Diagnostics Bulletin

Sept./Oct. '99

American Association for Respiratory Care

Notes from the Chair

by Carl Mottram, RRT, RPFT

By the time this edition of the *Bulletin* reaches your mailbox we will be getting ready to gather in Las Vegas for the 45th AARC International Respiratory Congress. I hope you have the opportunity to join us in this tremendous learning experience. Earlier in the year I submitted a 16-page Diagnostic Section program proposal to the Program Committee for their consideration in planning this year's meeting. Although we didn't get everything accepted into the program, I think we have some timely and informative lectures to share with our diagnostic colleagues.

The section will conduct its annual business meeting during the Congress, and I hope many of you will be able to attend. The business meeting time and location will be listed in the program you receive at registration. At that meeting I will "hand off the baton" of leadership to Cathy Foss, from the University of Michigan, who will assume the role of chair. Cathy is a very intelligent, well-versed practitioner who is very approachable, and I'm sure she is looking forward to leading the section into the 21st century.

It is hard to believe that six years of serving in leadership roles for the section are coming to an end. I would like to thank all of you for the support, guidance, and general conversation that we have been able to share over the years. I would especially like to thank the section's leadership team: Cathy Foss, chair-elect; and Mary Kay Collins and Vickie Ganey, *Bulletin* co-editors, for making the job so enjoyable and for all of their assistance in making my job less of a challenge. I would also like to thank Susan Blonshine and Robert Brown for their mentoring and friendship. They truly guided this section to a new level of professionalism and excellence, which I have tried to maintain.

I hope you enjoy this issue of the *Bulletin.* Please share it with your colleagues who perform diagnostic testing. We need to identify new members as we fall just short of the number of members needed to have a seat on the Board of Directors in the new leadership model of the AARC. By sharing the *Bulletin* with others, maybe we will help them recognize the benefits of section membership.

Once again, thank you for the honor of serving as your chair. ■

Offering New Diagnostic Services

by Vickie Ganey, MBA, RRT, RPFT, RN

Department managers are always being asked to provide new diagnostic services for the clients of their facilities. Sometimes these services are easy to provide and very cost effective, and sometimes they are not.

When department managers are thinking about providing a new service, they must first look at it as a business proposition, considering both the benefits and the drawbacks of providing that service. The benefits include the value of the service to the clients and the physicians. The drawbacks include the cost of

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the service and the ease in which it can be provided.

When considering a sleep study program for our hospital, I looked into the number of clients we could expect to service, what it would cost to set up and run the service, the reimbursement expected for the service, and the space required. To determine the average number of clients we might expect, I polled area physicians and asked, on average, how many clients we could expect from their practice. Next, I looked into the cost of equipment, the space needed, the availability of a physician to interpret the studies, and the staff needed to provide the service. The last thing I investigated was the reimbursement available for the service.

After checking into all of these issues, I began to look at alternative solutions available for providing this service for our hospital. Since we had already decided that we wanted to develop a service that would keep our clients from having to travel outside of our service area, I started with that goal in mind. We ultimately decided to look into the possibility of contracting for the service with an outside source.

When thinking about developing a relationship with a contract service, there are a few things that you should keep in mind:

1. How reliable are they as a company, and do they have good references?
2. Can they provide all of the services you require?
3. What will be the cost of doing business with them?
4. Can they provide all of the services the physicians are asking for?
5. How much time and effort will be required from the hospital staff?
6. What kind of contract are they proposing, and will they work with you?
7. Will they be able to provide follow up studies, split studies, equipment, and staff?

Once you have all of your questions answered by the prospective service providers, you are ready to make your choice. Base your decision on all of the information you receive and what would be the best solution for your facility.

