

ADULT ACUTE CARE BULLETIN

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NOTES FROM THE CHAIR-ELECT & EDITOR

by John Graybeal, CRTT

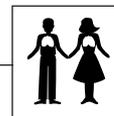
As I write this column in late October, I am looking forward to the 1996 AARC Convention in San Diego. Hopefully, by the time this issue reaches you, I will have had the chance to meet and talk with many of you at the Convention. For everyone who was able to attend, I hope you enjoyed the meeting. The advance program certainly promises a well-rounded educational experience.

Under the leadership of our section chair, Bob Campbell, many new ideas have been initiated over the past 2 years. This issue of the *Bulletin* marks yet another. The "Point-Counterpoint Series" that begins in this issue is designed to open up the debate on current "hot" topics in adult acute care. The goal of this series is to address issues of concern to us all by highlighting the key factors on both sides of the aisle.

As we go into the new year, I am encouraged by the growing willingness of our membership to participate in section activities. I have received several calls and letters from members in recent months, including a request for information that appears in this issue. Please fill out the survey and send it back to Caryn Pope. She'll tabulate the results and report back in the next issue.

Unquestionably, times are changing in health care. But it seems to me that the winds of change are blowing in gusts right now. At the moment things seem to have settled down in my area, but

I'm sure another storm is on the horizon. The one thing I remind myself of frequently is that this storm is hitting everywhere — not always with the same intensity at the same moment, but undoubtedly destined to blow through every region of the country. Take heart! If we are all willing to share ideas and information, the end result of these changes will be a better system for everyone. Remember Ben Franklin's statement during the beginning of the Revolutionary War, "If we do not all hang together we will surely all hang separately." Till next issue . . .



ADULT ACUTE CARE SPECIALTY PRACTITIONER OF THE YEAR: *CARL HAAS, RRT, CPFT*

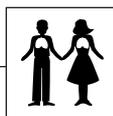
As educational coordinator at the University of Michigan Health Systems, this year's Adult Acute Care Specialty Practitioner of the Year has the opportunity to impact a wide range of programs in his hospital. Over the years, Carl Haas, RRT, CPFT, has played significant roles in the development of the department's patient assessment program, its practitioner-driven therapy protocols, and its continuous quality improvement program.

He also coordinated the department's involvement in several adult surfactant replacement therapy studies and is currently coordinating RC's participation in an NIH study of ventilatory

management strategies for patients with ARDS. His contributions in each of these areas have added value to his department and created opportunities for growth for his fellow RCPs. He is quick, however, to credit his colleagues in the department with much of the success. “Much of what I do is a team effort — everyone contributing to the final product.”

Carl believes his membership in the Adult Acute Care Section plays a critical role in keeping him up to date on new developments in the profession that directly impact his ability to perform on the job. “Working in an adult university teaching hospital with 80 ICU beds, much of our activity is in the acute care setting. It is important, clinically and professionally, that we stay in touch with our peers in like hospitals.” He says the *Adult Acute Care Bulletin* and section activities at the AARC Convention provide him with an opportunity to network with colleagues around the country that he otherwise would not have.

Membership in the AARC is also important to Carl. “The greatest benefit to me of AARC membership,” he says, “is knowing that my membership dues go to activities that promote my chosen profession.” As a former member of the AARC House of Delegates, he appreciates the time and effort that goes into maintaining an organization like the AARC, and particularly appreciates the work the association has done in the area of Clinical Practice Guidelines. “Membership assures me access to excellent tools that are helpful in clinical practice . . . the publications *RESPIRATORY CARE* and *AARC Times*, and the educational conferences.” The best part of belonging to the association, however, “are the people that you meet from around the country.” Congratulations, Carl!



POINT/COUNTERPOINT VENTILATOR FLEETS: ALL OF ONE OR ONE OF EACH?

Editor’s Note: *In this debate, each participant was asked to provide a rationale for either the “standardization” of ventilators used in his respiratory department or the use of multiple brands and types of ventilators within a single department. The participants may or may not actually believe in the point that they are trying to support.*

MULTIPLE BRANDS AND TYPES OF MECHANICAL VENTILATORS SHOULD MAKE UP THE VENTILATOR FLEET

by Robert S. Campbell, RRT, University of Cincinnati

My ideal ventilator fleet would consist of various types and brands of ventilators for the following reasons:

Care setting-patient population: There are eight different intensive care units with eight different medical directors at the University of Cincinnati, not including the NICU. Obviously, there are also differences in the ventilatory requirements of various patient populations within each unit. For example, postoperative cardiac surgical patients are usually weaned from mechanical ventilation in less than 12 hours after surgery using intermittent mandatory ventilation (IMV). This patient population may be safely and adequately ventilated using a \$15,000 mechanical ventilator with basic features (modes, breath types, monitoring, and alarms).

