Agency for Healthcare Research and Quality
Advancing Excellence in Health Care

RESEARCH ACTIVITIES

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MONAHRQ gains momentum

What happened in Las Vegas with sharing health care data shouldn't stay in Las Vegas.

The State of Nevada has been collecting health care data and generating health statistics since the mid-1980s. Some information was available to the public, but interest was minimal until summer 2010 when "Do No Harm: Hospital Care in Las Vegas" ran in the *Las Vegas Sun* newspaper.

The five-part series opened with the prologue:

"There's a running joke about hospitals around here: 'Where do you go for great health care in Las Vegas?'

'The airport.'

The implication is everyone knows hospital care in southern Nevada is substandard.

The reality, however, is that almost no one has had access to meaningful information about the quality of Las Vegas hospitals. Until now."

Two *Sun* reporters analyzed hospital billing records to report on preventable injuries, infections, and surgical mistakes in Las Vegas hospitals in 2008 and 2009. "Do No Harm" not only won accolades for the authors when they were named Pulitzer Prize finalists, it helped spur a package of health care reform and transparency laws in Nevada.

Joseph A. Greenway, M.P.H., director of the Center for Health Information Analysis in Nevada, knows how tough it can to be to provide transparency. He explains, "First we were met with resistance, then an initial backlash after the *Las Vegas Sun* articles, but now we have cooperation, collaboration, and even encouragement."

Even with more support and a larger budget for his Center,

Greenway still had a small staff and a lot to do to comply with the new State laws that require health care data reporting on a quarterly basis.

Greenway got help. He says, "MONAHRQ® saved the day."

"With this Web development product, we multiplied the information on our transparency Web site twentyfold," Greenway told *Research Activities*. "With MONAHRQ, we produced in days what could have taken years."

MONAHRQ, an acronym for "My Own Network powered by AHRQ," is free downloadable software the Agency for Healthcare Research and Quality developed for organizations to create their own reporting Web sites.

"We'd been asking ourselves for a long time, 'Why should it be so expensive to generate and put out basic information on quality of care, utilization, rates of conditions, and procedures?' and 'Why should

continued on page 3

Highlights

Topics

Regular Features

From the Director

As Director of the Agency for Healthcare Research and Quality, I've traveled to more than half of the States.

We know from our State Snapshots that States can differ dramatically in health care disparities and quality, population risk factors, and more.

Yet everywhere I go, I'm hearing more and more about a desire for transparency. People want to know more about the health care in their State and even in their county.

They want answers to questions like "Which hospitals have the lowest mortality rates after coronary bypass surgery?" and "Which hospitals perform the most hip replacement surgeries? And what is the cost?" At the county level, people are asking, "Which counties have the highest rates of hospitalization for uncontrolled diabetes? How much money could we save if these rates were reduced?" and "Which counties have the highest rates of lung cancer?"

In similar fashion, health care organizations, States, and counties want answers to such questions so they can identify at-risk populations, target care improvements, and reduce care costs.

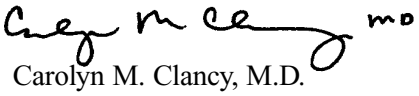
Hospitals, associations, and States are collecting substantial amounts of data on health care statistics that can help find answers to questions like these.

But making the data available for the public takes both time and money. For a State, hospital, or other organization to compile, analyze, and post data on the quality of hospital care, it is estimated to cost $300,000 or more. It could take a year to develop the Web site.

At AHRQ, we have a strong record of developing innovative quality indicators and hospital reporting tools. Now, we're starting to revolutionize how States and others report health care data publically or use it to improve health care quality.

MONAHRQ®, or "My Own Network Powered by AHRQ," is a free software application that significantly reduces the time needed to compile, analyze, and post data on the quality of hospital care, its cost, and how that care is used.

In March, the U.S. Department of Health and Human Services recognized MONAHRQ as one of the top six innovations. It feels good to be honored, but I'm finding the real satisfaction comes from knowing that more Americans can get valuable information to make better decisions for themselves and their families.



Carolyn M. Clancy, M.D.

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Also in this issue:

With MONAHRQ, we produced in days what could have taken years.

MONAHRQ

continued from page 1

this information be so difficult for the public to get?'" says Anne Elixhauser, Ph.D., of AHRQ. She also grappled with "Why should an organization that wants to share this information have to reinvent the wheel every time they want to do this?"

Elixhauser answered her questions with action.

MONAHRQ uses hospital administrative data to analyze, summarize, and present information in a format ready for use by consumers and other decisionmakers to compare quality in four key areas: hospital ratings, hospital utilization, preventable hospitalizations, and rates of conditions and procedures.

Through MONAHRQ, State and local data organizations, hospitals, and health plans load their own data or measure results and create their own look with the colors and images they want. MONAHRQ can be used internally or for public reporting.

As organizations and States search for ways to share quality data inexpensively, quickly, and efficiently, MONAHRQ is taking flight throughout the United States.

MONAHRQ in Maine

The State of Maine is legally required to report on comparative health care quality on a publicly accessible Web site. Carrying out this State mandate is the Maine Health Data Organization, a small independent State agency. Their new Web site, powered by MONAHRQ, replaced their "older and woefully outdated Web site," says Susan Schow, epidemiologist at the Maine Health Data Organization.

At the new site, people in Maine can get answers to basic questions such as "What is health care quality?" They can also find out which hospitals see the most patients with head and neck cancer or compare the average stay for mental health conditions at hospitals.

The least ethnically diverse State in the country also has the oldest population and a high percentage of people living in rural areas who may need to travel long distances for hospital care. "The fact that folks can query the data themselves is tremendously valuable," says Schow.

A racially diverse State

Hawaii is about as far as you can get from Maine in many ways. In addition to being one of the most racially diverse states in the country, the Aloha state is also different because there is no public reporting requirement for health data. "We can't report hospital-level data publicly, and our primary business obligation is to our paying members," says Jill Miyamura, Ph.D., vice president of the Hawaii Health Information Corporation.

But Miyamura also uses MONAHRQ—for two sites.

One site provides data by the county level, which is public. The second, password-protected site for hospitals provides more detailed information.

"MONAHRQ gives us a giant step forward toward being compliant with reporting guidelines we do have in Hawaii," she says. "MONAHRQ also helps us fulfill the commitment to the public that is implicit within our mission to improve the quality and cost-efficiency of health care services to the people of Hawaii."

"In the past year or two, we've seen a heightened interest in data," she says. "Even though Hawaii is known as the 'healthy State,' we have opportunities to identify where we need to get better."

Another healthy State

Like Hawaii, Utah gets high marks for the health of its citizens. Keely Cofrin Allen, Ph.D., attributes this to the fact that Utah has the youngest average age of any State and a large portion of the population are members of the Church of Jesus Christ of Latter Day Saints, which prohibits smoking and drinking alcohol. "This ripples out to other areas of the State," says Cofrin Allen, director of the Office of Health Care Statistics at the Utah Department of Health.

The Office of Health Care Statistics has been collecting health care data in Utah since 1990, but the requirement to publish hospital comparison data using nationally recognized measures didn't became law until 2005.

For Cofrin Allen, MONAHRQ means her data will be useful. When MONAHRQ debuts in December on her State's Web site, "My Health Care in Utah," consumers will be able to look at everything from the last hospital satisfaction report to columns by AHRQ Director Carolyn M. Clancy, M.D., on how to navigate the health care system.

"You can collect a pile of data and analyze it all day long, but until it's communicated, it's not useful," says

continued on page 4

MONAHRQ

continued from page 3

Cofrin Allen. "People will be more engaged with the data. They will be able to do more research to find out what's going on where they live."

A State in the stroke belt

By most measures, Arkansas has many health challenges. "We are considered to be part of the stroke belt. We have a high rate of stroke and related diseases such as hypertension, diabetes, and other chronic conditions," says Lynda Lehing, hospital discharge data section chief for the Arkansas Department of Health.

Arkansas also has another challenge. "We're pretty unique," says Connie Marie Ardwin, research policy analyst with the Department, "because we have a law that prevents disclosing any information that could identify an individual hospital."

Yet, Lehing and Ardwin share a commitment to being as open as possible. They're in the process of using MONAHRQ to put out information that will allow people to compare health data by county. For example, the State can use data on hospital admissions for certain chronic conditions to target certain areas for disease-prevention programs. Also, consumers can see which counties have hospitals that perform the most of certain procedures, since procedure volume is often connected to care quality. "We hope that when people start seeing this information, we can work toward being more transparent," says Ardwin. "We want to stir up interest."

An innovation leader

The U.S. Department of Health and Human Services (HHS) honored MONAHRQ as one of six winners in the HHSinnovates program, which received 90 nominations for the competition to recognize innovation. At an awards ceremony, HHS Secretary Kathleen Sebelius told the audience, "HHS is all about innovations. 'We've always done it this way' is one of my least favorite phrases."

You can collect a pile of data and analyze it all day long, but until it's communicated, it's not useful.

MONAHRQ is a stellar example of innovation at its best. As transparency gains more momentum, MONAHRQ will continue to help make useful health care data widely available. ■ *KM*

Editor's note: Visit www.monahrq.ahrq.gov for more information.

Patient Safety and Quality

Less than half of pharmacy computer systems studied correctly identified drug-drug interactions

Drug interaction computer programs alert the pharmacist to an adverse interaction between a medication a patient is prescribed and other medications the patient is already taking or also being prescribed. This computer decision support (CDS) tool has been a mainstay of pharmacy software packages for many years and is now available in many computerized prescription order-entry systems. Researchers visited 64 participating Arizona pharmacies to analyze their information systems and associated CDS software's ability to detect drug-drug interactions (DDIs). They found that only 28 percent of surveyed pharmacy systems correctly identified all 19 DDIs and non-interactions of mainly cardiovascular drugs.

The researchers chose the oral cardiovascular medications based on their widespread use, clinical importance, propensity to cause adverse events, and level of documentation. They examined pharmacy computer responses to prescription orders for a standardized fictitious patient that consisted of 18 different medications, including 19 drug pairs of interest; 13 had clinically significant DDIs and six were non-interacting pairs.

For all of the 64 participating pharmacies, the median percentage of correct DDI responses was 89 percent. The digoxin and itraconazole drug pair was incorrectly identified more than any other DDI pair. The presence

continued on page 5

Drug-drug interactions

continued from page 4

or absence of an alert regardless of its severity level was the basis for determining whether a pharmacy's software response was classified as correct. The community and in-patient pharmacies studied used a total of 24 different software vendors for their DDI systems.

