



# Adult Acute Care

May/June '01

Bulletin

## Notes from the Chair

by Nick Widder, RRT

2

Resident 'RTs'

3

Ventilator Associated  
Pneumonia

5

CCM-L Discussion Part  
Two: International Heat  
Turns Up on USA RTs

7

Specialty Practitioner of  
the Year

In this issue, we once again address the role of the respiratory therapist in a variety of settings. The CCM-L discussion continues to demonstrate the unique position that we therapists hold in the United States. Indeed, our role has been defined by the system in which we operate, leading us to become "physician extenders." This is certainly contrasted by the European-based approach, where a physician is in the intensive care unit 24 hours a day, obviating the need for someone else to function as his eyes, ears, and hands.

Scott Singer goes further with an article on training residents to function as therapists at Giesinger Medical Center. While I can imagine the red flags that must have initially been raised as therapists felt that their "turf" was being violated, I was happy to note the positive results that the program demonstrated. Indeed, it has been my experience that positive contact with other health care professionals in training reaps significant rewards years afterwards.

Three years ago I presented an abstract at a state level Society of Critical Care Medicine (SCCM) conference. While there I ran into a familiar face that I had not seen in approximately a decade. While he was in medical school, this gentleman, now a trauma surgeon, had run blood gases at the VA Medical Center in Washington, DC. I was one of two full time night therapists employed at the VA at that time. One night he asked if he could follow me for part of the shift to see what I did and help him understand my role and responsibilities. Never realizing the potential fruits that such an

experience would bear, I agreed, and the next Friday night he worked, we spent a few hours rounding on ventilator patients, discussing various modalities and changes, and showing how respiratory therapists fit into the health care team.

Ten years later, I found that he had instituted respiratory-based ventilator and therapy protocols on his patients and had started several respiratory-based research projects. As we chatted and caught up on old times, this physician intimated to me that most of his interest in respiratory — and his realization that therapists could be used to assist him — came from that one night of exposure to our field. He went on to state that had I not been interested in sharing my experiences with him in that regard, he is not sure he would have come to realize our utility so quickly, because, "no one else was interested" in teaching him about our field.

It is sad that there is still an overwhelming fear that if we share our knowledge with other members of the health care team, it will result in our being replaced by those other members. My experience has been completely the opposite — demonstrating professional competence to other professionals serves to enhance our jobs and improve patient care. Other professionals are busy enough within their own areas of expertise and do not wish to have "our" job responsibilities added to their own. Initiation of good, firm professional relationships throughout the health care continuum can only serve our profession well. ■

## Notes from the Editor

by Jeff Whitnack RRT, RPFT

In this issue, we continue the ongoing Critical Care Medicine Listserv (CCM-L) discussion on the respiratory therapist's role in critical care and, specifically, protocol-driven care. Almost as if to reinforce the theme is an article by Scott Singer, RRT, entitled "Resident 'RTs'." (No, it's not some bizarre movie or video game title!) In the article, Scott describes

how residents do the RT's "job" in order to better understand mechanical ventilation. From there, Patricia and Brian Neis provide an enlightening look at ventilator associated pneumonia. To further add to the mix, I'd like to discuss the Society of Critical Care Medicine (SCCM) and,

"Notes from the Editor" continued on page 2

American Association  
for Respiratory Care

"Notes from the Editor" continued from page 1

most specifically, the Respiratory Care Section of the SCCM.

The SCCM is a multidisciplinary organization which publishes the journal *Critical Care*. While it is comprised primarily of physicians, the society seems genuinely interested in living up to its goal of inclusiveness. In fact, the current president-elect is an RN.

This past February, I was fortunate enough to be able to attend the SCCM Conference held in San Francisco, CA. The theme of the conference was, "Critical Care: Blending Science and Compassion." I also attended the

Respiratory Care Section meeting. (And, yes, there is a fair amount of overlap between the active members of AARC Adult Acute Care Section and the SCCM RC Section.)

I strongly urge those of you who are interested in advancing both your own professional growth and that of respiratory therapy's in general to consider SCCM membership and RC Section involvement. At the risk of sounding melodramatic, I would say that critical care is at a critical juncture. Mechanical ventilation and respiratory care are vital components of critical care, and it is imperative that we be both visible and active as these issues are sorted out. Paul Mathews,

RRT, FAACM, a past president of the AARC, is the RC Section chair. His email address is pmathews@kumc.edu. The SCCM RC Section web site is: [http://www.sccm.org/sections/resp/resp\\_home\\_set.html](http://www.sccm.org/sections/resp/resp_home_set.html).

In addition to becoming a member of a truly multidisciplinary critical care organization, you will also receive the monthly journal *Critical Care*. If you want to check the journal out before you join, it's now available online and will be free to all for a limited time. (After that — subscribers only!)

