VOL. 8 • NO. 10 • OCTOBER 2013

CHEST Physician

THE NEWSPAPER OF THE AMERICAN COLLEGE OF CHEST PHYSICIANS

NASEEM S. MILLER/IMNG MEDICAL MEDIA

In the most severely affected pulmonary embolism patients, edoxaban may have an advantage over warfarin, said Dr. William A. Zoghbi. Scan the code to watch a video online.

New anticoagulant safe, effective for VTE

BY MITCHEL L. ZOLER
IMNG Medical News

AMSTERDAM – The growing role for the new factor Xa inhibitors in treating acute venous thromboembolism received another boost with sterling performance of a new drug from the class, edoxaban, in a pivotal, randomized, international trial with more than 8,000 patients.

Edoxaban showed noninferior efficacy and superior safety compared with the standard treatment, warfarin, during 12 months of follow-up, performance that closely matched prior results for the first two direct factor Xa inhibitors that were tested for treating venous thromboembolism (VTE), rivaroxaban (Xarelto) and apixaban (Eliquis). The edoxaban trial also showed an important new feature for drugs in this class, a statistically significant benefit compared with warfarin in the roughly one-third of enrolled patients with a severe pulmonary embolism causing right ventricular dysfunction.

"The most interesting observation is that the third of patients [with pulmonary embolism and] with right ventricular dysfunction were better off with edoxaban,"

See **Anticoagulant** • *page 4*

HHS tools ease patient consent to e-data sharing

Standard explanations simplify process.

BY MARY ELLEN SCHNEIDER
IMNG Medical News

As more medical practices exchange patients' health information electronically with hospitals and other providers, physicians have a new problem on their hands: how to explain the process to patients and gain their consent to share the information.

Federal health officials have developed some tools – including customizable patient videos – that aim to simplify the process by creating a standardized explanation of the data exchange process and patient options for sharing their medical information.

The effort, known as meaningful consent, deals specifically with information shared through health information exchange organizations (HIEs). These third-party organizations help health care providers in several ways, including directly exchanging information and orders, allowing providers to request specific patient information, or allowing consumers to aggregate their own data online to share with specific providers.

While state laws and regulations create a patchwork of different requirements for

See **Patient** • *page 13*

INSIDE

Breath test promising for aspergillosis

BY DOUG BRUNK
IMNG Medical News

DENVER – A novel breath-alyzerlike test detected fungal gas metabolites in the breath of immunocompromised patients with suspected invasive aspergillosis, with excellent sensitivity and specificity, a single-center study demonstrated.

"We envision this work can be adapted to a rapid, noninvasive point-of-care detection system for real-time surveillance of patient breath for the emergence of aspergillosis and potentially for the diagnosis of lung infections caused by other fungal and bacterial pathogens," Dr. Sophia Koo explained in an interview prior to a poster session at the annual Interscience Conference on Antimicrobial Agents and Chemother-

See **Aspergillosis** • *page 14*

CHEST Physician
151 Fairchild Ave.,
Suite 2,
Plainview, NY 11803-1709

CHANGE SERVICE REQUESTED

Presorted Standard
U.S. Postage
PAID
Permit No. 384
Lebanon Jct. KY

Should the decision for long-term PAH treatment be based on short-term trial results?

CHANGE VI

It's time for PAH studies to align with your long-term treatment goals

Although PAH is a chronic disease, clinical trials have historically been of short duration, with small patient populations, and have relied on short-term functional endpoints.[1,2] As a result, they have provided limited information about long-term PAH patient outcomes.[1]

Now is the time for a new perspective on clinical trial design in PAH. Expert consensus has called for future PAH studies to deliver data on the long-term effect of therapy on clinical outcomes, such as hospitalizations and mortality.[1-3] Actelion is committed to investigating this evolving perspective in PAH.

References: 1. Gomberg-Maitland M, Dufton C, Oudiz RJ, Benza RL. Compelling evidence of long-term outcomes in pulmonary arterial hypertension? *J Am Coll Cardiol*. 2011;57:1053-1061.
2. Galiè N, Manes A, Negro L, Palazzini M, Bacchi-Reggiani M, Branzi A. A meta-analysis of randomized controlled trials in pulmonary arterial hypertension. *Eur Heart J*. 2009;30:394-403.
3. McLaughlin VV, Badesch DB, Delcroix M, et al. End points and clinical trial design in pulmonary arterial hypertension. *J Am Coll Cardiol*. 2009;54:S97-S107.

PERSPECT

Of 18 controlled clinical studies of FDA-approved PAH agents, reviewed in a 2009 study[2]:

Only 2 included more than 300 patients

Only 1 was longer than 4 months in duration

Only 7 reported PAH-related hospitalizations

None 0 measured long-term clinical outcomes as a primary endpoint

Learn more by visiting:
PAHChangePerspective.com/longterm

ACTELION

Edoxaban safe, effective for PE

Anticoagulant *from page 1*

Dr. Harry R. Büller said at the European Society of Cardiology Congress 2013.

"A criticism raised with [the pivotal rivaroxaban and apixaban trials treating acute VTE] was that the investigators were reluctant not to use low-molecular-weight heparin in the patients with large clots. In that group we've made a novel observation" in this prespecified subgroup analysis, said Dr. Büller, professor and chairman of vascular medicine at the Academic Medical Center in Amsterdam.

Investigators in the edoxaban trial may have been more willing to enroll their severely ill VTE patients because the treatment regimens compared began all patients with at least 5 days of treatment with either enoxaparin or unfractionated heparin. Intravenous treatment stopped after about a week and then continued with either oral warfarin or edoxaban. This treatment strategy contrasted with the prior rivaroxaban (EINSTEIN, N. Engl. J. Med. 2012;366:1287-97) and apixaban (AMPLIFY, N. Engl. J. Med. 2013;369:799-808) pivotal studies that began acute VTE patients on the oral drugs from the start of treatment. In the edoxaban study, participating physicians enrolled "the full spectrum of VTE patients," Dr. Büller said.

Physicians "feel comfortable intervening with heparin in these patients because you have quick, intravenous treatment with an anticoagulant," commented Dr. William A. Zoghbi, professor of medicine and director of the Cardiovascular Imaging Institute at the Debakey Heart and Vascular Center at Methodist Hospital in Houston. The results showing superior efficacy of edoxaban over warfarin in the most severely affected pulmonary embolism patients "makes you more confident that in the higher-risk patients edoxaban was not only not inferior but may even have an advantage," Dr. Zoghbi said in an interview.

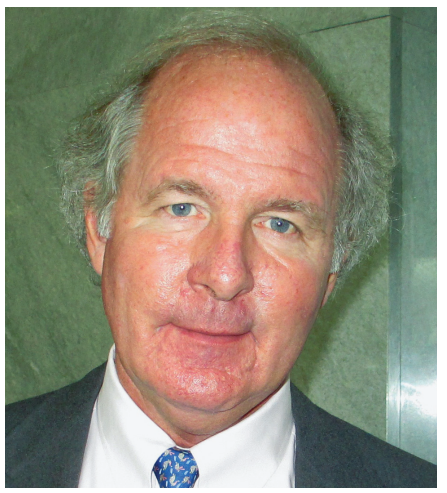
The Hokusai-VTE trial randomized 4,921 patients with deep-vein thrombosis and 3,319 patients with pulmonary embolism at 439 centers in 37 countries during January 2010–October 2012. Patients averaged 56 years of age, a bit more than half were men, and they received heparin for a median of 7 days.

After 1 year, the primary efficacy endpoint of recurrent VTE in all patients occurred in 3.2% of the 4,118 patients randomized to receive edoxaban and in 3.5% of the 4,122 randomized to receive warfarin, results that meet the study's criterion for noninferiority.

Among the prespecified subgroup of pulmonary embolism patients with a larger clot and inferred right ventricular dysfunction – based on both the anatomic size of their clot and on their blood level of N-terminal pro-brain natriuretic peptide – the rate of recurrent VTE during follow-up was 3.3% in the edoxaban group and 6.2% in the warfarin group, a statistically significant difference.

The study's primary safety out-

Continued on following page



"The most interesting observation is that the third of patients [with pulmonary embolism and] with right ventricular dysfunction were better off with edoxaban," said Dr. Harry R. Büller.

VITALS

Major finding: Treatment of acute venous thromboembolism with edoxaban reduced clinically relevant bleeds by a relative 19%, compared with warfarin.

Data source: The data came from Hokusai-VTE, a multicenter, randomized, pivotal trial that enrolled 8,240 patients with acute VTE.

Disclosures: Hokusai-VTE was sponsored by Daiichi-Sankyo, the company developing edoxaban. Dr. Büller said that he has received honoraria from Daiichi Sankyo, as well as from Bayer, Boehringer Ingelheim, Pfizer/Bristol-Myers Squibb, Isis, and Thrombogenics. Dr. Büller also served as a principal investigator for the VTE pivotal trials of rivaroxaban and apixaban. Dr. Zoghbi said that he had no disclosures. Dr. Konstantinides has been a speaker for and an adviser to Boehringer Ingelheim, Bayer, and Pfizer/Bristol-Myers Squibb.

IN THIS ISSUE

Dr. W. Michael Alberts, FCCP, is Medical Editor in Chief of *CHEST Physician*.

CHEST PHYSICIAN

CHEST PHYSICIAN, the newspaper of the American College of Chest Physicians, provides cutting-edge reports from clinical meetings, FDA coverage, clinical trial results, expert commentary, and reporting on the business and politics of chest medicine. Each issue also provides material exclusive to the members of the American College of Chest Physicians. Content for **CHEST PHYSICIAN** is provided by International Medical News Group, a Frontline Medical Communications Inc. company. Content for NEWS FROM THE COLLEGE is provided by the American College of Chest Physicians.

POSTMASTER: Send change of address (with old mailing label) to CHEST PHYSICIAN, Subscription Service, 151 Fairchild Ave., Suite 2, Plainview, NY 11803-1709.

CHEST PHYSICIAN (ISSN 1558-6200) is published monthly for the American College of Chest Physicians by Frontline Medical Communications Inc., 7 Century Drive, Suite 302, Parsippany, NJ 07054-4609. Subscription price is $230.00 per year. Phone 973-206-3434, fax 973-206-9378.

EDITORIAL OFFICES 5635 Fishers Lane, Suite 6100, Rockville, MD 20852, 240-221-2400, fax 240-221-2548

Scan this QR Code to visit chestnet.org/chestphysician

IMNG SOCIETY PARTNERS, A DIVISION OF IMNG MEDICAL MEDIA

President and CEO, IMNG Medical Media Alan J. Imhoff
Director, IMNG Society Partners Mark Branca
Editor in Chief Mary Jo M. Dales
Executive Editors Denise Fulton, Kathy Scarbeck
Managing Editor Lori Buckner Farmer
Executive Director, Operations Jim Chicca
Director, Print Production Judi Sheffer
Creative Director Louise A. Koenig
Display Advertising Managers Derek Lundsten, 973-713-2650, dlundsten@americanmedicalcomm.com, Lauren Provenzano, 609-306-5776, lprovenzano@americanmedicalcomm.com
ADVERTISING OFFICES 7 Century Drive, Suite 302, Parsippany, NJ 07054-4609 973-206-3434, fax 973-206-9378
Classified Sales Representative John Baltazar 917-488-1528, jbaltazar@americanmedicalcomm.com

FRONTLINE MEDICAL COMMUNICATIONS
Chairman Stephen Stoneburn **CFO** Douglas E. Grose
President, Custom Solutions JoAnn Wahl, 973-206-8989 jwahl@frontlinemedcom.com.com
Vice President, Custom Programs Carol Nathan, 973-206-8099 cnathan@frontlinemedcom.com.com
Corporate Director, Audience Development Donna Sickles, Subscription Inquiry Line 1-800-480-4851
Corporate Director, Marketing and Research Lori Raskin 973-206-8013 lraskin@frontlinemedcom.com.com

Continued from previous page

come was the rate of clinically relevant major or nonmajor bleeds, which occurred in 8.5% of the edoxaban patients and in 10.3% of the warfarin patients, for a relative hazard reduction of 19% by edoxaban that was statistically significant for superiority, reported Dr. Büller. Concurrent with his talk at the meeting a report of the trial results was published online (N. Engl. J. Med. 2013;doi:10.1056NEJMoa1306638).

The safety data also showed that the edoxaban-treated patients had a total of 5 intracranial or retroperitoneal bleeds, compared with 22 in the patients treated with warfarin, a difference that Dr. Büller said he believed was real and due to the effect of warfarin on clotting factor VII, and is something that has also been seen in the trials testing the other new factor Xa inhibitors.

Unusual trial

The Hokusai-VTE study is unique among the trials of oral factor Xa inhibitors by being the only study that allowed for a flexible duration of anticoagulation treatment, followed all patients for 12 months, and used imaging and biomarkers to risk-stratify patients to prove efficacy in patients with severe pulmonary embolism, commented Dr. Stavros V. Konstantinides, professor and deputy scientific director of the Center for Thrombosis and Haemostasis of Johannes Gutenberg University in Mainz, Germany.

The data collected on all three oral factor X inhibitors so far suggest that they all are "noninferior to standard treatment and are also not inferior and most likely superior for safety, with apixaban showing the best safety profile so far," said Dr. Konstantinides, who was the designated discussant for Dr. Büller's report. But Dr. Konstantinides also warned that these new drugs will need to "justify their high cost" by showing improvements in patient satisfaction with their treatment and quality of life, and by lowering overall health care costs by lowering the number of rehospitalizations in VTE patients.

mzoler@frontlinemedcom.com
On Twitter @mitchelzoler

VIEW ON THE NEWS

Dr. Steven Q. Simpson, FCCP, comments: This study is relevant, because investigators treated VTE patients in a standard fashion, but randomized to Factor Xa inhibition vs. warfarin. It is important that this strategy provides equivalent inhibition of recurrent clot, with a safety profile that is better. However, it is a very interesting finding that patients with evidence of right ventricular dysfunction actually had better outcomes on the new regimen than on warfarin.

We may now have entered the era where we can liberate our patients from the periodic blood draws, concerns about diet and concomitant medications, and much of the bleeding risk associated with warfarin therapy. Warfarin has saved many lives in its career, but it is time to consider retiring.

Varenicline helps smokers with stable depression

BY SHARON WORCESTER
IMNG Medical News

Varenicline successfully promoted durable smoking cessation without exacerbating depression or anxiety in a randomized, phase IV, industry-funded study of patients with stably treated major depressive disorder.

Smoking cessation, defined as carbon monoxide–confirmed continuous abstinence, was higher at weeks 9-12 among 256 subjects in the double-blind study who were randomized to receive varenicline, compared with 269 who received placebo (35.9% vs. 15.6%; odds ratio, 3.35), Dr. Robert M. Anthenelli of the University of California, San Diego, and his colleagues reported in the Annals of Internal Medicine.

The differences between the groups were also significant for weeks 9-24 (20.3% vs. 10.4%; OR, 2.36) and for weeks 9-52 (25% vs. 12.3%; OR, 2.36), the investigators said (Ann. Intern. Med. 2013;159[6]:2).

VITALS

Major finding: Smoking cessation rates among patients with stably treated major depressive disorder were higher at 9-12 weeks in those treated with varenicline than in those treated with placebo (35.9% vs. 15.6%).

Data source: A randomized, double-blind, placebo-controlled phase IV study.