The trauma patient who develops ARDS, however, may require the advanced sophistication that only a \$30,000 ventilator can provide. The extra \$15,000 buys that patient the availability of enhanced breath delivery techniques, more sophisticated monitoring capabilities, and a more comprehensive alarm package. It is my guess that less than 20% of all mechanically ventilated patients at the University of Cincinnati would actually benefit from the advanced breath delivery or

monitoring inherent in “top of the line” ventilators! Why, then, would I purchase 60 “fully loaded” mechanical ventilators for \$1.8 million dollars when I could purchase 30 “basic” ventilators and 30 “fully loaded” models and save a half-million dollars? I know that would pay for more than a few FTEs over the life of those ventilators.

Staff education: A department manager who tells you that a uniform ventilator fleet is needed to eliminate errors and improve patient care and therapist productivity is giving you the Roberto Alomar treatment. All RCPs should have a firm knowledge and understanding of the indications, physiological effects, complications, manipulation, and weaning issues associated with mechanical ventilation long before they get close to a patient who is on one. These things are not “interchangeable” with the type of ventilator used but are the foundation upon which quality care is provided. I believe that today’s ventilators are “user-friendly” enough to allow practitioner interface and manipulation in a safe and effective manner after just a short training session. The use of, and exposure to, different devices (each of which may do the same thing differently) can be of great benefit in terms of the RCP’s complete understanding of principles, techniques, and clinical application of the mechanical ventilator.

Fleet maintenance: Nearly all of today’s ventilators will function equally well with available “add on” equipment, such as humidifiers, breathing circuits, and filters. The selection of these devices and techniques should be based on the needs of the patients seen in your particular institution. Just as the ventilatory needs of our patients vary, so do their humidification and breathing circuit needs. For this reason, we stock both HMEs and heated humidifiers. The key to successfully applying the available equipment and techniques appropriately is staff education and empowerment of practitioners to “do the indicated thing.”

Little, if any, of the maintenance done on our mechanical ventilators is done within the respira-

tory care department anymore. We currently have a contract with our BMET department to maintain and repair each mechanical ventilator. While our use of a variety of ventilators means that we must stock more parts and manuals, we are also “spreading” our eggs between different baskets so that one flaw or setback with a particular device will not devastate our budget or fleet. In addition, we are able to provide direct comparisons in regard to “cost of ownership” for the various ventilators used.

Bargaining power: Fleet pricing is but one way to attract a lower price per unit. Another way is to provide systematic “head-to-head” pressure between devices in terms of capability, monitoring, alarms, and pricing. It has been my experience that “head-to-head” pressure between manufacturers can be as effective at lowering the price per unit as any “fleet pricing” deal. Moreover, the “head-to-head” comparison hinges on the assumption that you are going to pay not only for what you get but for what your patients need.

Ability to provide “patient-focused” care based on sound practitioner assessment of the patient and empowerment of the practitioner as a clinical-critical decision maker: Okay, I know that sounds “corny” but it really is true. First, some ventilators have realistic and measurable differences in function and design when compared to others. For instance, I know of only one adult ventilator that currently offers a mode like airway pressure-release ventilation (APRV). If APRV is good for some patients, then I should have the ability to provide it. For the sake of argument, let’s say that this same ventilator did not have a mandatory minute ventilation (MMV) mode, which one of my medical directors prefers to use during weaning. I must now choose between possibly limiting my ability to satisfy the desires of the medical staff and reducing the availability of current technology to patients in need.

Avoid stagnation: Setting up and managing the same old ventilator will create a rusting of the mind. Lack of exposure to other techniques and

ideas will seriously limit your ability to solve problems and think independently. I will use the age-old story about the 900C ventilator as an example. I know people who love that machine because it is so “versatile” and “flexible.” Interestingly, they can only set the machine up on a patient with the CMV rate set to 20. Heaven help the patient if the physician requests a 1.4 second inspiratory time.