At this writing in late summer, we are still in the process of deciding how to set up our new diagnostic sleep program. We will chose the best possible course of action based on the information we gained from using the above procedure. ■

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Another Approach to Sleep Medicine Services

by Camden J. McLaughlin, BS, RRT, CPFT, president/owner, MEDIAS, LLC Sleep Diagnostic Services

Wake up to sleepiness, a major health problem confronting society. The National Sleep Foundation has reported the following:

- Approximately $46 billion is spent yearly by the American government and businesses due to accidents related to sleepiness.
- At least 100,000 police-reported crashes in the US annually are attributed to the drowsy driver.
- 31% of fatal-to-the-driver commercial truck crashes are caused by drowsiness.
- 40 million Americans suffer debilitating sleep disorders, and the majority of those go undiagnosed.

Obviously, sleepiness in America is a serious problem. But fortunately, there is opportunity to diagnosis and treat these patients. The American Academy of Sleep Medicine (AASM) reports that there are 425 accredited centers and labs throughout the country. Unfortunately, when one looks at the waiting list for most sleep diagnostic and treatment facilities it becomes apparent that this number is not adequate to provide expedient diagnosis for these individuals.

MEDIAS Sleep Diagnostic Services was founded in 1993 with the mission of providing high quality, cost-effective sleep medicine services and patient education in a caring environment. In cooperation with our affiliate hospitals and physicians we incorporate a broad range of services, such as facility/space planning, staffing,

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provision of equipment, scoring and report generation, billing and reimbursement consultation, marketing, and quality management.

Our approach to sleep medicine has been to assist current and potential affiliates in becoming keenly aware that timely access to quality sleep diagnostics and treatment is needed. We have based our approach on the following:

- **Impact on quality of life:** Sleep disorders are associated with stroke, hypertension, congestive heart failure, MIs, gastroesophageal reflux, psychological issues, and other related medical issues.
- **Treatment outcomes:** Treatment of sleep disorders produces measurable result in patient health, productivity, and quality of life.
- **Complements other services:** Sleep medicine directly relates to pulmonary and internal medicine, cardiology, oral maxofacial and ENT surgery, and psychological and home care services.
- **Demand complements opportunity:** Heightened public and physician awareness increases the need for timely and accurate diagnosis and treatment of sleep disorders.

It is important to assess the specific needs of each facility when tailoring the development of a sleep medicine program. Our services are designed to assure that each facility maintains its own identity. These services are offered on a short- or long-term contractual basis. From the beginning, sleep medicine programs should be planned to meet the criteria for accreditation by the AASM.

Once the specific needs of each facility have been identified, gaining physician support should be next on the agenda. The enthusiastic support of a physician who sees the effects of sleepiness in his or her patients is paramount to the success of site-based sleep medicine. Typically, this individual proves to be a pulmonary specialist, although in some situations a neurologist might fit the bill.

At MEDIAS, we generally have each facility select a physician who is willing to develop his or her skills in sleep medicine. This physician must be prepared to take the responsibility of accepting referrals from other physicians for sleep evaluations, as well as providing interpretations for the studies. This physician should also initiate the process of becoming a Fellow of the AASM.

Procedure coding and reimbursement are key to the financial success of the sleep medicine center. Numerous third-party insurers, as well as Medicare, cover the costs of sleep testing. The facility where the polysomnography is performed bills using the appropriate CPT code. A typical polysomnogram, consisting of staging of sleep and four or more physiological variables of sleep, would use the CPT code, 95810-TC, for the technical fee. The interpreting physician would use the same CPT code with a -26 modifier, i.e., 95810-26.

We have found that our affiliate centers are best served by having the physician bill separately for his or her professional services. There may, however, be areas of the country where insurers require a global billing, which would include the technical and professional fee as a single reimbursement. Different CPT codes are required for titration, split night studies, and Multiple Sleep Latency Studies.

The majority of insurance companies require some form of preauthorization for the performance of the polysomnogram. Typically, this is the responsibility of the referring physician. One of MEDIAS' points of service is to acquire preauthorizations for the physician's office, saving staff time.

Staffing for a position that is primarily nocturnal can make recruitment difficult. We have had success in providing staff by training either Registered or Certified Respiratory Therapists for the position. Our training is conducted by a Registered Sleep Technologist. This can be a time-consuming process, as the trainee is required to work under direct supervision for a minimum of three months. Trainees are, and should, be encouraged to take the registry exams for which they are eligible. Outside training resources are available nationally through several centers.

