



# RESEARCH ACTIVITIES

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## Highlights

### Topics

**Safety/Quality of Care . . . . . 2**

**Disparities/Minority Health . . . 5**

**Child/Adolescent Health . . . . 7**

**Chronic Disease . . . . . 9**

**Mental Health . . . . . 12**

**Primary Care . . . . . 13**

**Health Information  
Technology . . . . . 16**

**Access to Care . . . . . 17**

**Women's Health . . . . . 18**

**Elderly/Long-Term Care . . . 20**

### Regular Features

**Agency News and Notes . . . 21**

**Announcements . . . . . 25**

**Research Briefs . . . . . 27**

## AHRQ State Snapshots expanded to include new data on health insurance

The Agency for Healthcare Research and Quality's (AHRQ's) annual release of State-by-State quality data has been expanded to include new data on health insurance, including data on health care quality categorized by source of payment (private insurance, Medicare, Medicaid, and those without insurance). The 2009 *State Snapshots*, recently released by AHRQ, are available at <http://statesnapshots.ahrq.gov>.

The new health insurance section allows users to compare payer-specific quality rates as well as differences among payers. For example, a State can compare the quality of care received by Medicaid or uninsured patients with that received by these same patients nationally. In addition, a State can assess whether its insurance-related disparities are larger or smaller compared with the nation as a whole.

The 2009 *State Snapshots* provide State-specific health care quality information, including strengths, weaknesses, and opportunities for improvement. State-level information used to create the *State Snapshots* is based on data collected for AHRQ's 2009 *National Healthcare Quality*

*Report*. Overall, States get mixed reviews for the quality of care they provide. As in previous years, AHRQ's 2009 *State Snapshots* show that no state does well or poorly on all quality measures.

Maine, Maryland, Wyoming, South Carolina, and the District of Columbia showed the greatest improvement. The five States showing the smallest improvement were North Dakota, Texas, West Virginia, Nebraska, and Washington State. For each State, specific clinical conditions could be identified that accounted for different rates of improvement.

"The addition of the insurance information to the *State Snapshots* adds one more dimension to the picture of health care quality and disparities in individual States and regions," said AHRQ Director Carolyn M. Clancy, M.D. "The 2009 *State Snapshots* continue to evolve into an invaluable resource for State officials and other stakeholders."

The 2009 *State Snapshots* summarizes health care quality in three dimensions: types of care (preventive, acute, and chronic care), settings of care (hospitals, ambulatory settings, nursing

*continued on page 2*

## State Snapshots

continued from page 1

homes, and home health care) and clinical conditions (cancer, diabetes, heart disease, maternal and child health, and respiratory

disease). There are also special focus areas on diabetes, asthma, *Healthy People 2010* objectives, clinical preventive services, and disparities.

Additional features in the 2009 *State Snapshots* provide more ways to analyze the quality of health care for each State compared with all States, as well as with States in the same region. ■

## Safety/Quality of Care

### Assessment of hospital computerized physician order entry systems finds many medication errors are missed

Computerized physician order entry (CPOE) systems with decision support provide advice, such as recommended drug dosages, and warnings, for example, about patient drug allergies or drug-drug interactions, as physicians use the computer software to order patient medications. One of the major reasons for implementing CPOE systems is to prevent serious errors that can cause patient harm. However, simulation of CPOE as it is used by physicians at 62 U.S. hospitals detected only 53 percent of the medication orders that would have likely resulted in fatalities and, in individual hospitals, 10-82 percent of orders that would have caused serious injuries. In the

hospitals studied, the overall scores varied by as much as 40 to 65 percent among hospitals using CPOE software from the same vendor. The six top-performing hospitals used software from six different vendors (one homegrown solution and five commercial products).

In a statistical model, choice of vendor was significant in predicting performance, but only accounted for 27 percent of the total variation in performance. Hospital teaching status also was a significant predictor of CPOE performance, but only accounted for 10 percent of the observed variation in hospital performance. The hospitals were much more likely to use basic decision support than advanced

decision tools that require more configuration and customization. However, the top-performing hospitals implemented advanced clinical decision support, as well as basic tools, thereby demonstrating what is possible with current systems.

The simulation tool mimics what happens when a physician writes a medication order for a real patient but uses fictitious patients and orders created for the test. The test orders would cause serious harm if the medication actually reached the patient and represent the categories of adverse drug events (excessive dose, wrong route, contraindicated based on patient age, diagnosis, or renal function) research shows

continued on page 3

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### Also in this issue:

**Higher rates of lung cancer deaths among blacks, page 5**

**Emergency department use by patients with lupus, page 9**

**Impact of e-prescribing on medication safety, page 16**

**Drop in heart bypass surgery death rates, page 21**

**Price tag for treating back problems, page 23**

**Measuring patients' home health care experiences, page 26**

## CPOE

*continued from page 2*

contribute the most adverse drug events. For each assessment, a participating physician enters about 50 test orders for 10–12 test patients into the local electronic health record via its CPOE and notes any guidance provided by the software's decision report module.

In the study, the researchers calculated an overall score

(percentage of test orders identified) as well as scores for each category of adverse drug event for all hospitals in aggregate. The researchers then compared hospitals based on hospital size (bed number), teaching status, and whether the hospital was part of a multihospital health system. The assessment tool employed in the study was funded in part by the Agency for Healthcare Research

and Quality (Contract No. 290-04-0016).

More details are in “Mixed results in the safety performance of computerized physician order entry,” by Jane Metzger, B.A., Emily Welebob, R.N., M.S., David W. Bates, M.D., M.Sc., and others in the April 2010, *Health Affairs* 29(4), pp. 655-663. ■ *DIL*

## Detailed, up-to-date medication lists help prevent errors

Primary care physicians should help their patients develop and maintain medication lists and encourage a review at every health encounter, suggests a new study. After pharmacists reviewed the records of and conducted interviews with 651 adult general medicine inpatients at a Chicago hospital, they found that more than a third of patients were switched to different medications by their physicians during the first 48 hours of hospitalization due to unexplained medication discrepancies. For 85 percent of these patients, the source of errors occurred in their medication histories, which then carried through to their inpatient orders. Omission of a medication was the most frequent error (48.9 percent), followed by different dose (30.4 percent) and different frequency (11 percent).

Four of the medication errors could have resulted in longer hospital stays if they were not caught, 32 could have caused temporary harm, and 162 could have required increased monitoring. Medications most commonly involved in errors were cardiovascular drugs, antidepressants, gastrointestinal agents, neurological agents, and diabetes drugs.

The authors suggest since most of the detected errors happened when clinicians were obtaining and recording patients' medication histories, a multidisciplinary approach toward medication reconciliation involving physicians, nurses, and pharmacists may help ensure that accurate medication histories are available. Closer to home, primary care physicians should encourage their patients, especially older individuals who take many medicines, to keep their medication lists current and carry it with them at all times in the event they face an unexpected hospitalization or emergency room or doctor's visit. This study was funded in part by the Agency for Healthcare Research and Quality (HS13903).

See “Results of the Medications at Transitions and Clinical Handoffs (MATCH) Study: An analysis of medication reconciliation errors and risk factors at hospital admission,” by Kristine M. Gleason, R.Ph., Molly R. McDaniel, Pharm.D., Joseph Feinglass, Ph.D., and others in the May 2010 *Journal of General and Internal Medicine* 25(5), pp. 441-447. ■ *KFM*

## Visit the AHRQ Patient Safety Network Web Site

AHRQ's national Web site—the AHRQ Patient Safety Network, or AHRQ PSNet—continues to be a valuable gateway to resources for improving patient safety and preventing medical errors and is the first comprehensive effort to help health care providers, administrators, and consumers learn about all aspects of patient safety. The Web site includes summaries of tools and findings related to patient safety research, information on upcoming meetings and conferences, and annotated links to articles, books, and reports. Readers can customize the site around their unique interests and needs through the Web site's unique “My PSNet” feature. To visit the AHRQ PSNet Web site, go to [psnet.ahrq.gov](http://psnet.ahrq.gov).

## Physician champions key to successful quality improvement projects

Patients suffering from acute respiratory tract infections (ARIs) often expect their doctors to prescribe antibiotics, even though these drugs are ineffective in combating the viruses that typically cause these infections. The Improving Antibiotic Use in Acute Care Treatment (IMPAACT) study aimed to reduce inappropriate antibiotic prescribing in emergency departments. A followup study finds that enthusiastic physician champions play a key role in changing fellow physicians' behaviors like antibiotic prescribing.

After conducting focus groups and interviews with hospital staff who participated in the IMPAACT study, Ralph Gonzales, M.D., M.S.P.H., of the University of California, San Francisco, and coinvestigators pinpointed three

recurring elements that led to a site's success or failure in appropriate antibiotic prescribing for ARIs: a physician champion, a previous history of implementing quality improvement initiatives, and an institution's attitude toward patient satisfaction.

By far, the presence of an effective physician champion who trained and served as a consultant to other staff members caused the greatest reduction in prescriptions for unnecessary antibiotics. Institutions that want to change physician behaviors should search their ranks to find a passionate physician champion to build support for the quality improvement intervention, the authors suggest.

Previous history with bottom-up or top-down quality improvement initiatives did not readily ensure a hospital's success in the IMPAACT

study. Additionally, although the authors first believed that hospitals placing a high value on patient satisfaction would have lower rates of success because staff would be reluctant to deny patients' demands for antibiotics, the reverse proved to be true. The authors suggest that those hospitals may have forestalled this problem by addressing tactics to counter it during staff training sessions. This study was funded in part by the Agency for Healthcare Research and Quality (HS13915).

See "Physician champions are key to improving antibiotic prescribing quality," by Eva M. Aagaard, M.D., Dr. Gonzales, Carlos A. Camargo, Jr., M.D., Dr.P.H., and others in the March 2010 *The Joint Commission Journal on Quality and Patient Safety* 36(3), pp. 109-116. ■ *KFM*

## Physicians' use of "we" during patient visits does not necessarily foster patient-physician partnership

Partnership, i.e., the physician's alliance with the patient, is part of any patient-centered interaction. Physicians' use of the first person plural to refer to themselves in alliance with the patient may be one way in which partnership is fostered. However, a new study reveals that physicians' use of "we" does not necessarily foster patient-physician partnership. The researchers analyzed audio recordings of encounters between 45 providers and 418 patients with HIV.

Contrary to the researchers' initial hypothesis, patients were less likely to rate their provider's communication style positively if the physician used "we" statements, but these statements did not affect patient ratings of provider's participatory decisionmaking style or their overall satisfaction. In 92 of 418 encounters, providers made 157 "we" statements. Factors associated with the use of "we" statements were younger patient age, higher patient depression scores, not being on antiretroviral therapy, and older provider age.

Each of the 157 statements was coded for both positive and negative characteristics. "We" statements considered to foster partnership included those that involved the patient in the health care process, addressed patient goals, created an understanding between doctor and patient, or contained reflections and/or discussion of a shared past. Features considered not to foster partnership involved persuasion, indirect communication, or ambiguous use. Of the 157 statements made by providers, 77 (49 percent) had at least one negative feature. When negative statements that seemed to be persuasive, indirect, patronizing, or condescending were used in the contexts of medication adherence, weight loss, smoking, and substance abuse, the use of the word "we" falsely involved the provider in activities that are the practical responsibility of the patient. In contrast, positive statements that occurred in the context of purposefully addressing the patient's goals, sharing medical decisionmaking, and

*continued on page 5*

## Partnership

*continued from page 4*

legitimizing the patient-provider relationship seemed to contribute to a sense of equality between the two parties. This study was supported in part by the Agency for Healthcare Research and Quality (Contract No. 290-01-0012).

See “‘We’ll do this together’: The role of the first person plural in fostering partnership in patient-physician relationships,” by Helen Kinsman, B.S., Debra Roter, Dr.P.H., Gail Berkenblit, M.D., Ph.D., and others in the December 2009 *Journal of General Internal Medicine* 25(3), pp. 1178-1183. ■ MWS

## Disparities/Minority Health

### Blacks with lung cancer have higher mortality rates than whites

**A**lthough treatment has improved for lung cancer, it remains the leading cause of cancer-associated mortality and the second most commonly diagnosed cancer. Blacks continue to have lower survival rates than whites. A recent study found that blacks with nonsmall-cell lung cancer (NSCLC) had a 22 percent greater overall risk of dying from all causes during the various stages of NSCLC. Blacks with stage III or IV NSCLC had a 22 percent greater risk of dying from all causes and 24 percent greater risk of dying from lung cancer in 2000-2002. Receipt of standard stage-specific treatment was significantly associated with longer survival, whereas poor socioeconomic status was associated with greater risk of dying.

A total of 70,901 elderly Medicare patients with stage I to IV

NSCLC participated in the study. Researchers determined the time to death from the date of diagnosis. One group included patients with stage I or II disease, who are usually treated by surgery. The second group included patients with stage III or IV disease, normally treated with chemotherapy and/or radiation. In addition, the researchers looked at three time periods: 1991-1995, 1996-1999, and 2000-2002.

Five-year survival rates were higher for whites (52.7 percent) than for blacks (47.5 percent) with stage I or II disease. For stage III and IV disease, 5-year survival rates were 17.7 percent for whites and 19.6 percent for blacks. When the researchers controlled for such things as treatment, socioeconomic status, and other factors, no significant differences were found in lung cancer mortality between

blacks and whites in both groups. However, overall, blacks did have an increased risk for all-cause mortality. In addition, blacks with stage III and IV disease had an increased risk of mortality during 2000-2002. Blacks belonging to the lowest socioeconomic status category had an increased risk for all-cause mortality at all stages. They also had an increased risk for lung cancer mortality at stages III and IV. The study was supported in part by the Agency for Healthcare Research and Quality (HS16743).

See “Racial disparities and survival for nonsmall-cell lung cancer in a large cohort of black and white elderly patients,” by Dale Hardy, Ph.D., Rui Xia, M.S., Chi-Chin Liu, M.S., and others in the October 15, 2009 *Cancer*, pp. 4807-4818. ■ KB

### Geographic information system reveals primary care needs of Hispanics

**W**ith Hispanics suffering from a number of health care disparities, it is important to identify geographic areas where unmet needs are the most acute. Using the Multiple Attribute Primary Care Targeting Strategy (MAPCATS) process is one way to do this, suggests a new study. Researchers found that the technique effectively identified geographic regions where increasing access to primary care services for the Hispanic community

would have the greatest potential impact on health outcomes.