The current study confirms continued variability in system performance across and within pharmacy organizations. Comprehensive system improvements in the manner in which pharmacy information systems identify potential DDIs are warranted, suggest the researchers. Their study was sponsored by the Agency for Healthcare Research and Quality (HS17001).

See "Ability of pharmacy clinical decision-support software to alert users about clinically important drug-drug interactions," by Kim R. Saverno, B.S.Pharm., Lisa E. Hines, Pharm.D., Terri L. Warholak, Ph.D., R.P.H., and others in the *Journal of the American Medical Informatics Association* 18, pp. 32-37, 2011. ■ *MWS*

Simpler drug warning labels are easier to understand

Many drugs are off limits to pregnant women because they can harm fetuses. But not all drug labels state this warning clearly enough for some women to understand it. When researchers tested the standard drug label that warns pregnant women to avoid a drug against a new text version and a text-and-icon version of the label, most women best understood the combination version.

Researchers interviewed 132 women at outpatient care clinics in Shreveport, LA, and Chicago, IL. Ninety-four percent of the women were able to understand the message of the enhanced text (Do not use if you are pregnant, think you are pregnant, or breast feeding) when it accompanied an icon that was a silhouette of a pregnant woman with a slash through it. In contrast, just 76 percent of women comprehended the standard label and 79 percent understood the enhanced text alone.

Because care providers do not often explain that the medicine they are prescribing may cause birth defects, warning labels may be the best line of defense in providing that information. Standardizing the labels and testing them with consumers may make them easier to understand so they do their job better. This study was funded in part by the Agency for Healthcare Research and Quality (T32 HS00078).

See "Improving pregnancy drug warnings to promote patient comprehension," by Whitney B. You, M.D., William Grobman, M.D., M.B.A., Terry Davis, Ph.D., and others in the April 2011 *American Journal of Obstetrics and Gynecology*, 204(4), pp. 318.e1-318.e5. ■ *KFM*

Medical students, interns, and residents need training to disclose medical errors

Although patients say they want health care providers to promptly disclose and apologize for errors made while patients are under their care, surveys suggest that a minority of harmful errors are disclosed to patients. What's more, disclosure conversations often fail to meet patients' expectations. In fact, a recent survey reveals that the disclosure content chosen by 758 medical students, interns, and residents falls short of current disclosure guidelines.

The researchers surveyed medical students in various stages of training at two universities that did not require error-disclosure training. The survey used two hypothetical scenarios, one involving an obvious insulin overdose, and the other involving hyperkalemia (excessively high potassium levels in the blood), an error less apparent to the patient. Questions focused on how likely the medical trainee would be to disclose the error and what they would most likely say.

Most trainees (85 percent) agreed that their scenario represented a serious error. A majority (78 percent) felt that, as the doctor, they would be very or extremely responsible for the error in the scenario. Trainees reported their intent to disclose the error as "definitely" (43 percent), "probably" (47 percent), "only if asked by the patient" (9 percent), and "definitely not" (1 percent). Trainees were more likely to disclose obvious

continued on page 6

Medical errors
continued from page 5

errors than errors that patients were unlikely to recognize (55 vs. 30 percent). Respondents were split between conveying a general expression of regret (53 percent) and making an explicit apology (46 percent). More experienced respondents were less likely to provide an explicit apology.

The information respondents would disclose largely mirrored that chosen by doctors surveyed by the researchers in prior studies. Yet, only a minority of medical students receive training in error disclosure.

The researchers conclude that the current training environment may not encourage an approach to error disclosure that is consistent with patient expectations and national guidelines. This study was supported by the Agency for Healthcare Research and Quality (HS14012).

See "How trainees would disclose medical errors: Educational implications for training programmes," by Andrew A. White, M.D., Sigall K. Bell, M.D., Melissa J. Krauss, M.P.H., and others in *Medical Education* 45, pp. 372-380, 2011. ■ *MWS*

Certain factors increase risk of medication errors in the neonatal intensive care unit (NICU)

Babies in neonatal intensive care units (NICUs), like patients in other critical care environments, are at increased risk for medication errors. In fact, these errors are eight times more likely to take place in the NICU than an adult setting in the hospital. Given their small size, infants in the NICU are particularly vulnerable to the consequences of medication errors. A new study profiled risk factors for medication errors in the NICU. It found that human factors were behind most medication errors in the NICU, with half of them the result of mistakes during the drug administration phase.

The researchers looked at 6,749 NICU medication-error reports from 163 health care facilities. All were reported to MEDMARX, an independent Internet-based error-reporting system, between 1999 and 2005. The majority of medication errors, (3,725) were errors that reached the patient but did not cause harm. Another 1,529 errors took place but never actually reached the patient. Overall, 72 percent of errors that reached the patient did not result in harm. Four percent of actual errors resulted in permanent harm or death.

Nearly half (48.2 percent) of all reported medication errors occurred during the drug administering phase, followed by drug transcribing/documenting, prescribing, and dispensing. Over a quarter (26.9 percent) of all error types cited involved improper dose or quantity. Other types included omission errors (18.6 percent) and wrong timing (17.6 percent).

Human factors were the cause of 68.4 percent of all errors, followed by miscommunication (14.4 percent). Risk factors associated with medication errors included the use of what are called high-alert medications, problems during the prescribing phase, and equipment/delivery device failures. The study was supported in part by the Agency for Healthcare Research and Quality (HS16774).

See "NICU medication errors: Identifying a risk profile for medication errors in the neonatal intensive care unit," by Theodora A. Stavroudis, M.D., Andrew D. Shore, Ph.D., Laura Morlock, Ph.D., and others in the *Journal of Perinatology* 30, pp. 459-468, 2010. ■ *KB*

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.

Going "smooth" can help relieve weekday crowding at children's hospitals

Children's hospital beds are often filled to or beyond capacity during the week and under-utilized on the weekend. At least some of this weekday/weekend difference can be reduced by rescheduling elective (prescheduled) admissions, a new study finds. This approach, smoothing inpatient occupancy, would affect the 15 to 30 percent of admissions to children's hospitals that are scheduled days—or even months—in advance, with arrival usually on a weekday.

The researchers analyzed resource-utilization information from 39 freestanding, tertiary-care children's hospitals across the United States. They then applied a retrospective smoothing algorithm to set each hospital's daily occupancy during a week to the hospital's weekly mean occupancy. Scheduled admissions (23.6 percent of hospital admissions in the dataset) represented 26.6 percent of weekday admissions, but only 12.4 percent of weekend admissions. Mean occupancy levels ranged from 70.9–108.1 percent on weekdays and 65.7–94.9 percent on weekends.

After smoothing occupancy over the course of a week using the hypothetical algorithm, the calculated weekly maximum occupancy for the participating hospitals was reduced by 6.6 percentage points. This meant that 39,607 patients at the 39 hospitals would not have been exposed to occupancy rates greater than 95 percent. The researchers calculated that the change would require a median 2.6 percent of patients to be scheduled on a different day of the week. The study was funded in part by the Agency for Healthcare Research and Quality (HS16418).

More details are in "Addressing inpatient crowding by smoothing occupancy at children's hospitals," by Evan S. Fieldston, M.D., M.B.A., M.S.H.P., Matthew Hall, Ph.D., Samir S. Shah, M.D., M.S.C.E., and others in the May 2011 *Journal of Hospital Medicine* (Epub ahead of print). ■ *DIL*

Transparency enhances physician communication with patients

Good physician-patient communication is the cornerstone of patient-centered care. Patients want information about their condition and treatment in ways they can understand. Yet, patients are reluctant to engage in information-seeking behaviors during visits. What's more, physicians devote relatively little time to proactively helping patients to understand their medical conditions or the pros and cons of treatment options or medications. A new study reveals that transparency in communication by physicians can do a great deal to alleviate patient uncertainty and engender empathy and respect during medical visits.

Lynne Robins, Ph.D., of the University of Washington, and colleagues analyzed audiotapes of 263 patient visits to 33 physicians providing care to adult patients in eight community-based, university-affiliated primary care practices. Communication was defined as transparent if the physician used nine types of conversational phrases. Some phrases communicated the process of the clinical encounter, such as what will be included in the visit or stages of the physical exam. Some phrases clarified the medical content of the visit and demystified medical terms and jargon. Other phrases centered around the patient's subsequent course of action, e.g., what the patient needed to do next or instructions in how to take their medication.

Physicians spent the greatest amount of time during the encounter demystifying medical terms into lay language and concepts. Other types of transparent communication often included sharing emotions and judgments about the patient's condition, giving reasons for treatment rationale, and orchestrating instructions on taking medications or determining the next appointment. Patients prompted their physicians to be more transparent, but relatively infrequently. They averaged around one prompt per visit to ask for clarification about medical jargon. In half of the visits, patients asked their physicians to share their thoughts. Patients only infrequently asked for additional information about treatment and diagnosis. The study was supported in part by the Agency for Healthcare Research and Quality (HS13172).

See "Identifying transparency in physician communication," by Lynne Robins, Ph.D., Saskia Witteborn, Ph.D., Lanae Miner, M.D., and others in *Patient Education and Counseling* 83, pp. 73-79, 2011. ■ *KB*

Minimally invasive heart treatments have reduced bypass surgeries and influenced valve repair and replacement

Changes in the treatment of coronary artery blockages have, in turn, influenced the rates and timing of valve replacement and repair, according to a study of Medicare patients. The use of minimally invasive percutaneous coronary interventions (PCIs), including coronary angiography with angioplasty and stent placement, have become a credible alternative to coronary artery bypass grafting (CABG), the researchers note. Between 1991 and 2005, enrollees in Medicare fee-for-service (FFS) plans had 3.6 million PCIs, 2.5 million CABGs, 582,000 valve replacements, and 62,000 valve repairs. The number of CABGs peaked in 1996 after increasing 36 percent from 1991, only to drop 30 percent from the peak volume by 2005. PCIs increased steadily, by 148 percent, over the entire study period.

During the initial period (1991–1996), valve placement and repair volumes increased by 34 percent and 23 percent, respectively. Subsequently (from 1996–2005), valve replacement and repair volume grew by 11 percent and 243 percent, respectively. One possibility for the inverse relationship between CABG volume and isolated valve repair is that cardiothoracic surgeons who perform fewer CABGs may have more time available to repair valves, the researchers note.

However, the study did not have the clinical data to determine whether the increase in valve repairs is meeting a real clinical need or giving more patients access to valve surgery who might be treated with less expensive and invasive techniques, the researchers conclude. They used Medicare Provider and Analysis Review Part A data files to identify all Medicare FFS enrollees who underwent PCI, CABG, and heart valve repair or replacement during the period under study.