The gauntlet has been thrown down. Will we pick it up? ■

## Resident "RTs"

by Scott P. Singer, RRT, respiratory adult critical care team leaders, Geisinger Medical Center

Geisinger Medical Center is a licensed, 508-bed tertiary care center located in Central Pennsylvania. The region offers a high quality of life with low crime rates and exceptional recreational and cultural opportunities, not to

mention a low cost of living. The campus is situated near the Pocono Mountains, which offer a wealth of outdoor activities such as skiing, camping, and hiking. Geisinger is a Level I Regional Trauma Center with certifications for Adult and Pediatric Trauma. The campus also houses The Janet Weis Children's Hospital, the first rural acute care children's hospital in the nation, licensed at 86 beds and located adjacent to the Medical Center. (If this paragraph sounds like an advertisement, it is; we are always looking for RTs who are up for a challenge.)

In 1995 we initiated an all-inclusive adult ventilator management protocol that covers care from the onset to the removal of mechanical ventilation. Under this progressive protocol, patients are continually assessed and challenged, then moved to the next step. We have made many changes to this protocol over the years due to clinical advances such as ARDS Net and others. However, soon after the implementation of the CMV protocol, we ran into a problem that required a creative solution on our part.

We received a letter from a resident stating that she felt she was being shorted on ventilator management training due to the therapists being so actively involved with the ventilators. We routinely do resident lectures at the beginning of each resident rotation in the AICU. During these two lectures a host of topics are covered, including mechanical ventilation, and we encourage the residents to be proactive, ask questions, and get involved. But in reality, the r1s and r2s are usually so busy writing notes, etc., they miss out on what's happening with the vents.

We all know the benefits of using a protocol approach to vent management. With a standardized approach we can make sound management changes and monitor outcomes, thus leading to decreased length of stay in the AICU and

decreased costs for our facilities. In our institution, we attributed a modest \$2.5+ million in savings to the protocol post implementation. But an even bigger benefit has accrued to our department because the protocol has given our therapists the okay to do their jobs, to think, and to use their education the way it was designed to be utilized. This leads to increased morale and pride/ownership in the department.

We thought it through and realized an additional optional rotation for the residents may be the answer. In this rotation the residents are treated just like RTs (i.e., grunts). They are taught to do it all — with a focus, of course, on vent management. Most residents work with us four hours a day for a month, and their ability to learn is amazing. Usually in less than week they are setting up patients on vents and thinking through the weaning process. This hands-on approach seems to really solidify some concepts. From the onset three years ago, we have had a resident practically every month the rotation has been offered. A lot of upper-level residents want this training prior to the start of a fellowship rotation. This optional rotation has become very popular, and I believe it is because it allows the residents to think the whole way through the process and concentrate on just one end of patient care — managing the ventilators.

Over the course of these three years our RT department has also benefited greatly. We have built a good working relationship with the residents in the AICU which extends into other areas they rotate through when they leave the unit. The residents are quick to ask RTs for their insight and knowledge with regard to patient treatment modalities. I believe it helps them value what respiratory does in the hospital, and especially

"Resident 'RTs'" continued on page 3

### Adult Acute Care Bulletin

is published by the  
American Association  
for Respiratory Care  
11030 Ables Lane  
Dallas, TX 75229-4593  
(972) 243-2272  
FAX (972) 484-2720  
e-mail: info@aarc.org

**Kelli Hagen**

AARC communications coordinator

**Debbie Bunch**

Bulletin managing editor

**Edwards Printing**

Bulletin typesetting

*Section Chair*

**Nick Widder RRT**

Education/QI Coordinator  
Department of Respiratory Care  
NorthEast Medical Center  
920 Church St. North  
Concord, NC 28025  
(704) 783-1716  
FAX (704) 783-1095  
NAWidder@aol.com

*Bulletin Editor*

**Jeff Whitnack RRT/RPFT**

825 Addison Ave.  
Palo Alto, CA 94301  
(650) 321-9062  
JWhitnack5@email.msn.com

*Medical Advisors*

**Russell Acevedo, MD**

(315) 470-7186

**William Turnage, MD**

(904) 953-2000

“Resident ‘RTs’” continued from page 2

in the critical care areas.

Of course, it takes time to work with the residents and a great deal of effort on the part of the respiratory staff. I don't want to sugar coat this concept — your staff must buy into it and be willing to

share their knowledge/time. Keeping the rotation to four hours per day has worked for us in terms of combating burn out. We have three RT schools that also rotate with us, and the staff can get tired of constantly teaching. But it is well worth it, and we have gained a lot of positive feedback through this optional rotation.

Above all, the residents who have gone through this rotation have left this hospital better qualified to choose the right mode of ventilation and with a greater understanding of the goals associated with ventilation, which in the long run will make them better doctors. ■

## Ventilator Associated Pneumonia

by Patricia Neis, RRT, CCRN, and Brian Neis, BSRT, RRT, CPFT, Perinatal/Pediatric Specialist

Ventilator associated pneumonia (VAP) is the second most common nosocomial infection in the United States. VAP is associated with a high morbidity and mortality rate and contributes to an increased length of hospital stay and higher costs. (Wilbin, 1997). In order to improve outcomes it is necessary to recognize patients who are at risk and treat them aggressively.

