



# Adult Acute Care

Nov./Dec. '99

Bulletin

2

Request for Assistance:  
New Technology

FYI . . .

4

Come Celebrate AARC's  
Cultural Diversity

American Association  
for Respiratory Care

## Red Wire, Red Wire, Lead II — Red Wire, Red Wire, Where to Place You?

by Larry Cate, RRT, Harney District Hospital, Burns, OR

Respiratory therapists travel to many departments throughout the hospital and are often called upon to help with ECGs and monitoring. But are we, and others in our institutions, correctly placing the leads?

On a weekly basis, I find the red wire being placed by the left chest; it appears to have become accepted practice in my hospital. Our monitor prints out Lead II, we chart Lead II, but are we correct?

Lead II is a limb lead from right arm to left leg. The red wire needs to be placed below the rib cage toward the left leg. There is no lead from right arm to left chest that is recognized or authorized by any medical group!

The P waves are the tallest, have the most upward deflection, and are found in Lead II and V1. Positive ions are most upright when traveling directly toward the positive electrode. When they are traveling away from the electrode, they become smaller or downwards.

When the red wire is placed on the left chest and near the V5, V6 area, it is not the best place to find P waves and QRS heights.

Proper red wire placement is important because you may not have time to do it twice. You should not have to take a patient off the monitor and move electrodes to do a 12 lead ECG. Remember teamwork, and place correctly the first time. In order to get accurate, recognizable

information, this lead placement must be consistent. Another important point to remember is to connect the patches and the wires together first, then apply to the patient. By doing so, you will not need a stiff rib cage to press against.

Significant Q waves are 25-33% of QRS height. When you are looking for significant Q waves in Lead II, III, and F, the common positive electrode is the red wire, and if it is in the wrong area, your measurements are not correct.

Taking sensitivity into account, very seldom does the Lead II monitor strip look like the Lead II on a 12 lead ECG. Why? Because when you put the red wire by V5, you are monitoring V5, not Lead II. It would be difficult to explain in a court of law why the two do not match, especially when both are labeled and charted as Lead II. Remember — the 12 lead ECG is always the most correct Lead II.

When asked why the red wire is placed on the left chest or side, many people reply, "That's just the way I was taught," whether through EMS, ER, ICU, telemetry, CCU, or ACLS. If this is true, we need to re-think our teaching and reemphasize the important of placing the red wire in the correct position.

Red wire, red wire does not need to go higher. ■

## Letter to the Editor

Dear Editor,

I would like to thank you for the article you wrote in the July-August *Bulletin* on your personal experience with the medical system. I think we need to hear these stories to be reminded of what we (respiratory therapists) represent and how we are perceived by others. Coming from a small community hospital, I was interested to see how a large hospital handled your father's care. From your comments, I feel that the quality of care we give is

just as good as that delivered by the big ones. We do try to ensure that everything we do is indicated and effective.

I also wanted to comment on the instances when your "knowledge of medical things" came into the story. I am always torn between admitting or concealing the fact that I am an RT when I have family or friends in the hospital. When we know we are talking to a nurse or RT, we can explain things in medical

"Letter to the Editor" continued on page 2

"Letters to the Editor" continued from page 1

terms. So in that case, it is better to admit that we are health care professionals ourselves because it ensures that we receive appropriate and accurate information. On the other hand, if people are threatened or intimidated by talking to

their peers, it is not good to admit to being a health care professional. We do live in a less-than-perfect world.

Thanks again for your article. I am making it available to my staff, particularly for the points it makes about identifying oneself as the respiratory therapist on the case and building up our

professional image. We should be proud (and humble) and act professionally at all times.

Lisa Bennett, RRT  
Walla Walla, WA

## Request for Assistance: New Technology

Susan Blonshine is writing a "clinical perspectives" article for AARC Times on new technologies in 1999 and would like

to know what new technology this year has had the greatest impact on your specialty area and why.