The study was funded in part by the Agency for Healthcare Research and Quality (HS16964) to the Duke University Center for Education and Research in Therapeutics (CERT). For more information on the CERTs program, visit www.certs.hhs.gov.

More details are in "Shifts in surgical revascularization and valve procedures among Medicare beneficiaries," by Jason Hockenberry, Ph.D., Xin Lu, M.S., Mary S. Vaughan-Sarrazin, Ph.D., and others, in the August 2011 *Medical Care* 49(8), pp. 686-692. ■ *DIL*

Full use of evidence-based therapies for heart failure could save nearly 70,000 lives each year

Many thousands of deaths from heart failure could be avoided each year with optimal use of evidence-based therapies, concludes a new study. All of these therapies: angiotensin-converting enzyme inhibitors (ACEIs) or angiotensin II receptor blockers (ARBs), beta-adrenergic blocking agents (beta-blockers), aldosterone antagonists, hydralazine/isosorbide dinitrate (H/ID), implantable cardioverter defibrillators, and cardiac resynchronization therapy (CRT) have been found to be effective in treating heart failure, with the benefits outweighing the risks.

Despite active efforts to get physicians and hospitals to fully implement guidelines recommending the use of each of these therapies, many heart failure patients are not given treatments for which they are eligible. Yet many of these treatments are known to reduce the relative risk of death—from 17 percent for ACEI/ARB therapy to 43 percent for H/ID therapy. There are 2,644,800 patients with heart failure and low left ventricular ejection fraction (indicator of weak pumping power of the heart). Three of the guideline-endorsed therapies are used in more than 50 percent of such eligible patients and up to 86 percent for treatment with beta-blockers.

Yet, the majority of eligible heart failure patients fail to get three of the treatments: aldosterone antagonists (64 percent untreated); H/ID (93 percent untreated); and CRT (61 percent untreated). The researchers calculate that optimal use of the guideline-recommended heart failure therapies would save an additional 67,996 lives each year, including 21,407 from optimal use of

continued on page 9

Heart failure
continued from page 8

aldosterone antagonists. Even optimal use of beta-blockers, which are already widely administered, could save another 12,922 lives annually. The findings are based on data from the *2010 American Heart Association Heart Disease and Stroke Statistics Update* and registries of patients with heart failure. The study was funded in part by the Agency for Healthcare Research and Quality (HS16964) to the Duke University Center for Education and Research on Therapeutics (CERT). For more information on the CERTs program, visit www.certs.hhs.gov.

More details are in "Potential impact of optimal implementation of evidence-based heart failure therapies on mortality" by Gregg C. Fonarow, M.D., Clyde W. Yancy, M.D., Adrian F. Hernandez, M.D., M.H.S., and others in the June 2011 *American Heart Journal* 161(6), pp. 1024-1030.e1-3. ■ *DIL*

Cancer patients more likely to face higher cost burdens than those with other chronic conditions

A new study reveals that a higher proportion of nonelderly patients with cancer face a high burden of treatment costs (13.4 percent) than those with other chronic conditions (9.7 percent) and those without chronic conditions (4.4 percent).

This is a problem, because high out-of-pocket health care costs can deter patients with cancer from seeking care and may affect treatment costs, notes Didem S.M. Bernard, Ph.D., of the Agency for Healthcare Quality and Research (AHRQ). She and colleagues analyzed data on 4,243 persons being treated for cancer and 148,971 persons not receiving cancer treatment. The data was gathered between 2001 and 2008 by AHRQ's Medical Expenditure Panel Survey.

Among patients with cancer, those who were more likely to have higher out-of-pocket burdens included those with private non-group insurance, age 55 to 64 years, blacks, those who never married or are widowed, those with one or no children, the unemployed or those with lower income, those with less education, those living in a nonmetropolitan statistical area, and individuals with other chronic conditions.

The services accounting for the largest share of out-of-pocket expenditures among the nonelderly patients with cancer were prescription drugs and ambulatory services (36 percent), hospitalizations (10 percent), and other services (19 percent). Although a detailed patient-physician discussion of cancer care costs may not be feasible, clinical oncologists may find it useful to be aware of the out-of-pocket burdens their patients face, note the researchers. They add that in the near future, for nonelderly adults with cancer, the temporary national high-risk pool and State-based health insurance exchanges are likely to lower out-of-pocket burdens, especially among the currently uninsured and those with non-group private insurance.

See "National estimates of out-of-pocket health care expenditure burdens among nonelderly adults with cancer: 2001 to 2008," by Dr. Bernard, Stacy L. Farr, and Zhengyi Fang in the *Journal of Clinical Oncology,* 2011 (Epub ahead of print). Reprints (AHRQ Pub. No. 11-R058) are available from AHRQ.* ■ *MWS*

Possible blood biomarkers for poorer asthma control identified

Blood levels of certain small proteins, including both cytokines and serum growth factors, may help physicians identify patients with chronic asthma who have well-controlled asthma and better quality of life, according to a new study. A variety of cytokines (such as interleukins, tumor necrosis factors, and interferons) are known to be involved in immune system regulation. About 7 percent of adults in the United States have asthma, but vary in the degree of asthma control they experience and their response to therapy. Treatment typically includes a short-acting beta-agonist to relax muscles squeezing the patient's airways, in combination with longer-acting corticosteroids to reduce airway inflammation.

However, 10–25 percent of patients with asthma do not respond to steroid treatment, and 1.8 million asthma patients required treatment in emergency departments

continued on page 10

Blood biomarkers
continued from page 9

during 2005. Previous studies had looked at cytokine levels in lung fluid. However, these researchers looked at whether cytokine levels in the blood could help predict a patient's response to treatment and the degree to which the disease interferes with doing everyday activities. The researchers found that interleukin-3 and interleukin-18 levels were significantly higher in poorly controlled (PC) than well-controlled (WC) asthma patients. The same pattern was observed for 3 serum growth factors (fibroblast growth factor, hepatocyte growth factor, and stem-cell growth factor beta). Most (13 of 18) cytokine levels measured, as well as 5 of 6 serum growth factor levels measured, from PC and WC patients were significantly higher than those from nonasthmatic control patients. The findings were based on analysis of subgroups of patients from an ongoing prospective study of inner-city adults with asthma. The researchers used the Asthma Control Questionnaire and Asthma Quality of Life Questionnaire, as well as a multiplex assay for detecting blood levels of 29 cytokines, 12 chemokines, 6 growth factors, and 3 adhesion molecules to compare the three groups. The study was funded in part by the Agency for Healthcare Research and Quality (HS13312).

More details are in "Detection of immunological biomarkers correlated with asthma control and quality of life measurements in sera from chronic asthma patients," by Sangita P. Patil, Ph.D., Juan P. Wisnivesky, M.D., Dr.P.H., Paula J. Busse, M.D., and others in the March 2011 *Annals of Allergy, Asthma & Immunology* 106(3), pp. 205-213. ■ *DIL*

Study identifies fractures most and least likely to be caused by osteoporosis

Fractures of the femoral neck, fractures of the vertebrae not due to trauma, and fractures of the lumbar and thoracic vertebrae are the skeletal fractures most likely to be due to osteoporosis in older patients, according to a new study. Fractures least likely to be associated with osteoporosis are open (wound-related) fractures of the proximal humerus (the end of the bone near the body), skull fractures, and fractures of the facial bones. Without consistent definitions for "fragility fracture" or "osteoporotic fracture," meaningful comparisons of efficacy cannot be done between clinical trials of different therapies. In addition to setting a consensus on definitions and identifying general osteoporosis-related (or -unrelated) fractures, the study's expert panel report some age- and race-associated differences. For example, open fractures of the arm (other than the proximal humerus) and fractures of the tibia or fibula, patella, ribs, and sacrum are likely to be associated with osteoporosis in white women over 80 years old, but the connection is less likely in younger black men (ages 65–80 years).

The researchers conducted a systematic review of research on fractures and osteoporosis in the elderly from January 1999 through December 2008. From 4,016 articles initially identified, abstract review left 168 potentially relevant articles. Of these, 68 were suitable for detailed review and abstraction of data elements. The resulting evidence report summarized the published estimates of fracture risk associated with osteoporosis for each anatomic site, as well as the possible association of fractures with other clinical risk factors (age, sex, trauma, glucocorticoid use, and chronic kidney disease). The report was used by the expert panel in a several stage process to score the likelihood of fractures happening due to osteoporosis in patients at least 65 years old and those older than 80 years. Because little data existed on members of other races and ethnic groups, racial comparison was limited to blacks and whites. The study was funded in part by the Agency for Healthcare Research and Quality (HS16956).

More details are in "Which fractures are most attributable to osteoporosis?" by Amy H. Warriner, M.D., Nivedita M. Patkar, M.D., M.S.P.H., Jeffrey R. Curtis, M.D., M.S., M.P.H., and others, in the *Journal of Clinical Epidemiology* 64(1), pp. 46-53, 2011. ■ *DIL*

A structured goal-setting approach can improve care outcomes for patients with type 2 diabetes

Self-management skills are critical to reducing morbidity and use of health services for older patients with both diabetes mellitus and other diseases. Delivery of effective self-management education and support can be difficult in traditional primary care. But a new study shows that structured goal-setting approaches to diabetes self-management can significantly reduce hemoglobin A1 (HbA1c, an indicator of blood-glucose levels). The researchers tested two alternative diabetes clinic approaches in 87 older veterans with treated, but uncontrolled diabetes (HbA1c 7 percent or higher).

Patients who participated in the structured goal-setting approach known as "Empowering Patients in Care" (EPIC), had significantly greater improvements in HbA1c immediately following the active intervention (HbA1c declined from 8.86 to 8.04 percent) in the EPIC intervention group, whereas it declined from 8.74 to 8.70 in the education-usual care group), and these differences persisted at the 1 year follow-up.

The EPIC approach trained patients to integrate their health care providers' treatment plans into collaborative self-management goals and action plans. The other approach consisted of diabetes group education plus routine primary care. The EPIC intervention consisted of four group sessions every 3 weeks over a 3-month period. Each session consisted of 1 hour of group interaction led by a study clinician trained in goal setting and action planning methods, and 10 minutes of individual interaction with the study clinician.

The group education approach consisted of two group sessions led by a diabetes nurse educator and a certified dietician, and individual sessions with the nurse educator and the primary care provider. This study was supported by the Agency for Healthcare Research and Quality (HS16093).