The National Nosocomial Infection Surveillance (NNIS) program collects data from 231 hospitals through the Centers for Disease Control and Prevention, which establishes criteria for determination of infection. Standardization of data is achieved by collecting data on VAP per 1,000 ventilator days. Over the past decade more than 13,000 pneumonia cases were reviewed, and results showed the mean rate of VAP ranges from 6.4 to 20.9 cases per 1,000 ventilator days. The highest rates are in neurosurgical and burn units, and the lowest rates are reported in pediatric intensive care. During this time period the NNIS determined that fatality rates associated with nosocomial pneumonia ranged from 20-50%. Risk of pneumonia increased from 6.5% in those patients ventilated 10 days, increasing to 28% for patients ventilated 30 days or longer. Wilbin estimated that 250,000 annual cases of nosocomial pneumonia in the United States account for 1.75 million excess hospital days and \$1.5 billion in excess costs. (Wilbin, 1997).

According to the NNIS, the most common pathogens causing over half of the nosocomial pneumonias are: staphylococcus aureus, pseudomonas aeruginosa, enterobacter spp. and klebsiella pneumoniae. Gram negative bacteria are cultured in 60% of all nosocomial infections (Hixson, Sole & King, 1998). Pseudomonas aeruginosa and acinetobacter spp. are associated with higher mortality rates (Fagon et al., 1993). In 25% of all cases more than one organism is seen. Two different phases of nosocomial pneumonias with different organisms have been recognized: early onset and late onset. Early onset is seen 1-4 days after admission, with any one of the following organisms: oropharyngeal species, streptococcus pneumonia, staphylococcus aureus, haemophilus influenza. Late onset is seen after 4 days

of hospitalization with the following gram negative bacteria: pseudomonas aeruginosa, acinetobacter spp., enterobacter spp. These pathogens may originate from the patient's own endogenous flora, hospital environment, other patients, staff members, or invasive devices. (Craven & Steger, 1996).

Normally, the respiratory tract above the vocal cords is colonized with both aerobic and anaerobic bacterial organisms. The lower respiratory tract maintains its sterility by several complex anatomical and physiologic defense mechanisms. The lung can be colonized by nosocomial pathogens in many ways. Some of the ways are microaspiration of oropharyngeal secretions, aspiration of gastric contents, direct introduction into the airways of intubated patients, inhalation of infected aerosols, hematogenous spread of infection from a distant site, and potential translocation of bacteria from the gastrointestinal tract (Craven & Steger, 1995). It is believed that most VAPs are caused by aspiration of bacteria colonizing the oropharynx or gastrointestinal tract. Gram negative bacteria is the pathogen that will most commonly colonize the oropharyngeal secretions. The growth of gram negative bacteria is a predictor for the development of VAP since it is not part of the normal flora of the oropharyngeal tract. Microaspiration of these pathogens is a leading cause of VAP. (Rello et al., 1996). The goal of hospital staff caring for these patients is to identify risk factors, institute protective measures, and treat infections appropriately with antibiotics that are sensitive to the known organism.

Risk factors for VAP include age greater than 65, thoracic or abdominal surgery, depressed consciousness, and underlying illness such as COPD and immunosuppression. Some medical devices will also place patients at increased risk. These include endotracheal intubation, mechanical ventilation, nasogastric tube placement, and enteral feeding. Once patients are intubated they lack protection from the normal anatomic barriers. Consequently, bacteria have a direct access to the lower airways. Endotracheal tubes provide a direct route for inoculation of the lungs. Inoculation is caused by inadequate hand washing, using the same gloves from patient to

patient, or using contaminated respiratory devices. Some common respiratory devices are nebulizers, spirometers, oxygen sensors, bag-valve devices, and suction catheters. (Wilbin, 1997).

Pseudomonas aeruginosa adapts and adheres to the respiratory tract better than any other gram negative bacteria. Exoproducts that affect cellular function and structure in the tracheobronchial tree and impair host defenses is one of the reasons this is such an aggressive organism. Since P. aeruginosa is one of the two organisms associated with higher mortality rates, it is imperative to recognize patients at risk, monitor them closely, and treat aggressively. It is important to remember that intubated patients have an impaired cough reflex, thereby interfering with mucociliary clearance. The epithelial layer then becomes injured, and the basement membrane becomes exposed. Injury to the epithelium and basement membrane appears to play a key role in facilitating bacterial adherence and colonization. (Craven & Steger, 1996).

Microaspiration of oropharyngeal secretions frequently occurs with intubated patients. All adult patients are intubated with cuffed endotracheal or cuffed tracheostomy tubes. The cuff is inflated in order to adequately ventilate the lungs. Microaspiration often occurs in spite of an adequately inflated cuff. Bacteria that has collected in the oropharynx and GI tract can migrate below the endotracheal tube cuff, causing transmission of bacterial pathogens. Endotracheal and tracheostomy tubes may serve as a storage place for bacteria. Bacteria that colonize these tubes form a bacterial biofilm within the tube that may be dislodged by suctioning, coughing, or movement of the tube, increasing the risk of bacterial contamination of the lower respiratory tract. (Craven & Steger, 1996).

