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JOEL VAUGHN/DIRECTOR OF MEDIA SERVICES, SECTION OF SURGICAL SCIENCES, VANDERBILT

The rate of ventilator-associated pneumonia fell from 15.2 cases per 1,000 ventilator days to 9.3, said Dr. Victor Zaydfudim.

Novel Tool Helped Cut VAP in Surgical ICU

BY JANE SALODOF MACNEIL
Elsevier Global Medical News

SANTA FE, N.M. — Putting a screen saver "dashboard" with red alerts on computers in a surgical intensive care unit helped staff to increase compliance with measures to prevent ventilator-associated pneumonia and to reduce the incidence of these potentially deadly infections.

The rate of ventilator-associated pneumonia (VAP) fell from 15.2 cases per 1,000 ventilator days during the 18 months before the dashboard was introduced in July 2007 to 9.3 per 1,000 ventilator days during the following 12 months, Dr. Victor Zaydfudim reported at the annual meeting of the Western Surgical Association.

Complete compliance with a bundle of six measures designed to prevent VAP rose from barely over 30% to around 90% during the same time frames, said Dr. Zaydfudim of the department of general surgery at Vanderbilt University, Nashville, Tenn. The bundle had been implemented in 2002, he noted, but compliance was low and VAP rates had not gone down before the dashboard was introduced.

The bundle requires spontaneous breathing trials by

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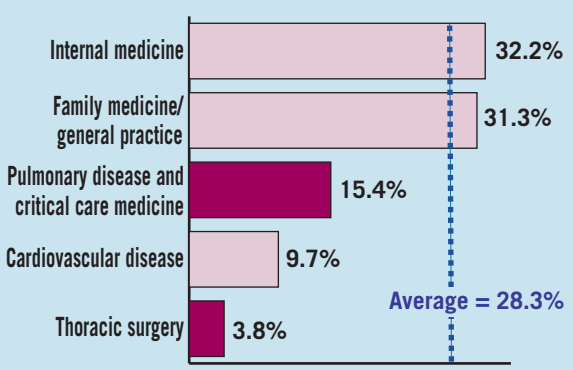
VITAL SIGNS

Percentage of Physicians Who Are Women

(Active physicians by specialty, 2007)



Source: 2008 Physician Specialty Data, Association of American Medical Colleges

ELSEVIER GLOBAL MEDICAL NEWS

Smoking-Related Deaths Decline in All but One State

But rates rise for women in some states.

BY MIRIAM E. TUCKER
Elsevier Global Medical News

Overall rates of smoking-attributable mortality declined in 49 states and the District of Columbia from 1996-1999 to 2000-2004, with the greatest drops occurring in Nevada, California, and Virginia.

New state-specific data on smoking-attributable mortality (SAM) and years of potential life lost (YPLL) from the Centers for Disease Control and Prevention show that average annual overall SAM rates decreased during the two time periods by 44.4/100,000 population older than 35 years of age in Nevada, by 37.8/100,000 in California, and by a total of 33.4/100,000 in Virginia. Oklahoma was the only state that experienced an increase in SAM, by 26.9/100,000 (MMWR 2009;58:29-33).

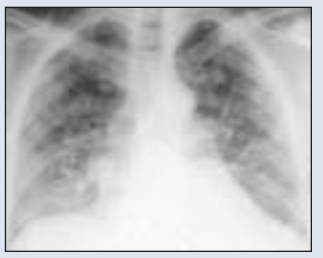
Sex- and age-specific SAMs were calculated by multiplying the total number of deaths among adults older than 35 years from 19 diseases caused by cigarette smoking by estimates of the smoking-attributable fraction of preventable deaths for each disease.

Compared with 1996-1999, the average annual SAM rates declined in 2000-2004 among men in all states except Oklahoma, but increased among women in several states (Alabama, Arizona, Arkansas, Georgia, Indiana, Kansas, Kentucky, Louisiana, Michigan, Mississippi, North Carolina, Ohio, Oklahoma, South Carolina, South Dakota, Tennessee, Texas) and D.C. For every state, the annual number of smoking-related deaths was higher among males than among females, the CDC said.

The release of these state-specific data follow a 2008

See **Smoking** • *page 2*

INSIDE



Postviral Wheezing Therapy Questioned

BY MARY ANN MOON
Elsevier Global Medical News

Preschool-age children with acute postviral wheezing should not routinely be given oral prednisolone, and concerns about growth may preclude use of short-term high-dose inhaled fluticasone in the same population, according to two reports published in the New England Journal of Medicine.

Oral corticosteroids are considered the keystone of managing these patients when they present to the hospital and are recommended in American and British treatment guidelines. However, a multicenter study of 687 such patients showed that oral corticosteroids are no better than placebo in managing patient symptoms.

In the second study, high-dose inhaled fluticasone given at the first sign of an upper respiratory tract infection to prevent wheezing recurrences did improve symptoms, but it appeared to impair normal growth in a study of 129 patients. The potential risks of this preemptive treatment outweigh its benefits, and it should not be used until further study clarifies long-term adverse effects, the researchers said.

In an accompanying editorial, Dr. Andrew Bush of the National Heart and Lung Institute and Royal Brompton Hospital, London, cautioned, "It is clear that on the basis of these two studies, current practice must change.

See **Wheezing** • *page 2*

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Smoking Deaths Are Down

Smoking • *from page 1*

report that cigarette smoking and exposure to secondhand smoke resulted in an estimated 443,000 deaths and 5.1 million YPLL annually in the United States during 2000-2004 (MMWR 2008;57:1226-8).

During 2000-2004, overall average annual SAM rates per 100,000 population were lowest in Utah (138.3), Hawaii (167.6), and Minnesota (215.1), and highest in Kentucky (370.6), West Virginia (344.3), and Nevada (343.7). Median SAM rates per 100,000 population overall were 288.1 for 1996-1999 and 263.3 for 2000-2004, the CDC reported.

Smoking-attributable YPLL were estimated by multiplying sex- and age-specific SAM by remaining life expectancy at the time of death. The average annual YPLL estimates ranged from 7,762 (Alaska) to 481,529 (California). The YPLL estimates for males ranged from 4,586 (Alaska) to 288,823 (California), and from 3,176 (Alaska) to 192,706 (California) for females.

To reduce SAM rates further, the CDC said, comprehensive evidence-based approaches for preventing smoking initiation and increasing cessation need to be implemented fully, and states should fund tobacco control activities at the level recommended by CDC. The CDC's guide on tobacco control activities can be found on the Web at (www.cdc.gov/tobacco/tobacco_control_programs/stateandcommunity/best_practices). ■

Prednisolone Use Challenged

Wheezing • *from page 1*

"Prednisolone should be administered to preschoolers only when they are severely ill in the hospital. Intermittent, high-dose inhaled corticosteroids should not be used," Dr. Bush said.

Dr. Jaychandran Panickar of the University of Leicester (England) and his associates assessed the efficacy of a 5-day course of oral prednisolone in children aged 10-60 months who presented to three British hospitals with an attack of wheezing preceded by an upper respiratory tract infection. These patients did not respond adequately to 10 puffs of albuterol administered through a metered-dose inhaler or nebulizer in the emergency department.

A total of 343 patients were randomly assigned to receive oral prednisolone and 344 to receive a matching placebo. There were no significant differences between the two groups in time to hospital discharge, number of further albuterol actuations given in the hospital, or Preschool Respiratory Assessment Measure (PRAM) scores at 4, 12, or 24 hours after presentation.

There also were no significant differences between prednisolone and placebo in parent-assessed 7-day symptom scores, time to return to normal activities, number of albuterol actuations given at home for 1 week, or number of readmissions for wheezing in 1 month.

The results were the same in the subgroup of children who were at high risk for developing asthma by school age, the patient group considered most likely to benefit from corticosteroids, Dr. Panickar and his colleagues noted (N. Engl. J. Med. 2009;360:329-38).

In the study of intermittent high-dose inhaled fluticasone, sponsored by GlaxoSmithKline, Dr. Francine M. Ducharme of the University of Montreal and her colleagues compared active treatment with placebo in 129 children aged 1-6 years who were seen at five Quebec medical centers for recurrent wheezing triggered by upper respiratory tract infection. Parents administered the therapy at the first sign of a cold and continued until 48 symptom-free hours had elapsed.

During a median of 40 weeks of follow-up, children who received fluticasone had lower symptom scores and required fewer rescues with systemic corticosteroids. Their parents also reported fewer disruptions in their day-to-day lives.

'IT IS DISTURBING TO CONTEMPLATE HOW MANY UNNECESSARY COURSES OF PREDNISONE HAVE BEEN GIVEN OVER THE YEARS, IN GOOD FAITH.'

However, those who received fluticasone also showed significantly smaller gains in height and weight, of a magnitude that was similar to that reported with a 1-year course of low-dose fluticasone in the same age group. This finding, together with the potential adverse effects that are not yet clear, "are cause for concern and indicate that this management strategy should not yet be recommended for use in clinical practice," Dr. Ducharme and her associates wrote (N. Engl. J. Med. 2009;360:339-53).

In his editorial, Dr. Bush noted that oral corticosteroids have been "the bedrock of therapy" for preschoolers with acute virus-induced wheezing, even though their efficacy is controversial and their use is based on results for an entirely different patient group: school-age children with asthma.

"There can no longer be any justification for the administration of prednisolone to preschoolers without atopy who have episodic [viral] wheezing in either a community or hospital setting, unless a severe clinical course is anticipated," he wrote (N. Engl. J. Med. 2009;360:409-10).

"It is disturbing to contemplate how many unnecessary courses of prednisone have been given over the years, in good faith, because we all assumed that preschool children are little adults," Dr. Bush noted.

Dr. Ducharme reported receiving research grants from GlaxoSmithKline, Merck & Co., and Nycomed International Management GmbH. Dr. Bush reported receiving grant support from Pharmaxis Ltd. Dr. Panickar reported no conflicts of interest; however, several of his associates reported associations with several pharmaceutical companies. ■

Dr. Burt Lesnick, FCCP, comments: *A growing body of literature raises doubts as to the efficacy of long-term inhaled steroids, short-term high-dose inhaled steroids, and systemic corticosteroids in the treatment of recurrent viral-induced wheezing in young children. It is unclear which children will progress to have full multi-trigger asthma. Thus, we may be overtreating a large number of children with our current practice.*

IN THIS ISSUE

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CHEST PHYSICIAN

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Smoker With Bronchitis? Check for Undiagnosed COPD

Understanding the patients who are at greatest risk should help improve disease recognition.

BY MITCHEL L. ZOLER
Elsevier Global Medical News

PHILADELPHIA — Patients with a history of smoking and the symptoms of chronic bronchitis had a 26% prevalence of airflow obstruction consistent with chronic obstructive pulmonary disease, in a cross-sectional study of more than 1,200 people seen at primary care centers.

"Spirometry should be considered in anyone with a smoking history and respiratory symptoms," Dr. Barbara P. Yawn and her associates said in a poster presented at the annual meeting of the American College of Chest Physicians. The finding highlights that physicians "should be vigilant to the potential for airflow obstruction in patients with symptoms of chronic bronchitis," the researchers wrote. "Despite the increasing incidence of COPD worldwide, the vast majority of patients with the disease remain undiagnosed and underreported," they added.

"Understanding the patients who are at greatest risk for having undiagnosed COPD should help improve disease recognition, diagnosis, and management," Dr. Yawn said in a written statement. Increasing the targeted use of spirometry "will improve recognition of COPD," added Dr. Yawn, a family medicine physician and director of research at Olmsted Medical Center in Rochester, Minn.

The prevalence of airflow obstruction consistent with COPD was determined in people aged 40 years or older who were patients at any of 40 U.S. primary care centers. Eligible participants had symptoms of chronic bronchitis and a smoking history of at least 10 pack-years. These participants were assessed using spirometry and two questionnaires. One questionnaire included the 12-item Short Form Health Survey; a modified respiratory questionnaire from the American Thoracic Society; and additional questions about disease, smoking history, and activities missed because of breathing problems. The second questionnaire, the Lung Function Questionnaire, included seven questions on respiratory symptoms, smoking history, and age.