See "Comparative effectiveness of goal setting in diabetes mellitus group clinics," by Aanand D. Naik, M.D., Nynikka Palmer, Dr.P.H., Nancy J. Petersen, Ph.D., and others in the March 14, 2011 *Archives of Internal Medicine* 171(5), pp. 453-459. ■ *MWS*

Health Information Technology

Patients with type 2 diabetes express mixed reactions to a mobile phone and Web-based disease management program

The U.S. healthcare system, with a focus on outpatient visits for acute problems, may not be supporting patients with chronic illness in their everyday lives to manage their health. Newer communication technologies hold the promise of better collaboration between doctors and patients and improved chronic disease management. However, a new study reveals mixed reactions by patients with type 2 diabetes to a mobile phone and Web-based disease management program.

Researchers affiliated with the University of Washington, Seattle, and a local HMO expanded an existing Web-based diabetes care program to allow patients to wirelessly upload blood-glucose values through mobile phones, communicate through email with a care manager, and access their shared medical record from the Wii game system at home. Participants were trained to access the system through a smartphone, personal computer, and through the Web on the Wii. After 3 months, each of the eight patients were interviewed about their experiences.

Participants expressed the following themes: connecting with the nurse practitioner was valuable; wirelessly uploading data from glucose meters was easy; the program increased health awareness; smartphone features were frustrating; and accessing the program through the Wii was not useful. The researchers concluded that some individuals are receptive to using Web-based and mobile communication services to help manage diabetes. However, the technology can add frustrations to self-management if there are technical problems, such as those

continued on page 12

Type 2 diabetes
continued from page 11

that arose from using older and perhaps less user-friendly smartphone models. This study was supported by the Agency for Healthcare Research and Quality (HS17042). See "Qualitative evaluation of a mobile phone and web-based collaborative care intervention for patients with type 2 diabetes," by Courtney R. Lyles, Ph.D., Lynne T. Harris, M.S., Tung Le, M.S., and others in *Diabetes Technology & Therapeutics* 13(5), pp. 563-569, 2011. ■ *MWS*

Study identifies costs of implementing electronic health records in network of physician practices

The real-life cost of implementing electronic health records (EHRs) in an average five-physician primary care practice, operating within a large physician network committed to network-wide implementation of electronic health records, is about $162,000 with an additional $85,500 in maintenance expenses during the first year, reveals a new study. Those figures include the average 134 hours per physician needed to prepare for use of the records during clinical visits. Neil S. Fleming, Ph.D., of the Baylor Health Care System, and coinvestigators conducted a 2.5-year study of 26 primary care practices within a 450-physician practice network in north Texas, while the practices implemented a commercial electronic medical record, electronic forms, and a clinical messaging system.

The cost of implementing the EHR system was $32,409 per physician through the first 60 days after system launch—similar to costs reported from community-wide initiatives in Massachusetts and New York City. One-time hardware costs were $25,000 per practice for Internet switches, cables, and wireless Internet connections—plus approximately $7,000 per physician for personal computers, printers, and scanners. Software and maintenance costs (which began at implementation) came to approximately $17,100 per physician annually.

In addition, there were 134.2 hours of nonfinancial costs (representing a monetary cost of $10,325 in salaries) for each physician and his or her support staff—primarily for entering information from paper records. Other nonfinancial costs through 60 days after implementation included 480.5 hours ($28,025 in salaries) per practice for efforts of the practice network's implementation team and 130 hours ($7,857 in salaries) for the practice's own implementation team. The study was funded in part by the Agency for Healthcare Research and Quality (HS18220).

More details are in "The financial and nonfinancial costs of implementing electronic health records in primary care practices," by Dr. Fleming, Steven D. Culler, Ph.D., Russell McCorkle, M.B.A., and others in the March 2011 *Health Affairs* 30(3), pp. 481-489. ■ *DIL*

Editor's Note: For more details on health IT and other projects, go to http://healthit.ahrq.gov/HITFeaturedProjects.

Acute Care/Hospitalization

Heart attack victims should use emergency transport services, not self or family to get to the hospital

When a patient recognizes that they are having a heart attack (acute myocardial infarction [MI]), they should call 911 for emergency medical services (EMS), rather than driving themselves to the hospital or asking a friend or relative to do so, recommends a new study. Patients with certain types of MI, particularly those with ST-segment-elevation MI (STEMI), are known to have lower rates of sickness and death when restoration of blocked blood flow to the heart (reperfusion) occurs early.

For example, this study of 18,069 STEMI patients treated at 296 hospitals found that only 61 percent of these patients were transported to the hospital by EMS while 39 percent were self-transported. Patients taken to the hospital by EMS transport vehicles had significantly shorter delays than self-transported patients from symptom onset to arrival time (median of 89 vs. 120 minutes) and

continued on page 13

Emergency transport services
continued from page 12

to the beginning of reperfusion once they arrived (63 vs. 76 minutes).

Self-transported STEMI patients who did not have contraindications to reperfusion were 23 percent less likely to receive reperfusion therapy than were EMS-transported patients. They were also 48 percent less likely to receive an initial electrocardiogram within 10 minutes of arrival and 57 percent less likely to undergo coronary angioplasty within 90 minutes of arrival. The researchers identified the study population from the National Cardiovascular Data Registry Acute Coronary Treatment Intervention Outcomes Network (ACTION) Registry—Get with the Guidelines (GWTG), and collected patient data from the participating hospitals. The study was funded in part by the Agency for Healthcare Research and Quality (HS16964).

More details are in "Use of Emergency Medical Service transport among patients with ST-segment-elevation myocardial infarction: Findings from the National Cardiovascular Data Registry Acute Coronary Treatment Intervention Outcomes Network Registry—Get With the Guidelines," by Robin Mathews, M.D., Eric D. Peterson, M.D., M.P.H., Shuang Li, M.S., and others in the July 2011 *Circulation* 124(2), pp. 154-163. ■ *DIL*

Physician recommendations for defibrillator therapy not influenced by race or gender

Implantable cardioverter defibrillator (ICD) therapy improves survival of patients with systolic heart failure (HF). Yet, one database showed that only 35 percent of all patients having a Class I indication (clearly recommended) for an ICD either had an ICD or were scheduled for ICD implantation. Despite earlier reports about racial and gender disparities in the use of ICD therapy, the vast majority of physicians would recommend an ICD to patients with a Class I indication for the device without regard to the gender or race of the patient, according to a new survey.

However, physicians were less likely to recommend an ICD to patients 80 years or older than they were to patients 50 to 80 years old. The significance of this finding is uncertain due to the paucity of data on the efficacy and safety of ICD therapy in older patients. Also, electrophysiologists were significantly more likely to recommend an ICD for a Class I indication (92.4 vs. 81.4 percent) than nonelectrophysiologists. They were not more likely to recommend an ICD for Class III (clearly not recommended) indications (0.4 vs. 0.6 percent).

The survey polled 9,969 U.S. physicians actively enrolled in the American College of Cardiology, of whom 1,210 (12 percent) responded. The survey presented four clinical scenarios asking respondents for their recommendations regarding ICD use. The scenarios differed by level of recommendation for ICD use: clearly recommended by current guidelines, clearly not recommended by current guidelines, reasonable but not clearly indicated, and recommended by current guidelines but with a patient who was previously noncompliant with recommended medical therapy. "Patients" differed by age, gender, and race.

The researchers believe that racial and gender disparities observed in earlier studies may not have been motivated by physician bias. This study was supported by the Agency for Healthcare Research and Quality (HS16964).

See "Do physicians' attitudes toward implantable cardioverter defibrillator therapy vary by patient age, gender, or race?" by Sana M. Al-Khatib, M.D., Gillian D. Sanders, Ph.D., Sean M. O'Brien, and others in the *Annals of Noninvasive Electrocardiology* 16(10), pp. 77-84, 2011. ■ *MWS*

Medicare Part D reduces out-of-pocket costs and modestly boosts prescription volume

A new study found a substantial ($179.86) reduction in out-of-pocket costs and a modest increase of two prescriptions per patient year from the Medicare Part D outpatient prescription drug benefit during its first year. However, it found no significant association between Part D and emergency department visits, hospitalizations, or health utility.

The modest increases in prescription use may reflect that both poor and wealthy Medicare beneficiaries already had access to prescription drugs through various alternative methods of financing. The results regarding non-medication health services suggest that the prescription increases tended to accrue in individuals or therapies that were not likely to result in reduced health services. Overall, their results support the findings of earlier studies that found Part D substantially transferred payment for prescription drugs from the private sector to the public sector.

The researchers compared the 12-month period before and after Part D implementation using the Medical Expenditure Panel Survey of the Agency for Healthcare Research and Quality (AHRQ). The study examined patterns of use of 556 elderly and 549 near-elderly persons. Eighty-nine percent of Medicare beneficiaries included in the study had one or more chronic diseases. The researchers call for more studies to characterize whether cost reductions may be realized over the longer term or for other populations. Their study was supported by AHRQ (HS15699).

See "The impact of Medicare Part D on out-of-pocket costs for prescription drugs, medication utilization, health resource utilization, and preference-based health utility," by Frank Xiaoqing Liu, Ph.D., G. Caleb Alexander, M.D., M.S., Stephanie Y. Crawford, Ph.D., and others in *HSR: Health Services Research* 46(4), pp.1104-1123, 2011. ■ *MWS*

Married couples who have twins are more likely to divorce

Past research has shown that women who give birth to twins have higher rates of postpartum depression and that counseling for depression may be warranted. But a new study suggests that counseling should also address marital discord. That's because women who give birth to twins are also more likely to divorce than mothers who give birth to just one baby.

Using 1980 U.S. census data, researchers found that the 6,224 first-time mothers who gave birth to twins had a 13.7 percent absolute risk of divorce compared with a 12.7 percent risk for first-timers who had just one baby. Women who had twins and who gave birth or married later, were white, or had some college education were less likely to divorce. Twin-bearing mothers who did not attend college had a 14.9 percent risk of divorce compared with a 13.3 percent risk for twin-bearing moms who had some college education.

The authors posit several explanations for the higher divorce rate for mothers who have twins. First, twins come with heightened emotional and time obligations that can stress parents. In fact, this study finds that couples were more likely to divorce once their twins were between 8 and 18 years old. This delay may indicate that couples experience more stress as their twins age or delay their breakups until they believe their twins are old enough to deal with divorce.

Additionally, divorces were more likely to occur when the couple had

continued on page 15

Twins

continued from page 14

at least one girl twin. The authors suggest that financial stresses may be at play in these divorces because girls tend to be more expensive, with some studies indicating an annual additional cost of $1,000 for girls. This study was funded in part by the Agency for Healthcare Research and Quality (T32 HS00046).