Disclosures: This study was funded by Pfizer. Individual authors reported receiving support from federal and state agencies and the University of California, San Francisco.

No clinically relevant differences were seen between the groups in suicidal ideation or behavior as captured by the Columbia Suicide Severity Rating Scale. Furthermore, no overall worsening of depression or anxiety occurred in either group. In fact, trajectories of mood and anxiety rating trended slightly toward improvement in both groups, they said.

Participants in the multicenter study were adults aged 19-73 years who had no recent cardiovascular events, who smoked at least 10 cigarettes daily, and who had current or past stably treated unipolar major depressive disorder without psychotic features. They were recruited from 38 centers in 8 countries between March 2010 and June 2012. Randomization was stratified by antidepressant use at baseline (any vs. none) and by baseline depression score (Montgomery-Asberg Depression Rating Scale score 11 or less vs. greater than 11). Patients received either placebo or varenicline titrated to a dose of 1 mg twice daily for 12 weeks, with a 40-week nontreatment follow-up phase.

Treatment was relatively safe; although 72.3% and 66.9% of the treatment and placebo groups, respectively, experienced treatment-emergent adverse events, most were mild or moderate. The most frequent adverse events in the treatment vs. placebo groups were nausea (27.0% vs. 10.4%, respectively), headaches

Continued on following page

CHEST Physician
THE NEWSPAPER OF THE AMERICAN COLLEGE OF CHEST PHYSICIANS

Continued from previous page

(16.8% vs. 11.2%), abnormal dreams (11.3% vs. 8.2%), irritability (10.9% vs. 8.2%), and insomnia (10.9% vs. 4.8%). Two patients in the treatment group died during the nontreatment phase, but neither death was considered related to treatment.

The findings suggest that varenicline, like other FDA-approved smoking cessation aids effective in non–psychiatrically ill smokers, are similarly effective in smokers with a history of depression – without increasing depressive symptoms; in the case of varenicline, as demonstrated in this study, this also applies to patients with depression who are using antidepressant medications.

"Varenicline is a partial agonist of brain alpha4beta 2 nicotinic acetylcholine receptors and is believed to alleviate nicotine withdrawal while simultaneously blocking its rewarding effects. Because depressed smokers are prone to more severe nicotine withdrawal than nonpsychiatric smokers, mitigating withdrawal symptoms may be important in this population," the investigators said. Depressed smokers who lapse into smoking while attempting to regulate mood may find cigarettes less reinforcing while taking varenicline, thus facilitating prolonged abstinence, they noted.

Although the findings may not extrapolate to untreated or actively depressed smokers and those with other psychiatric conditions, the findings nevertheless suggest an important role for varenicline in smokers with a history of stably treated depression.

"With 350 million individuals having the disease worldwide and because a large proportion of smokers that seeks treatment has a lifetime history of MDD, these results have the potential to reduce morbidity and mortality in many smokers," they concluded.

The researchers noted several study limitations, including their selection of "a population of smokers who were stably treated for or remitted from depression." Thus, they wrote, "our findings may not extrapolate to untreated or actively depressed smokers, whom many consider to be poor candidates for smoking cessation until their condition stabilizes." They also excluded individuals with "with psychotic features, bipolar disorder, current substance use disorders, and other conditions frequently associated with major depressive disorder; patients receiving medication for mania or psychosis were also excluded. Missing data resulting from attrition in both treatment groups may have affected the outcomes, the authors further noted.

VIEW ON THE NEWS

Dr. Vera DePalo, FCCP, comments: Smoking is a habit that contributes to several disease states and many strategies are employed to help with smoking cessation. Practitioners continue to search for the intervention that can aid the patient in success. As with all pharmacologic therapies, the prescriber considers the unintended side effects.

This industry-funded trial may be helpful to the practitioner's understanding of the possible options in non–psychiatrically ill smokers with a history of depression.

Prophylactic beta-blockers? It's complicated!

BY BRUCE JANCIN
IMNG Medical News

AMSTERDAM – Results of a new Danish national study suggest the effects of prophylactic beta-blocker therapy in patients with ischemic heart disease undergoing noncardiac surgery are considerably more heterogeneous than portrayed in current pro-prophylaxis practice guidelines or, at the opposite extreme, in a recent highly critical meta-analysis.

"This is an extraordinarily confusing area at the moment," Dr. Charlotte Andersson observed in presenting the Danish national registry findings at the annual congress of the European Society of Cardiology.

She reported on 28,263 adults with ischemic heart disease who underwent noncardiac surgery during 2004-2009. Hip or knee replacements were the most common operations, accounting for roughly one-third of the total. Patients were followed for 30 days postoperatively for the composite endpoint of acute myocardial infarction, ischemic stroke, or cardiovascular death, as well as for 30-day all-cause mortality.

In short, the effects of prophylactic beta-blocker therapy depended upon the type of background ischemic heart disease a surgical patient had.

"Our data suggest a beneficial effect of beta-blockers among patients with heart failure, perhaps a beneficial effect as well among patients with an MI within the previous 2 years, but no beneficial effect among patients with a more distant MI, and perhaps even harm associated with beta-blocker therapy among patients with neither heart failure nor a history of MI," according to Dr. Andersson of the University of Copenhagen.

The study population included 7,990 patients with heart failure, 53% of whom were on beta-blockers when they underwent noncardiac surgery. Those on beta-blockers fared significantly better in terms of the study endpoints (see graphic).

In contrast, 30-day outcomes in the 37% of patients without heart failure were identical regardless of whether or not they were on beta-blockers at surgery.

In a multivariate analysis, the use of beta-blockers in noncardiac surgery patients with heart failure was associated with a 22% reduction in major adverse cardiovascular events (MACEs) and an 18% reduction in all-cause mortality compared with no use of beta-blockers, both of which were statistically significant advantages. The analysis was adjusted for patient demographics, acute versus elective surgery, chronic obstructive pulmonary disease, diabetes, atrial fibrillation, peripheral artery disease, cancer, anemia, smoking, alcohol consumption, cerebrovascular disease, and American Society of Anesthesiologists score.

Among the 1,664 patients with an MI within the past 2 years, being on a beta-blocker at the time of surgery was associated with an adjusted highly significant 46% reduction in MACE and a 20% decrease in all-cause mortality, compared with no use of beta-blockers.

For the 1,679 patients with an MI 2-5 years prior to surgery, being on a beta-blocker was associated with a 29% reduction in the risk of MACE and a 26% reduction in 30-day all-cause mortality.

Among the 5,018 patients with an MI more than 5 years earlier, the use of beta-blockers at surgery was associated with a 35% greater risk of MACE than in nonusers of beta-blockers as well as a 33% increase in all-cause mortality. These differences in adverse outcomes rates barely missed achieving statistical significance.

Perhaps the most striking study finding was that patients with no prior MI or heart failure who were on a beta-blocker at the time of noncardiac surgery had a 44% increased risk of 30-day MACE and a 30% higher all-cause mortality, compared with those not on a beta-blocker, with both differences being significant.

Session cochair Dr. Elmir Omerovic thanked Dr. Andersson for a presentation that "really adds important new information" and asked whether she had been surprised by the findings.

"Yes, I have to say I was surprised by the increased risk in patients without prior MI or heart failure, because the ESC [European Society of Cardiology] guidelines state as a class I recommendation that all patients with ischemic heart disease undergoing noncardiac surgery should be on a beta-blocker. Perhaps we should reevaluate beta-blockers in noncardiac surgery," Dr. Andersson replied.

Current American College of Cardiology/American Heart Association guidelines also endorse perioperative beta-blockade in patients with coronary artery disease undergoing vascular or intermediate-risk noncardiac surgery.

She noted that in drawing up the current guidelines, the ESC and ACC/AHA committees relied heavily on strongly positive randomized clinical trials whose validity has recently been called into question in a major research scandal. Indeed, the lead investigator in those studies, Dr. Don Poldermans – who also happened to be chairperson of the ESC guidelines-writing task force – has been dismissed from the faculty at Erasmus University in Rotterdam.

Dr. Omerovic, of Sahlgrenska University, Gothenburg, Sweden, asked for Dr. Andersson's thoughts regarding a new meta-analysis by investigators at Imperial College London which excluded the suspect Dutch clinical trials. The investigators concluded that initiation of perioperative beta-blocker therapy was associated with a 27% increase in 30-day all-cause mortality, a 27% reduction in nonfatal MI, a 73% increase in stroke, and a 51% increase in hypotension.

"Patient safety being paramount, guidelines for perioperative beta-blocker initiation should be retracted without further delay," the meta-analysts argued (Heart 2013 July 31 [doi: 10.1136/heartjnl-2013-304262]).

"I read that meta-analysis with great interest," Dr. Andersson said. "I think there definitely is a heterogeneity in the effects of perioperative beta-blockers, and it depends on your baseline risk. Most of the studies in the meta-analysis included many patients at lower risk."

bjancin@frontlinemedcom.com

VITALS

Major finding: Patients with heart failure who were on beta-blocker therapy at the time of noncardiac surgery had a 22% reduction in 30-day major adverse cardiovascular events, compared with those not on a beta-blocker perioperatively. In stark contrast, patients with ischemic heart disease but no history of heart failure or MI had a 44% greater risk of such events if they were on a perioperative beta-blocker.

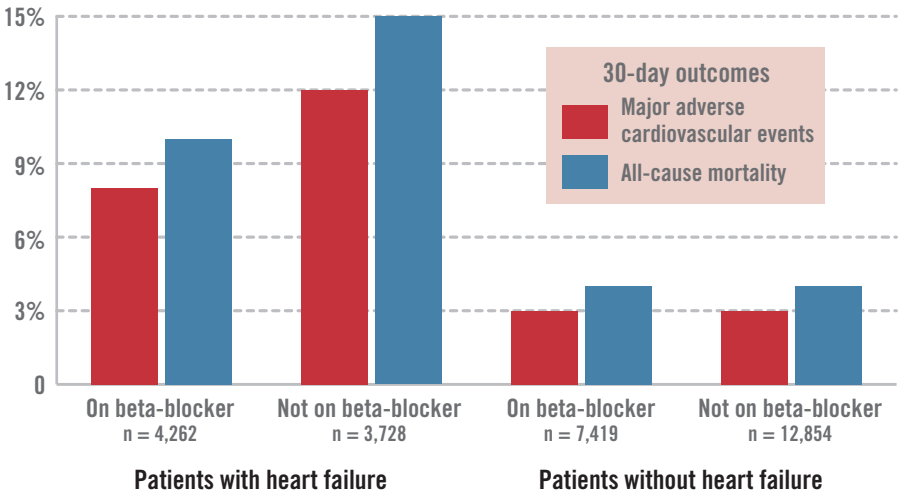
Data source: This was a Danish national registry study that included more than 28,000 patients with ischemic heart disease who underwent noncardiac surgery.

Disclosures: Dr. Andersson's study was funded by the Danish Medical Research Foundation. She reported having no financial conflicts of interest.

VIEW ON THE NEWS

Dr. Jun Chiong, FCCP, comments: There are similar studies published regarding preoperative beta-blockers. Most studies are from large databases and not randomized. The results are varied. Important factors such as severity of comorbid conditions prior to surgery (eg, uncontrolled diabetic, noncompliance), amount of blood loss, and surgical technique (not just the organ involved) are often not factored in. I applaud the authors for reporting a significant finding from such a large database. I hope this will encourage investigators to initiate a large, well-controlled, randomized study.

Perioperative beta-blockers: A mixed bag



Note: Based on data from a Danish national registry.
Source: Dr. Andersson

IMNG Medical Media

CHEST Physician
THE NEWSPAPER OF THE AMERICAN COLLEGE OF CHEST PHYSICIANS

Health insurance exchanges: What you need to know

BY ALICIA AULT
IMNG Medical News

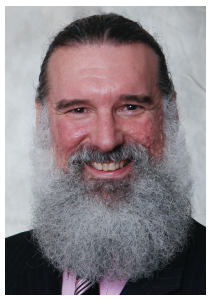
As the state and federal health insurance exchanges get up and running, physicians will face questions from patients about eligibility, enrollment, and how the marketplaces work.

The dizzying array of plans, costs, subsidies, and more could easily overwhelm even those who have been closely following the implementation of the Affordable Care Act, which established the exchanges.

Physicians don't have to go it alone. Several organizations – including the American Medical Association, the American College of Physicians, and the American Academy of Family Physicians – have set up websites to help doctors help their patients through the open enrollment period (Oct. 1, 2013, to March 31, 2014).

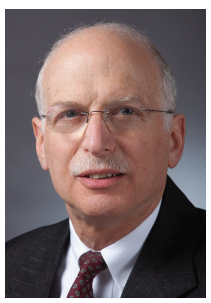
The AMA will provide facts and figures to doctors to help them navigate this period of time.

DR. HOVEN



Knowing about the exchanges, whether one agrees with the premise or not, is important to patient care.

DR. BLACKWELDER



Physicians' knowledge of patients' medical needs can help guide coverage choices.

DR. CUTLER

"We're going to give facts, figures, and information to doctors so they have it in their offices, to help them and their staff navigate this period of time," Dr. Ardis Dee Hoven, AMA president, said in an interview.

Knowing about the exchanges, whether one agrees with the premise of the ACA or not, is important to patient care Dr. Reid Blackwelder, AAFP president, said. "Even if physicians are not happy with [the law], they need to help patients recognize this is an option available to them to help them with their health care costs."

Dr. Charles Cutler, chairman of the ACP Board of Regents, said, "personally, this is a conversation I want to have with the patient." He said that a physician is most knowledgeable about that patient's medical needs and can help guide what kind of coverage to choose.

There is much to navigate. To a large extent, what doctors tell patients about the exchanges will depend on where they practice.

Each state has chosen its own pathway for an exchange as well as whether it will expand Medicaid eligibility, which impacts how, and how

many, patients will receive coverage.

Under the ACA, Medicaid coverage is available to all Americans who earn up to 133% of the federal poverty level ($14,856 for an individual and $30,657 for a family of four). Twenty-four states have said they will make Medicaid available at that level or higher, 21 won't expand, and 5 are uncommitted.

That means a lot of people will make too little to buy coverage on an exchange and too much to get Medicaid. According to a recent study by the Commonwealth Fund, in states that aren't expanding, about 42% of adults who were uninsured for any time over the past 2 years won't have access to new coverage.

At press time, 16 states and the District of Columbia had created their own exchanges, 26 states were letting the federal government run the exchange, and 7 states were operating in partnership with the feds. In Utah, the state has opened an exchange for small businesses, but the

Continued on following page

The 411 on health exchanges:

Exchanges will vary greatly from state to state.

The Commonwealth Fund has mapped it out, with links to each state's exchange website, details on how each exchange is governed, who serves on the board of directors, and whether and when quality data have to be reported.

Not every insurer in every state is participating. In some states, only one insurer is offering plans. A list of every insurer and all the plans being offered in every state can be found at the Centers for Medicare and Medicaid Services website. There is also information on insurers participating in the federally run exchanges at www.healthcare.gov. Each state exchange is using different ways to get patients enrolled. For the most part, physicians are not being asked to get involved personally; however, the department of Health and Human Services has enlisted organizations – such as the AMA, the AAFP, the ACP, and the American Academy of Pediatrics – as "Champions for Coverage," to help spread the word.

Plans offered through the exchanges have to cover a set of essential benefits. All Medicaid plans have to cover those services as well.

