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RESEARCH ACTIVITIES

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Health care quality gaps and disparities persist in every State

States are seeing improvements in health care quality, but disparities for their minority and low-income residents persist, according to the *2010 State Snapshots*, released in June by the Agency for Healthcare Research and Quality (AHRQ).

New Hampshire, Minnesota, Maine, Massachusetts, and Rhode Island showed the greatest overall performance improvement in 2010. The five States with the smallest overall performance improvement were Kentucky, Louisiana, New Mexico, Oklahoma, and Texas. As in previous years, AHRQ's *2010 State Snapshots* show that no State does well or poorly on all quality measures.

Among minority and low-income Americans, the level of health care quality and access to services remained unfavorable. The size of disparities related to race and income varied widely across the States.

"Every American should have access to high-quality, appropriate, and safe health care, and we need to increase our efforts to achieve that goal because our slow progress is not acceptable," said AHRQ Director Carolyn M. Clancy, M.D. "These AHRQ *2010 State Snapshots* not only provide States with a benchmark on how they are doing in these areas, but they also provide resources that States can use to make improvements."

The *2010 State Snapshots*, an interactive Web-based tool, show whether a State has improved or worsened on specific health-care quality measures. For each State and the District of Columbia, this tool features an individual performance summary of more than 100 measures, such as preventing pressure sores, screening for diabetes-related foot problems, and giving recommended care to pneumonia patients. It also compares each State to others in its region and the Nation.

Easy-to-read data charts indicate current strengths, weaknesses, and opportunities for improvement for each State. Health leaders, insurers, providers, researchers, and consumers can use the State Snapshots data to examine the extent of health care quality and disparities in their States and take steps to address gaps in quality care and access to services.

The *2010 State Snapshots* summarize health care data by:

Overall health care quality

- Type of care (preventive, acute, and chronic)
- Treatment setting (hospital, ambulatory care, nursing home, and home health)

continued on page 3

Highlights

From the Director

States have been involved in public health since the yellow fever, small pox, and cholera epidemics of the late 18th and early 19th century. At that time, State health initiatives focused on quarantine measures and efforts to improve water supply and sanitation infrastructure. After the discovery of antibiotics in the mid-1900s, States became increasingly involved in control of communicable disease and, over time, delivery of health care services.

Today, States and other stakeholders are focused on chronic disease, preventive care, and equitable care to improve State and national population health. The *2010 State Snapshots* kick starts that process by providing data and resources that States, policymakers, researchers, and clinicians can use to design and target interventions that ensure patients receive the high-quality care needed to make their lives better.

Overall, States are seeing improvements in health care quality, but disparities for their minority and low-income residents persist. Because we track the same core measures over time, we can also see some improvements in selected areas, so we know that improvement is possible. While every State was in the top 10 percent for at least some measures (benchmark States), States in the New England and Pacific census divisions were benchmark States more often. New England States performed best on preventive care and acute treatment, while western States did best on outcomes of care.

States also varied in quality of care for certain clinical conditions. For example, Connecticut and Florida ranked highest in cancer care; Massachusetts and California in maternal and child health care; and Nebraska, New Hampshire, and Wisconsin in care for respiratory diseases.

By identifying areas needing improvement, each State can target areas for intervention. Each State can also link directly from the interactive Web-based *2010 State Snapshots* to AHRQ's Health Care Innovations Exchange to find innovations that have improved care in areas States are seeking to improve.

For example, Maryland is weak in diabetes care. Maryland researchers, clinicians, or policymakers can look in the Exchange under diabetes to find that nurse-led visits, monthly text messages, and community coalitions are innovative ways to improve diabetes care for particular groups. They can also find diabetes-related tools such as a diabetes eye exam report or health coach toolkit.

Once stakeholders have the "big picture" of who their State residents are and how the State is performing on individual care measures, they can accelerate the speed that care is improved and disparities are reduced.

Carolyn M. Clancy, M.D.

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Community Hub Guide E-mail Correction: The June issue incorrectly advised readers to obtain *Connecting Those at Risk to Care*, a guide to building community hubs, from the wrong e-mail address. To obtain the guide, send an e-mail to AHRQPubs@ahrq.hhs.gov.

State Snapshots

continued from page 1

- Five clinical conditions (cancer, diabetes, heart disease, maternal and child health, and respiratory diseases)
- Strongest and weakest quality measures, as compared with other States.

A new feature this year is a *State Resource Directory* that provides tools and information on assessing quality measures and disparities data that States can use to develop their own health care quality and disparities measures. Also available are direct links to AHRQ's Health Care Innovations Exchange, a searchable database in which users can find information and resources on evidence-based innovations that others in their States have used to improve care.

Other highlights include special focus areas on diabetes, asthma, clinical preventive services, disparities, and health coverage status and variations over time.

The *2010 State Snapshots* are based on data from the *2010 National Healthcare Quality Report* and *National Healthcare Disparities Report*, which are mandated by Congress and produced annually by AHRQ. Data are drawn from more than 30 sources, including government surveys, health care facilities, and health care organizations. To see the *2010 State Snapshots*, go to http://statesnapshots.ahrq.gov. ■

Every American should have access to high-quality, appropriate, and safe health care, and we need to increase our efforts to achieve that goal because our slow progress is not acceptable.

Disparities/Minority Health

Americans, especially blacks, spend substantial periods of time uninsured

Millions of Americans do not have health insurance. In fact, 46 million people were uninsured in 2008. Little research has been done that examines the risk of being uninsured and simultaneously being in poor health. James B. Kirby, Ph.D., from the Agency for Healthcare Research and Quality (AHRQ), and Toshiko Kaneda, Ph.D., from the Population Reference Bureau, shed light on this in their new study. They found that the typical American can expect to be uninsured for well over a decade during their life. Unfortunately, 40 percent of these uninsured years will be spent in less than excellent health and, therefore, at a high risk for medical need. Blacks spend more of their lives uninsured than whites, and the difference between blacks and whites in uninsured life expectancy comes entirely in less healthy years.

The study used mortality data from published period life tables provided by the National Center for Health Statistics and data on health and insurance status on 34,403 individuals participating in the Medical Expenditure Panel Survey in 2004. The proportion of person-months with no health insurance was lowest during childhood regardless of race. Uninsured status peaked among young adults aged 20-24 and declined thereafter. Interestingly, blacks under age 20 spent less time uninsured than similar-aged whites. However, once childhood is over, blacks spend a higher proportion of time without health insurance. During ages 20-24, blacks spend 43 percent of their time being uninsured compared with 36 percent of whites.

Differences between blacks and whites were particularly large between the ages of 50 and 60, when health begins to decline and Medicare coverage has yet to take effect. For blacks, time spent being uninsured increases with age and is most prominent between ages 55 and 59. The proportion of time spent both uninsured and unhealthy continues to be high as individuals enter the near-elderly years, especially for blacks. In conclusion, although blacks have a shorter life expectancy, they have a longer uninsured life expectancy than whites and can expect to spend a higher proportion of their uninsured years in a less healthy state.

More details are in "Unhealthy and uninsured: Exploring racial differences in health and health insurance coverage using a life table approach," by Drs. Kirby and Kaneda, in the November 2010 *Demography* 47(4), pp. 1035-1051. Reprints (AHRQ Publication No. 11-R037) are available from AHRQ.* ■ *KB*

Language barriers related to increased hospital readmissions for Chinese- and Spanish-speaking patients

The number of patients in the United States who do not speak English or speak only limited English has risen in recent decades, presenting a challenge to health care systems to provide high-quality, patient-centered care for this group. In fact, a new study found that Chinese and Spanish speakers were more likely to be readmitted to the hospital than English speakers. However, 30-day mortality rates and hospital costs and length of stay were similar for non-English and English speakers.

When the researchers looked more closely at outcomes by language-ethnicity group, they found that when compared directly with English-speaking Asians and Latinos, Chinese and Spanish speakers' higher readmission rates persisted. Among English speakers, blacks had the highest and Latinos the lowest readmission rates.

The results indicate that language barriers may contribute to higher readmission rates for non-English speakers, but have less impact on care efficiency or mortality. Since only 14 percent of the non-English speaking patients used professional staff interpreters, the researchers suggest a need to develop and assess best practices for creating a culture of professional interpreter use in the hospital. Included in the study were 7,023 patients admitted to an urban university hospital who spoke English (84 percent), Chinese (8 percent), Spanish (4 percent), and Russian (4 percent). This study was supported by the Agency for Healthcare Research and Quality (HS10597, HS11416).

See "Influence of language barriers on outcomes of hospital care in general medicine in patients," by Leah S. Karliner, M.D., Sue E. Kim, Ph.D., David O. Meltzer, M.D., Ph.D., and Andrew D. Auerbach, M.D., in the *Journal of Hospital Medicine* 5, pp. 276-282, 2010. ■ *MWS*

Foreign-born patients are more likely to have a form of tuberculosis that resists a common drug used in treatment

Tuberculous meningitis (TBM), an infection of the membranes that cover the brain and spinal cord, is a life-threatening disease that can also cause severe neurological impairment in survivors. Along with other drugs, isoniazid is commonly used to treat patients with tuberculosis (TB). However, a new study finds that foreign-born patients with TBM are more likely to be infected with a TB strain that resists isoniazid's effects.

Researchers from the University of Pennsylvania School of Medicine used 1993 to 2005 data from the U.S. National Tuberculosis Surveillance System and identified 1,649 patients diagnosed with TB. These patients had no prior history of TB, had cerebrospinal fluid cultures that were positive for TBM, and underwent drug-susceptibility testing. Of the 1,649 patients, 8 percent were infected with a TB strain resistant to isoniazid.

After comparing characteristics of patients whose TB was resistant to isoniazid with patients whose TB could be treated with the drug, the authors found that foreign-born patients were more than twice as likely than U.S.-born patients to have isoniazid-resistant TB (odds ratio 2.53). However, characteristics such as HIV status, race, and residence in a long-term-care facility were not associated with TB that was resistant to isoniazid. The authors recommend that researchers conduct studies to help clinicians precisely determine which TB therapies will improve outcomes for patients with TBM. This study was funded in part by the Agency for Healthcare Research and Quality (HS10399).

See "Isoniazid-resistant tuberculosis meningitis, United States, 1993-2005," by Christopher Vinnard, M.D., Carla A. Winston, Ph.D., M.A., E. Paul Wileyto, Ph.D., and others in the March 2011 *Emerging Infectious Diseases* 17(3), pp. e1-e7. ■ *KFM*

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

Delays in reporting medical errors at Japanese hospital nearly triple that of United States hospital

When medical errors occur, they may not be reported immediately. Physicians are particularly resistant to reporting adverse events to administrators, feeling they are not responded to in a timely manner. Preventing lag times in reporting is important to avoid further harm to the patient and to rapidly deploy an organizational response to the event. Given that institutional cultures often influence timely reporting, researchers studied incident-reporting systems at two academic medical centers in the United States and Japan. They found that lag times were three times longer at a Japanese hospital and were longer for physicians compared with other providers.

The academic medical center selected for study in Japan has 1,240 beds and is located in Kyoto. Since 2002, the hospital has had an established Patient Safety Division. The American hospital has 747 acute-care inpatient beds and is located in Boston. Their Risk Management Department oversees the incident-reporting system. Researchers collected incident reports from both medical centers during a 16-month period. Lag time was defined as the time between the date of the medical error and the date the primary report was received.

A total of 4,102 reports came from the U.S. hospital and 3,084 reports from the Japanese hospital. Among persons reporting, physicians were a small minority: only 3.7 percent in the United States and 5.3 percent in Japan. However, when physicians did report an event, it was more likely to be a major incident. Among the 18 major incidents reported from Japan, 12 occurred after invasive or diagnostic procedures, 4 were postoperative surgical events, and 2 were medication errors. There were only four major events reported from the U.S. hospital distributed among the three above categories and "other." Mean lag times were much shorter in the US: 1.0 day compared with 3.1 days in Japan. Overall, physicians took 3.6 days to report an event compared with just 1.8 days for other providers. The researchers point to lag times as a valuable measure of performance for reporting systems and as a way to understand barriers and promote compliance. The study was supported in part by the Agency for Healthcare Research and Quality (T32 HS00020).

See "A comparative analysis of incident reporting lag times in academic medical centres in Japan and the USA," by Scott E. Regenbogen, M.D., M.P.H., M. Hirose, M.D., Ph.D., Dr.P.H., Yuichi Imanaka, M.D., Ph.D., Dr.P.H., and others in *Quality & Safety in Health Care* 19(e10), pp. 1-4, 2010. ■ *KB*

Hospitals with a teamwork culture have better patient safety climates

The culture of an organization can influence how well individuals and institutions adapt to change. This is particularly true in health care, where quality improvement depends heavily on teamwork and innovation. Overly bureaucratic institutions with hierarchical cultures and defined chain of command tend to favor stability and resist change. Recently, researchers examined whether institutional cultures that focus on teamwork have better patient safety climates. Although cultures varied by hospital, those with a group/teamwork culture had significantly higher safety climate scores compared with hierarchical culture hospitals.

The researchers distributed surveys to hospitals and to managers and providers in adult and pediatric intensive care units (ICUs). The surveys asked about organizational culture and the working safety climate. A total of 64 ICUs from 40 hospitals returned 1,406 completed surveys for analysis. Respondents were nurses (66.2 percent), physicians (5.3 percent), allied clinicians, and ancillary nursing staff.

Fifteen of the 40 hospitals were classified as having a hierarchical culture. Another 15 were determined to have a group/teamwork culture. The remaining 10 organizations had a balanced culture. A significant positive correlation was found between a high patient safety climate and a group/teamwork organizational culture. Alternatively, there was a high negative correlation between safety climate and institutions with a hierarchical culture. These hospitals had significantly lower average safety climate scores than hospitals with

continued on page 6

Teamwork cultures
continued from page 5

group culture environments. The findings suggest that a hospital's cultural climate is critical to the success of quality improvement programs. Attempts to understand underlying factors and to foster a climate of teamwork will have a positive impact on a hospital's patient safety climate, conclude the researchers. Their study was supported in part by the Agency for Healthcare Research and Quality (HS15934).

See "Organizational culture: Variation across hospitals and connection to patient safety climate," by Theodore Speroff, Ph.D., Samuel Nwosu, M.S., Robert A. Greevy, Ph.D., and others in *Quality & Safety in Health Care* 19, pp. 592-596, 2010. ■ *KB*

Quality measures are not used with all patients who suffer heart attacks

More than 4,000 U.S. hospitals report the actions they take to treat a patient who has suffered a heart attack so that the Centers for Medicare and Medicaid Services (CMS) can evaluate the hospital's track record against 5 core quality measures. For heart attacks, these measures include giving aspirin and beta-blockers at admission and discharge and providing angiotensin-converting enzyme inhibitors or angiotensin receptor blockers at discharge to patients with low left ventricular systolic function. A new study finds that increasingly, patients have other medical conditions that may lead to doctors excluding patients from taking these drugs because of concerns that these patients may experience complications. Because a large number of older patients are potentially being discretionarily excluded from evaluation against the quality measures, publicly reported hospital quality scores may not be entirely accurate.