See "Association between the birth of twins and parental divorce," by Anupam B. Jena, M.D., Ph.D., Dana P. Goldman, Ph.D., and Geoffrey Joyce, Ph.D., in the April 2011 *Obstetrics and Gynecology*, 117(4), pp. 892-897. ■ *KFM*

Disease that springs from water parasites may also be a risk factor for HIV for women in sub-Saharan Africa

A new study finds that a disease associated with parasite-infested waters may also be a risk factor for HIV infection for women living in sub-Saharan Africa.

Schistosomiasis is a parasitic disease prevalent in the fresh waters of tropical and subtropical areas. Women washing clothes and children playing in water can contract the disease when larval forms of blood flukes, known as schistosomes, enter the skin and take up residence in the blood vessels. When the worms reside in the vessels near a woman's bladder or genitals, the woman can develop female urogenital schistosomiasis (FUS), which causes vaginal itching, discharge, painful intercourse, bleeding after intercourse, and infertility.

When researchers tested and interviewed 457 women in 8 rural villages in Tanzania, they found that 5 percent of the women overall had FUS, and that the prevalence was higher in inland areas and in younger women. Further, although the HIV prevalence rate was nearly 6 percent for the area, the HIV rate was much higher—17.4 percent—for women with FUS.

The authors claim that longitudinal studies are needed to provide a causal association between FUS and HIV infection, but they offer several explanations for why the two diseases may be linked. For example, in most girls and women, FUS occurs first because schistosomal infection most often happens during childhood, before sexual activity begins. And because FUS can cause lesions on the genital tract and can disrupt the body's immune response, it seems plausible that women with FUS could be at increased risk for HIV infection. This study was funded in part by the Agency for Healthcare Research and Quality (T32 HS00066).

See "Urogenital schistosomiasis in women of reproductive age in Tanzania's Lake Victoria region," by Jennifer A. Downs, M.D., Charles Mguta, Godfrey M. Kaatano, and others in the March 2011 *American Journal of Tropical Medicine Hygiene* 84(3), pp. 364-369. ■ *KFM*

Women on Medicare with poor chances of living 4 more years often forego screening mammograms

Although experts recommend women receive regular screening mammograms to catch breast cancer early, guidelines also recommend that an older woman's life expectancy be factored in before she receives a mammogram. A new study confirms that Medicare patients and their providers do indeed consider the woman's mortality risk when making decisions about screening mammography.

Using Medicare Current Beneficiary Survey data from 2002, researchers examined mammography rates of 4,836 women age 65 and older. Fifty-two percent of the women received mammograms, and their average age was 74. Women whose life expectancies were good had higher rates of mammograms than women whose life expectancies were not as promising. For example, 62.7 percent of women whose health profiles indicated they had a low risk of dying had mammograms compared with just 24 percent of women whose life expectancies were estimated to be 4 years or fewer. The authors believe more research is needed to determine whether the 62.7 percent rate for healthy women indicates an underuse of screening mammography and if the 24 percent screening rate in unhealthy women is an overuse of the technology.

This study also indicates that providers are able to spot predictors of life expectancy in their older patients and

continued on page 16

Mammograms
continued from page 15

that patients are willing to accept their providers' recommendations when it comes to the benefit of screening for breast cancer. This study was funded in part by the Agency for Healthcare Research and Quality (HS13851).

See "Screening mammography use in Medicare beneficiaries reflects 4-year mortality risk," by Deepika L. Koya, M.D., M.S.C.R., John G. Chen, M.D., Ph.D., Tom G. Smith, Ph.D., and William P. Moran, M.D., M.S., in the April 2011 *The American Journal of Medicine* 124(4); pp. 369.e1-369.e8. ■ *KFM*

Child/Adolescent Health

More research is needed on outcomes after maternal-fetal surgery

The number of maternal-fetal surgeries increases every year, but research on the topic has not yet reached the point where it can be used to make care and policy recommendations, a new study finds. Researchers at the Vanderbilt Evidence-based Practice Center reviewed 258 published articles and found that most of the studies (116) were observational. Only three studies were randomized controlled trials, which are considered the gold standard for research.

The authors note that researchers face a number of challenges in examining maternal-fetal surgery. These include the small number of fetuses with specific conditions that can be easily grouped for studying and the wide geographic distribution of patients, yet narrow field of academic research centers. Further, researchers also contend with a lack of funds to cover the expenses of their research participants.

Despite these and other challenges, research in this area has moved the practice of maternal-fetal surgery forward. For instance, when published reports found that repairing a fetus' diaphragmatic hernia did not provide better outcomes than correcting it just after birth, researchers developed new less-invasive techniques for the procedure.

The field will benefit from studies that address whether maternal-fetal surgery leads to or helps prevent prematurity complications. Additionally, the authors recommend that researchers take a long-lens look at how the child develops after surgery, how the surgery affects the child's quality of life, and how the organ that was operated on functions. The balance of potential benefits and harms will continue to be a central issue in research about fetal surgery. This study was funded in part by the Agency for Healthcare Research and Quality (Contract No. 290-07-10065).

See "Evidence to inform decisions about maternal-fetal surgery: Technical brief," by Katherine E. Hartmann, M.D., Ph.D., Melissa L. McPheeters, Ph.D., M.P.H., Nancy C. Chescheir, M.D., and others in the May 2011 *Journal of Obstetrics and Gynecology* 117(5), pp. 1191-1204. ■ *KFM*

A small number of drugs are used most commonly during pediatric hospitalizations

Only two drugs were used in more than 10 percent of pediatric hospitalizations—acetaminophen(14.7 percent) and lidocaine (11 percent), while another eight drugs were used in 5–10 percent of children's hospitalizations, according to a new study. The study examined the feasibility of using a large administrative database to develop national estimates of pediatric inpatient medication use in order to improve pediatric drug labeling, include more children in clinical trials of medications, and address children's special metabolic and dosage issues.

Beyond the 10 most prevalent drugs, the researchers found that another 51 drugs were used in at least 1 percent (but less than 10 percent) of all pediatric inpatient hospitalizations, while 240 drugs were used in at least 0.1 percent (and less than 1 percent) of these hospitalizations. All other drugs were used less frequently. The lists of 10-most-common drugs differed for children under 2 years old, children 2–4 years old, children 5–11 years old, and children 11–17 years old,

continued on page 17

Pediatric hospitalizations
continued from page 16

although acetaminophen remained the most frequent drug used through age 11.

The researchers used the commercial Premier Perspective database for data on medications used during pediatric hospitalizations during 2008. They validated the database by comparing characteristics of the patients with those in the 2006 AHRQ Health Care Utilization Program's Kid Inpatient Database. The study was funded in part by the Agency for Healthcare Research and Quality (HS17998).

More details are in "Estimating pediatric inpatient medication use in the United States," by Tamar Lasky, Ph.D., Frank R. Ernst, Pharm.D., M.S., Jay Greenspan, M.D., and others in *Pharmacoepidemiology and Drug Safety* 20(1), pp. 76-82, 2011. ■ *DIL*

Human rhinovirus linked to bronchiolitis and upper respiratory infections among healthy term infants

Human rhinovirus (HRV) infections have been known to provoke asthma attacks in adults and children. Now a new study adds to the evidence that HRV infections are a frequent cause of bronchiolitis (inflammation of the narrow airways in the periphery of the lungs) and uncomplicated upper respiratory tract illnesses (URIs) in previously healthy term infants. Relatively little attention has been paid to the role of HRV in respiratory diseases in infants.

The researchers examined 630 infants with bronchiolitis or URIs. Of these, 26 percent had HRV infections, comprising 18 percent of the cases of bronchiolitis and 47 percent of the cases of URIs. The majority of HRV-infected infants (64 percent) had negative tests for a panel of seven other common respiratory viruses, and 42 percent of the infants testing positive for HRV alone were hospitalized. Among infants infected with HRV, a diagnosis of bronchiolitis instead of a simple URI correlated with white race (57 percent with bronchiolitis vs. 30 percent with URI), coinfection with another virus (42 vs. 11 percent), and a history of allergic sensitivity, called atopy, in the mother (54 vs. 40 percent).

After taking into account the age, race, and sex of the infant and exposure to smoking in the home, cases of HRV-associated bronchiolitis were 2.39 times as likely to be severe if the mother had a history of atopy and 2.49 times as likely to be severe if the mother had asthma. The prospective study drew on clinical data about and biospecimens from infants under 12 months old seen for bronchiolitis or URI from fall 2004 through spring 2008, as part of the Tennessee Children's Respiratory Initiative. The study was funded in part by the Agency for Healthcare Research and Quality (HS18454 and HS19699).

More details are in "Host and viral factors associated with severity of human rhinovirus-associated infant respiratory tract illness," by E. Kathryn Miller, M.D., M.P.H., John V. Williams, M.D., Tebeb Gebretsadik, M.P.H., and others in the April 2011 *Journal of Allergy and Clinical Immunology* 127(4), pp. 883-891. ■ *DIL*

Hospital deaths from heart failure cut by half over 7 years

The death rate of hospital patients who were admitted primarily for heart failure fell roughly by half between 2000 and 2007—from 55 deaths to 28 deaths per 1,000 admissions, according to the latest News and Numbers from the Agency for Healthcare Research and Quality.

The Federal agency also found that between 2000 and 2007, for heart failure deaths of hospitalized patients:

- People age 85 and over experienced the largest drop from 87 to 48 deaths per 1,000 admissions.
- For seniors age 65 and older, the rate fell from 64 to 34 deaths per 1,000 admissions.
- The rate for people ages 45 to 64 dropped from 28 to 15 deaths per 1,000 admissions, while the rate for people ages 18 to 44 fell from 19 to 12 deaths per 1,000 admissions.

This AHRQ News and Numbers is based on information in the 2010 *National Healthcare Disparities Report* (www.ahrq.gov/qual/qrdr10/4_heartdiseases/T4_3_5-1.htm), 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 Linwood Norman at linwood.norman@ahrq.hhs.gov or call (301) 427-1248. ■

Hospitalizations for children with influenza and skin infections increased in the last decade

Influenza increased dramatically as a major cause of hospitalizations for children age 17 and under, climbing from 65th in 2000 in the ranking of reasons why children go to the hospital to 10th in 2009. Skin infections increased from the 13th most common condition in 2000 to 7th in 2009. Other findings reported by the Agency for Healthcare Research and Quality (AHRQ) on hospital stays for children age 17 or younger:

- Pneumonia, asthma, and acute bronchitis were the most common conditions that required hospital care in 2009, followed by mood disorders (depression and bipolar disorder).
- Children represented one out of every six hospital stays, and total hospital charges for children were $33.6 billion, or 9 percent of total hospital costs in 2009. About 72 percent of children in hospitals were newborns and infants under 1 year.
- Compared with all hospitalizations in 2009, a child's average hospital stay was shorter (3.8 days vs. 4.6 days) and less expensive ($5,200 vs. $9,200).