Exchange plans can't deny coverage or charge higher premiums for preexisting conditions, and premiums can't be different for men and women. Insurers can still charge more as people age, except in Vermont and New York, which prohibit age-rating by state law.

Plans can offer five levels of coverage, ranging from the least protective and least expensive to the most protective and most expensive: catastrophic, bronze, silver, gold, and platinum. Not every state requires that every level of coverage be offered.

Premiums are based on income and age. An individual with an income below $45,960 and a family of four with an income below $94,200 will be eligible for some kind of assistance. Tax credits are given directly to the insurance company so that the enrollee doesn't have to pay the higher premium up front. Out-of-pocket costs will also be limited, depending on income.

–Alicia Ault

Continued from previous page

federal government runs the exchange for individuals.

There are a lot of questions about how many patients will enroll through exchanges and how diligently they will stick with the new insurance plans.

Families USA has estimated that as many as 26 million Americans who make between 100% and 400% of the federal poverty level (between $24,000 and $94,000 for a family of four) will be eligible for tax credits to buy insurance.

Although individuals will be required to have health insurance beginning in January, some will choose not to. Those who opt out in 2014 will pay a penalty to the federal government with their 2015 tax return. The penalty will be either 1% of their income or $95, whichever is higher. By 2016, that amount rises to 2.5% of income or $695 per person, with exceptions for low-income individuals.

The government is also cutting enrollees a break on premium payments. As long as they have paid at least one premium, they'll have a 90-day grace period to pay the next one. If they don't pay, the insurer can drop the patient from the plan. But, if they've received services during that 90-day period, the insurer is not obligated to pay. That doesn't sit well with many physicians.

"It makes no sense at all – the patient is protected but the rest of the system isn't and that's not how it's supposed to work," the AMA's Dr. Hoven said.

Much remains to be seen with how the exchanges work, including what kind of clout they will have in negotiating with physicians. Many predict that the exchanges will grow as forces to be reckoned with in the insurance market.

Physicians don't have to go it alone. Several organizations have set up websites to help doctors help their patients through the open enrollment period.

Eventually, they will be able to set quality standards, bar plans that don't meet certain standards, and limit the sale of insurance outside exchanges, according to Henry Aaron of the Brookings Institution and Kevin W. Lucia of Georgetown University (N. Engl. J. Med. doi:10.1056/NEJMp1308032).

Vermont and Washington, D.C., already prohibit sales of individual policies outside their exchanges.

The insurance exchanges also are expected to expand their reach. They will start offering plans to employers with 51-100 workers in 2016, and could be adding larger employers in 2017. Over time, "we believe that the exchanges will be seen as a means for promoting a competitive insurance market in which consumers can make rational decisions, and that they will become an instrument that can reshape the health care delivery system," wrote Mr. Aaron and Mr. Lucia.

aault@frontlinemedcom.com
On Twitter @aliciaault

Online resources

AMA: *www.ama-assn.org/ama/pub/advocacy/topics/affordable-care-act.page*

ACP: *www.acponline.org/pressroom/aca_resources.htm?hp*

Pages 12a—12b

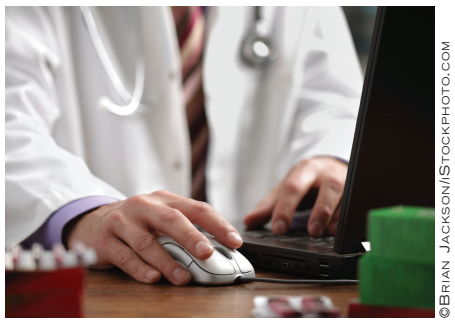
Online tool calculates CMS incentives, penalties

BY MARY ELLEN SCHNEIDER

Not sure if you're going to be getting a bonus or paying a penalty to Medicare this year? You're not alone.

Between the Medicare e-prescribing program, the "meaningful use" incentives for implementing electronic health records (EHRs), and the Physician Quality Reporting System (PQRS) – all with different incentive and penalty schedules – it's hard to keep track of whether payments are going up or down and by how much.

Apparently, officials at the Centers for Medicare and Medicaid Services (CMS) agree. They have launched an online tool (available at CMS.gov or tinyurl.com/CMSPayments) that allows physicians to click through a few questions and figure out what their payment adjustments will look like based on 2013 participation in the eRx Incentive Program, the Medicare EHR Incentive Program, and the PQRS.



©BRIAN JACKSON/ISTOCKPHOTO.COM

Clarity: A EHR, eRx, and PQRS calculator is available at CMS.gov.

For instance, if a physician attested to meaningful use of certified EHR technology in 2013 and plans on demonstrating that use, then he will avoid the 2015 payment adjustment and be eligible for incentive payments of between $8,000 and $12,000, depending on the year that he first demonstrated meaningful use.

The tool can also help physicians figure out how the three programs interact. If a physician reported the eRx measure's numerator code at least 25 times in 2012, he will avoid the 2014 eRx penalty. But if he also successfully attested to meaningful use in 2012, then he can't "double dip" and pick up the 1% eRx bonus, according to CMS.

mschneider@frontlinemedcom.com

VIEW ON THE NEWS

Dr. Stuart M. Garay, FCCP, comments: Meeting CMS requirements for Medicare reimbursement is becoming increasingly complicated. During the past few years e-prescribing, EHR meaningful use, and PQRS have been rolled out to physicians with different incentive and penalty schedules. Physicians have been presented a confusing mess! Finally CMS has provided an online tool to sort this out. Take advantage; don't miss out!

Tools ease consent to e-data sharing

Patient *from page 1*

when patient consent is required to release information for treatment, federal officials are encouraging physicians to develop a "meaningful consent" process that includes education about how the information is shared, gives patients time to review the educational materials, and allows them to change or revoke their consent at any time.

The HHS Office of the National Coordinator for Health Information Technology (ONC) recently conducted a pilot project to test the use of tablet computers to educate patients about their options in sharing information through an HIE. The project, which was completed in March 2013, found that patients were most interested in who could access their information, whether sensitive health information would be shared, how the information would be protected from misuse, and why it needed to be shared at all.

"As patients become more engaged in their health care, it's vitally important that they understand more about various aspects of their choices when it relates to sharing their health in the electronic health information exchange environment," Joy Pritts, ONC's chief privacy officer, said in a statement.

mschneider@frontlinemedcom.com

POLICY & PRACTICE

FDA, NIH fund tobacco centers

The Food and Drug Administration and the National Institutes of Health have awarded a total of up to $53 million to create 14 Tobacco Centers of Regulatory Science, which the agencies said will aid in the development and evaluation of tobacco product regulation designed to protect public health. The American Heart Association and 13 large universities are forming the centers, which will provide scientific evidence related to the diversity of tobacco products; reducing addiction; reducing toxicity and carcinogenicity; adverse health consequences; communications; marketing of tobacco products; and economics and policies, the two agencies said. "The FDA is committed to a science-based approach that addresses the complex public health issues raised by tobacco product regulation," Dr. Margaret Hamburg, FDA commissioner, said in a statement.

Most MDs remain self-employed

Although more physicians have signed on to work for hospitals and health systems over the past 5 years, slightly more than half of physicians remained self-employed in 2012 and 60% worked in practices wholly owned by physicians, according to research from the American Medical Association. Meanwhile, more than 5% worked directly for a hospital in 2012, and 23% worked for a practice that was at least partially owned by a hospital, the study found. In a 2007/2008 AMA survey, a little more than 16% worked in one of those two settings. Some physician practices report that lower-cost, cloud-based electronic health records and billing systems may give them what they need to stay independent, according to a survey by market research firm Black Book Rankings. The survey found that the vast majority of practices that have met meaningful use criteria believe better billing and EHR systems can help ensure practice survival.

Meaningful use reached by some

About 10% of Medicare providers and 17% of hospitals met requirements to demonstrate meaningful use in the first year of the electronic health record incentive programs, the Centers for Medicare and Medicaid Services announced. Through the 2011 program year, more than 57,000 providers – physicians and other clinicians – and more than 800 hospitals successfully attested stage 1 meaningful use, the CMS report said. To attest that they met the requirements of meaningful use, providers and hospitals needed to meet measures in five areas of focus covering quality, engaging patients and their families, care coordination, population health, and privacy. Both providers and hospitals "performed well above minimum performance thresholds for all measures of stage 1 meaningful use" and are expected to meet the higher thresholds of the same measures for stage 2, CMS officials said in a statement.

ACP warns on meaningful use

The American College of Physicians warned that an aggressive timetable combined with overly ambitious objectives may limit the success of the entire meaningful use EHR incentive program. In a letter to the CMS, the Health and Human Services department, and the National Coordinator for Health Information Technology, the ACP urged that the requirements be made more flexible so providers can adapt them to their practices. The ACP said providers need more time to begin their reporting on measures for stage 2, and that new clinical quality measures haven't been sufficiently tested and validated. Practices will struggle next year with the implementation of ICD-10, the ACP said, which will make it difficult for them to cope at the same time with stage 2 meaningful use.

MDs oppose assisted suicide

More than two-thirds of U.S.-based readers of the New England Journal of Medicine said in an online poll that they opposed physician-assisted suicide. Worldwide, 65% of readers said they thought the practice should not be permitted, according to the poll of respondents from 74 countries. A majority of respondents in 11 countries favored physician-assisted suicide, the report said. Mexico had the largest number favoring the practice. In the United States, a majority of respondents in 18 states said they supported physician-assisted suicide, but in Washington and Oregon – the only 2 states with laws that allow physicians to help patients terminate their lives – the majority opposed physician-assisted suicide. "Commentators on both sides of the divide agreed on the importance of palliative care, including hospice, for helping terminally ill patients manage their symptoms," the authors wrote.

–Jane Anderson

Tiotropium via Respimat didn't raise COPD death risk

BY MICHELE G. SULLIVAN
IMNG Medical News

Delivering the bronchodilator tiotropium with the Respimat inhaler did not increase the risk of death in chronic obstructive pulmonary disease, compared with the HandiHaler delivery system, according to a large study.

A randomized trial of more than 17,000 patients with COPD found that tiotropium Respimat 2.5 mcg and 5 mcg were both noninferior to tiotropium HandiHaler 18 mcg with respect to mortality, Dr. Robert A. Wise and his colleagues reported in the New England Journal of Medicine and presented simultaneously at the European Respiratory Society Annual Congress.

The 5-mcg Respimat dose also was as effective as the HandiHaler at preventing a first exacerbation of COPD, wrote Dr. Wise of Johns Hopkins Medical Center, Baltimore, and his colleagues.

Boehringer Ingelheim, which makes the Respimat inhaler, sponsored the study.

The 5-mcg Respimat dose and the 18-mcg HandiHaler dose have been shown to be pharmacokinetically equivalent. However, "concern about the safety of tiotropium Respimat was expressed when a post hoc pooled analysis of three 1-year trials and one 6-month placebo-controlled trial showed that [the 5-mcg dose] was associated with excess mortality in the planned treatment period (relative risk, 1.33), particularly among patients with known cardiac-rhythm disorders," Dr. Wise and the coauthors said. Subsequent meta-analyses appeared to confirm the finding.

The researchers designed the TIOSPIR (Tiotropium Safety and Performance in Respimat) trial to investigate the possible increased mortality risk in a large number of patients – many with preexisting cardiac disease. The study comprised 17,135 patients with COPD, who were randomized to once-daily tiotropium at 2.5 mcg or 5 mcg delivered by Respimat, or 18 mcg delivered by HandiHaler. The study was designed to continue until at least 1,266 deaths had occurred. The mean follow-up was 2.3 years [doi:10.1056/NEJMoa1303342]).

Average age of the patients was 65 years; 71% were male. About a third (38%) were current smokers. The mean forced expiratory volume in 1 second was 48% of predicted value.

Cardiac disease was not uncommon: 11% had a history of arrhythmia; 6% a prior heart attack; 2% a prior stroke; and 15% ischemic heart disease or coronary artery disease. Most (62%) were taking a long-acting beta$_2$-agonist, and 68% used inhaled glucocorticoids.

The primary endpoint was the risk of death from any cause. Death occurred in 7.7% of the 2.5-mcg Respimat group, 7.4% of the 5-mcg Respimat group, and 7.7% of the HandiHaler group. There was no significant difference in the risk of death between the HandiHaler and either Respimat dose.

All of the treatments performed similarly in the risk of first COPD exacerbation, the study's secondary endpoint.

Cause of death was judged to be cardiovascular in 2% of cases from each group, and respiratory in about 2.5% of cases in each group.

"In particular, there was no increased risk of death among the 1,221 patients with a history of cardiac arrhythmia in the Respimat 5-mcg group as compared with the HandiHaler group (10.6% and 12.9%, respectively)," the authors noted.

The risk of first COPD exacerbation was the secondary endpoint. In that measure, all of the treatments performed similarly. The hazard ratio for Respimat 5 mcg vs. HandiHaler was 0.98; exacerbations occurred in 48% of the Respimat 5-mcg group and 49% of the HandiHaler group, with median time to exacerbation of 756 and 719 days, respectively.

The investigators also performed a spirometry substudy. That showed that Respimat 5 mcg was noninferior to the HandiHaler treatment; the 2.5-mcg dose, however, was not as effective as the HandiHaler.

About a third of patients in each group experienced a serious adverse event. Most were respiratory in nature (about 17% in each group), followed by cardiovascular events (4% in each group).

msullivan@frontlinemedcom.com

VITALS

Major finding: Patients with chronic obstructive pulmonary disease were at no increased risk of death if they used 2.5 or 5 mcg tiotropium delivered by the Respimat inhaler, compared with 18 mcg tiotropium delivered by HandiHaler (HR, 1.00 and 0.98, respectively).

Data source: The randomized, double-blind study comprised 17,135 patients with COPD.

Disclosures: Boehringer Ingelheim sponsored the study. Dr. Wise reported receiving consulting fees from the company. Of the 11 coauthors, 6 are BI employees and 4 reported financial relationships with the company.

VIEW ON THE NEWS

Dr. Darcy D. Marciniuk, FCCP, comments: In this study of more than 17,100 participants, tiotropium delivered via the Respimat device was as effective and safe, as when delivered via the HandiHaler. Post-hoc analysis and meta-analyses of prior smaller studies suggested a possible increased risk of death, but this large and carefully performed study, which included a significant number of participants with pre-existing cardiac disease, did not replicate those concerns.

These results demonstrate, once again, the value of large, well-performed clinical research trials designed to directly address important clinical issues.

Breath test promising

Aspergillosis *from page 1*

apy, where the study was presented.

"An urgent need" exists for better diagnostic tests for invasive aspergillosis, a life-threatening fungal pneumonia in immunocompromised patients, explained Dr. Koo of Harvard Medical School, Boston. Current diagnostic tests – respiratory tract cultures, serum and bronchoalveolar lavage for fungal antigen testing, and nucleic acid detection assays – "have significant limitations in their sensitivity and specificity, and the turnaround time of these assays in clinical practice is often days," she said.

Dr. Koo and her colleagues developed a new method to detect volatile fungal metabolites directly in patient breath. First, they defined the fungal volatile metabolite profile of *Aspergillus fumigatus*, the most common cause of invasive aspergillosis, in in vitro culture. Next, they used gas chromatography–mass spectrometry to detect those metabolites in the breath of 54 immunocompromised patients with suspected invasive aspergillosis pneumonia. Of those 54 patients, 29 ultimately had invasive aspergillosis, and 25 had other causes of pneumonia.