MAPCATS analyzed five key attributes describing the Hispanic population in Charlotte, North Carolina, which has the fourth fastest growing Hispanic community in the United States. The attributes were: socioeconomic status, population density, insurance status, patterns of emergency department (ED) use, and

*continued on page 6*

## Geographic information system

*continued from page 5*

utilization of the primary care safety net. The researchers developed maps for each individual attribute, and then created a process using input from health providers and community members to blend these attributes into a composite map showing the community's overall primary care needs.

From the composite map, the researchers were able to identify areas to target interventions to increase primary care access for the Hispanic population in Charlotte. For example, one target area had no nearby safety-net clinic. Some other target areas had a safety-net clinic that primarily served black or white patients. Low-income uninsured patients or those with Medicaid insurance living in areas without an accessible safety net clinic were also more likely to receive care for primary care treatable conditions from a nearby ED.

The composite map will allow the research team to target specific areas within the community for

interventions that improve access to primary care. In addition, the MAPCATS model can be used to assist policymakers looking to identify locations where increased access to primary care would most impact health outcomes and reduce the cost of medical care by reducing inappropriate use of emergency services. Finally, the composite maps can be monitored over time to measure changes in the community's patterns of health care access that result from the development of new clinics or other interventions that help patients see a primary care doctor when needed. The study was supported in part by the Agency for Healthcare Research and Quality (HS16023).

See "Geographic information system (GIS) demonstrating primary care needs for a transitioning Hispanic community," by Michael F. Dulin, M.D., Ph.D., Thomas M. Ludden, M.A., Hazel Tapp, Ph.D., and others in the January/February 2010 *Journal of the American Board of Family Medicine*, 23(1), pp. 109-120. ■ KB

## Minority pediatricians are more likely to care for minority children

Minorities continue to be underrepresented in the medical profession. However, a diverse physician workforce is vital to providing culturally appropriate care to minority patients. Minority pediatricians continue to be more likely than their nonminority peers to care for minority children and publicly insured or uninsured children, according to a new study.

Researchers collected data on pediatricians at three different times: 1993, 2000, and 2007. Information was obtained from the American Pediatric Association's Periodic Surveys of Fellows. In these surveys, pediatricians can identify the racial/ethnic group to which they belong, practice location, patient insurance coverage, and estimates of the number of patients treated from each racial/ethnic category.

After grouping the results from the three surveys together, the researchers found that underrepresented minority (URM) pediatricians treated an average of 20 percent more minority children than their non-URM colleagues. The percentage of minority patients was highest for Hispanic pediatricians (57.9 percent), closely followed by black pediatricians (57.6 percent).

This compared with just 33.4 percent for white pediatricians and 40.6 percent for Asian pediatricians. The average percentages of minority children in URM pediatrician practices did not vary much over the three time periods (57, 56.6, and 56.7 percent).

URM pediatricians also took care of higher percentages of publicly insured or insured children. In 1993 URM practices treated 46 percent versus 38.8 percent for non-URM practices. By 2007, the gap had widened to 59.7 percent in URM practices versus 40.7 percent in non-URM practices. These findings underscore the need for more recruitment programs aimed at minority high school and college students to encourage them to consider careers as pediatricians. The study was supported in part by the Agency for Healthcare Research and Quality (HS15679).

See "Assessing trends in practice demographics of underrepresented minority pediatricians, 1993-2007," by William T. Basco, Jr., M.D., William L. Cull, Ph.D., Karen G. O'Connor, B.S., and Scott A. Shipman, M.D., M.P.H., in the March 2010 *Pediatrics* 125(3), pp. 460-467. ■ KB

**Note:** Only items marked with a single (\*) asterisk are available from the AHRQ Clearinghouse. Items with a double asterisk (\*\*) are available from the National Technical Information Service. 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.

## Public insurance linked to longer perception of disease burden among children with asthma

The type of insurance coverage and intensity of asthma control influence the decline in children's perceived asthma burden over time, concludes a new study. Children with public insurance had an estimated slower drop in the perceived burden of asthma over time than children with other types of insurance. Children who received and enacted a high level of asthma control (medical visits and use of prescription medication) had a faster decline in perceived health burden and actual burden (sick days) than children who did not receive this level of asthma control.

At the beginning of an observation period, a high level of asthma control was associated

with a higher perceived health burden and mean number of disability days each month. By the end of the observation period, perceived health burden and disability days for children with high levels of asthma control had dropped below those for children with lower levels of asthma control. The study highlights the importance of and benefits from high levels of asthma control, even for children who initially perceived a high health burden from the disease, conclude Gail Kieckhefer, Ph.D., P.N.P., of the University of Washington, and colleagues.

They used data from the Agency for Healthcare Research and Quality (AHRQ) Medical Expenditure Panel Survey of

representative U.S. households. The study used data on children with asthma from the 1996-1999 household panels, who were between 3 and 11 years of age at the first interview. The study followed patterns of change in two measures of health burden, perceived burden (on a five-point scale from "poor" to "excellent") and actual burden (in terms of total disability days per month). The study was funded in part by AHRQ (HS11301).

More details are in "Changes in the health burden of a national sample of children with asthma," by Nazli Baydar, Ph.D., Dr. Kieckhefer, Jutta M. Joesch, Ph.D., and others in the January 2010 *Social Science & Medicine* 70(2), pp. 321-328. ■ *DIL*

## Iron and zinc co-supplementation seems to be most helpful for children in developing countries

Zinc and iron deficiencies often coexist in malnourished child populations of developing nations. Zinc is important in reducing childhood morbidity and mortality from diarrhea and pneumonia, while iron prevents anemia and may also improve psychomotor activity. However, various studies have called into question the safety of universal iron supplementation and the advisability of co-supplementation with iron and zinc. A new study shows that separate and combined administration of iron and zinc are equally effective for reducing diarrhea, hospitalizations, and improving iron outcomes (e.g., increased hemoglobin).

Stephanie Chang, M.D., of the Agency for Healthcare Research and Quality, and international colleagues examined the interaction of zinc and iron supplementation on diarrhea, hospitalizations, and other outcomes for 1,000 6- to 18-month-old children

in a rural area of Bangladesh. Each child received one of five regimens (placebo, zinc alone, combined iron and zinc, iron alone, or iron and zinc separately). Overall supplement adherence during the followup period was 81.9 percent.

Iron alone increased diarrhea, but zinc added to iron, either separately or together, reduced diarrhea and hospitalizations. In fact, any combination of zinc (alone, combined with iron, or separately with iron) significantly decreased the incidence of diarrhea with dehydration compared with iron alone. Stunted children benefitted more from separate (vs. combined) iron and zinc supplementation.

There were a total of 80 hospitalizations, with bronchiolitis being the most common reason. Other reasons for hospital admission were diarrhea, viral infection, and pneumonia. Zinc and iron, together or

*continued on page 8*

## Zinc and iron deficiencies

continue from page 7

separately, reduced hospitalizations the most. Zinc, given alone, reduced infection-related hospitalizations whereas any combination of zinc reduced bronchiolitis hospitalizations. The researchers concluded that iron and zinc co-supplementation seems to help with diarrhea, blood levels of iron, and hospitalization for this population. They note that their findings are

applicable to non-malaria-endemic populations with similar plant-based, nutrient-poor diets.

See “Supplementing iron and zinc: Double blind, randomized evaluation of separate or combined delivery,” by Dr. Stephanie Chang, M.D., Sadia El Arifeen, M.D., Sanwarul Bari, M.D., and others in the *European Journal of Clinical Nutrition* 64, pp. 153-160. Reprints (AHRQ Publication No. 10-R053) are available from AHRQ.\* ■ MWS

## Physicians report care barriers for young adults with childhood-onset chronic diseases

Thanks to medical advances, many children with chronic diseases are now able to live into adulthood. It is not uncommon for adults with conditions such as cystic fibrosis, sickle cell disease, and congenital heart disease to live into their 40s and beyond. Traditionally, many of these patients continued to be treated as adults by pediatric generalists and subspecialists. Many medical societies now recommend that these young adults transition to adult-centered care. However, these young adults may face health care barriers when it comes to finding quality adult primary care, according to a new study. Even physicians admit to not being readily able to meet the primary care needs of this group.

Researchers mailed a survey to 1,500 randomly selected pediatricians and 1,500 internists. A total of 1,289 responded. After

contacting nonrespondents, the final response rate was 53 percent. Physicians were asked to share their views on the quality of primary care delivery to young adults with childhood-onset chronic diseases. The researchers wanted to know if it was easy for these young adults to find a general internist to handle their care needs. They also asked the physicians if they felt equipped to handle these patients’ transfer of care into their practices.

Just 38 percent of pediatricians and 51 percent of internists felt it would be easy for these patients to find an internist willing to handle their primary care needs. Only half of the internists felt they were readily able to take on the complex needs of these patients. The majority of both pediatricians and internists felt they did not receive enough reimbursement to care for these young adults.

Internists were significantly less likely to have easy access to specialized disease centers for cystic fibrosis or sickle cell disease. Nearly a quarter of internists (24 percent) believed they lacked the training necessary to care for these patients. Factors that were associated with improved provider perceptions of providing quality care included good office systems for coordinating care with subspecialty resources. The study was supported in part by the Agency for Healthcare Research and Quality (HS17716).

See “Physician views on barriers to primary care for young adults with childhood-onset chronic disease,” by Megumi J. Okumura, M.D., Eve A. Kerr, M.D., M.P.H., Michael D. Cabana, M.D., M.P.H., and others in the April 2010 *Pediatrics* 125(4), pp. e748-e754. ■ KB



## Follow AHRQ news on Twitter

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To view all of AHRQ’s social media tools, including e-mail updates, podcasts, and online videos, go to [www.ahrq.gov/news/socialmedia.htm](http://www.ahrq.gov/news/socialmedia.htm).

### Certain patients with lupus are more likely to end up in the emergency department three or more times a year

Patients with systemic lupus erythematosus (lupus), an inflammatory connective tissue disease, often suffer from fatigue, skin rashes, and joint pain, and may have more serious problems with their kidneys, heart, lungs, or other organs. Patients with lupus who are insured by Medicaid or have more active disease are more likely to end up in the emergency department (ED) three or more times a year, according to a new study. Frequent reliance on the ED for medical care may indicate that the person has poor access to primary care, inadequate coordination among their health care providers, or lax adherence to prescribed treatments, note the researchers.

Of the 807 persons with lupus studied, 61.7 percent were nonusers of the ED, 28.5 percent were occasional users (1-2 times annually), and 9.7 percent were frequent users (3 or more times a year). The frequent users accounted for the majority of all ED visits (58.1 percent), were younger (mean age of 44.5 years) than nonusers (47.6 years) and occasional users (49.0 years), and were more likely to rely on Medicaid as their

primary health insurance (21.3 percent) than nonusers (3.0 percent) or occasional users (6.1 percent).

After adjusting for demographic factors, a Medicaid-insured patient was more than four times more likely to be a frequent ED user than someone with employer-based insurance. Patients with disease activity, as shown on the Systemic Lupus Activity Questionnaire, were slightly, but significantly, more likely to be frequent ED users. The patients were drawn from a large group of lupus patients in 41 States enrolled in an ongoing longitudinal study. Trained survey workers collected data on demographic information, disease and general health status, utilization of health care resources, and insurance coverage. The study was funded in part by the Agency for Healthcare Research and Quality (HS13893).

More details are in “Frequent use of the emergency department among persons with systemic lupus erythematosus,” by Pantelis Panopalis, M.D., Joann Zell Gillis, M.D., Jinoos Yazdany, M.D., M.P.H., and others in the March 2010 *Arthritis Care & Research* 62(3), pp. 401-408. ■ *DIL*

### Impact of anti-arthritis drug on lipid levels in patients with rheumatoid arthritis remains unclear

A drug used to treat rheumatoid arthritis (RA) blocks the action of tumor necrosis factor-alpha (TNF- $\alpha$ ), a protein that causes the inflammation that sparks RA symptoms. However, the antagonist to TNF- $\alpha$  has also been linked to cholesterol and other lipid abnormalities. Elevated lipids accelerate atherosclerosis (narrowing of the blood vessels that can lead to heart disease), a problem for many patients with RA. A recent systematic review found insufficient evidence on the effects of this drug on circulating lipids in patients with RA treated with a TNF- $\alpha$  antagonist.

From an initially identified 1,555 publications, 24 observational studies met the inclusion criteria (7 cohort studies with a control group and 17 cohort studies without controls). No randomized, controlled studies were found.

In studies including both patients treated with TNF- $\alpha$  antagonists and controls, four of seven studies showed a statistically significant increase in total cholesterol (TC) with treatment (ranging from 6.0 to 28.0 percent), while one showed a significant decrease in TC (-5.4 percent). These seven controlled studies included three with a significant increase in high density lipoprotein (HDL), a form of cholesterol that is protective against

heart disease. In a group of 17 studies without control groups, 7 studies reported a significant increase in TC (ranging from 5.8 to 20 percent). The same 17 studies included 7 with significant increases in HDL (ranging from 8.1 to 15.3 percent) and 1 with a significant decrease (-10.7 percent).

Other studies in the two groups showed nonsignificant increases or decreases in TC and HDL. Because many of the patients in the studies received statins to treat heart disease, and statins have been recently found to combat inflammation, the researchers suggest the need for future studies to look at the effects of both statins

*continued on page 10*

## Rheumatoid arthritis

*continued from page 9*

and TNF- $\alpha$  antagonists on disease activity and lipid metabolism in RA patients. The study was funded in part by a grant to the Houston Center for Education and Research on Therapeutics (CERT) from the

Agency for Healthcare Research and Quality (HS16093). For more information on the CERTs program, visit [www.certs.hhs.gov](http://www.certs.hhs.gov).

