



# Adult Acute Care Bulletin

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## Notes from the Editor: *Open and Closed ICUs*

by Jeff Whitnack, RRT

The fifth installment of the CCM-L Discussion, which appears in this issue of the *Bulletin*, basically touches on three themes:

1. The usefulness and validity of protocols in critical care medicine.
2. The usefulness and validity of respiratory therapists in critical care medicine.
3. ICU staffing models (i.e., who should be Captain of the Ship in the ICU, should the ICU be closed or open, and what role should "SODs" — Single Organ Docs — play in this setting?).

A careful reading of the discussion reveals that these themes are intertwined. For example, one can easily imagine that the role of protocols may differ vastly between an ICU in Amsterdam staffed at 2 a.m. by an intensivist and ICU/ventilator RNs versus an open ICU in a US community hospital — one staffed by RTs and RNs, with the various covering MDs home asleep and on-call.

In my opinion, protocols as a whole will always be a double-edged sword. It's just the nature of the beast. The benefit of clinical expediency is balanced against the danger that the protocol will become an ossification of outdated practice or theory. In addition, some aspects of critical care effectiveness will always entail a bit of "the art." I was thinking of this the other day while reviewing our protocol for non-invasive ventilation in treating acute respiratory failure. We may study the application and effectiveness of non-invasive ventilation, yet one of the key factors for NIV success or failure will always be the presence (or lack) of a clinician who can quickly match the interface and settings. One who can be both calming and reassuring, and at the same time rapidly effective in relieving dyspnea.

Please refer to New Zealand MD #3's hypothesis that, "RTs are more likely to develop in 'closed' ICUs than 'open' ones."

I believe he meant the opposite — that RTs are more likely to develop in open ICUs than closed ones. In many parts of the world, and most notably in Europe, the ICUs are "closed." An intensivist service staffs the ICU 24 hours a day. For all patients admitted to the ICU, that intensivist is the "Ship's Captain." He or she may call in medical or surgical con-

sults, authorize surgery or various specialized diagnostics, consult with the patient's primary care physician, etc. But the buck stops with the intensivist "Captain." I believe truly "closed" ICUs are rather rare in the US, existing primarily in county and federal hospitals. I would be very surprised to hear of any community or private hospitals in which the ICUs are not "open."

An interesting summation of this topic and the drive to have the closed ICU model adopted in the US appeared in the editorial, "Captaining the Ship During a Storm, Who Should Care for the Critically Ill?" by Ruben J. Awar, MD and Alan Lisbon, MD, FCCP, in the September 2001 issue of CHEST (page 694). Consider the following quote:

"The reason for these findings (*studies cited in the editorial showing decreased morbidity/mortality/LOS in closed versus open ICUs*) seems obvious. Critically ill patients are prone to rapid and dramatic changes in status. These changes necessitate constant monitoring, and immediate appropriate therapy. In an open system, a physician with no formal training in critical care medicine, who may also have clinic, ward, and operating room responsibilities, takes care of the patient. When management problems are noted, sometimes with significant delay, they are often referred to a consultant. When a 24-h intensivist is present, the problems are detected in a more efficient and timely fashion. Structured morning bedside rounds allow the planning of strategic decisions for the day, and evening rounds allow a review of the data and the results of the plan. A more standard and scientifically based education program can be provided to the housestaff, nurses, and other caregivers who participate in the care of these patients. The development of protocols for care and efficient bed control helps to minimize costs. The intensivist also may facilitate decisions regarding the futility of care and the withholding/withdrawing of care."

The editorial also describes the Leapfrog Group, a consortium of corporations from Delta Airlines to IBM and Xerox which is

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focusing on the development of new cost-effective health benefit policies. To quote from the editorial, "The Leapfrog Group wants ICUs to be staffed with doctors who have credentials in critical care medicine." Also described in the editorial is the "furious opposition" to this proposed change arising from fellow health care practitioners.