The breathalyzerlike test correctly identified 27 of 29 patients with invasive aspergillosis and 24 of 25 patients without invasive aspergillosis, for an overall diagnostic sensitivity of 93% and a diagnostic specificity of 96%.

"We were a bit surprised by how clearly we were able to discriminate patients with invasive aspergillosis from patients with other pneumonias using this approach," Dr. Koo noted. Dr. Koo acknowledged certain limitations of the study, including its single-center design and the fact that it will require validation in a larger cohort of patients.

The study was supported by the National Institutes of Health and Harvard grants. The authors reported having no relevant financial conflicts.

VIEW ON THE NEWS

Dr. Marcos I. Restrepo, FCCP, comments: This promising and novel breath test that identifies invasive aspergillosis may have important implications in the care of immuncompromised patients with invasive fungal infections. Further developments are necessary before this technology can be considered as a point-of-care testing in the real world.

dbrunk@frontlinemedcom.com

Selenium fails for secondary prevention in NSCLC

BY SHARON WORCESTER
IMNG Medical News

Selenium supplementation provided no benefit over placebo for the prevention of second primary tumors in patients with completely resected stage 1 non–small cell lung cancer in a randomized phase III trial.

VITALS

Major finding: The incidence rates of lung and overall second primary tumors were similar with selenium and placebo (1.62 and 3.54 per 100 person-years vs. 1.30 and 3.39 per 100 person-years, respectively).

Data source: A randomized, placebo-controlled phase III trial involving 1,561 patients.

Disclosures: This study was supported by various federal grants. One coauthor of this study, Dr. David H. Johnson, reported serving as a consultant or adviser for Peloton Therapeutics. The remaining authors reported having no disclosures.

In 1,040 patients who were randomized to receive selenium and 521 patients randomized to receive placebo, the incidence rates of lung and overall second primary tumors (SPTs) were similar (1.62 and 3.54 per 100 person-years vs. 1.30 and 3.39 per 100 person-years, respectively). Five-year disease-free survival (DFS) rates were 74.4% and 79.6% for the selenium and placebo groups, respectively, Dr. Daniel D. Karp of the University of Texas M.D. Anderson Cancer Center, Houston, and his colleagues reported.

The findings were published online in the Journal of Clinical Oncology.

Patients included in the double-blind study were adults aged 18 years or older who were 6-36 months out from complete resection of histologically proven stage 1A or 1B non–small cell lung cancer (NSCLC). Selenium was given at a dose of 200 mcg daily for up to 48 months (J. Clin. Oncol. 2013 Sept. 3 [doi: 10.1200/JCO.2013.49.2173]).

At a planned interim analysis in October 2009, a data monitoring committee determined that "it was highly unlikely that this study could eventually show significant evidence of benefit from selenium," and the following month accrual was discontinued and participating patients discontinued treatment and entered the follow-up phase.

At the interim analysis, there were 83 cases of lung SPT, corresponding to 46% of the originally planned end points. The incidence rates of lung SPT were 1.91 and 1.36 per 100 person-years in the selenium and placebo groups, respectively.

"Overall, the SPT incidence rate was higher in the selenium arm but not significantly. Five-year DFS was 72% for selenium and 78% for placebo," the authors noted.

At the more recent analysis in June 2011, there were 252 reported SPTs in 224 patients. Of these, 98 were lung cancers, corresponding to 56% of the originally planned endpoints.

Although prior studies suggested

Continued on following page

Continued from previous page

a possible benefit of selenium for tertiary chemoprevention in completely resected NSCLC patients, the findings of the current study suggest otherwise.

Although selenium treatment was safe, with similar rates of grade 1 to 2 toxicity (31% and 26%, respectively), and grade 3 or greater toxicity (2% and 3%, respectively) occurring in the treatment and placebo groups, and no increased risk of diabetes or skin cancer among those treated with selenium, no significant differences were seen with respect to SPT prevention, the investigators said.

However, a recurring theme in this and prior SPT prevention trials in lung cancer and head and neck cancer – including studies evaluating retinoids for chemoprevention – is that the lowest rates of SPTs to be seen were in never-smokers, followed by former smokers, according to the investigators.

In the current study, active smokers in the selenium group had a 30% risk of recurrence or SPT, compared with a 24% risk for former smokers and a 20% risk for never-smokers. Also, the 3- and 5-year overall survival rates were 85.5% and 74.9%, respectively, in those who were active smokers or who had stopped smoking within 1 year, compared with 90% and 83.6%, respectively, for never-smokers.

'In the current era of molecularly targeted therapies for lung cancer, it seems that persisting with broad approaches in genomically unselected patient populations who continue to smoke is highly unlikely to be successful.'

"It is now clear that there is no demonstrable benefit in giving supplements such as selenium or retinoids to current smokers. However, the data suggest that a better approach might be to treat never-smokers with low serum selenium levels," they said, explaining that descriptive data from the current study suggest that any beneficial effect of selenium is limited to patients with a low baseline selenium level.

"In the current era of molecularly targeted therapies for lung cancer, it seems that persisting with broad approaches in genomically unselected patient populations who continue to smoke is highly unlikely to be successful," they said.

VIEW ON THE NEWS

Dr. W. Michael Alberts, FCCP, comments: Chemoprevention of lung cancer, including prevention of second primary cancers, is theoretically and practically appealing.

Unfortunately, as mentioned in the article: "It is now clear that there is no demonstrable benefit in giving supplements such as selenium or retinoids to current smokers." Further investigative efforts in this area are unlikely to be of major benefit.

PULMONARY PERSPECTIVES: Subsolid nodules: Significance & CT scans

BY DR. JANE P. KO
AND DR. DAVID P. NAIDICH, FCCP

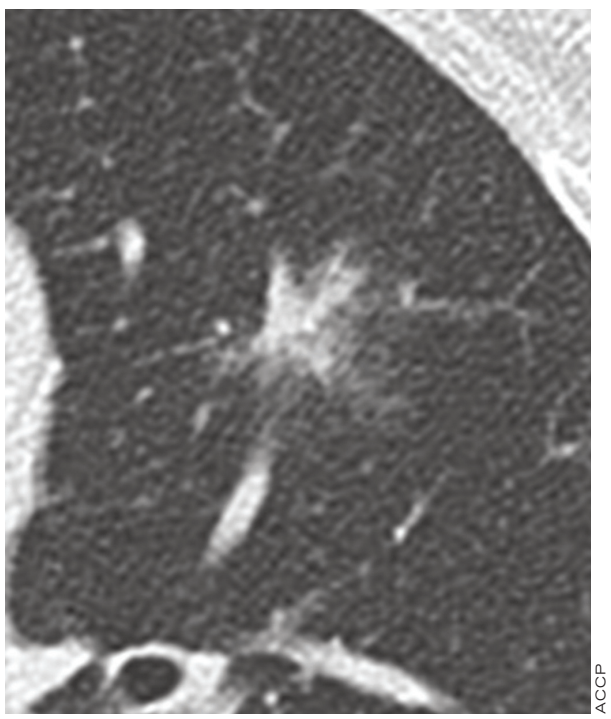
By providing high-resolution, volumetric acquisition, multidetector CT (MDCT) scanning has profoundly altered our understanding of the appearance and natural history of peripheral adenocarcinomas of the lung. In particular, use of MDCT has led to a growing awareness of the importance of "subsolid" lung nodules, which contain ground-glass"attenuation. As defined by the Fleischner Glossary of terms, ground glass refers to foci of "hazy increased attenuation of lung that does not obliterate the bronchial and vascular margins" (Hansell et al. *Radiology.* 2008;246[3]:697). When composed only of ground glass, nodules are preferentially referred to as pure ground-glass nodules (pGGNs), while those with both soft tissue and ground-glass components are described as part-solid nodules (PSNs). PGGNs and PSNs are considered together as subsolid nodules, in contrast to solid nodules (Naidich et al. *Radiology.* 2013;266[1]:304).

Appearance and natural history

Current knowledge of the appearance and natural history of subsolid lesions has largely been obtained from large scale, low-dose CT screening studies (Wang et al. *Br J Radiol.* 2000;73[873]:930; Yang et al. *AJR Am J Roentgenol.* 2001;176[6]:1399; Henschke et al. *AJR Am J Roentgenol.* 2002;178[5]:1053; de Hoop et al. *Radiology.* 2010;255[1]:199). Persistent subsolid nodules on serial CT scans have been shown to strongly correlate with the spectrum of peripheral lung adenocarcinomas, the classification of which has been recently redefined. The current system sponsored by the International Association for the Study of Lung Cancer, the American Thoracic Society, and the European Respiratory Society (IASLC/ATS/ERS) reflects the present understanding of adenocarcinoma (Travis et al. *J Thorac Oncol.* 2011;6[2]:244). The objective has been to separate lesions according to prognosis and provide more specific criteria to reduce diagnostic variability. The classification now includes two preinvasive lesions – atypical adenomatous hyperplasia (AAH) and adenocarcinoma in situ (AIS) – the latter effectively replacing bronchioloalveolar (or bronchoalveolar) carcinoma.

AAH is composed of mildly to moderately atypical type II pneumocytes and/or club cells (Clara) along the alveoli and is typically 5 mm and smaller in dimension. AAH can be difficult to differentiate from AIS, in which tumor cells grow in a lepidic growth pattern along the alveoli without invasion of vessels, stroma, or pleura.

Nonmucinous AIS is common while the mucinous form is rare. AAH is seen as a small, 5 mm or less, round faint pGGN on imaging. Similarly, nonmucinous AIS often appears as a 3 cm or smaller pGGN although occasionally is a PSN. In contrast, mucinous AIS manifests as a solid nodule. A small, maximally 5-mm or less focus of invasion in a 3-cm or smaller lepidic-predominant neoplasm indicates a minimally invasive carcinoma (MIA). On CT scan, nonmucinous MIA exhibits part-solid attenuation, with higher density areas correlating with invasion and collapse fibrosis. Similar to AIS, the mucinous form of MIA is rare, appearing as a solid or PSN. Invasive adenocarcinoma is diagnosed when a focus of invasion is larger than 5 mm. The predominant histology such as lepidic, acinar, papillary, and micropapillary within the invasive tumor determines the diagnosis. For example lepidic-predominant adenocarcinomas (Figure) are predominantly lepidic with an invasive focus larger than 5 mm. Key to this classification is the recognition that AIS and MIA are associated with 100% 5-year



Lepidic-predominant adenocarcinoma: Axial CT scan image in lung window settings shows a left-upper-lobe part-solid nodule with ground-glass and solid attenuation areas.

disease-specific survival with resection (Yoshizawa et al. *J Thorac Oncol.* 2013[1];8:52), while lepidic-predominant subtypes are associated with a 90% or higher survival following resection and clearly separate from survival characteristics of more invasive subtypes.

Role of CT in characterization

To date, as discussed above, close correlation between the new classification system and CT appearances of these lesions has been reported (Austin et al. *Radiology.* 2013;266[1]:62; Godoy and Naidich. *J Thorac Imaging*. 2012;27[4]:240). Unfortunately, despite close correlation, not all subsolid nodules prove to be part of the spectrum of lung adenocarcinomas. Specifically, it has been shown that about 20% of resected persistent subsolid lesions, especially pGGNs or nodules with solid components less than or 5% solid, may prove due to focal fibrosis or organizing pneumonia (Kim et al. *Radiology*. 2007;245[1]:267).

Pending more extensive CT-pathologic correlation to improve diagnostic ability, accurate characterization of subsolid nodules involves assessing for temporal changes in nodule characteristics. To date, this has involved simultaneously assessing both changes in lesions size and nodule density (Takashima et al. *AJR Am J Roentgenol.* 2003;180[3]:817). In general, lesions that increase in size are sufficiently worrisome to require definitive biopsy, although it has been noted that a decrease in the dimensions of a subsolid invasive adenocarcinoma may rarely occur because of collapse of alveolar spaces and localized fibrosis (Kakinuma et al. *J Comput Assist Tomogr.* 2004[1];28:17).

If close monitoring of lesions is the current method of choice, it cannot be overemphasized that subsolid lesions, in particular pGGNs, may exhibit exceedingly slow growth with doubling times on the order of 813 days (Hasegawa et al. *Br J Radiol.* 2000;73[876]:1252). For this reason, careful scrutiny of the ground-glass and solid components in relation to existing lung architecture is needed to detect subtle changes in morphologic features when comparing multiple CT scans. Additionally, the comparison of current to remote CT scan examinations is also mandatory to facilitate the detection of slow growth.

Quantitative computer-assisted analysis can potentially improve the assessment of subsolid nodules on CT scan. A subsolid nodule's amorphous qualities, heterogeneous internal features, and architectural distortion hinder both accurate measurement and qualitative evaluation. Measurement techniques currently entail manual acquisition of linear dimensions.

Investigations have addressed manual and semi-automated techniques for area and volume measurement; however, expressions of nodule size and proportion of solid components are not standardized. Histogram analysis entails evaluating the attenuation values within a volume or area of interest in which the number of voxels (y axis) are plotted against Hounsfield units along the x axis (Ikeda et al. *Chest.* 2007;132[3]:984). The vanishing ratio is derived by subtracting the area of a nodule on soft tissue windows (reflective of the solid portion of nodules) from the area on lung windows, divided by the area on lung windows (Kakinuma et al. *J Comput Assist Tomogr.* 2008;32[5]:792). Nodule mass, a measure that incorporates physical density and volume, is a promising method for detecting growth at an earlier time than linear dimension or volume, although currently requiring manual delineation of the nodule on CT images (de Hoop B et al. *Radiology.* 2010;255[1]:199).

Regardless of the assessment method used, careful attention to CT technique is needed to maintain image quality while minimizing radiation exposure to patients who undergo follow-up CT scans for nodule evaluation. In addition, the evaluation of subsolid nodules for attenuation and morphologic features is optimized with the use of thin sections on the order of 1 mm.

Recent management recommendations

In the absence of definitive diagnostic criteria, several recent recommendations for the management of subsolid nodules have been issued, including by the Fleischner Society (Naidich et al. *Radiology*. 2013;266[1]:304) and the American College of Chest Physicians (ACCP) (Gould et al. *Chest.* 2013;143:e93S). These guidelines cover the roles of follow-up CT scanning, PET, and biopsy. Similarities exist between the two guidelines, such as annual interval follow-up of larger than 5-mm

Continued on page 24

Study highlights acute exacerbation risks in RA-ILD

BY ELIZABETH MECHCATIE
IMNG Medical News

An older age at the time of diagnosis and treatment with methotrexate were significantly associated with an increased risk of developing "acute exacerbation" of rheumatoid arthritis–associated interstitial lung disease in a retrospective cohort study of 51 patients.

The other risk factor associated with the development of acute exacerbation (AE) was a specific pattern on high-resolution CT scan, which was also associated with poorer survival, Dr. Hironao Hozumi, of Hamamatsu (Japan) University, and associates reported in BMJ Open.

Overall, survival was also significantly lower among those who developed AE, according to the study. As far as the authors know, this is the first study to investigate the risk factors and prognosis associated with AE in patients who have been diagnosed with rheumatoid arthritis–associated interstitial lung disease (RA-ILD).

Until this study, risk factors and prognosis for AEs in patients with RA-ILD have been unclear, the investigators said.

AE is "a recently established and an increasingly recognized occurrence"

Continued from page 19

nodules after an initial 3-month scan, no strong recommendation for follow-up of 5-mm and smaller pGGNs, and no emphasis on morphologic features.