Researchers used 1994-1995, 1998-1999, and 2000-2001 data on admission for heart attacks from three CMS quality improvement projects. They found that patients with conditions that could lead to discretionary exclusions increased for four of the five measures from 1994 to 2001. In fact, patients with potential discretionary exclusions for aspirin at admission went from 15.8 to 16.9 percent, beta-blockers at admission jumped from 14.3 to 18.3 percent, aspirin at discharge rose from 10.3 to 12.3 percent, and angiotensin-converting enzyme inhibitors at discharge went from 2.8 to 3.9 percent.

The authors suggest that these findings bring to light a quandary many doctors face when treating older patients who have suffered heart attacks: Do the five quality measures provide optimum care for older patients, or is excluding them from the five measures the best course of treatment? Because older and sicker patients are mostly excluded from clinical trials, contraindications for treatment for these patients are unclear, so doctors are forced to rely on their discretion. The authors recommend researchers provide better evidence to help doctors provide the best care for older patients suffering from multiple ailments.

Further, because a large number of patients are being excluded from the five core measures, true care quality cannot be assessed, especially for older, sicker patients. Discretionary exclusions also complicate public reporting, because the public does not have access to quality data representing all patients seen at the hospital, just those who were included as ideal candidates for the quality measures. The authors recommend that public reporting systems provide more detailed information on the characteristics of included patients to give the public a clearer picture of what is actually being reported. This study was funded in part by the Agency for Healthcare Research and Quality (HS18283).

See "Who is missing from the measures? Trends in the proportion and treatment of patients potentially excluded from publicly reported quality measures," by Susannah M. Bernheim, M.D., M.H.S., Yongfei Wang, M.S., Elizabeth H. Bradley, Ph.D., and others in the November 2010 *American Heart Journal* 160(5), pp. 943-950. ■ *KFM*

Studies examine safety of pain killers among older adults

Older patients with arthritis and their physicians have to consider differences in comparative safety between nonselective nonsteroidal anti-inflammatory drugs (nsNSAIDs), selective cyclooxygenase-2 inhibitors (coxibs), and opioids when deciding on medication for non-cancer-related pain, according to a new study. Specifically, opioid use is associated with increased relative risk for a number of safety events compared with nsNSAIDs, the researchers found. A companion study by the same researchers also reports major differences in comparative safety among five opioid drugs commonly used to treat non-cancer-related pain. Although prescription painkillers account for 230 million prescription purchases annually, little is known about the comparative safety of these drugs, except for the cardiovascular safety of nsNSAIDs and coxibs, note the researchers.

In both studies, they used 7 years of combined data (1999–2005) for Medicare beneficiaries from two Middle Atlantic States, who qualified for pharmaceutical assistance programs, to look at the relative risk for a specific cardiovascular event, (heart attack, stroke, heart failure, revascularization, and out-of-hospital cardiac death), a gastrointestinal (GI) event (upper or lower bleeding, or bowel obstruction), acute kidney injury, liver toxicity, bone fractures, and three composite safety measures (cardiovascular event, fracture, and GI tract bleeding). The studies were funded by a contract from the Agency for Healthcare Research and Quality (Contract No. 290-05-0016) to Brigham and Children's Hospital in Boston, as part of the Developing Evidence to Inform Decisions about Effectiveness (DEcIDE) program. They are briefly described here.

Solomon, D. H., Rassen, J. A., Glynn, R. J., and others. "The comparative safety of analgesics in older adults with arthritis." (2010, December). ***Archives of Internal Medicine*** **170(22), pp. 1968-1978.**

This study compared nsNSAIDs as the reference treatment with coxibs and opioids in 12,840 Medicare patients with osteoarthritis or rheumatoid arthritis (4,280 for each drug category). Compared with patients taking nsNSAIDs, those prescribed coxibs or opioids appeared to have increased risk of cardiovascular events (by 28 percent and 77 percent, respectively). GI bleeding risk was observed to reduce by 40 percent for coxib users, but for opioid users was similar to the risk for patients on nsNSAIDs. Patients taking coxibs and nsNSAIDs seemed to have similar risk of fractures, but the risk for those on opioids was elevated more than fourfold. Opioids (but not coxibs) were associated with an increased risk (by 68 percent) of safety events requiring hospitalization and an 87 percent increase in all-cause mortality.

Solomon, D. H., Rassen, J. A., Glynn, R. J., and others. "The comparative safety of opioids for nonmalignant pain in older adults." (2010, December). ***Archives of Internal Medicine*** **170(22), pp. 1979-1986.**

The researchers compared five different opioid drugs (hydrocodone bitartrate, codeine phosphate, oxycodone hydrochloride, propoxyphene hydrochloride, and tramadol hydrochloride), using hydrocodone as the reference medicine among 31,375 Medicare patients (6,275 patients for each opioid drug). The risk of cardiovascular events appeared to be similar across the opioid groups for the first 30 days after the beginning of therapy, but was elevated by 62 percent for codeine compared with hydrocodone after 180 days. Tramadol was associated with a reduction in risk of fracture by 79 percent after 30 days of use, while propoxyphene reduced this risk by 46 percent after the same period of time. All of the opioids studied had similar risks of GI bleeding. Both oxycodone and codeine were associated with substantially increased risk of all-cause mortality (by 143 percent and 105 percent, respectively) after 30 days of use compared with hydrocodone. ■ *DIL*

Immersive simulation training for CPR shows no benefit over standard training

In-hospital cardiopulmonary resuscitation (CPR) in actual practice is frequently suboptimal and inconsistent with published guidelines. A recent study revealed that medical residents leading cardiac arrest teams do not feel adequately trained to the task. In light of these findings, many experts have advocated for new approaches to resuscitation training, such as advanced simulation training. However, a new study by a team of researchers from the University of Chicago has found no additional benefit from adding simulation training to current CPR training methods. The research team tested whether the addition of a 4-hour immersive simulation course to a series of lectures and weekly performance debriefing sessions would improve CPR quality during actual in-hospital resuscitation.

Their study involved 32 second-year internal medicine residents with Advanced Cardiac Life Support (ACLS) training, who were randomly assigned to receive either standard resuscitation training or standard plus immersive simulation training. The simulation laboratory used a complex computerized mannequin simulator in a mock-up of a traditional hospital room. The simulation training was done in groups, with each group participating in the same four scenarios of in-hospital cardiac arrest.

There were no significant differences in objective metrics of resuscitation performance between the two groups as measured by a CPR-sensing and feedback-enabled monitor/defibrillator. These metrics included chest compression depth and rate, ventilation rate, no-flow fraction, and proportion of appropriate shocks. In addition, contrary to what was expected, the study found no incremental benefit of immersive simulation training over current training methods in confidence in performing CPR or knowledge of CPR guidelines.

There were several potential explanations for the lack of benefit: the course itself may have been inadequate; CPR quality was fairly good in the study hospital prior to the start of the study; finally, the control group physicians were much more likely to have completed ACLS certification within the 6 months immediately prior to the study period. The researchers concluded that CPR-sensing technology has the potential for use in assessing the impact of a simulation curriculum on some aspects of actual resuscitation performance. This study was supported by the Agency for Healthcare Research and Quality (HS16664).

See "Assessing the impact of immersive simulation on clinical performance during actual in-hospital cardiac arrest with CPR-sensing technology: A randomized feasibility study," by Elizabeth K. Weidman, B.A., George Bell, M.D., Deborah Walsh, R.N., and others in *Resuscitation* 81, pp. 1556-1561, 2010. ■ *MWS*

Acute Care/Hospitalization

Patients who suffer strokes and are seen at designated stroke centers fare better in the short and long run

Since 2003, the Joint Commission has certified almost 700 hospitals in the United States as stroke centers. These hospitals adhere to the Brain Attack Coalition's guidelines to improve care and outcomes when a patient suffers a stroke. A new study finds that patients who suffer ischemic stroke and are admitted to stroke centers have slightly lower mortality rates and are more frequently given clot-busting (thrombolytic) therapy, which can help limit the damage and disability a stroke can cause.

Researchers compared data from nearly 31,000 patients who suffered ischemic strokes and were treated either at New York's 104 designated stroke centers or other nondesignated hospitals in the State. The 30-day mortality rate for the 15,297 patients seen at stroke centers was 10.1 percent compared with 12.5 percent for the 15,650 patients seen at other hospitals. In addition to better short-term survival rates, patients seen at stroke centers had better long-term survival rates (up to 1 year) than patients seen at other hospitals. Further, 4.8 percent of patients seen at stroke centers received thrombolytic therapy compared

continued on page 9

Stroke centers
continued from page 8

with 1.7 percent of patients treated at nondesignated hospitals.

The authors did not find similar lower mortality rates at stroke centers for patients suffering from other life-threatening conditions, including gastrointestinal hemorrhage and heart attacks. This finding indicates that the better mortality rates for patients who suffered strokes were a result of adherence to stroke treatment guidelines and not other quality improvement initiatives undertaken at the hospital. Although the differences in mortality rates were modest, they do demonstrate that patients seen at designated stroke centers enjoy better outcomes than patients seen at other hospitals, the authors suggest. This study was funded in part by the Agency for Healthcare Research and Quality (HS169649).

See "Association between stroke center hospitalization for acute ischemic stroke and mortality," by Ying Xian, M.D., Ph.D., Robert G. Holloway, M.D., M.P.H., Paul S. Chan, M.D., M.S., and others in the January 26, 2011 *Journal of the American Medical Association* 305(4), pp. 373-380. ■ *KFM*

Trauma center patients treated after hours or on weekends have no difference in mortality rates

Patients with various medical and surgical conditions may not have the best outcomes when they are seen after normal business hours or on the weekends. When this happens, it is called the "weekend effect." Patients with heart attack and stroke are particularly vulnerable to this phenomenon. However, a new study of injured patients treated at a Level 1 trauma center found no difference in mortality for patients seen after hours or on weekends. This finding may be due to the fact that Level 1 trauma centers must be fully staffed and ready for patients at all times, suggest the University of Pennsylvania School of Medicine researchers.

Their study included 4,382 patients treated at a Level 1 trauma center in Philadelphia over a 3-year period. A third of these (34.0 percent) arrived over the weekend, while another 23.3 percent were seen during the overnight shift.

Overall, patients who arrived during weekends were no more likely to die (5.2 percent) than patients seen on weekdays (5.3 percent). Similarly, there was no significant difference in mortality rates between patients arriving overnight (4.4 percent) compared with those treated during the day (5.5 percent). These findings were consistent even for the most severely injured patients. There were also no differences between day versus night/weekend patients in terms of the length of time spent in the intensive care unit, the number of days on a ventilator, or the total time spent in the hospital.

Brendan G. Carr, M.D., M.A., M.S., and colleagues believe lessons can be learned from this study and applied to other time-sensitive conditions, including cardiac events, where outcomes are different on nights/weekends. They suggest developing a category system based on emergency care capabilities, improving staffing requirements, and implementing quality improvement programs to lessen negative outcomes. The study was supported in part by the Agency for Healthcare Research and Quality (HS17960).

See "Does the trauma system protect against the weekend effect?" by Dr. Carr, Peter Jenkins, M.D., Charles C. Branas, Ph.D., and others in the November 2010 *The Journal of Trauma Injury, Infection, and Critical Care* 69(5), pp. 1042-1048. ■ *KB*

A high percentage of patients with sickle cell disease self-discharge from hospital care

Sickle-cell disease (SCD) is a painful genetic condition that in the United States affects mostly blacks. SCD changes normal, round red blood cells into cells shaped like a crescent moon or sickle, which get stuck and block blood vessels and blood flow. The condition can cause pain lasting from hours to days, as well as infections, anemia, and stroke. Painful episodes often land patients with SCD in the hospital for pain management. Many of these patients feel their clinicians do not take their pain seriously and even suspect them of having a substance abuse problem. The result? A new study reveals that nearly half (46.5 percent) of patients hospitalized for SCD have self-discharged from a hospital

continued on page 10

Sickle-cell disease
continued from page 9

against medical advice, which can jeopardize their health.

Researchers examined the lifetime prevalence of hospital self-discharge in this population and found that, of the 86 SCD patients studied, 40 (46.5 percent) had a history of self-discharge. These patients were more likely to report experiencing three or more hospitalizations each year for treatment of SCD pain.

Patients who were more distrustful of clinicians, and those who reported difficulty in persuading medical staff about sickle-cell pain were more likely to report having ever self-discharged from a hospital. The researchers also found that hospital self-discharge tended to be associated with having a history of substance abuse as determined by a positive toxicology screen for cocaine or marijuana use during any admission in the previous 5 years.

When seeing a positive toxicology result, clinicians may doubt the legitimacy of the patient's pain reports, when, in fact, a substantial proportion of these results may reflect SCD patients' attempts to manage their pain outside of a hospital setting, note the researchers. They point out that the discrepancy between the clinical interpretation and the actual significance of positive toxicology screen results could contribute to interpersonal conflicts between clinicians and patients and, ultimately, diminished patient trust in clinicians and eventual self-discharge. They call for design of interventions to reduce the occurrence of this potentially dangerous phenomenon. This study was supported by the Agency for Healthcare Research and Quality (HS13903).

See "Hospital self-discharge among adults with sickle-cell disease (SCD): Associations with trust and interpersonal experiences," by Carlton Haywood, Jr., Ph.D., Sophie Lanzkron, M.D., Neda Ratanawongsa, M.D., and others in the *Journal of Hospital Medicine* 5, pp. 289-294, 2010. ■ *MWS*

Two approaches help identify cardiac surgery patients at risk for postoperative kidney failure

After coronary artery bypass grafting (CABG), between 5 and 30 percent of patients may experience acute kidney injury, defined as a rapid loss of kidney function. Once an acute kidney injury develops, there is an increased risk for poor outcomes, such as a threefold increase in 30-day mortality rates. Two criteria methods are used to define the type of acute kidney injury and its consequences. A recent study found that both sets of criteria were accurate as early predictors of mortality from acute kidney injury among CABG patients after surgery.

The Northern New England Cardiovascular Disease Study Group collected data on 24,747 consecutive patients undergoing CABG at 8 medical centers in the New England area. Patients already receiving kidney dialysis were excluded from the study. Serum creatinine levels, specifically the last preoperative and the highest postoperative readings, were used as part of both criteria methods to determine the presence of acute kidney injury and to calculate mortality risk. The two methods used were the Risk, Injury, Failure, Loss, and End-Stage Kidney Disease (RIFLE) criteria and the Acute Kidney Injury Network (AKIN) criteria, both consensus-based.

Based on the AKIN criteria, acute kidney injury was present in 30 percent of patients. The RIFLE criteria yielded similar results (31 percent). Both methods were accurate at predicting mortality rates. For example, patients with stage 3 acute kidney injury had a predicted mortality rate of 36.8 percent under AKIN and 36.4 percent under RIFLE. The risk of mortality increased in patients with a greater degree of acute kidney injury regardless of the criteria used. The researchers recommend that providers use either criteria method to identify early in the process, patients at increased risk of declining kidney function after CABG surgery. The study was supported in part by the Agency for Healthcare Research and Quality (HS18443).