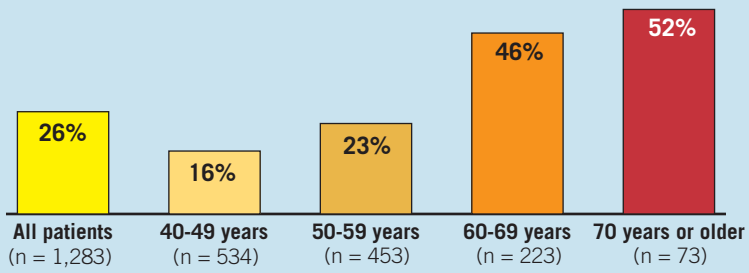
The average age of the 1,283 participants was 53 years (range 40-87 years), and 55% were women. Most were white (81%), and 17% were African American. Their average body mass index was almost 29 kg/m^2. In the 87% of participants who were current smokers, the average number of pack-years was about 40, with a range of 10-172.

Airflow obstruction indicative of COPD, defined as forced expiratory volume in 1 second divided by forced vital capacity (FEV_1/FVC) of 70% or less following bronchodilator (albuterol) treatment, occurred in 26% of the patients. The prevalence of undiagnosed obstructive lung disease—defined as an FEV_1/FVC of 70% or less before bronchodilator treatment—was 34%. Bronchodilator reversibility was absent in 91% of participants.

Slight dyspnea impairment, defined as shortness of breath when hurrying on level ground or when walking up a slight hill, existed in 47%. Coughing four to six times a day at least 4 days per week was reported by 79%, and 75% reported a whistling sound in their chests.

The analysis also showed that the prevalence of a breathing impairment suggestive of COPD increased with age. Among the youngest people in the study, those aged 40-49 years, an FEV_1/FVC after albuterol treatment of 70% or less occurred in 16%. The prevalence of this COPD marker rose to 23% among people aged 50-59 years, to 46% among those aged 60-69 years, and to 52% in those aged 70 years or older.

Prevalence of Undiagnosed COPD in Smokers With Chronic Bronchitis



Note: Percentage of patients with an FEV_1/FVC of 70% or less following albuterol treatment.
Source: Dr. Yawn

Elsevier Global Medical News

GlaxoSmithKline funded the study, and one of Dr. Yawn's associates was a GSK employee. Dr. Yawn and her other associates said that they had no conflicts of interest to disclose. ■

Dr. Philip Marcus, MPH, FCCP, comments: *This is yet another reminder of the need for screening patients at risk for COPD, essentially smokers, to document the presence of airflow obstruction and then to be able to counsel patients concerning the importance of smoking cessation.*

In addition, early treatment may help improve quality of life. This information needs to be widely disseminated to the primary care community, essentially the first line for intervention.

Also, the wording in this study may be confusing because, as we all know, chronic bronchitis is one of the presentations of COPD, and if one has chronic bronchitis, one has COPD.

Longer Life Spans Tied to Reduced Air Pollution

BY MARY ANN MOON
Elsevier Global Medical News

Increases in life expectancy during the 1980s and 1990s were associated with reductions in fine-particulate air pollution in 51 metropolitan areas across the United States, according to a report in the New England Journal of Medicine.

Specifically, when the concentration of particulate matter with an aerodynamic diameter less than or equal to 2.5 mcm ($PM_{2.5}$) decreased by 10 mcg/m^3 in study areas, life expectancy rose by about 1 year, reported C. Arden Pope III, Ph.D., of Brigham Young University, Provo, Utah, and associates.

Although it might be impossible to tease out the influence of numerous individual factors on health risks and benefits over time, the findings "suggest that the individual effect of reductions in air pollution on life expectancy was as much as 15% of the overall increase," said the researchers (N. Engl. J. Med. 2009;360:376-86).

They assessed air pollution data collected from 211 counties surrounding the target metropolitan areas for one period in the late 1970s and early 1980s, and compared it with data from the late 1990s and early 2000s in the same counties. They also assessed life expectancy estimates for the corresponding areas and time periods, as well as socioeconomic and health data that might confound life expectancy estimates, such as proxy variables for the prevalence of smoking and access to health care.

PREVIOUS STUDIES IN THE NETHERLANDS, FINLAND, AND CANADA SHOWED THAT INCREASED AMBIENT PARTICULATE MATTER CORRELATED WITH REDUCTIONS IN LIFE EXPECTANCY.

In several statistical models, life expectancy rose as fine-particulate pollution declined. And "in a variety of related sensitivity analyses, the effect estimate for a change in $PM_{2.5}$ was quite robust," Dr. Pope and colleagues said.

"Previous prospective cohort studies, using measures of ambient concentrations of pollutants and controlling for smoking and other individual risk factors, have suggested similar improvements in survival and life expectancy, on the basis of indirect estimates," they wrote.

"The results of our population-based analysis … corroborate these previous findings," they noted.

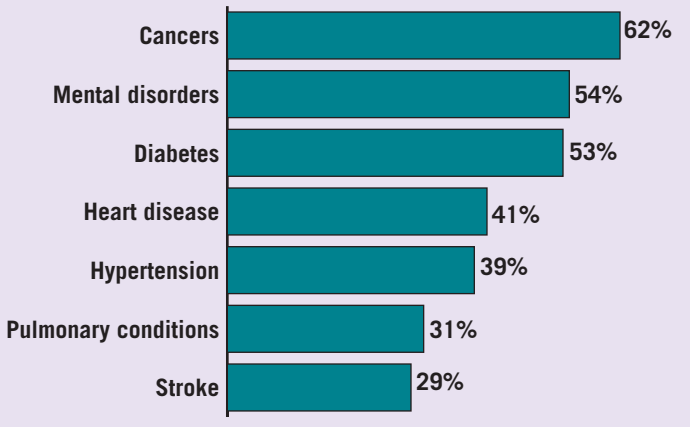
In an editorial comment that accompanied this report, Daniel Krewski, Ph.D., of the McLaughlin Center for Population Health Risk Assessment at the University of Ottawa, said that this "pioneering" work "provides direct confirmation of the population health benefits of mitigating air pollution and greatly strengthens the foundation of the argument for air-quality management."

The findings mirror those of previous investigations in the Netherlands, Finland, and Canada that showed that increases in ambient $PM_{2.5}$ concentrations of 10 mcg/m^3 correlated with reductions in life expectancy of 0.8-1.37 years, Dr. Krewski said (N. Engl. J. Med. 2009;360:413-5).

A coauthor on the report disclosed receiving grant support from the Health Effects Institute. Dr. Krewski reported serving on a university-industry partnership program, and as CEO and chief risk scientist at Risk Sciences International. ■

DATA WATCH

Projected Rise in Cases of Common Chronic Diseases, 2003-2023



Note: Projections based on 2003 nationwide data.
Source: The Milken Institute

Elsevier Global Medical News

Look for Rheumatic Disease in ILD

BY SHERRY BOSCHERT
Elsevier Global Medical News

SAN FRANCISCO — Clinicians detected underlying rheumatic disease in 17 of 28 patients referred to a multidisciplinary clinic for interstitial lung disease.

The evaluations changed the diagnosis in 11 of the 28 patients, including 4 of 15 who had been referred for idiopathic interstitial lung disease and 7 of 13 who had been referred for rheumatic disease related to interstitial lung disease (ILD). As a result, clinicians changed therapy for 14 (50%) of the patients, Dr. Flavia V. Castelino and her associates reported at the annual meeting of the American College of Rheumatology.

All patients with ILD should be evaluated by a rheumatologist, said Dr. Castelino of Massachusetts General Hospital, Boston.

Distinguishing between ILD that is idiopathic versus related to rheumatic disease is important because the former carries a worse prognosis, and the response to treatment may differ, she said. A separate retrospective study of 362 cases of ILD found 5-year survival rates of approximately 40% with idiopathic disease and approximately 70% with cases that were associated with rheumatic disease (Am. J. Resp. Crit. Care Med. 2007;175: 705-11).

The difference in prognosis is thought to be related to the major lung histopathology, previous data suggest. Nonspecific interstitial pneumonia was present in 4 (9%) of 47 patients with idiopathic ILD and in 23 (83%) of 28 patients with undifferentiated connective tissue disease and interstitial lung disease in one study (Am. J. Resp. Crit. Care Med. 2007; 176:691-7).

A separate previous study of 39 cases of ILD found that community physicians were more likely to diagnose it as idiopathic disease, compared with retrospective diagnoses from a multidisciplinary academic team review by pulmonologists, radiologists, and pathologists (Am. J. Resp. Crit. Care Med. 2007;175: 1054-60).

In the current prospective study of patients referred by pulmonologists over an 8-month period to a new multidisciplinary clinic at Brigham and Women's Hospital, Boston, all patients were evaluated by a pulmonologist and a rheumatologist, who took a complete history and physical examination (including capillary microscopy) and reviewed laboratory and serologic data. They reviewed available imaging and pathologic specimens in consultation with a dedicated radiologist and a pathologist experienced in interstitial lung disease.

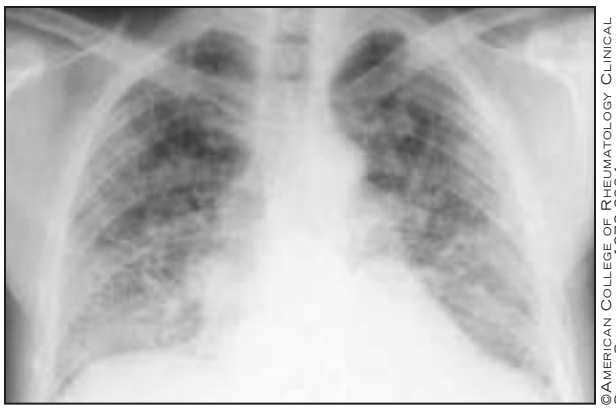
Additional serologic tests, imaging, or biopsies were performed at the discretion of the clinic physicians. They initiated or changed therapy in collaboration with the referring physician.

Evaluations by a rheumatologist significantly affected diagnoses because of additional serologic testing and because the rheumatologist was able to elicit subtle clues suggestive of a rheumatologic diagnosis. Recognition of "mechanic's hands," periungual erythema, abnormal capillary microscopy, and inflammatory arthritis led to new diagnoses including antisynthetase syndrome, systemic sclerosis, rheumatoid arthritis–associated ILD, and mixed connective tissue disease.

The cohort was half female, with a median age of 63 years and a history of smoking in 23 (82%) of patients.

The multidisciplinary interstitial lung disease clinic now meets weekly and has evaluated an additional 28 patients. In this group, diagnoses were changed in eight patients, Dr. Castelino said.

The investigators reported that they had no potential conflicts of interest related to this study. ■



Bilateral interstitial fibrosis of the lower two-thirds of the lung fields is common in systemic sclerosis.

Infectious Complications of Trauma Rise With Age

BY BRUCE JANCIN
Elsevier Global Medical News

NEW ORLEANS — The risks of pneumonia and other serious infectious and septic complications of traumatic injury climb steadily in age-dependent fashion.

This finding from an analysis of the world's largest trauma registry suggests that the immune response to trauma varies with the age of the patient, and that the neuroendocrine axis is involved in this immunoactivation, Dr. Christian D. McClung observed at the annual scientific sessions of the American Heart Association.

He reported on 857,046 patients aged 5-89 years included in the American College of Surgeons National Trauma Data Bank for 2000-2004.

The patients in the database were hospitalized at more than 600 participating trauma centers, with a median 3-day length of stay. The mean age of the study population was 40 years. Two-thirds were male. The mortality rate was 4.4%.

Pneumonia was a complication of trauma in 1.6% of cases, acute respiratory distress syndrome in 0.5%, and bacteremia in 0.13%, according to Dr. McClung, an emergency physician at Los Angeles County–USC Medical Center, Los Angeles.

The risks of pneumonia, bacteremia, and acute respiratory distress syndrome rose with each decade of age in a multivariate logistic regression analysis adjusted for potential confounders including age, sex, injury severity score, trauma mechanism, and days on a ventilator. The 56,680 children aged 5-12 years in the study served as the comparison group.

These risk figures are probably underestimates, since it's likely that posttraumatic complications are underreported, Dr. McClung noted. ■

Infliximab Benefits Select Sarcoidosis Patients

BY MITCHEL L. ZOLER
Elsevier Global Medical News

PHILADELPHIA — Patients with sarcoidosis who have the most severe lung disease stand to benefit the most from treatment with a tumor necrosis factor antagonist, Dr. Daniel Culver, FCCP, said at the annual meeting of the American College of Chest Physicians.

For the time being, the tumor necrosis factor (TNF) antagonist that is most beneficial to use for sarcoidosis is infliximab (Remicade), because it has "the best track record," said Dr. Culver, a clinician in the Respiratory Institute at the Cleveland Clinic.

On the basis of treatment results reported so far, the best candidates for infliximab treatment among pulmonary sarcoidosis patients are those who have more severe physiologic derangement, those with disease duration of longer than 2 years, and patients with dyspnea as a prominent symptom, he said.