More details are in “A systematic review of the effects of TNF-antagonists on lipid profiles in patients with rheumatoid arthritis,” by Eduardo Nicolas Pollono, M.D.,

Maria A. Lopez-Olivo, M.D., M.S., Ph.D., Juan Antonio Martinez Lopez, M.D., and Maria E. Suarez-Almazor, M.D., Ph.D., in the online April 10, 2010 *Clinical Rheumatology* ([www.springerlink.com/content/81r6416433474180/fulltext.pdf](http://www.springerlink.com/content/81r6416433474180/fulltext.pdf)). ■  
*DIL*

## Hydroxychloroquine still underused by patients with lupus, but use more likely if treated by rheumatologists

Patients with systemic lupus erythematosus (SLE or lupus), an autoimmune disease, suffer early symptoms of fatigue, fever, joint pain, and lupus rash. Later, the disease can cause damage to organs such as the kidney, lungs, heart, blood, and nervous system. The disease is characterized by periodic and unpredictable flare-ups and is managed by a variety of medications. Hydroxychloroquine (HCQ) treatment has emerged as a key therapy for patients with lupus. HCQ, an antimalarial medication, may reduce progression of the disease, reduce diabetes, improve lipid profiles, and prolong survival of patients with lupus. It also appears to be inexpensive, safe, and well-tolerated. Yet, HCQ remains underused by patients with lupus, according to a new study. While patients receiving lupus care through a rheumatologist were twice as likely to use HCQ as those seeing other specialists or generalists, rheumatologists still only prescribed HCQ in 62 percent of patient-years.

The researchers sought to determine the prevalence of HCQ use in a diverse, community-based group of patients with SLE and to identify predictors of HCQ use. Overall, 55 percent of patients reported HCQ use each year, a figure that remained constant throughout the observation period (2002-2006). Patients who had

SLE for a longer period were less likely to be taking HCQ. For each additional 10 years of disease duration, there was a 27 percent decrease in the odds of taking HCQ. The researchers speculate that patients with longer disease duration may have taken HCQ in the past and stopped because of disease quiescence, lack of perceived efficacy, or adverse effects.

Contrary to the researchers' initial hypothesis, the results also showed that there was no difference in disease activity between HCQ users and nonusers. The relationship between lupus disease duration and HCQ use, as well as patient and physician factors that contribute to HCQ underuse, need to be better understood, note the researchers. A total of 887 patients contributing 3,095 person-years of data were interviewed during the study period. The study was partly supported by the Agency for Healthcare Research and Quality (HS13893).

See “Hydroxychloroquine treatment in a community-based cohort of patients with systemic lupus erythematosus,” by Gabriela Schmajuk, M.D., Jinoos Yazdany, M.D., M.P.H., Laura Trupin, M.P.H., and Edward Yelin, Ph.D., in the March 2010 *Arthritis Care & Research* 62(3), pp. 386-392. ■ *MWS*

## Being overweight does not have a negative impact on quality of life after a kidney transplant

Nearly 60 percent of patients with end-stage renal disease (ESRD) who are waiting for a new kidney are overweight and about 30 percent are considered obese. Studies have shown that being overweight or obese does not affect survival after a kidney transplant. Now a new study finds being overweight or obese also does

not affect physical health-related quality of life (HRQOL) after kidney transplantation.

Researchers studied 464 adults who had a kidney transplant at an academic medical center between 1998 and 2008. Patients were asked about their health-related quality of life in eight areas of functioning and well-being. These included

scales such as bodily pain, the feeling of vitality, emotional and mental health, their physical functioning, and how well they were functioning socially. Prior to their transplant, 154 patients were normal weight, 192 were overweight, and 118 were obese.

*continued on page 11*

## End-stage renal disease

*continued from page 10*

No negative association was found between pretransplant overweight or obesity and HRQOL after transplant. Patients who had a kidney transplant before beginning dialysis had substantially better post-transplant HRQOL. Also, patients who did not require

pretransplant dialysis and those managed with a corticosteroid-avoidance protocol to suppress the immune system (so that it would not reject the new kidney) were considerably more likely to achieve physical HRQOL scores comparable with those of the general population. The study was supported in part by the Agency for Healthcare Research and Quality (HS13833).

See “Pre-transplant overweight and obesity do not affect physical quality of life after kidney transplantation,” by Victor Zaydfudim, M.D., M.P.H., Irene D. Feurer, Ph.D., Deonna R. Moore, M.S.N., A.C.N.P., and others in the March 2010 *Journal of the American College of Surgeons*, 210(3), pp. 336-344. ■ KB

## Evidence-based care processes are associated with improved outcomes for heart failure

**H**eat failure is an expensive, difficult-to-manage condition that costs Medicare more to treat than any other condition. Various performance measures have been established to improve the care of heart failure patients in the hospital. A recent study took a look at some of these processes of care to see how well they improved outcomes after patients were discharged. Measures related to drug therapy, particularly when they are based on clinical evidence, are the most helpful, according to the study.

Researchers reviewed Medicare data on 20,441 patients listed in a heart failure registry as well as process-of-care information. They selected six performance measures to examine. These included any beta-blocker or any evidence-based beta-blocker given at discharge for left ventricular systolic dysfunction (LVSD), warfarin (a blood thinner) for

patients with atrial fibrillation, and an aldosterone antagonist for patients with LVSD. Two nondrug performance measures were implanting a cardioverter-defibrillator (ICD) in patients with left ventricular ejection fraction of 35 percent or less (normal ejection fraction, a measure of the heart’s pumping power, is 50-70 percent) and referral to a heart failure disease management program. They measured hospital adherence to each process of care and several patient outcomes: mortality at 1 year after discharge, 1-year cardiovascular readmission rates, and 60-day mortality and cardiovascular readmission rates.

Hospital adherence rates varied widely for the six performance measures. The highest rate was for any beta-blocker (82 percent), while the lowest rate was found for disease management referral (7 percent). Uses of any beta-blocker, evidence-based beta-blocker, aldosterone antagonist, and ICD

were significantly associated with lower 1-year mortality. For every 10 percent increase in one of these performance measures, there was a 5 to 8 percent lower risk of dying at 1 year after hospital discharge. These four processes-of-care measures can be used to evaluate hospital-level quality of care for heart failure and should be considered for inclusion in all heart failure programs, suggest the study authors. Their study was supported in part by the Agency for Healthcare Research and Quality (HS10548).

See “Relationships between emerging measures of heart failure processes of care and clinical outcomes,” by Adrian F. Hernandez, M.D., M.H.S., Bradley G. Hammill, M.S., Eric D. Peterson, M.D., M.P.H., and others in the March 2010 *American Heart Journal* 159, pp. 406-413. ■ KB

## Predicting cardiovascular risk in patients with metabolic syndrome depends on definition used for the syndrome

**M**etabolic syndrome is characterized by problems such as increased blood pressure, elevated insulin levels, excess fat around the waist, and abnormal cholesterol levels. It is often a precursor for diabetes and can increase a person's risk of cardiovascular diseases such as heart attack and stroke. Physicians can use two different classification systems to determine if someone has metabolic syndrome. However, a new study finds that each definition differs in its ability to predict a person's cardiovascular risk.

Researchers focused their attention on two classification systems. One, the National Cholesterol Education Program Adult Treatment Panel (ATP) III criteria, is the most widely used in the United States. Patients must meet any three of the following criteria: elevated waist circumference (>40 in. in men or >35 in. in women); elevated triglycerides; decreased high density lipoprotein-cholesterol, the so-called "good cholesterol;" elevated blood pressure; or elevated blood sugar levels. To meet criteria for the other system created by the International Diabetes Federation (IDF), individuals have to have an elevated waist circumference (>37 in. in men or 31.5 in. in women) and two of the other four ATP-III criteria.

A total of 22,719 individuals in the REasons for Geographic and Racial Differences in Stroke study were evaluated. Half were black and half were women. Nearly half were found to have metabolic syndrome (47 percent). Of those with the condition, 79 percent met both definitions, 6 percent met the criteria based only on ATP criteria, and 14 percent met IDF criteria only. Individuals defined by ATP criteria had the highest odds of current cardiovascular disease and future risk, as measured by Framingham risk scores, compared with study participants without metabolic syndrome. Individuals with metabolic syndrome only defined by IDF had 43 percent higher odds of cardiovascular disease and a twofold increased odds of future risk. The study was supported in part by the Agency for Healthcare Research and Quality (HS13852).

See "Variations in prevalent cardiovascular disease and future risk by metabolic syndrome classification in the Reasons for Geographic and Racial Differences in Stroke (REGARDS) study," by Todd M. Brown, M.D., M.P.H., Jenifer H. Voeks, Ph.D., Vera Bittner, M.D., M.S.P.H., and Monika M. Safford, M.D., in the March 2010 *American Heart Journal* 159, pp. 385-391. ■ KB

## Mental Health

### Some patients with bipolar disorder pray and meditate more than others

**R**eligious beliefs and activities are a principal form of coping with depression and other life stresses for many individuals in the United States. A new study examined whether patients with bipolar disorder (BD) might use religion to cope with the stress of their illness. BD is a devastating illness characterized by wide, often severe mood fluctuations and sometimes psychosis, and can severely affect an individual's everyday functioning and physical well-

being. To better understand the relationship between different forms of religious involvement and individuals suffering from BD, researchers examined churchgoing, prayer/meditation, and the influence of religious beliefs on the lives of 334 mostly male veterans with BD. Patients with BD were considered to be in manic, depressed, mixed (simultaneous combination of manic and depressed states), or euthymic (normal mood) states.

The researchers used the Duke Religious Index, a five-item scale

that reports on respondent involvement in the public, private, and subjective dimensions of religious involvement. Patients in euthymic states had significantly lower self-reported rates of prayer/meditation while BD patients in mixed states had significantly higher self-reported rates of prayer/meditation than the other patients with BD. There was no significant association between any type of religious involvement

*continued on page 13*

## Bipolar disorder

*continued from page 12*

for patients with depression or mania.

The researchers suggest that prayer/meditation may be an important coping behavior for individuals with BD who are in a mixed state. On the other hand, they could not determine if prayer/meditation was a behavioral

consequence of underlying psychopathology such as religious delusions. They recommend to mental health providers that if an individual suffering from BD is religious, they explore these religious activities to assess the presence of a mixed state and to determine how the religious activities may influence treatment-seeking behaviors. This study was

partly funded by the Agency for Healthcare Research and Quality (HS16097).

See “The relationship between religious involvement and clinical status of patients with bipolar disorder,” by Mario Cruz, M.D., Harold Alan Pincus, M.D., Deborah E. Welsh, M.Sc., and others in the 2010 *Bipolar Disorders* 12, pp. 68-76. ■ MWS

## Primary Care

### Study shows Guided Care benefits family caregivers, chronically ill older adults, and physicians, and may reduce costs

As the U.S. population ages, the number of older adults with chronic health conditions is increasing. Often, the burden of care falls upon family members and friends. This can cause high levels of stress among caregivers and subsequent poor perceptions of care in this elderly population. Guided Care is a new model of care delivery that attempts to improve care for these individuals. At its core is the role of a registered nurse who is based in a primary care practice and works with three to four physicians to manage all aspects of care, support family members, and facilitate community resources for older patients with multiple chronic conditions. A 32-month randomized controlled trial, led by Chad Boulton, M.D., M.P.H., M.B.A., of the Johns Hopkins Bloomberg School of Public Health, is evaluating the effects of the Guided Care model on older patients with multiple chronic conditions, family caregivers, primary care practices, and Guided Care nurses. The study is supported in part by the Agency for Healthcare Research and Quality (HS14580). Papers

demonstrating early results of the study are briefly discussed here.

**Giddens, J. F., Tanner, E., Frey, K., and others. (2009). “Expanding the gerontological nursing role in Guided Care.” *Geriatric Nursing* 30(5), pp. 358-364.**

This article describes the role of the Guided Care nurse, including how best to prepare nurses to deliver components of the Guided Care model. Based in the primary care practice, a Guided Care nurse is expected to provide comprehensive care to 50 to 60 older patients with complex health care needs. A key component of this role is to facilitate health care by acting as a liaison between older adults and their caregivers, the primary care provider, specialists, and various health care agencies. Other clinical activities carried out by the nurse include patient assessment, the creation of an evidence-based care guide, monthly monitoring, encouraging patient self-management, coordinating care, smoothing transitions, providing education and support to

caregivers, and assessing community resources.

Nurses learn these eight clinical activities and competencies through a 6-week course organized into four units. After training, monthly meetings provide opportunities for these nurses to enhance self-confidence, master their role, receive peer support, and obtain ongoing education.

**Boyd, C. M., Reider, L., Frey, K., and others. (2010). “The effects of Guided Care on the perceived quality of health care for multi-morbid older persons: 18-month outcomes from a cluster-randomized controlled trial.” *Journal of General Internal Medicine* 25(3), pp. 235-242.**

The researchers determined the effects of Guided Care on how patients perceived the quality of health care they received from their health care team. Older patients received telephone calls during which they were asked 20 validated questions about their ongoing care. They were asked, for example, how well their care was organized, if they were asked for input on their

*continued on page 14*

## Guided Care

*continued from page 13*

treatment plan, and if they received a list of things they could do to improve their health.

Those who received Guided Care had two times greater odds of rating their overall chronic care highly compared with controls who received usual care. Guided Care recipients also were significantly more likely to report higher-quality coordination of care and decision support. Guided Care recipients tended to have greater odds of rating their care as high quality when it came to goal setting, problem solving, and patient activation, although this was not statistically significant.

**Marsteller, J., Hsu, Y. J., Reider, L., and others. (2010, July). "Physician satisfaction with chronic care processes: A cluster-randomized trial of Guided Care." *Annals of Family Medicine* 8(4), pp. 308-315.**

In this study, the researchers randomly assigned 14 teams of physicians (and their chronically ill older patients) to provide either Guided Care or usual care. They surveyed the physicians at baseline and 1 year later about their satisfaction with chronic care processes, time spent on chronic care, knowledge of their chronically ill older patients, and care coordination provided.

Compared with the usual care physicians, those in the Guided Care group rated their satisfaction with patient/family communication and their knowledge of the clinical characteristics of their chronically ill older patients significantly higher. Other differences did not reach statistical significance.