These are but a few of my reasons for wanting a variety in either the brand or type of ventilators that make up my ventilator fleet. Not only will this decision save me money that may be used to provide in-servicing and maintenance, but it will keep my staff sharper, provide them with more experience, and make them more confident in their ability to ensure that any patient’s needs may be met or any physician order may be carried out.

VENTILATORS: UNIFORMITY VS. VARIETY

by John Sabo, RRT,

St. Luke’s Episcopal Hospital, Houston, TX

In 1988 I had the rare opportunity to replace our entire fleet of adult mechanical ventilators. What’s more, respiratory care personnel were the final decision makers. Purchasing, biomedical, and administration acted in a consultative capacity. This opportunity presented us with key decision points to address:

1. Which manufacturer(s) would we consider?
2. Should we standardize or diversify our ventilator fleet?
3. Which ventilator(s) would be our best value?

Our department’s background was very similar, if not identical, to most respiratory care departments. Through the years ventilators were purchased on a one- or two-at-a-time basis. The choice was based on the machine’s features. A machine with the “new” knobs (SIMV, CPAP, etc.) often was chosen. Thus, we grew up with a

variety of mechanical ventilators in our fleet — Emersons, MA-1s, Bear 1s, Bear 2s, Engstroms, and Servos. We convinced ourselves that this was a good situation because of our diverse patient population and educational requirements. Surely no single style ventilator could ever ventilate our unique mixture of patients. An assortment of ventilators was also essential for the educational preparation of therapists, residents, and students. As we got ready to replace our entire fleet, however, we questioned these two points and decided they were myths.

What *did* influence our selection and why did we decide to standardize? Here are the key components of our decision:

Gas delivery systems: Our first consideration was the efficiency of the ventilator’s gas delivery system. We chose the Servo 900C and the Puritan Bennett 7200 as our benchmark and decided that we wouldn’t consider any ventilator that did not have a gas delivery system as efficient as the 900C or the 7200. This immediately eliminated many manufacturers on the market at the time. It also provided a single machine that would ventilate our entire adult population.

Bargaining power: The purchase of 60 units greatly enhanced our bargaining/negotiating power with manufacturers. We created a high value “deal.” The word value is the key, a high quality ventilator (very efficient gas delivery system) at an appropriate cost. If cost had been the only consideration, more options would have been available.

Uniformity of productivity: Using a single style ventilator to train therapists and provide patient care could influence productivity. A common scenario in the past was having the “wrong” ventilator on a patient. This required ventilator switching in the middle of the night and was very counterproductive.

Efficiency: By having a single ventilator we could buy the same circuits, connectors, filters, replacement parts, and service contracts to maintain our fleet.

Medical/legal: The standardization of equip-

ment would decrease the chance of a clinical mishap. Equipment that is occasionally used seems to “malfunction.” Long gone are the days of modifying mechanical ventilators with a variety of connectors, hospital tape, and bailing wire. In the 1960s and 1970s, and even in the 1980s, this was a very common approach to “quality patient care.” But it is no longer appropriate today. The standardization and repetition afforded by a single style ventilator would minimize mistakes.

These were the five major reasons that influenced our decision to standardize our fleet of ventilators. In retrospect, we made the right decision for us and we would make it again.

VENTILATOR STANDARDIZATION IMPROVES RCP’S “PATIENT FOCUS”

*by Dennis Hastings, RRT, and J.B. Burchfield, RRT,
University of Texas Medical Branch in Galveston, TX*

There are many issues that are open for debate in the RT profession. Most are driven by the angst being produced by the rapid rate of change in the health care industry. There is one issue that never fails to stimulate heated discussion. That is the issue of product standardization, particularly the standardization of ventilators.

The emotional ties that therapists have with mechanical ventilators are strong (to say the least). There have been many times when the benefits of one ventilator over another have been hotly contested, even to the point of outright anger. Ask the question, “What is the best ventilator on the market?” to a room full of respiratory therapists and you’ll get 10 different answers. Journal articles touting the virtues of one ventilator over another have prompted letters to the editor protesting the “bias” of the article. This, in turn, has initiated other evaluations that counter the results of the previous evaluation. It is not the intent of this article to debate “the debates,” but rather to present the benefits of standardizing ventilators within an institution.