Marketing of sleep medicine services at each affiliate is essential to the success of the program. Key areas of marketing concentration include educating potential referring physicians, as well as the community, on the availability and necessity of sleep services. Local insurers should also be educated on the value of sleep medicine services.

Physician marketing should include education on screening tools and the step-by-step process for ordering polysomnograms. Educational seminars conducted by physicians trained in sleep medicine are often well received.

We have found that marketing to the community by speaking at gatherings of clubs, organizations, and businesses is successful. Support and educational groups such as AWAKE provide a resource for patients with sleep apnea and their family members. These groups can also serve to educate the public on the need for sleep services.

The AASM has developed practice parameters that are available either by fax or mail. These documents can serve as a valuable resource for facilities interested in developing sleep medicine programs.

The development of site-based sleep medicine facilities in cooperation with sleep service companies such as MEDIAS can help to provide much needed opportunities to care for some of the following:

- The 62% of adults reported driving while feeling drowsy.
- The 27% of adults who reported dozing off at the wheel in the past year.
- The 40% of adults who are so sleepy during the day that it interferes with their daily activities.

Remember: A good night's sleep is not a reward. It's a requirement! ■

The Future of Diagnostic Sleep Testing

by Jeffrey Kuznia, RRT, RPFT, sleep business group manager, Medical Graphics Corp., St. Paul, MN

Not too long ago the advanced sleep disorders center was built around a multi-channel paper polygraph system with 12 to 18 amplifiers. Physiologic respiratory signals were measured with separate external devices, including CO2 analyzers for airflow and mercury strain gauges for respiratory effort. Many labs incorporated the newly developed, but expensive, inductive plethysmography systems that produced semi-quantitative signals. The paper recordings produced crisp traces, but paper was a large expense and the record for each study required significant storage space. Of course, scoring of the record required flipping through each page multiple times to stage sleep and mark abnormal events.

Over the last 15 years, transducer, amplifier, and computer technology has improved at a rapid pace. Beginning with companies like CNS, Inc. in 1984, computerized, "digital" sleep systems were developed. Today, almost all newly purchased diagnostic sleep systems employ amplifier systems that digitize the analog voltage signals produced by the body via EEG, EOG, EMG, and ECG electrodes, or from sensors or transducers attached to patient.

Signals from these digital sleep systems are sampled and stored on a computer (usually a computer workstation with an Intel Pentium-based processor). The paper polygraph recording has been replaced with a high-resolution graphics display that only recently has achieved resolutions that produce traces as crisp as the paper it replaced. More importantly, the computer display is controlled by advanced software that give the sleep technicians and the interpreting physicians tools for data display and analysis that were not possible using a paper record.

Current trends in sleep diagnostics are related to sensor development, improvements in amplifier technology, enhancements in analysis of sleep data and, as is the case throughout medicine, information management, including computer networking and advanced database applications.

Sensor technology has been guided by an increasing desire in the diagnostic sleep community for sensors that produce output directly related to the physiologic events that are causing patient symptoms. Of particular note are the soon-to-be-published "Chicago Criteria," which have been developed by a committee of recognized sleep researchers. The criteria are focused on respiratory effort and flow signals that quantitatively measure changes in both of these critical indicators of apnea and hypopnea.

To this end, the preferred technologies for effort monitoring are esophageal pressure monitoring and respiratory inductive plethysmography with a sum channel rather than the more popular piezo-type sensors. Pneumotachography and nasal pressure monitoring are presented as better measurements than the commonly used thermistors and thermocouples.