**Wolff, J. L., Rand-Giovannetti, E., Palmer, S., and others. (2009). "Caregiving and chronic care: The Guided Care Program for Families and Friends." *The Journals of Gerontology. Series A, Biological Sciences and Medical Sciences* 64A(7), pp. 785-791.**

The ongoing trial of Guided Care with 14 primary care physician teams showed that at the 6-month followup, caregivers participating in the Guided Care model had lower depression and caregiver strain compared with controls, especially among caregivers who provided more than 14 hours of weekly assistance to older adults with complex health-related needs. The Guided Care Program for Families and Friends included an initial meeting between the nurses and the patient's caregivers, education and referral to community resources, coaching family members on a regular basis, a six-session workshop, and 1-hour monthly support groups for family members to share their experiences.

**Wolff, J. L., Giovannetti, E. R., Boyd, C. M., and others. (2010). "Effects of Guided Care on family caregivers." *The Gerontologist*, 50(4), pp. 459-470.**

This article presents 18-month followup outcomes data about the effects of Guided Care on family caregivers. Caregivers completed surveys if their elderly loved ones were still alive and participating in the Guided Care study. Measured outcomes included caregiver depressive symptoms, caregiver strain, quality of care reported by the patient, and personal productivity.

The research team found no statistically significant differences

between intervention and control groups in depression, strain, and productivity at 18 months. However, caregivers participating in the Guided Care model reported the overall quality of care received by patients to be significantly better than caregivers of control group patients. Quality of care was reported to be significantly better by Guided Care-group caregivers across several dimensions, including goal setting, coordination of care, decision support, and patient activation.

**Leff, B., Reider, L., Frick, K., and others. (2009). "Guided Care and the cost of complex healthcare: A preliminary report." *The American Journal of Managed Care* 15(8), pp. 555-559.**

Using insurance claims, the study team compared the health services used by patients who received Guided Care with the health services used by patients who received usual care during the first 8 months of the trial of Guided Care. Guided Care patients experienced, on average, 24 percent fewer hospital days, 37 percent fewer skilled nursing facility days, 15 percent fewer emergency department visits, and 29 percent fewer home health care episodes, as well as 9 percent more specialist visits (not statistically significant).

Based on current Medicare payment rates and Guided Care costs, Guided Care produced a net savings of \$75,000 per Guided Care nurse (average caseload of 55 high-risk patients) per year to the health care insurer, two-thirds of which accrued from reductions in hospital utilization. ■ KB

## Patients more likely to follow medication regimens if they share their doctor's beliefs about causes of health outcomes

When the patient and provider have similar attitudes about the causes of health outcomes, patients are more likely to adhere to their medication regimens, concludes a new study. One method used to assess these attitudes is the health locus of control (HLOC) beliefs six-item scale. The critical element measured by HLOC is the degree to which a patient attributes health outcomes to factors under her own control or to external factors such as chance or actions of the provider. A parallel version of the HLOC constructed by the study researchers also measures the provider's related beliefs.

The researchers measured the extent to which patient and provider symmetry in HLOC beliefs was associated with medication refills in 244 male veterans with coexisting diabetes and hypertension. The veterans were being treated by 27 primary care physicians at the Veterans Administration Iowa City Medical Center and clinics. Medication adherence was measured by an electronic pharmacy record. In physician-patient dyads holding highly similar beliefs regarding the degree of personal control that

individual patients have over health outcomes, both overall and cardiovascular medication regimen adherence was significantly higher than in dyads in which the patient held a stronger belief in their own personal control than their treating physician's beliefs regarding patients in general.

The symmetrical group also had lower diastolic blood pressure than the nonsymmetrical group. When compared with the symmetrical group, the nonsymmetrical group had a 50 percent higher rate of medication nonadherence. Based on their findings, the researchers suggest examining the feasibility of matching patients and providers based upon their similarity on the HLOC attitudinal measure. The study was supported in part by the Agency for Healthcare Research and Quality (HS16094).

See "Patient and physician beliefs about control over health: Association of symmetrical beliefs with medication regimen adherence," by Dr. Christensen, M. Bryant Howren, Ph.D., Stephen L. Hillis, Ph.D. and others in the *Journal of General Internal Medicine* 25(5), pp. 397-402, 2010. ■ MWS

## Primary care doctors prefer additional medical record information when making decisions about patient test results

With increased demands on their time, primary care physicians (PCPs) often must make decisions about patient test results on the fly, without complete patient data. In fact, studies show that follow-up of abnormal diagnostic test results is one of the most problematic safety issues in outpatient practice. A preliminary study shows that automatically adding information from a patient's electronic medical records can add to the usefulness of test results sent to the patient's PCP. Nine surveyed PCPs found that enhanced laboratory reports (ELRs)—which include previous related test results, medication prescriptions, information from recent primary care visits, and

computer-generated reminders related to the type of test done—were well organized and easy to interpret. The ELRs included a median of 11 additional report elements. The PCPs rated the elements an average of 3.2 to 4.3 on a 5-point Likert scale (from 1, least valuable, to 5, most valuable). In fact, the physicians preferred the ELRs to standard lab reports, giving the ELRs a rating of 3.8 points.

J. Marc Overhage, M.D., Ph.D., and his colleagues relied on information stored in a regional Health Information Exchange, the Indiana Network for Patient Care (INPC), to provide the additional data elements. The ELR processor in the preliminary study started

with a list of 10 common laboratory tests to enhance, which were chosen because they typically require historical data for medical decision-making. For each test selected for enhancement, the researchers created a set of relevant lab test and medication associations. A third component of the enhanced report was a history of visits to providers within the INPC. Finally, a set of clinical reminders was created to help guide clinicians as they interpreted the ELRs and made medical decisions.

The ELR processor created a new message that appended the additional information to the original lab result, and delivered the ELR to the identified PCP via the

*continued on page 16*

## Medical record information

*continued from page 15*

special application. The researchers plan future studies of ELRs that will include a larger panel of evaluating physicians, increased number and complexity of rules

that generate reminders, and the impact of ELRs on quality of care. The study was funded in part by the Agency for Healthcare Research and Quality (Contract No. 290-04-0015).

More details are in “Enhancing laboratory report contents to

improve outpatient management of test results,” by Kevin C. Chang, M.D., Dr. Overhage, Siu L. Hui, Ph.D, and others in the January/February 2010, *Journal of the American Medical Informatics Association* 17(1), pp. 99-103. ■ *DIL*

## Health Information Technology

### Electronic prescribing with clinical decision support reduces medication errors in community-based practices

Physicians in community-based office practices dramatically reduce their rate of prescribing errors when using a Web-based electronic prescribing (e-prescribing) system with clinical decision support, according to a new study. The researchers found that physicians who switched from paper prescribing to e-prescribing (“adopters”) reduced their error rate nearly sevenfold, from 42.5 to 6.6 per 100 prescriptions by the end of 1 year. For physicians in practices who continued to use paper prescriptions (“nonadopters”), errors remained high at 1 year (37.3 per 100 prescriptions). The use of e-prescribing eliminated all illegibility errors among adopters, going from 87.6 legibility errors per 100 prescriptions at baseline to none at 1 year.

The e-prescribing system included clinical decision support that made dosing recommendations and checked for drug-allergy interactions, drug-drug interactions, and duplicate therapies. Errors judged to be preventable by the clinical decision support software included errors in a medicine’s dose,

strength, frequency, directions, amount to be dispensed, and length of treatment.

The researchers studied 12 adult primary care practices located in a predominantly rural and suburban region of upstate New York. The practices all used paper prescriptions at the beginning of the study. Six practices adopted e-prescribing while another six practices continued to use paper prescribing during the study. Preventable adverse drug events (ADEs) are best detected through patient surveys. Future studies involving larger numbers of providers should include such surveys to analyze the impact of e-prescribing on rates of preventable ADEs, the researchers suggest. Their study was funded in part by the Agency for Healthcare Research and Quality (HS16316).

More details are in “Electronic prescribing improves medication safety in community-based office practices,” by Rainu Kaushal, M.D., M.P.H., Lisa M. Kern, M.D., M.P.H., Yolanda Barrón, M.S., and others in the June 2010 *Journal of General Internal Medicine* 25(6), pp. 350-356. ■ *DIL*

### Electronic prescribing improves safety, but with a small increase in physician time

The use of electronic prescribing (e-prescribing) has been promoted to reduce medical errors, but a new study suggests that this improvement in patient safety comes with a small increase in physician prescribing time. On average, prescriptions prepared using computerized

provider order entry (CPOE) systems in the examination room took 69 seconds. This was 25 seconds longer than if handwritten and 24 seconds longer than if entered at computers in the prescriber’s office or a hallway workstation.

According to the researchers, this meant that a provider seeing 20 patients per day spent 6 minutes longer if all prescriptions were e-prescribed than if handwritten, an increase of 20 seconds per patient. The observed increase in time when providers changed from

*continued on page 17*

## Electronic prescribing

*continued from page 16*

e-prescribing in their offices or at hallway workstations to e-prescribing in the examination room was unexpected, the researchers noted.

The study was conducted at a multispecialty health system with 16 ambulatory care sites in Washington State. The system has an internally developed electronic health record that began adding CPOE functions in 2003. Three primary care sites were chosen for a two-phase direct observation time-

motion study of prescribing. During phase 1, one site was still using handwritten prescriptions, another had begun e-prescribing 11 months before the study began, and the third site 15 months before the study began. During phase 2, all three sites accessed the CPOE system from desktops in the examination rooms.

Because systematic reviews by others found that CPOE systems can reduce medication errors by 55 to 86 percent and preventable adverse drug events by 17 percent, the researchers suggest that the 20-second-per-patient increase in time

spent may be worthwhile in terms of improved safety and quality of patient care. The study was funded in part by the Agency for Healthcare Research and Quality (HS15319 and HS14739).

More details are in “Electronic prescribing at the point of care: A time-motion study in the primary care setting,” by Emily Beth Devine, Pharm.D., M.B.A., Ph.D., William Hollingsworth, Ph.D., Ryan N. Hansen, Pharm.D., and others in the February 2010 *HSR: Health Services Research* 45(1), pp. 152-171. ■ *DIL*

## Access to Care

### Relative inefficiency of rural critical access hospitals must be balanced against their contributions to care access and quality

Medicare created the critical access hospital (CAH) program to improve the financial viability of small, isolated rural hospitals that are critical to the care of Medicare beneficiaries in rural areas. Through its CAH program, Medicare pays these hospitals on a cost basis, instead of the prospective payment system it uses for other hospitals. This keeps them from being penalized if they lack the economies of scale needed to keep costs below the prospective payment rates paid by Medicare.

However, a new study shows that CAH hospitals are less cost-efficient than non-CAH rural hospitals.

Ryan L. Mutter, Ph.D., of the Agency for Healthcare Research and Quality (AHRQ), and Michael D. Rosko, Ph.D., of Widener University, compared the hospital-level cost inefficiency of CAHs and a group of similar, nonconverting rural hospitals paid on a prospective basis. They found that CAH facilities had more cost inefficiency (15.9 percent) than the comparison group (10.34 percent). Perhaps the most remarkable trend was the correlation between the rise in cost inefficiency and the number of years in the CAH program. Hospitals with only 1 year in the CAH program had a mean cost inefficiency of 13.33 percent, but with each extra year (up to 7 years) in the program, inefficiency increased, reaching a maximum of 21.85 percent.

In estimating efficiency, the researchers examined the relationship between provider inputs and intermediate outputs, such as discharges and outpatient visits. The study included a total of 534 hospitals. In the first year (1997) of the study, there were 12 CAH hospitals and 531 nonconverting hospitals; by 1994, there were 286 CAHs and 257 prospectively paid hospitals in the sample. The researchers believe that, given the potentially devastating effects of closing hospitals in isolated communities, the CAH program has achieved a reasonable balance among its objectives of efficiency, access, and quality. However, they remain concerned that too much inefficiency may be spawned by cost-based reimbursement, and advise that its cost and efficiency trends be monitored. This study was supported in part by the Agency for Healthcare Research and Quality (Contract No. 290-00-0004).

See “Inefficiency differences between critical access hospitals and prospectively paid rural hospitals,” by Drs. Rosko and Mutter, in the February 2010 *Journal of Health Politics, Policy and Law* 35(1), pp. 95-126. Reprints (AHRQ Publication No. 10-R056) are available from AHRQ.\* ■ *MWS*

## Requiring proof of citizenship cuts participation in Oregon's Medicaid family planning program

To combat Medicaid fraud by noncitizens, proof of citizenship has been a requirement for Medicaid eligibility since implementation of the Federal Deficit Reduction Act (FDRA), effective November 1, 2006. This requirement reduced family planning visits by a third under the Medicaid-funded Oregon Family Planning Expansion Project, according to a new study. However, the requirement did not affect visit differences by Hispanics and non-Hispanics, which were both down by about a third. This casts doubt on the need for proof of citizenship to combat Medicaid fraud by noncitizens, note the authors of the study. They also found that the citizenship requirement did reduce access to family planning services and preventive health care for thousands of families in Oregon. The Deficit Act also required teenage Medicaid applicants to provide their Social Security numbers, and applicants with other

insurance were no longer eligible for services under the program.

The Oregon researchers found that, during the study period, 61 percent of 698,832 family planning visits to State-funded clinics were billed to the Family Planning Expansion Project. Clients under age 20 accounted for 29 percent of all the visits, with clients aged 20-24 accounting for another 34 percent. The vast majority of services (97 percent) were sought by women, though the program was open to both sexes. While 21 percent of the visits were by Hispanic patients, Hispanic patients represented only 9 percent of visits billed to the project. White patients accounted for 82 percent of the visits and 74 percent of the clients had below-poverty incomes.

When the researchers compared Family Planning Expansion Project visits 18 months after the Deficit Act took effect with those in the 18 months prior to its implementation, they found a decline of 33 percent,

but a decline of only 10 percent for visits not billed to the project. Once the law took effect, visits by clients under age 18 declined by 46 percent, but by only 30 percent for clients aged 18 and older. The researchers collected data on use of family planning services from the Oregon Public Health Division from May 1, 2005 through April 30, 2008. Using these data, the researchers compared visit volume and demographic characteristics of clients before and after the change in requirements. The study was funded in part by the Agency for Healthcare Research and Quality (HS16181).