Please respond by October 10 to Susan by email (sblonshine@aol.com) or fax (517-676-7018). ■

## FYI . . .

### Prescribing patterns vary widely

Where you live plays a big role in how many and which medicines you take, say

researchers from the University of Arizona who analyzed prescription use patterns among 68,000 recipients of pharmacy benefits in nine states — California, Nevada, Louisiana, Missouri, Illinois, Tennessee, North Carolina, Ohio, and Michigan — where previous national data on pharmaceutical use had shown variation. Prescription use varied from a low of 5.03 prescriptions per member per year in Nevada to a high of 11.38 prescriptions per member per year in Louisiana.

Among therapy classes, the widest variation between the states was found among cholesterol and blood pressure lowering drugs and antihistamines. The least variation was found among diabetes drugs, estrogens, and antirheumatics. (Express Scripts, Inc. Conference)

decline in function than individuals without this genotype. And those with high levels of atherosclerosis were three times more likely to show a loss of function than those without atherosclerosis.

Participants had clinical assessments every year and answered questions about their health to track past history and incidence of diabetes and vascular diseases, including heart attack, congestive heart failure, atrial fibrillation, coronary artery bypass graft, the use of a pacemaker, stroke, or transient ischemic attack. Researchers identified early signs of vascular disease by measuring systolic blood pressure, carotid artery wall thickness with ultrasound, major ECG abnormalities, and atrial fibrillation from ECG. (JAMA, 7/7/99)

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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**  
John M. Graybeal, CRTT  
(717) 469-2620  
FAX (717) 469-9238  
e-mail: rabbitfarm@yahoo.com

**Chair Elect**  
Dennis Hastings, RRT  
(409) 772-8190

**Medical Advisor**  
Frederick A. Oldenburg, MD (ACCP)  
(207) 942-6096

**Bulletin Editor**  
Nicholas Widder, RRT  
Lead Therapist, Department  
of Respiratory Care  
Carolinas Medical Center  
PO Box 32861  
Charlotte, NC 28232  
Phone (704) 355-2389  
Fax (704) 355-8185  
e-mail: NAWidder@aol.com

### Cognitive decline is not normal in aging

In a study that tracked changes in cardiovascular health and cognitive function in 5,888 community-dwelling senior citizens over a ten-year period, researchers at UC Davis School of Medicine and Medical Center found that cognitive decline was not a normal part of aging for the majority. Only those with high levels of atherosclerosis or diabetes and those with the apolipoprotein E4 gene associated with Alzheimer's disease were at high risk for a decline in cognitive ability as they aged. Seventy percent of individuals evaluated in the study showed no significant decline in cognitive function over the study period.

The researchers found that the greatest loss of cognitive ability occurred in people who had both high levels of atherosclerosis or diabetes and an Apo4E gene. These individuals were eight times more likely to show a decline in function than people with a low level of atherosclerosis and no genetic predisposition. Individuals with an E4 allele were three to four times more likely to show a

### Older adults still not receiving recommended vaccinations

Despite their proven safety and effectiveness in helping elderly people — especially those with chronic medical conditions — avoid more serious illness, many older adults are still not receiving flu and pneumococcal vaccinations.

These findings come from University of Iowa researchers who studied 787 Iowa adults, selected at random from both rural and urban areas, who were age 65 or older and had one or more chronic conditions, such as arthritis, diabetes, heart or lung disease, or hypertension. Participants were asked about their current health practices, marital and occupational status, and access to health care.

Of the 784 subjects who provided complete influenza vaccination information, 68% reported getting the flu vaccine in the past year. Of the 768 people who provided complete pneumococcal vaccination information, 51% reported having received the vaccine. Forty-four percent of the study participants reported receiving both vaccines.

"FYI..." continued on page 3

“FYI” continued from page 2

Study results also showed that people age 70 or older were more likely to get the vaccinations, as were those who were still married or did not live on their own. Study participants age 65 or older who were still working were more likely to be immunized, as were people who had more contact with the medical system — defined as doctor visits, prescription drug use, or having a number of underlying chronic illnesses. The researchers found no significant disparities between rural and urban residents in the study, but insurance issues did affect whether study participants received the vaccinations. Those with supplemental insurance were nearly twice as likely to have received both vaccines. (*Medical Care*, 5/99)

### **Centenarians do well following surgery**

It's not how old you are; it's how sick you are — at least when it comes to recovery following surgery. This is the major finding of a Mayo Clinic study of 31 men and women 100 years old or older.