Nasogastric or nasoenteric tubes are inserted shortly after intubation to prevent gastric distention or to deliver nutritional support. These tubes increase the risk of aspiration by translocating bacteria and reflux of gastric contents. Risk of aspiration is increased because these tubes interrupt the patency of the gastroesophageal sphincter, intensifying the

“Ventilator” continued on page 4

"Ventilator" continued from page 3

potential for gastrointestinal reflux. Reflux of gastric contents exposes the upper airways to an increased number of bacteria. Migration of these organisms may occur because of translocation from the gastrointestinal tubes up to the oropharynx and colonization of the airways. (Rello et al., 1996)

Critically ill patients frequently develop stress ulcers if they are not treated with antacids and H<sub>2</sub> receptor antagonists. Unfortunately, these drugs cause the gastric pH to increase, affecting the normal flora of the GI tract, thereby causing the proliferation of pathogens in the gastric secretions. Should aspiration of gastric contents occur, the likelihood of the patient developing VAP is increased ten-fold. Duodenal reflux and a gastric pH higher than 3.5 have been associated with increased bacterial colonization of the lower respiratory tract (Prod'hom, Leuenberger, & Koerfer, 1996). Results of several studies comparing antacids and different H<sub>2</sub> receptor-antagonists against the incidence of VAP have been reported to NNIS for review. One study compared the incidence of VAP in 104 mechanically ventilated patients who were treated with cimetidine or sucralfate. The incidence of VAP was 45.5% in the cimetidine group and 26.5% in the sucralfate group. Mean gastric pH values were significantly lower in the group that received sucralfate, which decreases the likelihood of bacterial growth. (Prod'hom, Leuenberger & Koerfer, 1996). Several other studies also demonstrate that sucralfate decreases the median gastric pH and the gastric colonization of bacteria. These studies also point out that the incidence of early onset pneumonia was not statistically different among groups. In these studies, 213 patients were observed for more than four days for the development of late-onset VAP. Results support the theory that early onset VAP is caused by oropharyngeal colonization, whereas late-onset pneumonia is related to gastric colonization. (Thomason, M. H., 1996).

Enteral feeding is an additional risk factor for VAP and should be monitored closely. Results of a recent study revealed that 80% of all patients were colonized after seven days of enteral feeding. Gastric pH may be altered by enteral feeding, increasing the bacterial growth and thus causing these patients to become colonized. Intra-gastric volume is increased by feeding patients enterally and places them at risk for aspiration of stomach contents. (Rello et al., 1996). Gastrointestinal tubes should be checked for residuals at least every two hours when feedings are initiated to decrease the risk of aspiration. Once the feedings

are tolerated without gastric distention, residuals can be checked every four hours. Patients who have enteral feeding should also be kept with the head elevated least 45° to decrease the risk of aspiration while they are being fed. (Wilbin, 1997).

Clinical indicators for VAP must be recognized early in order to decrease the morbidity and mortality of these patients. One should become suspicious if the intubated patient becomes febrile, secretions become purulent, leukocytosis is noted on CBC, or the chest x-ray gives the appearance of consolidation or patchy infiltrates. Frequently these patients will develop all four of these indicators concurrently. (Wilbin, 1997). Reintubation increases the risk of VAP and should be done only if absolutely necessary. The nurse and respiratory therapist need to be diligent in recognizing patients who may be extubated early and promote aggressive pulmonary hygiene to prevent reintubation. The endotracheal cuff pressure should be regularly monitored to ensure there is an adequate seal. Endotracheal cuff pressure should be maintained with at least 20cm of water pressure because the incidence of VAP increases with cuff pressures less than 20cm. Frequent suctioning of oral secretions and good oral and nasal hygiene are also recommended. (Rello et al., 1996).

One device developed recently is assisting in significantly decreasing the incidence of VAP. It is a special dual-lumen endotracheal tube that has a port through which subglottic secretions are continuously aspirated. If this device is not available, alternative methods for aspiration may be tried, such as thoroughly suctioning the oropharynx every 1-2 hours in an attempt to decrease the amount of pooled secretions around the endotracheal tube. Nasogastric tubes have also been used to reduce these pooled secretions. They are placed in the area above the subglottic region and connected to low continuous suction. The tube placement requires frequent observation to prevent additional trauma to the oropharynx. (Hixson, Sole & King, 1998).

These devices, plus implementing other strategies and protocols, can significantly reduce VAP in critically ill patients. Collaboration within a multidisciplinary team of physicians, nurses, and respiratory therapists is essential. Development of monitoring tools, clinical protocols, and evaluation tools for quality improvement are necessary for each critical care unit to set patient care standards designed to minimize the incidence of VAP. These standards and protocols will help institutions realize goals of improved quality of care, decreased costs, and improved outcomes.