For the most part, however, sarcoidosis patients have not shown substantial improvement with infliximab treatment, according to Dr. Culver. A more realistic treatment goal is slowing disease progression.

The most extensive experience with successful infliximab treatment in sarcoidosis is in patients with pulmonary involvement.

The treatment has also shown some efficacy for treating extrapulmonary disease, such as patients who have central nervous system or skin involvement.

In some of these sarcoidosis patients, the benefit of infliximab has waned over a period of time; other patients have experienced a durable effect. One very responsive group of patients with skin involvement has been those with lupus pernio. In one recent series, 90% of sarcoidosis patients with lupus pernio improved with infliximab treatment, Dr. Culver said.

Despite promising reports that support using infliximab in sarcoidosis patients, there are still few data on the best dosage, and dose escalation has not been useful so far in patients who don't respond to infliximab. The best treatment interval seems to be an injection every 4-8 weeks.

THE BEST CANDIDATES ARE THOSE WITH MORE SEVERE PHYSIOLOGIC DERANGEMENT, DISEASE DURATION OF AT LEAST 2 YEARS, AND DYSPNEA AS A PROMINENT SYMPTOM.

Concurrent treatment with methotrexate appears to enhance the beneficial effect from infliximab, Dr. Culver noted, and also reduces the risk that patients will develop an immune reaction to the injected drug.

As with any anti-TNF drug, care must be taken about the risk of activating latent tuberculosis. It is advisable to screen patients for tuberculosis before starting infliximab treatment, and to watch for an atypical infection presentation, Dr. Culver said.

Ideal candidates for treatment with a different anti-TNF drug are most likely those who develop side effects from infliximab or initial responders whose response wanes over a period of time. However, far less experience exists for treating sarcoidosis patients with adalimumab (Humira) or certolizumab (Cimzia). Etanercept (Enbrel) does not appear to be useful for treating sarcoidosis.

Dr. Culver also cautioned that none of the anti-TNF drugs have a labeled indication for treating sarcoidosis, and there have been no reports from placebo-controlled studies of agents other than infliximab in sarcoidosis patients.

However, using an anti-TNF drug makes sense, he said, because TNF levels are increased in sarcoidosis patients, and TNF plays a role in granuloma formation.

Patients who don't respond to a TNF antagonist may include those who have a low baseline level of C-reactive protein, patients who are smokers, patients with a genetic polymorphism, and those whose disease is not as strongly mediated by TNF.

Dr. Culver said that he has received no corporate funding or payments relevant to these drugs. ■

Dashboard Improves Compliance

VAP • *from page 1*

respiratory therapists; administration of the Richmond Agitation Sedation Scale by physicians and registered nurses; and head of bed elevation, oral care, dental hygiene, and hypopharyngeal suction by registered nurses. "All critically ill patients received stress ulcer prophylaxis and deep venous thrombosis prophylaxis," he added.

As described by Dr. Zaydfudim, the dashboard tracks compliance in real time for every patient in the ICU. Each measure in the bundle corresponds on the dashboard to a box in a row assigned to each patient. A green box tells the staff that the patient's care is up to date with that item. A yellow box indicates that compliance for that item is about to expire. A red box means the patient's care no longer meets the standard set forth in the bundle.

All computers in the ICU are equipped with the screen saver, which appears for everyone to see whenever a computer is not being used.

COURTESY DR. VICTOR ZAYDFUDIM

The dashboard tracks compliance in real time for every patient in the ICU.

The closed, intensivist-run, 21-bed surgical ICU where the dashboard was tested is in a tertiary referral center that admits about 1,300 patients per year. Except for the average APACHE II score, which increased from 17.8 to 22, and a small rise in body mass index, Dr. Zaydfudim said patient case mix did not change significantly during the study. The rate of bloodstream infection was similar before and after the dashboard: 4.5 per 1,000 catheter days and 5 per 1,000 catheter days, respectively.

VAP is the most common nosocomial infection in ventilated patients, he noted. It accounts for 60% of hospital-acquired pneumonia deaths, prolongs hospital stays by 4 days, and increases direct hospital costs by about $40,000 per patient.

The study defined VAP by the following criteria: mechanical ventilation lasting more than 48 hours; fever higher than 38.5°C and/or leukocytosis greater than 12,000 cells per microliter, and/or infiltrate on chest radiograph; and positive bronchoalveolar lavage culture with greater than 10^4 cfu/mL.

Despite the VAP reduction achieved with the dashboard, Dr. Zaydfudim said further efforts are still needed to meet a VAP goal of 4.1 cases or less per 1,000 ventilator days, based on data published by the Centers for Disease Control and Prevention (Am. J. Infect. Control 2007;35:290-301). This led to a discussion of whether an across the board standard based on hospital reporting is realistic if surgical and trauma ICUs carry a higher risk of VAP, compared with medical units.

"I am not sure we are ready to accept those benchmarks as stated," said Dr. Charles Wright Pinson, H. William Scott Professor of Surgery at Vanderbilt and senior author of the study.

"The presence of a complication is directly proportional to how hard you look for it. And so I would submit that people who report very low VAP rates, like zero VAP rates, are not looking for it very hard," Dr. Pinson said, questioning whether generalized targets are realistic for specific subgroups of surgical ICU patients. The Vanderbilt surgical ICU was limited to general surgery, vascular surgery, and patients from surgical subspecialties such as thoracic, plastic, orthopedics and otolaryngology, as well as transplant patients, he noted; it did not include cardiac and trauma patients.

Asked how Vanderbilt kept staff motivated once the dashboard was no longer a novelty, he said, "We set this up as a management goal, so all personnel in this unit were responsible for the outcome."

He did not have data on cost of the intervention, but said the unit initially tried to make the intervention work with a paper dashboard. Putting the dashboard on a screen saver, where it serves as a constant reminder, was helpful, he said.

Dr. Zaydfudim disclosed no conflicts of interest. ■

Higher CRP Levels Linked to Better ARDS Outcomes

BY BRUCE JANCIN
Elsevier Global Medical News

NEW ORLEANS — Critically ill patients with acute respiratory distress syndrome who had higher C-reactive protein levels had unexpectedly lower multiorgan dysfunction scores, more ventilator-free days, and better 60-day survival.

This finding in a 177-patient study runs contrary to conventional wisdom, which says that a high level of C-reactive protein (CRP), a biomarker of systemic inflammation, is always a bad thing. A high CRP level has previously been shown to predict worse outcomes in patients with cardiovascular disease, rheumatoid arthritis, and several other diseases, Dr. James J. Januzzi Jr. said at the annual scientific sessions of the American Heart Association.

"Among our group of well-characterized patients with [acute respiratory distress syndrome], those with lower CRP concentrations were sicker. Concentrations of CRP were significantly lower among those patients who died, and this association was present in a graded fashion such that patients with the highest CRP values had the lowest event rates. CRP concentrations were independently inversely predictive of survival," he said.

"So we conclude that our finding, which we're currently confirming in a much larger cohort of patients with ARDS, paradoxically seems to support the beneficial role of CRP in ARDS," said Dr. Januzzi of Massachusetts General Hospital, Boston.

The 177 ARDS patients were mostly middle aged to elderly, with a median Acute Physiology and Chronic Health Evaluation (APACHE) III score of 80. They had the typical causes of ARDS, mainly pneumonia and sepsis. The median 24-hour urine output was 1,535 cc. Baseline renal dysfunction, hypotension, and leukocytosis were common.

All patients had a high-sensitivity CRP measurement within 48 hours after ARDS diagnosis; the median value was 155 mg/L. In the 70 patients who died within 60 days, the median value was 133.5 mg/L, compared with 176.5 mg/L in the 107 survivors. With use of an optimal cut point of 226 mg/L, the 130 patients with a CRP below that threshold had a 60-day survival of only about 25%, compared with more than 60% survival in the high-CRP subgroup.

After a Cox proportionate hazards analysis was used to adjust for age, APACHE III scores, liver disease and other relevant comorbid conditions, and CRP-lowering corticosteroid therapy, CRP level remained a significant predictor of mortality. Indeed, a practical clinical take-home point in the study was that a CRP above the 226-mg/L cutoff was associated with a 50% reduction in the likelihood of mortality within 60 days, Dr. Januzzi noted.

The median APACHE III score among the 107 survivors was 73, compared with 90 in patients who died within 60 days. Yet in the multivariate adjusted analysis, APACHE III scores were no longer significantly predictive of mortality; only CRP level was. This remained the case when a Bayesian analysis was performed.

This paradoxical finding regarding CRP and ARDS prognosis may be explained by basic science models, he said.

"We are forced to actually look—perhaps against our will as cardiologists—at the basic science data, which suggest that CRP may actually be beneficial in experimental models of acute lung injury. It has been shown that CRP inhibits neutrophil chemotaxis and reduces alveolitis, and that CRP overexpression leads to a systemic resistance to alveolitis and acute lung injury. So it may very well be that we are seeing a clinical correlate with these basic science models," Dr. Januzzi said.

He and his coinvestigators are now studying a much larger cohort of ARDS patients accessed through the National Heart, Lung, and Blood Institute's ARDS Clinical Network. They hope to learn whether a high CRP level is truly protective or merely a fellow traveler linked to better survival, and whether a low CRP should serve as a trigger for a change in hospital interventions. They're in the process of determining whether CRP levels are affected by such interventions as different ventilator or fluid management strategies, Dr. Januzzi explained. ■

Catheter Line Protocols Slash CA-BSIs in Children

BY DENISE NAPOLI
Elsevier Global Medical News

The overall rate of catheter-associated blood stream infections is 1.2 per 1,000 line-days at the critical care unit of Children's National Medical Center in Washington.

Compared with the national 2006 pooled mean of 5.3 infections per 1,000 central line–days, "that's pretty good," said Dr. Heidi Dalton, who heads the unit.

Recently the unit went 197 days without any patients developing catheter-associated blood stream infections.

The secret of the unit's success, according to Dr. Marlene Miller, is an approach that focuses on line maintenance rather than line insertion.

In the adult population, a catheter line is accessed relatively infrequently, and infection rates are dramatically reduced after initiating relatively simple insertion standardization policies. But in children, catheter lines are accessed much more frequently—more than 30 times per day in some cases, according to Dr. Miller.

"In children, we'll draw all our blood samples from the line so that the child doesn't have to have another painful needle stick. Every one of these 'creature comforts' to minimize the pain is extremely important to these [pediatric] patients," said Dr. Miller, who is cochair of the Catheter-Associated Blood Stream Infections Project, run by the National Association of Children's Hospitals and Related Institutions (NACHRI).

In addition, because lines are difficult to insert in children, they are often left in longer. "Although the child may look good today, tomorrow they might not look so good. Since it is very hard to put these types of lines in children, especially younger ones, we carefully consider when to remove the line."

Another variable is the location of line placement. With young children, "we might be hesitant to put a line in the neck region where they can grab it," said Dr. Miller, who is also vice chair of Quality and Safety at Johns Hopkins Children's Center in Baltimore.

The frequency of access to pediatric lines and the duration of placement mean that best practices for line insertion aren't enough, she said. Pediatric critical care teams seeking to lower their catheter-associated blood stream infection (CA-BSI) rate must focus on line maintenance.

Children's National Medical Center succeeded in achieving reduced rates after becoming 1 of 27 hospitals around the country that enrolled in phase I of the NACHRI collaborative when it was initiated in October 2006. Since then, the collaborative has expanded to include more than 60 pediatric intensive care units.

Overall, according to the NACHRI Web site, the 27 phase I participants have tallied a 43% decrease in CA-BSIs in the first 12 months of the program, $9 million in cost savings related to an estimated 275 prevented infections, and the likely prevention of dozens of deaths.

The NACHRI program provides hospitals with "bundles," or prompts for intensive care unit staff to ask themselves each time a line is accessed. For example, one of the prompts asks whether any medications can be converted from venous to oral administration, Dr. Miller said. Another bundle offers evaluation tools and encourages critical care teams to frequently assess whether the line can be removed.

Nurses and other staff are also instructed about the cleaning and changing of the catheter line's cap (different protocols apply according to whether the line has most recently been used for feeding, medication, or blood drawing), the changing of the dressing at the insertion site, and the methods of clearly communicating the status of each aspect of central line care for each patient to the nurses in the next shift.

"It's a lot of work, but this is the only statistically significant predictor we have: If you do maintenance care better, you're significantly more likely to have a lower CA-BSI rate in pediatric patients," Dr. Miller said.