So what may we predict? Surely the practice of critical care medicine in the US will move in this direction to some degree, perhaps in major ways. But I doubt that our system will ever fully resemble the European model. Can anyone imagine a community hospital in which the CT surgeons allow an intensivist to hold sway after the operation — where they lose "control" of "their" patient as the OR/ICU boundary is traversed? I also have my doubts that closed US ICUs will actually have the intensivist staffing the ICU onsite 24 hours a day as opposed to being on call, at least in the wee hours of the morning. It is also interesting to speculate on how the emerging intensivist/closed ICU model will interact with the also-emerging hospitalist model.

What does all of this harbor for the RT

profession? Is it a time of crisis or a time of opportunity? One could suppose that if we adopt a European closed ICU model — one which doesn't seem to need or want RTs — it would be akin to a giant meteor landing on us; a dust cloud of extinction might cover the RT profession. After all, part of the "selling" of the "closed ICU/intensivist as Captain" model just might entail the projection of cost savings to be reaped from the intensivist/nursing team negating the role of the ICU RT.

But before we see the sky falling, let's consider what type of clinical "animal" this intensivist is likely to be, as well as the "habitat" he or she will subsist in. He will probably resemble a mix of the senior resident and the attending physician often found in teaching hospitals today. Staffing the ICU 24 hours a day, these individuals will see things more from our (and the RN's) perspective. Our problems and frustrations will also be theirs. They will be more interested and skilled in mechanical ventilation and effective respiratory therapy. They will live in our world. They will have either respect and appreciation for skilled and knowledgeable RTs, or well deserved disdain and contempt for the opposite.

Who will they meet in your ICU?

So, the times they are a changin'. But before we send an RT out on horseback galloping furiously throughout the land shouting, "the intensivists are coming, the intensivists are coming," I'd like to recommend one more article, also from CHEST: "Physiotherapy in Intensive Care, Towards an Evidence-Based Practice," by Kathy Siller, PhD (Dec. 2000, page 1801).

Dr. Siller is an Australian physiotherapist. She goes into some detail on the clinical role and expectations of the physiotherapist in the ICU. In a model in which ventilator management is the role of 24-hour intensivists and ventilator-trained RNs, I find it fascinating that the "therapy" aspect is nonetheless performed by yet another profession. In some aspects it's a case of "a rose is a rose by another name." In other aspects, the article seems to point out how we US RTs might consider a bit of "cross pollination." As I read the article I couldn't help imagining our profession adopting and integrating more of the physiotherapist's practice — their ICU focus and activity — as our own. As you read the article ask yourself if this is what we should be doing when ventilator check frequency is reduced, as opposed to taking longer breaks and risking possible layoffs. ■

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## Notes from the Chair

by *Nick Widder, RRT*

As I write this column on October 10, 2001, I reflect on the last month, which has changed many of our outlooks. We all have been affected by the terrorist acts of September 11. We lined up to donate blood, money, time, and energy to the victims of the attacks, and to the workers who are and were involved in rescue and recovery efforts.

As one of many of RTs who gravitated to this profession from an EMS background, I felt somewhat disappointed that I had never put forth the effort to join and train with one of the many disaster response teams that were sent to the crash sites. The two that I have contacted in the last two states I have resided in (NC and GA) have less than ten respiratory therapists involved in BOTH states, COMBINED. Such teams not only treat the many victims of disasters, but also function to relieve those medical workers who live in affected areas so that they may take the time to assure that their families and loved ones (and for that matter, homes and property) are safe and secure.

With the newly recognized potential for biological and chemical terrorism, there is even more need for those of us skilled at the maintenance and preservation of airways and ventilation to join these teams. In fact, the National Disaster Medical System (NDMS) has been trying to recruit more RTs for their Disaster Medical Assistance Teams (DMATs) for some months now. And well before September 11, the AARC had already formed a committee on disaster response, chaired by Robert Fluck, Jr., MS, RRT, to increase the role of RTs in this important area of care. For more information about the committee, click on the Disaster Response button on the AARC website ([www.aarc.org](http://www.aarc.org)). To find out how to volunteer for a DMAT in your area, visit the NDMS website: [http://ndms.dhhs.gov/NDMS/About\\_Teams/about\\_teams.html](http://ndms.dhhs.gov/NDMS/About_Teams/about_teams.html).

