until you realize that the usual care system can’t promise them that,” Lynn says. “The average ICU doc can’t make these promises for their care system, because they don’t have any idea what happens when people go to the nursing home or home care.”

### **Hospice: A Solution and a Problem**

Selecty concurs that transitions can be perilous but points to the logistical problems involved. He observes that hospice growth, fueled by the fact that hospices are now for-profit enterprises, brings another set of problems: Physicians must use the typical Medicare evaluation and management codes, and there is essentially no physician reimbursement for in-home patient care.

“When the patient goes into hospice care, does the physician continue or turn the patient over to the hospice director?” Selecty asks. “Can you have more than one physician caring for the patient? That seems to be unclear.”

Though it will take time to sort out the logistics, ABCD refers physicians to the following list of 20 improvements in end-of-life care that can be made right now. These were written by Don Berwick, MD, of the Institute for HealthCare Improvement in Boston.

- Ask yourself as you see patients, “Would I be surprised if this patient died in the next few months?” For those sick enough to die, prioritize the patient’s concerns—often this is symptom relief, family support, continuity, advance planning, or spirituality.
- To eliminate anxiety and fear, chronically ill patients must understand what is likely to happen. When you see a patient who is sick enough to die, tell the patient, and start counseling and planning around that possibility.
- To understand your patients, ask 1) “What do you hope for, as you live with this condition?” 2) “What do you fear?” 3) “It is usually hard to know when death is close. If you were to die soon, what would be left undone in your life?” and 4) “How are things going for you and your family?” Document and arrange care to meet each patient’s priorities.
- Comprehensive and coordinated care often breaks down when providers don’t have all the facts and plans. The next time you transfer a patient or a colleague covers for you, ask for feedback on how

patient information could be more useful or more readily available next time.

- Unsure how to ask a patient about advance directives? Try: “If sometime you can’t speak for yourself, who should speak for you about health care matters?” Follow with: 1) “Does this person know about this responsibility?” 2) “Does he or she know what you want?” 3) “What would you want?” and 4) “Have you written this down?”
- To identify opportunities to share information with patients and caregivers, ask each patient who is sick enough to die: “Tell me what you know about (their disease).” Then: “Tell me what you know about what other people go through with this disease.”
- Most internists’ practices have educational handouts on heart failure, COPD, cancer, and other fatal chronic illnesses to give to patients. Read them—if your handouts do not mention prognosis, symptoms, and death, exchange them for ones that do. Considering making “The Handbook for Mortals” and other resources available to your patients.
- Some patients and their families are getting most of their information from the Internet. Log onto a patient-centered Internet site about an eventually fatal chronic illness to learn what is of interest to patients and families.
- Is coordinating the care of your chronically ill patients taking up too much of your time? Call a local advocacy group (American Heart Association, American Cancer Society, etc) for help, or consult with a care management service.
- Discussing and recording advance directives with all your patients may take a while. How many patients older than 85 years do you have? Start making plans with them. Expand to all who are sick enough to die.
- Use each episode in the ICU or emergency room as a “rehearsal.” Ask the patient what should happen the next time. Be sure the patient has all necessary drugs at home and knows how to use them. Can you promise prompt relief from dyspnea near death? Tell the patient and family what’s possible and make plans together.
- Ask your next patient who is sick enough to die whether anything happened recently regarding their medical situation for which they were unprepared. Work to anticipate the expectable complications and to have plans in place.
- Since meperidine (Demerol) is almost the only opioid that has toxic metabolites and, thus, is contraindicated for chronic pain, banish meperidine from your prescribing and from the formularies where you work.

- Very sick people will often be most comfortable at home or in nursing homes. Identify programs that are good at home care, send patients to those quality services, and work with them to fill the gaps your patients encounter.
- Feedback on performance guides improvement. Find the routine surveys, administrative data, and electronic records that record symptoms, location of death, unplanned hospital or emergency room use, family satisfaction after the death, and other outcomes. Set up routines to get feedback on performance and improvement every month.
- Except in hospice, most families never hear from their internist after a death. Change that. Make a follow-up phone call or set a visit to console, answer questions, support family caregivers, and affirm the value of the life just recently ended. At least, send a card!
- Working with very sick patients who die is hard on caregivers. Next week—and every week—praise a professional or family caregiver who is doing a good job.
- We can't really change the routine care without changing Medicare. Contact your congressional representatives to ask for hearings, demonstration programs, research, and innovation to improve the Medicare program.
- Some of our language really does not serve us well. Never say "There's nothing more to be done," or "Do you want everything done?" Talk instead about the life yet to be lived and what can be done to make it better.
- Patients and families need to be able to rely on their care system. Consider what you can promise on behalf of your care system—pain relief, family support, honest prognosis, enduring commitment in all settings over time, planning for complications and death, and so on. Pick a promise that your patient needs to hear and start working with others to make it possible to make that promise. Quality improvement strategies work. ❖

## Increase Staff Knowledge of Pain Management

With new pain management standards from the Oakbrook Terrace, Ill.-based Joint Commission on Accreditation of Healthcare Organizations, hospitals have been alerted to the need for increased education on this topic, says Roxie Foster, PhD, RN, FAAN, associate professor at University of

Colorado Health Sciences Center School of Nursing in Denver.

"Thus, it is an excellent time for nurses to let administrators know exactly what education they need," Foster recommends.

The most effective education is evidence-based, ongoing, provides a variety of forums for learning, and establishes a base for expert judgments, she says. "Occasional consultation visits from pain management experts can validate local efforts and open a dialogue about practices in other areas," Foster adds. "Many of these experts have sponsors to offset consultation costs."

### Look at Literature, Conferences

To locate experts, search current literature on pain management, Foster suggests. "The experts are usually well-published, and their contact information is listed with the article," she says. "Also ask co-workers about speakers they have heard at conferences who might make good consultants."

Stay abreast of the current literature in pain management, Foster urges. "Ask the hospital librarian to prepare a monthly update of pain-related articles available within the institution," she says. Selected articles might be collated in a notebook on the unit and the information used for evidence-based practice initiatives, she adds.

Journal clubs are a good way to start a dialogue with physicians and other professionals, suggests Foster. "These usually involve discussing one or more articles of interest that are made available to the group in advance." This provides an opportunity to review sophisticated literature and to discuss its relevance and application for the population of interest, says Foster.

"Interdisciplinary partnership is a prerequisite for optimal pain relief," she says. ❖

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## Readers are Invited. . .

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