Dr. Dalton added that the hospital's adoption of a minocycline/rifampin-impregnated line designed for children, the Cook Spectrum (Cook Medical), has also played a major role in their success at reducing BSIs. In addition, contributing factors have been the switch to chlorhexidine scrub and the use of Biopatch (Johnson & Johnson Inc.) at the site of insertion, both of which are recommended by the NACHRI collaborative.

Just participating in the collaborative drives infection reductions, she added.

"All the hospitals in that collaborative make their data transparent [to each other]," she said. "So you're not just 'unit 22.' Everyone knows [unit 22] is Children's National Medical Center data. The peer pressure of the network has really made a sustained improvement in our infection rate."

Dr. Dalton declared that she has no conflicts to disclose in relation to her use of the Cook Spectrum catheter, Biopatch, or chlorhexidine. ■

For more information about the NACHRI collaborative, visit www.childrenshospitals.net.

Pulmonary Perspectives

The IMPACT DC Asthma Clinic: Breaking the Cycle of ED Recidivism Among Urban Pediatric Patients With Asthma

While EDs are effective at managing exacerbations, the care rarely extends beyond the acute episode.

With a grant from the Robert Wood Johnson Foundation received in 2001 (Rachelefsky et al. *Pediatrics* 2006; 117:S57), we developed and evaluated an ED-based intervention (the IMPACT DC Asthma Clinic [*Improving Pediatric Asthma Care in the District of Columbia*]) that successfully reduced dependence on EDs for episodic care of asthma, while also decreasing morbidity and improving asthma-related quality of life among a cohort of low income, urban, and largely minority children with moderate to severe asthma and a history of ED recidivism (Teach et al. *Arch Pediatr Adolesc Med* 2006; 160:535). We have since sustained and grown this multifaceted approach to addressing the disparities in asthma care and outcomes among children in our community.

WE SOUGHT TO RECONCEPTUALIZE THE ROLE OF OUR EMERGENCY DEPARTMENT IN LONGITUDINAL ASTHMA CARE.

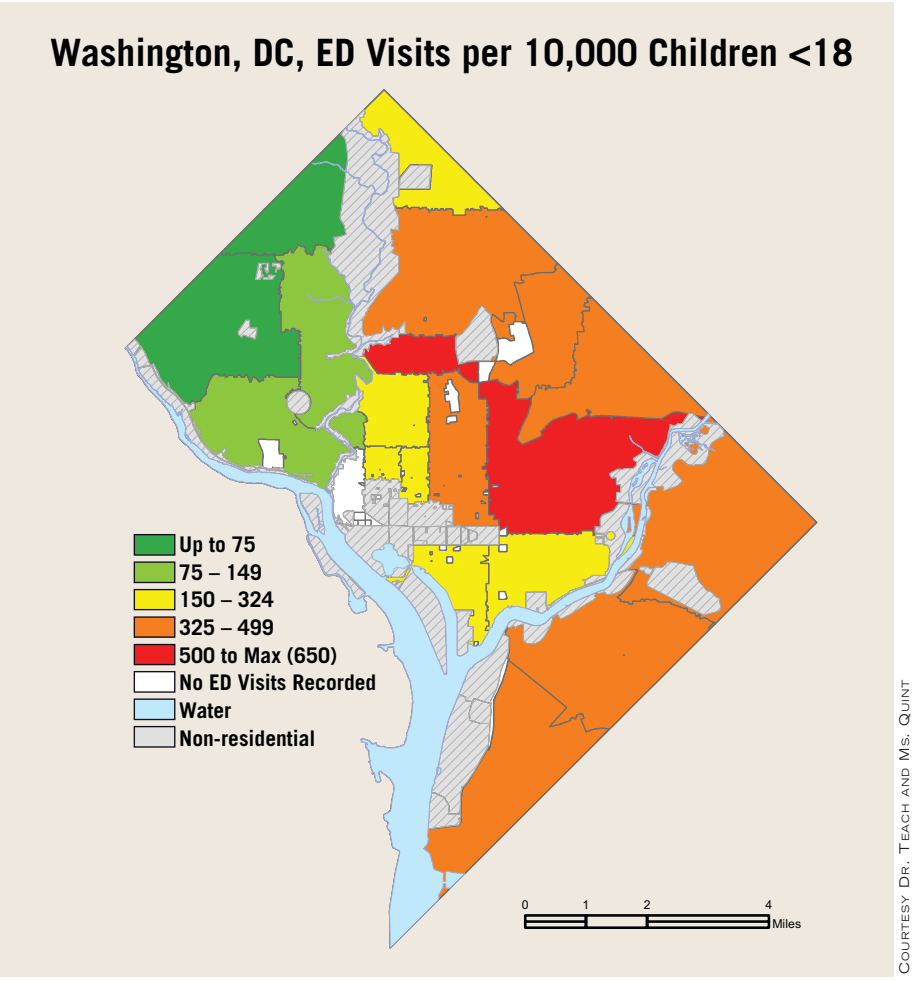
Pediatric asthma is a disease marked by dramatic disparities in care and outcomes, with poor and minority children bearing a disproportionate share of the overall morbidity (Grant et al. *Am J Public Health* 2000; 90:1923). Urban centers with large populations of disadvantaged minority residents are particularly severely affected. Our own community, Washington, DC (DC), is an excellent example. Data from the Centers for Disease Control and Prevention document an overall pediatric asthma prevalence rate in DC that is 20% greater than the national rate (Akinbami LJ. National Center for Health Statistics. 2006), and our own data demonstrate ED visit rates in DC that are up to five times the national rate (www.impact-dc.org).

Our hospital, Children's National Medical Center (CNMC), is uniquely positioned to address the epidemic of asthma in DC. The vast majority of the ED visits made by children in DC are at CNMC, an urban, tertiary care pediatric medical center with an annual ED volume exceeding 75,000. In 2007, for example, 85% (5,334 of 6,291) of ED visits for asthma citywide by children age 12 months through 17 years of age was to CNMC. These visits reflect great geographic disparities, with much higher rates of visits made by children in the district's most socioeconomically disadvantaged neighborhoods. In 2006, for example, there was a tenfold difference between rates in the most socioeconomically disparate zip codes in the eastern and western parts of DC (see box).

Unfortunately, many inner-city families with children with asthma still depend heavily on EDs for episodic care of acute exacerbations, and many of these children have high ED recidivism (Friday et al. *Ann Allergy Asthma Immunol* 1997; 78:221). In fact, for many families, the ED is the primary source of asthma care (Dinkevich et al. *J Asthma* 1998; 35:63). In addition, reported rates of follow-up with primary care providers following an ED visit for asthma are very low, reaching 64% only with intensive case management before and after ED discharge (Zorc et al. *Pediatrics* 2003; 111:495).

While EDs are effective at managing exacerbations of asthma, the care provided in the ED rarely extends beyond the acute episode. In a recent survey (Scarfone et al. *Pediatrics* 2006; 117:821) of 391 ED physician-members of the American Academy of Pediatrics Section on Emergency Medicine, fewer than 20% provided asthma controller medications to patients who clearly met criteria for them by the NIH *Guidelines for the Diagnosis and Management of Asthma*. Instead, it was the general expectation that patients will follow up with their primary care providers (PCPs) following discharge, and that these follow-up visits will provide opportunities for improved care and education, as recommended by the NIH guidelines.

Given the dependence of urban families on EDs for episodic care and their lack of follow-up with PCPs, we sought to reconceptualize the role of our ED in longitudinal asthma care. Instead of being a mere barometer of the problem, we sought to be a proactive part of the solution. Our intervention, the IMPACT DC Asthma Clinic, therefore, took the highly novel approach of providing asthma care and education during a follow-up visit within the familiar context of the ED itself. We sought to leverage the strong identification that families feel with our ED to reorient them to a model of longitudinal asthma management consistent with the NIH guidelines. We deliberately did not seek to subsume ongoing care of children with asthma; instead, the intervention is explicitly designed to transition to ongoing care within their primary medical care homes.



Courtesy Dr. Teach and Ms. Quint

Because the majority of children are seen at the IMPACT DC Asthma Clinic within 2 weeks of their ED visit, we take advantage of this 'teachable moment' to involve and empower the children and families in the child's asthma care. During a typical 90-min visit to the IMPACT DC Asthma Clinic, each family meets with an asthma educator and a clinician. While highly individualized and based on a shared dialogue with the family and the patient, the clinic's curriculum is scripted and highly reproducible, focusing on the key elements of the NIH guidelines: environmental modification and trigger control, self-monitoring and medical management, and care coordination. The intervention puts a strong emphasis on robust and individualized education. Recent evidence supports this approach. In fact, a recent metaanalysis of outpatient interventions found that asthma education reduces the mean number of hospitalizations and ED visits (Coffman et al. *Pediatrics* 2008; 121:575).

The intervention was fully evaluated and validated in a randomized clinical trial (Teach et al. *Arch Pediatr Adolesc Med* 2006; 160:535). Our primary hypothesis was that the intervention would decrease subsequent unscheduled visits (to both EDs and other sources of urgent care) for acute asthma care over a 6-month follow-up period. We further hypothesized that the intervention would decrease hospitalizations for asthma; improve adherence with an individualized asthma action plan, controller medications, and trigger control behaviors; increase scheduled visits for routine asthma care; and decrease asthma symptoms while improving asthma-related quality of life.

We prospectively recruited 488 patients aged 12 months to 17 years into the trial from our ED. Each was presenting for acute care of asthma, had prior physician-diagnosed asthma, had used the ED for asthma care in the previous year, and had no ongoing care by an asthma specialist. Outcomes were assessed at 1, 3, and 6 months, and analysis was completed by intention-to-treat. Of those participants randomized to the intervention group, 70.5% attended their visit with the IMPACT DC Asthma Clinic

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Dr. Gene L. Colice, FCCP
Editor, *Pulmonary Perspectives*

BY DR. JAMES A. L. MATHERS, JR., FCCP

PRESIDENT'S REPORT

Maintenance of Certification and Physician Grading

In my practice lifetime, the environment in which we care for our patients has changed substantially. The practice of chest medicine is very different now compared with the day I completed my fellowship.

We have been confronted by and benefited from an explosion of technology, resulting in sophisticated diagnostic options and protocols, as well as multiple therapies from which to choose. Members of the ACCP have been responsible for substantial improvements in patient care through their scholarly pursuits. Indeed, traditional change in medical practice has been due to advances in medical knowledge and in disease management.

In recent years, change in our practice environment has included the addition of procedural and regulatory matters. This increasing array of rules and regulations has altered the practice of medicine. Medical decision making has fallen under the scrutiny of insurance companies, managed care organizations, pharmacy benefit managers, hospital management, independent review organizations, and federal agencies. Health-care policy makers have recently expressed their conviction that measurement and public reporting of physician performance is essential to accelerate improvement in health system quality. Employers, insurers, and the general public are showing interest in a readily accessible physician grading platform. A variety of organizations are entering the competition to provide online consumer information about hospitals and physicians. The Consumers Union, an organization usually associated with rating of consumer goods, has launched an online hospital grading service and is considering adding public rating of physician groups.

External evaluation of our competence has not been foreign to us. My colleagues and I are board-certified by the American Board of Medical Specialties (ABMS), licensed by the state, and granted hospital privileges by credentialing committees. Our individual practice has been monitored by quality improvement organizations contracted by the Medicare administration. For those of us in private practice, there is informal but important daily evaluation by our patients and referring physicians. An unhappy patient does not return, and a disappointed referring physician looks elsewhere for help. This dramatic increase in public interest in physician and hospital competence was precipitated by the 1999 Institute of Medicine (IOM) report, *To Err is Human: Building a Safer Health Care System*, and subsequent publication of analyses of the variability of practice outcomes and costs. As a result of a series of IOM reports, policy makers have pushed the Medicare administration toward establishing a process for physician grading. The Centers for Medicare and Medicaid Services (CMS) initiated a voluntary program of self-reporting in the Physician Voluntary Reporting Program, followed by the addition of a financial carrot in The Physician Quality Reporting Initiative. CMS is now working on adding a publicly available physician report card similar to its "Hospital Compare" Web site. Some for-profit insurance companies have started their own program of physician grading and feedback, primarily based on economic factors. Backed by the Robert Wood Johnson Foundation, and with support from major corporations, The Consumer-Purchaser Disclosure Project is promoting the "Patient Charter for Physician Performance Measurement, Reporting and Tiering Programs," which creates a national set of principles to guide measuring and reporting to consumers about doctors' performance. It is their intent that physician performance be periodically assessed, and patients should have readily available results upon which they can rely.

