



RESEARCH ACTIVITIES

U.S. Department of Health and Human Services | No. 372, August 2011

This publication is provided for historical reference only and the information may be out of date.

AHRQ's clinical care tools help clinicians ensure better and safer care

"Marcella" is a 52-year-old Hispanic woman, who has diabetes and speaks limited English. Like many patients, her care is better and safer due to clinical tools funded by the Agency for Healthcare Research and Quality (AHRQ). Thanks to these clinical tools—software applications, checklists, strategies, and care protocols—Marcella gets the preventive services she needs during office visits, waits less time to see an emergency department doctor, is less likely to develop complications after surgery, and is less apt to be readmitted to the hospital due to problems after hospital discharge.

Highlights

Disparities/Minority Health	11
Child/Adolescent Health	13
Women's Health	15
Outcomes/Effectiveness Research	16
Health Care Workforce	16

Regular Features

From the Director	2
Agency News and Notes	18
Announcements	21
Research Briefs	24

Preventive Care Screening Tool

For example, Marcella visits her primary care doctor for a regular checkup. During the visit, Marcella's doctor uses his stethoscope and blood pressure cuff, typical tools of the trade, during the physical exam. Then he pulls out his laptop, iPad, or cell phone to use a software application, the Electronic Preventive Services Selector (ePSS) tool (<http://epss.ahrq.gov/PDA/index.jsp>), which indicates the clinical preventive services (screening, counseling, and preventive medications) Marcella should receive based on her age, sex, whether or not she smokes, and other risk factors. After the doctor enters Marcella's data, the ePSS shows that Marcella should be screened for colorectal cancer, which is recommended for people between the ages of 50 and 75 years.

The ePSS tool provides access to the latest evidence-based recommendations from the AHRQ-sponsored U.S. Preventive Services Task Force (www.uspreventiveservicestaskforce.org). "It's hard to squeeze preventive services into primary care visits," says Timothy Quigley, M.P.H., P.A.-C., Director of Student Affairs, MEDEX

Division of Physician Assistant Studies at the University of Washington School of Medicine.

"Rather than get this information in a 10-minute discussion during a short visit, you can use the ePSS to enter a few items and get a comprehensive list of recommendations for the patient. In less than a minute you've covered all the bases.... It also enriches the dialog with patients, because it doesn't look like it's just your random opinion about what preventive services they need."

The ePSS is a helpful tool given that Americans fail to receive recommended care nearly half the time, according to a 2003 landmark study by the RAND Corporation. The ePSS tool helps clinicians select the right preventive service for the right patient in real time—in Marcella's case, a screening for colorectal cancer.

"The AHRQ ePSS app is a must-have program for its ability to facilitate the practice of optimal preventive care, an increasingly vital element of good medicine," notes Amit Patel, M.D., of Washington University School of Medicine/Barnes-Jewish Hospital, in a recent Web review of the tool.

continued on page 3

From the Director



relies on clinical tools like software applications and checklists that have become as essential as the stethoscope for

patient care. Instead of reaching into their black bag, today's clinicians reach for their mobile phone or laptop for the latest tools to provide quality care for their patients. These tools are teamwork and communication strategies that enhance surgical care in the operating room, conversational techniques to ensure that patients understand what clinicians are telling them, checklists that prevent potentially deadly infections in the intensive care unit, and software applications that let clinicians identify preventive screening tests a patient needs. These tools also include specific protocols to triage patients in the emergency

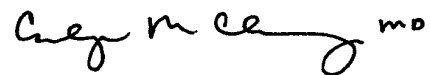
partment so they can see a doctor quickly or discharge them from the hospital so that they won't end up back in the hospital.

Busy clinicians have little time to research the latest studies on the best diagnostic tests or treatments for their patients. The clinical tools that AHRQ supports can do much of that work for clinicians by incorporating the latest medical evidence into tools that are not prescriptive, but rather can guide care like a GPS. Some tools are based on comparative effectiveness research (CER) studies that directly compare the benefits and side effects of specific medications or treatments for a specific condition like diabetes. This information helps clinicians tailor recommendations to patients' needs and preferences. In Marcella's case, described in our cover story, her doctor could use a CER clinical guide to review specific medications for type 2 diabetes. He could discuss with Marcella whether she was concerned about the weight gain from certain medications or if it was

important for her to take her medicine only twice a day instead of four times a day, so they could select the best medication for her.

Marcella is typical of many complex patients seen in doctors' offices, emergency departments, hospitals, and other health care facilities today. These patients often have multiple medical conditions, take several medications, and struggle with health literacy problems. Clinical tools can help clinicians better treat and communicate with these and other patients to avoid future problems and improve their health.

Studies have shown that many of these clinical tools improve care and save lives. AHRQ is committed to providing health care professionals with the tools they need to implement the latest medical evidence at the hospital bed, physician's office, or other site of care as quickly as possible. Our patients deserve no less.



Carolyn M. Clancy, M.D.

Research Activities is a digest of research findings that have been produced with support from the Agency for Healthcare Research and Quality. *Research Activities* is published by AHRQ's Office of Communications and Knowledge Transfer. The information in *Research Activities* is intended to contribute to the policymaking process, not to make policy. The views expressed herein do not necessarily represent the views or policies of the Agency for Healthcare Research and Quality, the Public Health Service, or the Department of Health and Human Services. For further information, contact:

AHRQ
Office of Communications
and Knowledge Transfer
540 Gaither Road
Rockville, MD 20850
(301) 427-1360

Gail Makulowich
Managing Editor

Kevin Blanchet
Karen Fleming-Michael
David I. Lewin
Kathryn McKay
Mark W. Stanton
Contributing Editors
Joel Boches
Design and Production
Karen Migdail
Media Inquiries

Erratum

The article on charity care provided by physicians on page 8 of the May issue of *Research Activities* incorrectly stated that, "Also, emergency physicians were likely to provide less charity care and surgeons more such care than others." The sentence should have read, "General surgeons provided the most charity care among nonsalaried physicians, followed by emergency medicine and mental health specialists." ■

Clinical care tools

continued from page 1

He also designated the ePSS one of the top 10 iPhone medical applications for internal medicine physicians and residents.

The ePSS contains approximately 110 recommendations for specific populations covering about 59 separate preventive service topics. When Marcella's doctor keyed in her characteristics, it produced a report tailored for her that her doctor could discuss with her.



Workflow Assessment for Health IT Toolkit

Next, Marcella's doctor uses his laptop to access her medical history in her personal electronic health record (EHR) and finds that she has not had her blood-sugar tested and diabetes-related eye and foot checks in over a year and that prescriptions for her diabetes medications are inconsistent. Marcella's doctor did not always have an EHR, but his patients have benefited since he adopted this tool into his practice. Many physicians are struggling with how to integrate EHRs and other health information technology (IT) systems into their practice, with just over half of office-based physicians having full or partial EHR systems in 2010, according to the Centers for Disease Control and Prevention. Practices without EHRs will soon have a tool, the Workflow Assessment for Health IT Toolkit

(<http://healthit.ahrq.gov/workflow>), which provides a roadmap to ease the integration of EHR systems into their practices.

This toolkit helps small- and medium-sized practices assess and redesign their workflows when transitioning from paper to electronic records. "The toolkit can be used to identify workflow issues and problems before health IT is implemented, therefore preventing or mitigating workarounds, inefficiencies, and safety problems," notes Pascale Carayon, Ph.D., of the University of Wisconsin-Madison.

The Workflow Assessment for Health IT Toolkit also provides examples of the experiences of similar clinics, so practices can gauge how the integration of health IT into their practice will affect workflow, including changing staff roles, need for training, and time spent entering patient data. In Marcella's case, because her doctor's practice analyzed user needs prior to EHR implementation, the practice made sure the system would allow the doctor to easily pinpoint gaps in Marcella's diabetes care during her visit.



Health Literacy Universal Precautions Toolkit

Like over one-third of patients in the United States who have limited health literacy, Marcella finds it

difficult to obtain, process, and understand basic health information. Luckily for her, her doctor uses tips from AHRQ's Health Literacy Universal Precautions Toolkit (www.ahrq.gov/qual/literacy) to make sure she understands their discussion of diabetes management and medications. Low health literacy in older Americans is linked to more emergency department visits and hospitalizations and higher risk of death, according to an evidence report by AHRQ (www.ahrq.gov/clinic/tp/lituptp.htm).

"Of all the things we're doing to improve care, if we ignore the health literacy piece of this and we don't ensure that patients know what they need to know and do, all these other strategies aren't going to get us very far in health care improvement," asserts Laura Noonan, M.D., director of the Center for Pediatric Excellence at Levine Children's Hospital.

The health literacy toolkit enables practices to assess gaps in their communication with patients and then directs them to one of 20 tools in the kit to improve communication with less literate patients. These tools include tips on communicating clearly, strategies to encourage patients to ask questions, the teach-back method to ensure patients understand what the clinician has said, a brown bag medication review, and strategies to address language and cultural differences.

"Based on our practice assessment, we targeted the teach-back tool," says Dr. Noonan. The teach-back method involves having the patient repeat back, in his/her own words, what he/she heard from the

continued on page 4

Clinical care tools

continued from page 3

clinician. “We trained our staff to learn this method and practice it so they could work it into their workflow,” adds Dr. Noonan. “The teach-back is key, and also encouraging patients to ask questions. Our staff asks patients if they have any questions from the time they get called back to be weighed all the way to checkout. We also ask them if they got all their questions answered.” Dr. Noonan also notes the benefit of the brown bag tool, which provides strategies clinicians can use to help patients remember to bring their medicines to their office visits. There the doctor can identify any medication problems and educate patients about their medications.

Based on guidance from the Health Literacy Universal Precautions Toolkit, the doctor asks to see Marcella’s medications, and corrects her confusion about how often to take them, which probably caused some of her recent symptoms. He also talks to her about the importance of regular blood-glucose testing and diet and exercise to control her diabetes using the teach-back method. He asks Marcella to repeat back what she understood and if any dietary suggestions or other parts of her diabetes action plan will not work with her culture or would be difficult for her to carry out. The doctor answers all her questions and then orders the required tests and schedules Marcella for a colorectal screening test.

Door-To-Doc Patient Safety Toolkit

A month after her routine checkup, in an unrelated development, Marcella develops acute abdominal

pain and ends up in the emergency department (ED). Following a triage protocol, the Door-to-Doc Patient Safety Toolkit (www.innovations.ahrq.gov/content.aspx?id=1952), the ED staff gives her a quick look and escorts her to an ED bed for clinical evaluation. The Door-to-Doc tool reorganizes the ED patient flow process. When a patient arrives in the ED, she is given a “quick look” rather than full triage and identified as “less sick” or “sicker.” Sicker patients are escorted to an ED bed where a clinical team evaluates them and orders diagnostic tests and treatments. Less sick patients, who tend to be ambulatory, are not assigned beds. Instead they move among treatment areas away from the flow of other patients, while they wait for lab and other test results.

The ED staff can use the Emergency Severity Index (www.ahrq.gov/research/esi/es1.htm), one tool in the toolkit, to stratify patients into five groups from 1 (most urgent) to 5 (least urgent). This approach accurately identifies patients who need to be seen immediately from those who can safely wait to be seen. Severity is determined by stability of vital functions and potential for life, limb, or organ threat. In Marcella’s case, the ED team suspects a ruptured appendix and makes plans to prepare her for surgery.

Eight emergency departments in the Banner Health System that adapted this two-track patient flow model reduced the patients who left without ED treatment from 7.1 to 1.7 percent, average ED length of stay by 14 percent (from 310 to 268 minutes), and door-to-doc waiting times by more than an hour (from 117 to 49 minutes).

TeamSTEPPS®

To avoid the many errors that can happen before, during, and after surgery, Marcella’s hospital uses TeamSTEPPS®—strategies and tools to improve communication and crucial teamwork skills among health care professionals.

“Communication failures and lack of teamwork are major contributing factors to patient injury and harm,” notes Carolyn M. Clancy, M.D., director of AHRQ.