See "Cardiac surgery-associated acute kidney injury: A comparison of two consensus criteria," by Alina M. Robert, M.D., Robert S. Kramer, M.D., Lawrence J. Dacey, M.D., Jeremiah R. Brown, Ph.D., and others in the *Annals of Thoracic Surgery* 90, pp. 1939-1943, 2010. ■ *KB*

Communication problems between hospitalists and primary care providers lead to postdischarge problems for seniors

Primary care physicians (PCPs) are much less likely to care for patients in the hospital—a role largely taken over by hospitalists. Also, with the emphasis on shorter hospital stays, more extensive postdischarge followup is often warranted for patients, which then becomes the responsibility of the patient's PCP. Despite the increased need for more extensive postdischarge followup, communication between hospitalists and PCPs has been characterized as poor and ineffective. A new study suggests that this is the case, especially when the PCP is unaware their patient was in the hospital.

The study found that 42 percent (27) of 64 frail, elderly patients from a large urban hospital reported a postdischarge problem. The most common problems were patients having difficulty obtaining follow-up tests and test results. Also, many patients needed reevaluation and had to be either readmitted to the hospital or go to the emergency department. Other patients reported that they were not properly prepared for discharge, with most of them not receiving proper discharge materials, which then caused other problems. Thirty percent of the 40 PCPs surveyed reported being unaware of their patient's hospitalization. Patients of these PCPs were twice as likely to report a postdischarge problem. This study was supported by the Agency for Healthcare Research and Quality (HS17119).

See "Problems after discharge and understanding of communication with their primary care physicians among hospitalized seniors: A mixed methods study," by Vineet M. Arora, M.D., Megan L. Prochaska, B.A., Jeanne M. Farnan, M.D., and others in the September 2010 *Journal of Hospital Medicine* 5(7), pp. 385-391. ■ *MWS*

Many primary care patients are at risk for obstructive sleep apnea, but few are sent for testing

A new study reveals that about 40 to 50 percent of adult patients visiting primary care clinicians on any given day are at high risk of having obstructive sleep apnea (OSA) – a condition caused by temporary restriction of air intake during sleep. If asked, 90% of them have worrisome symptoms. Yet, only 20 percent mention these symptoms during their primary care visits. As a result, these patients continue to struggle with excessive daytime sleepiness (and related traffic accidents), impaired thinking, mood disorders, insomnia, and increased risk of hypertension, ischemic heart disease, or stroke. Only 23 percent of the participating primary care clinicians surveyed routinely screen patients for OSA. Instead, they tend to use reviews of symptoms during annual exams and risk factors (e.g. obesity, large neck size, diabetes, etc.) to identify high-risk patients.

The researchers interviewed 18 sleep consultants, who reported that 67 percent of their referrals came from primary care clinicians; 85 percent of the referred patients tested positive for OSA. The researchers analyzed patient medical charts and interview and survey data from patients and clinicians in primary care practices associated with five practice-based research networks located in Oklahoma, Florida, Alabama, Connecticut, and California. Based on their findings, the researchers recommend the development of clearer guidelines and a systematic approach to screening patients for OSA. The study was funded in part by the Agency for Healthcare Research and Quality (Contract No. 290-07-10009).

More details are in "Identification by primary care clinicians of patients with obstructive sleep apnea: A practice-based research network (PBRN) study," by James W. Mold, M.D., M.P.H., Craig Quattlebaum, M.S., Eric Schinnerer, M.S., and others in the March/April 2011 *Journal of the American Board of Family Medicine* 24(2); pp. 138-145. ■ *DIL*

Guideline familiarity does not equal guideline adherence

A decade ago, the Centers for Disease Control and Prevention teamed with the American College of Physicians to issue guidelines on using antibiotics appropriately for acute respiratory infections (ARIs), which include sinusitis, middle ear infections, bronchitis, pneumonia, and flu. The goal of these guidelines was to decrease the number of prescriptions for antibiotics that doctors write for ARIs caused by viruses, which are unfazed by antibiotics. A new study finds that primary care clinicians who report being very familiar with the ARI guidelines persist in prescribing antibiotics for these conditions.

Jeffrey A. Linder, M.D., M.P.H., and Blackford Middleton, M.D., M.P.H., M.Sc., of Brigham and Women's Hospital surveyed 208 clinicians in Massachusetts who treated patients suffering from ARIs. The 77 clinicians who reported they were not very familiar with the guidelines prescribed antibiotics for ARIs for 38 percent of patient visits. However, the 131 clinicians who said they were familiar with the guidelines prescribed antibiotics in 46 percent of visits for ARIs.

The authors tried to explain the contradiction between familiarity with the guidelines and failure to adhere to them. They posit that individuals who are adept at a task tend to underestimate their performance while poor performers overestimate their ability because they lack the cognitive skill to evaluate themselves. In the case of overprescribing antibiotics for ARIs, the clinicians who inappropriately prescribe antibiotics may believe they are actually following the guidelines and are overstating their familiarity with the guidelines. The authors suggest that self-reports of guideline familiarity should not be automatically associated with guideline adherence and higher quality of care. This study was funded in part by the Agency for Healthcare Research and Quality (HS15169 and HS14563).

See "Self-reported familiarity with acute respiratory infection guidelines and antibiotic prescribing in primary care," by Dr. Linder, Jeffrey L. Schnipper, Ruslana Tsurikova, and others in the International *Journal for Quality in Health Care* 22(6) pp. 469-475, 2010. ■ *KFM*

Chronic Care Model linked to exercise discussions during primary care office visits for diabetes

The Chronic Care Model (CCM) is a widely adopted approach to improving ambulatory care. A new study links full implementation of this model to longer discussions about exercise during primary care visits with patients with type 2 diabetes, who must carefully control diet and exercise to control their disease. A team of San Antonio-based researchers audio-recorded 162 office visits of patients with type 2 diabetes at 20 different clinics served by 45 primary care physicians. They scored the clinics on their level of CCM implementation. They were also interested in discovering if the level of CCM implementation in primary care clinics was related to exercise stage of change (SOC). Stages of change are distinct stages individuals go through before they adopt a health behavior. Those stages are precontemplation, contemplation, preparation, action, and maintenance.

Although overall time spent counseling on exercise-related matters was statistically correlated with CCM scores, the time differential was very small. In fact, the total range of time spent in this activity was very limited across the entire group. The average time discussing exercise was 22 seconds (range, 8-36 seconds). In clinics with full implementation of CCM, discussions of exercise may be 18 to 33 seconds longer compared with those with basic implementation. These discussions took place during a visit lasting approximately 18 minutes (range, 10-26 minutes).

The patient exit survey revealed that patients who were in the contemplation, preparation, and action SOCs, were more likely to discuss exercise than those in the maintenance and precontemplation SOCs. The researchers concluded that primary care clinics with consistent CCM care and more time spent discussing exercise during a routine visit may have prepared proactive teams, resulting in better support for self-care behaviors. This study was supported by the Agency for Healthcare Research and Quality (HS13008).

See "The chronic care model and exercise discussions during primary care diabetes encounters," by Neela K. Patel, M.D., M.P.H., and Michael L. Parchman, M.D., M.P.H., in the January/February 2011 *Journal of the American Board of Family Medicine* 24, pp. 26-32. ■ *MWS*

Metformin remains the medication of first choice in treating type 2 diabetes

The U.S. Food and Drug Administration has approved 11 unique classes of drugs to treat hyperglycemia (high blood-sugar levels) in patients with type 2 (adult-onset) diabetes. However, compared with other oral diabetes medications, metformin by itself or in a two-drug combination continues to have high benefits, according to an updated review of studies. The researchers note that this is consistent with the findings of a 2007 review that included fewer medications and comparisons. Even after including newer studies, the evidence for long-term clinical outcomes such as all-cause mortality, cardiovascular disease, or neuropathy, was limited, the researchers report.

Most medications reduced the level of glycosylated hemoglobin (hemoglobin A1C, an indicator of average blood-sugar level over a period of months) equally by 1 percent; and most two-drug combinations produced similar reductions. Metformin caused less weight gain compared with either the thiazolidinediones or sulfonylureas. Metformin decreased low-density lipoprotein levels compared with pioglitazone, sulfonylureas, and DPP-4 inhibitors.

With regard to medication risks, patients taking sulfonylureas had a fourfold higher risk of mild or moderate hypoglycemia (low blood sugar) compared with metformin alone, and patients taking metformin plus sulfonylureas had more than a fivefold higher risk of this adverse effect than did those taking metformin plus thiazolidinediones. However, thiazolidinediones increased the risk of congestive heart failure compared with sulfonylureas, and increased risk of bone fractures compared with metformin. Patients taking metformin were more likely to develop diarrhea than those taking thiazolidinediones or sulfonylureas.

Using search criteria similar to those for the 2007 review, the researchers found 166 studies for inclusion, which included 71 studies from the earlier review. The study was funded by the Agency for Healthcare Research and Quality (Contract No. 290-02-0018) to the Johns Hopkins University Evidence-based Practice Center.

More details are in "Comparative effectiveness and safety of medications for type 2 diabetes: An update including new drugs and combinations," by Wendy L. Bennett, M.D., M.P.H., Nisa M. Maruthur, M.D., M.H.S., Sonal Singh, M.D., M.P.H., and others in the May 3, 2011 *Annals of Internal Medicine* 354(9). ■ *DIL*

Empowerment approach to diabetes education works better than the traditional didactic approach

Patient education is an integral component of high-quality diabetes care. Diabetes educators place particular emphasis on patients understanding the clinical importance of three key metabolic markers: hemoglobin A1c (a measure of average blood-sugar levels over time), systolic blood pressure, and low density lipoprotein (LDL) cholesterol values (the diabetes "ABCs"). Diabetes education related to the diabetes ABCs remains wedded to traditional didactic approaches in which experts "teach" the relevant information and provide recommendations to patients about their self-care. This is contrasted to an empowerment approach that places knowledge and understanding of the ABCs within the context of personalized goal-setting, skill-building, and one's daily roles.

In a comparative effectiveness study of these two methods of diabetes education, a team of Houston-based researchers discovered that participants in the empowerment group were significantly more likely to accurately recall the clinical meaning of the diabetes ABCs than were patients in the traditional education group. Three months later, they were also more likely to recall accurately their personal ABC values and a

continued on page 14

Diabetes education
continued from page 13

clinically reasonable target level for their ABC values than those in the traditional education group.

The empowerment intervention consisted of 4 group clinic sessions (8-10 patients per group) led by an internist, which focused on participant awareness of the diabetes ABCs, goal setting, action planning, and active communication with one's physician. The participants also received 10 minutes of one-on-one time with a study clinician after each hour-long session. A key strategy involved introducing the diabetes ABCs by mapping it to a weather prediction concept, presenting various levels of A1c, systolic blood pressure, and LDL cholesterol as being consistent with a "sunny," "partly sunny," or "stormy" diabetes "forecast." Another strategy, drawing from team-based learning methods, aimed to give participants active hands-on practice in applying ABC values to cases that simulated real-world complexity.

The 41 participants in the traditional diabetes education group received a 2-hour didactic group session on diabetes self-management followed by a 5-10 minute individual review of each participant's current diabetes ABCs. Both group and individual sessions were conducted by a nurse educator and followed American Diabetes Association patient education guidelines. All participants in the study were patients receiving diabetes care from various primary care clinics in a single regional Veterans Affairs Medical Center. This study was supported by the Agency for Healthcare Research and Quality (HS16093).

See "Knowing the ABCs: A comparative effectiveness study of two methods of diabetes education," by Aanand D. Naik, M.D., Cayla R. Teal, Ph.D., Elisa Rodriguez, B.S., and Paul Haidet, M.D., in the February 5, 2011 *Patient Education and Counseling* (epub ahead of print). ■ *MWS*

Preventive care for patients with lupus could be improved

Infections and cancer are the two leading causes of death in patients with systemic lupus erythematosus (lupus), after circulatory system diseases. That's why it's important for patients with lupus, an autoimmune disease much more common in women, to get preventive cancer diagnostic tests and immunizations to prevent infections. A new study found that patients with lupus did get key preventive tests and vaccinations at rates similar to that of the general population or persons with other chronic diseases. However, patients with lupus who were younger or less educated were less likely to receive preventive services.

The researchers examined cancer surveillance (for cervical, breast, and colon cancer) and immunizations against influenza and pneumococcal diseases in patients with lupus and two comparison groups: the general population and persons with chronic conditions other than lupus. Among the women with lupus meeting the United States Preventive Services Task Force guidelines, 70 percent (vs. 73 percent for the general population) had cervical cancer screening; 70 percent (vs. 68 percent) had mammography; and 62 percent (vs. 57 percent) had colon cancer screening. Most of the women with lupus received the influenza vaccine (59 percent) and pneumococcal vaccine (60 percent), while the rates for the general population were 42 percent and 70 percent, respectively.

The study group included patients with lupus (685 women and 57 men) from the University of California–San Francisco Lupus Outcomes Study, who were interviewed about receipt of preventive services during the group's fourth annual interview (conducted between March 2005 and February 2006). They were compared with respondents to the California Health Interview Survey—a general population sample of 18,013 English-speaking individuals at least 18 years old, and a sample of 4,515 individuals with chronic illnesses (asthma, diabetes mellitus, and heart disease) other than lupus. The study was funded in part by the Agency for Healthcare Research and Quality (HS13893).

More details are in "Provision of preventive health care in systematic lupus erythematosus: Data from a large observational cohort study," Jinoos Yazdany, M.D., M.P.H., Chris Tonner, M.P.H., Laura Trupin, M.P.H., and others, in *Arthritis Research & Therapy* 12:R84, 2010 ■ *DIL*

Trends in treating depression favor psychotropic medications over psychotherapy

The way depression is treated in the United States has changed over the past 20 years. Between 1987 and 1997, significantly more people were treated for the condition as outpatients. During this time, the use of psychotherapy declined, replaced by antidepressant medications. In 1987, 37.3 percent of outpatients treated for depression received antidepressant medications. By 1997, it had doubled to 74.5 percent. In two recent studies, researchers from Columbia University and the University of Pennsylvania looked at the next decade from 1998 to 2007 to see if these trends in treating depression continued. Results revealed a continued decline in the use of psychotherapy and stabilization in the use of antidepressants to treat depression. Both studies, supported by the Agency for Healthcare Research and Quality (HS16097), are summarized here.

Marcus, S. C. and Olfson, M. (2010, December). "National trends in the treatment for depression from 1998 to 2007." *Archives of General Psychiatry* 67(12), pp. 1265-1273.
The researchers analyzed household data from the 1998 and 2007 results of the Medical Expenditure Panel Survey (MEPS). Information collected included diagnoses of depression, use of psychotherapy and psychotropic medications, and background individual characteristics.