For more information on this initiative, visit http://healthcaredisclosure.org/docs/files/PatientCharter.pdf

Information on the Guidelines for Measurement of Provider Performance can be found at: http://healthcaredisclosure.org/docs/files/Measurement-Guidelines09-2006.pdf.

In step with these movements, our certifying organization, the ABMS, is altering its physician evaluation and certification process. The ABMS is transitioning from a recertification process based on knowledge testing to a maintenance of certification process that emphasizes self-assessment of practice habits, evaluation of competency, and documentation of efforts directed toward continuous improvement

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ACCP Past President Honored

In November 2008, the American Lung Association of New York (ALANY) hosted the Life & Breath Awards Gala to honor outstanding contributors to lung health with the organization's highest tribute, ***The Life & Breath Award***. Dr. Mark J. Rosen, FCCP, was a recipient of the award, *in recognition of his outstanding contributions to the respiratory health of communities throughout New York and the rest of the nation as a devoted physician, educator, and researcher.*

DR. MARK J. ROSEN, FCCP

Dr. Rosen is Chief, Divisions of Pulmonary, Critical Care, and Sleep Medicine, North Shore University Hospital - Long Island Jewish Medical Center. He is a Professor of Medicine at Albert Einstein College of Medicine and Adjunct Professor of Medicine at New York University School of Medicine. Nationally recognized for his research in the field of pulmonary illness, Dr. Rosen has investigated such critical issues as respiratory failure and care for immune-compromised patients. He is a Past President of the ACCP.

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within 15 days of their ED discharge.

The participants were predominantly African-American (86%) and economically disadvantaged. Reliance on the ED was high, with more than half having >3 other ED visits for asthma in the prior 12 months. Despite the high morbidity of this cohort, just under 25% of participants reported use of inhaled corticosteroids (ICS), and just under 21% reported use of a written asthma action plan.

A single visit to the IMPACT DC Asthma Clinic was associated with improved outcomes in multiple domains. One month after the visit, for example, patients in the intervention group were significantly more likely to have used a written asthma action plan, to report daily use of controller medications, and to use a spacer with their metered-dose inhalers. Over the 6-month follow-up period, patients in the intervention group had significantly fewer ED visits than patients in the control group (0.64 vs 1.19 visits respectively, adjusted RR=0.54 [0.40, 0.72]). Patients in the intervention group also had significantly fewer total unscheduled visits to any source (ED or elsewhere) [1.39 vs 2.34, adjusted RR=0.60 (0.46-0.77)]. Perhaps most importantly, the intervention group showed significant improvements in several measures of quality of life that largely persisted over the 6-month follow-up period.

The Clinic's operations are now funded by a mixed portfolio that includes fee-for-service and philanthropy. Medical coverage is provided by pediatric emergency medicine physicians, general pediatricians, pediatric hospitalist physicians, a pediatric allergist, and a pediatric nurse practitioner.

Comment

The IMPACT DC Asthma Clinic has become a unique source of care for patients with asthma in DC by targeting children who are heavily dependent on EDs for episodic care. This provision of a comprehensive source of asthma education, medical care, and care coordination is designed to transition them to more effective longitudinal asthma care in their primary care medical homes. The model grew out of the idea that the ED can and should take a proactive role in reducing asthma morbidity in our community.

While ED visits are a downstream marker of the asthma epidemic, we reconceptualized the role of our ED as an important point of intervention, especially given its place as a trusted source of asthma care for many disadvantaged, urban, and minority children.

While the IMPACT DC Asthma Clinic has been implemented and expanded to become a key element of the asthma care plan at CNMC, we have not reproduced its success in other communities or in other environments. We believe that an important aspect of our success is that our large urban ED sees sufficient numbers of asthma visits to provide a steady flow of referrals and that the families seen in our ED are very bonded to it and return to our clinic in large numbers. In addition, our leadership in the ED is supportive of our novel approach, even though our primary goal is to reduce subsequent visits to the department. Another key factor is our own commitment to sustaining, expanding, and improving this program.

While there remains a debate on the appropriateness of the expanded role of the ED in asthma management (Singer et al. *Ann Emerg Med* 2005; 45:295), we believe that our program is a successful example of how an ED can improve asthma care and outcomes within a disadvantaged urban pediatric population. ■

Dr. Stephen J. Teach, MPH
Associate Chief
Division of Emergency Medicine
and
Deborah M. Quint, MPH
Clinical Research Administrator
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Children's National Medical Center
Washington, DC

NETWORKS

Cultural Diversity, Disaster Response, Home Care

Cultural Diversity in Medicine

This NetWork draws upon the diversity and expertise of the ACCP membership in the education and care of patients with similar characteristics, habits, and traditions who may be underserved by mainstream medicine. As part of its mission, the NetWork focuses on issues specific to lung health and palliative care and end-of-life issues in these populations. The members of this NetWork have a special passion in matters related to diversity, clinical cultural competency, and education, and addressing health-care disparities.

The NetWork's completed projects include a speaker's kit, *Lung Health in Minorities*, the "Chest Coach" mentoring program, and a postgraduate course on cultural competence featured during CHEST 2006. The NetWork has always included palliative and end-of-life issues on its agenda as it develops educational sessions for the annual CHEST meetings and represents the ACCP in collaborative efforts with other organizations. Ongoing activities include representation by Drs. Sheik Hassan, FCCP, and Allen Goldberg, Master FCCP, as ACCP representatives on the AMA's Commission to End Healthcare Disparities.

Looking forward, the NetWork is strengthening its commitment to improve the education about and treatment of lung health among the economically and socially disadvantaged and those with disproportionately poorer health outcomes. The NetWork is looking to produce a resource of cultural competence initiatives in collaboration with several organizations. The proposed compendium would identify resources, activities, and key individuals focusing on cultural competence. Development and dissemination of the resource to both caregivers and patients would continue the course set by ACCP Immediate Past President, Dr. Alvin Thomas, Jr., FCCP, which he described during CHEST 2007. More information about our NetWork is available at www.chestnet.org/networks/cultural_diversity/index.php.

Dr. Walfredo Leon, FCCP
Cultural Diversity in Medicine NetWork
Vice-Chair

Disaster Response

The US Department of Defense (DOD) released a directive stating effective nation reconstruction must include health care. Because of the current strain on the US military, several recent humanitarian missions have included non-DOD providers with nongovernmental organizations serving as a major source of medical personnel.

"Project Hope" has partnered on such missions around the world. With Project Hope, I [Dr. Reed] joined the sophisticated hospital ship, USNS COMFORT, in 2007, on its mission to South America and visited three countries: Trinidad/Tobago, Guyana, and Surinam.

In Trinidad, a community center served as our clinic. Patients and, in some cases, doctors came to garner opinions. Over 3 days, we performed highly complex adult and pediatric surgeries. Local surgeons observed and prepared for postoperative care. It was an efficient use of resources.

In Guyana and Surinam, the health care seemed political. US relations appeared strained. Our team was informed that there would be no local follow-up care. This severely limited the scope of surgery offered. Patients were transferred directly to home care postoperatively. Many patients who could benefit from our expertise were not helped.

Winning "hearts and minds" through health is not yet an American strength. Cuban physicians have done health outreach for decades on three continents. China provides money to build and equip clinics throughout the world.

Despite frustrations, the experience was rewarding. Many believe the US will continue to use health diplomacy to improve its world image. Clearly, civilians will be needed. However, there are concerns. Combining humanitarian care with a military presence blurs the line between altruism and national interest. Which agenda is more important? Who is in charge? How can civilians and military improve collaboration? Hopefully, it will evolve as the world is shrinking and a "hand held is a heart won."

CAPT Dennis Amundson, MC, USN, FCCP
Disaster Response NetWork
Vice-Chair

Dr. Mary Jane Reed, FCCP
Member, Disaster Response NetWork

Home Care

Since 2000, there has been an average annual increase in the incidence of natural disasters of 8.4% per year (Scheuren J-M, et al. Annual Disaster Statistical Review: The Numbers and Trends 2007. US Agency for International Development's Office of Foreign Disaster Assistance [OFDA]: Belgium). Much emergency preparedness has focused on management of disaster-related acute illness. Members of the ACCP's Disaster Response NetWork served on the task force that recently published guidance for mass critical care delivery (Devereaux et al. *Chest*

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in physician practice performance. A similar approach has been advocated by the Federation of State Medical Boards, and renewal of state licenses may require documentation that a physician has participated in quality improvement activities, as well as those that certify competence.

Where does the ACCP fit into this? The College is well known for its high quality, clinically relevant continuing education courses. In addition to our regularly scheduled courses, one of our finest educational offerings is ACCP-SEEK, the Self-Education and Evaluation of Knowledge workbook, published annually.

Changes are being made in these educational offerings recognizing the need to demonstrate to The Accreditation Council for Continuing Medical Education, our certifying organization, that participants' knowledge, competence, and performance are improved based on participation in ACCP educational programs.

In response to the modification of the maintenance of certification process and the move toward external grading of our clinical practice by outside agencies, the College has embarked on several additional projects.

To address the issue of clinical competence, the College has added a state-of-the-art simulation center to the headquarters in Northbrook, IL. The ACCP Simulation Center for Advanced Clinical Education is designed to enhance your learning in a hands-on clinical environment. The recently expanded center features a variety of simulation exercises, so participants can apply their knowledge and actively practice clinical skills in realistic scenarios. The center features technologically sophisticated equipment and an experienced faculty to assist participants with advancing their cognitive, technical, and behavioral skills needed for optimal patient care across a variety of situations. The College has been building real-life clinical scenarios into the system to train and evaluate physicians and health-care teams in these and other topic areas:

- Airway and Ventilator Management in the Critical Care Setting
- Polysomnography
- Pulmonary Function Testing
- Invasive and Noninvasive Hemodynamic Monitoring
- Shock Management in the Critical Care Unit
- Ultrasonography in the ICU

It appears that physician participation in this activity will satisfy the ABMS maintenance of certification requirements for documentation of clinical competence in our specialty.

As part of their continuous quality improvement evaluation, both CMS and the ABMS will be looking for evidence that physicians are participating in patient registries to document efforts in self-evaluation and improvement in practice outcomes. Both have indicated that they will accept a physician's participation in a professional society's database as evidence of quality improvement activity. Several medical specialty societies have developed patient registries and quality improvement databases to assist their members with fulfilling their self-evaluation of practice performance requirements for the American Board of Internal Medicine (ABIM) maintenance of certification. Current medical societies with direct links to ABIM's maintenance of certification program include the American College of Cardiology.

Anticipating this government and public demand for documentation of quality, members of the ACCP Quality Improvement Committee (QIC) developed a proposal for an ACCP database and presented this to the Board of Regents meeting in July 2007. Following board approval, the committee entered into discussion with CECity, a provider of online continuing medical education, quality improvement, and outcomes platforms and services, with technology designed specifically for health care. CECity's processes and applications are fully compliant and meet HIPPA and CME guidelines. The initial project is focused on recording of procedural data, specifically fiberoptic bronchoscopy. The first stage has been implemented and, as the kinks are worked out, additional pulmonary-related categories will be added.

Participation in the CECity platform should provide several benefits.

It is designed to simplify management and reporting of maintenance of certification data, state licensure information, and continuing medical education requirements. There will be access to reliable and secure information about individual practice strengths and areas that might need improvement. The College will provide opportunities to build skills and competencies with educational offerings that target areas where improvement is needed. For those of us in private practice, this program will provide readily available clinical data as a statistical aid in contract negotiations.

In addition to maintaining cutting-edge postgraduate education programs, it is the goal of the College leadership and committees to anticipate issues affecting care delivery to the patient. While working to ease the regulatory burdens on the clinician, the staff stands ready to act as a resource for physicians facing these problems. Feel free to call with questions at any time. ■

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2008; 133(suppl):1S). Less attention has been paid to the needs of people living in the community who are reliant on electricity to operate their crucial medical equipment. People requiring home positive pressure ventilation and/or oxygen (up to 1.8 million Americans) are particularly at-risk during sustained power outages (Prezant et al. *Crit Care Med* 2005; 33(suppl):S96; Chatburn et al. *Respir Care* 2006; 51:252). While disaster planning is required for accredited home medical equipment (HME) agencies, this planning need not include a steady supply of oxygen during prolonged power outages. Hospital wards will be too full to be "medical sheltering" sites for oxygen-dependent patients. A single patient on 2L/min continuously will require approximately 5 E cylinders per day. To provide this level of support, pre-event planning is needed to provide back-up generators, oxygen conserving devices, and emergency management collaboration with HME organizations. In addition, respiratory clinicians should discuss disaster preparedness with their individual patients (see box below). ACCP Home Care and Disaster Response NetWorks are in collaboration with other professional societies and federal agencies and have embarked on a comprehensive approach to enhance disaster resiliency for patients with respiratory disease.