Finally, Godspeed to, and God Bless, all those affected by the attacks on September 11; and may God continue to bless America. ■

## CCM-L Discussion Part Five: Protocols, Consultants, and RTs

*Editor's Note: This issue's installment of the CCM discussion begins with a debate on the value of ACLS guidelines, followed by a rousing exchange on the merits (or lack thereof) of physician consultants in the ICU and, finally, an international opinion on which countries use RTs and why.*

**USA RN #6:** Anyone who has been involved in a resuscitation knows without a doubt that patient situations vary widely. The intent of the American Cardiac Life Support (ACLS) guidelines is to provide some basic common pathways for managing patient situations initially. I've seen many patients sur-

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vive due to properly applied ACLS, even in the ICU.

It is great to have an experienced physician or surgeon there to run a code at the moment a patient arrests (or even before, when the downward spiral begins), but this is rarely the case. As a former night shift nurse, I have been present many times when staffing was extremely low and the only MDs in our community hospital were the teaching service residents. ACLS is a great starting point for these relatively inexperienced individuals to manage patient situations, especially if it is a patient they do not know.

I took my first ACLS course in 1986 — at that time I had one year’s experience as an RN, in an intermediate care unit of a major medical center. In 1986, I found myself in a very small community hospital where codes were run by the emergency room physician, one nurse from the ICU, one respiratory therapist, a nursing supervisor (to document), and any nurse available to help. (The RT, by the way, was responsible for intubation, if needed, setting up the vent, drawing and running ABGs, and performing 12-leads.) Nothing in my career (besides experience) came closer to helping me through those codes (and any since) than ACLS.

**Israeli MD #1:** The ACLS protocols illustrate petrified thinking at its worst. I don’t know if you are aware that until 1985, the ACLS protocols called for starting bicarbonate with the resuscitation, and giving an amp every five minutes as the code went on. In 1986, this recommendation changed, and now the ACLS holds that bicarb should only be given under very rare circumstances. It is only since 1986 that you must get blood gases before giving any bicarb.

The point of this story is that the author of the papers which demonstrated conclusively that bicarb during code is harmful died in 1977. Further, the papers and the data began flowing from 1969 onwards. None of the articles quoted in the JAMA issue which announced the change was dated later than 1978; i.e., eight years prior. Note also that the ACLS protocol was modified in 1981 or ‘82 — four years after the data were available — but that withdrawal of bicarb was incorporated only in ‘86.

Imagine the thousands of people who were harmed by all the bicarbonate given. Consider also those who were called to task for deviating from the protocol, by not giving bicarb in 1983. I know this well, since it happened to me.

The ACLS is not a good example of live, dynamic protocols, used only as a guideline to be individualized for a given patient. On the contrary, it is a heavy, almost immutable, protocol which is used by QA personal as the de facto standard of care when it is not that by any means. It may be useful to someone who only occasionally participates in codes. It should never be used in the ICU setting where the experts work. In the ICU you need state-

of-the-art codes, not eight-to-ten-year-old practices.

**USA Surgeon #2:** I am firmly convinced that we could reduce the COST of health care in America by at least 30-50%, without deterioration in the outcome (perhaps an improvement in outcome), if we reduced the almost obligatory duplication, triplication, and quadruplication of services from greedy physician consultants.

**USA RN #2:** I think we haven’t really discussed the “politics” of this issue. It’s a game of reimbursements and turf wars. In our area, respiratory therapists make less money than nurses so they now do the respiratory treatments, which RNs used to do. At other area hospitals, they have greatly cut back RTs in critical care, and nursing has assumed more of the duties. We just had a layoff of RTs because they used to go to the nursing homes, but reimbursement was cut, so nurses will pick that up again.

As far as knowledge is concerned, to some extent I believe this expands and contracts with duties. Nurses will know less and less about respiratory issues if it’s someone else’s turf — and the knowledge base will increase with responsibility.