The ACCP recommendations consider the pretest probability and do not address multiple subsolid lesions. In addition, size of the nodule plays a role. The Fleischner guidelines provide recommendations for multiple subsolid nodules and do not incorporate guidelines according to size for lesions larger than 5 mm. Rather, the size of any soft tissue component is incorporated as a factor guiding management. Thus, variations exist among recommendations, knowledge of which is useful for determining the management of subsolid nodules.

Conclusion

Persistent subsolid nodules have been shown to be characteristic of the entire spectrum of peripheral lung adenocarcinomas, including both preinvasive and frankly invasive forms. However, many of these lesions may prove to be benign, including those that are transient on sequential studies; optimal management typically involves close monitoring of these lesions with sequential low-dose high resolution CT studies.

Pending future investigations allowing more definitive CT-pathologic correlations and the development of sophisticated quantitative CT methods, familiarity with guidelines that now address the management of subsolid nodules is helpful for clinical decision making.

Drs. Ko and Naidich are with the Department of Radiology, NYU Langone Medical Center, New York, NY.

in people with idiopathic pulmonary fibrosis, and it also affects people with other types of interstitial lung diseases, including those associated with collagen vascular disease, the authors noted.

AE was defined in the study as "acute deterioration in respiratory status, with newly developed bilateral ground-glass opacities and/or consolidations" visible on chest x-ray or CT scans.

The retrospective case-control study evaluated medical records and images of 51 patients consecutively diagnosed with RA-ILD at Hamamatsu University Hospital between 1995 and 2012. The median ages at the time of the RA and ILD diagnoses were 61 and 62 years, respectively. A majority (57%) of the patients were men. The patients had been followed for a median of 8.5 years (range, 1-17 years) before being diagnosed with AE (BMJ Open 2013;3:e003132).

During the observation period of 1-11 years, 11 of the 51 patients (22%) developed AE at a median age of 72 years (range, 60-86 years).

In a univariate Cox hazard analysis, an older age at the time of ILD diagnosis was associated with an 11% increase in the risk of AE occurrence.

Of the 11 patients who developed AE, 7 (64%) died of respiratory failure during the initial episode of AE, compared with 2 (5%) of the 40 patients who did not develop AE.

There was a usual interstitial pneumonia (UIP) pattern on high-resolution CT in 14 (27%) of the 51 patients. This pattern was found in 6 (55%) of the patients who had AE, compared with 8 (20%) of the 40 patients with no AE, a significant difference.

The overall 5-year survival was 90% for all the patients, but there was a significant difference among those with or without the UIP pattern (70% vs. 97%). Patients' risk of death more than doubled with an AE occurrence (hazard ratio, 2.47).

The use of methotrexate was associated with a threefold increased risk of developing AE (HR, 3.04) in a univariate Cox hazard analysis. Although methotrexate was discontinued, the respiratory condition of all six patients in the AE group continued to deteriorate and they had poor responses to corticosteroid therapy.

The authors had no disclosures to report.

emechcatie@frontlinemedcom.com

VITALS

Major finding: The use of methotrexate was associated with a threefold increased risk of developing acute exacerbation of RA-ILD (HR, 3.04) in a univariate Cox hazard analysis.

Data source: A retrospective case-control study that looked at the medical records and images of 51 patients diagnosed with RA-ILD at an academic hospital in Japan between 1995 and 2012.

Disclosures: The authors had no disclosures to report. The study was partly funded by a grant from Japan's Ministry of Health, Labor, and Welfare to the Diffuse Lung Diseases Research Group.

AE is 'a recently established and an increasingly recognized occurrence' in people with idiopathic pulmonary fibrosis, and it also affects people with other types of interstitial lung diseases.

Thousands quit smoking after CDC campaign

BY ALICIA AULT
IMNG Medical News

Almost 2 million Americans tried to quit smoking in the wake of a 2012 government educational campaign, and at least 100,000 of them have quit permanently.

That's according to an analysis of the Centers for Disease Control and Prevention's (CDC's) Tips From Former Smokers campaign that was published online in the Lancet (2013 Sept. 9 [doi: 10.1016/S0140-6736(13)61686-4]). The analysis by CDC officials estimates that 1.6 million Americans tried to quit after the campaign's launch in March 2012. By June 2012, when it ended, at least 100,000 of them could be defined as having permanently quit.

"These are really minimal estimates," said Dr. Thomas Frieden, director of the CDC, in a briefing with reporters. "We think the actual impact may have been even larger than this."

The Tips From Former Smokers campaign was made possible by a $54 million grant from the Affordable Care Act's Public Health and Prevention Fund. Print ads featured graphic photos of former smokers with stomas, or scars from open heart surgery. Former smokers also described tobacco's toll on their health in broadcast and radio ads and videos posted to the CDC website. The TV ads directed viewers to the 1-800-QUIT-NOW quit line or to the National Cancer Institute's quit assistance website, ww.smokefree.gov.

A testimonial from former smoker Terrie Hall has been the most-visited page on the entire CDC site, receiving 2.5 million hits so far, Dr. Frieden said. In it, Ms. Hall tells smokers: "Record your voice for loved ones while you still can." Ms. Hall was diagnosed with throat cancer, had her larynx removed, and now speaks with the aid of an artificial voice box.

©THINKSTOCKPHOTOS.COM

Over 1.6 million people tried to kick their habit after ads launched in March 2012.

Overall, the tips campaign was seen by four out of five smokers, the Lancet report estimated.

To assess how well the campaign worked, the CDC used a nationally representative online survey. Current smokers – those who had smoked at least 100 cigarettes in their lifetime and now smoked every day or some days – and nonsmokers (all others) were compared. There was a baseline survey before the campaign started and another immediately after the campaign ended.

Of the invited smokers, 70% (4,108) responded, and 58% (3,000) of the invited nonsmokers responded to the baseline survey. After the campaign ended, 74% (3,058) of the smokers and 74% (2,220) of the nonsmokers responded. About 75% of the smokers and nonsmokers said they recalled seeing at least one tips ad.

The prevalence of smokers who tried to quit in the past 3 months increased from 31% before the tips campaign to 35% after the campaign. At the end of the 12-week campaign, 13% of smokers who tried to quit said they had not smoked again.

After stratifying the results of the overall response to the campaign, the CDC researchers found that there were more quit attempts among younger smokers, lighter smokers, African American smokers, and smokers with less education.

Calls to the 1-800-QUIT-NOW line increased 132% during the 12-week campaign, 200,000 more calls than during the same period the previous year. There were also 500,000 unique visitors to the www.smokefree.gov website.

The analysis showed that the campaign spurred a large number of nonsmokers to talk to their friends or family about the dangers of smoking and quitting. Applying the findings to the U.S. population, the researchers reported that almost 5 million nonsmokers recommended a smoking cessation service to a friend or family member, and 6 million discussed the dangers of smoking.

ALICIA AULT/IMNG MEDICAL MEDIA

CDC chief Thomas Frieden hailed the effect of Tips From Former Smokers ads.

Lisha Hancock was one of those smokers who heard from a family member about quitting, but she also said that she was influenced greatly by Ms. Hall's story. Ms. Hancock told reporters that she smoked for 17 years, starting at age 21. Family and peer pressure did not motivate her to quit. But her 5-year-old son's questions and response to Ms. Hall's ads, along with her own impressions from Ms. Hall's testimonial, moved her. "You can see the regret and sadness in her eyes," said Ms. Hancock, in a conference call.

After seeing the ads and online testimonials, Ms. Hancock decided to make a plan, made some diet and exercise changes, and used nicotine lozenges to help her quit. She has gone about 6 months without smoking, she said.

The CDC report found that thanks to more people quitting, the campaign may have added 500,000 quality-adjusted life-years to the U.S. population, which suggests a cost per life-year saved of less than $200. That ranks the campaign "among the most cost-effective preventive interventions," said the CDC authors.

Dr. Frieden said that the study results validated a large, national educational antismoking campaign. The CDC will continue to find ways to alert the public to the dangers of smoking, he said. The agency ran additional Tips From Former Smokers ads between March and June this year. That campaign included exhortations for smokers to talk to their physicians about quitting.

aault@frontlinemedcom.com
On Twitter @aliciaault

PRESIDENT'S REPORT: Simulation education very real at the ACCP

BY DARCY D. MARCINIUK, MD, FCCP

The ACCP received notification in August that it had received formal accreditation from the Society of Simulation in Healthcare (SSH), with recognition in the areas of education, training, assessment, and research.

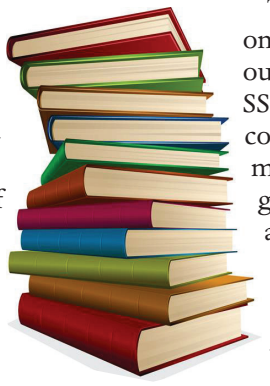
DR. MARCINIUK

This is big news!

Let me help you appreciate the significance of this notable achievement. The ACCP is the first, and only, professional medical society to be accredited by the SSH for fulfilling its stringent criteria for simulation-based educational requirements. Not only is the ACCP the first and only professional medical society in pulmonary, critical care, sleep medicine, and pulmonary procedures—but the first and only professional medical society in all areas of medicine. While that might not last forever, it says something about the commitment of the ACCP to excellence and innovation in education, and so vividly, to the expertise of the ACCP in the design and delivery of simulation education.

As noted by the SSH, this designation represents the highest level of accreditation that can be awarded to an organization. It demonstrates the ACCP's substantial conformance to the highest accreditation standards in health care. This recognition doesn't happen by chance; we put ourselves through a rigorous and lengthy peer review process.

It started with building a great simulation education program (which took years); then over many months and hundreds of hours, we compiled a comprehensive application with the help of dedicated staff and physician volunteers. We then shared our activities and our vision with a team of expert external surveyors, who carefully reviewed all of the submitted materials (binders and binders of completed documents) and answered all follow-up inquiries that arose from that assessment.



The next step was an exhaustive on-site visit (for both the members of our team and the surveyors) with the SSH in which we demonstrated our commitment to offering the best medical simulation training programs and services that are measurable, accountable, and of the highest quality. It was not easy but fundamental to keeping our promise that we deliver the very best simulation education.

ACCP

The ACCP's new Silver LEED-certified headquarters building will have a dedicated state-of-the-art Innovation, Simulation, and Training Center.

A new home for education

We are grateful to the SSH and the accreditation team for their careful review and expert assistance. An important benefit for the ACCP from this comprehensive process was that we received practical suggestions about how we might become even better. And that goal comes even closer as we approach another milestone effort within the ACCP with completion of our new headquarters building. The Silver LEED-certified building will have an emphasis on our education,

Continued on following page

Continued from previous page

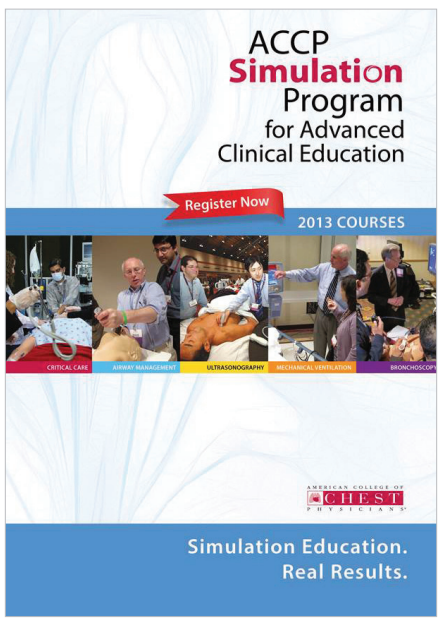
training, simulation, and educational research efforts with a dedicated state-of-the-art Innovation, Simulation, and Training Center.

The new ACCP campus will help propel respiratory health and medicine forward. It is designed to be a center for cutting-edge education, a catalyst for new ideas, and an active partner in spreading and implementing new practices that lead to a better life for patients. The new building will create a year-round environment for immersive training and innovation and facilitate on-demand access to new tools for clinicians throughout the country and around the world.

Many of us can remember years ago when we deliberated whether or not to support simulation (it definitely helps to be visionary).

Advanced simulation training is fundamental to reaching that goal; and with our accreditation, you can be assured you are receiving the best medical simulation training in the world from a trusted source—the ACCP.

This didn't happen overnight. As I recently shared with colleagues, many of us can remember years ago when we deliberated whether or not to support simulation (it definitely helps to be visionary). But fast forward to today, and the ACCP is an established leader in simulation education, providing programs with a strong clinical focus for improving patient care in airway management, bronchoscopy and pulmonary procedures, critical care management, critical care ultrasonography, and mechanical ventilation. (Stay tuned—there are many more to come!)



Evidence-based medicine meets state-of-the-art technology.

EBM plus technology

The ACCP Simulation Program combines evidence-based medicine with technologically advanced simulation education techniques and practical hands-on learning. It provides hands-on, clinical education experiences for participants and teams from varied backgrounds and scopes of practices. It integrates a variety of task trainers, low- and high-fidelity simulators, and actual medical devices to provide optimal clinical learning opportunities, all the while emphasizing current standards of practice, patient safety, evidence-based patient care, and formative assessments.

The courses are led by expert clinicians in their respective fields of

study, with a student to teacher ratio of 5:1 or better. This ensures focused, thoughtful attention and a performance-based, hands-on assessment for each participant supported by the ACCP Certificate of Completion Program. Anything less won't do.

Since 2005, more than 5,000 physicians have benefited from ACCP simulation education programs. And each year, the ACCP hosts the world's largest medical simulation education event during our annual CHEST meeting. Housed in the ACCP Simulation Center at CHEST, we train more than 1,000 physicians in nearly 25,000 square feet of space, featuring state-of-the-art simulation technology and education.

Taken together, it all adds up to "simulation education with the proven leader." To find out more or to register for an upcoming simulation course offering, please visit www.chestnet.org and click on "Simulation Program." It's easy, and now, it's fully accredited!

Let me finish by saying thank you and congratulating the member volunteers, leaders, and ACCP staff who have been involved with the simulation program over the years, and have made this remarkable feat

Continued on following page

Continued from previous page

possible. A lot of gifted individuals were doing a lot of hard work, over a long period of time, with the important goal of providing our members and colleagues with the most innovative and effective (and now, accredited) simulation learning opportunities possible. And on behalf of our almost 19,000 members from around the globe, let me convey how proud we are of the entire ACCP team for this deserved recognition.

PS: Dr. Mike Baumann will be assuming the ACCP Presidency during CHEST 2013 in Chicago. I would like to express my sincere appreciation for having been allowed the wonderful opportunity to serve as your President. Thank you also to everyone (… and there are so many of you!) who gave so unselfishly to assist the ACCP, and me, during the past year – it was most welcome and very much appreciated!

Please join me in wishing Dr. Baumann the very best this coming year, and in committing to help Mike, and the ACCP, achieve our goals.

DR. BAUMANN

ACCP

Chinese Thoracic Society President Dr. Chen Wong (L); and ACCP President Dr. Darcy D. Marciniuk sign an agreement to develop PCCM fellowship training programs in China.

ACCP to collaborate with Chinese Thoracic Society

Culminating a year of discussion and planning, the ACCP and the Chinese Thoracic Society formally agreed on September 19, to collaborate to develop and launch fellowship programs in pulmonary and critical care medicine in China.