### References

- Craven, D., & Steger, K. (1995). Epidemiology of nosocomial pneumonia: New perspectives on an old disease. *Chest*, 108(1), 1-16.
- Craven, D., & Steger, K. (1996). Nosocomial pneumonia in mechanically ventilated adult patients. *Epidemiology and Prevention*, 11(1), 32-53.
- Fagon, J., Chastre, J., Hance, A., Montravers, P., Novara, A., & Givert, C. (1993). Nosocomial pneumonia in ventilated patients: A cohort study evaluating attributable mortality and hospital stay. *American Journal of Medicine*, pp. 281-288.
- Hixson, S., Sole, M. L., & King, T. (1998). Nursing strategies to prevent ventilator-associated pneumonia. *American Association of Critical Care Clinical Issues*, 9(1), 76-90.
- Prod'hom, G., Leuenberger, P., & Koerfer J. (1994). Nosocomial pneumonia in mechanically ventilated patients receiving antacid, ranitidine, or sucralfate as prophylaxis for stress ulcer. *Internal Medicine*, 120(1), 653-662.
- Rello, J., Sonora, R., Jubert, P., Artigas, A., Rue, M., & Valles, J. (1996). Pneumonia in intubated patients: Role of respiratory airway care. *American Journal of Respiratory Critical Care Medicine*, 154 (1), 111-115
- Thomason, M. H. (1996). Nosocomial pneumonia in ventilated trauma patients during stress ulcer prophylaxis with sucralfate, antacid, and ranitidine. *Infection Control and Hospital Epidemiology*, 41, 437-442.
- Wilbin, R. T. (1997). *Prevention and control of nosocomial infection*. Baltimore: Williams & Wilkins. ■

## The AARC Online Buyer's Guide

Your Ultimate  
Resource for  
Respiratory Product  
Information

<http://buyersguide.aarc.org>

## CCM-L Discussion Part Two: *International Heat Turns Up on USA RTs*

---

*Editor's Note:* When we left the discussion last issue, South African MD #1 had just commented, "That a trained physician, who presumably carries ultimate responsibility for the patient, should allow himself to be dictated to by the respiratory technologist is akin to the drummer boy ordering the general to muster his troops." As we pick up the conversation, this same physician is commenting on a previous posting by RN #2 . . .

---

**South African MD #1:** (Quoting previous post by USA RN #2), "If this be directed to nursing, I can address it from that standpoint. We need orders because we have been taken to task many times for doing what is needed and not what is written, because we are not covered for liability when we deviate from this legal standard, and because we do not get credit when we do take these things on. When we assume responsibility (consciously or otherwise) for these decisions, we are not being compensated either in additional staffing to meet added demands or monetary compensation for added risk. We are at great risk at this time in our profession and cannot afford to take anything for granted. I don't agree with "protocolling" things to death, but unfortunately, nurses can no longer afford to do things silently to ensure quality outcomes. We've no room to breathe ourselves."

I am not surprised at your answer at all. It simply represents the failure of a form of medicine which puts its faith in technology as opposed to the simple ethic of each of us recognizing the fact that we are supposed to be there as a team to help the patient. The implication that you can no longer silently assure quality and therefore have to resort to an insistence on a protocol speaks volumes.

I do not believe that nurses should have to do that, and that makes me sad. Sadder still that the further implication of what you say is that the general standard of medical practice falls far below what I have been led to expect of the world's leading state.

**Netherlands MD #1:** Thank God I am living in the Netherlands. No respiratory therapists over here.

**USA RN #3:** You live in a different world. There are thousands of hospitals with ICUs and intubated patients where there are no residents — where physicians make AM rounds, have PM office hours, might check back at 4 PM for crit-

ical patients, then go home for the night. We seldom extubate after noon. You know a patient is really stable if they are extubated in the afternoon. Of course, this is also a world where we use "Effic" beds that automatically give the patients chest PT — yes, every 2-4 hours round the clock.

**USA MD #4:** While I appreciate (USA Surgeon)'s concern, my observation is that protocols have been enormously useful in allowing us to recognize deviations from expected clinical courses. We have used a relatively simple PSV weaning protocol for about three years, and the most striking thing about the protocol is that we now recognize when patients are NOT progressing. This has allowed us to identify a variety of unsuspected intercurrent processes, from sepsis to hypothyroidism to Addisonian syndrome. (USA Surgeon) will likely remark that a good clinician will always pick these things up. I agree, but that is beside the point. The protocols allow us to recognize that something is amiss a little earlier.

I agree that the protocols should be supervised by all team members. They are neither an excuse nor a mechanism to relinquish physician authority. I tend to view them the same way I viewed checklists when I used to fly and to teach people how to fly: they are tools intended to free the pilot, not to enslave him or to allow someone else to assume command authority.

I would be interested to hear list members' views on how they are actually using the enlarging collection of practice parameters and guidelines available.

**USA RT #2:** Perhaps we are fortunate in our institution, where almost all ventilator changes can be traced back to a single order at the initiation of ventilation which includes the words, "The respiratory therapist will adjust the mode, frequency, tidal volume, flow rate, FIO<sub>2</sub>, and pressure support to maintain ABGs within acceptable parameters, and according to the physician's plan of care." This puts a large responsibility for communication with the physician on the bedside practitioners, but it also allows for a more rapid response to changes in patient condition while awaiting the paging system to broadcast your cries for assistance.