More details are in "Evidence that the Citizenship Mandate curtailed participation in Oregon's Medicaid Family Planning program," by Lisa Angus, M.P.H., and Jennifer DeVoe, M.D., D.Phil., in the April 2010 *Health Affairs* 29(4), pp. 690-698. ■ *DIL*

### Women's Health

## Awareness of turning points shared by abused women can help health care workers provide counseling

Women involved in abusive relationships who leave their partners share common experiences that prompt their departures, a new study finds. Judy C. Chang, M.D., M.P.H., of the University of Pittsburgh Medical Center, and colleagues held focus groups with 41 women and interviewed 20 more women who were undergoing counseling for domestic violence. They identified five turning points that health care workers may be able to identify to motivate women to leave their abusers.

Some of the women reported that they fled their abusers when they feared the abuse would spill over onto another family member, especially their children. They also left home when the abuse intensified, causing them to fear for their lives. The realization that support

and assistance was available to them also empowered women to leave. Finally, fatigue from continually losing hope that their situation would change and an abuser's unfaithfulness were last straws for some abuse victims.

Health care providers who are aware of these catalysts may be better able to counsel abused women and help them explore options for ending the abuse, the authors suggest. This study was funded in part by the Agency for Healthcare Research and Quality (HS13913).

"Understanding turning points in intimate partner violence: Factors and circumstances leading women victims toward change," by Dr. Chang, Diane Dado, M.S.W., L.C.S.W., Lynn Hawker, Ph.D., and others in the February 2010 *Journal of Women's Health* 19(2), pp. 251-259. ■ *KFM*

## Obstetrician malpractice claims lead to small reduction in inpatient deliveries, but not C-section rates

A dramatic rise in malpractice insurance premiums has sparked concern among physicians and health policymakers that access to care may be limited by physicians who no longer practice certain types of procedures. In a study of whether the timing of malpractice claims or the size of awards had any impact on obstetrical practice patterns in Florida, Gilbert W. Gimm, Ph.D., of Mathematica Policy Research, found a small decrease (six fewer per year) in the number of inpatient deliveries performed by physicians 3 years after the closing of a malpractice claim. If the malpractice award was \$250,000 or higher, physicians performed 14 fewer deliveries on average. Dr. Gimm did not find increased C-section rates or diminished access to obstetrical services.

Recent studies on the impact of malpractice pressure on physician supply have found small or no effects. Another indicator of diminished access would be if travel times for women undergoing high-risk deliveries increased. However, a Florida-based study found that travel times were not affected by tort reform. The author sought to extend these studies by providing evidence on whether practice patterns and delivery volume were affected by the timing of a

claim or the size of an award. The somewhat greater reduction in delivery volume (11 percent vs. 5 percent) in response to higher awards suggests that tort reforms with damage caps at \$250,000 would have some effect on limiting the reduction in average delivery volume.

During the study period (1992-2000), the average delivery volume of obstetrician-gynecologists (OB/GYNs) increased from 112 to 142 births, while deliveries by family practitioners declined from 80 to 41 births. The growth in the overall supply of physicians coupled with the increase in average volume of deliveries by OB/GYNs suggests that the small reduction in inpatient deliveries by OB/GYNs who had been sued was fully absorbed by other OB/GYNs. The findings were based on data on 1.2 million hospital deliveries in Florida during 1992-2000. The final sample included 1,772 physicians, almost all of whom were OB/GYNs. This study was supported by the Agency for Healthcare Research and Quality (HS14515).

See “The impact of malpractice liability claims on obstetrical practice patterns,” by Dr. Gimm, in the February 2010 *HSR: Health Services Research* 45(1), pp. 195-211. ■ MWS

## Satisfaction after hysterectomy linked to quality of life improvements

Women with persistent pelvic problems, such as fibroids and heavy bleeding, who get no relief from medicine or other treatments, often choose to undergo hysterectomy. However, nonclinical factors, including health-related quality of life, sexual function, and attitudes toward the uterus, are also factors influencing women’s decisions to have this surgery, according to a new study by Miriam Kuppermann, Ph.D., M.P.H., of the University of California, San Francisco, and colleagues.

They analyzed data obtained from 207 women who participated in the 8-year Study of Pelvic

Problems, Hysterectomy, and Intervention Alternatives and underwent hysterectomy. Nearly 64 percent of the women were satisfied in the year after their surgery; 21 percent were somewhat satisfied. Not surprisingly, women whose symptoms ceased after their hysterectomy were more likely than other women to be satisfied, as were women whose pelvic problems had interfered with their sex lives and their overall quality of life prior to surgery. Finally, women who saw a benefit in no longer having a uterus were more likely than women who did not share this view to elect to have the surgery and to be satisfied with that course of action.

The authors suggest that these findings illustrate how important it is for providers to discuss not only the clinical reasons for a woman to have a hysterectomy but also to explore the extent to which pelvic problems are affecting her sexual function and quality of life. This study was funded in part by the Agency for Healthcare Research and Quality (HS11657).

See “Predictors of hysterectomy use and satisfaction,” by Dr. Kuppermann, Lee A. Learman, M.D. Ph.D., Michael Schembri, M.A., and others in the March 2010 *Obstetrics & Gynecology* 115(3), pp. 543-551. ■ KFM

### Benefits of chemotherapy for elderly patients with lung cancer must be weighed against risk of long-term toxicities

A new, population-based study of the toxic impact of chemotherapy on elderly patients with nonsmall cell lung cancer (NSCLC) identifies a number of common short-term and long-term toxicities associated with treatment with different chemotherapy regimens. The researchers studied 14 different chemotherapy regimens and 50 toxicity-related problems. Overall, patients who received chemotherapy had 4.4 times the incidence of long-term toxicity than patients not given chemotherapy. Female patients, those with localized disease, and those with fewer medical conditions were more likely to have long-term toxicity.

The commonest short-term toxicities, which developed within 3 months or less of treatment, included: acute anemia (20.0 to 35.9 percent incidence); nausea (20.1 to 60 percent); and neutropenia, a decrease in an important type of white blood cell, (9.2 to 22.5 percent). For long-term toxicities, which developed beyond 3 months of treatment, the most common included: acute anemia (30.7 to 37.6 percent incidence); dehydration (24.9 to 33.6 percent); respiratory failure (26.3 to 40.8

percent); pulmonary fibrosis, or lung scarring, (25.0 to 33.3 percent); neutropenia (17.0 to 33.3 percent); nausea (16.0 to 25.6); and fever (13.3 to 20.0 percent).

The study drew on the National Cancer Institute's Surveillance, Epidemiology, and End Results Program—Medicare linked database. The researchers looked at 41,361 elderly men and 30,804 elderly women diagnosed with NSCLC between the beginning of 1991 and the end of 2002. The findings may help physicians and patients weigh the survival benefit from particular chemotherapy agents against the risk of difficult-to-manage long-term toxicity, the researchers suggest. Their study was funded in part by the Agency for Healthcare Research and Quality (HS16743).

More details are in "Chemotherapy-associated toxicity in a large cohort of elderly patients with non-small cell lung cancer," by Dale Hardy, Ph.D., Janice N. Cormier, M.D., M.P.H., Yan Xing, M.D., Ph.D., and others in the January 2010 *Journal of Thoracic Oncology* 5(1), pp. 90-98. ■ *DIL*

### Measure of inappropriate prescribing predicts risk of adverse drug events in older adults

Older patients who receive inappropriately prescribed drugs are at greater risk of suffering adverse drug events (ADEs) than patients who only receive appropriate drugs. ADE risk can be predicted with a measure of inappropriate drug prescribing, according to a new study. The researchers used a 6-criteria, modified version of the 10-criteria Medication Appropriateness Index (MAI) to create numerical scores for each medication a patient takes. Prescribed drugs are considered inappropriate if they have significant interactions with another

drug the patient takes, if the drug's impact is affected by the patient's disease, or for other reasons (for example, if there is no indication for the drug's use, it is not effective for the indication, or it unnecessarily duplicates the action of another prescribed drug).

Among the 236 elderly veterans completing the study, 14.4 percent experienced an ADE. Only the modified MAI score significantly predicted ADE risk, but the score on the original MAI or another widely used measure of drug appropriateness (the Beers criteria) did not. The mean modified MAI

score for these patients was 3.1. Every 1-point increase in the modified MAI score increased the patient's 3-month risk of an ADE by 13 percent.

The study used data from a sample of veterans aged 65 or older who were seen in the primary care clinics of the Iowa City Veterans Affairs Medical Center. Patients in the study received at least five prescription medications, lived in the general community (rather than a nursing home or other institution), and did not suffer from cognitive problems. MAI assessment of each

*continued on page 21*

## Adverse drug events

*continued from page 20*

patient's prescriptions was done by a trained clinical pharmacist. The investigators call for more research to confirm the association between the modified MAI scores and the

risk of ADEs at 3 months. The study was funded in part by the Agency for Healthcare Research and Quality (HS16094).

More details are in "Inappropriate prescribing predicts adverse drug events in older

adults," by Brian C. Lund, Pharm.D., M.S., Ryan M. Carnahan, Pharm.D., M.S., Jason A. Egge, Pharm.D., M.S., and others in the June 2010 *The Annals of Pharmacotherapy* 44(6), pp. 957-963. ■ DIL

## Early followup with a physician reduces readmissions for Medicare patients hospitalized for heart failure

Medicare patients treated for heart failure receiving early physician followup (within 7 days after hospital discharge) are less likely to be readmitted for additional treatment within 30 days of discharge than patients without early followup, a new study finds. Potentially avoidable readmissions for all Medicare hospitalizations cost Medicare up to a fifth (\$17 billion) of its hospital costs. For the heart failure study, 21.3 percent of the patients were readmitted within 30 days of discharge. The median rate for early followup among the included hospitals was 38.3 percent of patients.

The 30-day readmission rate for patients whose hospitals were in the lowest (first) quartile of early followup was 23.3 percent compared with a significantly lower rate of 20.5–20.9 percent for hospitals in the second or higher quartiles. Only 7.5 percent of the patients getting early followup saw a cardiologist. Early followup by a cardiologist resulted in a significantly lower 30-day death rate for patients treated in hospitals with the highest versus lowest quartiles of early followup by a cardiologist.

The researchers used data from inpatient Medicare claims from 2003 through 2006 for patients over 65 years old who were in two national heart failure patient registries that included patients from 225 hospitals. Transfers to or from another hospital or heart-related emergency department visits that did not result in hospitalization were not counted as readmissions. The researchers suggest that models of care that include the use of nurse practitioners or physician assistants under physician supervision may allow more heart failure patients to be seen early after their hospital discharge. The study was funded in part by the Agency for Healthcare Research and Quality (HS16964).

More details are in "Relationship between early physician follow-up and 30-day readmission among Medicare beneficiaries hospitalized for heart failure," by Adrian F. Hernandez, M.D., M.H.S., Melissa A. Greiner, M.S., Gregg C. Fonarow, M.D., and others, in the May 2010 *Journal of the American Medical Association* 303(17), pp. 1716-1722. ■ DIL

## Agency News and Notes

### Heart bypass surgery death rates drop sharply

The proportion of patients who died in the hospital after having heart bypass surgery fell 43 percent from 42 deaths per 1,000 admissions for the procedure to 24 per 1,000 between 2000 and 2006, according to the latest News and Numbers from the Agency for Healthcare Research and Quality (AHRQ).

Rural hospitals experienced the greatest improvement (92

percent), although their rate of 38 deaths per 1,000 admissions was still higher than other hospitals. Suburban hospitals near large metropolitan areas had the lowest rate (21 per 1,000 admissions).

AHRQ also found that:

- In 2006, the heart bypass surgery death rate for women remained higher (35 per 1,000 admissions) than for men (20 per 1,000 admissions).

- Hospitals in counties with small cities (fewer than 50,000 residents) were the only ones that reported an increase in heart bypass surgery death rates between 2000 and 2006 (28 versus 31 per 1,000 admissions).
- In 2006, uninsured patients had the lowest heart bypass surgery death rate (23 deaths per 1,000 admissions),

*continued on page 22*

## Heart bypass surgery

*continued from page 21*

followed by privately insured, Medicare, and Medicaid patients (24, 24.5, and 28 deaths per 1,000 admissions, respectively).

This AHRQ News and Numbers is based on information in “Deaths per 1,000 hospital admissions with

coronary artery bypass graft surgery age 40 and over, United States, 2000 and 2006,” Table 4-4-2.1 appendix to the 2009 *National Healthcare Disparities Report*, which examines the disparities in Americans’ access to and quality of health care, with breakdowns by race, ethnicity, income, and education. ■

## Use of physical restraint in nursing homes cut by half in 8 years

The number of residents at nursing homes who were kept physically restrained dropped by more than half from 1999 to 2007, according to the latest News and Numbers from the Agency for Healthcare Research and Quality. Nursing home residents who were kept physically restrained declined from 11 percent in 1999 to 5 percent in 2007. Restraints include belts, vest and wrist ties or bands, or special chairs or bedside rails to keep residents seated or in bed.

The Federal agency also found that:

- The percentage of Asian/Pacific Island and Hispanic residents who were restrained physically declined from nearly 16 percent in 1999 to 7 percent in 2007. This group had the highest rate in both 1999 and 2007, but they also saw the greatest reduction among all racial and ethnic groups.
- In contrast, black residents were the least likely to be physically restrained in both 1999 and 2007 (10 percent and 4 percent, respectively).

- Use of physical restraints among American Indian/Alaska Native and white residents also declined by roughly half (from just over 10 percent to 6 percent and from just over 10 percent to 5 percent, respectively).
- Overuse of physical restraints may reflect poor quality of care because residents who are restrained daily can become weak and lose daily functioning abilities. They are also more prone to pressure sores and other problems, such as chronic constipation or incontinence as well as emotional problems.