This AHRQ News and Numbers summary is based on data from Statistical Brief #118: *Hospital Stays for Children, 2009* at www.hcup-us.ahrq.gov/reports/statbriefs/sb118.pdf. The report uses data from the Agency's Kids' Inpatient Database and Nationwide Inpatient Sample. For information about these AHRQ databases, go to www.ahrq.gov/data/hcup/datahcup.htm.

For other information, or to speak with an AHRQ data expert, please contact Linwood Norman at linwood.norman@ahrq.hhs.gov or call (301) 427-1248. ■

More than 20,000 emergency room visits for air and paintball gun injuries in 2008

Hospital emergency departments saw more than 20,000 injuries due to air and paintball guns in 2008, according to the latest News and Numbers from the Agency for Healthcare Research and Quality. This represents a 20 percent decrease in emergency room visits for injuries caused by air and paintball guns from 2006. AHRQ also found that in emergency departments in 2008:

- About 60 percent of visits for air and paintball gun injuries were for children and adolescents 17 and younger. More than 25 percent were for children aged 10 to 14.
- Males were 5 times more likely than females to be seen for air and paintball gun injuries.
- Visits for air and paintball gun injuries were higher in rural areas (92 per 1 million population) than in urban areas (61 per 1 million population).
- Low-income children and adults were nearly three times more likely than those with higher incomes to be treated for air and paintball gun injuries, at 93 and 34 visits per 1 million people, respectively.
- One in four visits for air and paintball guns were billed as uninsured, while about one-third of visits were billed to private insurance and another one-third billed to Medicaid.

This AHRQ News and Numbers summary is based on data from Statistical Brief #119: *Emergency Department Visits for Injuries Caused by Air and Paintball Guns, 2008*. The report uses data from the Nationwide Emergency Department Sample. For information about these AHRQ databases, go to www.ahrq.gov/data/hcup/datahcup.htm.

For additional information, or to speak with an AHRQ data expert, please contact Bob Isquith at bob.isquith@ahrq.hhs.gov or call (301) 427-1539. ■

Nighttime-breathing treatments backed by strongest evidence among options to treat sleep apnea

Among the treatments for obstructive sleep apnea, the effectiveness of a nighttime-breathing machine, the continuous positive airway pressure (CPAP) machine, was backed by the strongest evidence, and a mouthpiece worn at night was also shown to be effective, according to a new report funded by the Agency for Healthcare Research and Quality (AHRQ).

Sleep apnea is a disorder that disrupts sleep for an estimated 12 million Americans, with millions more likely undiagnosed. It causes people to stop breathing during sleep (from a few times per hour to every few minutes) due to the repeated collapse and blockage of the upper airway during sleep. The report found that the CPAP, which pumps air through a mask while the patient is asleep, is highly effective in improving sleep and related symptoms of obstructive sleep apnea by improving airflow. Another treatment, a mouthpiece called a mandibular advancement device, can also be very effective, the report found.

Weight loss and surgery to clear the airway blockage may also be effective, although the evidence behind these treatments is not as strong, according to the report, a comparative effectiveness review prepared by the Tufts Medical Center Evidence-based Practice Center for AHRQ's Effective Health Care Program. The report does note that all treatments have possible side effects.

To highlight the findings of the report, AHRQ also published guides for consumers and clinicians that summarize the latest evidence for treating obstructive sleep apnea, a disorder that can lead to heart disease, diabetes, and multiple other health problems. The report and the companion guides are available at www.effectivehealthcare.ahrq.gov.

"Obstructive sleep apnea is a frustrating and debilitating condition for so many Americans, and millions of people don't even know they have it. The resultant poor sleep and daytime sleepiness can lead to work-related or driving accidents," said AHRQ Director Carolyn M. Clancy, M.D. "These guides and this new report will help patients and their doctors understand what treatment options might be best for them."

The companion guides summarize the report's findings for consumers

continued on page 20

Sleep apnea
continued from page 19

and clinicians. The consumer guide defines sleep apnea for patients and their families, summarizes treatment options, offers a list of questions to discuss with a doctor and contains basic cost information. The clinician guide covers these topics, provides "confidence ratings" for existing scientific evidence and offers a "clinical bottom line" to give clinicians tools to discuss treatment options with their patients.

The report, *Comparative Effectiveness Review of the Diagnosis and Treatment of Obstructive Sleep Apnea in Adults*, is the latest comparative effectiveness review from AHRQ's Effective Health Care Program. More information about the program can be found at www.effectivehealthcare.ahrq.gov. ■

Announcements

Task Force updates recommendation on screening for bladder cancer in asymptomatic adults

In an update to its 2004 recommendation, the U.S. Preventive Services Task Force (USPSTF) concludes that the current evidence is insufficient to assess the balance of benefits and harms of screening for bladder cancer in asymptomatic adults. Previously, the Task Force concluded that the harms outweighed the benefits of screening for bladder cancer. The update focused on the benefits and harms of screening people without symptoms, the accuracy of screening tests done in primary care settings, and the benefits and harms of treatment. The updated evidence review did not find any new high-quality evidence to determine adequately the balance of benefits and harms of screening for bladder cancer. However, bladder cancer is a common cancer and can cause considerable health problems, including death. The Task Force emphasized the need for additional research in this area. The recommendation appeared in the August 16 issue of *Annals of Internal Medicine*. You can view the recommendation on the USPSTF Web site at www.uspreventiveservicestaskforce.org/uspstf/uspsblad.htm. ■

AHRQ releases tool to help Spanish-speaking consumers reduce medication errors

Three out of four Americans aren't following their doctor's advice when it comes to taking prescription medication, according to U.S. Surgeon General Dr. Regina Benjamin. As a group, Hispanics tend to rely on friends and coworkers for advice before turning to the expertise of medical professionals. AHRQ has released a new guide and medication tracking tool in Spanish, *Su medicamento: Infórmese. Evite riesgos.* (*Your Medicine: Be Smart. Be Safe.*), to help patients take medicines safely.

Su medicamento: Infórmese. Evite riesgos is a guide that includes a detachable, wallet-size card that can be personalized to help patients keep track of all their medicines, including vitamins and herbal and other dietary supplements. Also available in English, the guide includes questions that patients can ask their doctors about their medications. You can download a copy of the guide in Spanish at www.ahrq.gov/consumer/safemedsp/yourmedssp.pdf. To order copies, contact the AHRQ Publications Clearinghouse at AHRQPubs@ahrq.hhs.gov or call (800) 358-9295. ■

New Spanish-language guides inform decisions about heart disease and other illnesses

A free, illustrated, easy-to-read pamphlet that compares drugs for preventing heart attacks, heart failure, or strokes in people with stable coronary heart disease is one of six new Spanish-language publications from the Agency for Healthcare Research and Quality (AHRQ) that help patients compare treatments for common illnesses.

The publication, "Guía para pacientes que están en tratamiento de una cardiopatía coronaria estable (ACE Inhibitors and ARBs to Protect Your Heart?—A Guide for Patients Being Treated for Stable Coronary Heart Disease), summarizes the benefits and risks of medications called ACE (angiotensin-converting enzyme) inhibitors and ARBs (angiotensin II receptor blockers). These medications help reduce blood pressure in patients who often take other heart-related medications such as aspirin, blood thinners, or cholesterol-lowering drugs.

"This new Spanish-language guide on heart medications is part of AHRQ's ongoing effort to give Hispanics the knowledge they need to take a greater role in their health care," said AHRQ Director Carolyn M. Clancy, M.D. "All patients should have access to the best information available so they can work with their doctor to identify the best treatment for them."

The additional five Spanish-language guides that compare treatment options for common illnesses are:

- *Controle el dolor por una fractura de cadera* (Managing Pain from a Broken Hip) compares medications for controlling pain from hip fracture as well as other therapies, such as nerve blocks and acupressure.
- *Opciones para tratar el desgarro de los músculos y tendones del hombro* (Treatment Options for Rotator Cuff Tears) compares surgical and non-surgical treatments, including physical therapy, to treat rotator cuff injury—the often painful tearing of shoulder-based tendons that are used to help lift and rotate the arms.
- *La depresión después de una lesión cerebral* (Depression after Brain Injury) compares antidepressants and psychotherapy for treating depression in people who suffered brain injury from trauma, such as a blow to the head.
- *Conozca sobre la radioterapia en el cáncer de cabeza y cuello* (Understanding Radiotherapy for Head and Neck Cancer) compares different types of radiation therapy for head and neck cancer, including Intensity-Modulated Radiation Therapy and Two-Dimensional Radiation Therapy.
- *Hormona del crecimiento humano para los niños con fibrosis quística* (Human Growth Hormone for Children with Cystic Fibrosis) discusses the benefits and risks of somatotropin, a human growth hormone that is injected in children daily for growth problems associated with cystic fibrosis.

AHRQ now offers 23 publications in Spanish that compare treatments for heart and vascular system conditions, diabetes, cancer, bone and joint-related conditions, pregnancy, and mental health and digestive system ailments. These and their English-language companion guides were produced by AHRQ's Effective Health Care Program, which conducts patient-centered outcomes research and makes research results available to consumers, clinicians, policymakers, and others.

AHRQ's Spanish-language Effective Health Care patient guides are available online at http://effectivehealthcare.ahrq.gov/index.cfm/informacion-en-espanol/. To order printed copies, email the AHRQ Publications Clearinghouse at ahrqpubs@ahrq.gov or call (800) 358-9295. For other AHRQ Spanish-language consumer tools, go to www.ahrq.gov/consumer/espanoix.htm. ■

New report shows strengths and areas for improvement in nursing homes

AHRQ's first report on nursing home safety culture shows that 86 percent of nursing home staff participating in a survey on safety culture feel that residents are well cared for and safe. The report also shows that just over half of staff (51 percent) reported that they feel safe reporting mistakes. The report, *Nursing Home Survey on Patient Safety Culture: 2011 User Comparative Database Report*, offers a comparative assessment of 16,155 staff responses from 226 U.S. nursing homes to AHRQ's Nursing Home Survey on Patient Safety Culture (www.ahrq.gov/qual/patientsafetyculture/nhsurvindex.htm).