The proportion of people undergoing outpatient treatment for depression increased significantly from 2.37 per 100 persons in 1998 (6.48 million) to 2.88 per 100 persons in 2007 (8.69 million). Groups with the largest proportionate increases in treatment included blacks, Medicare patients, and adults with less than a high school education. There was little change in the percentage of depression outpatients who received antidepressants from 1998 (73.8 percent) to 2007 (75.3 percent). However, there was a significant decline in depression outpatients receiving psychotherapy, from 53.6 percent in 1998 to 43.1 percent in 2007. Expenditures for depression treatment increased at the national level, for medications, and for Medicare.

Olfson, M. and Marcus, S. C. (2010, December). "National trends in outpatient psychotherapy." *American Journal of Psychiatry* 167(12), pp. 1456-1463.
This study used data from the same MEPS in 1998 and 2007. Researchers focused on persons who made more than one outpatient psychotherapy visit during a calendar year. They calculated the percentages of individuals treated only with psychotherapy, only with a psychotropic medication, or a combination of both treatments.

Although the overall percentage of people receiving psychotherapy remained nearly constant from 1998 (3.37 percent) to 2007 (3.18 percent), psychotherapy use significantly declined among people receiving outpatient mental health care. Among this group, use of only psychotherapy fell from 15.9 percent in 1998 to 10.5 percent in 2007; use of psychotherapy and psychotropic medication together declined from 40.0 percent in 1998 to 32.1 percent in 2007; and use of only psychotropic medications increased from 44.1 percent in 1998 to 57.4 percent in 2007. These trends reflect increasing psychotropic medication use with little change in psychotherapy use. Among outpatients receiving psychotherapy, there was a decrease in average number of annual visits from 9.7 (1998) to 7.9 (2007). As a proportion of outpatient mental health expenditures, psychotherapy significantly declined from 71.0 percent in 1998 to 44.7 percent in 2007. Private insurance had the biggest decline in mean expenditures for psychotherapy (27.1 percent decline), followed by self-payment (17.4 percent), and Medicaid (17.3 percent). ■ *KB*

Some patients hospitalized for stroke more likely to keep taking drugs to prevent another stroke

Each year, there are 180,000 recurrent strokes in the United States. Patients who have been hospitalized for stroke are more likely to keep taking medicine to prevent another stroke after hospital discharge depending on their knowledge of the medications, self-reported quality of life, and access to health insurance, according to a new study. The researchers found that three-fourths of 2,598 patients hospitalized for stroke were still taking medicines to prevent future strokes (antiplatelet therapies, warfarin, blood pressure medications, lipid-lowering medications, diabetes medications) 3 months after hospital discharge. The remaining patients or their proxies reported discontinuance of one or more of their prescribed preventive medications during the 3-month period.

Patients who responded for themselves were 71 percent more likely to persist with the preventive drugs. Those with no history of atrial fibrillation were 48 percent more likely to persist at 3 months (although warfarin persistence was 170 percent higher in patients who had had fibrillation). Patients who reported having insurance that covered medications (87.6 percent) were more likely to continue taking their medications. Other factors linked to persistent medication taking included fewer number of medications prescribed, older age, less disability from the original stroke, working status, understanding why the medications were prescribed and how to refill them, and hospital size and geographic location.

The researchers recruited 3,068 potential patients during acute stroke hospitalization at 106 hospitals participating in the nationwide Get With The Guidelines Stroke Program. The final group included 2,598 patients or their proxies. Data analysis for the study was funded in part by the Agency for Healthcare Research and Quality (HS16964).

More details are in "Persistence with stroke prevention medications 3 months after hospitalization," by Cheryl D. Bushnell, M.D., M.H.S., Louise O. Zimmer, M.A., M.P.H., Wenqin Pan, Ph.D., and others in the December 2010 *Archives of Neurology* 67(12); pp. 1456-1463. ■ *DIL*

Sleep apnea and pulmonary hypertension affect in-hospital outcomes of noncardiac surgery

Patients undergoing noncardiac surgery are at higher risk of negative outcomes developing before hospital discharge if they have either pulmonary hypertension (PHTN) or sleep apnea (SA), according to two new studies. Both studies by Stavros G. Memtsoudis, M.D., Ph.D., of the Weill Medical College of Cornell University, and colleagues used the National Inpatient Sample (NIS) databases for the years 1998 to 2006 (or 2007, in the newer study) to test whether the two lung-related conditions were risk factors for perioperative complications or death.

The NIS is an annual all-payer database of inpatient discharges, collecting data on approximately 8 million hospital discharges annually as part of the Agency for Healthcare Research and Quality (AHRQ) Healthcare Cost and Utilization Project. Both studies, described here, were funded in part by a grant from the AHRQ (HS16075) to the Weill Medical College of Cornell University Center for Education and Research on Therapeutics (CERT). For more information on the CERTs program, visit www.certs.hhs.gov.

Memtsoudis, S. G., Ma, Y., Chiu, Y. L., and others. "Perioperative mortality in patients with pulmonary hypertension undergoing major joint replacement." (2010, November). *Anesthesia Analgesia* 111(5), p. 1110-1116.

Patients with PHTN are at increased risk of dying after total hip arthroplasty (THA) or total knee arthroplasty (TKA) than patients undergoing these surgeries who do not have PHTN, the researchers found. Using records from the NIS for 1998 through 2006, the researchers identified 670,516 entries for discharges of patients following TKA and 360,119 for THA. Of these patients, 2,184 (weighted national average of 0.3 percent) and 1,359 (weighted national average of 0.4 percent),

continued on page 17

In-hospital outcomes
continued from page 16

respectively, had the diagnosis of PHTN.

Among patients with PHTN, 18 percent of those undergoing TKA and 20 percent of those undergoing THA had primary PHTN—the more serious form of this disease. Patients with PHTN tended to be older, were more frequently female, and had a greater number of other health problems. Compared with matched controls having the same surgery, perioperative mortality among patients with PHTN was 3.7 or 4.6 times higher (for those undergoing THA or TKA, respectively). A fatal outcome was at least three times more frequent in patients with primary than with nonprimary PHTN.

Memtsoudis, S., Liu, S. S., Ma, Y., and others. "Perioperative pulmonary outcomes in patients with sleep apnea after noncardiac surgery." (2011, January). *Anesthesia Analgesia* 112(1), p. 113-121.

Among patients undergoing noncardiac surgery, SA is an independent risk factor for pulmonary complications of surgery, the researchers found. As in the pulmonary hypertension study, the researchers used NIS data from 1998 through 2007 to identify 2,610,441 patients who had orthopedic and 3,441,262 who had general surgery during this period.

Among these patients, SA was diagnosed in 51,509 patients who underwent general surgery (weighted national average, 1.4 percent) and in 65,774 patients who underwent orthopedic surgery (weighted national average, 2.5 percent). For either procedure, males had a higher prevalence of SA compared with the general surgical population. Patients with SA had a greater number of other health problems, and were approximately five times more likely to be obese. Three pulmonary complications (aspiration pneumonia, adult respiratory distress syndrome, and intubation/mechanical ventilation) developed more frequently among patients with SA than their matched controls regardless of the type of surgery. However, pulmonary embolism was significantly more common among SA patients than their matched controls after orthopedic surgery compared with general surgery. ■ *DIL*

Certain factors linked to risk of early death of intensive care patients after discharge

Early death after hospital discharge for patients treated in a hospital intensive care unit (ICU) is associated with patient treatment preferences and decisions about the timing and location of discharge, according to a new study. The risk of dying after hospital discharge, but within 30 days of ICU admission, rose with greater severity of illness. The risk of early postdischarge mortality declined by 67 percent for patients with no limitations on care ("full-code status") at ICU admission.

Compared with discharge to home, discharge to an outside acute care hospital increased this risk more than threefold (hazard ratio [HR] of 3.18) or nearly threefold (HR of 2.71) for discharge to a skilled nursing or rehabilitation facility. Patients with short ICU stays (less than 1 day) ran nearly twice the risk of early postdischarge death (HR of 1.86) as those treated in the ICU for between 1 and 7 days.

The researchers solicited participation from among the 308 California hospitals with at least 50 hospital beds. Patient chart data was collected between 2001 and 2004 on 8,484 adult patients who had ICU stays of 4 hours or longer. Based on their findings, the researchers suggest that paying attention to factors influencing early postdischarge mortality can be important in attempts to measure or improve ICU performance. The study was funded in part by the Agency for Healthcare Research and Quality (HS13919).

More details are in "Predictors of early postdischarge mortality in critically ill patients: A retrospective cohort study from the California Intensive Care Outcomes Project," by Eduard E. Vasilevskis, M.D., Michael W. Kuzniewicz, M.D., M.P.H., Brian A. Cason, M.D., R. Adams Dudley, M.D., M.B.A., and others in the February 2011 *Journal of Critical Care* 26(1), pp. 65-75. ■ *DIL*

Physicians more reluctant to deactivate some life-sustaining devices than others

Navigating end-of-life care for patients who require life-sustaining devices can be clinically and ethically challenging. Since annual mortality rates for recipients of pacemakers (PM) and implantable cardioverter-defibrillators (ICDs) are 5 percent to 20 percent, physicians caring for these patients are frequently confronted with the possibility of deactivating these devices. However, device deactivation during end-of-life care raises a number of ethical and legal issues. A team of Boston-based researchers surveyed 185 internal medicine physicians and subspecialists from a Massachusetts hospital to clarify clinicians' experience with the withdrawal of PM and ICD therapy in end-of-life patients and their views of the related ethical and legal issues.

Twenty-five percent to 49 percent of physicians viewed deactivation of PMs and ICDs as morally distinct from each other as well as from withdrawal of other life-sustaining therapies, such as mechanical ventilation, dialysis, and feeding tubes. Compared with deactivation of an ICD, physicians more often characterized deactivation of a PM in a pacemaker-dependent patient as physician-assisted suicide (19 percent vs. 10 percent) or euthanasia (9 percent vs. 1 percent). However, the researchers contend that although some may view PMs or ICDs as unique, there is no identifiable medical, legal, or ethical basis for this distinction.

The surveyed physicians had considerably more experience in the withdrawal or removal of mechanical ventilation, dialysis, and feeding tubes than with PMs or ICDs. Few physicians had personally deactivated either type of cardiac device in end-of-life patients (10 percent PMs, 11 percent ICDs). They were distinctly less comfortable discussing deactivation of PMs or ICDs compared with mechanical ventilation, dialysis, or feeding tubes. The physicians were queried about the withdrawal of therapy in several types of scenarios including brain death, coma with a very poor prognosis, and a stable outpatient with terminal cancer who requested withdrawal of treatment.

The researchers propose that efforts be undertaken to better educate health care providers about the methods, clinical implications, ethics, and legality of device deactivation. This study was supported by the Agency for Healthcare Research and Quality (HS18465).

See "Ethical and legal views of physicians regarding deactivations of cardiac implantable electrical devices: A quantitative assessment," by Daniel B. Kramer, M.D., Aaron S. Kesselheim, M.D., J.D., Dan W. Brock, Ph.D., and William H. Maisel, M.D., in *Heart Rhythm* 7, pp. 1537-1542, 2010. ■ *MWS*

Mandated increases in nurse staffing levels unevenly affect uncompensated care growth rates in California hospitals

In 1999, California became the first State to pass mandated minimum nurse staffing requirements for certain hospital patient care units. For example, in 2006, one nurse was required for every five patients for medical-surgical areas. These requirements boost a hospital's operating costs, especially in hospitals that were understaffed relative to the mandated ratios prior to the legislation, thus potentially reducing the amount of uncompensated care hospitals provide. However, a new study found that the new requirements had an inconsistent effect on hospitals' provision of uncompensated care (sum of charity care plus bad debt).

The study included 228 short-term, general hospitals in California over the period 1999 to 2006. Using the nurse staffing levels in the preregulation period, the researchers divided the hospitals into quartiles, reflecting the lowest to highest preregulation nurse staffing levels. Growth rates in uncompensated care were lower for hospitals in the lowest three staffing quartiles compared with those in the highest quartile. However, results were statistically significant only for county and for-profit hospitals in quartiles 1 and 3.

Uncompensated care averaged 5 to 6 percent of total operating expenses over the study period, and was similar across all of the staffing quartiles, as was the average growth rate. The researchers concluded that their findings did not show broad reductions in uncompensated care following the implementation of minimum nurse staffing legislation in California.

continued on page 19

Nurse staffing levels

continued from page 18

However, apparent reductions among county and for-profit hospitals suggest the need for caution when considering such legislation and other quality improvements that directly increase operating expenses, and therefore threaten hospital profitability. This study was supported by the Agency for Healthcare Research and Quality (HS10153).

See "The effect on minimum nurse staffing legislation on uncompensated care provided by California hospitals," by Kristin L. Reiter, Ph.D., David W. Harless, Ph.D., George H. Pink, Ph.D., and others in *Medical Care Research and Review*, 2010 (Epub ahead of print). ■ *MWS*

Women's Health

No link found between chemotherapy in older women with breast cancer and later cognitive impairment

Contrary to the findings of several small-scale clinical trials linking chemotherapy to later cognitive impairment, a new study of older women diagnosed with breast cancer did not find significantly increased risk of cognitive impairment up to 16 years after chemotherapy. Researchers from the University of Texas Health Science Center found that an apparent 8 percent increase in drug-induced dementia with chemotherapy was not significant after adjustment for patient and tumor characteristics; nor was a possible 15 percent decline in cognitive disorder not otherwise specified (NOS). In fact, the data for the entire study group suggests that the women who received chemotherapy were 23 to 28 percent less likely to develop Alzheimer's disease, vascular dementia, or other dementias/dementia NOS than women not treated with chemotherapy.

The researchers used the merged database of the National Cancer Institute's Surveillance, Epidemiology, and End-Results program and Medicare, which increased coverage of the U.S. population from 14 to 25 percent over the course of the study. The study group was 62,565 women aged 65 or older diagnosed with breast cancer and free from cognitive impairment at the time of their cancer diagnosis. A subset of 9,752 women who received chemotherapy and an equal number who did not were matched on the factors that make treatment with chemotherapy likely at diagnosis. The study was funded in part by the Agency for Healthcare Research and Quality (HS16743).

More details are in "Relationship between chemotherapy use and cognitive impairments in older women with breast cancer. Findings from a large population-based cohort," by Xianglin L. Du, M.D., Ph.D., Rui Xia, M.S., and Dale Hardy, Ph.D., in the December 2010 *American Journal of Clinical Oncology* 33(6); pp. 533-543. ■ *DIL*

Women's self-reported stress seems to jibe with a common stress biomarker

Stressed-out pregnant women are at risk for delivering early or giving birth to babies with lower-than-desired birth weights. A new study finds that a biomarker typically associated with chronic stress appears to be present when women of childbearing age report having stressful lives.