Many hospitals have multiple brands of ventilators and often various models of several brands. For example, an average hospital may have a PB-7200 for adults, Sechrists and Bear Cubs for infants, and Newport Waves for pediatric patients. They may also have an MA-1 in the ER, a Monahagn 225 in the MRI unit, and the Univent for in-house transports. This can cause a logistical nightmare in terms of training, maintenance, and supplies. Yet variety in ventilators is not only accepted but encouraged in many hospitals. This is partly due to the fact that there is no “one size fits all” type of ventilator. That is, a single ventilator for adults, pediatrics, and infants. The issue of specialty bias also comes into play. The neonatologists want one type of ventilator, the pulmonary specialists want another, and the trauma surgeons have their own preference as well. Usually this bias has less to do with the specific features on the various ventilators than it does with the familiarity these physicians have with the equipment.

In today’s environment, it is important that hospitals reduce costs while improving outcomes. How is this accomplished? One mechanism for standardizing the process of ventilatory support is the use of ventilator management protocols. Utilizing protocols requires standardizing methods and equipment. By standardizing the process you reduce the number of variables that come into play. By reducing the number of variables that may affect the outcome, you increase the chances of having a successful outcome.

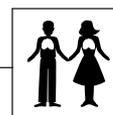
Standardizing ventilators reduces a number of variables associated with using multiple ventilator brands. Training clinicians to safely operate the ventilator becomes less complex. Therapists at the bedside do not have to worry about the subtle nuances inherent in different ventilator systems. Therapists can then be cross-trained to operate in any clinical setting. Training can shift from equipment-related issues to patient-related issues, allowing for a greater emphasis on patient safety. The risks associated with unfamiliarity of the equipment, which can be extremely high

when ventilatory support is being managed by someone unfamiliar with the ventilator system, are minimized.

Standardization also reduces the overall number of ventilators required to meet the needs of the hospital. There is no longer a need to maintain a certain backup inventory of each type of ventilator. It has been estimated that most ventilators are utilized 40% to 50% of the time. It would make economic sense to increase the utilization of these \$20,000 to \$30,000 ventilators to 60% to 70%. Maintenance costs are also less since there is only one type of machine to be maintained. Ventilator parts inventory is simpler and less expensive to manage. Training expenses for biomedical personnel are reduced. Turnaround time for processing “dirty vents” is reduced and errors in assembling the ventilator for the next patient are minimized. The cost of disposable supplies is reduced by standardizing to one type of vent circuit. Aside from a decrease in morbidity and mortality, the measurable outcome for mechanical ventilation is a reduction in average time spent on the ventilator. Standardization allows the clinician to focus more on the patient than the ventilator. Utilizing the modalities of the ventilator in the context of a ventilator management protocol should reduce total ventilator time and improve outcomes.

Most university-based hospitals and teaching institutions have always used their need to train medical students, physicians, and allied health students as an excuse for having multiple ventilator brands. Some may argue that there is a decrease in competency when the staff does not have a variety of ventilators to work with. However, the key to competency in ventilator training is the level of proficiency in the concepts of ventilation, not the operation of single piece of equipment. Respiratory therapists should become knowledgeable in the principles of mechanical ventilation and its effect on gas exchange and then utilize this knowledge within the context of the operation and limitations of the device. Any respiratory therapist

worth his or her salt can learn to “turn the knobs” or “push a button.” Likewise, non-RT medical personnel can do the same. When the focus of training shifts from the operation of the device to the interaction of the patient and the ventilator, the true value of a highly trained, competent, and resourceful respiratory therapist will be appreciated.



IN SEARCH OF NONTRADITIONAL RCPs

Historically, clinical trial/research coordinators have been nurses, pharmacists, or physician assistants. At a recent investigators’ meeting for a septic shock trial, however, approximately 30% of the coordinators were respiratory care practitioners. So, even though research is an area traditionally overlooked by RCPs, members of our profession are getting involved. Indeed, clinical trials involving critical care and respiratory pharmacotherapy and device development often go hand in hand with the RCP’s background and expertise.