In a setting like this, the physician decides how the patient needs to be weaned, and the therapist and nurse arrange for it to be done, whether it is a wean by pressure support, trach collar trial, IMV rate, or what have you. This enhances the idea of collaborative practice and allows the physician to concen-

trate on more global matters. The therapist/nurse KNOWS that the trauma service wants the FIO<sub>2</sub> to be .40 or less, and if it cannot be accomplished, the physician is notified. Likewise, there is no need to notify the physician at 0300 that the COPD patient, on a controlled rate of 10, has a PO<sub>2</sub> of 125, a PCO<sub>2</sub> of 35, and a pH of 7.54, because the ventilator is adjusted to fix that problem.

There is obviously a need to notify the physician if there is a deleterious change in patient condition, but things CAN be allowed to proceed in a positive direction without needing to page someone 6 times a shift.

Please understand that micromanagement of complex issues is probably the most inefficient way of dealing with problems, and proper utilization of the strengths of all members of the team will result in the best outcomes across the board.

**USA Surgeon #2:** The mechanism stated by (USA MD #4) for the use of the "cookbook" methodology is NOT the way that the HMOs and the clipboard-carrying QA hawks want to use practice guidelines. The original intent has been massively distorted in an attempt to "save money," standardize therapy, make all doctors appear to be Xeroxed, and to prohibit progress. ALL practice guidelines should be sunsetted at least every 12 months, perhaps even 6, so that new information and technology can emerge. I probably would have no specific disagreement with (USA MD #4) on any particular patient. Furthermore, I would not disagree with the educational value of the cookbooks. However, it is when the HMO and QA people make them LAWS to be blindly applied across the board that I must yell foul.

**USA MD #5:** One of the nice by-products (of protocols) is that they (nurses and RTs) don't drive me nuts all day and night showing me blood gases and other parameters.

(Quoting a previous post), "I do not feel that a protocol should be necessary in order to demonstrate to somebody that the object of the exercise is to remove as much support as possible at all times and on all occasions. In other words, each individual should always be asking the question, "how much and what can I remove in respect to support?"

That is a surprisingly difficult philosophy to get across. Specifically, what are you advocating? Give me a scenario and describe how you think it should work.

**USA MD #4:** (Quoting USA Surgeon #2), "The original intent (of protocols)

“CCM-L Discussion” continued from page 5

has been massively distorted in an attempt to ‘save money,’ standardize therapy, make all doctors appear to be Xeroxed, and to prohibit progress.”

I appreciate the point, but I think we physicians have to accept some of the responsibility for allowing the distortion to occur. I have had the privilege of training and practicing in several outstanding hospitals, and I continue to be impressed by the variation in practice that appears to have little foundation even in accumulated personal experience. I do not mean to suggest that there is one “right way” and an infinite number of “wrong ways” to accomplish a goal. Rather, I think we physicians have been regularly derelict in raising the question of whether one way might be better (less expensive, safer, etc.) than another to accomplish a desired goal. (USA Surgeon #2) has been a leader in asking whether one approach might be better than another in addressing common clinical challenges, and indeed it has been on the basis of his work that we have revised our approach to resuscitation of hypotensive patients with penetrating torso trauma, to cite just one example. We, ourselves, are in the midst of testing our approach to tracheostomy, randomizing a sufficient number of patients to test the (null) hypothesis that traditional and percutaneous dilational approaches are equivalent with respect to safety, cost, efficiency, and so on. Protocols are part of clinical scientific inquiry.

My point is not to celebrate the efforts of any individual or group, but that an ethic of continually challenging the status quo is entirely consistent with the development and implementation of best practice protocols. In my view, the problem is not with the implementation of protocols but rather with our failure to regularly challenge them using hypothesis-driven, mechanistically-focused, results-oriented trials. In my view, the cycle of protocol development, implementation, challenge, testing, and redevelopment encourages progress rather than prohibits it. In my view, we should not rail against protocols, but rather we should demand that HMOs and other regulators support the development, challenge, redevelopment cycle. Certainly the “clipboard” staff will not just go away, and I would rather see those people put their work to more constructive use. I think HMOs, patients, and doctors might all come out “ahead.”

**USA RN #3:** I don’t understand the vehement anti-protocol response; our vent pathway/protocol is the product of many meetings/conferences between our pulmonologists/respiratory thera-

pists/nurses and nurse managers and provides guidelines for consistent care.

The (preprinted) package consists of a doctor’s order sheet, a medication sheet (in effect only for the duration of intubation), and a pathway with expected outcomes/goals to be signed off as the goals are reached (or not).

The physician signs the appropriate orders after evaluating the patient; the pharmacy receives the orders promptly; the nurses and respiratory therapists can begin care immediately. Everyone knows what is expected. The nurses don’t have to call the doctors, the pharmacy doesn’t have to call the nurses, and the families can be given an approximate idea of what is going to happen and when. It is just a guideline, not a rigid law.