Up to 90 percent of adults are infected with Epstein-Barr virus (EBV), but the virus stays latent for most of them. Adequate immune function is required to maintain EBV in this latent state. However, when an individual experiences chronic stress, immune dysfunction allows the EBV to reactivate and release viral antigen. Elevated EBV antibody titer serves as an indirect measure of chronic stress and has been associated with a wide range of chronic stressors.

To test whether self-reports of stress coincide with stress biomarkers, researchers used blood samples and questionnaires from 205 reproductive-age women who were receiving welfare in the Chicago area. After determining the women's levels of EBV and C-reactive protein (CRP), another common stress biomarker, they compared the results with the women's responses to

continued on page 20

Stress biomarker
continued from page 19

questions on stress. The questions probed for external stressors, such as life events and hardships; stress enhancers, such as mental health or substance abuse problems; stress buffers, including social and community support; and perceptions of stress, including discrimination, economic troubles, and dangerous neighborhoods.

Ann E. B. Borders, M.D., M.Sc., M.P.H., of Northwestern University, and colleagues found that EBV levels were indeed linked to the women's reports of chronic stress. For instance, women who reported elevated levels of perceived stress or discrimination had higher levels of EBV than women who had lower stress levels or had not experienced discrimination. However, CRP levels were not strongly associated with the women's self-reported stress. These findings are noteworthy because they connect high stress levels and discrimination with the disparity black women experience with preterm births and low-birth-weight infants, the authors suggest.

Because all but one of the women in the study were willing to provide a blood sample for the researchers, this study also demonstrates that community-based research studies such as this one can surmount the trust and follow-up issues that can occur in hospital-based studies. The study was supported in part by the Agency for Healthcare Research and Quality (T32 HS00078).

See "The relationship between self-report and biomarkers of stress in low-income reproductive-age women," by Dr. Borders, William A. Grobman, M.D., M.B.A., Jane L. Holl, M.D., M.P.H., and others in the December 2010 American *Journal of Obstetrics & Gynecology* 203(6), pp. 577e1-577e8. ■ *KFM*

Mothers' medical appointments may be a link to getting daughters vaccinated for human papillomavirus

Despite the availability of two vaccines to prevent human papillomavirus (HPV) infection, which causes cervical cancer, most young women in the United States are not vaccinated. One reason for low vaccination rates may be because adolescent women make fewer trips to the doctor's office during their tween and teen years than any other period of their lives. A group of researchers from the University of Michigan Medical Center found that approaching young women's mothers during annual visits for Pap smears or mammograms may be a possible route for increasing awareness of HPV and improving HPV vaccination rates.

Researchers mailed 3,000 surveys to urban and suburban women who received Pap smears or mammograms. Of the 937 women who responded, a quarter (232 women) had daughters who were 9 to 17 years old, the age range recommended for HPV vaccination. The authors suggest that visits for Pap smears or mammograms may also serve as opportunities for clinicians to educate mothers on the importance of having their daughters vaccinated against HPV. This study was funded in part by the Agency for Healthcare Research and Quality (HS15491).

See "Feasibility of using maternal cancer screening visits to identify adolescent girls eligible for human papillomavirus vaccination," by Ruth C. Carlos, M.D., M.S., Amanda F. Dempsey, M.D., Ph.D., Ken Resnicow, Ph.D., and others in the December 2010 *Journal of Women's Health* 19(12), pp. 2271-2275. ■ *KFM*

U.S.-born Mexican women who have adopted U.S. culture may be more at risk for cervical cancer

Latina women in the United States have higher rates of cervical cancer than white women. A recent study shows that Latinas who have acculturated (i.e., they think in, speak, and read English at home or with friends) may be at higher risk for contracting human papillomavirus (HPV) and cervical cancer than less-acculturated Latinas.

Researchers examined National Health and Nutrition Examination Survey data and its Short Acculturation Scale as well as HPV test results for 503 Latinas and 442 Mexican-American women. They found that U.S.-born Mexican women had double the odds of having 1 of the 15 HPV types known to lead to cervical cancer compared with foreign-born Mexican women in the United States. Further, U.S.-born Mexican women whose parents were both born in the United States had

continued on page 21

Cervical cancer

continued from page 20

a 2.24 increased odds of any type of HPV infection and a 2.98 increased odds for having 1 of the 15 HPV types known to cause cervical cancer.

White women had a 14.5 percent infection rate for 1 of 15 HPV types known to lead to cancer. U.S. Mexican women had a 13.2 percent infection rate for high-risk forms of HPV, and other Latinas had a 16.1 percent high-risk infection rate. Furthermore, U.S. Mexican women with high levels of acculturation had a 16.5 percent infection rate.

Rates of HPV in U.S. Mexican women may be a result of higher risk sexual behavior, because the authors found that more acculturated U.S. Mexican women also had higher rates of chlamydia, gonorrhea, and herpes II, which are sexually transmitted infections. They suggest that targeting interventions for U.S. Mexican women that increase HPV vaccination, promote healthier sexual choices, and increase Pap smears may be effective in reducing cervical cancer rates in this group. This study was funded in part by the Agency for Healthcare Research and Quality (HS13853).

See "Acculturation and HPV infection among Latinas in the United States," by Deanna Kepka, M.P.H., M.A., Gloria D. Coronado, Ph.D., Hector P. Rodriguez, Ph.D., M.P.H., and Beti Thompson, Ph.D., in *Preventive Medicine* 51(2), pp. 182-184, 2010. ■ *KFM*

Pelvic ultrasound imaging by emergency physicians is highly effective in ruling out ectopic pregnancy

Emergency physicians can use bedside ultrasound imaging of the pelvis to quickly and accurately rule out ectopic pregnancy in women who are at high risk of this condition, according to a new meta-analysis of studies. Ectopic pregnancy, in which the embryo implants and begins developing outside of the uterus, is a common life-threatening condition that is the leading cause of first trimester maternal deaths. Because the chances of a woman having both a normal (intrauterine) and ectopic pregnancy at the same time is low (about 1 in 4,000 natural pregnancies), using ultrasound imaging to confirm a normal pregnancy can be used to rule out ectopic pregnancy, note the study authors.

Emergency physicians would only need to be trained in pelvic ultrasound imaging, which can be done in the emergency department (ED), rather than requiring the patient to be transported to the radiology or gynecology department. The researchers conducted a systematic literature review that identified 10 clinical studies of ED pelvic imaging involving 2,057 patients, 152 (7.5 percent) of whom had ectopic pregnancies. Based on the pooled data from the 10 studies, the authors calculated that the bedside imaging procedure had 99.3 percent sensitivity and a negative predictive value of 99.96 percent. The researchers concluded that ED physicians can learn to quickly rule out ectopic pregnancy without waiting for radiology consultation with a specialist.

The researchers identified the 10 studies following a comprehensive literature search of citations from January 1966 to August 2009. The study was funded in part by the Agency for Healthcare Research and Quality (HS15569).

More details are in "Emergency physician ultrasonography for evaluating patients at risk for ectopic pregnancy: A meta-analysis," by John C. Stein, M.D., Ralph Wang, M.D., Naomi Adler, M.D., and others in the December 2010 *Annals of Emergency Medicine* 56(6); pp. 674-683. ■ *DIL*

Antibiotics are modestly more effective than no treatment for middle ear infections in children

Middle ear infections (acute otitis media, AOM) are the most common infection for which children receive antibiotics in the United States. In addition, the management of AOM costs an estimated $2.8 billion dollars per year. California researchers recently reviewed the literature to examine evidence for the diagnosis and treatment of AOM in children. They found that antibiotic treatment for uncomplicated AOM in low-risk children may have a slightly better success rate compared with no antibiotic treatment. However, it is also associated with an increased risk of side effects such as rash or diarrhea.

The analysis included 135 studies published from 1999 through 2010. The findings from one systemic review and three additional studies on diagnosis suggested that specific visual signs (red and immobile or bulging tympanic membrane) when examining the ear with an otoscope were strongly associated with AOM and critical for accurate diagnosis. Symptoms such as ear rubbing, pain, and fever were less important in predicting the condition.

Six studies shed light on changes in the microbiology of AOM after the introduction of the heptavalent pneumoccocal vaccine (PCV-7) in 2000. In general, *Haemophilus influenzae* became more prevalent as the cause of AOM compared with *Streptococcus pneumoniae*, although the latter organism remained an important cause.

Seven randomized controlled trials compared ampicillin or amoxicillin with placebo and reported on clinical success. Pooling the data from these studies, the difference in the success rate by day 14 of illness was 12 percent; that is, 9 children would need to be treated with immediate ampicillin or amoxicillin in order to see one case of clinical success from using immediate antibiotic treatment. There was also an increased rate of side effects with treatment with amoxicillin or ampicillin compared with placebo, with a 3 to 5 percent increase in the rate of rash or diarrhea. Further, there was no evidence that any other antibiotics work better at treating AOM than amoxicillin, the currently recommended first-choice antibiotic for AOM. The study was supported in part by the Agency for Healthcare Research and Quality (Contract No. 290-07-10056).

See "Diagnosis, microbial epidemiology, and antibiotic treatment of acute otitis media in children," by Tumaini R. Coker, M.D., M.B.A., Linda S. Chan, Ph.D., Sydne J. Newberry, Ph.D., and others in the *Journal of the American Medical Association* 304(19), pp. 2161-2169, 2010. ■ *KB*

Health insurance is necessary but not sufficient for children's access to care

Recent Federal health care reform legislation focuses on expanding health insurance. Insurance coverage is often necessary to access care, but it is not sufficient, especially if individuals do not have a regular source of care, suggests a new study. Jennifer E. DeVoe, M.D., D.Phil., of the Oregon Health and Science University, and colleagues examined the separate and combined effects of having health insurance and/or a usual source of care (USC) on a child's parental-reported access to health care services and unmet health care needs.

Using a broad national sample, they found that 95.8 percent of children age 18 and under had a USC and 91.3 percent had health insurance. An estimated 88.1 percent had both a USC and insurance while 1.1 percent had neither. A further 7.6 percent had a USC only, and 3.2 percent had insurance only. For children, having continuous health insurance and a USC was associated with the lowest percentage of unmet needs, while

continued on page 23

Health insurance
continued from page 22

having neither one was associated with the highest percentage of unmet needs. The uninsured without a USC had the worst care access in all cases. They were more than 2.5 times as likely to have an unmet medical, dental, and/or prescription medication need compared with the group having a USC and insurance.

The researchers analyzed data from the Agency for Healthcare Research and Quality's Medical Expenditure Panel Survey on a nationally representative sample of 193,119 children from 2003 through 2007. They concluded that proposals to greatly expand eligibility for the Children's Health Insurance Program or to mandate individual health insurance coverage will not achieve optimal or equitable access to pediatric health care services without a mechanism to ensure adequate provider capacity. The study was supported by the Agency for Healthcare Research and Quality (HS16181).

See "The effects of health insurance and a usual source of care on a child's receipt of health care," by Dr. DeVoe, Carrie J. Tillotson, M.P.H., Lorraine S. Wallace, Ph.D., and others in the February 14, 2011 *Journal of Pediatric Health Care* (Epub ahead of print). ■ *MWS*

Health Literacy

A simple question identifies patients with low health literacy

"How confident are you in filling out medical forms?" Asking this simple question, in either English or Spanish, may allow clinical researchers to identify persons with limited health literacy (HL) as effectively as using the English or Spanish versions of the short Test of Functional Health Literacy in Adults (s-TOFHLA), a new study reports. Earlier studies indicate that nearly half (46 percent) of the United States population has limited HL (inadequate or marginal HL), and that limited HL is associated with poor health outcomes.

Unlike the versions of s-TOFHLA, which have to be administered in person, the single question, "How confident are you in filling out medical forms?" can be asked over the telephone. Participants were asked to reply to this question on a 5-point Likert scale ("not at all," "a little," "somewhat," "quite a bit," and "extremely"). Responses of "not at all" through "somewhat" were found to be good predictors of having inadequate or marginal HL according to the s-TOFHLA (scores of 0-22), while responses of "quite a bit" or "extremely" corresponded with s-TOFHLA scores indicating adequate or better HL (scores of 23-36). Two other questions ("How often do you have problems learning about your medical conditions?" and "How often do you have someone help you read hospital materials?) were not as closely predictive of s-TOFHLA scores.

The researchers conducted the validation study as part of trial of diabetes self-management support interventions in the San Francisco Department of Public Health. Individuals were asked by bilingual research assistants to rate their responses to the three self-report questions on a 5-point (Likert) scale in their preferred language (English or Spanish). Participants also took the s-TOFHLA, in either English or Spanish. The study was funded in part by the Agency for Healthcare Research and Quality (HS17261).

More details are in "Validation of self-reported health literacy questions among diverse English- and Spanish-speaking populations," Urmimala Sarkar, M.D., M.P.H., Dean Schillinger, M.D., Andrea Lopez, B.S., and others in the March 2011 *Journal of General Internal Medicine* 26(3), pp. 265-271. ■ *DIL*

AHRQ, Ad Council launch Conoce las Preguntas campaign

Conoce las Preguntas, (Know the Questions) a new, multimedia Spanish-language campaign lauched by the Agency for Healthcare Research and Quality (AHRQ) and the Ad Council, encourages Hispanics to get more involved in their health care and to talk with their doctors about their medical concerns.

The national public service advertising campaign, which features television, radio, print and Web ads, offers tips to help Hispanics prepare for medical appointments by thinking ahead of time about questions to ask their doctors during medical appointments. The public service announcements (PSAs) direct audiences to visit AHRQ's Web site at www.ahrq.gov/preguntas where they can find tips and other important health information in Spanish.

AHRQ research shows that Hispanics tend to seek medical treatment advice from friends, co-workers and even casual acquaintances rather than going to the doctor unless they are very sick. Some Hispanics report avoiding asking doctors questions out of respect or because they feel intimidated or embarrassed.

"Getting a diagnosis from a doctor rather than guesses from co-workers, friends, and others is a key to good health and good health care," said AHRQ Director Carolyn M. Clancy, M.D. "While Hispanics face challenges in getting access to health care services and a higher rate of uninsurance, good communication with health care professionals is one step they can take to improve their health and health care quality."

The campaign supports the Department of Health and Human Services Action Plan to Reduce Racial and Ethnic Health Disparities, the Department's first-ever strategic action plan to reduce health disparities among racial and ethnic minorities in the United States. AHRQ's recently published 2010 *National Healthcare Disparities Report* found that, compared with whites, the proportion of Hispanics who report having poor communication with their health providers is widening and the percentage who regularly get important screening tests to check for diabetes or cancer is not improving.

AHRQ data show that 47 percent of adult Hispanics reported not having seen a doctor in 2008, compared with 29 percent of adult non-Hispanics. This included 37 percent of insured Hispanics aged 18 to 64, compared with 29 percent of insured non-Hispanics, as well as 15 percent of older Hispanics versus 10 percent of non-Hispanic seniors.