Dr. Lisa Wolfe, FCCP
Home Care NetWork
Steering Committee Member

Dr. Lewis Rubinson, FCCP
Member, Disaster Response NetWork

Interstitial and Diffuse Lung Disease

Health-Related Quality of Life in Patients With IPF: More Work To Be Done

Compared with general population norms, patients with idiopathic pulmonary fibrosis (IPF) have impaired health-related quality of life (HRQL) in nearly every domain assessed (Swigris et al. *Chest* 2005; 127:284) and dyspnea is one strong driver of that impairment (Nishiyama et al. *Respir Med* 2005; 99:408).

Investigators have used several instruments to measure HRQL in patients with IPF; HRQL scores tend to correlate significantly (and in the appropriate directions) with various concurrently collected clinical measures of IPF severity (*eg*, FVC, DLCO). Despite a number of these cross-sectional, concurrent validity studies, a lingering question is what instrument(s) is "best" to assess HRQL in patients with IPF? If the goal is to capture within-subject change in HRQL over time, or to compare change between groups (*eg*, in the context of a treatment trial), it is entirely unclear—data needed to answer the question are sparse.

Also lacking for IPF is a basic understanding of how to interpret changes in HRQL scores—a factor paramount to using HRQL as an outcome measure. Tomioka and colleagues (*Intern Med* 2007; 46:1533) have shed some light on this issue. In a study of 32 subjects with IPF, they found that certain SF-36 domains could discriminate subjects whose disease status changed over time. For example, among subjects whose vital capacity declined 10% (raw or percent predicted not stated) after a median 14 months from baseline, the SF-36 vitality domain score (which assesses energy/pep) declined 16 points, indicating worsened HRQL; among subjects whose vital capacity remained stable or improved 10% from baseline, the score was unchanged, increasing by about 2 points. For patients with IPF, whether this 18-point difference is meaningful clinically is unknown. Establishing the minimum differences in HRQL scores that are clinically meaningful is important work that remains to be done. Only after such data are known can IPF trials be adequately powered for HRQL, and only then will we know, with reasonable certainty, whether interventions lead to meaningful change in this important outcome.

Dr. Jeffrey J. Swigris
Interstitial Lung Disease Program in the Autoimmune Lung Center
National Jewish Health; Denver, CO

Sleep Medicine

Advances in the science of sleep medicine will continue to radically transform the role of sleep and the various sleep disorders in the daily clinical practice and research activities of pulmonologists, cardiologists, and intensivists. Increasingly, chest clinicians and allied health professionals are being asked to manage patients with complaints of either sleeplessness or sleepiness, and the wide range of sleep disturbances between them, including sleep apnea, circadian rhythm sleep disorders, and parasomnias. Finally, many respiratory and cardiovascular disorders, such as asthma, COPD, restrictive lung diseases, and heart failure, can disturb sleep and alter sleep architecture. Sleep can be impaired by the medical conditions themselves or by the medications used to treat them.

The Sleep Medicine NetWork has several proposed projects that are designed to assist the College and its members with issues related to the field. With an emphasis on education and advocacy, and in collaboration with the other ACCP NetWorks and the ACCP-Sleep Institute, the Sleep Medicine NetWork's proposed projects for 2009 include the management of sleep in the dying patient, and Webcasts on important topics, such as home sleep apnea testing, sleep medicine board examinations, and quality performance measures. Current projects include the systematic review of sleep disorders among health-care workers and a comprehensive lecture slide set series.

If you are a clinician, researcher, or health professional with an interest in sleep medicine, kindly consider joining the Sleep Medicine NetWork by e-mailing Jennifer Nemkovich at jnemkovich@chestnet.org.

Dr. Teofilo Lee-Chiong, FCCP
Sleep Medicine NetWork
Chair

Disaster Planning Steps

1. Identify a "safe retreat" and provide phone numbers and locations to the DME.
2. If personal assistance is required, identify and train alternative care providers at the "safe retreat."
3. Contact local public health or emergency management and find out if they have a medical needs disaster registry. If so, provide appropriate information to the registry.
4. Consider the use of portable oxygen concentrators that may allow for easier evacuation.
5. Develop a "Go Pack" with needed equipment, such as cannulas, suction catheters, nebulizers, extra PAP therapy masks, etc. Plan to take all of your nondisposable equipment, if possible.
6. Back-up power sources are essential; generators, car battery adapters, or marine batteries may all be helpful. These devices should be seen as a bridge to allow for easier evacuation.
7. Discuss with your respiratory provider oxygen conservation strategies—are any strategies safe for you and what are they?
8. Periodically, practice your disaster plan to ensure that you are best prepared for a real emergency.

CRITICAL CARE COMMENTARY

IOM Recommendations on Resident Duty Hours: Enhancing Sleep, Supervision, and Safety

On December 2, 2008, the Institute of Medicine's (IOM) Committee on Optimizing Graduate Medical Trainee (Resident) Hours and Work Schedules to Improve Patient Safety released a compendium of recommendations regarding resident duty hours, patient safety, and supervision (http://books.nap.edu/openbook.php?record_id=12508&page=R1 [accessed December 31, 2008]).

This report comes about 5 years after the current Accreditation Council for Graduate Medical Education (ACGME) regulations went into effect and provides a comprehensive review of the available literature. It also identifies where evidence is lacking. The committee's report, funded by the National Academy of Sciences and the Agency for Healthcare Research and Quality (AHRQ), suggests further refinement of the 2003 ACGME duty hour standards and calls for further measures to reduce resident fatigue, improve patient handovers, and ensure "adequate" resident supervision and more research to quantify the effects on clinical outcomes and resident education and quality of life.

The implementation of the 2003 ACGME regulations grew from public concern after a death felt to be related to resident fatigue occurred in a New York City hospital in 1984. Subsequently, the Bell Commission was established and delivered a report to the State of New York in 1987 (Final Report of the New York State Ad Hoc Advisory Committee on Emergency Services. Albany, NY: New York State Health Department; 1987). Thus, in 1989, New York state law mandated that residents could not work more than 80 h/wk. Dr. Bell writes that the 80-h limit, upon which so much political and media spotlight has been lavished, was arrived at through a back-of-the-envelope calculation by a colleague on his front porch and was only one of the report's 17 recommendations: the primary focus was on supervision, not hours (Bell. *JAMA* 2007; 298:2865).

The 2003 ACGME regulations fundamentally changed the structure of residency training programs across the country and placed great programmatic burdens on resident scheduling, time-accounting, and documentation. Because these mandates were unfunded, individual programs incurred annually recurring costs generally greater than $1,000,000 (http://books.nap.edu/openbook.php?record_id=12508&page=R1 [accessed December 31, 2008]), an amount not including many hidden costs (Daschbach. Presentation to the Committee on Optimizing Graduate Medical Trainee (Resident) Hours and Work Schedules to Improve Patient Safety. March 4, 2008, Irvine, CA). Of greater concern, the regulations failed to achieve their goals of enhancing patient safety and protecting residents. Rates of nonintercepted serious errors and preventable adverse events were not lowered (Landrigan et al. *N Engl J Med* 2004; 351:1838); needlesticks were not prevented (Landrigan et al. *Pediatrics* 2008; 122:250); and residents were no safer behind the wheel of an automobile (Landrigan et al. *Pediatrics* 2008; 122:250).

Not only did the ACGME duty hour regulations fail to improve patient safety, they spawned many unintended consequences. Indeed, the IOM Report uses the term "unintended consequences" five times in its Abstract and Summary (http://books.nap.edu/openbook.php?record_id=12508&page=R1 [accessed December 31, 2008]). For example, handovers, when one doctor transfers patient care to another doctor, increased significantly. It is likely that handovers create a vulnerable period for patients and also fragment the doctor-patient relationship, both socially and educationally. Additionally, the 2003 rules significantly reduced the admitting resident team's contact with the patient from 70% to only 47% of a typical hospital stay (Horwitz et al. *Arch Intern Med* 2006; 166:1173). Thus, the work hours may have reduced the quantity and quality of doctor-patient experiences without a concomitant increase in residency training time.

The reaction to the 2003 duty hour regulations was largely negative, sometimes vehemently so. Key clinical faculty judged the changes to have adversely affected patient care, education, and professionalism (Reed et al. *Arch Intern Med* 2007; 167:1487). Some of this surely represents resistance to change, lack of knowledge of the profound effects of sleep deprivation, and financial motivations. Yet, we hesitate to dismiss this "from the trenches" view. Many of those who complain of the 2003 regulations do not try to refute the goal of assuring adequate rest; rather, they are critical of good intentions gone bad.

This time around, and apparently after vigorous debate, the IOM makes 10 new recommendations, including workload adjustment, enhanced supervision, improved handovers, additional resources for implementation (funding), and moonlighting modifications (see box). However, its recommendations on duty hour adjustments are the most well developed and include clear guidelines, whereas the remaining (probably more important) recommendations are much more conceptual and lack specific detail. No further reductions to duty hours were recommended (80-h work week averaged over 4 weeks), with the acknowledgement that "regulating resident duty hours and increasing adherence to them would be insufficient to improve conditions for resident and patient safety" (http://books.nap.edu/openbook.php?record_id=12508&page=R1 [accessed December 31, 2008]).

New measures to reduce fatigue were suggested. Notably, extended call shifts, defined as >16 h, must have 5 uninterrupted protected hours of sleep time between 10:00 PM and 8:00 AM in a "safe and sleep-conducive environment." Residents should not admit patients after 16 h on any extended call shift and, after three or four consecutive shifts, a 48-h period off must be ensured.

The ACGME mandatory time off allowances of 4 days per month and 1 day (24 h) per week (averaged) over 4 weeks has been changed to 5 days per 4 weeks, 1 day (24 h) per week (no averaging), and one 48-h period off. Clearly, then, adjustments to work hours have been recommended, but they have been ingeniously packaged and could result in scheduling mayhem and further decreases in patient contact.

We are heartened by the IOM report's renewed focus on resident supervision. The tension between education and service provision has been ongoing since medical training began. Ideally, supervision would be such that resident errors, whether secondary to fatigue or not, not reach the patient. Because of economic realities, physician teachers are not nearly numerous enough to achieve this. The IOM committee recommended that "the ACGME should ensure that residency programs provide adequate, direct, onsite supervision for residents" and that "Residency Review Committees, in conjunction with teaching institutions and program directors, establish measurable standards of supervision for each level of physician in training, as appropriate to their specialty." This is far easier said than done.

The IOM also recommended developing system-wide face-to-face preferably electronic handover tools that standardize communication and encourage "check list" type information exchange. Also, residency programs are encouraged to schedule adequate time during shift overlap in order to foster effective communications.

From our perspective, most of the recommendations seem sensible. Yet, what will be the consequences of another round of changes in graduate medical education (intended and unintended)?

In a medical world that is supposed to be "evidence based," there is a complete lack of data regarding the impact of ensuring 5 h of protected sleep during a 30-h shift. What will be the relative effects on error reduction (if any) and botched handovers (if any)? Can handovers be improved through research and education? Will patients be better off—or worse?

The IOM committee believes that the ACGME "should begin their work with urgency and that action on all recommendations should be taken within 24 months." With a price tag very conservatively estimated at $1.7 billion, we should pause long enough to ask if it is prudent to speed this change when, even in the assessment of the Committee, "there are simply too few data to reliably estimate the extent to which errors in performance by fatigued residents affect patients and cause them harm" (http://books.nap.edu/openbook.php?record_id=12508&page=R1 [accessed December 31, 2008]).

To its credit, the IOM's committee encourages research to answer these questions, education to reduce the risks inherent in its recommendations, and funding to support the changes. The committee also proposed that other agencies, such as but not limited to the Centers for Medicare and Medicaid Services and The Joint Commission, add duty hour reviews to their site visits.

But if history (2003) is any lesson, a focus on duty and sleep hours will take center stage, while research and funding will languish. Legislation was introduced in Congress to ensure funding for changes contemplated

Continued on following page

Highlights of IOM Recommendations

- 80-h work week (averaged over 4 weeks)
- Maximum 30-h shift (admitting patients for up to 16 h only, plus 5 h protected sleep period between 10:00 PM and 8:00 AM
- On-call periods that are no more than every third night (no averaging)
- Guaranteed days off to permit adequate recovery after working long shifts or sequential night shifts
- Increased supervision of work hours
- Improved communication during handovers
- Stronger restrictions on moonlighting
- Increased involvement of residents in patient safety activities and adverse event reporting

CHEST Launches New Online Platform, New Look for 2009

CHEST started 2009 off with a bang, as it migrated to a new Web 2.0 platform in January. The more robust and enhanced platform contains many new features and an improved layout and design.