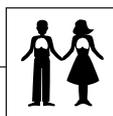
We would like to identify RCPs who hold full- and part time positions as clinical research coordinators, clinical research associates (site monitors), or similar positions. This information would be useful in networking trials, as there are often requests from pharmaceutical companies for further citing of studies. If you are involved in clinical research in your institution, please complete the following form and mail/E-mail/fax it to:

Caryn Pope, RRT, RCP
Baylor College of Medicine
Pulmonary/Critical Care
1504 Taub Loop
Houston, TX 77030
voice: (713) 793-2471
fax: (713) 790-9576
E-mail: cpope@bcm.tmc.edu

Name _____
 Address _____
 City _____
 State _____ Zip _____
 Voice _____
 Fax _____
 E-mail _____
 Research position held _____

 Years as CRC/CRA/other _____
 Current categories of studies _____

 RCP credentials:
 RRT CRTT
 CPFT RPFT
 ACP credential:
 RCRC
 Would you be interested in participating in
 networking within the AARC and the
 Adult Acute Care Section?
 YES NO



WEANING PROTOCOL IN ICU CAN SAVE MONEY

by Linda Domini, BS, RRT, Patsy Wallace, RN,
 and Susan P. Pilbeam, MS, RRT

Linda Domini, Patsy Wallace, and Susan P. Pilbeam
 are from Candler Hospital in Savannah, GA.

Between 1994 and 1995 the respiratory care department and ICU staff at Candler Hospital in Savannah, GA, noticed a dramatic rise in the number of patients receiving mechanical ventilatory support. These patients were staying on the ventilator longer and in the hospital longer, and there was also a rise in ventilator-associated pneumonia. Knowing that these combined issues could cause medical costs for both patients

and the hospital to skyrocket, the hospital formed the following team to look into the problem:

- Patsy Wallace, RN
- Linda Dominy, RRT
- Rhonda Anderson, RN, Clinical Nurse Specialist
- Wiley Workman, RRT
- Margaret Mills, RN
- Margaret Oliver, RRT, Infection Control
- Linda Formby, RN, Infection Control
- Ken Hendley, RRT
- Cynthia Schnabel, RN, ICU Manager
- Dr. Daly, Medical Director of Respiratory
- Carol Kostella, Dietitian
- Connie Moore

The team consisted of individuals from respiratory care, nursing, infection control, physical therapy, nutrition, and the intensive care unit. The group began its work by evaluating the previous year's data. They found that the number of initial ventilator setups had increased steadily from January of 1994 (265) to December of 1995 (369). The average number of hospital days for patients on ventilatory support had also changed in the same time frame, from 4 days in 1994 to 7 days in 1995. The total number of hospital days for ventilated patients in 1994 was 2,112 and in 1995 it was 2,605. The number of patients on mechanical ventilation between 1 and 7 days more than tripled, from 57 patients in 1994 to 191 patients in 1995.

Obviously, the cost to the hospital and to the patients increased. For every patient in the unit who requires mechanical ventilation, there are a substantial number of related expenses not incurred by other ICU patients:

- Arterial lines
- Arterial blood gases
- CO-oximetry
- Ventilator
- Aerosol treatments
- Chest radiographs
- Respiratory mechanics measurements
- Respiratory therapist
- Pulse oximetry

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An additional indirect expense for the hospital came from the necessity of renting ventilators for these patients. In February 1994, for example, the ventilator rental cost was more than \$11,000 in this 285-bed hospital with 34 ICU/CCU beds.

Adding to these rising costs was an increase in the number of ventilator-associated pneumonias, which went from 24 cases (9% of ventilated patients) in 1994 to 46 cases (12.5%) in 1995. As expected, this rise correlated with the length of stay on ventilatory support. It is interesting to note that 40% of all the unplanned extubations of mechanically ventilated patients in the ICU during this time frame were not reintubated. This was very suggestive of their readiness to wean.

As they saw costs for care rising while human and material resources stayed the same, the team became concerned for the patients, the hospital, and its employees. Having evaluated and reported the problem, they set to work to find a solution. They saw this problem as an opportunity to improve patient outcomes and wanted to establish goals that would

- Improve management of ventilator patients
- Begin plans to wean the patient on the first day of mechanical ventilation
- End with a successful weaning
- Improve timeliness and effectiveness of care and decrease the average length of stay.

To achieve these goals, they came up with three useful tools. These included a weaning protocol, a nursing guideline for ventilated patients, and routine orders for ventilated patients. The weaning protocol was presented to the medical staff (pulmonary department, Critical Care Committee, and surgical department) and approved for use. The Routine Ventilator orders were approved by the Critical Care Committee and were implemented. The Nursing Guidelines for Ventilated Patients were introduced to the staff, accepted, and placed at every nursing station.