"Hispanics who go to the doctor and are unclear about his or her instructions should speak up," said AHRQ Scientific Review Officer Ileana Ponce-Gonzalez, M.D. "The lesson is that there is nothing to fear—doctors appreciate patients asking them questions if they don't understand something"

Conoce las Preguntas was created pro bono for the Ad Council by Revolución, an ad agency based in New York. Aliza Lifshitz, M.D., a practicing internist in Los Angeles who also serves as editor-in-chief of VidaySalud.com and host of Univision radio's weekly health show "El Consultorio de la Dra. Aliza," is also participating in the campaign.

"Many Latinos are timid with medical professionals and turn to peers before turning to their doctors or other medical professionals," adds Dr. Lifshitz. "I hope that this public service campaign empowers Latinos to speak up when they have questions and to more effectively communicate with their doctors so they get the best health care possible."

AHRQ and the Ad Council also will be implementing a mobile marketing program to further engage the Hispanic community in the campaign messages. A mobile version (WAP) of the Web site will be developed and users will have the opportunity to opt in to receive biweekly text message alerts for tips on talking with health care

continued on page 25

Spanish-language campaign

continued from page 24

providers, getting prescriptions and medical tests, and the benefits of getting more involved in their health care. Mobile users can text "preguntas" to 80676 to opt in to the program.

"We are proud to continue our efforts with AHRQ to get these critical messages to the Hispanic community," said Peggy Conlon, president and CEO of the Ad Council. "The new PSAs speak directly to the insight that we learned from research—many Hispanics tend to seek medical advice from friends and family, rather than approaching their doctors. This campaign is motivating and compelling, and I'm confident that the Hispanic media will support it."

The PSAs are being distributed to approximately 2,500 Spanish-language media stations nationwide. Per the Ad Council's donated media model, all of the PSAs will air or appear in advertising time and space donated by the media. ■

School-age children treated most often for sports-related concussions

About 39,000 school-age children were treated for sports-related concussions at hospital emergency departments in 2008—approximately 90 percent of all emergency visits for that condition, according to the latest News and Numbers from the Agency for Healthcare Research and Quality (AHRQ).

Children aged 14 to 18 (high school age) represented 58 percent of the emergency visits treated for a sports-related concussion, 17 percent were between the age of 11 and 13 (middle school), 7 percent were 6 to 10 years old (elementary school), and 8 percent were 19 to 23 years old (college).

AHRQ also found that among patients treated for sports-related concussions in 2008:

- About 12 percent experienced a moderate or prolonged loss of consciousness, while 21 percent had a brief loss of consciousness. More than half of all patients (52 percent) did not lose consciousness.
- Males accounted for more than three-quarters of patients (78 percent) treated in the emergency department for sports-related concussions.
- People treated for concussions typically also received care for other injuries, including less severe injuries such as pulled muscles and sprains, and more severe injuries such as skull fractures.
- The vast majority of patients (95 percent) did not have to be admitted into the hospital.

This AHRQ News and Numbers summary is based on data from Sports-Related Concussions, 2008 (www.hcup-us.ahrq.gov/reports/statbriefs/sb114.pdf). The report uses data from the Agency's 2008 Nationwide Emergency Department Sample. For information about this AHRQ database, go to www.ahrq.gov/data/hcup/datahcup.htm. For other information, or to speak with an AHRQ data expert, please contact Bob Isquith at bob.isquith@ahrq.hhs.gov (301) 427-1539. ■

More rural Americans treated in emergency departments for eye injuries

Rural Americans were five times more likely than urban residents to be treated in emergency departments (EDs) for eye injuries in 2008, according to the latest News and Numbers from the Agency for Healthcare Research and Quality (AHRQ). The Federal agency found that rural Americans made 646 visits to hospital EDs per 100,000 people in 2008, compared with 120 visits per 100,000 people by those in urban areas. People in the Northeast were the most and those in the West the least frequently seen in EDs for eye injury (256 vs. 156 visits per 100,000 people). The Midwest and South fell in between—242 visits and 200 visits per 100,000 people, respectively.

AHRQ also found that for patients treated in the ED and released in 2008 (97 percent of all patients treated for eye injuries):

- The three most common types of the roughly 637,000 eye injuries were cornea scratches (50 percent), followed by cuts to the eyelid or around the eye (9 percent), and bruises around the eye (7 percent).
- Of these injuries, 32 percent were caused by being hit in the eye by something or someone, falling down (9 percent), getting a caustic substance in the eye (4 percent), insect bites or other reasons (3 percent), or being in a motor vehicle accident (nearly 3 percent).

For the 3 percent of patients admitted to the hospital for eye injuries in 2008:

continued on page 26

Eye injuries

continued from page 25

- The most common types of injuries were wounds to the tear glands (17 percent), bruised eye sockets (15 percent), and bruised eyelids (11 percent).
- Falls were the major cause of these injuries (36 percent), followed by motor vehicle accidents (19 percent), being hit by something or somebody (12 percent), other reasons including insect bites (3 percent), and getting burned by a caustic substance (1 percent).

This AHRQ News and Numbers summary is based on data from *Emergency Department Visits Related to Eye Injuries, 2008* (www.hcup-us.ahrq.gov/reports/statbriefs/sb112.pdf). The report uses data from the Agency's 2008 Nationwide Emergency Department Sample. For information about this AHRQ database, go to www.ahrq.gov/data/hcup/datahcup.htm.

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

ICUs in Michigan sustain zero bloodstream infections for up to 2 years

Intensive care units (ICUs) in both large and small hospitals stopped central line-associated bloodstream infections (CLABSIs) for up to 2 years after using a targeted quality improvement initiative funded in part by the Agency for Healthcare Research and Quality (AHRQ). The initiative, known as the Comprehensive Unit-based Safety Program, or CUSP, was implemented through the Keystone Intensive Care Unit Project in Michigan hospitals.

The study, "The Ability of Intensive Care Units to Maintain Zero Central Line–Associated Bloodstream Infections," published in the May 7th issue of the *Archives of Internal Medicine*, found that hospital ICUs eliminated CLABSIs for an extended period of time—up to 2 years or more. The researchers found that 60 percent of the 80 ICUs evaluated went 1 year or more without an infection, and 26 percent went 2 years or more. Smaller hospitals sustained zero infections longer than larger hospitals.

"Previous research has shown that using CUSP to reduce healthcare-associated infections works," said AHRQ Director Carolyn M. Clancy, M.D. "This study gives us even better news—that results from efforts to eliminate these deadly and costly infections can be sustained."

A CLABSI is a serious healthcare-associated infection (HAI) that is introduced into the bloodstream through a central line. According to the Centers for Disease Control and Prevention (CDC), at any one point in time one in every 20 hospital patients in the United States has an HAI.

"This study demonstrates that any hospital ICU can go a year or two without an infection if it commits to implementing this targeted quality improvement initiative. With CUSP, the goal of a year or two without a CLABSI is achievable," said the study's lead author, Peter J. Pronovost, M.D., Ph.D., a professor of anesthesiology and critical care medicine at The Johns Hopkins University School of Medicine in Baltimore.

In conjunction with the Michigan Health and Hospital Association, Dr. Pronovost led development of the AHRQ-sponsored Keystone Intensive Care Unit Project to reduce infections in Michigan hospitals by implementing CUSP.

The Keystone Project used a comprehensive approach that included promoting a culture of patient safety; improving communication among ICU staff teams; and using a checklist to promote implementation of infection control practices based on guidelines from the CDC. AHRQ continues to support the nationwide implementation of CUSP through a contract with the Health Research & Educational Trust, an affiliate of the American Hospital Association, by reaching more hospitals and other settings in addition to ICUs and applying the approach to various HAIs. For AHRQ's recently funded HAI projects, go to www.ahrq.gov/qual/haify10.htm. For more information on CUSP, go to www.ahrq.gov/qual/cusp.htm.

The CUSP implementation activities support the Partnership for Patients, a new national public-private partnership with hospitals, medical groups, consumer groups, and employers that will help save lives by preventing millions of injuries and complications in patient care over the next 3 years. The Department of Health and Human Services (HHS) has set a goal of decreasing preventable hospital-acquired conditions by 40 percent (compared with 2010 rates) by the end of 2013. Achieving this goal should result in approximately 1.8 million fewer injuries and illnesses to patients, with more than 60,000 lives saved over the

continued on page 27

Bloodstream infections
continued from page 26

next 3 years. By preventing injuries and complications and reducing readmissions, the Partnership for Patients has the potential to save up to $35 billion in health care costs by the end of 2013.

For additional information, see the Partnership for Patients at www.HealthCare.gov/center/programs/partnership and the HHS Action Plan to Prevent Healthcare-Associated Infections at www.hhs.gov/ash/initiatives/hai/index.html.

Editor's Note: Additional research findings from the Keystone Project are available. One study, "Impact of a Statewide Intensive Care Unit Quality Improvement Initiative on Hospital Mortality and Length of Stay: Retrospective Comparative Analysis," published in the Feb. 1, 2011, issue of the *British Medical Journal* showed that patients in ICUs participating in the Keystone Project were less likely to die. In "Rates of Pneumonia Dramatically Reduced in Patients on Ventilators in Michigan Intensive Care Units," published in the Feb. 17, 2011, issue of *Infection Control and Hospital Epidemiology*, researchers demonstrated that hospitals participating in the Keystone Project reduced the rate of ventilator-associated pneumonia by more than 70 percent. ■

Over 3 million look to hospitals for headache relief

More than 3 million Americans went to hospital emergency rooms seeking relief from headaches and there were 81,000 hospitals admissions, according to the latest News and Numbers from the Agency for Healthcare Research and Quality. One-third of the emergency visits and two-thirds of the hospital stays were for migraine headaches.

AHRQ also found in 2008 that:

- Women accounted for nearly 3 out of 4 emergency department visits and hospital admissions for headaches.
- Migraines were about 4 times more common among women than men in both the emergency department and the hospital.
- People from the lowest-income communities were 2.3 times more likely than those from the highest-income communities to go to the emergency room for headaches—1,300 versus 565 visits per 100,000 people, respectively.
- Rural residents were 1.6 times more likely than their urban counterparts to make emergency department visits for headaches (1,425 vs. 896 visits per 100,000 people).
- By age, the most likely to make emergency departments visits for headache was 18-to-44 year-olds (1,626 visits per 100,000 people) and the least likely were those 18 and younger (345 visits per 100,000 people).
- The Midwest and South led the country in emergency department visit rates for headache (1,158 and 1,131 per 100,000 people), compared with the Northeast's 809 visits per 100,000 people and the West's 744 visits per 100,000 people.

This AHRQ News and Numbers is based on data in *Headaches in U.S. Hospitals and Emergency departments, 2008* (http://www.hcup-us.ahrq.gov/reports/statbriefs/sb111.pdf). The report uses data from the 2008 Nationwide Inpatient Sample and from the 2008 Nationwide Emergency Department Sample — databases of hospital inpatient stays and emergency department visits in all short-term, non-Federal hospitals. The data are drawn from hospitals that comprise 95 percent of all discharges in the United States and include patients, regardless of insurance type, as well as the uninsured.

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

Most American women experience complications during delivery

Over 9 out of every 10 women giving birth in the United States had some complication in 2008, according to the latest News and Numbers from the Agency for Healthcare Research and Quality (AHRQ). According to data from the Federal agency, 94 percent of women hospitalized for pregnancy and delivery had complications such as: premature labor, urinary infection, anemia, diabetes, vomiting, bleeding, laceration of the area between the vagina and anus during delivery, abnormal fetal heart rate, advanced maternal age (over 35 years), and hypertension and eclampsia (a condition associated with high blood pressure that can involve swelling and seizures).

AHRQ also found that among these women in 2008:

- Hospital stays for pregnancies with complications averaged 2.9 days, while the average hospital stay for an uncomplicated delivery was 1.9 days.
- A hospital stay for a complicated pregnancy averaged $4,100, nearly 50 percent more costly than a delivery without any health issues ($2,600).
- Pregnancy- and delivery-related complications accounted for $17.4 billion, or nearly 5 percent of total U.S. hospital costs.

This AHRQ News and Numbers summary is based on data from *Complicating Conditions of Pregnancy and Childbirth, 2008* (www.hcup-us.ahrq.gov/reports/statbriefs/sb113.pdf).

The report uses data from the Agency's 2008 Nationwide Inpatient Sample. For information about this AHRQ database, go to www.ahrq.gov/data/hcup/datahcup.htm. For other information, or to speak with an AHRQ data expert, please contact Linwood Norman at Linwood.Norman@ahrq.hhs.gov or call (301) 427-1248. ■

Readmissions in 30 days or less account for 1 in 9 hospital admissions

In 2008, nearly 12 percent of hospital stays were readmissions within 30 days of a previous stay, according to the latest News and Numbers from the Agency for Healthcare Research and Quality. The Federal agency's analysis, which was based on data from 15 States, also found that 7 percent of hospital stays were readmissions within 14 days of their previous stay and 4 percent were readmissions within 1 week.

In 2008, for Medicaid patients admitted for reasons other than childbirth:

- The highest percentage of readmissions occurred in the 45 to 64 age group. The rates were about 8 percent, 14 percent, and nearly a quarter of hospital stays within 7 days, 14 days, and 30 days of their initial stay, respectively.
- Close to 21 percent of hospital stays for those aged 18 to 44 years old were readmissions within 30 days.
- For adult Medicaid patients under age 65, the readmission rates were 50 percent higher than those of the privately insured for any time periods within 30 days of discharge.
- For Medicare patients aged 65 and older, about 19 percent of hospital stays were readmissions within 30 days, 11 percent were readmissions within 14 days, and 6.5 percent were readmissions within 7 days.

This AHRQ News and Numbers summary is based on data from *All-Cause Readmissions by Payer and Age, 2008* (www.hcup-us.ahrq.gov/reports/statbriefs/sb115.pdf). The report uses data from 15 States in AHRQ's 2008 State Inpatient Databases. These states are Arkansas, California, Florida, Hawaii, Louisiana, Massachusetts, Missouri, Nebraska, New Hampshire, New York, South Carolina, Tennessee, Utah, Virginia, and Washington. For information about this AHRQ database, go to www.ahrq.gov/data/hcup/datahcup.htm.

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

Report shows physicians view e-prescribing features as cumbersome

E-prescribing systems can provide physicians access to important patient information, such as drugs prescribed by physicians in other practices and formulary information that can help reduce insured patients' drug costs. But many physicians are reluctant to use these features, because they are viewed as cumbersome and unreliable, according to a new report funded by the Agency for Healthcare Research and Quality. The report, prepared by researchers at the Center for Studying Health System Change, is a qualitative study of 24 physician practices using e-prescribing systems. The study highlighted two barriers to use:

- Tools to view and use the patient health information are cumbersome to use in some systems.
- Data are not always seen as useful enough to expend the extra effort to use them.

You can access the study at www.hschange.org/CONTENT/1202. ■

Connecting local providers to academic medical centers using video improved hepatitis C outcomes

Widely available technology, expert training, and real-time feedback helped ensure that patients treated for hepatitis C in local communities did as well as patients treated at a university-based medical center, shows a new study funded by the Agency for Healthcare Research and Quality. The study was published in the June 2 online issue of the *New England Journal of Medicine* and in the June 9 print edition.