“The main message of the study is that our oldest citizens can do well after surgery,” says Mark Warner, MD, a Mayo Clinic anesthesiologist and primary author of the study. “Many people believe that old people are fragile and frail and won't tolerate surgery well. This study shows that notion to be false. Older individuals who have operable diseases or injuries should not be denied surgery because of perceived risks associated with advanced age.”

Dr. Warner says that recent improvements in drugs and less-invasive surgical techniques have made surgery safer for the elderly. He also notes that, contrary to popular opinion, people who are dismissed from the hospital more quickly often do better following a procedure.

“A number of the patients in this study had lived in their homes for more than 70 years,” Dr. Warner explains. “They know how many footsteps it is to the bathroom. They are secure and comfortable in their own environment — but not in an unfamiliar hospital room. In general, we believe that the faster they get back to their daily routines, the quicker they will recover.”

The researchers studied 31 men and women ages 100 to 107 who had surgery at Mayo Clinic or Olmsted Community Hospital over a 20-year period. Patients in the study had procedures ranging in complexity from total hip replacement to cataract surgery. They then compared their survival rates with people of the same age and gender who hadn't

undergone surgery. They found that the survival rate for centenarians undergoing surgery and anesthesia was comparable to that of the general population. (*Journal of the American Geriatrics Society*, 8/99)

### **Linezolid found effective against antibiotic-resistant infections**

Gram-positive bacterial infections are on the rise, as are the number of new strains of bacteria that are increasingly resistant to antibiotics. For patients infected with these drug-resistant organisms, there are few, if any, therapeutic options.

Now, a study by researchers at Northwestern University Medical School and Northwestern Memorial Hospital reports that linezolid, a new antibiotic, is highly effective against a range of gram-positive bacteria, including several antibiotic-resistant enterococci and staphylococci. The study is the largest laboratory experience to date with linezolid.

Infectious disease specialist Gary A. Noskin, MD, and co-researchers from Northwestern compared the activity of linezolid with that of a number of currently available antibiotics against approximately 4,000 fresh bacteria isolates of streptococci, enterococci, and staphylococci.

They found that linezolid showed potent activity against all isolates tested and was the most active antibiotic against oxacillin-resistant staphylococci and vancomycin-resistant enterococci, including both VanA or VanB types. Against all vancomycin-susceptible bacteria, the activity of linezolid was comparable to that of vancomycin.

Based on these in-vitro results, as well as his clinical experience with this drug, Noskin says, “Linezolid appears to be a promising new antibiotic for the treatment of a wide range of gram-positive infections, including vancomycin-resistant enterococci.” (*Antimicrobial Agents and Chemotherapy*, 8/99)

### **Smokers have three times greater pneumonia risk**

Men and women who smoked more than 20 cigarettes per day were almost three times more likely to acquire pneumonia than persons who never smoked, according to Carlos A. Gonzalez, PhD, of the Institute of Epidemiological and Clinical Research, Hospital of the Consorci Sanitari de Mataro, Barcelona, Spain. He and three associates studied 112 men and 93 women who had contracted community-acquired pneumonia. Among the patients with pneumonia,

almost 65% were current smokers of cigarettes. Among the control group of 475 persons who did not have pneumonia, slightly over 56% were current smokers.

“The number of cigarettes smoked per day and the life-time pack-years showed a positive dose-response relationship, with a significant trend,” says Dr. Gonzalez. Smokers who smoked more than 38 pack-years of cigarettes had a risk of getting pneumonia of over 3.15 to 1. The risk of ex-smokers was similar to current smokers, about 2.14 to 1. After five years of no smoking, the risk of acquiring pneumonia was reduced.

According to the researchers, the physical and chemical properties of cigarette smoke causes oxidative stress in people and alterations in the responsiveness of inflammatory cells.

The authors estimate that approximately one out of every three cases in these adults could have been avoided if no one in the population had smoked.

The investigators' results showed no difference in risk associated with the use of filter cigarettes, cigarettes made with darker tobacco, or the individual's depth of inhaling.

The study was conducted in a mixed residential-industrial area of Barcelona containing 74,610 inhabitants over 14 years of age. The researchers selected this area because all physicians who had first contact with patients with symptoms of pneumonia agreed to collaborate on the study. The physicians in public and private health care facilities covered 95.2 percent of this population.