TeamSTEPPS®

(<http://teamstepps.ahrq.gov/>), developed by the Department of Defense (DOD) and AHRQ, is comprised of four teachable-learnable skills: leadership, situation monitoring, mutual support, and communication.

Communication failures and lack of teamwork are major contributing factors to patient injury and harm.

TeamSTEPPS® provides steps and techniques to become an effective team leader and to monitor the status of the patient, team members (for example, for fatigue that can lead to mistakes), the clinical environment, and progress toward the care goal. TeamSTEPPS® also provides tips on how to provide mutual support to protect team members from work overload and how to freely ask for help, as well as how to assertively advocate for corrective action to protect the patient. Finally, TeamSTEPPS® provides communication strategies that can be used to convey critical

continued on page 5

Clinical care tools

continued from page 4

information that requires immediate attention, to ensure information conveyed by one team member is understood by the other, and to transfer information during care transitions such as shift changes or patient transfers from one unit to another.

TeamSTEPPS® has reduced adverse events by 40 percent, according to the DOD. Using this approach, Marcella's surgical team communicates her medication allergies and diabetes, confirms her patient ID and the specific surgery to be performed, and organizes itself to prepare for Marcella's appendectomy. The team member responsible for reviewing completion of pre-op protocols finds that Marcella was not given pre-operative antibiotics to prevent post-surgical site infections and takes steps to correct it. This saves Marcella from a potentially longer hospital stay and her recovery from the surgery is quick and uneventful.



Project RED

Once Marcella recovers and is ready to go home, a nurse discharge advocate, a central figure in Project RED (Re-engineered Discharge), prevents Marcella from being one of the millions of patients each year who are readmitted to hospitals. Project RED developer, Brian Jack, M.D., of Boston University Medical Center, developed this approach to tackle the fragmentation and misinformation involved in the discharge process to avoid adverse events following hospital discharge that often force people back into the hospital.

The Project RED checklist involves 11 steps that range from reconciling

medications and making follow-up appointments to arranging for post-discharge services and sending a discharge summary to the patient's primary care physician. These steps are applied to each patient and culminate in an After Hospital Care Plan the patient can understand.

When Project RED

(www.ahrq.gov/news/kt/red/redfaq.htm) was tested in 750 adult patients at the Boston University Medical Center, Dr. Jack documented a 30 percent decrease in hospital readmissions at the end of 30 days for Project RED patients compared with patients who underwent a typical discharge. Thanks to Project RED, Marcella is discharged home with a care plan and guide for how to take care of herself when she leaves the hospital (www.ahrq.gov/qual/goinghomeguide.htm).

Editor's Note: To access some of AHRQ's other clinical care tools, as well as data, assessment, and quality measurement tools, go to www.ahrq.gov/qual/tools/toolsria.htm. ■ GSM

Patient Safety and Quality

Hospital-acquired infections dramatically increase trauma patients' risk of in-hospital death and hospital stay

Hospital-acquired infections (HAIs) are among the top five leading causes of death in the United States, striking 4.5 of every 100 patients admitted to the hospital. A new study finds that trauma patients who develop HAIs during treatment have up to six times the in-hospital mortality rate than similar patients without HAIs. It found that women were 30 percent less likely to have HAIs than men (adjusted OR [AOR] = 0.70; 1 is equal odds). Compared with patients hospitalized for blunt trauma, patients whose trauma was caused by a motor vehicle accident had 25 percent greater odds of developing an HAI, while those suffering from pedestrian trauma had 48 percent great odds; gunshot

wound, 28 percent greater odds; and stab wound, 74 percent greater odds.

Among the HAIs, patients with sepsis had nearly six times higher risk of hospital death than uninfected trauma patients. Patients with other HAIs had 1.5 to nearly twice the risk of hospital death than trauma patients without HAIs. In addition, trauma patients with HAIs had approximately 2- to 2.5-fold higher health care costs and approximately 2-fold longer hospital stays than uninfected trauma patients.

continued on page 6

Hospital-acquired infections

continued from page 5

Laurent G. Glance, M.D., of the University of Rochester School of Medicine, and colleagues analyzed data on 155,891 trauma patients from the Agency for Healthcare Research and Quality (AHRQ) Healthcare Cost and Utilization Project (HCUP) National Inpatient Sample. They defined HAI groups using the diagnostic codes for sepsis, pneumonia, *Staphylococcus*

infections, and *Clostridium difficile*-associated disease. The study was funded by the Agency for Healthcare Research and Quality (HS16737).

More details are in “Increases in mortality, length of stay, and cost associated with hospital-acquired infections in trauma patients,” by Dr. Glance, Pat W. Stone, Ph.D., Dana B. Mukamel, Ph.D, and others in the March 21, 2011 online *Archives of Surgery*. ■ DIL

Trigger tools have potential to detect adverse events following outpatient surgery

Applying clinical logic to patient electronic medical records (EMRs) as “triggers” can accurately identify outpatient (same-day) surgeries likely to produce adverse events following surgery, concludes a new study. It found that two triggers, pulmonary embolism or deep-vein thrombosis (PE/DVT) within 30 days of the operation, and an emergency department visit within 21 days, were highly predictive of adverse events following outpatient surgery. Three other triggers (hospital admission within 30 days of the surgery, hospital admission for longer than 24 hours, and certain intervention procedures or reoperation within 30 days) were much less precise in identifying a likely adverse event.

Amy Helwig, M.D., of the Agency for Healthcare Research and

Quality, and fellow researchers ran all five triggers on EMR data from patients who underwent outpatient surgeries at participating institutions. As a result, 6,688 of 17,492 records were flagged that had at least 1 trigger. Nurses looked at each flagged record to identify adverse events occurring within 30 days of the outpatient surgery.

The percent of cases flagged ranged from 1.1 percent to 22 percent, depending on the trigger. The PE/DVT trigger, though flagging the smallest number of cases (189, or 1.1 percent), had the highest positive predictive value (PPV), 62 percent for any adverse event. The other triggers’ PPVs for any adverse event ranged from 6 percent (the procedure trigger, which flagged 1,135 cases) to 23 percent (the hospital admission

trigger, which flagged 3,846 cases). The researchers obtained de-identified patient data from three health care systems interested in the use of triggers. Eligible adults had surgery during 2007 and had at least one clinical note within 6 months of the surgery. The study was funded in part by the Agency for Healthcare Research and Quality (Contract No. 290-02-0600).

More details are in “Applying trigger tools to detect adverse events associated with outpatient surgery,” by Amy K. Rosen, Ph.D., Hillary J. Mull, M.P.P., Haytham Kaafarani, M.D., M.P.H., and others in the March 2011 *Journal of Patient Safety* 7(1), pp. 45-59. Reprints (Publication No. 11-R042) are available from AHRQ.*

■ DIL

Note: Only items marked with a single (*) asterisk are available from the AHRQ Clearinghouse. See the back cover of *Research Activities* for ordering information. Consult a reference librarian for information on obtaining copies of articles not marked with an asterisk.

Electronic order sets can help treatment conform to guidelines for antibiotic use after surgery

A 2002 Centers for Disease Control and Prevention (CDC) campaign to reduce surgical wound infections and antibiotic overprescribing stressed the need to give antibiotics 1 hour before surgery and then to discontinue the drugs within specific time frames depending on the surgery performed. Despite the campaign, a 2005 report found that these practices were not widely adopted. A new study from researchers at the University of Pennsylvania School of Medicine's Center for Education and Research on Therapeutics (CERT) found that implementing electronic order sets that adhere to the CDC guidelines was effective in raising the percentage of patients whose antibiotics were stopped appropriately after surgery.

The hospital that integrated the electronic order set in its computerized provider order entry system saw timely discontinuation of antibiotics rise from 36.8 percent of patients to 55.7 percent. The increase was greatest in cardiac surgeries, which saw an increase of 33.6 percent in timely antibiotic discontinuation.

The order set did not allow physicians to override CDC guidelines. The only way a physician could continue a patient's antibiotics after surgery was to indicate that the drugs were prescribed as treatment for an infection. The authors suggest that technology interventions such as these are stronger than system alerts, which can be easily overridden. This study was funded by a grant from the Agency for Healthcare Research and Quality (HS16946) to the University of Pennsylvania School of Medicine CERT. For more information on the CERTs program, visit <http://certs.hhs.gov>.

See "Effectiveness of an information technology intervention to improve prophylactic antibacterial use in the postoperative period," by Kevin Haynes, Pharm.D., M.S.C.E., Darren R. Linkin, M.D., M.S.C.E., Neil O. Fishman, M.D., and others in the March 2011 *Journal of the American Medical Informatics Association* 18(2), pp. 164-168. ■ *KFM*

Mental demands of pediatric hospital pharmacy staff have varying effects on likelihood of medication errors and adverse events

Workload in hospital pharmacies doesn't tell the whole story of medication errors, suggests a new study. The researchers note that previous studies used prescription volume or rate as an indicator of work intensity, but failed to find an association between workload and medication safety. The findings of their study suggest that regulation of work volume, without consideration of the mental demands of the work itself, may be mobilizing a costly solution that may not address the real problem. They surveyed 48 pharmacists and 31 pharmacy technicians at two pediatric hospitals about task-specific mental workload and its perceived effect on medication safety and employee well-being.

Results showed that each increase in external task demands (such as

interruptions, divided attention, and feeling rushed) more than doubled the perceived likelihood of medication errors (odds ratio [OR] = 2.56) and nearly doubled the perceived likelihood of adverse drug events (OR = 1.58). In contrast, increased internal mental task demands (effort and concentration) had no association with the perceived likelihoods of medication errors or adverse events (OR = 1.04 and 1.11, respectively). Furthermore, external task demands were associated with increased job dissatisfaction and burnout, while internal demands reduced the likelihood of dissatisfaction. No differences were noted between pharmacists and technicians.

Because the two hospitals were similar and the numbers surveyed were relatively small, the

researchers suggest further research be done in a variety of pharmacy settings. They also point out that there are many solutions for workload through design interventions, policymaking, and management. The study was funded in part by the Agency for Healthcare Research and Quality (HS13610 and T32 HS00083).

More details are in "Effect of mental demands during dispensing on perceived medication safety and employee well-being: A study of workload in pediatric hospital pharmacies," by Richard J. Holden, Ph.D., Neal R. Patel, M.D., Matthew C. Scanlon, M.D., and others in *Research in Social & Administrative Pharmacy* 6(4), pp. 293-306, 2010. ■ *DIL*

High performance on quality measures linked to financial benefits for nursing homes

Nursing homes benefit financially from investments made in improving performance, suggests a new study. The researchers examined data on 6,286 Medicare-certified nursing homes between 1999 and 2005. They compared revenues, expenses, operating margins, and total profit margins before and after public reporting of quality data was initiated with the Nursing Home Compare (NHC) Web site in 2002. Nursing homes that improved on publicly reported performance had increased revenues and higher profit margins after public reporting, mainly through increased Medicare admissions.

The potential return on investment may motivate providers to invest in improving care quality. On the other hand, low-quality providers that face the most severe resource constraints—those who predominantly care for poor and under-served populations—may be less likely to undertake quality improvement, because incremental quality improvements do not have much financial payback. If quality improvement is concentrated in highly resourced facilities, the quality gap between facilities may widen, caution the

researchers. Safeguards may be necessary to ensure that low-quality facilities have the necessary resources to improve.

To compare quality of care at nursing homes, the study focused on 15 clinical quality measures included in the NHC, a Web site used by the Centers for Medicare & Medicaid Services to publicly report the quality of care at nursing homes. The NHC quality measures draw on the Minimum Data Set, which contains resident-level clinical data collected at regular intervals for every resident in all Medicare- or Medicaid-certified nursing homes. Nursing home financial performance was measured using Medicare Cost Reports that contain facility-level information. This study was supported by the Agency for Healthcare Research and Quality (HS16478).