To bring effective treatment to persons with the hepatitis C virus (HCV) infection in underserved areas, researchers at the University of New Mexico Health Sciences Center (UNMHSC) developed a model called Extension for Community Healthcare Outcomes, or ECHO, that brings state-of-the-art medical knowledge to primary care providers and nurses.

Using videoconference or teleconference lines, community-based medical teams, including physicians and nurses, take part in weekly clinics with specialists. Together, they discuss patients' medical history, review lab results and other key findings, and collaborate on treatment plans using evidence-based treatment approaches.

Study authors examined outcomes for 407 patients undergoing treatment for HCV infection at 21 community settings, including five prisons, and at a UNMHSC-affiliated clinic in Albuquerque. They found that the HCV infection was cured at a similar rate for patients who were treated at these community-based settings as patients who were treated at the university clinic (58.2 percent vs. 57.5 percent).

"The key to this study is that technology helped local physicians and other providers deliver safe, high-quality care within their own—in most cases, underserved—communities," said AHRQ Director Carolyn M. Clancy, M.D. "We've known that geography can play a role in timely and appropriate treatment, especially in managing complex conditions such as hepatitis C; however, it doesn't have to mean destiny."

Approximately 3.2 million Americans are chronically infected with HCV, which causes 12,000 deaths per year. It is the leading cause of liver transplantation. Although treatment is available and effective, it can cause serious side effects and, therefore, must be carefully managed by a medical team. Typically, such care and treatment is not available outside of university medical centers.

"Project ECHO demonstrates that we can solve the problems of underserved communities by empowering primary care clinicians to provide high-quality specialty care locally," said Sanjeev Arora, M.D., the liver disease specialist at UNMHSC who created Project ECHO. "This empowerment—what we call a 'force multiplier effect'—holds promise for reforming health care delivery nationally."

continued on page 30

Hepatitus C outcomes

continued from page 29

Because a majority of patients at the community setting were Hispanic, the study also achieved a related goal of increasing treatment for underserved and minority patients. AHRQ's 2010 *National Healthcare Quality Report*, released in February, found that Hispanics had worse access to care than non-Hispanics for five of six measures of ability to obtain health services.

For more on the *National Healthcare Quality Report* and the *National Healthcare Disparities Report*, go to www.ahrq.gov/qual/qrdr10.htm. The U.S. Department of Health and Human Services also recently launched its action plan to prevent and treat viral hepatitis. To read the plan, go to www.hhs.gov/ash/initiatives/hepatitis.

AHRQ's health information technology (IT) initiative is part of the Nation's strategy to put health IT to work in health care. Since 2004, AHRQ has invested more than $300 million in contracts and grants in more than 200 communities in 48 States to develop knowledge about and encourage adoption of health IT practices that improve quality. Project ECHO is an example of how these research investments make a difference for America's health care systems and patients. ■

Announcements

AHRQ's 2011 Annual Conference set for September 18-21

The Agency for Healthcare Research and Quality's 2011 Annual Conference, "AHRQ: Leading Through Innovation & Collaboration," is scheduled for September 18-21 at the Bethesda North Marriott Hotel and Convention Center in Bethesda, MD. Leading authorities in health care research and policy will participate in sessions focused on addressing today's challenges in improving care quality, access, and value. Health care pioneers have been invited to talk about their local successes, which have national potential. Register for the conference at www.capconcorp.com/AHRQ/Registration.asp. Information on the agenda, posters, and more is at wwwcapconcorp.com/AHRQ. ■

AHRQ toolkit helps to prevent hospital-acquired pressure ulcers

The Agency for Healthcare Research and Quality's new Web-based resource can assist hospital staff in implementing effective pressure-ulcer prevention practices through an interdisciplinary approach to care. *Preventing Pressure Ulcers in Hospitals: A Toolkit for Improving Quality of Care* (www.ahrq.gov/research/ltc/pressureulcertoolkit), provides links to tools that outline a step-by-step hospital-based initiative to target interventions in those areas where patient care processes have shown the most risks to patient skin integrity. Pressure ulcers acquired during acute care hospital stays present significant treatment and recovery delays for patients. Hospitals can tailor the toolkit to meet their needs to implement new strategies and to track, record, and assess progress in pressure-ulcer management. According to AHRQ's Healthcare Cost and Utilization Project, the costs for adults in U.S. hospitals treated for pressure ulcers developed prior to admission or hospital-acquired is more than $11 billion dollars a year. The *Pressure Ulcer Toolkit* is included as a resource in the new Partnership for Patients, a public-private program to improve patient safety. ■

Stereotactic body radiation therapy reviewed

The Agency for Healthcare Research and Quality's (AHRQ's) Effective Health Care Program has released a new technical brief, *Stereotactic Body Radiation (SBRT)*, which provides a broad overview of the current state of evidence on the use of SBRT for targeting solid malignant tumors. The brief also identifies gaps in the scientific data regarding the theoretical advantages of SBRT over other radiotherapies in actual clinical use.

While SBRT appears to be widely used for treatment of a variety of cancer types, none of the currently available studies includes comparison groups. AHRQ-funded researchers noted that in order to fully assess the benefits and risks of SBRT, comparative studies are needed. These studies should preferably be randomized trials but, at a minimum, there is a need for trials with concurrent controls.

The technical brief also provides a review of key research questions that remain unanswered and may be helpful to radiology researchers in prioritizing future research.

To download and read the technical brief, visit the Effective Health Care Web site at www.effectivehealthcare.ahrq.gov. ■

Evidence report on safety of probiotics published

AHRQ has released a new evidence report, *Safety of Probiotics Used To Reduce Risk and Prevent or Treat Disease*, to catalog what is known about the safety of interventions containing organisms from six different genera used as probiotic agents *(Lactobacillus, Bifidobacterium, Saccharomyces, Streptococcus, Enterococcus, and Bacillus)*, alone or in combination, used to reduce the risk of, prevent, or treat disease. The report, prepared by AHRQ's RAND-Southern California Evidence-based Practice Center, was jointly sponsored by the National Institutes of Health (NIH) Office of Dietary Supplements, the NIH National Center for Complementary and Alternative Medicine, and the Food and Drug Administration Center for Food Safety and Applied Nutrition. You can view the report at www.ahrq.gov/clinic/tp/probiotictp.htm. A print copy is available by sending an e-mail to AHRQpubs@ahrq.hhs.gov. ■

Guide helps consumers reduce medication errors

AHRQ and the National Council on Patient Information and Education have released a newly revised guide to help patients learn more about how to take medicines safely. *Your Medicines: Be Smart. Be Safe* is a booklet that includes a detachable, wallet-sized card that can be personalized to help patients keep track of all medicines they are taking, including vitamins and herbal and other dietary supplements. Available in English and Spanish, the guide includes questions that patients can ask their doctors about their medications. Select to download a copy of the guide: www.ahrq.gov/consumer/safemeds/yourmeds.pdf. To order copies, contact the AHRQ Publications Clearinghouse at AHRQPubs@ahrq.hhs.gov or call (800) 358-9295. ■

Evidence report examines health IT impact on medication management

AHRQ has released a new evidence report, *Enabling Medication Management Through Health Information Technology*, that examines the impact—clinical, economic, and effectiveness—of health information technology (IT) applications on medication management. The review, conducted by AHRQ's McMaster University Evidence-based Practice Center, Hamilton, Ontario, Canada, found that health IT-enabled applications, especially clinical decision support and computerized physician order entry systems, showed evidence of improved care processes. However, the review also showed that few studies examined economic or clinical outcomes, and revealed mixed findings about clinician effectiveness and cost-effectiveness. You can view the report at www.ahrq.gov/clinic/tp/medmgttp.htm. A print copy is available by sending an e-mail to AHRQPubs@AHRQ.hhs.gov. ■

AHRQ releases new report on pain management of hip fracture

A new report from the Agency for Healthcare Research and Quality (AHRQ), *Comparative Effectiveness of Pain Management Interventions for Hip Fracture*, concludes that while most hip pain interventions result in short-term improvements (patient-reported pain scores), there is little evidence supporting the effectiveness of one treatment over another. The systematic review of 83 studies compares the effectiveness and safety of both drug and non-drug pain treatments for older patients admitted to the hospital after fracturing a hip.

The report is accompanied by a consumer guide explaining hip fractures and summarizing the available treatment options, and a clinician guide for use in decisionmaking and in discussions with patients.

You can read and download the full report from AHRQ's Effective Health Care Program Web site at www.effectivehealthcare.ahrq.gov.

The consumer guide, *Managing Pain From a Broken Hip*, and the clinician guide, *Evidence About Effectiveness of Pain Management Interventions for Elderly Patients With Hip Fracture*, are also available. ■

Opportunities for advancing delivery system research—AHRQ meeting summary now online

The public and private sectors are experimenting with promising new ways to deliver and pay for care. But rigorous research is needed to identify the most effective approaches, circumstances under which these approaches are most likely to succeed, and requirements for scaling up and spreading the most promising forms of care delivery. To advance research on the design and improvement of the delivery of care, the Agency for Healthcare Research and Quality (AHRQ) recently convened a meeting on "The Challenge and Promise of Delivery System Research."

Participants included recent delivery system grantees, leading Federal officials and health policy experts, and prominent health service researchers, whose research covers areas such as the primary care medical home, care coordination, payment, reporting, and improvement of care quality and efficiency. Authors of commissioned white papers and meeting participants identified and discussed key topics and research methods deserving greater attention by funding agencies and researchers, as well as necessary ingredients for successful spread of promising innovations. A summary of the meeting's recommendations for advancing delivery system research is available at www.ahrq.gov/qual/deliverysys/2011mtg/mtgsumm.htm. For more information, contact Michael.Harrison@ahrq.hhs.gov. ■

Important information about CHIPRA core set of recommended health care quality measures released

The Children's Health Insurance Program Reauthorization Act (CHIPRA) legislation required a core set of recommended health care quality measures to be identified for voluntary use by State Medicaid and the Children's Health Insurance Programs, which together cover almost 40 million American children and adolescents. In a special May-June supplement to *Academic Pediatrics*, noted authorities presented critical insights into the issues surrounding the initial core set and key concepts for improving children's health care. In the introductory article, "The Children's Health Insurance Program Reauthorization Act Quality Measures Initiatives: Moving Forward To Improve Measurement, Care, and Child and Adolescent Outcomes," AHRQ's Senior Advisor, Child Health and Quality Improvement, Denise Dougherty, Ph.D., and co-authors describe the current environment in children's health care, noting that children make up 26 percent of the nation's population and account for 1 in 6 health care dollars, yet only receive 47 percent of the recommended clinical care.

Go to www.ncbi.nlm.nih.gov/pubmed/21570012 to access the abstract on PubMed.® Go to www.ncbi.nlm.nih.gov/pubmed/21570024A to access a second AHRQ abstract in the special Supplement, "Transforming Children's Health care Quality and Outcomes—A Not-so-Random Non-Linear Walk Across the Translational Continuum." Reprints are available by sending an e-mail to AHRQPubs@ahrq.hhs.gov. ■

Annett, R.D., Bender, B.G., Skipper, B., and Allen, C. (2011). "Predicting moderate improvement and decline in pediatric asthma quality of life over 24 months." (AHRQ grant HS09123). *Quality of Life Research* 19, pp. 1517-1527.
Because quality of life reflects disease control from the patient's perspective, its measurement has become an important objective of asthma management and research. The authors of this study examined factors associated with moderate improvement in quality of life over a 24-month period for 1,041 children and parents who participated in a Childhood Asthma Management Program. Medication treatment did not contribute to changes (either improvement or decline) in child or parent quality of life during the study period. However, the single determinant of moderate improvement in physical activities was the use of steroid therapy in the preceding 4 months. The factors most strongly associated with moderate decline in child-reported quality-of-life score were reports of asthma interfering with the child's life and specific child psychological functioning.

Andrews, R.M. (2011). "Race and ethnicity reporting in Statewide hospital data: Progress and future challenges in a key resource for local and State monitoring of health disparities." *Journal of Public Health Management Practice* 17(20), pp. 167-173. Reprints (AHRQ Publication No. 11-R033) are available from AHRQ.*
Statewide hospital discharge data are an important resource for identifying and tracking racial and ethnic disparities at the local, State, and national levels. This study examined the extent of race-ethnicity coding in statewide hospital discharge data systems, compared the collection to national standards, and assessed the completeness and accuracy of race-ethnicity data collected in these systems. Information from the Healthcare Cost and Utilization Project State Inpatient Databases, sponsored by the Agency for Healthcare Research and Quality, was the primary source of data for the study. Race data collection increased from 14 to 43 States between 1991 and 2008. In 2008, 20 States conformed to the 1997 Office of Management and Budget directive standard, 19 used the 1977 standard, 10 collected multi-racial data, 4 did not collect Hispanic ethnicity, and 3 collected detailed data by racial-ethnic categories.

Brokel, J.M., Schwichtenberg, T.J., Wakefield, D.S., and others. (2011, February). "Evaluating clinical decision support rules as an intervention in clinician workflows with technology." (AHRQ grant HS15196). *CIN: Computers, Informatics, Nursing* 29(1), pp. 36-42.
Clinical information systems in rural hospitals lag 40 to 50 percent behind urban hospitals. The high cost of implementing the electronic health records (EHRs) has been a significant obstacle in rural areas. The clinical decision support (CDS) applications within the EHR are powerful information technology tools to foster efficiencies and affect outcomes. This study describes the process of validation of one of the complex types of CDS interventions, the CDS rule (CDSR). Since 2005, the study hospital has added specific CDSRs for catheter-acquired urinary tract infections, deep venous thrombosis, heart failure, and more. The findings validate the use of CDSRs across sites and the ability to use existing indicators to measure outcomes. The authors present a model for design and validation of CDSRs into workflow processes. They plan further research to test the effectiveness of more CDSRs across facilities.

Brown, T.T., Mehta, S.H., Sutcliffe, C., and others. (2010). "Hepatic steatosis associated with increased central body fat by dual-energy X-ray absorptiometry and uncontrolled HIV in HIV/hepatitis C co-infected persons." (AHRQ grant HS07809). *AIDS* 24(6), pp. 811-817.
Only a subset of HIV/hepatitis C (HCV) patients will progress to end-stage liver disease, and the risk factors associated with disease progression are not fully understood. The researchers evaluated the relationship between regional body composition and liver disease (fibrosis or steatosis) in HIV/HCV co-infected patients.

Whole body dual-energy X-ray absorptiometry (DXA) was

continued on page 35

continued from page 34

performed in 173 HIV/HCV co-infected persons within 12 months of a liver biopsy. In this group, who underwent both DXA and histologic evaluation of liver biopsy specimens, hepatic steatosis was significantly associated with increased central fat, whereas hepatic fibrosis was not correlated with any measure of body composition. Another finding was that steatosis was associated with uncontrolled HIV replication rather than the use of antiretroviral therapy or specific antiretroviral therapy.