This AHRQ News and Numbers is based on information in “Long-stay nursing home residents who were physically restrained, United States, 1999 and 2007,” Table 11-1-17.1 appendix to AHRQ’s 2009 *National Healthcare Disparities Report* ([www.ahrq.gov/qual/qdr09.htm](http://www.ahrq.gov/qual/qdr09.htm)), which examines the disparities in Americans’ access to and quality of health care, with breakdowns by race, ethnicity, income, and education. ■

## Cost of family coverage provided by employers 1.5 times more in 2009 than in 2000

The annual premium for a family health plan sponsored by an employer cost about 54 percent more in 2009 than it did in 2000—\$13,027 and \$8,437 (adjusted for inflation), respectively—according to the latest News and Numbers from the Agency for Healthcare Research and Quality (AHRQ). During the same period, the average cost of an annual premium for a single coverage plan rose by 41 percent,

from \$3,308 (adjusted for inflation) to \$4,669.

According to AHRQ’s analysis for the period:

- Just under a third (30.5 percent) of the 59 million U.S. workers who were enrolled in employer-sponsored health plans had family coverage, while about half were enrolled in single-coverage plans, and nearly one-fifth had employee-plus-one coverage, which is health insurance that covers the employee plus one

family member at a lower premium rate than full family coverage.

- Among the 10 largest States, New York had the highest average premiums, ranging from \$13,757 for family plans to \$5,121 for single coverage, and Ohio had the lowest, ranging from \$11,870 for family coverage to \$4,261 for single coverage.

*continued on page 23*

## Family coverage

*continued from page 22*

- The average annual employee contributions to health insurance premiums were \$3,474 for family coverage (26.7 percent of the average family premium), \$2,363 for employee-plus-one coverage (26.1 percent of the average premium), and \$957 for single coverage (20.5 percent of the average single premium).

- About 21 percent of workers with single coverage, 10 percent with employee-plus-one coverage, and 11 percent with family coverage made no contribution toward their health insurance premium. However, these proportions varied among the 10 largest States.

The data in this AHRQ News and Numbers summary are taken from the Medical Expenditure

Panel Survey (MEPS), a detailed source of information on the health services used by Americans, the frequency with which they are used, the cost of those services, and how they are paid for. For more information, see *State Differences in the Cost of Job-Related Health Insurance, 2009* at

[www.meps.ahrq.gov/mepsweb/data\\_files/publications/st286/stat286.pdf](http://www.meps.ahrq.gov/mepsweb/data_files/publications/st286/stat286.pdf). ■

## Mental disorders and/or substance abuse related to one of every eight emergency department cases

Nearly 12 million visits made to U.S. hospital emergency departments (EDs) in 2007 involved people with a mental disorder, substance abuse problem, or both, according to the latest News and Numbers from the Agency for Healthcare Research and Quality (AHRQ). This accounts for 1 in 8 of the 95 million visits to EDs by adults that year. Of these visits, about two-thirds involved patients with a mental disorder, one-quarter was for patients with a substance abuse problem, and the rest involved patients dealing with both a mental disorder and substance abuse.

AHRQ's analysis also found that for the 12 million ED visits involving mental health and/or substance abuse problems:

- Depression and other mood disorders accounted for 43 percent of the visits, while 26 percent were for anxiety disorders, and 23 percent involved alcohol-related problems.
- Mental health and/or substance abuse-related visits were two and a half times more likely to result in

hospital admission than visits not involving mental disorders and/or substance abuse. Nearly 41 percent of mental disorder and/or substance abuse-related visits resulted in hospitalization.

- Medicare was billed for 30 percent of all mental health and/or substance abuse ED visits; private insurance was billed for 26 percent; the uninsured for 21 percent; and Medicaid 20 percent.

This AHRQ News and Numbers is based on data in *Mental Health and Substance Abuse-Related Emergency Department Visits among Adults, 2007* ([www.hcup-us.ahrq.gov/reports/statbriefs/sb92.pdf](http://www.hcup-us.ahrq.gov/reports/statbriefs/sb92.pdf)). The report uses statistics from the 2007 Nationwide Emergency Department Sample, an AHRQ database that is nationally representative of ED visits in all non-Federal hospitals. The Nationwide Emergency Department Sample contains 26 million records from ED visits from approximately 1,000 community hospitals nationwide. This represents 20 percent of all U.S. hospital EDs. ■

## Price tag for treating back problems now totals \$30.5 billion

Treating back problems, one of the most bothersome medical problems, cost Americans more than \$30 billion in 2007—up from \$16 billion in 1997 (in 2007 dollars), according to the latest News and Numbers from the Agency for Healthcare Research and Quality (AHRQ). According to AHRQ's analysis, in 2007 about 27 million people, or nearly 12 percent of adults aged 18 and older, reported having back problems. Of those, more than 19 million sought medical treatment.

AHRQ also found that:

- In 2007, two-thirds of the total spent for treatment of back problems went to pay physicians, chiropractors, and physical therapists for ambulatory care and for prescription drugs (\$18 billion and \$4.5 billion, respectively). This is up from \$9.3 billion spent on office-based care and \$1.2 billion on prescription drugs in 1997 (in 2007 dollars).

*continued on page 24*

## Back problems

continued from page 23

- The remaining expenses in both 2007 and 1997 were for hospital care, emergency room visits, and home health services.
- The average expenditure for treatment of back problems was \$1,589 per adult in 2007 (\$1,146 for ambulatory care and \$446 for prescription drugs).
- Out-of-pocket payments by patients accounted for roughly 17 percent of the total spent in 2007 for treatment of back problems; private health insurance accounted for 45 percent; Medicare 23 percent; and

other sources, such as workers' compensation, 15 percent.

The data in this AHRQ News and Numbers summary are taken from the Medical Expenditure Panel Survey (MEPS), a detailed source of information on the health services used by Americans, the frequency with which they are used, the cost of those services, and how they are paid for. For more information, see *Back Problems: Use and Expenditures for the U.S. Adult Population, 2007* at [www.meps.ahrq.gov/mepsweb/data\\_files/publications/st289/stat289.pdf](http://www.meps.ahrq.gov/mepsweb/data_files/publications/st289/stat289.pdf). ■

## Blacks hospitalized for high blood pressure five times more often than whites

The hospital admission rate for blacks with hypertension was 161 per 100,000 people in 2006—nearly 5 times the hospitalization rate for whites (33 admissions per 100,000), according to the latest News and Numbers from the Agency for Healthcare Research and Quality (AHRQ).

Hypertension, which can significantly increase a person's risk of heart attack, stroke, or kidney failure, is defined as blood pressure of 140/90 mm Hg or higher. There are a quarter of a million hospitalizations each year for hypertension with

complications. AHRQ also found that in 2006:

- The admission rate for Hispanics with high blood pressure was 61 per 100,000 people, or nearly twice that of whites.
- Asians and Pacific Islanders had the lowest admission rate for high blood pressure (26 per 100,000).
- Women were admitted for high blood pressure more often than men (56 versus 40 hospitalizations per 100,000).

- The poorest Americans were 2.5 times more likely to be admitted for high blood pressure than the wealthiest (83 versus 32 admissions per 100,000).

This AHRQ News and Numbers is based on information in "Admissions for Hypertension," Table 17-2-1.1a appendix to AHRQ's *2009 National Healthcare Disparities Report* ([www.ahrq.gov/qual/qrd09.htm](http://www.ahrq.gov/qual/qrd09.htm)), which examines disparities in Americans' access to and quality of health care, with breakdowns by race, ethnicity, income, and education. ■

## New study finds rotator cuff injuries treatable, but evidence unclear whether surgery is preferable

Injuries to the rotator cuff are treatable, but it is unclear which treatment option—surgery or nonsurgical treatments such as exercise or medication—is best, according to a new comparative effectiveness report published by the Agency for Healthcare Research and Quality (AHRQ).

Tears to the shoulder's rotator cuff, which is composed of four muscle-tendon units, are common among older adults. Rotator cuff tears can cause significant pain and limit arm motion.

The report, prepared for AHRQ by the University of Alberta Evidence-based Practice Center, examined

treatment and rehabilitative options for rotator cuff tears. It found that all treatments, whether surgical or nonsurgical, result in improvement, but found few differences between interventions. It also did not find evidence indicating ideal timing of surgery.

Most older patients who suffer a rotator cuff tear are first treated with up to 3 months of nonsurgical treatment such as pain and anti-inflammatory medications, exercise, and rest. If nonsurgical treatments do not work, the rotator cuff may be repaired surgically, using a variety of methods ranging from

continued on age 25

## Rotator cuff injuries

continued from page 24

minimally invasive techniques to an open operation. Patients can then undergo rehabilitation to restore their range of motion, muscle strength, and function following surgery.

Rotator cuff tears also can occur in younger adults, usually as a result of traumatic injury. In such cases they are almost always treated with surgery.

Some doctors have maintained that earlier surgery results in less pain and better use of the shoulder, leading to an earlier return to work and decreased costs; thus, patients often face the difficult decision of opting for surgery rather than waiting for nonoperative treatments to work. However, researchers found little evidence that earlier surgery benefits patients.

*Comparative Effectiveness of Nonoperative and Operative Treatments for Rotator Cuff Tears* is the newest comparative effectiveness report from the AHRQ's Effective Health Care Program. The Effective Health Care Program represents the leading Federal effort to compare alternative treatments for health conditions and make the findings public, to help doctors, nurses, pharmacists, and others work together with patients to choose the most effective treatments.

In conjunction with the new report, AHRQ will soon publish plain-language summary guides about treating rotator cuff tears for patients, clinicians, and policymakers. Summary guides on numerous clinical topics and other information and background on the Effective Health Care Program can be found at [www.effectivehealthcare.ahrq.gov](http://www.effectivehealthcare.ahrq.gov). ■

## Announcements

### Atul Gawande is plenary speaker at AHRQ's annual conference September 26-29

**A**tul Gawande, renowned surgeon, author, and innovator, will be the featured speaker for the September 28 plenary session at the 2010 AHRQ Annual Conference. Come hear Dr. Gawande talk about the current state of health care and system transformation in the United

States. AHRQ's fourth annual conference, "Better Care, Better Health: Delivering on Quality for All Americans," will be held September 26-29 in Bethesda, Maryland.

Leading authorities in health care research and policy will hold sessions on transforming health care delivery; developing new

patient care models, strengthening preventive care, and reducing disparities; improving quality and patient safety; and measuring and reporting on provider and system performance. To register for the free conference, visit AHRQ's conference Web site at <http://meetings.capconcorp.com/ahrq>. ■

## Patient-centered medical home Web site launched

**T**he Agency for Healthcare Research and Quality (AHRQ) recently launched a new Web site—[www.pcmh.ahrq.gov](http://www.pcmh.ahrq.gov)—devoted to providing objective information to policymakers and researchers about the medical home. The patient-centered medical home (PCMH) is a promising model for transforming the organization and delivery of primary care. A medical home is not simply a place, but a model of primary care that delivers care that is:

- Patient-centered
- Comprehensive
- Coordinated
- Accessible

- Continuously improved through a systems-based approach to quality and safety

The new Web site provides policymakers and researchers with access to evidence-based resources about the medical home and its potential to transform primary care and improve the quality, safety, efficiency, and effectiveness of U.S. health care.

The Web site provides users with searchable access to a rich database of publications and other resources on the medical home and exclusive access to the following AHRQ-funded white papers focused on critical medical home issues:

continued on page 26

## Medical home

*continued from page 25*

- “Necessary but not Sufficient: The HITECH Act and Health Information Technology’s Potential to Build Medical Homes.” This paper looks at how the HITECH act and health reform legislation supports the PCMH model and offers policy recommendations on increasing the ability of health information technology (IT) to contribute to the patient-centered medical home.
- “Engaging Patients and Families in the Medical Home.” This paper offers policymakers and researchers insights into opportunities for engaging patients and families, examples of existing efforts, and key lessons for future efforts.

- “Integrating Mental Health Treatment into the Patient Centered Medical Home.” This paper examines the conceptual similarities in and differences between the PCMH and current strategies used to deliver mental health treatment in primary care. It presents programmatic and policy actions needed to facilitate the integration of high-quality mental health treatment within a PCMH.

AHRQ believes that health IT, workforce development, and payment reform are critical to achieving the potential of the medical home. The Web site provides a link to find out more about AHRQ’s approach to the medical home. ■

## AHRQ tool that measures patients’ home health care experiences to be implemented by CMS

A tool developed by the Agency for Healthcare Research and Quality (AHRQ), designed to measure patients’ experiences with Medicare-certified home health agencies, is being implemented by the Centers for Medicare and Medicaid Services (CMS) on a voluntary national basis beginning in October 2010. The Consumer Assessment of Healthcare Providers and Systems (CAHPS®) Home Health Care Survey captures patients’ perceptions on areas such as patient care, communication between providers and patients, specific care issues (e.g., medications, home safety, and pain),

and overall rating of care. It is currently available in five languages: English, Spanish, Chinese, Russian, and Vietnamese.

The survey is designed to meet the following goals:

- Create incentives for home health agencies to improve their quality of care through public reporting of survey results.
- Hold health care providers accountable by informing the public about the providers’ quality of care.
- Produce standardized data on patients’ perspectives of care that allow objective and meaningful comparisons between home

health agencies on domains that are important to consumers.

The Home Health Care Survey is part of a family of CAHPS® surveys that asks patients to report on and rate their experiences with health care. The survey, along with implementation instructions from CMS, is available online at [www.homehealthcahps.org](http://www.homehealthcahps.org). For technical assistance with the CAHPS® Home Health Care Survey, please send an e-mail to [HomeHealthCAHPS@cms.hhs.gov](mailto:HomeHealthCAHPS@cms.hhs.gov), call (866) 354-0985, or fax (919) 542-7400. For overall information on CAHPS®, go to [www.cahps.ahrq.gov](http://www.cahps.ahrq.gov). ■

## Introducing the electronic Preventive Services Selector Widget

Access recommendations of the U.S. Preventive Services Task Force (USPSTF) at the click of a button—introducing the electronic *Preventive Services Selector Widget!*

The electronic *Preventive Services Selector* (ePSS) is an application designed to help primary care clinicians identify the screening, counseling, and preventive medication services that are appropriate for their patients. The ePSS widget provides easy and free access to these clinical preventive service recommendations from the USPSTF.