The innovations are highlighted by the inauguration of a highly anticipated new section: Interactive Physiology Grand Rounds, edited by Michael J. Parker and Richard M. Schwartzstein. This series will feature interactive animated diagrams that are an important part of each article and will help to improve the understanding of the underlying physiology related to each case.

An editorial introducing the new section, and the section's first submission, can be found in the January 2009 issue of *CHEST*.

The animations are viewable online at www.chestjournal.org.

Dr. Richard S. Irwin, FCCP, comments: "The launch of the new Web platform and Interactive Physiology Grand Rounds with animated diagrams are features that were conceived to transform *CHEST* into becoming a Journal of the Future. As defined during a 2007 strategic planning meeting of the Associate Editors and described in one of our recent editorials (Irwin RS, Welch SJ. Becoming the journal of the future. *CHEST* 2008; 133: 1-3), a successful journal of the future will need to publish content that will be meaningful and essential to a more diverse group of readers and subject matter that is easier and faster to read and access. It will also need to find ways to enhance teaching.

"We believe that the launch of these new features meets the spirit of this definition." ■

PCCU Lessons for February

www.chestnet.org/education/online/pccu/index.php

PCCU LESSONS FOR JANUARY

▶ **Management of Pulmonary Complications in the Patient With Cystic Fibrosis.** *By Dr. Patrick A. Flume, FCCP*

▶ **Fibrosing Mediastinitis: Causes, Diagnosis, and Treatment.** *By Dr. Meredith W. Pugh; and Dr. James E. Loyd*

PCCU Pulmonary and Critical Care Update

PCCU LESSONS FOR FEBRUARY

▶ **Cognitive and Functional Outcomes After ICU Admission.** *By Ramona O. Hopkins, PhD; and James C. Jackson, PsyD*

▶ **Noninfectious Pulmonary Diseases in HIV.** *By Dr. Kristina A. Crothers, FCCP; Dr. Laurence Huang, FCCP; and Dr. Alison M. Morris*

This Month in *CHEST*: Editor's Picks

BY DR. RICHARD S. IRWIN, FCCP
Editor in Chief, CHEST

▶ **Ventilator-Associated Tracheobronchitis (VAT): The Impact of Targeted Antibiotic Therapy on Patient Outcomes.** *By Dr. D. E. Craven, et al.*

▶ **Effect of Specific Allergen Inhalation on Serum Adiponectin in Human Asthma.** *By Dr. A. Sood, FCCP, et al.*

▶ **The Extent of Lung Parenchyma Resection Significantly Impacts Long-term Quality of Life in Patients With Non-small Cell Lung Cancer.** *By Dr. T. Schulte, et al.*

▶ **Acute Lung Injury Outside of the ICU: Incidence in Respiratory Isolation on a General Ward.** *By Dr. A. A. Quartin, et al.*

▶ **Reliability of a 25-Item Low-Stakes Multiple Choice Assessment of Bronchoscopic Knowledge.** *By Dr. S. Quadrelli, FCCP, et al.*

Clinical Commentary

▶ **AAOS and ACCP Guidelines for VTE Prevention in Hip and Knee Arthroplasty Differ: What Are the Implications for Clinicians and Patients?** *By Dr. J. W. Eikelboom, et al.*

www.chestjournal.org

Continued from previous page

in 2003; however, the bill was not passed.

We recommend a cautious (walk, don't run!) approach, advocating well-conducted innovative pilot trials to enhance resident and patient safety before another wholesale (and possibly ineffective) reengineering of our nation's program for training doctors is implemented.

Unfortunately, it would appear that the ACGME may do just that and has indicated that "in early March 2009, the ACGME is convening a duty hours conference that will bring together leaders in graduate medical education from around the world" (www.acgme.org/acWebsite/newsReleases/newsRel_12_2_08.asp [accessed December 31, 2008]).

Taking another leap of faith and assuming that restructured hours will result in less fatigued residents and will translate into safer patient care will be costly and potentially dangerous. We must instead emphasize and fund process improvements so that our training programs will have the requisite personnel for superior trainee supervision, quality software to enable effective and structured handovers, and the research necessary to know that we are improving rather than damaging care. ■

Dr. John K. McIlwaine, FCCP
University of Massachusetts
UMass Memorial Medical Center
Worcester, MA

Dr. Stephen M. Pastores, FCCP
Memorial Sloan-Kettering Cancer Center
New York, NY

Dr. Gregory A. Schmidt, FCCP
University of Iowa Hospitals and Clinics
Iowa City, IA

Dr. William R. Andrews, FCCP
Memorial Hermann Hospital-Texas Medical Center
Houston, TX

The CHEST Foundation 2009 Awards

ACCP membership offers you an opportunity to apply for one of The CHEST Foundation awards. Whether your area of expertise is research in critical care, lung cancer, women's health, or AAT deficiency and COPD; leadership in end-of-life care; or humanitarian service; The CHEST Foundation offers 1- and 2-year awards to ACCP members who meet the qualifications of one of the many 2009 awards available.

The **Third Eli Lilly and Company Distinguished Scholar in Critical Care Medicine** award is open to ACCP members who are FCCPs in the area of critical care medicine. The successful candidate will have a 3-year opportunity to examine issues that are not easily supported by traditional funding, such as the development of public policy, patient education models, or economic analysis of treatment or care delivery in this patient group.

This award grants $160,000 over the course of 3 years for a project or program that relates to the treatment of critically ill patients.

The research awards, granted to ACCP members who submit outstanding research projects in various areas of chest medicine, reflect the multidisciplinary nature of the ACCP.

In 2009, The CHEST Foundation offers a variety of clinical research awards in the areas of geriatric development, lung cancer, COPD and alpha-1 antitrypsin (AAT) deficiency, and women's health. The 2009 research opportunities also reflect the continuing partnerships of The CHEST Foundation with the Association of Specialty Professors, the LUNGevity Foundation, and the Alpha-1 Foundation.

Focusing on the important area of critical care, The CHEST Foundation continues to acknowledge outstanding leadership in end-of-life care through the **Roger C. Bone Advances in End-of-Life Care Award**.

The year 2009 marks the ninth year that this prestigious award will be granted to an ACCP member involved in palliative and/or end-of-life care. Members of the Palliative and End-of-Life Care NetWork serve on the review committee.

The CHEST Foundation's **D. Robert McCaffree, MD, Master FCCP Humanitarian Awards,** formerly known as **The CHEST Foundation Humanitarian Recognition Awards and Project Development Grants,** support the volunteer efforts of those who generously give their time and medical expertise to improve the health of people living in communities around the world.

Since 1998, The CHEST Foundation has awarded over $1.3 million in awards given to nonprofit and nongovernmental organizations where ACCP members focus their pro bono service.

NEW for 2009: The CHEST Foundation will grant awards in the amounts of $5,000, $10,000, and $15,000. Those applying for the $10,000 and $15,000 grants will be required to complete a more extensive application and submit additional documentation with their completed application.

THE DEADLINE FOR ALL 2009 AWARDS IS APRIL 30, 2009.

For requirements and candidate qualifications, go to www.chestfoundation.org. Click on Clinical Research Awards, Humanitarian Awards, or Critical Care on the top bar.

Value of The CHEST Foundation's Awards Program. . . in the Words of Previous Award Recipients

Dr. Martin L. Bauer, FCCP
$25,000 Humanitarian Project Development Grant 2007 Recipient
Camp Aldersgate Summer Medical Camp for Ventilator Technology-Dependent Children


DR. MARTIN L. BAUER, FCCP

The objectives of his project were the following: (1) provide a 1-week camp experience at Camp Aldersgate in Little Rock, AR, for ventilator technology-dependent (VTD) children; (2) provide parents of VTD children a week of respite from the care of their children; and (3) provide facilities, personnel, and equipment to support the care of VTD children while they attend summer camp.

Funds provided by The CHEST Foundation Humanitarian Award allowed installation of additional electrical circuitry to accommodate 16 VTD campers, their medical buddies, equipment, equipment storage, and equipment cleaning in two cabins.

These cabins are specifically designed for wheelchair and disability access, each with specially designed showers and bathroom facilities, spacious sleeping rooms with space for hospital beds, and a large screened porch. They are climate-controlled, allowing year-round use. These cabins provided the facilities to house the VTD children.

The first camp experience was provided in conjunction with the Muscular Dystrophy summer camp. Three VTD youth with muscular dystrophy attended the camp June 8-13, 2008.

Dr. Bauer noted that the most obvious impact was on the campers and their families. He said that the families provided their VTD children an experience away from parents in an environment supportive of ventilation technology. The VTD campers reveled in this new independence and freedom that they thought they had lost when they could no longer breathe adequately on their own. Other campers saw and appreciated the beneficial impact that ventilation could have on their lives in the future.

This first summer camp for VTD children convinced the dedicated volunteer staff members that a first-class camp experience can, indeed, be provided for these children. They are now investigating services for VTD children with invasive, as well as noninvasive, interface and those with diseases other than muscular dystrophy, and children younger than 8 years of age. They are also considering weekend respite opportunities throughout the year.

Dr. Carlos A.V. Fragoso, FCCP
Association of Specialty Professors and The CHEST Foundation of ACCP Geriatric Development Research Award Recipient 2007
Establishing Chronic Obstructive Pulmonary Disease in Older Persons


DR. CARLOS A.V. FRAGOSO, FCCP

The specific aims of his project were the following: (1) to establish airflow limitation based on a lower limit of normal for the FEV_1/FVC ratio that is defined by mortality risk; and (2) to stage severity of airflow limitation and, hence, COPD, according to the FEV_1 expressed as a standardized residual percentile. He has completed the first year of his 2-year award.

Dr. Fragoso writes, "I wish to express my gratitude for the support provided by the ASP/CHEST Foundation. This has been an important step in my career development, as it has allowed me to pursue further training in skills necessary for becoming an independent investigator and to successfully compete for a VA Career Development Award.

"In addition, our research may improve patient care regarding COPD in older persons. Specifically, by distinguishing persons with a higher likelihood of death or of being symptomatic from those with airflow limitation alone, our definition of COPD could lead to a more efficient use of diagnostic and therapeutic services." ■

www.chestfoundation.org

Winners at CHEST 2008

Participants in the CHEST 2008 5K Lung Health Walk/Run were ALL winners. Those who placed first, second, or third place are listed below.

Category	Name
Oldest Female Runner	Monir Almassi
Oldest Male Runner	Floyd Okada
1st Place Male 29 and under	no winner
2nd Place Male 29 and under	no winner
3rd Place Male 29 and under	no winner
1st Place Male 30 - 39	Paul Boesch
2nd Place Male 30 - 39	Nathan Hatton
3rd Place Male 30 - 39	Roy Sprooten
1st Place Male 40 - 49	Eric Flenaugh
2nd Place Male 40 - 49	Timothy Quast
3rd Place Male 40 - 49	Michael Boyd
1st Place Male 50 - 59	Ben Foy
2nd Place Male 50 - 59	Allan Davidson
3rd Place Male 50 - 59	Craig Piquette
1st Place Male 60 - 69	Jeffrey Hawkins
2nd Place Male 60 - 69	Pierre Mocostabella
3rd Place Male 60 - 69	no winner
1st Place Female 29 and under	Amy Spence
2nd Place Female 29 and under	no winner
3rd Place Female 29 and under	no winner
1st Place Female 30 - 39	Amy Jenkins
2nd Place Female 30 - 39	Danira Mayes
3rd Place Female 30 - 39	Tammy Wichman
1st Place Female 40 - 49	Mojdeh Talebian
2nd Place Female 40 - 49	Janet Myers
3rd Place Female 40 - 49	Pam Sperl
1st Place Female 50 - 59	Anne Marie Geneser
2nd Place Female 50 - 59	no winner
3rd Place Female 50 - 59	no winner
1st Place Female 60 - 69	no winner
2nd Place Female 60 - 69	no winner
3rd Place Female 60 - 69	no winner

Note: Caleb Edmonds and Lee Edmonds came in first and second place overall and did not give their ages. They also left immediately following the race and did not stay for the awards.