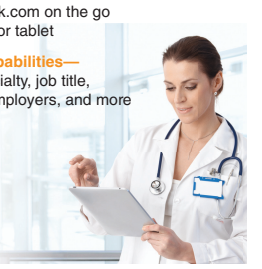
ICUs in China are currently organized from general ICUs to units focusing on diseases of specific organ systems; likewise, physician staff range from recent medical school graduates to skilled intensivists. Pulmonary physicians play varied roles, from ICU director to consultant to no role at all.

Chinese intensive care units are currently organized from general ICUs to units focusing on diseases of specific organ systems. Pulmonary physicians play varied roles, from ICU director to consultant to no role at all.

The leadership of the Chinese Thoracic Society recognized the similarities between critical care in China now with the United States decades ago, and how the field of pulmonary medicine in the United States evolved into "pulmonary and critical care medicine" (PCCM).

In 2012, the Chinese Thoracic Society leadership proposed to the ACCP leadership that the ACCP help them establish PCCM as a recognized subspecialty and to take the lead in critical care in China across the country.

The first step will be for a steering committee to design training programs with standardized curricula and requirements for trainees, faculty, and programs, estimated to launch in the fall of 2014.



NETWORKS: Respiratory care, pediatric ILD, oncology, and VTE

Respiratory Care

"The Times They Are a-Changin"

For those of us who grew up in the 1960s, Dylan's iconic song evokes images of political protest and change. Today, however, the title could just as easily apply to our current health-care environment. Nowhere in health care are the times a-changin' more than for our colleagues in respiratory care, in large part driven by the American Association of Respiratory Care (AARC)'s "2015 and Beyond" project.

Many ACCP members may not be familiar with the "2015 and Beyond" project. Launched in 2007, the project's charge was to "envision the RT of the future" and included input from key stakeholders,[1] including the ACCP. In a series of three conferences, the AARC identified anticipated changes in health care and potential future roles for RTs; the skills, knowledge, attributes, and competencies needed by respiratory therapists to fill these roles; and outlined a roadmap for transitioning respiratory care to the new vision.[2] The project predicted increased roles for RTs in acute and chronic disease management, quality improvement and cost containment, biomedical innovation, team and protocol-based care, and evidence-based practice.

At the core of this vision is an educated, critically-thinking workforce.[3,4] It is no surprise, then, that the most significant changes are in RT education. An Associate's Degree is now required for entry into the profession, and there is increasing pressure for additional education and training. Currently, 13% of respiratory care training programs offer a baccalaureate degree and three programs offer a master's in Respiratory Care.[5] Degree advancement programs, often via articulation agreements with 4-year colleges and universities, are offered or are being considered by over 50% of associate degree programs responding to a recent survey.[6] Distance education is increasingly available to RTs in remote locations. Master's level programs, with a goal of an Advanced-Practice RT, similar to the Physician's Assistant or Nurse Practitioner, are also being discussed.[7]

DR. O'NEIL

Mirroring the educational changes are changes to current certification examinations. In July 2012, the National Board for Respiratory Care (NBRC) began offering an Adult Critical Care Specialist (ACCS) examination. The NBRC now offers specialty certification in three areas—adult critical care, neonatal/pediatric care and sleep medicine, as well as PFT certification and the entry-level Certified Respiratory Therapist (CRT) and advanced Registered Respiratory Therapist (RRT) examinations. The ACCS certification requires 1 year of full time practice in critical care, advanced level (RRT) certification, and passing a comprehensive exam focused broadly on critical care practice.[8] The certification is meant to recognize a special level of expertise, similar to the CCRN certification.

There are also changes planned for the CRT and RRT examinations. While the "2015 and Beyond "Committee recommended retiring the CRT examination and making the RRT exam the entry level certification for RTs, the NBRC has taken a different path. The plan is to combine the current two examinations into a single written exam with two "passing" scores. The lower passing (CRT) score would signify entry-level knowledge while the higher passing (RRT) score would indicate advanced knowledge and would make the examinee eligible for the simulation component of the RRT certification process. The new examination and other enhancements to the simulation portion of the certification process are under development with implementation scheduled for 2015.

Finally, the workplace and state licensing boards are prompting change. Employers have indicated a desire for advanced education and RRT certification[9]; and in the current employment environment, they have significant discretion in hiring. In addition, state licensing boards, most notably Ohio,[10] are proposing requirements for advanced education and the RRT credential licensure. Other states are likely to follow suit.

2015 is just around the corner. Many of the changes proposed by the "2015 and Beyond" project are already here and several more are pending implementation. As chest physicians, we should be prepared to support our respiratory care colleagues through their transition and anticipate collaborating with more educated, professional therapists capable of assuming new roles and responsibilities in a-changin' health-care environment.

Dr. Kevin M. O'Neil, FCCP
Vice-Chair

References

1. Kacmarek RM, Durbin CG, Barnes TA, Kageler WV, Walton JR, O'Neil EH. Creating a vision for respiratory care in 2015 and beyond. *Respir Care*. 2009;54(3):375-386.
2. Giordano SP. Building a bridge to the future: some points to ponder. *Respir Care*. 2011;56(5):720-721.
3. Barnes TA, Gale DD, Kacmarek RM, Kageler WV. Competencies needed by graduate respiratory therapists in 2015 and beyond. *Respir Care*. 2010;5(5):601-616.
4. Barnes TA, Kacmarek RM, Kageler WV, Morris MJ, Durbin CG. Transitioning the respiratory therapy workforce for 2015 and beyond. *Respir Care*. 2011;56(5):681-690.
5. 2012 CoARC Report on Accreditation in Respiratory Care Education. Commission on Accreditation for Respiratory Care website. www.coarc.com. Accessed August 15, 2013
6. Personal communication, Dr. Thomas Smalling, Executive Director, Committee for Accreditation for Respiratory Care, July 14, 2013.
7. Shelledy DC. Advanced Practice Respiratory Therapist Update: New Horizons in RC Education. Presented at AARC Summer Forum, July 16, 2013.
8. Lamb KD. Adult critical care credential for adult critical care RTs. *AARC Times*. 2013; 37:32-35.
9. Kacmarek RM, Barnes TA, Durbin

Continued on following page

NETWORKS CHALLENGE 2013: A travel grant awaits winners

What is the NetWorks Challenge?

The CHEST Foundation established the NetWorks Challenge as a way for ACCP NetWorks members to philanthropically support The Foundation and its programs: youth tobacco prevention, humanitarian programs, research grants and awards, and patient and public education (OneBreath®). The NetWorks Challenge 2013 is a competition to raise the most funds between September 4 and October 31, the final day of CHEST 2013.

In addition to supporting the important programs of The CHEST Foundation, your donation will help your NetWork win in these challenge categories:

► Highest total dollars raised.
► Greatest percentage of participation.
► 100% participation for your NetWork Steering Committee with donations at the $250 level and above. Every NetWorks can be a winner in this category!

How can I help the physicians-in-training in my NetWork?

Each winning NetWork will receive one physician-in-training travel grant to attend CHEST 2014. The travel grant recipient will be selected by drawing from the list of physicians-in-training who are members of the NetWork on January 10, 2014. Please see the *NetWorks Challenge 2013 Travel Grant Guidelines* for full details. This is a great way to highlight your NetWork and foster career growth for your young members!

In addition, winning NetWorks will be given special recognition in *ACCP NewsBrief* and *CHEST Physician*, on the CHEST 2013 website, in social media, and through e-community updates and communications throughout the year.

Where can I make my donation?

Donate online by visiting www.onebreath.org. Click on the "Donate" tab at the top. If you prefer to send a check by mail, send the completed NetWorks Challenge 2013 Donation Form and your check to: The CHEST Foundation, Attn: Annual Fund Manager, 3300 Dundee Rd., Northbrook, IL 60062.

Last year, the Critical Care NetWork had the highest total dollar participation, and the Steering Committee of the Interstitial and Diffuse Lung Disease NetWork was the first group to reach 100% participation. Make sure your NetWork wins this year!

For more details or additional information about NetWorks Challenge 2013, please contact Patti Steele, CHEST Foundation Annual Fund Manager, at psteele@chestnet.org or by phone: (224) 927-5202.

Continued from previous page

CG. Survey of directors of respiratory therapy departments regarding the future education and credentialing of respiratory care students and staff. *Respir Care.* 2012:57(5):710-720.

10. Mays MK. Licensure by 2015 K ORCB Files Rule Proposing to Require the RRT Credential for Initial Licensure by 2015. The News Link Winter 2013. www.respiratorycare.ohio.gov. Accessed August 16, 2013.

Pediatric Chest Medicine

Children's interstitial lung disease

Children's interstitial lung disease (chILD) refers to a heterogeneous group of rare and diffuse lung diseases associated with significant morbidity and mortality.[1] These diseases include neuroendocrine cell hyperplasia of infancy, pulmonary interstitial glycogenosis, surfactant dysfunction mutations, and alveolar capillary dysplasia with misalignment of pulmonary veins. Diagnosis can be challenging, which may lead to a delay in recognition and treatment of these disorders.[2, 3] In an effort to promote better understanding of these diseases, the Children's Interstitial and Diffuse Lung Disease Research Network (chILDRN) Investigational Consortium was formed, in partnership with the Children's Interstitial and Diffuse Lung Disease (chILD) Foundation.

In the past, knowledge of these diseases was limited to case reports and small case series. However, with the formation of the chILDRN Investigational Consortium, a robust and collaborative research and clinical network has been established. Through the efforts of the network, a comprehensive clinical practice guideline highlighting the classification, evaluation, and management of childhood interstitial lung disease in infancy was recently published.[4]

For more information or to refer patients, please contact Dr. Robin Deterding (University of Colorado, Children's Hospital Colorado) at Robin.Deterding@childrenscolorado.org.

Dr. Jonathan Popler, FCCP
Steering Committee Member

References

1. Deterding R. Evaluating infants and children with interstitial lung disease. *Semin Respir Crit Care Med.* 2007;28(3):333-341.
2. Deutsch GH, Young LR , Deterding RR, et al. Diffuse lung disease in young children: application of a novel classification scheme. *Am J Respir Crit Care Med.* 2007; 176(11):1120-1128.
3. Langston C, Dishop MK. Diffuse lung disease in infancy: a proposed classification applied to 259 diagnostic biopsies. *Pediatr Dev Pathol.* 2009;12(6): 421-437.
4. Kurland G, Deterding RR, Hagood JS, et al. An official American Thoracic Society clinical practice guideline: classification, evaluation, and management of childhood interstitial lung disease in infancy. *Am J Respir Crit Care Med.* 2013;188(3):376-394.

Thoracic Oncology

Educational forums

CHEST 2013 will provide a spectrum of educational forums and topics related to thoracic oncology. The general sessions and highlights will address areas relevant to the practicing clinician, trainee, and thoracic oncology specialist. The recently published Lung Cancer III Guidelines will be highlighted in an afternoon session on Sunday, October 27, and will form the framework for a half-day lung cancer track on Thursday morning, October 31. Other sessions will focus on lung cancer screening, lung nodule evaluation, staging, chest imaging of the cancer patient, and optimizing techniques for appropriate tissue acquisition. Our NetWork Open Forum is on Monday, October 28, at 11:30 AM. This is a great opportunity to meet others with shared interests and find ways to be engaged in the NetWork's activities. This year's NetWork Open Forum featured lecture will be delivered by Dr. Fabien Maldonado, FCCP. He will be speaking on the topic: CT-Based Risk Stratification of Lung Adenocarcinomas: Who Needs Pathologists Anymore?. Separately, you can engage with NetWork leaders at the NetWork Open House on Sunday, October 27, at 12 PM.

The College has provided us with a venue to improve communication within and between the NetWorks and their membership through its e-community. The Thoracic Oncology NetWork's page provides relevant resources and a forum for discussions about new or controversial topics. We hope to enhance our site with updated links to helpful material and a series of focused topic discussions. We encourage you to visit and contribute.

The Thoracic Oncology NetWork and our membership are involved in projects of various scope and at different stages of development. Many members of our network dedicated a great deal of time to the production of the Lung Cancer III Guidelines. We are all very proud of the product

Continued on following page

Continued from previous page

of this effort, which was published in the spring of 2013. A project aiming to develop quality indicators for the evaluation and staging of lung cancer is nearing completion, and a project aiming to provide guidance on the ideal means of tissue acquisition and processing is being discussed.

Overall, it is an exciting time, with many developments in thoracic oncology leading to opportunities for education and research. The Thoracic Oncology NetWork welcomes your ideas and participation in these efforts.

Dr. Peter Mazzone, FCCP
NetWork Chair

Pulmonary Vascular Disease

The evolving paradigm shift in the treatment of VTE

For decades, the use of vitamin K antagonists (VKA) has been a mainstay in the long-term treatment of venous thromboembolic disease (VTE). Numerous factors have made VKA challenging to use. Arriving on the scene are several new oral anticoagulants, including dabigatran, a direct thrombin inhibitor, and the factor Xa inhibitors, apixaban, rivaroxaban, and edoxaban. The reported benefits of these agents are the rapid therapeutic effect and the ease of use without the necessity of measuring anticoagulant effect.

In a randomized, double-blind trial, dabigatran was noninferior to warfarin, with comparable bleeding complications, for VTE (Schulman et al. *N Engl J Med*. 2009;361[2]:2342). Two factor Xa inhibitors, rivaroxaban and apixaban, were compared with standard therapy for symptomatic PE over 12 months. These noninferiority trials demonstrated similar efficacy. The safety profiles were similar in the rivaroxaban trial, but the apixaban group experienced fewer bleeding complications compared with enoxaparin and VKA. (EINSTEIN-PE Investigators et al. *N Engl J Med*. 2012; 366[14]:1287; Agnelli et al. *N Engl J Med*. 2013;369[9]:799). Edoxaban was compared with warfarin for up to 12 months after initial standard therapy for VTE. Edoxaban was noninferior to "standard therapy" with fewer bleeding complications (The Hokusai-VTE Investigators. *N Engl J Med*. 2013; Aug 31).

These studies herald an alternative strategy for the treatment of acute thromboembolic disease. A number of important questions need to be addressed as these agents are introduced in clinical practice (Cushman. *N Engl J Med*. 2013;369[9]:865). Their use in patient populations excluded from clinical trials, the assessment of potential drug interactions and how to measure their effect, the determination of long-term safety, and the identification of reversal agents are a few of the issues that require further research if these drugs are to become the new cornerstone of antithrombotic therapy.

Dr. William R. Auger, FCCP
Steering Committee Member
Dr. Victor J. Test, FCCP
NetWork Chair

Editor's Picks: This Month in *CHEST*

BY DR. RICHARD S. IRWIN, MASTER FCCP

EDITORIAL
Guidelines and Conflicts: A New Twist. *By Dr. Ian Nathanson, FCCP.*

ORIGINAL RESEARCH
Low Anonymous Voting Compliance With the Novel Policy for Managing Conflicts of Interest Implemented in the 9th Version of the American College of Chest Physicians Antithrombotic Guidelines. *By Dr. Ignacio Neumann et al.*

An Isolated Reduction of the FEV_3/FVC Ratio Is an Indicator of Mild Lung Injury. *By Dr. Z. Q. Morris et al.*

Systematic Review of Supervised Exercise Programs After Pulmonary Rehabilitation in Individuals With COPD. *By Dr. M. K. Beauchamp et al.*

Ozone Is Associated With an Increased Risk of Respiratory Exacerbations in Patients With Cystic Fibrosis. *By Dr. S. C. L. Farhat et al.*

The ACCP Airway Management Training Program

BY DR. THOMAS M. FUHRMAN, FCCP; AND COL. ALEXANDER S. NIVEN, MC, USA, FCCP

The ACCP has consistently made high-quality educational offerings for its members a leading priority. In recent years, the ACCP has made the use of simulation in advanced clinical training a significant focus of these educational endeavors.