**USA Surgeon #2:** Regarding the consensus approach — I could not disagree more regarding this reverse logic. It was the consensus approach which resulted in the terrible practice of steroid use in spinal cord injury. It was the consensus approach which resulted in the application of TED type hose to ICU patients, with their resultant problems and no evidence of benefit. I have no problem with appropriate consultation, but I do have a great problem with ANY consultant anywhere taking over the control of a patient. Only ONE physician (the one with whom the patient developed a contract) should write orders; the consultants write their opinions and the physician decides whether or not to accept the views of the consultant. One global bill is sent and the patient’s physician decides how much of his/her fee should go to the consultant.

**USA MD #5:** One of the original ideas in critical care was to develop a super physician capable of handling simultaneously all organs and most of the procedures, as well as managing the flow of patients.

That is very much still the idea, aimed at accomplishing two purposes:

1. To provide continuity of care, the person making the decisions is also responsible for integrating them into the “whole” patient care scenario and following the results.
2. To stop the incredibly capricious habit of primary care physicians routinely consulting every specialist in the house for every patient who lands in the ICU. I can handle 75% of all medical problems in the ICU all by my lonesome. That’s why I humbled myself and cheerfully accepted lots of misery and abuse for two years in a critical care fellowship on top of my primary specialty, which I am also Boarded in.

Having said that, I hastily add that there IS a place for SODS (Single Organ Disease Specialists) in the ICU. It is for COMPLICATED cases where the upper echelon of expertise needs to be tapped. When that scenario occurs, I am more than happy to call for help, and I do. The amount of money saved by this scheme is incredibly large, and the amount of whining and political manipulating by SODS is commensurately high. That is because, like lawyers, the residency programs are churning out too many of them. They need to convince generalists that their expertise is needed disparately, just like lawyers need to convince prospective clients that any discomfort they may ever feel should be quickly followed by a money reward.

Critical care physicians will not stop the evil and pernicious habit of SODS perching on the ends of beds like vultures by being nice guys. It will only stop when reimbursers start paying the most proximate decision maker in ICU medicine. Toward that end, you can all thank your SCCM (in the USA) for their lobbying efforts to achieve that desirable end.

**USA RT #6:** Respiratory Therapist Consultants? Not in the sense that you are indicating. RTs are not replacements for MDs or RNs. We work subordinate to MDs and side-by-side with RNs. We are not external to the ICU. We are part of the health care team in the ICU. We are not called in as consultants the way a pulmonologist or infectious disease MD might be called in. We respond to physician orders to deliver whatever form of respiratory care (from delivering aerosolized medication treatments to managing ventilators and everything else in between) the physician feels their patient might need. We frequently offer (generally outside the ICU) a “consulting” service, but it is intended to determine the best way (given our first hand knowledge of, and hands-on experience with, the tools at our disposal) to assist the physician in achieving physician-dictated goals and objectives. Again, we are not outsiders to be called in as consultants, but a part of the team that administrators have found to be fiscally sound additions.

**USA Surgeon #2:** I strongly believe that at least 30% — and an estimated up to 50% — of the total cost of health care in America goes to fuel the Regulatory Industrial Complex, most of which has never been shown to benefit the quality of health care. Add to this the Medical Legal Industrial Complex, and the double- and triple-dipping we do, we could markedly improve the care with Draconian reductions in both costs and charges. Take, for instance, the cost of a shot of Tetanus toxoid 40 years ago from a multidose vial. The cost to the hospital was a fraction of a penny. Very little product improvement in the Tetanus Toxoid has occurred, but the cheapest price for a single dose of Tetanus Toxoid is \$21.73, the majority of which is regulatory packing, information insert, destruction and disposal of

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the syringe and needle, etc. It is time that the government, the health care industry, and the public mandate a national investigation and day of reckoning.