See “Performing well on nursing home report cards: Does it pay off?” by Jeongyoung Park, Ph.D., R. Tamara Konetzka, Ph.D., and Rachel M. Werner, M.D., Ph.D., in the April 2011 *HSR: Health Services Research* 46(2), pp. 531-554. ■ MWS

Chronic Disease

Patients with heart failure are older, have more illnesses, and take more medications than earlier

Patients with heart failure are older and their care is commonly complicated by disability, the presence of other illnesses, and multiple medications compared with 20 years ago, reveals a new survey. It found that the proportion of patients 80 years of age or older significantly jumped from 13 percent in 1988-1994 to 22 percent in 2003-2008. In the same period, the proportion of patients with heart failure who had 5 or more other illnesses grew from 42 percent to 58 percent and prescription drug use increased from a mean of 4.1 to 6.4 prescriptions.

A rising proportion of patients with heart failure have high cholesterol (42 to 54 percent), diabetes (25 to 38 percent), obesity (33 to 47 percent), kidney disease (35 to 46 percent), thyroid disease (10 to 23 percent), and osteoporosis (5 to 16 percent). Patients with heart failure are taking an increasing amount of both cardiovascular and non-cardiovascular medications. The proportion of these patients with disability did not change over time, but was significant throughout. In 2003-2008, 57 percent of patients aged 60 and over had impaired mobility; 11 percent had limitations

in activities of daily living; and 12 percent were vision-impaired.

These findings were based on analysis of data from the National Health and Nutrition Examination Survey. The researchers identified 1,395 participants with heart failure (581 in 1988-1994, 280 in 1999-2002, and 534 in 2003-2008). They believe that the growing complexity of patients with heart failure demonstrates a need to fundamentally change the way we research and care for these patients. The very elderly, with multiple

continued on page 9

Heart failure

continued from page 8

medical conditions and on multiple medications, are inadequately studied in clinical trials. As patients with heart failure grow increasingly complex, physicians will need to

improve their ability to prioritize treatment recommendations based on relative benefits and harms and in the context of patient preferences.

See “Trends in comorbidity, disability, and polypharmacy in

heart failure,” by Catherine Y. Wong, B.S., Sarwat I. Chaudhry, M.D., Mayur M. Desai, Ph.D., and Harlan M. Krumholz, M.D., in the February 2011 *The American Journal of Medicine* 124, pp. 136-143. ■ MWS

Drugs to treat hepatitis B may not prevent patients from liver disease later

Chronic hepatitis B can result in liver damage, failure, or cancer and causes 2,000 to 4,000 deaths each year, according to the Centers for Disease Control and Prevention. Antiviral drugs are often prescribed to combat the disease progression, but hard evidence on their effectiveness is lacking. Researchers at the Minnesota Evidence-based Practice Center reviewed randomized control trials to examine the benefits and harms of antiviral therapy to treat hepatitis B. They found no evidence that a single antiviral drug reduced mortality or prevented the development of liver cancer or cirrhosis. Physicians and patients should make treatment decisions based on the benefits of antiviral drugs on biochemical, virologic, and histologic laboratory markers as well as safety of the drugs, suggest the study authors.

They found that no one drug regimen improved all laboratory markers. Interferon alfa-2b and peginterferon alfa-2b, which are interferon therapies that are given by injection (usually for less than a year), appear to cause the loss of hepatitis B surface antigen, which is one marker for resolved hepatitis B. However, 50 percent of patients who receive interferon therapy suffer flu-like symptoms that include fatigue, headache, abdominal pain, nausea,

and diarrhea. All treatments decreased hepatitis B virus DNA levels, including oral medications such as lamivudine, telbivudine, adefovir, and entecavir. However, most of the included studies excluded patients with liver or renal insufficiency or other serious coexisting conditions.

Using pooled data from the studies, the authors created an evidence map for clinicians to use when treating patients diagnosed with hepatitis B. The map provides data on efficacy and the comparative effectiveness of the different treatments, including benefits and harms, and identifies knowledge gaps. This study was funded by the Agency for Healthcare Research and Quality (Contract No. 290-02-0009) through an inter-agency agreement with the National Institutes of Health Office of Medical Applications of Research.

See “Systematic review of the literature on comparative effectiveness of antiviral treatments for chronic hepatitis B infection,” by Tatyana A. Shamliyan, M.D., M.S., James R. Johnson, M.D., Roderick MacDonald, M.S., and others in the March 2011 *Journal of General Internal Medicine*, 26(3); pp. 326-339. ■ KFM

The likelihood of bacterial blood infections among patients with HIV has risen slightly in recent years

Bacteremia is the 10th leading cause of death among persons 45 years and older, with HIV-infected patients at greater risk than HIV-negative patients. However, the likelihood of bacteremia has risen slightly in this group in recent years. Blacks and intravenous drug users (IDUs) with HIV are more likely than other patients with HIV to develop bacterial blood infections

(bacteremia), concludes a new study. The study followed 39,318 HIV-infected patients, 57 percent of whom were on highly active antiretroviral therapy (HAART) during the enrollment year, for up to 9 years.

John A. Fleishman, Ph.D., of the Agency for Healthcare Research, and colleagues found that the

continued on page 10

Bacterial blood infections

continued from page 9

incidence of bacteremia was 13.8 events per 1,000 patient-years (PY) over the 9-year period. This rate was substantially lower than that seen in studies conducted at single clinical sites early in the era of HAART. However, the incidence per 1,000 PY in the new study declined from 15.1 in 2000 to a low of 10.7 in 2002, only to rebound to 15.0 in 2004, then declined slightly over the rest of the study period, but still staying at 13.4 in 2008.

Factors associated with significantly higher odds of bacteremia included black race (45 percent higher odds than white patients) and past IDU (65 percent higher odds than for men who had sex with men). Receipt of HAART did not appear to be directly protective against bacteremia. But patients with stronger immune systems (higher CD4 lymphocyte counts) had progressively reduced bacteremia risk, as did patients with progressively lower HIV-1 RNA copies per mL of blood (lower HIV load).

The researchers could not conclusively link bacteremia with *Staphylococcus aureus*. However, supplementary data from one of the participating sites found that 38 percent of 184 “bacteremia not otherwise specified” cases were due to *S. aureus*, and 42 percent of these were methicillin-resistant *S. aureus* (MRSA). The findings were based on analysis of data from the HIV Research Network, a consortium of sites that provide primary care and subspecialty care to HIV-infected patients in 14 cities in the United States. The study was funded in part by the Agency for Healthcare Research and Quality (Contract No. 290-01-0012).

More details are in “Incidence of and risk factors for bacteraemia in HIV-infected adults in the era of highly active antiretroviral therapy,” by Baligh Ramzi Yehia, M.D., Dr. Fleishman, Lucy Wilson, Sc.M., and others for the HIV Research Network, in the March 2011 *HIV Medicine* [Epub ahead of print]. Reprints (AHRQ Publication No. 11-R041) are available from the AHRQ Publications Clearinghouse.* ■ *DIL*

Caregivers for advanced cystic fibrosis patients want to discuss intensive treatments and symptom relief

Cystic fibrosis (CF) is a genetic disease that leads to progressive decline in lung function over time, with a median survival in the United States of 37.4 years. Two exploratory studies supported by the Agency for Healthcare Research and Quality (HS10397) examined caregiver perspectives on intensive treatment discussions and end-of-life symptom control for patients with advanced CF. They are briefly described here.

Dellon, E.P., Shores, M.D., Nelson, K.I., and others. (2010, December). “Caregiver perspectives on discussions about the use of intensive treatments in cystic fibrosis.” *Journal of Pain and Symptom Management* 40(6), pp. 821-828.

The researchers interviewed 36 caregivers of patients who had died of complications of CF (or a syndrome seen in some CF patients

after lung transplant) about treatment preference discussions and how to improve them. Twenty-two (61 percent) caregivers had discussed intensive treatment preferences with a physician, and 17 of these discussions were initiated during an acute illness. Intensive treatments, such as noninvasive ventilation or mechanical ventilation, which are intended to sustain life during acute respiratory failure, are commonly used in patients with advanced CF lung disease. Most (29) caregivers favored first discussing treatment preferences during a period of medical stability.

Dellon, E.P., Shores, M.D., Nelson, K.I., and others. (2010, December). “Family caregiver perspectives on symptoms and treatments for patients dying from complications of cystic fibrosis.” *Journal of Pain and*

***Symptom Management* 40(6), pp. 829-837.**

In this study, 27 caregivers answered questions about symptoms and treatments. Caregivers reported that distressing symptoms were common during the last week of life, including shortness of breath (100 percent), fatigue (96 percent), anorexia (85 percent), anxiety (74 percent), pain (67 percent), and cough (56 percent). Most caregivers (71 percent) said that symptom control was “somewhat good” and 9 percent said it was “very good.” Caregivers often believed that symptoms could not be controlled because of side effects and potential for hastening death with the use of opioids and anti-anxiety medications to relieve symptoms. Many family caregivers expressed

continued on page 11

Cystic fibrosis

continued from page 10

low expectations for symptom control.

The researchers suggest additional studies may identify barriers to symptom assessment and

management and assist in designing design interventions to overcome those barriers. Additional studies could address how to reduce and counteract side effects and discomforts of disease-specific treatments (such as chest

physiotherapy or tube feeding), which providers, caregivers, and patients feel are necessary to manage advanced lung disease related to CF, so they are better tolerated by patients. ■ MWS

Disparities/Minority Health

Studies examine possible disparities surrounding implantable cardioverter defibrillators

A patient who has some types of life-threatening irregular heart rhythms or a patient at high risk of developing a life-threatening irregular heart rhythm can undergo a procedure to receive an implantable cardioverter defibrillator (ICD). This electronic device monitors the heart's rhythm, and when it detects an abnormal rhythm, it delivers energy to the heart to put it back into a normal rhythm. Two new studies from the Duke Center for Education and Research on Therapeutics (CERT), funded by a grant from the Agency for Healthcare Research and Quality (HS16964) to the Duke CERT, examined different aspects of underuse of ICDs in eligible patients. They are summarized here.

LaPointe, N.M., Al-Khatib, S.M., Piccini, J.P., and others. (2011, March). "Extent of and reasons for nonuse of implantable cardioverter defibrillator devices in clinical practice among eligible patients with left ventricular systolic dysfunction. *Circulation Cardiovascular Quality and Outcomes*, 4(2), pp. 146-51.

Using claims data and the Duke Databank for Cardiovascular Disease, the authors of this study

found that 224 of 542 patients (41%) who were potentially eligible to receive an ICD did not receive the device. Being a woman and older age were associated with a lower likelihood of receiving an ICD. This rate of underuse and the factors associated with underuse have been seen in other studies. However, when the medical records of patients were reviewed, many of the 224 patients without an ICD were found to have a contraindication (117 patients) to the ICD or had refused the ICD (38 patients).

Therefore, after taking into consideration contraindications and refusals, the rate of underuse was much lower—69 of 542 patients or 13%. Being a woman and being older were no longer associated with not having an ICD.

Using the more detailed information available from the medical record, information that is not available from claims data, allowed for a more complete assessment of underuse of ICDs in clinical practice.

Al-Khatib, S.M., Sanders, G.D., O'Brien, S.M., and others. (2011). "Do physicians' attitudes toward implantable cardioverter

defibrillation therapy vary by patient age, gender, or race?"

***Annals of Noninvasive Electrocardiology*, 16(1), pp. 77-84.**

To determine if physicians' attitudes play a factor in the low rates of ICD use, researchers posed four clinical scenarios to 1,127 members of the American College of Cardiology. When an ICD was definitely indicated by guidelines, 84 percent of the physicians said they would recommend the device. When an ICD was not recommended, 98 percent of the physicians indicated they would not offer it. When an ICD was a reasonable option but not clearly indicated, just 61 percent of clinicians said they would offer one, and when an ICD was indicated but the patient had not complied with medical therapy in the past, 65 percent of the clinicians said they would offer an ICD.