Having put these tools in place, they then implemented the following changes:

- A nutritional consult was started within 24 hours of intubation for each patient.

- Respiratory therapists followed the weaning protocol.
- Nurses carefully followed the nursing guidelines for the management of ventilated patients.
- The nursing and respiratory staff members collaborated to identify when patients met the criteria for weaning.
- Physical therapy was ordered on patients within a 72-hour limit.

Physicians began using the protocol more frequently as time passed, and its success became apparent. A study was then begun to evaluate the effectiveness of the protocol. This study looked at patients randomly assigned to the weaning protocol and to a group receiving routine weaning. The total number of days in the unit for the protocol group was 105 (total of 106 patients). The total number of days for the non-protocol group was 211 (total of 132 patients). Thirty percent of the patients were on ventilators for more than 15 days prior to use of the protocol. Following use of the protocol, the majority of the patients were weaned from ventilation in 1 to 7 days. The average length of stay for ventilator patients went from 7 days to 4 days, with a cost savings of \$6,000 per patient. The total savings was \$551,200 for 106 patients using the weaning protocol. The results far exceeded the expectations of the team.

When asked to describe the protocol and why it brought about such a dramatic result, Linda Dominy, department head for respiratory therapy, said, "The protocol was really not the issue; any protocol would suffice. The changes came from the therapists and nurses being empowered to enact the changes." Awareness of the problem, a multidisciplinary approach to its solution, and physician awareness were all integral to the dramatic success of this weaning protocol in our hospital. Rather than accepting what would seem to be an inevitable problem associated with a growing patient population, this team of professionals (with the support of hospital administration) worked together to find a solution that helped their patients and their hospital alike.

FOR YOUR INFORMATION . . .

RESEARCHERS ESTABLISH A DIRECT LINK BETWEEN SMOKING AND LUNG CANCER

Health officials have known that cigarette smoking causes lung cancer for decades, but the exact link between the two has remained elusive—until now. Researchers from the City of Hope Cancer Center in Duarte, CA, and the M.D. Anderson Cancer Center in Houston, TX, have found that benzo(a)pyrene-metabolite (BPDE), a substance prevalent in the tar in cigarette smoke, directly transforms lung tissue.

Specifically, BPDE damage was noted on specific sites on the p53 tumor suppressor gene — an exact match to the genetic damage noted in about 60% of lung cancer patients. Normally, p53, which is called the “guardian of the genome,” produces a protein that suppresses cell division. The defect seen in 60% of lung cancer patients triggers abnormal cell growth and tumor formation. Researchers used a technique called genetic amplification to arrive at their findings. The study was published in the October 18 issue of *Science*. (Source: Reuter, 10/17/96)

PROGRESS ON HIV CONTINUES

Physicians battling the HIV virus are finally chalk-ing up some victories. Using a mixture of antiviral drugs in a “cocktail” approach, they have been able to remarkably lower the amounts of HIV in the systems of infected individuals — sometimes to the point where it can no longer be detected by standard tests. If they can begin treating a patient soon enough — before the virus devastates the immune system — they believe they may be able to hold the virus at bay over the long term.

But what about patients whose immune systems are already severely compromised by the disease? New research being conducted at New York Hospital-Cornell Medical Center suggests there may be hope for them as well. In an attempt to see if the immune system could be stimulated (something yet to be accomplished by medical science), they administered small doses of the hormone interleukin-2 to AIDS patients with CD4 counts that were below normal but not indicative of full blown AIDS. The idea was to see if

the hormone, which is used against several cancers known to cause severe side effects in large doses, might still have a positive effect if given at doses that could be tolerated. Patients were taught to self-administer the treatment through injections.

Researchers started their subjects out with doses measuring 125,000 IU, but found they were too low to make a difference in CD4 counts. Doses of 500,000 IU made a difference, but caused side effects like low-grade fever, muscle aches, and general malaise. When patients were given doses of 250,000 IU, however, CD4 counts began to rise, adding a mean of 27 or 28 cells a month, and there were no side effects.