A widget is an online tool that can be easily added to any Web site or blog. Embedding a short amount of Web-based code will add the widget to your site and content will be automatically updated. It’s easy, fun, and can be used over and over again!

You can find out more about the evidence-based recommendations of the USPSTF at: [www.uspreventiveservicestaskforce.org](http://www.uspreventiveservicestaskforce.org) and [www.epss.ahrq.gov](http://www.epss.ahrq.gov) ■

## AHRQ adds new guides to supplement ischemic heart disease comparative effectiveness review

The Agency for Health Care Research and Quality (AHRQ) Effective Health Care (EHC) Program has added new materials relevant to the comparative effectiveness review *Comparative Effectiveness of Angiotensin Converting Enzyme Inhibitors or Angiotensin II Receptor Blockers Added to Standard Medical Therapy for Treating Stable Ischemic Heart Disease*.

- A 10-page consumer guide, “*ACE Inhibitors and ARBs To Protect Your Heart?*,” provides plain-language information on coronary heart disease and helps patients work with clinicians to understand the benefits and risks of these treatments. This guide is available at: [www.effectivehealthcare.ahrq.gov/index.cfm/search-for-guides-reviews-and-reports/?pageaction=displayproduct&productID=384](http://www.effectivehealthcare.ahrq.gov/index.cfm/search-for-guides-reviews-and-reports/?pageaction=displayproduct&productID=384).
- A two-page clinician guide, “*Adding ACEIs and/or ARBs to Standard Therapy for Stable Ischemic Heart Disease: Benefits and Harms*,” offers clinical bottom-line findings. The findings include level-of-confidence ratings for possible benefits and harms. This guide is available at:

[www.effectivehealthcare.ahrq.gov/index.cfm/search-for-guides-reviews-and-reports/?pageaction=displayproduct&productID=385](http://www.effectivehealthcare.ahrq.gov/index.cfm/search-for-guides-reviews-and-reports/?pageaction=displayproduct&productID=385).

- Two continuing medical education (CME) activities educate the learner on the important findings from the comparative effectiveness review and their application to patient care. These activities have been approved for American Medical Association PRA Category 1 Credit. They are available at: <http://effectivehealthcare.ahrq.gov/index.cfm/guides-cmece-and-other-resources-for-clinicians>.
- Two faculty slide talks summarize important findings from the comparative effectiveness review and highlight the relevance of the findings within the clinical setting. The talks are available at: <http://effectivehealthcare.ahrq.gov/index.cfm/slide-library-and-other-resources-for-faculty-researchers-and-policymakers/slide-library>.

Learn how you can personalize your interactions with and share what you learn on the EHC Program Web site. Visit [www.effectivehealthcare.ahrq.gov/index.cfm/personalization-and-social-media-tools](http://www.effectivehealthcare.ahrq.gov/index.cfm/personalization-and-social-media-tools). ■

## Research Briefs

**Alexander, K. P., and Peterson, E.D. (2010, May). “Minimizing the risks of anticoagulants and platelet inhibitors.” (AHRQ grant HS16964) *Circulation* 121(17), pp. 1960–1970.**

In this article, the authors summarize the current state of antithrombotic therapy. They note that thrombosis contributes to many of the problems associated with plaque buildup in the arteries (atherosclerotic disease). They discuss the major anticoagulants and platelet inhibitors approved for use in patients with acute coronary syndromes, their characteristics, and risks. The risks include drug-, patient-, and provider-specific factors related to thrombosis

formation or bleeding events. Finally, the authors discuss the future development of safer agents, better monitoring, and clinical process improvement.

**Bachhuber, M., Bilker, W. B., Wang, H., and others. (2010, May). “Is antiretroviral therapy adherence substantially worse on weekends than weekdays?” (AHRQ grant HS10399). *Journal of Acquired Immune Deficiency Syndromes* 54(1), pp. 109–110.**

In this letter to the editor, the researchers address whether HIV-infected patients adhere to their antiretroviral therapy as well on weekends (defined as from 5 p.m. on Friday to 5 p.m. on Sunday) as

they do during the more structured weekdays. A group of 116 HIV-infected patients with low blood levels of HIV RNA (75 copies per ml) while under treatment were followed for up to 12 months. Median adherence to the drug regimen was slightly, but significantly, higher on weekdays (95.3 percent) than on weekends (93.2 percent). This small weekday/weekend difference was unlikely be clinically significant, the researchers said. Although weekends are not necessarily times for clinicians to be concerned about medication adherence, the researchers recommend helping

*continued on page 28*

## Research briefs

*continued from page 27*

HIV-infected patients develop plans for any periods involving altered routines.

**Capps, C., Dranove, D., and Lindrooth, R. C. (2010, January). “Hospital closure and economic efficiency.” (AHRQ grant HS10730). *Journal of Health Economics* 29(1), pp. 87-109.**

The researchers present a new framework for assessing the effects of closing hospitals on both social welfare and the local economy. Closing a local hospital reduces patient welfare, primarily in terms of travel time for the patient and friends and family who visit, but tends to reduce local costs. The researchers use five hospital closures in two States to test their framework and find that, on balance, the cost savings from urban hospital closures more than offset the decrease in patient welfare. Because some of the cost savings are shared nationally (for example, by the Medicare program), the total surplus in the local community due to a hospital closure may be less than anticipated, the researchers conclude.

**Clark, D. E., Hannan, E. L., and Raudenbush, S. W. (2010, April). “Using a hierarchical model to estimate risk-adjusted mortality for hospitals not included in the reference sample.” (AHRQ grant HS15656). *HSR: Health Services Research* 45(2), pp. 577–587.**

The researchers developed a method for any hospital to evaluate patient mortality using a hierarchical logistic regression equation. This equation, which was derived from a reference sample (the American College of Surgeons National Trauma Data Bank), was developed to allow a hospital that is

not part of the reference sample to generate a performance score for quality comparison. The researchers validated the estimated algorithm against actual results using standard software.

**Clark, M. C., and Diamond, P. M. (2010). “Depression in family caregivers of elders: A theoretical model of caregiver burden, sociotropy, and autonomy.” (AHRQ grant HS13750). *Research in Nursing and Health* 33, pp. 20-34.**

To identify caregivers at high risk for depression so they can be assisted in the early stages of caregiving, the researchers sought to assess the usefulness of the diathesis-stress model for family caregivers. This model emphasizes the role of sociotropy (strong concerns about interpersonal relationships) and autonomy (high achievement concerns) as personality factors that may lead to depression through their interaction with a stress event. For this study, 112 caregivers completed questionnaires on depression, caregiving burden, dysfunctional attitudes, and personal style. The results supported the model by showing that the development of depression was precipitated by the activation of dormant vulnerabilities (sociotropy and autonomy) by a stressor (caregiver burden). These personal characteristics can assist in identifying caregivers at high risk of depression.

**Dimick, J. B., Osborne, N. H., Hall, B. L., and others. (2010). “Risk adjustment for comparing hospital quality with surgery: How many variables are needed?” (AHRQ grant HS17765). *Journal of the American College of Surgeons* 210, pp. 503-508.**

To better engage surgeons and accelerate quality improvement, the American College of Surgeons (ACS) National Surgical Quality Improvement Program (NSQIP) is moving toward sampling a small number of targeted procedures instead of sampling all procedures. By reducing the number of covariates used for patient risk adjustment, this would decrease the burden of data collection and lower the costs to participating hospitals. For the five core general surgery operations examined in the study, the researchers found that procedure-specific hospital quality variables for both morbidity and mortality can be adequately risk-adjusted with a limited number of variables. In the context of the ACS NSQIP, this more limited model will dramatically reduce the burden of data collection for participating hospitals.

**Fleishman, J. A., and Cohen, J. W. (2010, April). “Using information on clinical conditions to predict high-cost patients.” *HSR: Health Services Research* 45(2), pp. 532-552. Reprints (AHRQ Publication No. 10-R052) are available from AHRQ.\***

The researchers used nationally representative data from the Medical Expenditure Panel Survey to compare expenditure prediction models. They examined three approaches to incorporating clinical condition information: the prospective risk score generated by the diagnostic cost group (DCG) algorithm, indicators of specific prevalent chronic conditions, and a count of the number of chronic conditions. The DCG risk score provided the greatest improvement in prediction among the sets of variables considered. However, the

*continued on page 29*

## Research briefs

*continued from page 28*

number of chronic conditions also significantly predicted high-cost cases, controlling for DCG score category. In contrast, separate indicators of specific prevalent diagnoses were significant predictors of high costs when the model excluded the DCG score. However, the set of key condition indicators provided less improvement than the count of chronic conditions when the DCG score was controlled.

**France, D. J., Greevy, R. A., Liu, X., and others. (2010, March). “Measuring and comparing safety climate in intensive care units.” (AHRQ grant HS15934). *Medical Care* 48(1), pp. 279-284.**

The safety attitudes questionnaire (SAQ) has been used extensively to measure safety climate in intensive care units (ICUs) in the United States and abroad since 2000. It measures six domains: teamwork climate, safety climate, perceptions of management, job satisfaction, working conditions, and stress recognition. Using the SAQ, the researchers sought to measure the safety climate in 110 ICUs in 61 hospitals owned and operated by a single for-profit company. A total of 1,502 (43 percent) surveys were completed by physicians, respiratory therapists, pharmacists, managers, and other providers. The study found a positive safety climate that varied significantly between ICUs and provider types. Survey respondents scored perceptions of management and working conditions significantly lower than the other domains of safety climate.

**Haukoos, J. S., Witt, M. D., and Lewis, R. J. (2010). “Derivation and reliability of an instrument**

**to estimate medical benefit of emergency treatment.” (AHRQ grant HS17526). *American Journal of Emergency Medicine* 28, pp. 404-411.**

The researchers developed and evaluated the reliability of a tool to estimate the medical benefit of emergency treatment compared with routine outpatient care. The results of using the tool to evaluate a patient’s medical records for a 30-day period after the initial visit to the emergency department (ED) was a rating of either significant benefit, possible benefit, or unlikely benefit. The instrument was independently applied by multiple investigators to three different groups of ED patients (300 from a general ED population, 300 from a homeless ED population, and 275 from an HIV-infected ED population). When applied individually, the tool exhibited good to excellent reliability. However, when multiple raters applied it using a consensus process, the reliability was excellent to outstanding.

**Hill, S., and Miller, G. E. (2010, May). “Health expenditure estimation and functional form: Applications of the generalized gamma and extended estimating equation models.” *Health Economics* 19(5), pp. 608-627. Reprints (AHRQ Publication No.10-R063) are available from AHRQ.\***

The researchers used data from the United States Medical Expenditure Panel Survey to compare different mathematical regression approaches to estimate health expenditures for the elderly and privately insured adults. They compared the bias, predictive accuracy, and marginal effects of generalized gamma models, extended estimating equations (EEEs), and other mathematical

forms. The equations were used to estimate models of total health expenditures and prescription drug expenditures for the two populations. The researchers found that it was important to examine their assumptions about the link functions used. The EEE model, which has a flexible link function, performed as well or better than the other models tested.

**Hoff, T. (2010, January–March). “Managing the negatives of experience in physician teams.” (AHRQ grant HS11697). *Health Care Management Review* 35(1), pp. 65-76.**

This paper examines how overreliance on experience can undermine learning, participation, and entrepreneurship among teams of physicians in health care organizations. The author drew on 100 hours of direct observation of normal workdays for physician teams in two different work settings in an academic medical center. He found three experience-based schemas that physician teams used to structure social relations and perform work. Each of these schemas had the potential for undermining learning, participation, and entrepreneurship in the group. To avoid such undermining, the author suggests that health care organizations promote bureaucratic forms of control that enable physicians to engage learning, participation, and entrepreneurship in their work.

**Jolly, S., Kao, C., Bindman, A. B., and others. (2010). “Cardiac procedures among American Indians and Alaska natives compared with non-Hispanic whites hospitalized with ischemic heart disease in California.” (AHRQ interagency agreement**

*continued on page 30*

## Research briefs

continued from page 29

with the Indian Health Service), *Journal of General Internal Medicine* 25(5), pp. 430–434.

American Indians/Alaska Natives (AI/AN) have a higher rate of heart disease and cardiac-related deaths than whites. To understand the source of this disparity, the researchers compared rates of cardiac procedures among AI/AN with rates for whites. The data on hospitalizations for ischemic heart disease (796 for AI/AN and 90,971 for whites) was collected in 37 of 58 California counties during 1998–2002. The researchers did not find lower rates for AI/AN than for whites for cardiac catheterization and percutaneous cardiac intervention. Adjustment for age, sex, comorbidities, and payer source did not result in significant differences. Additional research is needed to identify the source of the disparities, conclude the researchers.

**Koopman, R.J. (2010, May).** “Health and information technology evaluation and education: Finding our way.” (AHRQ grant HS17948). *Family Medicine* 42(5), pp. 312–313.

The article serves as an introduction to a special issue of the Journal on Health Information Technology. The author puts the issue in context, noting that use of health information technology (IT) promises benefits, but can have unintended consequences. She gives brief previews of the topics covered in the issue, such as training family practice residents in use of this technology, the impact of electronic medical records on workflow and physician efficiency, the promise of electronic clinical decision support systems, and the impact of health IT on doctor–patient interactions.

**Kreuter, F., Olson, K., Wagner, J., and others. (2010).** “Using proxy measures and other correlates of survey outcomes to adjust for non-response: Examples from multiple surveys.” *Journal of the Royal Statistical Society* 173 (Pt. 2), pp. 389–407. Reprints (AHRQ Publication No. 10-R058) are available from AHRQ.\*

Household surveys in many countries have witnessed a decline in response rates over the past few decades. The danger of a low response rate is the presence of nonresponse bias if sampled people who are unlikely to participate in a survey differ systematically from participants with regard to survey outcomes of interest. Weighting is one strategy used to address potential nonresponse. However, weighting is effective only when the variables used in constructing weights are highly correlated with both the survey variables of interest and the response propensity. The researchers examined traditional covariates and new auxiliary variables, such as interviewer observations, for five major American and European surveys. Their results show the difficulty of finding suitable covariates for nonresponse adjustment and the need to improve the quality of auxiliary data.