When gender and race were added to the scenario mix, recommendations for ICD implantation were unaffected, suggesting that if disparities in who receives ICDs exist, they are not

continued on page 12

Cardioverter defibrillators

continued from page 11

prompted by physician bias. Physicians were, however, more likely to recommend ICDs for eligible patients who were 60 years old than patients who were 80 years old. For example, 98 percent of the clinicians indicated they would recommend a 60-year-old receive an ICD when guidelines clearly

indicated them, but when the patient's age was changed to 80, 63 percent of the clinicians were less likely to recommend ICDs.

The authors suggest that this reluctance may be due in part to the lack of data on ICDs' safety and effectiveness in older patients. Finally, electrophysiologists were much more likely to recommend an

ICD when guidelines called for one compared with non-electrophysiologists (92 percent vs. 81 percent). A possible explanation is that electrophysiologists may be more familiar with the ICD guidelines. For more information on the CERTs program, visit <http://certs.hhs.gov>. ■ *KFM*

Having a usual source of care as well as insurance reduces unmet health needs

The lowest percentage of unmet medical needs among adults, who visited a doctor in the past year and reported need for additional care, was among those having both health insurance and a usual source of care (USC), according to a new study. In contrast, unmet needs were highest for those persons lacking both insurance and a USC. Jennifer E. DeVoe, M.D., of Oregon Health & Science University, and colleagues analyzed 2002-2007 data from the Medical Expenditure Panel Survey. They estimated that 77 percent of United States adults had a USC and 81 percent had health insurance. However, only 68 percent of U.S. adults had both a USC and insurance, while 10 percent had neither.

Compared with persons with a USC and insurance, persons with insurance, but no USC were 27 percent more likely to have problems getting care, tests, or treatment; those with no insurance, but a USC were 63 percent more likely to report these problems; and adults lacking both USC and insurance were twice as likely to report these problems.

Data for the study came from AHRQ's Medical Expenditure Panel Survey–Household Component, which uses a stratified and clustered random sample from National Health Interview Survey households. The sample of 134,714 people (weighted to represent the United States population) was used for analysis of unmet health care needs among those in the sample who reported having at least one medical appointment in the past 12 months and who reported the need for additional care. The need for care represented: unmet medical needs; unmet prescription needs; problems getting care, tests, or treatment; and delayed urgent care. The study was funded in part by the Agency for Healthcare Research and Quality (HS16181 and HS18569).

More details are in “The case for synergy between a usual source of care and health insurance coverage,” by Dr. DeVoe, Carrie J. Tillotson, M.P.H., Sarah E. Lesko, M.D., M.P.H., and others in the March 16, 2011 *Journal of General Internal Medicine* 26 [Epub ahead of print]. ■ *DIL*

Parents and primary care physicians are satisfied with children's use of nonurgent emergency department services

Nonurgent emergency department (ED) use is considered a problem because of the higher cost to society and the loss of continuity of care. However, a new study found that both parents and primary care physicians (PCPs) generally considered these visits appropriate. Also, neither parents nor physicians saw these visits as a significant enough breach of continuity of care to warrant concern. The researchers interviewed 26 parents of children who had received nonurgent emergency care and 20 of their PCPs.

The interviews also revealed that the need for immediate reassurance that their children are safe from

harm is critical to parents' decisions; PCP offices lack specific tests and treatments that parents and physicians believe may be necessary, regardless of whether they are actually needed; and discrepancies exist between PCP and parent perceptions of adequate communication and care access.

The children seen in an academic pediatric ED were treated for fever, pain (oral, ear), breathing problems (wheezing, coughing), rash, laceration, bump on the head, nosebleed, minor trauma, and swollen eye. Parents in this study did not express significant concern about costs. Either they did not have to pay, or they believed the

quality of care justified higher charges. The researchers concluded that nonurgent ED use serves as an effective care resource for families, and parents have little motivation to change their current care-seeking behaviors. This study was supported by the Agency for Healthcare Research and Quality (HS15482).

See "Nonurgent emergency-department care: Analysis of parent and primary physician perspectives," by David C. Brousseau, M.D., Mark R. Nimmer, B.A., Nichole L. Yunk, M.S., and others in the February 2011 *Pediatrics* 127, pp. e375-3381. ■ MWS

A usual source of care may be more important than insurance on children's receipt of preventive health counseling

Although insurance coverage is necessary to access care, it may not be sufficient. In fact, a new study suggests that a usual source of care may play an equally or more important role than health insurance in ensuring that a child receives preventive health counseling. It found that children with neither health insurance nor a USC had the highest rates of missed counseling, while children with both insurance and a USC had the lowest rates of missed counseling. Children with only insurance were more likely than those with only a USC to have never received preventive health counseling from a health care provider regarding healthy eating, regular exercise, use of car safety devices, use of bicycle helmets, and risk of second-hand smoke exposure.

The researchers examined 2002-2006 data on children 17 years or younger from the nationally representative Medical Expenditure Panel Survey. Parents answered whether they had received anticipatory guidance from a health care provider regarding these five areas of preventive health counseling. Preventive health

counseling was estimated to be received by less than half of all children.

The results suggest that expanding eligibility of the Children's Health Insurance Program or mandating health insurance coverage for everyone will not achieve optimal delivery of preventive health counseling without a mechanism to ensure adequate provider capacity. Although a higher percentage of insured children had a USC, it cannot be assumed that gaining stable health insurance will automatically lead to finding a USC, note the researchers. Their study was supported by the Agency for Healthcare Research and Quality (HS16181).

See "Is health insurance enough? A usual source of care may be more important to ensure a child receives preventive health counseling," by Jennifer E. DeVoe, M.D., Carrie J. Tillotson, M.P.H., Lorraine S. Wallace, Ph.D., and others in the March 4, 2011 *Maternal Child Health Journal* [Epub ahead of print]. ■ MWS

When primary care providers apply fluoride varnish, young Medicaid-insured children have fewer cavities

Tooth decay among children younger than 5 years, referred to as early childhood caries (ECC), is preventable. Yet as many as 11 percent of 2-year-olds and 44 percent of 5-year-olds develop ECC, with children from low-income families bearing a disproportionate burden of the disease. According to a new study, application of topical fluoride varnish by non-dental pediatric primary care providers can reduce dental caries-related treatments among children. A North Carolina Medicaid program called “Into the Mouths of Babes” (IMB), initiated in 2000, had primary care providers apply fluoride varnish to children’s teeth during office visits. Analysis of the State’s Medicaid enrollment and claims data from 2000 to 2006 showed that the program reduced dental caries-related treatments among children with 4 or more IMB visits by 17 percent up to 6

years of age compared with children with no IMB visits.

When Bhavna T. Pahel, Ph.D., and her University of North Carolina colleagues simulated data for initial IMB visits at 12 and 15 months of age, there was a cumulative 49 percent reduction in dental caries-related treatments at 17 months of age. However, there was an increase in treatments for children from 24 to 42 months of age. The authors hypothesize that this increase in dental caries-related treatments likely occurred due to greater detection of disease in teeth of children who received and benefitted from the program, longer time since fluoride application, and emergence of teeth not initially treated with fluoride. Therefore, the authors concluded that multiple applications of fluoride at the time of primary tooth emergence seem to be most beneficial.

In total, the reduction in caries-related treatments from the IMB preventive dental services represents a substantial improvement in the oral health of Medicaid-enrolled children, who historically have had high rates of dental caries but poor access to care from dentists, comment the researchers. The IMB Program was based on the perception that, although very young children are unlikely to get checkups at the dentist, they frequently make well-child visits to their pediatricians or other primary care providers. The study was supported in part by the Agency for Healthcare Research and Quality (T32 HS00032).

See “Effectiveness of preventive dental treatments by physicians for young Medicaid enrollees,” by Dr. Pahel, R. Gary Rozier, D.D.S., Sally C. Stearns, Ph.D., and Rocio B. Qunonez, D.M.D., in *Pediatrics* 127, pp. e682-3689, 2011. ■ MWS

Impact of self-esteem and academic achievement on substance use and sexual initiation differs among boys and girls

A new study focused on adolescent risk-taking shows that high self-esteem, measured during an initial survey of 1,670 students enrolled in grades 7 through 12, was associated with lower odds of substance abuse in the following year among girls, but not among boys. Self-esteem was not significantly correlated with first sexual intercourse (sexual debut) 1 year later among girls or boys, according to Stephanie B. Wheeler, Ph.D., of the University of North Carolina.

In addition, higher academic performance in school was associated with less risky activities among young girls. Female students with “A” averages had significantly lower odds of sexual debut 1 year later compared with students with “C” averages and below. In addition, female students with “A” or “B” averages at baseline had lower odds of illegal substance abuse in the following year, but neither self-esteem nor grades

had a significant effect on substance abuse after 1 year for male students. Neither self-esteem nor academic performance at baseline had significant effects on adolescent risk-taking 6 to 7 years later.

Using the National Longitudinal Study of Adolescent Health (Add Health), the study first surveyed students in 1994-1995 and subsequently in 1995-1996 and 2001-2002. The finding that early sexual intercourse was strongly associated with subsequent substance use, and vice-versa, suggests that these activities are mutually reinforcing. As such, a behavioral intervention targeting multiple types of risky behaviors youths encounter may be warranted, suggests Dr. Wheeler. She adds that since results varied sharply by gender, thoughtfully designed, gender-specific interventions to

continued on page 15

Self-esteem

continued from page 14

prevent early sexual debut and substance use in adolescence may be appropriate. This research was supported by the Agency for Healthcare Research and Quality (T32 HS00032).

See “Effects of self-esteem and academic performance on adolescent decision-making: An examination of early sexual intercourse and illegal substance use,” by Dr. Wheeler, in the *Journal of Adolescent Health* 47, pp. 582-590, 2010. ■ MWS

Women's Health

Providers miss opportunities to prevent depression in and discuss birth control with women with unplanned pregnancies

The American College of Obstetricians and Gynecologists recommends that clinicians screen pregnant women during the first prenatal visit for depression, stress, support, and whether the pregnancy was planned. This screening allows providers to pinpoint women who may be at risk for post-partum depression or who may need social support once the baby arrives. A new study finds that this counseling is inconsistent, and clinicians miss opportunities to discuss future birth control and social support with women whose pregnancies were unplanned.

Judy C. Chang, M.D., M.P.H., of Magee-Women's Hospital, and colleagues recorded conversations

during 48 prenatal visits with 16 providers in an academic medical center in Pittsburgh. Thirty-five of the women indicated that their pregnancies were unplanned. Most of the visits included discussion about how the women felt about their unplanned pregnancies (29 of 35 visits), but only 8 women's visits included discussion about pregnancy options. What's more, providers referred just six women to counselors or social services, despite evidence showing that an unplanned pregnancy is a risk factor for depression during and after pregnancy.

Finally, future birth control plans were addressed in the visits of just 4 of the 35 women whose pregnancies were unplanned.

Because one unplanned pregnancy is a red flag for future unplanned pregnancies, the authors suggest that providers are missing opportunities to help women prevent future unplanned pregnancies. This study was funded in part by the Agency for Healthcare Research and Quality (HS13913).

See “Now is the chance: Patient-provider communication about unplanned pregnancy during the first prenatal visit,” by Rebecca Meiksin, M.P.H., Dr. Chang, Tina Bhargava, M.A., and others in the December 2010 *Patient Education and Counseling* 81(3), pp. 462-467. ■ KFM

Outcomes/Effectiveness Research

Primary anterior cervical fusion has lower in-hospital complication rates and deaths than posterior cervical fusion

If both approaches are reasonable beforehand, patients undergoing operations to fuse the cervical spine do better after anterior cervical spine fusion (ACDF) than posterior cervical spine fusion (PCDF), according to a new study. Fusion of the cervical spine has become more common in the past 3 decades for the treatment of trauma-fractured cervical vertebrae or degenerative disease that do not respond to other stabilization techniques. Researchers at Weill Medical College of Cornell University found in their study of 228,113 hospital admissions that involved primary cervical spine fusion, that the hospital length of stay (LOS) was significantly longer for PCDF patients than ACDF patients (7.8 days vs. 2.4 days). Patients undergoing ACDF had a fourth the incidence of procedure-related complications (4.14 percent) than did PCDF patients (15.35 percent), and lower in-hospital mortality (0.26 vs. 1.44 percent).