Clancy, C. (2011, April). "Patient engagement in health care." *HSR: Health Services Research* 46(2), pp. 389-393. Reprints (AHRQ Publication No. 11-R043) are available from AHRQ.*

In this issue of the journal, the author briefly introduces four papers addressing distinct tasks of patient engagement in health care, and one paper presenting a patient-centered approach to assessing health care expenditures. One paper on the tasks of patient engagement in health care is a discrete-choice experiment among Dutch consumers eliciting their willingness to switch general practitioners or pharmacists in response to different copayments and information on quality of care. A second paper assesses how financial incentives and quality information from multiple sources affect consumer choice of physicians. A third paper assesses the psychometric properties of Hibbard's Patient Activation Measure. Finally, a fourth paper assesses the extent to which racial/ethnic differences in ratings of patient experience represent true differences or perceptions. The author concludes that a focus on the interactions between new models of care and patients' engagement will be an indispensable component of research illuminating which models are most effective.

El-Kareh, R.E., Gandhi, T.K., Poon, E.G., and others. (2011). "Actionable reminders did not improve performance over passive reminders for overdue tests in the primary care setting." (AHRQ grant HS15226). *Journal of the American Medical Informatics Association* 18, pp. 160-163.

Many primary care patients do not receive recommended preventive or chronic disease care. Actionable reminders (electronic reminders linked to computerized order entry) might improve care by facilitating direct ordering of recommended tests. The researchers created a set of such reminders that appeared each time a clinician opened an electronic patient chart. These reminders targeted performance of annual mammography, one-time bone-density screening, and diabetic testing. The intervention was implemented in 2007-2008 in four primary care clinics employing 25 primary care physicians. Among these physicians, 79 percent almost never used the system or were unaware of the functionality. Actionable reminders in the primary care setting did not affect the performance of overdue testing compared with passive reminders. The limited effect of these reminders was likely strongly influenced by inefficiencies in the test-ordering process.

Flaherman, V.J., Chien, A.T., McCulloch, C.E., and Dudley, R.A. (2011). "Breastfeeding rates differ significantly by method used: A cause for concern for public health measurement." (AHRQ grant HS17146). *Breastfeeding Medicine* 6(1), pp. 31-35.

The Centers for Disease Control and Prevention (CDC) has reported that rates of initial breastfeeding in the immediate post-partum period are close to the Healthy People 2010 goal of 75 percent of mothers initiating breastfeeding. But rates of "exclusive" breastfeeding through 3 and 6 months are estimated to be 30.5 percent and 11.3 percent, respectively. Researchers compared the estimates of "any" and "exclusive" breastfeeding from two different data sources, the National Immunization Survey (NIS) used by CDC and the California Newborn Screen (CNS) used by the California Department of Public Health. They found that the rates for "any" breastfeeding were similar using NIS and CNS data for the State as a whole, and for most racial/ethnic groups and geographic areas. In contrast, "exclusive" breastfeeding rates as reported by the two sources differed significantly, with the NIS reporting 60.4 percent and the CNS reporting 41.6 percent. This suggests that either or both sources are flawed measures of "exclusive" breastfeeding.

Mark, B.A., and Harless, D.W. (2011, April). "Adjusting for patient acuity in measurement of nurse staffing." (AHRQ grant HS10153). *Nursing Research* 60(2), pp. 107-114.

This study concludes that until a standardized system for measuring patient acuity (patient requirements for nursing care) is developed,

continued on page 36

continued from page 35

tested, implemented widely in hospitals, and adopted by researchers, the power of the evidence base about nurse staffing to drive practice will not reach its full potential. The frequently used Medicare case mix index (CMI), a physician- and medical-diagnosis-oriented measure, is not really intended for this purpose. The researchers examined the unadjusted measures of registered nurse (RN) staffing (RNs per 1,000 adjusted patient days) and CMI-adjusted nurse staffing as well as nurse staffing adjusted with nursing intensity weights (NIW), a measure of patients' needs for nursing care. They drew on secondary data from 579 hospitals in 13 States from 2000 to 2006 that included three measures of nurse staffing and hospital characteristics. The study found statistically significant differences between NIW-adjusted staffing and CMI-adjusted staffing for ownership, teaching status, hospital size, and proportion of Medicare inpatient days.

Meyers, D., Quinn, M., and Clancy, C. (2011). "Health information technology: Turning the patient-centered medical home from concept to reality." ***American Journal of Medical Quality*** **26, pp. 154-156. Reprints (AHRQ Publication No. 11-R044) are available from AHRQ.***

The nation's primary care infrastructure is under great strain. The patient-centered medical home (PCMH) has emerged as a model of care that would restore order to the nation's primary care system. The PCMH is more necessary now than ever before because of skyrocketing medical costs, an aging and growing population, advances in the science of diagnostic and treatment procedures, and the rapid expansion of chronic care needs. Health information technology (IT), such as electronic health records can facilitate the development of and implementation of PCMHs by collecting and managing personal health information, enhancing communication among providers and patients, supporting providers' decisionmaking on tests and treatments, and in other ways. Research by the Agency for Healthcare Research and Quality is supporting the effort to apply the best features of health IT to create a PCMH that will improve care for all Americans.

Reynolds, C., Quan, V., Kim, D., and others. (2011, January). "Methicillin-resistant ***staphylococcus aureus*** **(MRSA) carriage in 10 nursing homes in Orange County, California." (AHRQ Contract No. 290-05-0031).** ***Infection Control and Hospital Epidemiology*** **32(1), pp. 91-93.**

Previous studies showed methicillin-resistant *staphylococcus aureus* (MRSA) prevalence ranging from 5 percent to 40 percent in nursing homes, but few explained this variation. The researchers measured MRSA prevalence among 10 nursing homes in 1 county and identified factors predicting carriage. MRSA carriage varied substantially across the nursing homes, with an overall point prevalence of 31 percent compared with 6 percent in hospitals and 9-24 percent in intensive care units. Overall, MRSA point prevalence was 67 percent higher than admission prevalence. MRSA carriage was associated with high proportions of Medicaid-insured residents. Limited resources may impact patient care and cleaning staff ratios, availability of single rooms, and cleaning and infection-control practices. The researchers concluded that MRSA burden was associated with admission of patients to the nursing home, but transmission from resident to resident was also evident and may relate to facility resources.

Richardson, T.M., He, H., Podgorski, C., and others. (2010, December). "Screening for depression for aging services clients." (AHRQ grant T32 HS00044). ***American Journal of Geriatric Psychiatry*** **18(12), pp. 1116-1123.**

Accurate and timely detection of major and subsyndromal depression is critical to reducing the burden of depression for the elderly. One setting that may offer a unique and important opportunity for elders at risk for affective illness is the Aging Services Network consisting of nearly 20,000 community services organizations. Yet systematic efforts to detect depression and other affective illnesses in this setting are rare. In primary care settings, the Patient Health Questionnaire (PHQ-9) is perhaps the most widely disseminated screening tool for depressive symptoms among adults, including the elderly. The PHQ-2, an abbreviated version of the PHQ-9, has similar properties. In a test including 378 persons, 60 years of age or older, who were clients of a single aging services provider, the researchers found that the PHQ-9 had greater specificity than the PHQ-2. This meant that its use would lead to fewer false positives and related higher costs.

continued on page 37

continued from page 36

Stevens, A.B., and Sanghi, S. (2010). "Emerging frontiers in healthcare research and delivery. The 16th Annual HMO Research Network Conference, March 21-24, 2010, Austin, Texas." (AHRQ grant HS18886). *Clinical Medicine & Research* 8 (3/4), pp. 135-137.

The purpose of this article is to provide information about the Health Maintenance Organization Research Network (HMORN) and its 16th annual conference held in March 2010. The HMORN is a collaboration of 16 nationally and internationally recognized research centers based within not-for-profit health care delivery systems. The theme of the conference was "Emerging Frontiers in Healthcare Research and Delivery." More than 320 researchers and health care professionals attended the conference. Some of the 16 session topics were cancer research, health and bioinformatics, virtual data warehouse, cardiovascular research, and genetics. The agenda included a new participant-directed group format in which small groups were formed based on topics of interest to the group, with facilitators provided by the organizing committee.

Strom, B.L., and Schinnar, R. (2011, February). "Evaluating health information technology's clinical effects." (AHRQ grant HS10399). *LDI. Issue Brief.* 16(4).

The researchers report on the experience of one hospital system that used its computerized physician order entry (CPOE) system to reduce the occurrence of a drug interaction between warfarin, an anticoagulant, and trimethoprim-sulfamethoxazole (TMP/Sulfa), an antibiotic. Patients who take both drugs are much more likely to develop bleeding from warfarin. The intervention consisted of using the CPOE system to introduce a hard-stop alert notifying the clinician that the order could not be processed due to a potential drug interaction. During the study period, clinicians ordered 8,826 prescriptions for warfarin or TMP/Sulfa, with 55 physicians triggering alerts in the intervention group. The trial was stopped for ethical reasons, because of three delays in prescribing one of the two drugs and one failure to prescribe TMP/Sulfa to a critically ill patient. The researchers conclude that their study illustrates why formal evaluation is needed in the implementation of health information technology.

Sun, F., Kosberg, J.I., Kaufman, A.V., and others. (2010). "Coping strategies and caregiving outcomes among rural dementia caregivers." (AHRQ grant HS13189). *Journal of Gerontological Social Work* 53(6), pp. 547-567.

The researchers studied 141 family caregivers of persons with dementia in rural Alabama in order to learn about caregiver coping strategies and their relation to caregiver quality-of-life measures. Coping styles came from caregiver responses to the 60-item COPE Scale. Almost all of the rural caregivers used religious coping, followed by planning, growth, acceptance, and active coping. The least-used coping strategies included mental disengagement, behavioral disengagement, denial, and disengagement through alcohol or drug use—all considered dysfunctional coping styles. The researchers found a direct relationship between deliberate coping and education, and an inverse relationship between avoidance coping and both education and perceptions of having adequate income. They suggest that social workers in rural settings give particular attention to caregivers who use avoidance coping by using interventions to alter their coping styles.

Turchin, A., and Conlin, P.R. (2011). "The doctor needs to see you now: Accelerating the care of patients with uncontrolled hypertension." (AHRQ grant HS17030). *Expert Reviews. Cardiovascular Therapeutics* 8(11), p. 1501-1503.

Barely half of hypertensive adults in the United States have their blood pressure under control (<140/90mmHg). Studies show that patients with elevated blood pressure are being seen much less frequently than the monthly or more frequent visits recommended by guidelines. This study of 5,042 hypertensive patients with diabetes found that patients who saw their physicians monthly or more often normalized their blood pressure within 1.5 months compared with 12.2 months for patients seen less frequently. They cite a number of other studies showing that earlier control of hypertension was correlated with a lower incidence of stroke, cardiovascular complications, and mortality. The authors conclude that clinicians should feel comfortable adopting treatment algorithms that actively and rapidly manage patients with uncontrolled hypertension using patient encounter intervals of 2 weeks or less.

continued on page 38

Research briefs

continued from page 37

Wagner, P.J., Howard, S.M., Bentley, D. R., Seol, Y-H., and Sodomka, P. (2010). "Incorporating patient perspectives into the personal health record: Implications for care and caring." (AHRQ grant HS17234). *Perspectives in Health Information Management* Fall 2010, pp. 1-12.

The purpose of this study was to examine patient perspectives on electronic personal health record (ePHR) use and functionality as part of the development process of an existing ePHR, to assess whether these ideas are technologically feasible, and to compare the patient views to the expectations of a collaborative team of providers, information technology professionals, patient- and family-centered care experts, and investigators. Patients participated in a semistructured interview after one to two weeks of using an ePHR. Seven technology themes with 40 specific questions were identified and were rank-ordered by importance and feasibility, and 20 suggestions were subsequently implemented into the ePHR. The researchers concluded that incorporating patient feedback on specific utilities and functionality into an existing ePHR is possible.

Wald, J.S., Businger, A., and Gandhi, T.K. (2010). "Implementing practice-linked pre-visit electronic journals in primary care: Patient and physician use and satisfaction." (AHRQ grant HS13362). *Journal of the American Medical Informatics Association* 17(5); pp. 502-506.

The previsit electronic journal (eJournal) was developed as a new feature of a large, integrated health system's electronic health record-connected patient portal. Patients who registered to use the portal could communicate securely with their doctor's office; view selected portions of their medical chart; make requests for prescriptions, appointments, and other matters; and search for health reference information. The researchers invited 2,027 patients at a large, integrated health system in Boston to fill out an eJournal before a primary care visit and surveyed the patients after the visit. Among the 806 patients responding to the survey who submitted eJournals, 55.9 percent reported feeling more prepared for the visit and 58 percent reported that the provider had more accurate information about them.

Woreta, T.A., Sutcliffe, C.G., Mehta, S.H., and others. (2011). "Incidence and risk factors for steatosis progression in adults coinfected with HIV and hepatitis C virus." (AHRQ grant HS07809). *Gastroenterology* 140, pp. 809-817.

Hepatic steatosis (accumulation of triglycerides and other fats in liver cells) is a common finding in individuals coinfected with HIV and hepatitis C virus (HCV). The researchers examined the natural history of steatosis in 222 HIV/HCV coinfected patients who attended an urban HIV clinic between 1993 and 2008. Initial biopsy specimens from 88 percent of patients had either no fat or trivial amounts of fat. But the second biopsy samples showed 74 percent with little or no fat and 13 percent with significant amounts of fat. Fibrosis progression was observed more frequently in conjunction with an increase in steatosis. Fat progression was associated with the clinical diagnosis of alcoholism and a body mass index greater than 25kg/m^2. Importantly, exposure to contemporary antiretroviral medications and higher baseline CD4 cell count (indicating better immune system function) appeared to be protective against progressive steatosis.

Wright, A., Sittig, D.F., Ash, J.S., and others. (2011). "Governance for clinical decision support: Case studies and recommended practices from leading institutions." (AHRQ Contract No. 290-2008-10010). *Journal of the American Medical Informatics Association* 18, pp. 187-194.

Clinical decision support (CDS) represents a critical tool for improving the quality and safety of health care. Careful consideration of governance issues when developing and implementing CDS can be as important as the quality of the decision support itself. However, limited research exists about optimal and real-world CDS governance practices. The authors show how five diverse health care organizations developed their governance structures and discuss some of the tools they are using to support these activities. They identify six recommended practices in the area of governance and four in the area of content management. Many of these recommended practices may be nearly universal and all implementers of decision support should consider employing them. ■

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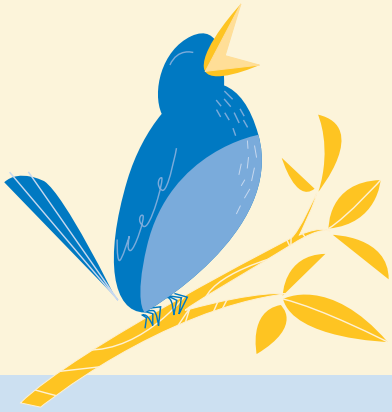

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