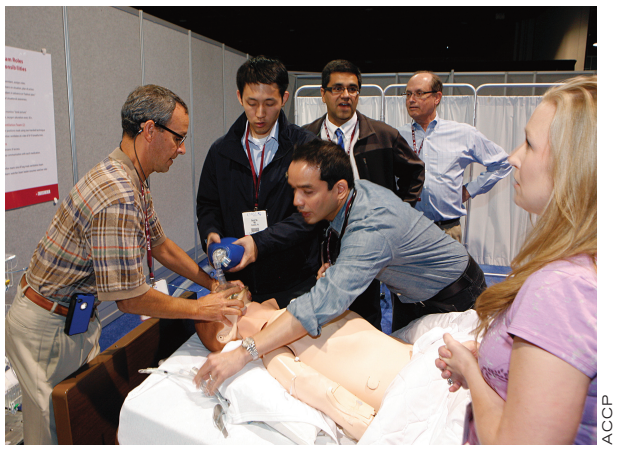
ACCP

Figure 1. Basic airway management techniques.

In 2008, the ACCP launched its first difficult airway management course for critical care providers at its headquarters in Northbrook, Illinois. As of March 2013, 266 participants have taken part in a total of 13 of these advanced airway management courses. Another 709 have participated in the eight different courses offered at the last six CHEST meetings (2007-2012).

The curriculum for the difficult airway management course includes extensive hands-on experience with both familiar and the very latest equipment available. Figure 1 shows two students working on the essential skill of bag-valve-mask (BVM) ventilation. Yet hands-on skills acquisition with this equipment is just the first step; a major goal of the course is to prepare learners to lead an airway team when they return to their home institution.

Figure 2 shows an airway team in action in the ACCP's high-fidelity simulated clinical environment; two practitioners are providing high-quality BVM ventilation, while another is preparing intubation equipment in a standardized way at the patient's "head." A fourth team member serves as a watcher, responsible for regularly relaying vital signs to maintain shared situational awareness. The final member is the team leader, responsible for coordinating everyone's activities, directing the participants in their assigned roles, and making sure everyone is aware of the airway plan and, as important, the back-up plan.



ACCP

Figure 2. Advanced airway management team training.

Learners rotate in all the roles and participate in a debriefing with faculty after every scenario. In every class, learners quickly take charge of these sessions, eager to learn more by critiquing their teams' performance.

Originally, the class sizes for the advanced airway management courses in Northbrook were intentionally restricted due to the physical room constraints. Very soon, the ACCP will open its new headquarters with a dedicated, 25,000 square-foot Innovation, Simulation, and Training Center, featuring six high-fidelity ICU simulation rooms, eight multipurpose/breakout conference rooms, and an auditorium. In addition to airway management, ACCP simulation courses also now include bronchoscopy, critical care management, critical care ultrasonography, and mechanical ventilation.

It has been gratifying to watch participants' progress from a wide range of initial skills to become leaders of an airway team. The entire faculty and ACCP staff of the Airway Management Training Program invites you to the ACCP Simulation Center at CHEST 2013 or better yet to the new headquarters for a full 2.5-day educational program.

CLASSIFIEDS

www.MedJobNetwork.com

TUOMEY REGIONAL MEDICAL CENTER

Bringing more to life

Join a growing **PULMONARY / CRITICAL CARE*** practice in beautiful Sumter, South Carolina, where you're in the middle of everything!

- Tremendous Community Need
- Traditional Practice
- Sign-on Bonus
- Relocation Expenses
- Guaranteed 1st Year's Salary

PRACTICE INCLUDES:
- Sleep Medicine
- Bronchoscopy
- Thoracentesis
- Vent Management
- ICU Coverage

* THIS IS NOT A VISA OPPORTUNITY

The only hospital in Sumter, Tuomey is a private, not-for-profit, 301-bed, TJC-accredited facility that delivers the industry's most advanced technological care with a high level of patient consideration. We offer state-of-the-art medicine in a collegial setting you'll come to love. It's the perfect combination for your future.

TUOMEY HEALTHCARE SYSTEM

Contact JILLIAN HUCKEBA at 803.774.5257 or email jillian.huckeba@tuomey.com to discuss further.

Chief, Division of Pulmonary Medicine

The North Shore-LIJ Department of Medicine is seeking an experienced leader to serve as the **Chief for the Division of Pulmonary Medicine** at **Lenox Hill Hospital in New York City**. The ideal candidate will be Board-Certified in both Internal Medicine and Pulmonary/Critical Care, with a proven track record as a leader in an academic facility.

The Chief will be expected to provide leadership to a group of over 25 full-time, part-time, and voluntary faculty Pulmonologists, as well as a Pulmonary/Critical Care fellowship program. You will also be expected to expand the full-time clinical faculty and lead the development of innovative programs in Pulmonary and Critical Care Medicine.

Lenox Hill Hospital, serving NYC since 1857, is a 652-bed, acute care hospital which has earned a national reputation for outstanding patient care and innovative medical and surgical treatments. The hospital is particularly well-known for excellence in internal medicine, cardiovascular disease, orthopedics, sports medicine, otolaryngology/head and neck surgery, and maternal child/health. The hospital is also a recognized leader in public health education and community outreach.

Located directly off of tree-lined Park Avenue, Lenox Hill is steps away from the beauty and serenity of Central Park, diverse restaurants, Museum Mile and the infamous shopping on Madison Avenue. Lenox Hill is easily accessible by the 6 train servicing the East Side, Brooklyn and the Bronx, with easy transfers to the West Side as well. Whether residing or working, the Upper East Side has plenty to offer everyone.

We offer a competitive salary and comprehensive benefits package. **For further information, please contact Laura Screeney, FASPR, Corporate Director, Physician Recruitment at (888) 685-7545.**

To apply, please visit **www.nslijPhysiciancareers.com**

North Shore LIJ

An Equal Opportunity Employer. M/F/D/V

GEORGIA, Atlanta

The Atlanta VA Medical Center and Division of Pulmonary, Allergy & Critical Care Medicine at Emory University are seeking a physician-scientist or clinician-investigator to lead the VA Pulmonary Section. Candidates should be Assistant or Associate Professor with demonstrated success in laboratory or clinical research and a strong commitment to mentoring fellows and junior faculty. The VA Pulmonary Section includes 7 physicians with NIH and VA funded research and 3 VA career development awardees. The successful candidate will assume a leadership role integrating clinical and academic functions with the 50 full-time faculty and NIH funded training program of the Pulmonary Division in the Department of Medicine. Atlanta is a thriving metropolitan area. The VA Medical Center is adjacent to the campuses of Emory University and the Centers for Disease Control. Interested applicants should contact:

David M. Guidot, MD, Division Director, at 404-712-2970 or **dguidot@emory.edu** and apply online at **www.usajobs.gov**, announcement JV-13-238CW-874134 for consideration.

KEEP UP-TO-DATE

Watch our Classified Notices for Postgraduate Course information.

Disclaimer Chest Physician assumes the statements made in classified advertisements are accurate, but cannot investigate the statements and assumes no responsibility or liability concerning their content. The Publisher reserves the right to decline, withdraw, or edit advertisements. Every effort will be made to avoid mistakes, but responsibility cannot be accepted for clerical or printer errors.

CHEST *Physician*

CLASSIFIEDS

For Deadlines and More Information, Contact:
John Baltazar
Tel: (917) 488-1528
jbaltazar@americanmedicalcomm.com

IMNG MEDICAL MEDIA

Norwalk Hospital

Norwalk Hospital is a 328-bed, academically oriented community hospital with primary educational affiliation with Yale University School of Medicine. Norwalk Hospital has been ranked in the top 5% nationally for clinical excellence by HealthGrades®. Norwalk Hospital hosts training programs in Internal Medicine, Radiology, Gastroenterology, Pulmonary Medicine and Sleep Medicine.

FACULTY POSITION-
PULMONARY AND CRITICAL CARE MEDICINE

The Section of Pulmonary, Critical Care and Sleep Medicine at Norwalk Hospital is seeking a BC/BE pulmonary and critical care faculty member to assume the role of Associate Director of Critical Care Medicine and to participate in all aspects of the educational and clinical programs in the section.

The successful candidate will have a strong interest in medical education of residents and fellows; outstanding patient-centered clinical skills; medical leadership; and a desire to pursue clinical/translational research. Expertise in endobronchial ultrasound and critical care ultrasonography are desirable.

Norwalk Hospital is located in beautiful Fairfield County, CT, an area which boasts a family-based community and excellent school systems and is located less than an hour from New York City.

Submit your CV to Holly E. Rouse, Human Resource Manager holly.rouse@norwalkhealth.org.

EOE

UC Health

Pulmonary, Critical Care and Sleep Medicine Investigator Assistant, Associate Professor Level

The University of Cincinnati Division of Pulmonary, Critical Care and Sleep Medicine (PCCSM) has an open faculty position at the Assistant or Associate Professor level for an investigator interested in basic or translational research in pulmonary vascular diseases, including pulmonary arterial hypertension and chronic thromboembolic disease. Completion of PhD, M.D. or M.D. /PhD training is required. The successful candidate will have a track record of scholarly productivity and an established or nascent research program that is funded or well positioned for funding.

The University of Cincinnati has a long history of strong basic science research programs and offers many opportunities for collaboration within the College of Medicine as well as with Cincinnati Children's Medical Center. The PCCSM Division is comprised of 30 full time faculty members and 12 fellows with broad subspecialty interests, and a well-established and growing pulmonary arterial hypertension program.

Please contact:
Jean M. Elwing, MD, Director
Pulmonary Hypertension Program
with a letter of interest and CV via e-mail at
jean.elwing@uc.edu

The University of Cincinnati is an Affirmative Action Equal Opportunity Employer

CLASSIFIEDS

www.MedJobNetwork.com

DALLAS

Established and well-respected 3 physician PUL/CC practice has opportunity for full-time/part-time BE/BC PUL/CC physician to join.

Practice includes diverse office, ICUs and rounding at near-by LTACs. Sleep Medicine a plus.

Startup volume is readily available. Excellent patient demographics, EMR-ECliniCalWorks, strong referral base.

Our strong team environment and mission allows us to focus on the highest quality and friendly patient care.

No cash buy in. Partnership Track. Production bonus. Competitive salary/benefits with CME and vacation, 401K /profit share.

No state income tax.

Centrally located in Dallas w/ superb dining, fantastic shopping, access to major affiliates, cultural centers and first-rate schools with family oriented communities.

Serious applicants only.

Email your CV and letter to
pulmonarycare@hotmail.com

New York

St. Barnabas Hospital, a Level 1 Trauma Center in the Bronx, New York has great opportunities for Critical Care Physicians to practice in a multi-disciplinary ICU.

We are looking for a full time employee but have part-time and per-diem work available as well.

Please fax CV to: 718-960-6122.

NORTH DAKOTA

Pulmonary/Critical Care position in North Dakota. Hospital Employed; Base Salary - $400,000; Signing Bonus – Up To - $30,000; Full Benefits; Level II Trauma Center.

If you're looking for great quality of life within a city with excellent family values, this city has it all.

Please call Robert Overfield at
800-839-4728 or email your CV to
overfield@beck-field.com

Moving? Look to Classified Notices for practices available in your area.

IDAHO

Pulmonary/Critical Care position in Southeast Idaho. Hospital Employed; Excellent Base Salary ; Full Benefits – Signing Bonus; Busy Out Patient Clinic; 20 Bed ICU; Four Bed Sleep Lab.

If you're tired of the "rat race" and want a quality of life for your family with excellent income potential, call:

Robert Overfield at 800-839-4728
or email your CV to
overfield@beck-field.com

Lucrative and rewarding career awaits you at a Pace-setting Institution!

ROCHESTER GENERAL HEALTH SYSTEM

Seeking a full-time BC/BE Pulmonologist to join a thriving, employed group with a rich mixture of critical care, outpatient practice, and inpatient pulmonary consultation

Participate in programs unique to the area: Mary Stuart Mulligan Rehabilitation Program for patients with symptomatic COPD, and inpatient unit for patients requiring long-term mechanical ventilation

Strong referral base

Clinical research and teaching opportunities

Generous compensation and benefits

About Rochester General Health System

- Top 100 Integrated Network and the region's third largest employer
- Encompasses eight affiliates offering comprehensive and nationally recognized care including Rochester General Hospital, Newark Wayne Community Hospital, 40 employed outpatient practices, long term senior living centers & Independent Living for Seniors, Behavioral Health Network, & an Ambulatory Services Division
- Recognized leader in quality improvement & commitment to deliver unparalleled patient care
- Cutting-edge EMR System
- State-of-the-art facilities including high-volume, newly renovated Emergency Departments
- World class medical and dental staff with exceptional specialist support
- Innovative affiliations/strategic partnerships with Rochester Institute of Technology, Cleveland Clinic, Roswell Park Cancer Institute
- To learn more visit our website: www.rochestergeneral.org

About Rochester, NY

Located on the shores of Lake Ontario, Rochester is ranked by Forbes as the fourth most affordable U.S. city and the # 3 metro region nationwide for raising a family. The Rochester area is home to 15 of the country's finest colleges and universities, and public school districts with high schools ranked among the best in America. Come see why people who move here don't want to leave!

If you are ready to join a **Patient-Centered Team** in a **Top Ranked Health System**, please submit an online application at
http://careers.rochestergeneral.org/careers/physicians/
and email your CV to
kathy.peishel@rochestergeneral.org or
brennan.canty@rochestergeneral.org

Rochester General Health System is an Equal Opportunity / Affirmative Action Employer. M/F/D/V

UC Health

Director of Adult Cystic Fibrosis

The University of Cincinnati Division of Pulmonary, Critical Care and Sleep Medicine (PCCSM) has an open faculty position at the Assistant, Associate or Professor level for Director of Adult Cystic Fibrosis. The adult CF team comprises 3 physicians, a social worker, a nurse coordinator and a dietician who care for approximately 120 patients with CF and conduct clinical trials. The successful candidate will be M.D. or M.D., pHD trained, and will bring an established basic or translational research program that is funded or well positioned for funding.

An attractive package that includes laboratory or clinical program support and an endowed chair will be provided. The University of Cincinnati has a long history of exemplary basic and clinical science research within the College of Medicine and Cincinnati Children's Hospital Medical Center (CCMC), including robust clinical and research pediatric CF programs. The PCCSM Division is comprised of 30 full time faculty members and 12 fellows with broad subspecialty interests.

Please contact:

Frank McCormack, MD
Director, UC PCCSM
with a letter of interest and CV via e-mail at
frank.mccormack@uc.edu

The University of Cincinnati is an Affirmative Action Equal Opportunity Employer

UC Health

University of Cincinnati Sleep Physician

The Division of Pulmonary, Critical Care and Sleep Medicine (PCCSM) at the University Of Cincinnati and growing UC Health network seeks an ABMS BC/BE sleep medicine specialist to join our vibrant and growing 30 member group. Practice will include a busy sleep medicine outpatient service, interpretation of polysomnographies in the state of the art AASM-accredited UC Comprehensive Sleep Medicine Centers, and possibly training of fellows in an accredited joint Children's Hospital/UC Sleep Medicine Fellowship.