**USA RT #3:** I would refer you to the Volume 2, Number 1 (March 1996) issue of the booklet, *Respiratory Care Clinics of North America/Therapist-Driven Protocols*, edited by James K. Stoller, MD and Lucy Kester, MBA, RRT. The publisher is W.B. Saunders Company. Your local respiratory therapy department can probably locate a copy (unless you are blessed enough to live in Amsterdam).

I did not see any specific protocols in regards to post-op patients, but rather protocols to address specific respiratory problems (atelectasis, secretions, increased airway resistance, etc.). There is also an excellent respiratory triage rating system tool on page 88.

Dr. Stoller has pretty much written the book on respiratory care protocols. He and Lucy Kester have been giving seminars and conducting clinical studies on this subject now for years. In the introduction he gives rather compelling reasons why such protocols are both beneficial and an improvement over how respiratory care has traditionally been ordered IN THE USA. Your mileage may vary in other countries and climes.

But to quote (USA Surgeon #2), “It is a step backwards to think that all patients are alike and can be treated with a preprinted formula. If such were true, we would be able to practice medicine completely by computer feedback loops. Every time any of our units revert to such practice guidelines, usually at the insistence of the ICU nursing and quality assurance people, we have some terrible complication or death. The PROCESS of discussing such guidelines has great educational value, but when a given individual patient is treated, one must use an individual approach.”

This is ironic. Actually, it is to both adjust and improve upon such cookbook habit post-op respiratory care ordering practices that the protocols were designed. Usually the ordering practice

of many surgeons is that all their post-op patients get the same thing (i.e., “Allupent .3 cc’s TID” or “Proventil .5 cc’s Q4 alternating with Albuterol unit dose”). In one bed may be the young athlete recovering from bunion surgery. In the next bed is a comatose, quadriplegic, COPDer, who is recovering from thoracic surgery. Often both are on the same respiratory care regime, or an unofficial protocol. Dr. X always orders this on all his patients, Dr. Y always orders that. Take it away Dr. Seuss. We really aren’t inventing protocols. We are merely replacing the carpet bombing order habits of respiratory care — habits based on the unlimited and wasteful use of resources — with formal protocols. Such protocols, if crafted wisely and utilized by “thinking interactive professionals,” will help ensure a better matching of respiratory care personnel and resources (be they RTs or RNs) to respiratory care needs.

Often respiratory care is ordered with, 1) a lack of understanding of the medicine or the goals (i.e., confusion over drugs, or trying to treat fever with Albuterol, etc.), 2) a cavalier manner of ordering (the cartoon of the judge sentencing a defendant to “oh . . . twenty years” as he stares blissfully at the clock reading 10 to 5 comes to mind), or 3) actually confusing diagnoses (fluid overload for asthma, for instance). Hopefully #3 doesn’t happen often, but it does occur. Most decompensations unveil themselves in a respiratory manner, and we’re the ones who are often the first to see it clinically. (See the “grunt” analogy below.)

And to further reply to this quote from (USA Surgeon #2): “I could not violently disagree more strongly. I have seen nothing but headaches in many places where I have served as a consultant. The derivation of the original protocols and guidelines were by people who wanted to borrow the physician’s license and practice medicine.”

I don’t want to practice medicine. I want to provide quick and effective respiratory care to those who need it and let the rest get their sleep. I don’t think I should be looking down a bronchoscope and trying to diagnose some lung tumor. Nor should I be drilling some cranium, ordering antibiotics, etc. But if your concept of a physician’s role is to be constantly making decisions as to the modality and intensity of respiratory care, well then that role can be replaced by a competent, motivated professional who is easily there 24 hours — and comes with a lower price tag. It’s that simple.

And to answer this quote from (South African MD #1), “I am astounded

“CCM-L Discussion” continued on page 7

“CCM-L Discussion” continued from page 6

and appalled that people should require a protocol to drive these simple issues. That a protocol should be required to keep people in the unit defies description. That a trained physician, who presumably carries ultimate responsibility for the patient, should allow himself to be dictated to by the respiratory technologist is akin to the drummer boy ordering the general to muster his troops.”

I am reminded of the story about one of the exams at West Point. The question the cadets are asked is, “How do you instruct a sergeant and a 12 man platoon to setup a flagpole?” The most detailed instructions are marked wrong, even if technically correct. The only correct answer is, “Sergeant, put up the flagpole!” Ordinate bodies should expect that subordinate levels can carry out goals. Doctors should expect that they can order their respiratory therapists, via a preplanned protocol, to carry out such clinical duties as “keep my patient from getting atelectasis” or “get the crud out of his lungs tonight,” etc, etc.