The new report also includes supplemental information that can help survey users understand how to compare their results to other survey users and prioritize and target improvement efforts. In addition, overall survey results are presented by nursing home characteristics such as size and ownership and respondent characteristics such as job titles, work areas, direct patient contact, and shift worked. The Web-only report is available at www.ahrq.gov/qual/nhsurvey11. ■

AHRQ releases report on designing consumer reporting systems for patient safety events

A recent report found little evidence of improvements in patient safety since the publication of the landmark Institute of Medicine report, *To Err is Human: Building a Safer Health System* in 1999. The Designing Consumer Reporting Systems for Patient Safety project, funded by the Agency for Healthcare Research and Quality (AHRQ), was developed to make recommendations for an ideal reporting system that consumers could use to report experiences with patient safety events. The recommendations for key design features of the consumer reporting system were developed by a technical expert panel, with input from consumer focus groups, stakeholder interviews, and an environmental scan and literature review. The technical expert panel made recommendations based on a set of six research questions developed by AHRQ. The expert panel recommended that the reporting systems should collect information on all types of events, ranging from near-miss and no-harm events to adverse events. The panel also recommended that information collected from consumers should include where a patient safety event occurred; what contributed to the event; whether or to whom an event was reported; what happened when an event was reported; and the impacts or consequences of the event. To access the report, including all technical expert panel recommendations, please go to www.ahrq.gov/qual/consreporting. ■

AHRQ report examines impact of human resource patterns on quality and safety

A new AHRQ-funded report, "Promoting Safety and Quality Through Human Resources Practices," examines the growing support for a link between innovative human resources staffing patterns and improvements in safety and quality in health care settings. The report features the results of five case studies conducted with health care organizations with strong reputations for human resources management based on high-performance work practices. Key findings included the importance of engaging staff with an organization's mission, vision, goals, and objectives; empowering frontline staff; hiring and placing staff based on competencies and organizational fit, rather than just on formal training; holding leaders accountable for organizational objectives; and using a high-performance organizing framework, such as Six Sigma or Lean production to clarify the link with quality and safety outcomes. Written by researchers at Ohio State University, the report also lays the groundwork for future research to establish a more definitive link between high-performance work practices and quality outcomes. The report is available at www.ahrq.gov/qual/prosafetysum.htm. You can access a tool derived from this project, "Using Workforce Practices to Guide Quality Improvement: A Guide for Hospitals," at www.ahrq.gov/qual/workforceguide.htm. ■

Alexander, G.C. (2011). "Enhancing prescription drug innovation and adoption." (AHRQ grant HS18960). *Annals of Internal Medicine* 154, pp. 833-837.
Newly released and branded therapies continue to be adopted in clinical practice without evidence of their comparative effectiveness or superior safety. The authors propose five mechanisms to address these problems: increasing the threshold of evidence required for approval; moving to a period of conditional approval; altering incentives to encourage value-added innovation; changing drug labeling to better inform patients and physicians; and modifying the structure of drug reimbursement by health care providers.

Braithwaite, S.A., Pines, J.M., Asplin, B.R., and Epstein, S.K. (2011). "Enhancing systems to improve the management of acute, unscheduled care." (AHRQ grant HS18114). *Academic Emergency Medicine* 18, pp. e39-e44.
Neither the emergency department nor primary care environments have adequate capacity to handle the entire volume of acute unscheduled care. The authors propose a research agenda to explore the advantages and disadvantages of each of these settings, offering guidance to policymakers in determining the optimum settings for acute, unscheduled care.

Brown, J.R., and Thompson, C.A. (2011). "Contrast-induced acute kidney injury: The at-risk patient and protective measures."(AHRQ grant HS18443). *Current Cardiology Report* 12, p. 440-445.
Contrast-induced acute kidney injury (CI-AKI) is a major complication following cardiac catheterization, percutaneous coronary intervention, and other procedures using radiocontrast dye. The authors recommend that clinicians pay attention to preventing this problem via mandatory standing orders before and after cardiac catheterization for hydration with normal saline or sodium bicarbonate and use of high-dose (1200 mg) N-acetylcysteine. They also recommend minimizing the volume of contrast dye used for each patient.

Clancy, C.M. (2011). "New research highlights the role of patient safety culture and safer care." *Journal of Nursing Care Quality* 26(3), pp. 193-196. Reprints (AHRQ Publication No. 11-R070) are available from AHRQ.*
Assessing an organization's patient safety culture remains a critical first step for health care organizations of all sizes. Organizations such as the Agency for Healthcare Research and Quality and Johns Hopkins University have led the field in developing surveys that help organizations measure their patient safety culture. Other related efforts include the Keystone Project to reduce central line-associated bloodstream infections and the comprehensive unit-based safety program that works with providers to improve safety.

Devine, E.B., Patel, R., Dixon, D.R., and Sullivan, S.D. (2011). "Assessing attitudes toward electronic prescribing adoption in primary care: A survey of prescribers and staff." (AHRQ grants HS15319, HS14739). *Informatics in Primary Care* 18, pp. 177-187.
The researchers used a brief survey instrument, based on theoretical constructs, that assesses attitudes toward adoption of electronic health records and e-prescribing, which may be useful in informing strategies for successful adoption. The 37-item survey covered four areas (finesse, intent to use, perceived usefulness, and perceived ease of use) and was completed by 59 prescribers and 50 staff. It found that computer use at home for professional purposes and self-assessed computer knowledge were associated with more positive adoption attitudes.

Dusetzina, S.B., and Alexander, G.C. (2011). "Drug vs. class-specific black box warnings: Does one bad drug spoil the bunch?" (AHRQ grant HS189960). *Journal of General Internal Medicine* 26(6), pp. 570-572.
The authors draw on a study published in the same issue that assesses the application of U.S. Food and Drug Administration black box warnings across drugs

continued on page 24

continued from page 23

within the same chemical class. They describe three settings where black box warning information on one or more drugs within a chemical class was absent from other agents within that class. These three cases are used to highlight the importance of considering the clinical context when applying black box warnings to agents within the same chemical class.

Flanagan, M.E., Welsh, C.A., Kiess, C., and others. (2011, June). "A national collaborative for reducing health care-associated infections: Current initiatives, challenges, and opportunities." (Contract No. 290-06-000131). ***American Journal of Infection Control*****, pp. 1-5.**
The authors characterize the current state of hospital-associated infection (HAI) reduction initiatives in 33 hospitals participating in a national HAI collaborative. They describe the types of HAI reduction initiatives and reasons that some hospitals are not implementing HAI initiatives. Improving hand hygiene was the most frequently mentioned HAI reduction initiative implemented in the previous year.

Fleishman, J.A., Selim, A.J., and Kazis, L.E. (2011). "Deriving SF-12v2 physical and mental health summary scores: A comparison of different scoring algorithms." ***Quality of Life Research*** **19, pp. 231-241. Reprints (AHRQ Publication No. 11-R071) are available from AHRQ.***
The researchers examined alternative procedures for deriving the SF-12v2 summary scores using recent, nationally representative U.S. data. Given the controversy regarding methods for constructing summary scores, they compared scores using exploratory factor analysis, principal components analysis, and confirmatory factor analysis, using both orthogonal and oblique rotation. Correlations among summary scores derived using different methods were high.

Funk, M.J., Westreich, D., Wiesen, C., and others. (2011). "Doubly robust estimation of causal effects." (AHRQ grant HS17950). ***American Journal of Epidemiology*** **173(7), pp. 761-767.**
Doubly robust estimation combines two approaches to estimating the causal effect of an exposure or treatment on an outcome. The authors present a conceptual overview of doubly robust estimation, sample calculations for a simple example, and results from a simulation study examining performance of model-based and bootstrapped confidence intervals. They also discuss the potential advantages and limitations of this estimation method.

Garman, A.N., McAlearney, A.S., Harrison, M.I., and others. (2011). "High-performance work systems in health care management, part 1: Development of an evidence-informed model." ***Health Care Management Review*** **36(3), pp. 201-213. Reprints (AHRQ Publication No. 11-R065) are available from AHRQ.***
High-performance work practices (HPWPs) can be defined as a set of practices within an organization that enhance organizational outcomes by improving the quality and effectiveness of employee performance. The authors examined the potential of HPWPs to support these objectives in health care settings. They developed a conceptual model showing how HPWPs are hypothesized to relate to one another as a set of related practices and how this set of practices facilitates achievement of organizational quality and efficiency.

Greene, J.A. and Kesselheim, A.S. (2011). "Why do the same drugs look different? Pills, trade dress, and public health." (AHRQ grant HS18465). ***New England Journal of Medicine*** **365(1), pp. 83-89.**
Consumers of generic drugs who refill a prescription for the same drug must be prepared to receive pills of a different size, color, and shape, depending on which manufacturer is supplying their pharmacies. The authors review the legal basis of trade dress as it has applied to pharmaceutical products, and consider the public health implications of variations in pill appearance. They discuss how a system of more uniform drug appearance could be designed to reduce medical error and promote patient adherence.

Handel, D.A., Wears, R.L., Nathanson, L.A., and Pines, J.M. (2011). "Using information technology to improve the quality and safety of emergency care." (AHRQ grant HS18114). ***Academic Emergency Medicine*** **18, pp. e45-e51.**
One of the groups participating in the American College of Emergency Physicians conference on improving emergency care recently issued this paper on the impact of information technology on emergency care. The paper provides an overview of issues

continued on page 25

continued from page 24

related to electronic health records and the quality of emergency department (ED) care. The group also proposes a research agenda addressing the following areas: interoperability, patient flow and work integration, patient handoffs, safety-critical computing, and technology-health care interactions.

Hanlon, J.T., Sloane, R.J., Pieper, C.F., and Schmader, K.E. (2011, March). "Association of adverse drug reactions with drug-drug and drug-disease interactions in frail older outpatients." (AHRQ grant HS18721). ***Age and Ageing*** **40(2), pp. 274-275.**
The objective of this study was to determine whether incorrect dosage, incorrect directions, drug-drug interactions, and drug-disease interactions, as measured by the medication appropriateness index (MAI), are associated with the Type A adverse drug reactions (ADRs) among frail older veterans moving from the hospital to the community. Neither dosage nor medication direction problems were significantly associated with Type A ADRs, but there was some evidence that drug-drug interactions and drug-disease interactions were separately associated with Type A ADRs.

Hornbrook, M.C., and Holup, J. (2011). "Insurance coverage for erectile dysfunction drugs." (AHRQ grant HS16963). ***Clinical Pharmacology and Therapeutics*** **89(1), pp. 19-21.**
Erectile dysfunction (ED) prevalence exceeds the rate of treatment seeking for ED. In addition, health plans that cover ED drugs have developed successful approaches to control budgetary impact. The authors argue that to address coverage disparities, ED prescriptions should be covered by all public and private payers when indicated to maintain, restore, or compensate for function loss caused by disease, injury, or medical treatment.