Signal amplifiers have taken advantage of ongoing advances in microelectronics, decreasing the size and increasing the capabilities. Many digital sleep systems incorporate the analog-to-digital (A-to-D) signal conversion within the amplifier system; others have the A-to-D conversion performed in the computer. A few of the amplifier systems allow for integrated devices, such as oximeters, pressure transducers, and respiratory inductive plethysmography systems, reducing the number and cost of external devices that have to be interfaced. Amplifiers are available with more channels, which are increasingly being used to add additional EEG signals for more in depth monitoring of seizure activity and improved reliability of sleep staging. Amplifiers with 24, 32, 48, or even 64 channels of data are available for use in the sleep lab.

The use of computer operating systems, such as Microsoft's Windows NT, that are designed to support Local Area Networks (LANs) allow labs to link computer workstations together for convenient data and printer sharing. This replaces the need to have high capacity storage devices at each computer just to transfer large data records from one computer to another.

The last few years have also seen the development of advanced databases for sleep labs that can be used to store patient information, sleep data, insurance and referring physician information, and results of therapy. Along with lab statistics, the database can be used to manage the activities of the lab, from scheduling studies to sending out follow up letters.

If we look out into the future, what kind of sleep lab will we see in the year 2001 or beyond? The sensor and amplifier technology will continue to develop, and advanced computer software will become an ever-increasing central component of the sleep lab. Current work on sensor technology will provide new options for quantifying respiratory flow and effort.

If we imagine a sleep disorder center in the year 2003, we might conjure up something like this: a lab with 6-8 traditional bedrooms of its own that is also linked to two or three remote sites by a Wide Area Network (WAN). Patients will have electrode and sensor wires attached to a small signal-processing unit that transmits the physiologic data by a central receiver connected to a LAN. The data from any patient can be monitored from workstations in the lab or remote workstations connected via the WAN. Sleep data is analyzed real time, with events marked automatically. Many patients will be setup at home with automatic therapy devices (auto-CPAP, implanted muscle stimulators, oxygen or drug delivery systems) and be monitored from the central lab via cable modem or DSL (digital subscriber line) connection.

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Home-based testing will become even more widespread, as the communication technologies allow for improvements in remote monitoring, control, and intervention with diagnostic and therapeutic devices. This will allow more patients to be evaluated early and treated appropriately.

Analysis of sleep data will have created new ways of looking at information as well. Parameters such as Pulse-Transit-Time and derivations of the respiratory effort signals will improve our ability to detect and diagnose more occult sleep disorders. Final results, along with appropriate digital photos and video recordings, will be stored in the hospital or health care system patient database. The database will provide comparisons of the outcomes of therapeutic interventions with regional and national standards, helping to determine the most effective therapy for different types of patients.

Of course, as we all know, there will also be unforeseen discoveries and developments that will undoubtedly affect this scenario in ways unknown. But if the past is any indication of the future, our patients are likely to benefit from the resulting increase in knowledge and expertise in this area of care.

A More Cost-Effective Approach to Diagnosing Sleep Disorders?

Researchers at the University of Warwick in Great Britain believe they have found a simple, cost-effective approach to diagnosing sleep disorders that could replace traditional methods like polysomnography.

The innovative method is based on the fact that every time a sleep apnea sufferer stops breathing and subsequently awakens, the heart rate is affected. Up until now, doctors have not used this heart rate effect as a diagnostic tool for two reasons. First, healthy hearts do not have an entirely regular heart rate and this has prevented detailed analysis. Second, the wide variation across patients in the intensity of sleep apnea has made it impossible to decide on a simple, single quantitative measure to look for when examining ECGs of heart activity.

Researchers surmounted these problems by using mathematical techniques to devise a single analysis of the heart rate that accounts for the heart's irregular rate and the wide variation in the effects of sleep apnea on the heart rate. Their study involved the application of two mathematical concepts — the Non-equispaced Fourier Transform and the Discrete Harmonic Wavelet Transform — to the ECGs of 20 sleep apnea patients and 20 normal subjects. They found that by using these tools they could diagnose sleep apnea from the ECG alone. According to the researchers, the advantages of this new technique include:

- The ECG data can be analyzed in just 20 minutes. Polysomnography data take 4-6 hours.
- Patients can take a portable ECG monitor home. They do not need to be admitted to the hospital.
- The technique will allow non-sleep specialist doctors to diagnose sleep apnea, even if they are using the ECG to look at other conditions.