The military analogy, with the drummer boy juxtaposed to the general ala respiratory therapist to doctor, is deficient for many reasons. First, unfortunately, the generals are now the “suits.” But then all wars have always been fought for overall political and economic goals. The difference between general and drummer boy is wide of the mark between that of MDs and RTs here in the USA. A general would never give a meaningful military order to a drummer boy. Let’s compare it to colonels and captains. Does the colonel feel confident that he can give the captain orders such as, “hold that line,” “prepare to attack on my order,” etc? Or does the colonel expect to be there fretting over every detail, micromanaging every aspect of the captain’s duties? What kind of captains do you want anyway?

Protocols are a double-edged sword. Crafted well, wielded skillfully, they can be a way for you to order your “captains” to treat atelectasis, wean a patient from mechanical ventilation, or a just “fix it” after being summoned away from a just intubated patient to another erupting crisis. The other side of the protocol sword is its potential use in the suits agenda.

1967. The generals are meeting in Washington, the colonels are safe in their Saigon enclosures. The grunts are in the field. Every hint of enemy movement is met with massive firepower; the goal is to impress the enemy, via body count and

damage, that “we’re bigger and stronger than them.” But the enemy has known that for a long time, is used to fighting such “bigger armies” over many years. It is the grunt who is the first to see that the problem is the underlying political and national inflammation and that no amount of Albuterol — I mean bombing — will “treat” the underlying condition. Meanwhile the carpet bombing has gotten too expensive (in an outcome kind of way), and 1968 is just around the corner.

(Ditto for the drummer boy, circa Union Army, Virginia, 1862, who has a brutally imposed battlefield perspective only later encapsulated in effective general form by Ulysses S. Grant.)

The Vietnam analogy can even go deeper. In the old fee for service model it was quite popular and profitable to just carpet bomb every conceivable problem — CXRs everyday and twice on Sunday, IPPB for big toe surgery. I remember when even incentive spirometry was done ala a fee for service charge. We all killed the goose that was laying the golden egg. It was amidst this milieu that the respiratory therapy profession was born. Part tribute to widespread technology, part clinical facilitator of the elevated economic status of USA MDs (compare the MD presence at 2 AM in a USA ICU vs. Europe or the Third World), part co-conspirators in the great USA medical rip-off. Are we just an irritant, an aberrant bubble which has despoiled the otherwise pristine medical landscape? Or are we a harbinger of a new type of medical professional, one ushered forth from the new technology and reflective of how the lungs unveil themselves uniquely to interventions and tie directly to the “heart” of critical care; part of a bursting apart of old medical professional roles as the daddy/doctor, mommy/nurse stereotypes slowly fade into the sunset?

History will tell.

**South African MD #1:** It’s not my fault you live in a different world where bad medical practice is so rife!

In fairness it is no different here. But the difference here is the level of the shortfall of resources. We have competent doctors, competent nurses, and incompetents in both. Mere assignation that a bad situation exists does not, of course, mean that such a situation is acceptable. Everything that I have been reading over the last several years, however, leads me to conclude that the situation is not improving but rather getting worse with the aggressive stance of HMOs and cost conscious administrators in the ascendance.

**New Zealand MD #2:** It takes one a long time to understand the difference between better and different. I was at a meeting in the US in December, and some nurses got hostile when I suggested that a doctor should be present when a patient was extubated as a part of withdrawal of treatment, and that the doctor should be talking to the family and be well known to the family. They felt it was their turf and again used the line about the level of cover from physicians. That is different here. I think our way is better. They think their way is.

I gave a lecture once at SCCM exploring why APACHE scores are 20% worse in the USA than in Australia. (It is probably a measurement artifact, but I suggested that it may be because of lack of medical direction and participation. I also said a few other things that led to my being banned from SCCM’s podium due to distorted views of the validity of US political correctness as applied to others. But that is another story.)

Last week there was a management seminar in Sydney specifically about intensive care. It was run by a professional group and cost more than any medically run thing (although they had to discount the tickets when they saw the number of registrants). I wouldn’t fund anyone from here. The reason I wouldn’t was that I read this stuff about no doctors in ICUs, and about turf wars and HMOs and limited access to health care by the poor and US patients who come here because they can’t afford surgery in the USA. And I read papers about the costs of ICU in the US and the percent of GDP you spend on health, and I looked at your infant mortality and your ICU SMRs, and I thought, this is different and certainly not better.

I also know our rich folk go to the USA for surgery in preference to Australia sometimes, and when I visit the US I see trauma surgeons save people who would not stand a chance in Australia. (May we never get your expertise.) So while I am tolerant of differences, I still rather believe it is complete effrontery and arrogance for someone from the USA to come out and tell us how to run intensive care. So we stayed home. The few people I spoke to who went reckoned we were smart.

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

---

## Specialty Practitioner of the Year

Don’t forget to nominate a fellow section member for Specialty Practitioner of the Year! Submit your nomination online at: [www.aarc.org/sections/adult-acute\\_section/adult-acute.html](http://www.aarc.org/sections/adult-acute_section/adult-acute.html).

American Association for Respiratory Care  
11030 Ables Lane  
Dallas, TX 75229-4593

**Non-Profit Org.**  
**U.S. Postage**  
**PAID**  
**Permit No. 7607**  
**Dallas, TX**