**USA MD #7:** Florida seems to agree that 75% of specialty consults called on an ICU patient are most likely not necessary. There are basically the technical procedure consults (endoscopy, dialysis, specific surgical procedure), defensive consults (neurology, perioperative cardiology), and cognitive consults. And then there are the “teaching consults.” The trick is to regulate this logically to the individual patient’s benefit. When I trained as a resident and fellow, I hardly ever had contact with consultants. Unfortunately, critical care is so deep in survival battles that it is losing track of this fact.

**USA RT #1:** I’ll make you a deal. I’ll see that “physician total control” concept and raise you a “they have to at least be board certified in critical care medicine.” (One of the little drummer boys . . .)

**New Zealand MD #3:** Following up on previous comments re: diversity and variety in the way that we skin cats. I take a cynical and Darwinian approach to this issue that goes a bit like this (since I’ve just been to our weekly liver transplant selection meeting, you will forgive the metaphors):

We don’t have RTs (I believe there are one or two, however, in other ICUs somewhere south of Cook Strait) because the jobs they do in the US are done by intensivists and intensive care nurses down here. In fact, a lot of the work that is done in the USA by “consults to ID, neuro, nutrition support, renal, pulmonology, etc.,” is done differently here too. There are no local proto-species from which RTs can differentiate. Further, there is not a niche into which they can (yet) metastasize from off-shore. Furthermore, it would be dif-

ficult to produce an argument that they would reduce in this health care system the total expenditure on salaries that we are all paid. There is therefore no reward for altering the ecosystem. Managers will tend to see RTs as a marginal cost without any compensatory saving. Finally, there is a primitive recognition algorithm present in the species already inhabiting the eco-niche (intensivists and ICU nurses), and some weak innate humoral xen immunity with hyperacute rejection exhibited. These conditions do not favor transplantation of a new species.

Contrast that with the US, where there is a tradition of “open access” to the ICU for all physicians with hospital privileges. Sure, there are many (perhaps growing) exceptions to this, but this is part of the history of our divergent ICU evolution. The idea that intensive care can be and is delivered by a team of ten people from different specialties and backgrounds is not foreign to those of you in the USA. But it is to those of us in countries with have a strong tradition of primary intensivist as gatekeeper and intensivist and ICU nurse as deliverers of care.

From many of the posts, I suspect that proto-RTs may have begun in a variety of ways in different places. Some of these roles were clearly to “fill in” for missing medical expertise (what we cynically call the “absentee landlord” syndrome). Others may have been created to compensate for reductions in nursing staffing (where multiple ICU patients are looked after by one nurse, for example). Once present, they could well present an opportunity for physicians to absent themselves (perhaps for more lucrative or satisfying pursuits elsewhere) or for managers to realize that they could cut nursing numbers even more and partly compensate by employing RTs (in fewer numbers than the nurses they cut). You connect the dots, you pick up the pieces. Finally, xeno-immunity is not pre-

sent in other inhabitants of the eco-system — in fact, it seems to have been replaced in the US by a (weak) form of allo-tolerance.

This analysis allows the formation of testable hypotheses:

1. RTs are more likely to develop in health care systems that do not employ salaried ICU medical staff.
2. RTs are more likely to develop in “closed” ICUs than “open” ones.
3. RTs are more likely to appear for the first time when ICU nursing numbers are cut.
4. RTs are less likely to develop in countries that hold combined medical/nursing ICU conferences than where separate ICU medical conferences and ICU nursing conferences are the norm.
5. RTs are likely to develop in countries that are attempting to “catch up rapidly” and lack an established ICU tradition.
6. RTs will be more common in countries with higher expenditures on health care, both absolutely (“Euros/capita”) and in terms of percent of GDP.

I would predict that they will be plentiful or expanding in the USA and perhaps Canada, the Middle East (outside Israel), South East Asia (outside Japan), including Indonesia, Singapore, Thailand, and the Philippines, and may develop in parts of Southern and Eastern Europe and South America.

They are probably rare or non-existent in Australia, New Zealand, the United Kingdom, Northern Europe, Scandinavia, Japan, China, India, and Pakistan.

*The preceding discussion was reprinted with permission from the Critical Care Medicine Listserv. In order to protect the privacy of those involved, all names have been replaced with more generalized identifications. ■*

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