The investigators are now looking at the effect of other conditions on heart rate and believe they can refine the process for application to other heart conditions, asthma, and diabetes. (University of Warwick)

A Growing Market

In 1998, the total sleep disorder diagnostic and therapeutic device markets generated $298.3 million in US revenues with a growth rate of 20%, according to Frost & Sullivan. The growing awareness of sleep disorders is increasing the demand for sleep studies, causing the number of sleep centers and labs to grow, while presenting new marketing opportunities for product manufacturers.

Frost & Sullivan's new report, *US Sleep Disorders Diagnostic and Therapeutic Device Markets*, provides forecasts of the major sleep disorder diagnostic devices available in the US for the period 1995 to 2005. Also provided in the research are forecasts of the major obstructive sleep apnea (OSA) treatment devices available in the US market for the same time period. End-user research, which covers purchasing decisions, product criteria, and reimbursement, is included.

The report predicts that by the year 2005, OSA therapeutic devices will generate more than 80% of the total revenues, as more diagnoses lead to more people requiring treatment. Research findings suggest that the average growth rate of the OSA treatment devices segment will surpass 17% annually through 2005.

Frost & Sullivan's research of the sleep disorders diagnostic markets includes products such as full polysomnographs, portable polysomnographs, and partial channel polysomnographs. The sleep disorder therapeutic products examined include CPAP and bi-level equipment, nasal masks, ready-made oral appliances, and somnoplasty equipment. (Frost & Sullivan)

Survey Says NFL Players Are Too Tired to Punt, Pass, and Kick

Ninety percent of NFL athletic trainers report that players come to them with sleep complaints. A full 83% say that sleep problems hinder players' on-field performance. These results come from a survey of NFL head athletic trainers taken during last summer's training camps.

With most teams sleeping on college dorm beds during training camp, it's not surprising that only 3% of athletic trainers polled say that players' sleep needs are satisfied at camp. By comparison, 90% say physical conditioning and 87% say nutritional needs are well met.

"A good night's sleep is critical to health, especially at training camp when athletes are pushed to their physical and mental limits," says Ronnie Barnes, New York

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Giants head athletic trainer. "The intensity level is higher because players are trying to secure a spot on the roster. As this survey shows, we need to focus more on the sleep component of the health equation."

Some of the sleep-related performance problems cited by trainers are: lack of concentration, stiffness and achiness, headaches, and delayed reaction time. Athletic trainers also agree that aches/pains (90%) and stress (83%) are the predominant inhibitors of sleep, with most chronic pain being reported in the neck and back.

"With recent national surveys estimating that approximately two-thirds of Americans experience sleep-related problems, it's no surprise that trainers find players suffering from sleep problems. Factors such as pressure to perform at high levels, in combination with chronic pain from the physical demand of football, may exacerbate sleep trouble," says Dr. William Wohlgemuth, clinical sleep psychologist for the Duke University Sleep Disorder Center, who facilitated this survey.

Thirty NFL head athletic trainers responded to the survey, which was sponsored by Select Comfort Corporation, which makes air beds designed to facilitate sleep. (Select Comfort Corporation) ■

Patient Cooperation During Arterial Puncture

by Vickie Ganey, MBA, RRT, RPFT, RN

I have been doing arterial blood gases for over 25 years now, and during this time I have continued to use the same technique that I was originally taught. However, drawing blood gases without causing the patient distress depends not only on the technique being used by the person drawing the blood gas, but also on the patient's cooperation and understanding of the procedure. I have always tried to make my patients aware of what I am going to do and why it is necessary for the blood to be drawn, and I believe this really helps relieve much of the discomfort they might otherwise experience. I know that if someone takes the time to explain something to me, I tend to be more cooperative. So I try to remember to treat my patients the way I would want to be treated in the same situation.