**Li, Y., Schnelle, J., Spector, W. D., and others. (2010).** “The ‘Nursing Home Compare’ measure of urinary/fecal incontinence: Cross-sectional variation, stability over time, and the impact of case mix.” *HSR: Health Services Research* 45(1), pp. 79–97. Reprints (AHRQ Publication No. 10-R050) are available from AHRQ.\*

The Centers for Medicare & Medicaid Services (CMS) maintain a Web site titled “Nursing Home Compare” that publishes outcome

measures derived from resident health assessments. These nursing home quality measures (QMs) should reflect true performance differences between facilities. However, facility variation in QM rates may be affected by varying facility case mix as well as varying care practices. The researchers assessed the potential impact of facility case mix on both the cross-sectional (or between-facility) variations and short-term stability of the CMS QM for urinary/fecal incontinence. They found that at least half of the between-facility variation of the CMS QM was explained by the facility case mix. In addition, both the CMS QM and case mix showed relatively high stability over the short term and, as a result of minimal risk adjustment of the QM, over 25 percent of its short-term variation was explained by case mix.

**Luo, N., Ko, Y., Johnson, J. A., and others. (2009).** “The association of survey language (Spanish vs. English) with Health Utilities Index and EQ-5D index scores in a United States population sample.” (AHRQ grant HS10243). *Quality of Life Research* 18, pp. 1377–1385.

The researchers compared several multiattribute health status classification systems (MAHSCS) to explore whether variations in their index scores were associated with the survey language (Spanish vs. English). The three MAHSCS compared included the EQ-5D, the Health Utilities Index (HUI) Mark II (HUI2), and HUI Mark III (HUI3). These questionnaires are all preference-based health-related quality of life measures and are available in English, Spanish, and other languages. The researchers found that the EQ-5D and the HUI2/3 health indices exhibited

continued on page 31

## Research briefs

*continued from page 30*

different outcomes in comparison with Hispanic and non-Hispanic American residents, suggesting that the choice of surveys matters when comparing culturally diverse populations. For example, Hispanics taking the HUI2/3 in Spanish were less likely than non-Hispanics taking the same surveys in English to report problems/disabilities in vision, speech, self-care, emotion, pain, and cognition. By contrast, no important differences were found in EQ-5D dimensions between any groups.

**Meyerhoefer, C. D., and Zuvekas, S. H. (2010).** “New estimates of the demand for physical and mental health treatment.” *Health Economics* 19, pp. 297-315. Reprints (AHRQ Publication No. 10-R056) are available from AHRQ.\*

Consumer price responsiveness is central to U.S. health care reform proposals, but the best evidence is from the RAND Health Insurance Experiment (HIE), now more than 25 years old. The researchers estimated health care demands by calculating expected end-of-year prices and incorporating them into a zero-inflated ordered probit model applied to several overlapping panels of data from 1996 to 2003. They found that the demand for outpatient mental health visits has become substantially less price elastic over the last 25 years. The RAND HIE had found that the demand for mental health visits was substantially more elastic than that for physical health visits. The new study found that the price responsiveness for mental health visits during the 1996-2003 period for the full U.S. population decreased substantially and is now slightly lower than physical health

visits. The authors suggest that rapid changes in medical technology and the diffusion of managed care may, in part, account for this change.

**Mularski, R. A., Campbell, M. L., Asch, S. M., and others. (2010).** “A review of quality of care evaluation for the palliation of dyspnea.” (Contract No. 290-05-0034). *American Journal of Respiratory and Critical Care Medicine* 181(6), pp. 534-538.

Despite the commonness and debilitation of dyspnea (difficult or labored breathing), clinical assessment and palliation of dyspnea is sporadic, and few quality measures exist to guide dyspnea care improvement. In this dyspnea quality measure review, the researchers identified and reviewed 5 operationalized quality measures, 14 quality indicators, and clinical assessment tools in 4 categories. Because of the many etiologies and treatment options for dyspnea, they were unable to make recommendations for how treatment should be operationalized into quality measures that would reliably link to improved patient outcomes. However, they did recommend that regular reassessment after therapeutic interventions with an intensity instrument is a minimal requirement to guide palliation of dyspnea.

**Osler, T., Glance, L. G., and Hosmer, D. W. (2010, March).** “Simplified estimates of the probability of death after burn injuries: Extending and updating the Baux Score.” (AHRQ grant HS16737). *The Journal of TRAUMA Injury, Infection, and Critical Care* 68(3), pp. 690-697.

The Baux Score, developed 50 years ago to predict mortality after burn injury, has become inaccurate because of advances in burn care. This Score posited that the

percentage mortality risk for a burn patient was the sum of the patient's age and the number denoting the percentage of the body burned. For example, a 50-year old patient with a 50 percent burn area was considered almost certain to die. Another problem has been that this score does not take into account the effects of inhalation injury. To update the Baux Score, the researchers used data from the National Burn Registry on 39,888 patients to develop a logistic regression model containing age, total burn surface area, and inhalation injury. They determined that inhalation injury added the equivalent of 17 years (or a 17 percent burn). The researchers conclude that this rough approximation of burn severity can be calculated mentally and is an accurate prognostication that can be computed with a calculator at the bedside of burned patients.

**Owens, P. L., Barrett, M. L., Gibson, T. B., and others. (2010, August).** “Emergency department care in the United States: A profile of national data sources.” *Annals of Emergency Medicine*. 56(2), pp. 150-165. Reprints (AHRQ Publication No. 10-R059) are available from AHRQ.\*

The authors describe seven publicly available data sources on emergency department care in the United States. They compare and contrast their methods of sampling, types of data collected, definitions, and assumptions. There were some systematic differences among the data sources. Some were more suitable for understanding hospital-level characteristics, others, for detailed clinical- and visit-level data. Data sources differed somewhat on global estimates for fundamental variables, such as the

*continued on page 32*

## Research briefs

*continued from page 31*

number of emergency departments, and the number of visits. The sources discussed were the American Hospital Association Annual Survey Database, the Hospital Market Profiling Solution, the National Emergency Department Inventory, the Nationwide Emergency Department Sample, the National Hospital Ambulatory Medical Care Survey, the National Electronic Injury Surveillance System—All-Injury Program, and the National Health Interview Survey.

**Parekh, A. K., Barton, M. B. (2010).** “The challenge of multiple comorbidity for the U.S. health care system.” *The Journal of the American Medical Association* 303(13), pp. 1303-1304. Reprints (AHRQ Publication No. 10-R061) are available from AHRQ.\*

Approximately 75 million people in the United States have two or more coexisting chronic conditions. The knowledge base for interrelated or unrelated but concurrent illnesses is limited, because patients with comorbidities are excluded from both epidemiologic studies and therapeutic trials. One area in which some initial progress is being made to reduce the burden of multiple chronic conditions on society is advancing evidence-based clinical decisionmaking in the care for patients with comorbidities. In 2007, the Agency for Healthcare Research and Quality sought proposals for studies with a focus on persons who have multiple chronic conditions. Grants funded under this program are already underway. Some subjects of research are how comorbid illnesses affect therapy and outcomes for patients with diabetes, depression, and eight prevalent chronic

conditions, and the use of preventive services in patients with multiple illnesses.

*continued on page 31*

## Research briefs

*continued from page 30*

**Patterson, M. E., Hernandez, A. F., Hammill, B. G., and others. (2010, March).** “Process of care performance measures and long-term outcomes in patients hospitalized with heart failure.” (AHRQ grant HS10548). *Medical Care* 48(3), pp. 210-216.

This study examined how overall conformity to the five Centers for Medicare and Medicaid Services (CMS) heart failure-specific process measures is associated with individual-level, long-term outcomes (1-year mortality and cardiovascular readmission) in a broad group of patients in the United States. Included in the study were 22,750 Medicare fee-for-service beneficiaries who were enrolled in a heart failure program between March 2003 and December 2004. The study found that hospital conformity rates varied from 52 to 86 percent across the CMS process measures. With the exception of the positive association between hospital-level conformity to the assessment of left ventricular function and cardiovascular readmission, there were no associations between the CMS hospital performance measures or the composite measures and patient-level mortality or cardiovascular readmission rates at 1 year.

**Patterson, P. D., Huang, D. T., Fairbanks, R. J., and Wang, H. E. (2010).** “The emergency medical services safety attitudes questionnaire.” (AHRQ grant HS13628). *American Journal of Medical Quality* 25(2), pp. 110-115.

Patient safety in the emergency medical services (EMS) setting has received little study and thus is poorly understood. The researchers evaluated the feasibility of adapting the Safety Attitudes Questionnaire to the EMS setting, examined the reliability and validity of the instrument, and evaluated score variation across different EMS agencies in a metropolitan area. They administered the survey instrument to three advanced life support EMS agencies in the Pittsburgh area. Ratings were developed for six patient safety domains: safety climate, job satisfaction, perceptions of management, teamwork climate, working conditions, and stress recognition. Results showed that instrument utility was generally positive. The six domains revealed acceptable model fit and validity and the proportion of positive perceptions varied significantly across EMS agency sites for five of the six domains.

**Popescu, I., Werner, R. M., Vaughan-Sarrazin, M. S., and Cram, P. (2010).** “Characteristics and outcomes of America’s lowest-performing hospitals: An analysis of acute myocardial infarction hospital care in the United States.” (AHRQ grant HS16478). *Circulation Cardiovascular Quality and Outcomes* 2(3), pp. 221-227.

Hospitals that have poor compliance with five measures of care quality for treating heart attacks (aspirin on admission, aspirin at discharge, beta blocker on admission, beta blocker at discharge, and angiotensin-converting enzyme inhibitor/angiotensin receptor blocker use at discharge for patients who have left ventricular dysfunction) tend to have lower bed numbers, lower

*continued on page 33*

## Research briefs

*continued from page 32*

staffing ratios, lower patient volumes, and worse mortality rates than hospitals that comply better with the five care measures. Low-performing hospitals also tend to be safety-net hospitals for vulnerable populations, and are less likely to provide specialty services, such as coronary revascularization. The authors suggest that these low performers are ripe for policy and quality improvement efforts to gain better patient outcomes and reduce disparities.

**Rose, D. E., Tisnado, D. M., Malin, J. L., and others. (2010, February). "Use of interpreters by physicians treating limited English proficient women with breast cancer: Results from the provider survey of the Los Angeles Women's Health Study." (Interagency agreement between AHRQ and the National Cancer Institute). *HSR: Health Services Research* 45(1), pp. 172-194.**

The researchers surveyed 348 physicians who had been identified by a population-based sample of breast cancer patients about physician-reported use and availability of interpreters. Almost all had treated patients with limited English proficiency in the 12 months preceding the survey. Fewer than half of the physicians reported good availability of trained medical interpreters or telephone language interpretation services when needed. The overwhelming majority used bilingual staff not specifically trained in medical interpretation and patients' friends or family members. Compared with physicians working in health maintenance organizations, physicians working in solo practice and single-specialty medical groups were less likely to report using

trained medical interpreters or telephone language interpretation services. This was also true of physicians in county government or medical school/university settings.

**Skolasky, R. L., Mackenzie, E. J., Riley, L. H., and Wegener, S. T. (2009). "Psychometric properties of the Patient Activation Measure among individuals presenting for elective lumbar spine surgery." (AHRQ grant HS16106). *Quality of Life Research* 18, pp. 1357-1366.**

Variability in outcome after lumbar spine surgery is well documented. Some of this variation may be due to the individual's propensity to engage in adaptive and rehabilitation behaviors. To explore this issue, the researchers sought to determine the psychometric properties and construct validity of the Patient Activation Measure (PAM) in a group of 283 individuals undergoing lumbar spine surgery. The 13-item PAM scale is a participant-completed questionnaire that addresses factors such as self-efficacy and condition-specific knowledge and skills. The researchers found its construct validity and correlation with optimism, hope, self-efficacy, and locus of control (as measured by other survey instruments) was strongly positive. The researchers concluded that the PAM is a reliable and stable measure in this population, has high test-retest reliability, and possesses good internal consistency of the individual scale items.

**Slutsky, J., and Clancy, C. (2010, March). "Patient-centered comparative effectiveness research." *Archives of Internal Medicine* 170(3), pp. 403-404. Reprints (AHRQ Publication**

**No.10-R049) are available from AHRQ.\***

Patient-centered comparative effectiveness research (CER) is essential for high-quality care because it focuses on filling gaps in evidence that is needed by clinicians and patients to make informed decisions. This commentary reviews recent developments in CER and their implications for clinicians and patients. In 2009, an investment of \$1.1 billion for CER was made through the American Recovery and Reinvestment Act, creating an unprecedented opportunity to develop a vital enterprise through the development of unbiased and timely evidence to inform important decisions facing clinicians and patients. The Institute of Medicine also published a report in 2009 outlining the priorities for CER. These events afford an opportunity to reexamine and reevaluate how best to approach patient-centered research. CER has to link the production of relevant research with strategies for delivering evidence to the point of care. Health information technology offers the potential of linking practice and research in unprecedented ways. In pursuing these new opportunities, patient-centered CER should take into account individuality, values, innovations, and equity.

**Warren, M. D., Arbogast, P. G., Dudley, J. A., and others. (2010). "Adherence to prophylactic antibiotic guidelines among Medicaid infants with sickle cell disease." (AHRQ grant HS16974). *Archives of Pediatric and Adolescent Medicine* 164(3), pp. 298-299.**

Infants with sickle cell disease have as much as a 100-fold increased rate of pneumococcal

*continued on page 34*

## Research briefs

*continued from page 33*

infection compared with the general population. Treatment with penicillin has been shown to reduce the risk of pneumococcal sepsis by 64 percent. Thus sickle cell management guidelines include

twice daily penicillin doses for infants and young children. Using retrospective data from the Tennessee Medicaid program, the researchers identified 407 infants with sickle cell disease, of whom 60 percent did not receive antibiotic prescriptions by the age of 12 weeks. Having one or more risk

factors significantly increased nonadherence to guidelines. Risk factors included having a single mother, maternal age younger than 20 years, maternal education of less than 12 years, familial income in the lowest quintile, and urban residence. ■



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