When the researchers controlled for coexisting medical conditions and other demographic variables, PCDF patients were at twice the risk of perioperative mortality than ACDF patients. Other mortality risk factors for cervical spine fusion found by the study were age 65 years or older or being male. A number of coexisting conditions (particularly kidney disease and pulmonary circulatory disease) were associated with at

least a threefold increased risk of perioperative mortality for patients who underwent cervical spine fusion. The authors caution, however, that higher risk associated with PCDF may be influenced by the fact that patients undergoing this procedure compared with ACDF often require more extensive fusion. This is a factor not accounted for in the study due to the lack of such information in the database.

Data on patients who underwent spinal surgery for cervical fusion came from the National Inpatient Samples for 1998 through 2006 of AHRQ's Healthcare Cost and Utilization Project. The study was funded in part by the Agency for Healthcare Research and Quality (HS16075) to Cornell University's Center for Education and Research on Therapeutics (CERT). For more information on the CERTs program, visit www.certs.hhs.gov.

More details are in "Increased in-hospital complications after primary posterior versus primary anterior cervical fusion," by Stavros G. Memtsoudis, M.D., Ph.D., Alexander Hughes, M.D., Yan Ma, Ph.D., and others in the March 2011 *Clinical Orthopaedics and Related Research* 469(3), pp. 649-657. An Erratum was published in the May 2011 *Clinical Orthopaedics and Related Research* 469(5), pp. 1502-1504. ■ DIL

Health Care Workforce

Opportunities to pursue bachelor's degrees may be limited for nurses in rural hospitals

When quality professionals look at hospitals across the Nation, they tend to lump all rural hospitals into one category. A new study finds that nursing characteristics vary among large and small rural hospitals. Most nurses in both types of rural hospitals graduate from associate degree programs.

Robin P. Newhouse, Ph.D., R.N., NEA-BC, of the University of Maryland School of Nursing surveyed 280 nurse executives from small (25 beds or fewer or a critical access hospital) and large (more than 25 beds) rural hospitals. For both large and small hospitals, 77 percent of the registered nurses

hold associate degrees. Of the nurses who have bachelor's degrees, more work in larger rural hospitals (20.8 percent) than small rural hospitals (17.1 percent). The authors suggest this is likely a result of the proximity of the rural hospital to colleges and universities.

continued on page 17

Nurses

continued from page 16

Because of their rural locations, the average distance to any educational institution from a hospital was 43 miles. Distance from a university may hamper nurses who are interested in completing a bachelor's degree. The authors stress the need for policymakers to explore ways to bring educational opportunities to rural settings for nurses who want to pursue baccalaureate degrees, either by

fostering partnerships with local colleges or through distance education.

Large rural hospitals are also more likely to have clinical ladders that structure nursing roles according to expertise; that is, higher levels indicate expanded roles and responsibilities. These ladders are associated with nurse retention and better patient outcomes. The authors recommend that nurse executives, particularly from small rural hospitals, explore how to institute

career ladders in their hospitals as a way to improve care. This study was funded in part by the Agency for Healthcare Research and Quality (HS15548).

See "Rural hospital nursing: Results of a national survey of nurse executives," by Dr. Newhouse, Laura Morlock, Ph.D., Peter Pronovost, M.D., Ph.D., and Sara Breckenridge Sproat, Ph.D., R.N. in the March 2011 *Journal of Nursing Administration* 41(3), pp. 129-137. ■ KFM

Unionized hospital RNs slightly less satisfied with work than non-unionized RNs

Unions are becoming increasingly important among registered nurses (RNs) in the United States. Yet, RNs who are union members are less likely to report job satisfaction than RNs not in unions, found two national surveys. Over 10,000 hospital-employed direct-care RNs were included in the surveys. In 2004, 18.9 percent of RNs were represented by a union and in 2008, 19.6 percent were represented.

Hospital-employed RNs who reported either being "satisfied" or "very satisfied" increased between 2004 and 2008 from 74.2 percent to 78.1 percent. In 2004, on average, 73.3 percent of unionized nurses reported being satisfied with work compared with 75.5 percent of non-unionized nurses; by 2008, the comparable figures were 77.1 percent compared with 78.3 percent. Unionized nurses reported higher average income from their principal nursing position in both 2004 and 2008.

There are several possible explanations for the results. Because these findings indicate associations rather than causal relationships, it is possible that lower levels of job satisfaction are not the result of unionization, but rather its cause. Nurses who are dissatisfied may seek union representation, and thus, during some transitional period, overall job satisfaction may be lower. It is also possible that unionized nurses are more inclined to voice dissatisfaction, suggest Joanne Spetz, Ph.D., of the University of California, San Francisco and coinvestigators. Their study was supported by the Agency for Healthcare Research and Quality (HS14207).

See "Hospital RN job satisfaction and nurse unions," by Jean Ann Seago, Ph.D., Dr. Spetz, Michael Ash Ph.D., and others in the March 2011 *Journal of Nursing Administration* 41(3), pp. 109-114. ■ MWS

Agency News and Notes

New ad campaign urges patients to consider medical treatment options

“Explore Your Treatment Options,” a new multimedia ad campaign initiated by the Agency for Healthcare Research and Quality (AHRQ) and the Ad Council, encourages patients to become more informed about their options before choosing a treatment for a health condition or illness.

The goal of this campaign is to increase consumers’ involvement in their care by providing easy access to unbiased information about treatment options and tools to encourage patients to work with their doctors, nurses, pharmacists, and other clinicians to make health care decisions. It features television, radio, print, Web, and outdoor ads that encourage consumers to visit AHRQ’s Effective Health Care Program Web site to find plain-language guides that summarize the scientific evidence on treatments for numerous medical conditions, including diabetes, osteoarthritis, high blood pressure, high cholesterol, and more.

“We see the best outcomes when doctors and patients work together to come up with a treatment plan that takes into account the patient’s quality-of-life concerns,” said AHRQ Director Carolyn M. Clancy, M.D. “Information is power in health care, and this campaign will provide patients with the information they need to become partners with their doctors in their health and health care.”

Since 2005, AHRQ’s Effective Health Care Program has compared the outcomes and effectiveness of different treatments and communicated findings to providers and consumers to help them make informed decisions about health care. For example, *Treating High Cholesterol: A Guide for Adults*, provides easy-to-understand information about different kinds of cholesterol medicines, including how they work and their side effects. The guide also includes a list of

questions that patients can ask their doctors to help them choose their best treatment option.

As part of the campaign, AHRQ’s Effective Health Care Program Web site features personal stories from patients with chronic conditions who achieved better health results by exploring their treatment options. In addition, a new Health Priorities Snapshot tool features questions about common daily activities and allows users to rate the importance of quality-of-life concerns. Patients can print out a list of their own health priorities and share it with their clinicians during medical appointments. These features are available at www.effectivehealthcare.ahrq.gov/options.

Created pro bono for the Ad Council by Grey New York, the new television, radio, print, outdoor, and Web ads highlight the fact that consumers have options when buying clothing, dining out, watching a movie or buying a car and should expect options when it comes to their health care.

“This new campaign is a wonderful extension of our ongoing efforts with AHRQ to encourage Americans to take a more active role in their health care,” said Peggy Conlon, president and CEO of the Ad Council. “These ads speak to a compelling insight—we look for options in nearly every aspect of our lives, but we’re not always exploring all treatment options available when it comes to our health care. It’s a very important message, as these decisions can affect the length and quality of our lives.”

The new public service advertisements (PSAs) are being distributed to approximately 33,000 media stations nationwide. Per the Ad Council’s donated media model, all of the new PSAs will air and run in advertising time and space donated by the media. ■

Certain Americans pay more than 10 percent of their family income to pay for medical expenses

Roughly 1 of every 6 Americans aged 18 to 64 reported using more than 10 percent of their total family income to pay for health insurance premiums and out-of-pocket medical expenses in 2007, according to the latest News and Numbers from the Agency for Healthcare Research and Quality.

According to the data from the Federal agency, this included:

- People who pay for their own health coverage (47 percent) and those who have employer-sponsored insurance (16 percent)
- or public insurance, such as Medicaid (also 16 percent).
- The poor (30 percent) and middle-income (19 percent) and high-income (7 percent) persons.
- Unemployed adults (29 percent) and 13 percent of working adults.
- Rural residents (21 percent) and 15 percent of people living in metropolitan areas.
- Adults with disabilities who have complex or basic activity limitations (35 percent and 32 percent) and 15 percent of those with no activity limitations.

This AHRQ News and Numbers is based on information in the 2010 *National Healthcare Disparities Report*, which examines the disparities in Americans' access to and quality of health care, with breakdowns by race, ethnicity, income, and education. For other information, or to speak with an AHRQ data expert, please contact Bob Isquith at Bob.Isquith@ahrq.hhs.gov or call (301) 427-1539. ■

Employees' share of health plan premium costs up dramatically

Employees of private-sector companies contributed up to 121 percent more in 2009 for their yearly share of their employer-sponsored health insurance coverage than they did in 2001, according to the latest News and Numbers from the Agency for Healthcare Research and Quality. By comparison, the total average annual premium for employer-sponsored health plans, which includes both the cost to the worker and to his or her employer, rose at a slower pace during the same period.

Data from the Federal agency found that the average annual premium share for workers with employee-plus-one coverage soared 121 percent—from \$1,070 to \$2,363, while the average annual contribution for workers with family coverage went up nearly 100 percent—from \$1,741 to \$3,474.

Workers with single coverage experienced an increase of 92 percent in their average annual share—from \$498 to \$957.

Specifically, the total premium increases for the different categories of coverage were:

- For an employee-plus-one plan – \$5,463 to \$9,053 (66 percent)
- For a family plan – \$7,509 to \$13,027 (73.5 percent)
- For a single plan – \$2,889 to \$4,669 (62 percent)

The data in this AHRQ News and Numbers summary are taken from the 2001 to 2009 Medical Expenditure Panel Survey, a detailed source of information on the health services used by Americans, the frequency with which they are used, the cost of those services, and how they are paid. The data in this report are not adjusted for inflation. For more information, view *Changes in Premiums and Employee Contributions for Employer-Sponsored Health Insurance, Private Industry, 2001-2009*, at www.meps.ahrq.gov/mepsweb/data_files/publications/st325/stat325.pdf. For other information, or to speak with an AHRQ data expert, please contact Bob Isquith at Bob.Isquith@ahrq.hhs.gov or call (301) 427-1539. ■

Six of every 10 rural emergency departments visits made by poor patients

Low-income adults aged 18 to 64 accounted for 56 percent of the 8 million visits made to rural hospital emergency departments in 2008, according to the latest News and Numbers from the Agency for Healthcare Research and Quality. The Federal agency's analysis also found that:

- About 44 percent of the adult visits to rural emergency departments were either paid for by Medicaid (28 percent) or were uncompensated or billed to uninsured patients (nearly 16.5 percent).
- Only 31 percent of the visits were paid for by private health plans and 25 percent were covered by Medicare.
- The top 10 reasons for rural emergency department visits included abdominal pain (233,064), back pain (223,248), chest pain from unknown cause (220,647), open wounds (211,587), and chronic obstructive pulmonary disease and bronchiectasis (159,002) that can make breathing difficult.
- Of the emergency departments in rural areas, only about 2 percent were trauma centers and less than 2 percent were located in teaching hospitals. Some 51 percent were located in designated critical access hospitals, which receive cost-based reimbursement for treating Medicare patients to help improve their financial

performance and reduce the danger of hospital closure.