After I have checked the physician's orders and determined that a blood gas has been ordered, I check the patient to decide how best to proceed. I usually do this while I am assessing the circulation in the patient's arms and doing the Allen test. Once I determine the site, I decide how best to gain the patient's cooperation. This often depends on the patient's frame of mind about the needle stick. Some patients are very good and don't mind being stuck. Others are afraid of needles or have had a bad experience.

I have found that if I treat all of my patients the same, I get better results. My technique is based on three things: distraction, stability, and patience.

- **Distraction:** I use distraction to get my patients to relax. I talk to them about anything and everything, then I ask them to make a fist with the other hand, the one I am not going to stick. I tell them to clench it tightly, then I ask them to think only of the hand they are clenching. This takes their mind off of what I'm doing. Before I stick them, I tell them what I am going to do and remind them to think about the hand they are clenching and keep the other relaxed.
- **Stability:** I use a two finger technique to find and anchor the artery I am about to stick, then I puncture the artery between my two fingers. I also have another person hold and support the patient's arm if I sense the need to keep him or her from moving it at the wrong time.
- **Patience:** After I distract the patient and stabilize the site, I take my time in puncturing the artery and drawing my blood. If the patient moves or draws away, I start over. Patience is required to stay focused and reassure the patient during the entire process. When I talk to my patients, many times they never realize they have been stuck.

Using this technique I am usually able to draw blood from children and adults without causing them or me undue distress. ■

Bronchoscopy-Related Infections and Pseudoinfections

Bronchoscopy is a useful diagnostic technique that can be performed safely when the bronchoscopes are reprocessed properly to prevent transmission of infection. The New York State Department of Health received reports of three clusters of culture-positive bronchoscopy specimens obtained in 1996 and 1998 from patients at local health care facilities. Between patient uses, the bronchoscopes had been cleaned, visually inspected, leak tested, and processed by STERIS System 1 processors. These clusters, which indicated involvement of *Mycobacterium tuberculosis, M. intracellulare,* or imipenem-resistant *Pseudomonas aeruginosa,* are summarized here.

Cluster 1

During November-December 1996, bronchial specimens from five patients in a health care center yielded M. tuberculosis with the same restriction fragment length polymorphism (RFLP) pattern,

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suggesting a common source. The index case-patient had tuberculosis with persistent acid-fast bacillus (AFB) smear- and culture-positive specimens. The four subsequent case-patients had no clinical evidence of tuberculosis, although one had a positive tuberculin skin test six weeks post-bronchoscopy. Investigators concluded that all specimens from the four patients were contaminated but could not determine whether contamination occurred during the bronchoscopy or in the mycobacteriology laboratory. Specimens from three of the four case-patients were processed in the laboratory on the same day as the index case-patient's specimen.

The bronchoscopies were performed using three Olympus BF-P20D bronchoscopes, each processed in the same STERIS System 1 processor. Cultures from all three bronchoscopes, taken five weeks after the last case procedure, were negative. The cleaning brushes used on all three bronchoscopes were also culture negative. Investigators identified an inconsistency between the disinfection/sterilization procedures recommended in the STERIS manual and those followed by the facility personnel — the biopsy port cap was not replaced before loading for cleaning in the STERIS System 1 processor. The bronchoscope manufacturer did not provide recommendations for processing in the STERIS System 1, but the manual suggests removal of the biopsy port cap before cleaning and replacement immediately before the next use. At the investigators' request, the STERIS device testing program performed pressure and flow studies with the biopsy port cap removed and observed a 50% flow reduction and a 25% flow pressure reduction. Therefore, STERIS could not assure bronchoscope sterility when the biopsy port cap was not replaced before processing, as specified in the STERIS manual.