“We feel we had an advantage in that all community-acquired pneumonia cases occurring in the entire population of this defined area over a two-year period were included,” says Dr. Gonzalez. “Thus, we avoided selection bias which might have been associated with hospitalized patients or with other selected groups of patients with pneumonia.”

Trained physicians and nurses elicited study data from participants in their homes. Self-reported factors included weight, height, alcohol consumption, living conditions, medical history, and medical treatments during the previous year. Information on smoking was collected in separate sections for consumption of cigarettes, cigars, and pipes. (*CHEST*, 8/99)

### **New curtains keep noise out**

Nursing home residents and hospital patients alike often complain that they can't sleep because of the noise going on around them at night. Now Georgia Tech

“FYI” continued on page 4

"FYI" continued from page 3

researchers have designed a unique modular curtain system that affords audio privacy.

The invention, dubbed "Quiet Curtains," stems from an effort to battle the two types of noise that most typically disrupt patients in nursing homes and hospitals: sound from inside their rooms, such as a roommate snoring or listening to a loud television program, and sound generated from the outside, such as carts rolling down the hall. To solve the problem, researchers decided to transform the curtains that hang around a patient's bed into a product that not only provides visual privacy, but also acts as an acoustical shield.

To accomplish that, sheets of noise

shielding material were sandwiched between two pieces of fabric and supported by a unique pocket system. The group conducted extensive testing to determine the noise reduction capabilities of various insert materials and exterior fabric. Besides analyzing acoustical properties, they looked for such qualities as durability, fire retention, and strength. Finally, they selected a plastic to use as the noise shielding material for the Quiet Curtains nursing home prototype.

In benchmark studies, the prototype reduced noise by about 7 decibels (dB). What's more, by adding a floor extension and valance, noise dropped approximately 12 dB. Researchers say that's akin to saying that if 16 toddlers were screaming "I want Mommy" all at the same time on one side of the curtain, it would seem to

someone on the other side as if only one toddler was screaming.

Quiet Curtains can also be equipped with a viewing window, allowing patients to watch television or have visual contact with nurses without letting noise in. This is done by adding a transparent noise shielding sheet, such as Plexiglas or glass, and cutting away a portion of the exterior fabric. A shade can then be added to this window and raised or lowered when desired.

Currently, a provisional patent has been filed and commercialization efforts are underway, including a search for potential marketing and manufacturing licensees. Plans are also underway for further testing of the curtains in nursing home settings. (Georgia Technical University) ■

## Come Celebrate AARC's Cultural Diversity

by Janyth Bolden, AARC Cultural Diversity Committee Chair

The AARC would like to hear your ideas on how "cultural diversity" should be addressed within the organization. In keeping with this goal, the Cultural Diversity Committee would like to invite you to attend a forum on cultural diversity. This first forum is being held at the Las Vegas Hilton Monday, Dec. 13, 1999 in conjunction with the 45th International Respiratory Congress. We are eager to listen to your ideas and suggestions, so please come share them with us.

We would like to make this a festive occasion — so why not dress the part? We invite and encourage you to wear

something that identifies your ethnic, religious, or other cultural group. And keep in mind, "cultural diversity" does not refer only to Black, White, Brown and Yellow. It also includes Jewish, Hindu, German, Assyrian, Italian, American Indian, Greek, etc. Come prepared to show off!

The AARC Cultural Diversity Committee is made up of managers, educators, staff, and entrepreneurs who represent regions from around the globe. Please join us Dec. 13 for insightful, constructive conversation about our varied backgrounds. Let us not just point out our

differences; let us also learn about and appreciate our similarities. It is by recognizing and utilizing our diversity that the AARC can become a "Fortune 500" association.

By the way, have you utilized the information found in the AARC Online cultural calendar? If not, why not? Check out this new feature on AARC Online at [http://www.aarc.org/times\\_plus/calendar.html](http://www.aarc.org/times_plus/calendar.html). This special feature is just the beginning of things to come. If you have any comments or suggestions, feel free to contact me at [jbalden@chw.edu](mailto:jbalden@chw.edu). ■

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