Kappagoda, S., Singh, U., and Blackburn, B.G. (2011). "Antiparasitic therapy." (AHRQ grant T32 HS00028). ***Mayo Clinic Proceedings*** **86(6), pp. 561-583.**
Parasitic diseases cause substantial morbidity and mortality worldwide. This article reviews the treatment of the major protozoan and helminth infections in humans. It focuses on clinical presentations of protozoan and helminth infections in humans, appropriate treatment for these infections, and adverse effects of antiparasitic therapies. There have been significant improvements in the treatment of these infections in the last two decades.

Kesselheim, A.S., Myers, J.A., and Avorn, J. (2011). "Characteristics of clinical trials to support approval of orphan vs. nonorphan drugs for cancer." (AHRQ grant HS18464). ***Journal of the American Medical Association*** **305(22), pp. 2320-2326.**
Concerns have been raised about the safety and efficacy of some approved orphan drugs for rare diseases. This review of new cancer drug approvals from 2004 to 2010 found that the FDA approved alternative trial designs that allowed most orphan cancer drugs to be approved on the basis of single-group, nonrandomized trials enrolling relatively small groups of patients. These trials were usually unblended and relied on surrogate markers of disease response to measure efficacy.

Krist, A.H. and Woolf, S.H. (2011, January). "A vision for patient-centered health information systems." (AHRQ grants HS17046 and HS18811 and Contract No. 290-07-100113). ***Journal of the American Medical Association*** **305(3), pp. 300-301.**
Personal health records can be far more refined and more appealing to patients than they are at present, note these authors. They identify five distinct levels of functionality that could be incorporated into an electronic personal health record: collecting patient information, integrating patient information, interpreting clinical information, providing individualized clinical recommendations, and facilitating informed patient action. They suggest that a new generation of systems could be designed to serve patient needs at all five levels of functionality.

Lautenbach, E., Lee, I., and Shiley, K.T. (2011, January). "Treating viral respiratory tract infections with antibiotics in hospitals: No longer a case of mistaken identity." (AHRQ grant HS10399). ***Leonard Davis Institute Issue Brief*** **16(3), pp. 1-4.**
Despite calls to prescribe antibiotics judiciously, many physicians continue to order antibiotics for inpatients who do not need them. This paper investigates antibiotic use in hospitalized adults with a confirmed viral infection—a group of patients that may not benefit from such therapy. Understanding the factors that lead to inappropriate antibiotic use may help change clinical practice and limit antibiotic resistance.

continued on page 26

continued from page 25

Lawrence, W. (2011). "Starting the conversation." ***Pharmacoepidemiology and Drug Safety*** **20, pp. 807-809. Reprints (AHRQ Publication No. 11-R072) are available from AHRQ.***
This commentary discusses a paper that summarizes the deliberations of a panel of experts convened to discuss a core curriculum in comparative effectiveness research (CER) for researchers and decisionmakers. The author believes that it represents an important start in helping to define the future training needs of new generations of researchers interested in CER for pharmaceuticals.

Lipitz-Snyderman, A., Needham, D.M., Colantuoni, E., and others. (2011, May). "The ability of intensive care units to maintain zero central line-associated bloodstream infections." (AHRQ grant HS14246). ***Archives of Internal Medicine*** **171(9), pp. 856-858.**
The objective of this study was to explore and quantify the ability of intensive care units (ICUs) to sustain zero central line-associated bloodstream infections (CLABSIs). Among the 80 ICUs in the Michigan Keystone ICU Project, sixty percent sustained zero CLABSIs for 12 months and 26 percent for 24 months or longer.

Litvin, C.B., Nietert, P.J., Wessell, A.M., and others. (2011). "Recognition and management of CKD in primary care." (AHRQ grant HS17037). ***American Journal of Kidney Disease*** **57(40), pp. 646-647.**
In 2002, the National Kidney Foundation issued guidelines for the classification of chronic kidney disease (CKD) based on the estimated glomerular filtration rate (eGFR) and for the management of patients with CKD. In a study of the impact of these guidelines on 120 primary care practices 7 years later, researchers found that more than half of patients with a low eGFR had been prescribed an angiotensin converting enzyme inhibitor, angiotensin receptor blocker, or lipid-lowering medication. Yet only a minority of patients met treatment goals for blood-pressure or lipid control.

Lyons, T.W., Wakefield, D.B., and Cloutier, M.M. (2011). "Mold and Alternaria skin test reactivity and asthma in children in Connecticut." (AHRQ grant HS11147). ***Annals of Allergy, Asthma, and Immunology*** **106, pp. 301-307.**
The researchers examined the relationship among Alternaria skin test reactivity (STR), ethnicity, and asthma severity in a group of 914 ethnically diverse Connecticut children. Their study found that mold and Alternaria STR were uncommon in this group. Alternaria STR was not associated with increasing asthma severity, but was associated with severe, persistent asthma independent of the total number of positive skin test results.

Martinez, E.A., Thompson, D.A., Errett, N.A., and others. (2011). "High stakes and high risk: A focused qualitative review of hazards during cardiac surgery." (AHRQ grants HS13904 and HS18762). ***Anesthesia & Analgesia*** **112, pp. 1061-1074.**
Following a review of the literature to identify and classify types of hazards in cardiac surgery, the researchers selected 55 articles that met the inclusion criteria. Two themes emerged: Studies were predominantly reactive (responding to an event or a report), and minor events were predictive of major problems. Multiple, often minor, deviations from normal procedures caused a cascade effect, ultimately leading to major events.

Mathews, R., Peterson, E.D., Chen, A.Y., and others. (2011). "In-hospital major bleeding during ST-elevation and non-ST-elevation myocardial infarction care: Derivation and validation of a model from the ACTION Registry-GWTW." (AHRQ grant HS16964). ***American Journal of Cardiology*** **107, pp. 1136-1143.**
The researchers developed and validated an in-hospital major bleeding risk model that assesses bleeding risk in the acute myocardial infarction population. Baseline characteristics and in-hospital major bleeding were similar between the derivation cohort (72,313 patients) and the validation (17,960 patients) cohort. The researchers concluded that their model stratifies risk for major bleeding, using variables at patient presentation, and enables risk-adjusted outcomes for quality-improvement initiatives and clinical decision-making.

McAlearney, A.S., Garman, A.N., Song, P.H., and others. (2011). "High-performance work systems in health care management, part 2: Qualitative evidence from five case studies." ***Health Care Management Review*** **36(3), pp. 214-226. Reprints (AHRQ Publication No. 11-R066) are available from AHRQ.***
The authors seek to improve their understanding of high-performance work practice (HPWP) use in health care through case studies of five high-performing U.S. health care

continued on page 27

continued from page 26

organizations. All organizations reported emphasis on all four HPWP subsystems: engagement; staff acquisition/development; frontline empowerment; and leadership alignment/development. All five organizations also reported links between HPWPs and employee outcomes (turnover and higher satisfaction/engagement).

McHugh, M.D. (2011). "Hospital nurse staffing and public health emergency preparedness: Implications for policy." (AHRQ grant HS17551). *Public Health Nursing* 27(5), pp. 442-449.
There are two purposes of this review. The first purpose is to outline the challenges facing hospitals in establishing surge capacity for public health emergencies in the context of a nursing shortage. The second purpose is to highlight the need for a national strategy and identify potential policy approaches to develop a robust nursing workforce supply in support of public health and emergency preparedness.

Pan, D., Huey, S.J., and Hernandez, D. (2011). "Culturally adapted versus standard exposure treatment for phobic Asian Americans: Treatment efficacy, moderators, and predictors." (AHRQ grant HS10870). *Cultural Diversity and Ethnic Minority Psychology* 17(1), pp. 11-22.
This study compared a standard in-vivo exposure treatment for phobia in Asian Americans with a culturally adapted similar treatment. Asian Americans with low acculturation benefitted more from the culturally adapted treatment with respect to catastrophic thinking and general fear. Both treatments were equally effective for Asian Americans with high acculturation.

Payabvash, S., Souza, L.C.S., Wang, Y., and others. (2011). "Regional ischemic vulnerability of the brain to hypoperfusion. The need for location specific computed tomography perfusion thresholds in acute stroke patients." (AHRQ grant HS11392). *Stroke* 42, pp. 1255-1260.
This study evaluated regional ischemic vulnerability of the brain to decreased blood flow in 90 patients with acute first-ever unilateral stroke. Of the brain areas with infarction (damaged tissue due to lack of oxygen) in this group, the researchers found that the caudate and putamen were highly vulnerable, as were specific cortical areas. These findings support the hypothesis that location-specific thresholds may be more accurate than whole-brain thresholds for estimating the likelihood of infarction with computed tomography perfusion.

Pines, J.M. and Asplin, B.R. (2011). "Conference proceedings—improving the quality and efficiency of emergency care across the continuum: A systems approach." (AHRQ grant HS18114). *Academic Emergency Medicine* 18, pp. 655-661.
This article describes a 2009 conference held by the American College of Emergency Physicians to discuss critical issues and outline a research agenda. The two main panels discussed systems and workflow redesign to improve health care, and improving care coordination for high-cost patients. Five additional panels developed research agendas on topics ranging from health information technology to end-of-life and palliative care in the emergency department.

Pines, J.M., Asplin, B.R., Kaji, A.H., and others. (2011). "Frequent users of emergency department services: Gaps in knowledge and a proposed research agenda." (AHRQ grant HS18114). *Academic Emergency Medicine* 18, pp. e64-e69.
Frequent use of emergency department (ED) services is often perceived to be a potentially preventable misuse of resources. The authors describe several issues in the epidemiologic study of ED use, identify gaps in knowledge, and propose a four-part research agenda. The agenda ranges from creating an accepted categorization system for frequent users to conducting qualitative studies of frequent ED users.

Polinski, J.M. and Kesselheim, A.S. (2011). "Where cost, medical necessity, and morality meet: Should US government insurance programs pay for erectile dysfunction drugs?" (AHRQ HS18465). *Clinical Pharmacology & Therapeutics* 89(1), pp. 17-21.
Both cost pressures and moral beliefs have led to calls by some to restrict or ban payment for erectile dysfunction (ED) drugs by Medicaid and Medicare Part D. The authors argue that both cost and medical necessity, but not morality, should be the primary drivers in setting drug coverage determinations. ■

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