Cluster 2

During March-April 1998, an increase in positive bronchial specimens for *M. avium-intracellulare* (MAI) occurred among patients in an ambulatory surgery unit (ASU) in a health care center. Seven cases without clinical evidence of MAI were identified over a two month period compared with two MAI cases during the preceding eight months. All seven patients had undergone bronchoscopy in the same ASU with the same bronchoscope. Typing by polymerase chain reaction restriction enzyme analysis indicated that all of the isolates from the ASU bronchoscopy-associated patients were *M. intracellu - lare* (nontypable), and all of the isolates from the environmental and control patients with previously diagnosed atypical mycobacterial disease were *M. avium*. Mycobacterial cultures of the implicated bronchoscope, taken 12 days after diagnosis of the last MAI case, were negative.

The bronchoscope used was an Olympus BF-P20D model and was processed in a STERIS System 1. Olympus connectors were used for processing the bronchoscope in the STERIS System 1 rather than the connector kit and methods specifically developed by STERIS.

Cluster 3

During August-October 1998, 18 patients (11 inpatients and seven outpatients) in a health care center had bronchial specimens that grew imipenem-resistant *P. aeruginosa* (IRPA). None of the 18 patients had IRPA isolated from sputum cultures obtained before bronchoscopy. At least three patients had persistent infection with IRPA with an associated clinical illness post-bronchoscopy. All but one of the isolates from the 18 patients had identical DNA patterns by pulsed-field gel electrophoresis analysis.

In July 1998, the facility began processing bronchoscopes and other endoscopes using a STERIS System 1 processor. The facility used Pentax and Olympus bronchoscopes but did not document the specific bronchoscope used on each patient. Neither the Pentax nor the Olympus bronchoscopes were connected to the STERIS System 1 in accordance with the STERIS manufacturer's recommendations. The person responsible for cleaning and disinfecting the endoscopes had received training at the STERIS Corporation; however, the specific scopes used at the facility were not demonstrated during the training.

(Centers for Disease Control) ■

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). ■

Correction

In the last issue of the *Bulletin*, the contact number for the ATS Pulmonary Function Laboratory Registry was misprinted. The correct number is: (212) 315-8821. ■

AARC Joins Tech Ed to Provide Training and Competence Manual on CD ROM

The American Association for Respiratory Care and Tech Ed Cardiopulmonary Diagnostics Specialists have joined forces to provide the Diagnostic Training and Competence Assessment Manual: Pulmonary and Noninvasive Cardiology. Specialists in the fields of pulmonary and noninvasive cardiology designed the manual to assist in the training and ongoing inservice education of professionals in the noninvasive and cardiopulmonary laboratory setting.

Many clinical settings need training and competence assessment for practitioners providing support for cardiopulmonary diagnostics, says co-author Susan Blonshine, BS, RRT, RPFT. She describes the manual as a practical tool that provides assessment criteria and "need-to-know" information for individuals performing laboratory procedures and techniques.

Blonshine explains that the current health care market, fraught with downsizing and tightening budgets, makes it difficult for administrators to develop assessment and training tools. "Managers and educators must often rely on 'on-the-job' experience to help current and new employees learn the ropes of diagnostic testing," she says.

Blonshine and co-author Jeff Johnson thus created for cardiopulmonary laboratory professionals the Diagnostic Training and Competence Assessment Manual: Pulmonary and Noninvasive Cardiology. The manual can be used as the basis for course development, training programs, orientation, and competence assessment for pulmonary diagnostics such as indirect calorimetry, venipuncture, static lung volumes, and more. The manual also includes topics for noninvasive cardiology procedures such as transtelephonic pacemaker evaluation, graded-exercise testing, electrocardiography (ECG), ambulatory ECG or Holter monitoring, and high-resolution signal-average ECG.

The Diagnostic Training and Competence Assessment Manual: Pulmonary and Noninvasive Cardiology manual is available on CD ROM and can be tailored to individual institutions to fit the needs of its professional staff. The manual (Item #PA99) costs $267 for AARC members ($289 for nonmembers) plus $8.85 for shipping and handling. Contact the AARC's Order Fulfillment Department at 972/243-2272 for more information or to order. ■

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. This special feature is just the beginning of things to come. If you have any comments or suggestions, feel free to contact me at jbolden@chw.edu. ■