This AHRQ News and Numbers summary is based on data from *Emergency Department Visits in Rural and Non-Rural Community Hospitals, 2008* (www.hcup-us.ahrq.gov/reports/statbriefs/sb116.pdf). The report uses data from the Agency's 2008 Nationwide Emergency Department Sample (NEDS) and data from supplemental sources from the U.S. Census Bureau. For information about NEDS, go to www.ahrq.gov/data/hcup/datahcup.htm. For other information, or to speak with an AHRQ data expert, please contact Bob Isquith at Bob.Isquith@ahrq.hhs.gov or call (301) 427-1539. ■

Up to \$500 million in Affordable Care Act funding will help health providers improve care

The Department of Health and Human Services has announced that it will provide up to \$500 million in Partnership for Patients (www.healthcare.gov/center/programs/partnership/index.html) funding to help hospitals, health care provider organizations, and others improve care and stop millions of preventable injuries and complications related to healthcare-acquired conditions and unnecessary readmissions.

To achieve these goals, the Partnership is seeking to contract with large health care systems, associations, State organizations, or other interested parties to support hospitals in the hard work of redesigning care processes to reduce harm. This funding, made available by the Affordable Care Act, will be awarded by the Centers for Medicare & Medicaid Services Innovation Center through a presolicitation and other procurements for Federal contracts. ■

Signups soar for AHRQ's popular CME courses

One hundred years ago, students could enter dozens of medical schools after completing less than 4 years of high school. Even Harvard Medical School admitted some students without an undergraduate degree. With a few notable exceptions, most medical training was considered mediocre. And if you wanted to continue your formal studies after medical school, you were on your own.

For today's health professionals, getting into college is competitive. But education doesn't stop—and can't stop—with a degree. Continuing education isn't an extra. It's a requirement.

In 2010, the Agency for Healthcare Research and Quality (AHRQ) began offering Continuing Medical Education/Continuing Education (CME/CE) credits through its Effective Health Care Program. Free credit classes are available to physicians, nurses, nurse practitioners, physician assistants, pharmacists, and other health professionals.

Content for the courses comes from comparative effectiveness reviews, which provide systematic appraisals of scientific evidence on common conditions such as arthritis, high cholesterol, and diabetes. The reviews are part of the growing field of patient-centered outcomes research, also called comparative effectiveness research, which evaluates the benefits and harms of treatment options.

The Program's first CME/CE modules were created by the John M. Eisenberg Center for Clinical Decisions and Communications Science at Baylor College of Medicine. In 2011, with funding from the American Recovery and Reinvestment Act, the Agency expanded

online courses through a contract with PRIME Education, Inc., a medical education provider. In addition, Total Therapeutic Management provides in-person accredited CME/CE to clinicians in their offices.

"We didn't know what to expect when we first started," said Kathleen Moreo, R.N., president of PRIME. "We found that clinicians seek this type of unbiased education." Indeed, within 60 days of its first CME/CE modules being released, PRIME issued more than 1,000 CME/CE certificates.

Every person who receives a certificate also participates in a post-test. Michael Fordis, M.D., director of the Eisenberg Center, said "We found that 95 percent of clinicians who complete the CME find them relevant to their practice and about 55 percent find them very relevant."

This isn't surprising to Frank Urbano, M.D., medical director of care coordination at Cooper University Hospital in Camden, NJ. He recently completed a course comparing treatments for patients with type 2 diabetes. "A lot of CME courses come from commercial interests," said Dr. Urbano. "They tend to be focused on one particular disease or treatment. The AHRQ classes give you a chance to look at what's out there to treat a condition and how the treatments compare. It gives you an objective measure."

AHRQ's free CME/CE classes give clinicians another choice to keep current. For more information, go to <http://effectivehealthcare.ahrq.gov/cme-ce.cfm> To learn more about the Effective Health Care Program, go to www.effectivehealthcare.ahrq.gov. ■

AHRQ offers interactive tool to analyze national and State health care data

Mining for specific data on health care quality and disparities in the United States? It's an easy process with the NHQRDRnet online query system by the Agency for Healthcare Research and Quality, which features data from the *2010 National Healthcare Quality Report*

and *National Healthcare Disparities Report*.

At the State and national level, you'll find quality-of-care data on clinical conditions ranging from asthma and diabetes to heart disease and cancer. You can review data by specific age groups as well

as by race, ethnicity, income, and education. Using NHQRDRnet's search tool, you can locate data tables based on selected words, chapters, or type of table.

To get started on AHRQ's NHQRDRnet system, go to: <http://nhqrnet.ahrq.gov> ■

2009 Nationwide Inpatient Sample released

The Healthcare Cost and Utilization Project (HCUP) Nationwide Inpatient Sample (NIS) featuring 2009 data was recently released by the Agency for Healthcare Research and Quality (AHRQ). The NIS is the largest all-payer inpatient care database in the United States and is updated annually. It is available from 1988 to 2009, allowing analysis of trends over time. The 2009 NIS contains data from approximately 8 million hospital stays drawn from more than 1,000 community hospitals in 44 States. The data can be weighted to produce national estimates, allowing researchers and policymakers to use it to identify, track, and analyze national trends in health care use, access, charges, quality, and outcomes.

The NIS is considered by health services researchers to be one of the most reliable databases for studying important health care topics. Its vast size enables analyses of infrequent conditions, such as rare cancers; uncommon treatments, such as organ transplantation; and special patient populations, like the uninsured. Its size also allows for the study of topics at both national and regional levels. In addition, NIS data are standardized across years to facilitate ease of use. The

NIS contains clinical and resource use information included in a typical discharge abstract, with safeguards to protect the privacy of individual patients, physicians, and hospitals (as required by data sources). For nearly 60 percent of the hospitals, the NIS includes identifiers that allow linkages to the American Hospital Association's Annual Survey Database.

The NIS is nationally representative of all short-term, non-Federal hospitals in the United States. It approximates a 20 percent stratified sample of hospitals in the United States and is drawn from the HCUP State Inpatient Databases, which include 95 percent of all discharges in the United States. The NIS includes all patients from each sampled hospital, regardless of payer—including persons covered by Medicare, Medicaid, or private insurance, and the uninsured.

The 2009 NIS can be purchased through the HCUP Central Distributor at www.hcup-us.ahrq.gov. Statistics from the 2009 NIS are available in HCUPnet at <http://hcupnet.ahrq.gov>, a free online query system. More information about the NIS and other HCUP products can be found on the HCUP-US Web site at www.hcup-us.ahrq.gov. ■

New brief outlines strategies to put patients at the center of primary care

A new brief from the Agency for Healthcare Research and Quality (AHRQ), *The Patient-Centered Medical Home: Strategies to Put Patients at the Center of Primary Care*, highlights opportunities to improve patient engagement in primary care. The brief focuses on involvement at three levels: the engagement of patients and families in their own care, quality

improvement activities in the primary care practice, and the development and implementation of policy and research related to the patient-centered medical home (PCMH).

Strategies to Put Patients at the Center of Primary Care provides a clear and concise definition of the PCMH and outlines six strategies that can be used to support

primary care practices in their efforts to engage patients and families.

This brief and other resources, including white papers and a searchable database of PCMH-related articles, is available from AHRQ's online PCMH Resource Center at www.pcmh.ahrq.gov. ■

New resources to care for community-dwelling patients during emergency events

AHRQ has released two new resources that can help emergency planners and responders ensure that community-dwelling patients receive appropriate care during a mass casualty event (MCE). Community-dwelling patients with daily health care needs may not be directly affected by a mass casualty event, but if that event disrupts their usual care routine, they may still be at risk. Lacking a usual source of care, these patients are more likely to seek care at hospitals already overburdened with mass casualties.

The Home Health Patient Assessment Tool: Preparing for Emergency Triage (www.ahrq.gov/prep/homehealth) reviews existing patient categorization tools and presents a new model patient risk-assessment tool. The

new tool will allow home care agencies, hospitals, and emergency planners to anticipate the needs of community-dwelling patients and assess who might be most at risk of hospitalization if their traditional home support services are disrupted during an emergency.

The compendium of resources available in *Data Sources for the At-Risk Community-Dwelling Patient Population* (www.ahrq.gov/prep/atrisk) provides a summary of each data resource, including its strengths and limitations for estimating the numbers of community-dwelling patients at risk during an MCE, as well as any areas of overlap with other data resources. ■

Emergency Preparedness Resource Inventory updated

The Agency for Healthcare Research and quality (AHRQ) has released a newly updated version of the Emergency Preparedness Resource Inventory (EPRI), a Web-based software tool to help local, regional, and State planners prepare for and respond to emergency situations. Prior to an event, emergency officials can download and use EPRI to develop an inventory of resources necessary to respond to different types of events.

During an emergency, EPRI can help determine what resources are available for response. EPRI is now pre-loaded with resources used in the AHRQ Hospital Surge Model, which allows users to better allocate health care resources during emergency-response operations. It also provides more flexibility for local users to develop inventory reports and emergency request functions that meet their needs. The new version is also now compatible with current releases of Microsoft

database and Web server software. It features an easier installation process with an improved configuration and set up. Other improvements include:

- A more user-friendly interface
- An updated Administrator's Guide and User Manual
- Better data-quality monitoring tools

For more information or to download the new version of EPRI, go to www.ahrq.gov/research/epri. ■

Research Briefs

Anderson, W.G., Chase, R. Pantilat, S.Z., and others. (2011, April). “Code status discussions between attending physicians and medical patients at hospital admission.” (AHRQ grant HS10597). *Journal of General Internal Medicine* 26(4), pp. 359-366.

When interviewed by a hospitalist for hospital admission, few seriously ill patients are informed about their code status options (e.g., cardiopulmonary resuscitation [CPR] or not in certain circumstances), prognosis, and goals of care, despite years of recommendations by bioethicists and professional associations, found this study. Only 19 of the 80 patients had these discussions with the admitting hospitalist at two hospitals in the same system. Discussions were more frequent with older or seriously ill patients (terminal illness or likely to die or be admitted to an intensive care unit in the next year). Yet 66 percent of seriously ill patients had no discussion of code status, CPR, or prognosis. Also, existing conversations were brief. The researchers suggest that hospitalists discuss these issues with patients most likely to need CPR during their hospitalization or those likely to have a worse-than-average outcome.

Atkins, D., Chang, S., Gartlehner, G., and others. (2011, April). “Assessing applicability when comparing medical interventions: Agency for Healthcare Research and Quality and the Effective Health Care Program.” *Journal*

of Clinical Epidemiology* [Epub ahead of print]. Reprints (AHRQ Publication No.11-R052) are available from AHRQ.

Existing guidance on conducting comparative effectiveness systematic reviews has focused insufficient attention to applicability, assert the authors of this study. They define applicability as the extent to which the effects observed in published studies are likely to reflect the expected results when a specific intervention is applied to the population of interest under “real-world” conditions. The authors outline specific steps to ensure that systematic reviews describe and characterize the evidence so that users of a review can apply it appropriately in their decisions. In identifying the characteristics of individual studies that may affect applicability, they develop The Patient, Intervention, Comparator, Outcome, Setting framework as a useful way of organizing the review.

Beukelman, T., Patkar, N.M., Saag, K.G., and others. (2011, April). “2011 American College of Rheumatology recommendations for the treatment of juvenile idiopathic arthritis: Initiation and safety monitoring of therapeutic agents for the treatment of arthritis and systemic features.” (AHRQ grant HS16956). *Arthritis Care & Research* 63(4), pp. 465-482.

Juvenile idiopathic arthritis (JIA) is one of the more common chronic diseases of childhood, with a prevalence of approximately 1 per 1,000. In developing

recommendations for the safest and most effective treatment of JIA on behalf of the American College of Rheumatology, the authors focused on the initiation and safety monitoring of various agents such as nonsteroidal antiinflammatory drugs, intraarticular glucocorticoid injections, nonbiologic disease-modifying antirheumatic drugs (DMARDs), biologic DMARDs, and systemic glucocorticoids for the treatment of the systemic features of systemic arthritis. The evidence and consensus-based recommendations offered in this article are meant as a guide to health care providers caring for children with JIA and are not meant to take the place of individualized care or to serve as health care coverage guidelines.