CHEST 2008 Bingo Winners

Here are the bingo winners from CHEST 2008:

▶ **Asthma Bingo winner**
Kenneth R. Phillips, MD, FCCP, Warwick, RI
Apple laptop computer

▶ **COPD Bingo winner**
Jeremy C. Johnson, DO, FCCP, Columbia, MO
Garmin Global Positioning System (GPS)

▶ **PAH Bingo winner**
Philip Mach, MD, FCCP, Pemberton, NJ
iPod® mobile digital device

PRODUCT OF THE MONTH

Prevention of Venous Thromboembolism in Hospitalized Patients

This CME activity consists of a print monograph (supplement to the February *CHEST Physician* issue) with three sections: (1) pretest questions designed to emphasize the learning objectives; (2) description of the current gap in performance and need for increased education in the area of venous thromboembolism (VTE) prevention; and (3) a review of the epidemiology and prevalence of VTE in hospitalized medical patients, a review of the evidence behind current recommendations, and a review of the current ACCP recommendations for VTE prevention in hospitalized medical patients.

Several months after release of the monograph, readers will be able to access an online link to case scenarios in which the application of their knowledge in VTE prevention will be tested. This will be ACCP-SEEK-type questions. CME credit will be provided. ■

ACCP Worldwide: ACCP Reaches Out at Brazilian Conference

The XXXIV Brazilian Congress of Neumonology and Tisiology (held in conjunction with the VI ALAT (Associación Latinoamericana del Tórax) meeting and the V Portuguese-Brazilian Congress of Neumonology) was held in Brasilia, Brazil, on November 21-24, 2008.

Dr. Alvin V. Thomas, Jr., FCCP, and Dr. M. Patricia Rivera, FCCP, served as faculty during this ACCP-endorsed educational event.

With about 2,400 attendees, this was the largest conference on thoracic diseases in Latin America, and the ACCP booth benefited from solid and constant activity throughout the meeting, as ACCP members and nonmembers came to find out about our latest offerings.

This was an excellent opportunity to strengthen ties with the SBPT (Sociedade Brasileira de Pneumologia e Tisiologia) leadership and expand awareness of ACCP products and services among the Brazilian and Latin American participants. ■

Congratulations to The CHEST Foundation's 2008 Award Winners

During CHEST 2008, The CHEST Foundation awarded nearly $1 million to support research and volunteer work related to chest and critical care medicine. Congratulations to these winners.

THE CHEST FOUNDATION®

Distinguished Scholar

The Second GlaxoSmithKline Distinguished Scholar in Thrombosis
Henry I. Bussey, PharmD, FCCP

The CHEST Foundation Humanitarian Awards

$25,000 Project Development Grant Winners
Yaseen Arabi, MD, FCCP
Henry I. Bussey, PharmD, FCCP
Gregory Efosa Erhabor, MD, FCCP
Rafael Laniado-Laborin, MD, FCCP

$5,000 Humanitarian Recognition Award Winners
Parthasarathi Bhattacharyya, MD, FCCP
Lorie Joan Q. Cabreros Jones, MD
Francis J. Podbielski, MD, FCCP
Asefa J. Mekonnen, MD, FCCP

$5,000 Ambassadors Group Humanitarian Recognition Award Winner
G. Lakshmipathi, MD, FCCP

Annual Awards

The Association of Specialty Professors and The CHEST Foundation Geriatric Development Research Award
Jeffrey C. Horowitz, MD, FCCP
Shirley F. Jones, MD, FCCP

Roger C. Bone Advances in End-of-Life Care Award
Richard A. Mularski, MD, FCCP

The Alpha-1 Foundation and The CHEST Foundation Clinical Research Award in COPD and Alpha-1 Antitrypsin (AAT) Deficiency
Amir Sharafkhaneh, MD, FCCP

The American Society of Transplantation and The CHEST Foundation Clinical Research Award in Lung Transplantation
Sharon F. Chen, MD

The CHEST Foundation and the LUNGevity Foundation Clinical Research Award in Lung Cancer
Scott L. Shofer, MD, PhD
Christopher G. Slatore, MD, MS

The CHEST Foundation and Boehringer Ingelheim Pharmaceuticals Inc. Clinical Research Award in Women's Pulmonary Health
Subani Chandra, MBBS
Margaret A. Pisani, MD, FCCP

The CHEST Foundation California Chapter Clinical Research/Medical Education Award
Henri G. Colt, MD, FCCP

Annual Awards

Alfred Soffer Research Award Winners

$1,500
Roland DuBois, MD
Aravindhan Sriharan, BS

$1,000
David P. L. Sachs, MD
Michael A. Wilson, MD, FCCP
Mario E. Dumas, MD, FCCP
Xiumei Sun, PhD

Young Investigator Award Winners

$2,275
CAPT James P. Woodrow, MC, USA
Anne Gonzales, MD
Gustavo Nino, MD

$775
Juan F. Sanchez, MD
Bhavneesh K. Sharma, MD
Adriano R. Tonelli, MD
Sebastian De Franchi, MD
Salah Najm, MD
Justin J. Baker, MD
Sushma K. Cribbs, MD

Top Five Posters Awards
Subhakar Kandi, MD, FCCP
Marcos I. Restrepo, MD, FCCP
Richard C. Redman, MD
Barbara A. Phillips, MD, FCCP
Safdar Khan MBBS, MD

Case Report Award Winners
David Green, MD
Veena Devarakonda, MD
Airie Kim, MD
Aparna Prasad, MD
Jess Thompson, MD
Atikun Limsukon, MD
Jason Caboot, MD
Paul Heffernan, MD
Brian Garibaldi, MD
Meghan McCullers, MD
Jason Elinoff, MD
Ghazwan Acash, MD
Juan Sanchez
Semaan Kosseifi, MD
CAPT James P. Woodrow, MC USA
Chakravarthy Reddy, MD
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Congratulations to the CHEST Challenge Winners

The top three teams from the CHEST Challenge competed in a live Jeopardy-style contest to win cash prizes for their institutions. Congratulations to these teams.

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2009 Awards Program

The tradition of supporting research and volunteer work related to chest and critical care medicine will continue in 2009. Watch for application details at www.chestfoundation.org.

Breath-Hold CT Improved Lung Tumor Sizing

BY PATRICE WENDLING
Elsevier Global Medical News

CHICAGO — Adding a breath-hold chest CT to a standard shallow-breathing PET-CT study improved the accuracy of sizing primary lesions and detection of additional small pulmonary nodules in a retrospective study of 50 consecutive patients with suspected or known lung cancer.

In 6 (12%) of 50 patients, a radiology resident found a 2-mm or more difference in primary axial tumor size when measured by shallow-breathing CT versus breath-hold CT. An experienced attending radiologist found such a difference in 18% of patients.

The largest measured size difference was 10 mm (mean size 5.3 mm, range 3-10 mm). In all cases where a size difference was reported, the measured size was larger on the breath-hold CT, Dr. Vinay Ravi and colleagues reported at the annual meeting of the Radiological Society of North America.

With breath-hold CT, an additional 15 pulmonary nodules were detected that were missed on the shallow-breathing PET/CT scan, the largest of which was 9 mm in size (mean 4 mm, range 3-9 mm). Two nodules were located in the upper lobe of the lung, 3 in the middle lobe, and 10 in the lower lobe nearest the diaphragm.

A continuous, shallow-breathing PET/CT study has become the standard-of-care imaging test for evaluating patients with lung cancer, but respiratory motion can play havoc with the evaluation of the lung parenchyma on CT images, said Dr. Ravi, a second-year radiology resident at Dartmouth University, Lebanon, N.H. Respiratory motion can blur the images and cause attenuation-related errors that can be severe near the diaphragm.

The interpretation of PET images is not significantly compromised by respiratory motion, but PET has limited sensitivity for subcentimeter lesions, which limits the characterization of small pulmonary nodules. The incidence of malignancy in subcentimeter nodules ranges from 10% to 58% in published reports.

In the current series, the identification of additional nodules with breath-hold CT impacted clinical management in 75% of cases read by the resident and in 60% of cases read by the attending radiologist, Dr. Ravi said. None of the additional nodules detected by breath-hold CT had visible FDG (^{18}fluorodeoxyglucose) uptake on PET.

"We believe that a separate breath-hold CT when obtained as part of a shallow-breathing PET-CT study may result in more precise size measurement of the primary lesion and improved detection and characterization of additional small pulmonary nodules, and thus may very well affect clinical staging and management," he said.

When asked by the moderators, however, if any of the attendees read PET and CT scans separately or charged for an independent CT, none raised their hands.

The overuse of CT has become an issue in the medical community, but Dr. Ravi said in an interview that adding a breath-hold CT would increase the radiation dose by only about 2-3 mSv. "I do not believe that this is a limiting factor," he said.

Although the study was limited by the fact that shallow-breathing PET-CT images were interpreted prior to breath-hold CT in all cases, its findings confirm those of two previous studies.

In a recent study performed at Memorial Sloan-Kettering Cancer Center in New York, breath-hold CT detected significantly more lesions than did clinical CT in 13 (87%) of 15 patients with suspected pulmonary lesions, increasing the total number of lung lesions detected from 53 with clinical CT to 82 with breath-hold CT (J. Nucl. Med. 2007;48:712-9).

Breath-hold CT detected an additional 125 parenchymal lung nodules in 34% of 142 consecutive patients evaluated with PT/CET for staging and restaging of various types of cancer at the University of California at Los Angeles. On average, three nodules were missed during shallow-breathing CT (J. Nucl. Med. 2006;47:298-301).

Fewer additional nodules were detected in the current study than in those two studies, likely because of the use of a more sophisticated 16-channel multidetector PET-CT system (GE Discovery ST) for the shallow-breathing studies, Dr. Ravi explained.

PET-CT findings were used to diagnose lung cancer in 8 patients, for initial staging in 11, and for restaging in 31. The patients' mean age was 65 years, and 26 were men.

The investigators received no funding for the study and had no conflicts of interest to disclose. ■

Dr. W. Michael Alberts, FCCP, comments: *A necessary companion study should investigate whether discovering additional nodules or more accurately measuring known nodules provides any clinical benefit—or whether it merely adds to the clinical challenge of dealing with false-positive findings.*

Sleep Apnea Exhibits Age-Related Peaks, Valleys

BY MICHELE G. SULLIVAN
Elsevier Global Medical News

Obstructive sleep apnea and its associated comorbid conditions show a distinct age-related pattern, peaking in very young children and in older adults.

The lowest incidence occurs in adolescence, when the pharynx has grown enough to accommodate lymphoid tissue and obesity is at a lifetime low, Qi Rong Huang, Ph.D., and his associates reported in the Dec. 15 issue of the Journal of Clinical Sleep Medicine (2008;4: 543-50).

Dr. Huang of the University of Sydney and his associates extracted their information from Australia's New South Wales Inpatient Data Collection system (1994-2004), which contains a representative collection of hospital records in the territory.

Of the 1.5 million patient records examined, 4% (60,200) showed obstructive sleep apnea (OSA) as either a primary or secondary diagnosis. A total of 72% of the patients were male, and males predominated in every age group.

The occurrence of OSA was elevated in children aged 0-4 years (9% males, 6% females) and declined to a low at 15-24 years (1% of each gender).

THE RESEARCHERS SPECULATED THAT GENDER DIFFERENCES MIGHT RELATE TO A LESS STABLE AIRWAY IN MALES, BEGINNING IN PUBERTY.

After 24 years, the occurrence rose linearly in both genders, reaching a peak at ages 55-59 years (13% males, 12% females). Thereafter, a sharp decline occurred; by 85 years, OSA was present in only 1% of each gender.

The analysis also revealed a number of associated comorbidities. Most frequent were essential hypertension (18% of the cohort), obesity (14%), type 2 diabetes (12%), chronic ischemic heart disease and chronic obstructive lung disease (8% each), and hypercholesteremia (7%).

Other conditions commonly seen were a history of tobacco use, congestive heart failure, atrial fibrillation or flutter, and coronary artery bypass graft.

Comorbidities also showed an age-related pattern, and were more common in males. Obesity rose after 25 years, peaking at 50-59 years, while diabetes peaked at 65-69 years. Hypertension peaked around age 55 years and remained increased until age 69 years for men and 74 years for women.

The researchers speculated that gender differences might relate to a less stable airway in males, beginning in puberty. "Boys have a longer upper airway length than girls, even when normalized for body height, and an increased airway length predisposes to pharyngeal collapse," they wrote.

The increased incidence in young children probably has to do with the rapid growth of lymphoid tissue, which outpaces nasopharyngeal development, while the increase in OSA after age 25 years correlates with the increase in obesity, they suggested.

Cardiovascular comorbidities are probably more related to obesity patterns than they are directly tied to OSA, the team noted. The sharp drop-off in OSA incidence after age 65 years may reflect mortality associated with the comorbidities. ■

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