Since the study group contained only 16 patients who received the therapy for 6 months, the researchers say more work must be done to establish the efficacy of this treatment. However, they believe it holds promise, not only for patients who have yet to develop full blown AIDS but also for those who are already suffering from the disease. The “cocktail” approach could be combined with the interleukin-2 therapy, they say, to reduce the amount of the virus in the person’s system and boost his/her immune system at the same time. The study was published in the *Proceedings of the National Academy of Sciences* last September. (Source: Reuter, 9/16/96)

NEW WEAPONS BEING DEVELOPED AGAINST DRUG- RESISTANT BACTERIA

The increasing drug resistance of bacterial infections like *Streptococcus pneumoniae*, *Staphylococcus aureus*, and enterococci has been a growing concern in hospitals for quite some time. As resistant strains of these bacteria gain ground, however, many are now leaving the hospital for other areas of the community. Particularly vulnerable are those in high-risk populations, such as the elderly, young children, and those with underlying medical conditions that leave them with compromised immune systems. Health officials estimate, for example, that resistance to penicillin — the first defense against *S. pneumoniae* — currently stands near 40% and other drugs, such as cephalosporins and non-beta-lactam agents, are catching up fast. Says Robert C. Moellering, MD, chair of the department of medicine at New England Deaconess Hospital in Boston, “While resistance was once found primarily in the hospital setting, we’re beginning to see more and more evidence of resistant pathogens in the community.”

Clearly, new drugs are needed to curtail the spread of these deadly bacteria. Rhone-Poulenc Rorer believes it has a couple of possible replacements. The company is currently awaiting approval from the FDA for an injectable streptogramin antibiotic called Synercid® (quinupristin/ dalfopristin), and an oral antibiotic called Zagam® (sparfloxacin) that appears to provide comprehensive coverage of community acquired infections, particularly those involving the respiratory tract. "Based on extensive clinical trials, Synercid and sparfloxacin show promise in treating several important antibiotic resistant strains," says Moellering. "New agents, combined with infection control measures and judicious antibiotic use, will help us win the war against microbes."

Moellering's comments were made during a satellite symposium aired prior to the 36th Interscience Conference on Antimicrobial Agents and Chemotherapy held last fall. (Source: PRNewswire, 9/16/96)

SMOKING STEALS THE YEARS AWAY

Since cigarette smoking causes life-threatening diseases like lung cancer, heart attacks, and stroke, it only stands to reason that smokers have shorter average life spans than nonsmokers. According to a British study involving 7,735 men, that's exactly right. They found that 78% of the men who had never smoked were still alive at age 73. Only 42% of those who had started smoking before the age of 20 and continued smoking throughout their lives could say the same. The 15-year study was conducted at London's Royal Free Hospital School of Medicine and funded by the British Heart Foundation. (Source: Reuter, 10/11/96)

RIGHT HEART CATHETERIZATION GETS ANOTHER THUMBS DOWN

A study that compared 2,184 critically ill patients who underwent right heart catheterization within 24 hours of being admitted to an ICU with a control group of patients who did not receive the test has raised serious questions about the safety and effectiveness of the procedure.

According to researchers from Case Western Reserve University in Cleveland, OH, patients who had the test had a 24% higher 30-day mortality rate and stayed in the ICU an average of 1.8 days longer

than those who did not. Their hospital bills averaged \$49,300 — a third higher than those for patients who did not undergo the procedure. More than 1.2 million right heart catheterizations are done every year in the U.S.

These dismal results, which confirm the findings from five previous studies that found an association between the test and increased risk of complications, higher mortality rates, and added costs, have led the American Medical Association to call for a nationwide study of the procedure. If a study is not forthcoming, the AMA says the Food and Drug Administration should consider a moratorium on the test. The study was published in the September 18 issue of *JAMA*. (Source: Reuters, 9/17/96, *USA Today*, 9/18/96)

DRUG-RESISTANT TB SPREADS IN HOSPITALS

A new study from the New York City Department of Health indicates that drug-resistant tuberculosis is easily spread within hospitals. Researchers who reviewed 267 cases say that about 70% were acquired in hospitals from other patients. Eighty-six percent of the patients in the study were also infected with HIV and 83% died during the course of the 43-month study. Prompt diagnosis and carefully watched treatment plans, however, can improve the odds for these patients. The researchers found that those who received appropriate care lived from 2 or 3 months to a year longer than those who did not. The study was published in the October 15 issue of *JAMA*. (Source: Reuter, 10/15/96)

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