Candidates who are BC/BE in pulmonary and critical care medicine may also round on pulmonary outpatient and inpatient consult services, MICU services, and provide training for our fully accredited PCCM fellowship.

Please send curriculum vitae to:

Frank McCormack, MD
Division Director
Pulmonary, Critical Care & Sleep Medicine
University of Cincinnati
231 Albert Sabin Way
Cincinnati, OH 45267-0564
Telephone number (513) 558-4858
Email to Frank.mccormack@uc.edu

The University of Cincinnati is an Affirmative Action Equal Opportunity Employer

CHEST Physician
CLASSIFIEDS

For Deadlines and
More Information, Contact:
John Baltazar
Tel: (917) 488-1528
jbaltazar@americanmedicalcomm.com

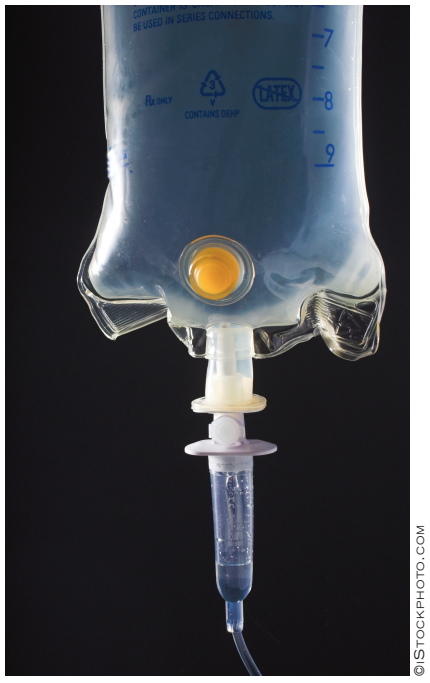
Disclaimer Chest Physician assumes the statements made in classified advertisements are accurate, but cannot investigate the statements and assumes no responsibility or liability concerning their content. The Publisher reserves the right to decline, withdraw, or edit advertisements. Every effort will be made to avoid mistakes, but responsibility cannot be accepted for clerical or printer errors.

CRITICAL CARE COMMENTARY: Hypertonic saline as osmolar therapy?

BY DR. GEORGE N. CORITSIDIS

Hypertonic saline (HTS) at various concentrations is used as an osmolar agent to limit edema formation, thereby limiting its clinical consequences. Primarily used in disorders of the central nervous system, its use attempts to diminish tissue or intracellular water accumulation by raising intravascular osmolarity (sodium levels). Traditionally, this was solely used in the treatment of clinically symptomatic hyponatremia, in which the rise in extracellular sodium limits intracellular water accumulation, reversing CNS symptoms related to neuronal cell swelling.

The osmolar effects of HTS have also been utilized in trauma resuscitation, where given as bolus administration, it can rapidly expand intravascular volume by drawing from the extravascular compartments.



©ISTOCKPHOTO.COM

Current evidence does not support use of HTS over isotonic solutions in trauma.

Physiology

The essential idea of osmolar therapy is that water will follow an osmolar concentration gradient if separated by an intact semipermeable membrane (Ropper et al. *N Engl J Med*. 2012: 367[8]:746). This works well in the treatment of certain disorders and less so in others. Indeed, it is clear that acute increases in tonicity have effects on alleviating tissue edema, most notably in the administration of mannitol. By lowering brain edema, mannitol lowers intracranial pressure, thus improving the neurologic findings (Bratton et al. *J Neurotrauma*. 2007;24 Suppl 1:S14-20). However, acute changes in osmolarity can also worsen conditions as seen when patients with renal failure and CNS injury undergo dialysis or in overly aggressive treatment of patients with hyponatremia. In such patients, slow gradual dialysis and implied gradual changes in volume and osmolarity are safer. Similarly, in patients with hyponatremia, a gradual rise in serum sodium is often prudent.

It is safe to say that as in most medical-clinical areas, there are few large controlled trials looking at HTS benefits. Specifically, the use of HTS has been examined in the following conditions: severe hyponatremia, elevated intracranial pressure, burn victims, and trauma resuscitation.

Hyponatremia

In syndrome of inappropriate antidiuretic hormone secretion (SIADH) or any symptomatic hyponatremic presentations, the goal is to quickly raise the sodium and hence the osmolarity of the extracellular space to achieve a gradient allowing intracellular water to equilibrate. The normalization of cellular volume and water prompts the normalization of neuron function and the patient's symptoms.

In symptomatic patients there is an initial "bolus" over 10 minutes of HTS (3 mmol/kg body weight), followed by infusion. HTS at a low concentration (3%) is continuously infused to reach a precalculated sodium level that only approaches normal with frequent monitoring of serum sodium levels. The process works well providing that the (rise) return of the serum sodium is not too quick or overdone. Proper monitoring is essential since rapid correction can potentiate central pontine myelinolysis. Fluid restriction, change in medications, and/or treating the underlying cause are the other interventions.

Emergency resuscitation in trauma

The trauma literature has suggested that at high concentrations of HTS can be beneficial in the initial resuscitation of hypovolemic trauma patients (Patanwala et al. *Am J Health-Syst Pharm*. 2010;67[22]:1920). When used as a bolus, and not continuously, it may provide an initial boost in intravascular volume by drawing from extravascular "reserves," for example, from tissue and intracellular spaces. Bolus doses in the literature have ranged from 7.5% to 20%, 100 to 30 mL, respectively. This may buy valuable minutes while standard crystalloid resuscitation is provided.

However, the literature, as yet, has not supported any benefit over saline.

Though there are studies touting mortality benefits, a Cochrane review concluded that hypertonic crystalloids were no better than isotonic or near-isotonic crystalloids for fluid resuscitation in trauma patients (Bunn et al. *Cochrane Database Syst Rev*. 2004;3:CD002045). In fairness, many of the studies administered their HTS with dextran, and the latter has since been shown to have complications such as renal failure. In those studies showing benefit, HTS appeared to improve survival in those with Glasgow Coma Scale scores of <8 or MAP <70 mm Hg.

At this point, the evidence does not support HTS providing any additional benefit over isotonic crystalloid solutions in trauma.

Burns

Use of HTS in patients with burn injury has been shown to decrease the volume required for resuscitation. Unfortunately, in one prospective study, results indicated that HTS increased rates of renal failure (40% vs 10.1%, *P* less than .001) and mortality (53.8% vs 26.6%, *P* less than .001) as compared with those patients who did not receive HTS (Huang et al. *Ann Surg*. 1995;221[5]:543). At this stage, guidelines from the American Burn Association have suggested that HTS may be used for burn shock resuscitation by experienced providers with close monitoring to avoid excessive hypernatremia.

Intracranial pressure management (HTS infusion)

HTS uses for intracranial pressure (ICP) treatment include bolus therapy for acute and refractory ICP as in herniation and as prophylaxis (Himmelseher et al. *Curr Opin Anaesthesiol*. 2007;20[5]:414).

Rescue

In patients with dangerously elevated ICP and/or impending herniation, bolus HTS has been found to be equally as effective as mannitol in reducing ICP (Kamel et al. *Crit Care Med*. 2011;39[3]:554).

The data support bolus HTS regardless of the etiology, for example, trauma, ischemia, or tumor. These studies have used small boluses of HTS in concentrations as high as 30% to achieve these outcomes. Mannitol has traditionally been used but can cause hypotension through diuresis as well as acute kidney injury (AKI). Hypotension can lead to diminished cerebral perfusion pressure, a clear risk for poorer outcomes in traumatic brain injury (TBI). HTS may be ideal over mannitol in those patients with concomitant volume depletion.

Maintenance osmolar therapy

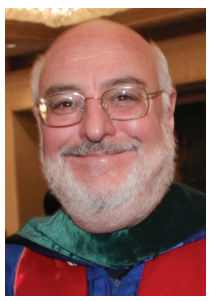
At a lower saline concentration (3%), HTS has been used as a continuous infusion to maintain relatively high serum sodium levels in patients with CNS disease (Froelich et al. *Crit Care Med*. 2009;37[4]:1433). This is somewhat preemptive with the presumption that higher plasma sodium concentrations would serve to minimize CNS edema through osmolar effects. In this setting, HTS therapy constitutes a preventative strategy in the hopes of limiting rises in ICP and not a treatment for acute increases in ICP. Other possible mechanisms that would explain positive HTS's effects on reducing ICP include rheological, hemodynamic, and hormonal.

Though commonly used, there is no clear evidence that HTS significantly affects CNS edema. In TBI, the literature is composed primarily of case reports, case series, and small controlled groups. Many of these studies did not use a similar concentrations of HTS, while others included dextrans. The results were not uniform; some showed

Continued on following page

EDITOR'S COMMENT

This fine review by Dr. Coritsidis on osmolar therapy is not only timely but a needed perspective on the benefits and risks of HTS.



Most critical care physicians are early adopters of new therapies and historically osmolar therapies (mannitol, starches, etc.) have been difficult to manage optimally and can be potentially harmful. With the advent of HTS it was felt that this therapy could be widely used with limited complications or concern. As always, risk-benefit is key and with wider adoption and study, a more clear usage profile emerges. Though HTS has benefits, its wide adoption across the continuum of osmolar therapy is still being determined.

Dr. Peter Spiro, FCCP
Section Editor, Critical Care Commentary

Extended delirium raises post-ICU cognitive risk

BY SHARON WORCESTER
IMNG Medical News

Critical illness survivors who experienced a long period of delirium during an intensive care unit stay can have long-term global cognition and executive function scores similar to those seen in traumatic brain injury and Alzheimer's patients, according to a multicenter prospective cohort study.

The finding of an association between longer duration of delirium and worse long-term global cognition and executive function was independent of sedative or analgesic medication use, age, preexisting cognitive impairment, the burden of coexisting conditions, and ongoing organ failure during ICU care, Dr. Pratik P. Pandharipande of Vanderbilt University, Nashville, Tenn., and his colleagues reported. The findings were published in the New England Journal of Medicine.

Of 821 patients with respiratory failure, cardiogenic shock, or septic shock who were treated in a medical or surgical ICU, 6% had cognitive impairment at baseline and 74% experienced delirium during their hospital stay. Median global cognition scores at 3 and 12 months as assessed by the Repeatable Battery for the Assessment of Neuropsychological Status (RBANS) were 79 and 80, respectively.

"These scores were approximately 1.5 [standard deviations] below the age-adjusted population mean of 100 plus or minus 15 and were similar to scores for patients with mild cognitive impairment. At 3 months, 40% of the patients had global cognition scores that were worse than those typically seen in patients with moderate traumatic brain injury, and 26% had scores 2 SD below the population means, which were similar to scores for patients with mild Alzheimer's disease," the investigators reported.

The deficits occurred regardless of patient age and persisted to 12 months, with 34% and 24% of patients demonstrating scores similar to those for patients with moderate traumatic brain injury and for patients with mild Alzheimer's disease, respectively, they said (N. Engl. J. Med. 2013;369:1306-16).

Duration of delirium was significantly associated with worse global cognition and significantly worse executive function at both 3- and 12-month follow-up. For example, patients with a 5-day mean duration of delirium had mean RBANS scores that were 6.3 points lower at 3 months and 5.6 points lower at 12 months than those with no delirium. They had Trails B executive-function scores that were 5.1 points lower at 3 months and 6.0 points lower at 12 months.

Although the investigators hypothesized that higher doses of sedative and analgesic use also would be independently associated with more severe cognitive impairment at 12 months, this did not prove to be the case. The use of higher benzodiazepine doses during hospitalization, however, was associated with worse executive function scores at 3 months.

The patients, who had a median age of 61 years and high severity of illness, were enrolled in the Bringing to Light the Risk Factors and Incidence of Neuropsychological Dysfunction in ICU Survivors (BRAIN-ICU) study between March 2007 and May 2010. Delirium was assessed by the Confusion Assessment Method for the ICU, and level of consciousness was assessed using the Richmond Agitation-Sedation Scale.

Though limited by an inability to test patients' cognition before their emergent illness (although the investigators took several precautions to address this limitation), and by the fact that some patients were unable to complete all cognitive tests, the findings demonstrate that impairment after critical illness is very common – even more so among those with longer duration of delirium – and can persist for at least 1 year, they said.

VITALS

Major finding: Neuropsychological status scores averaged 6.3 points lower at 3 months in patients who experienced 5 days of delirium vs. no delirium while in an ICU.

Data source: A prospective cohort study of 821 ICU patients.

Disclosures: This study was supported by various federal grants, as well as by a Mentored Research Training Grant from the Foundation for Anesthesia Education and Research. Most authors reported having no conflicts of interest. Dr. Pandharipande and a several other investigators have received grants or other support from industry sources, including Hospira and Orion.

COURTESY VANDERBILT UNIVERSITY

At 3 months, 40% of the patients had global cognition scores that were worse than those typically seen in patients with moderate traumatic brain injury, wrote Dr. Wes Ely (left) and Dr Pratik P. Pandharipande.

VIEW ON THE NEWS

The findings underscore that surveillance and intervention for delirium are crucial, and set a new standard for longitudinal cognitive-outcome studies, Dr. Margaret Herridge and Jill I. Cameron, Ph.D., wrote in an editorial (N. Engl. J. Med. 2013;369:1367-8).

As more knowledge accumulates about neurocognitive and functional morbidity, better education can be provided to patients, families, physicians, and policymakers, which "should fuel an informed discussion about what it means for our patients to survive an episode of critical illness, how it changes families forever, and when the degree of suffering and futility becomes unacceptable from a patient-centered and societal standpoint," they added.

Dr. Herridge and Dr. Cameron are with the University of Toronto. Dr. Herridge is with the Interdepartmental Division of Critical Care and Division of Pulmonary and Critical Care, University Health Network. Dr. Cameron is with the Department of Occupational Science and Occupational Therapy. They reported having no disclosures.

Continued from previous page

improvement as measured by the decreased need for intervention to lower ICP, primarily among children, while others showed no benefit. Only one of these studies suggested neurological benefits (Hauer et al. *Crit Care Med*. 2011;39[7]:1766). Some have identified various complications inclusive of deep venous thrombosis, AKI, increased infections, and potassium abnormalities (Coritsidis GN et al. *Crit Care Med*. 2009;37:2009:464a).

In patients with severe cerebrovascular disease, but not TBI, HTS was found to be safe. Reasons for the lack of benefits of this therapy would include a disrupted blood brain barrier and possible equilibration of osmoles across it.

Conclusion

The essential idea of osmolar therapy is that water will follow an osmolar concentration gradient if separated by an intact semipermeable membrane. To date, HTS has literature support in its use in clinically relevant hyponatremia and in the management of refractory ICP as rescue of acute elevations of ICP (herniation). Both are treatments in emergency situations. The former has been used for years and when properly monitored, is the treatment of choice. Interestingly enough, data are promising in the treatment of acute resuscitation for patients with hypotensive trauma, again an emergency condition.

The literature for empiric, continuously infused HTS, however, is lacking. In this setting and in burn victims, there are no clear indications for its use. Caution and, of course, more studies are needed.

Dr. Coritsidis is associate professor, chief division of nephrology, and director of the surgical/trauma ICU at Elmhurst Hospital Center, Elmhurst, N.Y.

CHEST Physician
THE NEWSPAPER OF THE AMERICAN COLLEGE OF CHEST PHYSICIANS