Crandall, W., Kappelman, M.D., Colletti, R.B., and others. (2011, January). “ImproveCareNow: The development of a pediatric inflammatory bowel disease improvement network.” (AHRQ grant HS16957). *Inflammatory Bowel Disease* 17(1), pp. 450-457. Inflammatory bowel disease (IBD) is estimated to account for more than 700,000 physician visits and 100,000 hospitalizations each year. Data from studies of pediatric IBD patients show significant variations in care, including variation in diagnostic interventions such as stool tests for pathogens and imaging of the small intestine. In addition, treatments were not started at the recommended doses and many underweight patients did not receive nutritional

continued on page 25

Research briefs

continued from page 24

interventions. The authors report on the design and development of an approach to overcome these gaps. The ImproveCareNow Network model includes three components: (1) creating multicenter collaborative networks of pediatric subspecialists, (2) sharing of performance data collected in patient registries, and (3) training in quality improvement methods. As of 2010, patients are being enrolled at 24 sites. Results will be reported separately in future publications.

Davies, S., McDonald, K.M., Schmidt, E., and others. (2011, April). “Expanding the uses of AHRQ’s Prevention Quality Indicators. Validity from the clinician perspective.” (AHRQ Contract No. 290-04-0020). *Medical Care* [Epub ahead of print].

The Agency for Healthcare Research and Quality’s Patient Quality Indicators (PQIs) are measures of potentially preventable hospitalizations. The 12 indicators for adult patients span both chronic and acute conditions. Each indicator was evaluated for 3 potential uses based on 3 potential levels of analysis and reporting (residents of geographic areas, enrollees of health plans, and patients of large physician organizations). Sixty-four clinician panelists were split into Delphi and Nominal Groups. Panelists showed more support of the usefulness of the PQIs for internal quality improvement within large physician groups than for other applications. Three indicators (diabetes short-term complications, asthma, and congestive heart failure) earned “full support for use” from both groups. Panelists fully supported

the usefulness of two indicators for comparative reporting (asthma, congestive heart failure) and no indicators for pay-for-performance applications.

Dougherty, D., and Clancy, C. (2011, May/June). *Transforming children’s health care quality and outcomes—A not-so-random non-linear walk across the translational continuum.* Academic Pediatrics 11(3S), pp. S91-S93. Reprints (AHRQ Publication No.11 R047) are available from AHRQ.*

The authors discuss the contributions that the Children’s Health Insurance Program Reauthorization Act (CHIPRA) makes to overcoming what they have characterized as the third translational block—between sufficient knowledge of clinical effectiveness and reliable delivery of safe and effective services at every patient’s bedside. They suggest that for substantial improvements to be made in children’s health care and health, additional attention must be paid to all components of the translational continuum. The authors suggest that the quality portions of CHIPRA contribute greatly to overcoming the third translational block between clinical knowledge and improved care quality and outcomes. But that to make even more substantial improvements in children’s health care and health, more attention to children’s clinical research is needed.

Dougherty, D., Schiff, J., and Mangione-Smith, R. (2011, May/June). “The Children’s Health Insurance Program Reauthorization Act Quality Measures Initiatives: Moving

forward to improve measurement, care, and child and adolescent outcomes.” Academic Pediatrics 11(3S), pp. S1-S10. Reprints (AHRQ Publication No.11-R045) are available from AHRQ.*

This article introduces a journal supplement on quality measures initiatives for the Children’s Health Insurance Program Reauthorization Act. The supplement aims to make available useful information about issues surrounding the initial core set and key concepts for moving toward improvement of children’s health care quality measures, children’s health care quality, and children’s health outcomes. Included in the set of articles is a detailed description of how the identification of a balanced, grounded, and parsimonious core set of children’s health care quality measures was accomplished by an open, public process combined with an evidence-informed evaluation methodology. The introduction briefly summarizes the content of other articles in the supplement. Finally, it focuses on setting priorities for measurement in the areas of inpatient care, specialty care, health outcome measures, and inequities in health.

Finkelstein, J., Barr, M.S., Kothari, P.P., and others. (2011). “Patient-centered medical home cyberinfrastructure. Current and future landscape.” American Journal of Preventive Medicine 40(5S2), S225-S233. Reprints (AHRQ Publication No. 11-R055) are available from AHRQ.*

The efforts to promote patient-centered medical home (PCMH) principles are especially important

continued on page 26

Research briefs

continued from page 25

in the light of recent health care reform initiatives that call for greater emphasis on health promotion and disease prevention. The major aspects of PCMH related to its information infrastructure were discussed at a panel organized by the Agency for Healthcare Research and Quality. The authors summarize the panel discussions along four major domains: (1) PCMH as the evolving model of health care delivery; (2) health information technology (IT) applications to support the PCMH; (3) Current health IT Landscape of PCMH; and (4) future HIT landscapes of PCMH: Federal initiatives on health informatics, legislation, and standardization. They conclude that health IT has enormous potential to improve primary care delivery, and will play a pivotal role in implementing the PCMH model.

Gerhard, T. (2011). “Clopidogrel and proton pump inhibitors: A clinically meaningful interaction?” (AHRQ grant HS16097). *Pharmacoepidemiology and Drug Safety* 20, pp. 214-218. Dual antiplatelet therapy (DAT) with clopidogrel and aspirin has been shown effective and is widely used for patients with acute coronary syndrome or percutaneous coronary intervention. Because both drugs increase the risk of bleeding, current guidelines generally recommend proton pump inhibitors (PPIs) to manage the risk for serious gastrointestinal bleeding in patients treated with DAT. Some studies suggest that PPIs diminish the effectiveness of clopidogrel, but these and studies suggesting otherwise are the subject of controversy and debate. The author

provides a brief overview of the evidence and takes an epidemiological perspective to discuss alternative potential causes for the conflicting findings reported in the literature. He concludes that the question whether the interaction between clopidogrel and PPIs is clinically meaningful is not yet conclusively answered.

Glance, L.G., and Dick, A.W. (2011). “In reply.” (AHRQ grant HS16737). *Anesthesiology* 114, pp. 1243-1255.

The researchers reply to a letter raising a question about their earlier article on perioperative outcomes in patients with modified metabolic syndrome (mMetS) who undergo cardiac surgery. The author of the letter raises the issue about whether their study proves the increased risk of mMetS or simply proves “that the perioperative presence of two independent risk factors (and one protective factor) is more significant than having one protective factor.” They respond that their analysis does not indicate whether the increased risk for cardiac, pulmonary, renal, and central nervous system complications associated with the mMetS is due simply to the additive effects of diabetes, hypertension, and obesity. Furthermore, they believe that whether their findings represent an additive effect or an interaction effect is less important than the simple recognition that mMetS is associated with a significantly higher risk of major postoperative complications.

Groeneveld, P.W., Polsky, D., Yang, F., and others. (2011). “The impact of new cardiovascular device technology on health care

costs.” (AHRQ grant HS18403). *Archives of Internal Medicine* 114, pp. 1243-1255.

The researchers assessed the overall impact of drug-eluting coronary stents (DESs) on Medicare expenditures in a nationally representative cohort of 1,981,088 Medicare beneficiaries with coronary artery disease. In this group, 4.5 percent had a recent acute myocardial infarction (AMI or heart attack), 3.4 percent had a recent noninfarction acute coronary syndrome (ACS), and 92 percent had no recent ACS. The authors’ estimates implied a DES-attributable increase in annual expenditures on patients with AMI of \$657, on patients with noninfarct ACS of \$999, and on patients without ACS of \$146. This observational study could not establish whether the association between increased DES use and cost growth was causal. DESs added \$1.57 billion in annual Medicare expenditures among beneficiaries aged 66 to 85 years.

Harrison, T.R., Morgan, S.E., King, A.J., and others. (2011). “Promoting the Michigan Organ Donor Registry: Evaluating the impact of a multifaceted intervention utilizing media priming and communication design.” (AHRQ grant HS08577). *Health Communication* 25, pp. 700-708.

Michigan has the fifth lowest rate of joining the organ donation registry, despite being the eighth most populous State in the country. In order to increase this rate, an intervention was focused on Secretary of State branch offices (the Department of Motor Vehicles equivalent in Michigan) in three

continued on page 27

Research briefs

continued from page 26

Michigan counties in 2008. The campaign consisted of a mass media component (billboards and radio), point-of-decision materials, and an interpersonal component (volunteers staffing branch offices and interacting with customers). The successful campaign accounted for an increase of over 14,672 new registrants on the organ donor registry, compared with baseline data from the previous year. The rest of the State in the same time period experienced an increase of only 6,600 new registrants.

Holden, R.J. (2011). “Lean thinking in emergency departments: A critical review.” (AHRQ grant T32 HS00083). *Annals of Emergency Medicine* 57, pp. 265-278.

The need for improvement in emergency departments (EDs) with respect to the cost of care, the speed of service, crowding, and patient safety is now widely accepted. Lean thinking is a bundle of concepts, methods, and tools derived from the Toyota Production System, the production philosophy of the Toyota Motor Corporation. Its success in manufacturing and in the British National Health Service and other health care systems has led to a strong push for introducing it to the ED. The author critically reviewed 18 articles describing the implementation of Lean in 15 EDs in the United States, Australia, and Canada. Patient care usually improved after implementation, with many EDs reporting decreases in length of stay, waiting times, and proportion of patients leaving the ED without being seen. Also, there were some indications of positive effects on employees and organizational culture.

Honore, P.A., Wright, D., Berwick, D.M., Clancy, C., and others. (2011). “Creating a framework for getting quality into the public health system.” *Health Affairs* 30(4), pp. 737-745. Reprints (AHRQ Publication No. 11-R053) are available from AHRQ.*

Efforts to define, measure, and uphold quality have shaped health care delivery for individuals for more than a decade. Yet similar improvements have not extended to the broader realm of public health. The authors discuss a recent report by the Department of Health and Human Services (HHS), *Consensus Statement on Quality in the Public Health System*, which defines for the first time, what is meant by public health quality and clarifies its associated aims. They also review priority areas in need of quality improvement as identified in another HHS report, *Priority Areas for Improvement of Quality in Public Health*. Finally, they provide illustrations of applications for these aims and priorities, particularly in the context of implementing the Affordable Care Act.

Kappelman, M.D., Crandall, W.V., Colletti, R.B., and others. (2011, January). “Short pediatric Crohn’s Disease Activity Index for quality improvement and observational research.” (AHRQ grant HS16957). *Inflammatory Bowel Disease* 17(1), pp. 112-117. Crohn’s disease (CD) is a chronic, relapsing disorder of the gastrointestinal tract that affects nearly 50,000 children in the U.S. Disease activity indices, such as the Pediatric Crohn’s Disease Activity Index (PCDAI) have been developed and validated, but because the PCDAI requires the

determination of height velocity, analysis of laboratory tests, and components of the physical exam that are not always completed during patient encounters, the feasibility of this index in observational studies has been called into question. The aims of this study were: (1) to determine the feasibility of completing the PCDAI, an abbreviated PCDAI, and their individual components in the context of routine clinical care, and (2) to create a Short PCDAI by retaining and reweighting the most practical and informative components. The study found that in 66.5 percent of visits, the Short PCDAI was completed (compared with 16.7 percent for the PCDAI and 44.1 percent for the abbreviated PCDAI). They concluded that it was a practical and valid tool to measure pediatric CD activity.

Kendall, B.A., Varley, C.D., Choi, D., and others. (2011, March). “Distinguishing tuberculosis from nontuberculosis mycobacteria lung disease, Oregon, USA.” (AHRQ grant HS17552). *Emerging Infectious Diseases* 17(3), pp. 506-509.

To determine whether tuberculosis (TB) and nontuberculous mycobacteria (NTM) infection patients could be distinguished from one another with limited information, the researchers conducted a population-based study comparing the demographic and clinical features of TB and NTM patients in a region of low TB incidence. They found that birthplace outside the United States, age, and the presence of chronic obstructive pulmonary disease can accurately categorize 98 percent of patients in whom NTM

continued on page 28

Research briefs

continued from page 27

disease is suspected. Because definitive identification of mycobacterial species can take several weeks, the ability to quickly distinguish NTM from TB on clinical grounds could help public health officials make decisions regarding contact investigations and isolation.

Landman, M.P., Shelton, J., Kauffman, R.M., and Dattilo, J.B. (2010, November/December). "Guidelines for maintaining a professional compass in the era of social networking." (AHRQ grant T32 HS13811). *Journal of Surgical Education* 67(6), pp. 381-386.

The researchers studied the use of social networking by all faculty in the Department of Surgical Sciences and all general surgery residents at Vanderbilt Medical Center in November 2009. They found that of the 88 residents and 127 faculty, 56 (64 percent) and 28 (22 percent), respectively, have pages on Facebook. Of these, 50 percent are publicly accessible. Thirty-one percent of the publicly accessible pages had work-related comments posted, and of these comments, 14 percent referenced specific patient situations or were related to patient care. The potential for misuse of these Web sites suggests the need for expanding professional guidelines to address this situation. The authors present a number of guidelines to preserve a balance of personal freedom and individuality with professional responsibility.

Mangione-Smith, R., Schiff, J., and Dougherty, D. (2011). "Identifying children's health

care quality measures for Medicaid and CHIP: An evidence-informed, publicly transparent expert process." *Academic Pediatrics* 11(3S), pp. S11-S21. Reprints (AHRQ Publication No.11-R046) are available from AHRQ.*

The authors present a brief summary of the processes used to identify an initial recommended core set of children's health care quality measures and the key steps that will need to be taken to successfully implement them on a widespread scale. This process was mandated by the Children's Health Insurance Program Reauthorization Act. The authors also provide an overview of the measures selected. Seventy of the 119 nominated measures met criteria for validity, feasibility, and importance, according to Delphi scoring. After further prioritization, 25 measures were recommended for the initial core set. Twelve of the recommended measures focus on preventive care and health promotion, including prenatal/perinatal care, well-child care, immunizations, screening for developmental delays, obesity, sexually transmitted infections, and receipt of preventive dental services.

McCormack, L.A., Treiman, K., Rupert, D., and others. (2011). "Measuring patient-centered communication in cancer care: A literature review and the development of a systematic approach." *Social Science & Medicine* 72, pp. 1085-1095. Reprints (AHRQ Publication No.11-R054) are available from AHRQ.*

One of the more problematic aspects of assessing patient-centeredness is the

conceptualization and measurement of patient-centered communication (PCC), which is arguably a primary means through which patient-centered care is accomplished. The authors present a brief critique of current approaches for measuring PCC in patient-clinician interactions. They then propose a conceptual framework for assessing PCC. Their study, which included a literature review, interviews with cancer patients, and consultations with experts, identified key domains and subdomains of PCC that can serve as the foundation for future PCC measure development. These domains are organized under the six core functions specified in the PCC conceptual framework: exchanging information, fostering healing relationships, recognizing and responding to emotions, managing uncertainty, making decisions, and enabling patient self-management.

Meyers, D. (2011). "Using the evidence: PCMH and patient-centered outcomes research." *Journal of the American Pharmacists Association* 51(2), p. 155. Reprints (AHRQ Publication No.11-R056) are available from AHRQ.*

The patient-centered medical home (PCMH) has emerged as an attractive model of care that holds the potential to improve the quality, safety, and effectiveness of health care. Patient-centered outcomes research helps patients confront everyday decisions about care under real-world circumstances. The Agency for Healthcare Research and Quality (AHRQ) supports PCMH by advancing its evidence base and by convening and working with government and

continued on page 29

Research briefs

continued from page 28

private stakeholders to ensure that the best ideas are shared broadly. AHRQ's role in patient-centered outcomes research is also well-established. AHRQ has conducted and supported this research since the creation of the Effective Health Care Program in 2005. The program already has produced much research that is of great interest to pharmacists, such as guides on medications to reduce the risk of developing primary breast cancers and on the use of insulin analogs.

Pronovost, P.J., Marsteller, J.A., and Goeschel, C.A. (2011). "Preventing bloodstream infections: A measurable national success story in quality improvement." (AHRQ grant HS14246). *Health Affairs* 30(4), pp. 628-634.

The number of patients in U.S. intensive care units suffering a central-line infection declined by 63 percent between 2001 and 2009. The authors present information about the combined public-private effort to reduce bloodstream infections in U.S. hospitals. The effort serves as a case example to describe how multiple forces can align to effectively disseminate successful quality improvement interventions. They describe the lever of managing change and the efforts to channel external pressures to create accountability, including social pressure from withholding payment when complications from bloodstream infections arise, and regulatory pressure. Although each of these pressures may have a relatively weak association with improved outcomes, they can have a bigger impact when combined.

Sharkey, S., Hudak, S., Horn, S.D., and Spector, W. (2011, April). "Leveraging certified nursing assistant documentation and knowledge to improve clinical decision making: The on-time quality improvement program to prevent pressure ulcers." (AHRQ Contract No. 290-05-0020). *Advances in Skin & Wound Care* 24(4), pp. 182-188.

The On-Time Quality Improvement for Long-term Care Program (On-Time) was developed to embed health information technology into quality improvement at the frontline of care and incorporate culture change, workflow redesign principles, and current best clinical practices to prevent pressure ulcers (PrUs) in long-term care facilities. This paper describes the three main components of On-Time: (1) leveraging documentation and knowledge of certified nursing assistant (CNA) staff, who serve as primary informants to licensed staff; (2) supporting collaborative clinical decisionmaking of a multidisciplinary team using clinical decision support tools that summarize information from weekly reports; and (3) establishing practices for proactive risk identification and early intervention to prevent PrUs as part of a frontline caregivers' daily work.

Siminoff, L.A., and Step, M.M. (2011). "A comprehensive observational coding scheme for analyzing instrumental, affective, and relational communication in health care contexts." (AHRQ grant HS13152). *Journal of Health Communication* 16, pp. 178-197.

This article describes a computerized program to facilitate the analysis of health care conversations, the Siminoff

Communications Content and Affect Program (SCCAP). This new program is designed to be adaptable to the goals and patterns of diverse health care contexts. The SCCAP builds on other well-known observational systems, but emphasizes verbal and nonverbal communication behaviors drawn from the communications research literature. Specifically, the program captures the following: (a) task-driven information exchange among multiple interaction partners, (b) the affective and relational communication activities of all communicators, and (c) the social-influence tactics used in health care settings that contribute to decisionmaking.

Sturmer, T., Funk, M.J., Poole, C., and Brookhart, M.A. (2011). "Nonexperimental comparative effectiveness research using linked healthcare databases." (AHRQ grant HS17950). *Epidemiology* 22(3), pp. 298-301.

The authors discuss the advantages and possible disadvantages of using large linked health care databases in performing nonexperimental comparative effectiveness research in pharmacoepidemiology. These databases have unique advantages for epidemiologic research. Most are population-based and therefore are less prone to the healthy selection that is virtually unavoidable when recruiting participants for randomized trials or cohort studies. Linked health care databases include continuous service dates rather than interval assessments. Continuous assessment of exposure and outcomes allows researchers to be specific about timing. Such

continued on page 30

Research briefs

continued from page 29

databases contain information about almost all drugs prescribed or dispensed in an outpatient setting. On the downside, they lack data on important confounders, on drugs administered during hospitalization or purchased over the counter, and on sensitivity and specificity of various algorithms to define outcomes.

Tipton, K., Launderers, J.H., Inamdar, R., and others. (2011, June). “Stereotactic body radiation therapy: Scope of the literature.” (AHRQ Contract No. 290-02-0019). *Annals of Internal Medicine* 154(11), pp. 737-745.

Stereotactic body radiation therapy (SBRT) is derived from the techniques of stereotactic radiosurgery used to treat lesions in the brain and spine. SBRT delivers a high dose of radiation to an extracranial target in the body in a

single dose or a few fractions and requires fewer treatment sessions. Thus, it is likely to be attractive to patients. The authors’ review of the SBRT literature identified a total of 124 relevant studies. No published comparative studies addressed the relative effectiveness and safety of SBRT versus other forms of external-beam radiation therapy. The review identified 50 ongoing SBRT trials, including metastatic breast cancer, as well as primary cancer of the biliary tract, kidney, liver, lung (principally non-small cell lung cancer), pancreas, prostate, and unidentified sites. Only one trial involved a direct comparison of SBRT with a different form of radiation therapy.

Wittenberg, E. (2011). “The effect of time of onset on community preferences for health states: An exploratory study.” (AHRQ grant HS14010).

Health and Quality of Life Outcomes 9(6), pp. 1-8.

Health utilities are cardinal values that represent the strength of the individual’s preferences for specific health-related outcomes. This paper addresses one specific aspect of utility elicitation—the time of onset of illness—and how its inclusion in health state descriptions developed specifically for the elicitation of community perspective preferences affects how patients verbalize those preferences. The researcher conducted a survey of community-perspective preferences for hypothetical health states among a convenience sample of healthy adults recruited from a hospital’s research volunteer pool. She found that the standard gamble scores from 368 completed surveys were not significantly different across times of illness onset described in the health-state descriptions, regardless of health condition severity and controlling for respondent characteristics. ■

Subscribe to AHRQ's Electronic Newsletter

AHRQ's free notification service brings news and information to your e-mail inbox! This service allows subscribers to receive automatic email updates about AHRQ's research, data, publications, events and meetings, and many other announcements.

You also can **customize your subscription** and receive other AHRQ topics of interest.

To subscribe:

1. Go to www.ahrq.gov and select "Email Updates" next to the red envelope icon.
2. Enter your email address.
3. On the "Quick Subscribe" page, select *AHRQ Electronic Newsletter* under the "AHRQ News and Information" heading.

Questions? Please send an email to Nancy.Comfort@ahrq.hhs.gov.



Healthcare 411

AHRQ's Audio Podcast Series

Healthcare 411 is a free, online resource featuring AHRQ research in critical health care areas, such as:

- Comparative effectiveness
- Patient safety
- Preventive health Care

One-minute consumer podcasts are available in both English and Spanish. Listen online or subscribe to have podcasts sent directly to you.

For more information, visit healthcare411.ahrq.gov.

Follow AHRQ news on Twitter



AHRQ uses Twitter to broadcast short health messages ("tweets") that can be accessed by computer or mobile phone. You can follow AHRQ's news releases on twitter at **<http://twitter.com/AHRQNews>**.

To view all of AHRQ's social media tools, including e-mail updates, podcasts, and online videos, go to **www.ahrq.gov/news/socialmedia.htm**.

**U.S. Department of
Health and Human Services**

Agency for Healthcare Research and Quality
P.O. Box 8547
Silver Spring, MD 20907-8547

Official Business
Penalty for Private Use \$300



AHRQ Pub. No. 11-RA011
August 2011

ISSN 1537-0224

Ordering Information

Most AHRQ documents are available free of charge and may be ordered online or through the Agency's Clearinghouse. Other documents are available from the National Technical Information Service (NTIS). To order AHRQ documents:

**(*) Available from the AHRQ
Clearinghouse:**

Call or write:

AHRQ Publications Clearinghouse

Attn: (publication number)

P.O. Box 8547

Silver Spring, MD 20907

800-358-9295

703-437-2078 (callers outside the

United States only)

888-586-6340 (toll-free TDD service;

hearing impaired only)

To order online, send an email to:

ahrqpubs@ahrq.hhs.gov



Scan with your mobile
device's QR Code Reader
to access or subscribe
to AHRQ's *Research
Activities*.

**For a print subscription to *Research
Activities*:**

Send an email to ahrqpubs@ahrq.hhs.gov with "Subscribe to *Research Activities*" in the subject line. Be sure to include your mailing address in the body of the email.

**Access or subscribe to *Research Activities*
online at www.ahrq.gov/research/resact.htm.**