



RESEARCH ACTIVITIES

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Health care quality still improving slowly, but disparities and gaps in access to care persist

Improvements in health care quality continue to progress at a slow rate—about 2.3 percent a year. However, disparities based on race and ethnicity, socioeconomic status, and other factors persist at unacceptably high levels, according to the 2010 *National Healthcare Quality Report* and *National Healthcare Disparities Report* released by the Agency for Healthcare Research and Quality (AHRQ) of the Department of Health and Human Services.

The reports, which are mandated by Congress, show trends by

measuring health care quality for the nation using a group of credible core measures. The data are based on more than 200 health care measures categorized in several areas of quality: effectiveness, patient safety, timeliness, patient-centeredness, care coordination, efficiency, health system infrastructure, and access.

“All Americans should have access to high-quality, appropriate, and safe health care that helps them achieve the best possible health, and these reports show that we are making very slow progress toward that goal,” said AHRQ Director Carolyn M. Clancy, M.D. “We need to ramp up our overall efforts to improve quality and focus specific attention on areas that need the greatest improvement.”

Gains in health care quality were seen in a number of areas, with the highest rates of improvement in measures related to treatment of acute illnesses or injuries. For example, the proportion of heart attack patients who underwent procedures to unblock heart arteries within 90 minutes improved from 42 percent in 2005 to 81 percent in 2008.



AHRQ's new quality and disparities reports

Other very modest gains were seen in rates of screening for preventive services and child and adult immunization. However, measures of lifestyle modifications such as preventing or reducing obesity, smoking cessation, and substance abuse saw no improvement.

The reports indicate that few disparities in quality of care are getting smaller, and almost no disparities in access to care are getting smaller. Overall, blacks, American Indians, and Alaska Natives received worse care than whites for about 40 percent of core measures. Asians received worse care than whites for about 20 percent of core measures. And

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From the Director



It makes a difference in people's lives when a patient suffering from a heart attack is given the correct lifesaving treatment in a

timely fashion; when medications are correctly administered; and when doctors listen to patients and their families, show them respect, and answer their questions in a culturally and linguistically skilled manner. All Americans should have access to quality care that helps them achieve the best possible health.

With the publication of the eighth *National Healthcare Quality Report* (NHQR) and *National Healthcare Disparities Report* (NHDR), AHRQ stands ready to contribute to efforts that encourage and support the development of national, State, tribal, and "neighborhood"

solutions using national data and achievable benchmarks of care.

The reports underscore the need to accelerate progress if the Nation is to achieve higher quality and more equitable health care in the near future. They show that health care quality and access are suboptimal, especially for minority and low-income groups. These barriers to care and continued disparities in care come at a personal and societal price.

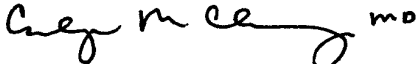
The reports reveal that urgent attention is needed to ensure improved quality and reduced disparities in certain services, geographic areas, and populations, including:

- Cancer screening and management of diabetes;
- States in the central part of the country;
- Residents of inner-city and rural areas; and
- Disparities in preventive services and access to care.

The reports also show uneven progress in eight national priority areas. Two areas, palliative care and patient and family engagement, are improving in quality. Population health, safety, and care access are lagging. Care coordination, overuse of care, and health system infrastructure require more data to assess. All eight priority areas show disparities related to race, ethnicity, and socioeconomic status.

The NHQR and NHDR identify areas where novel strategies have made a difference in improving patients' quality of life, as well as many areas where much more should be done. Future reports will track the success of the National Health Care Quality Strategy, the National Prevention and Health Promotion Strategy, and the National Plan for Action To End Health Disparities.

Information needs to be shared with partners who have the skills and commitment to change health care. Building on data in the NHQR, NHDR, and State Snapshots (<http://statesnapshots.ahrq.gov>), we believe that stakeholders can design and target strategies and clinical interventions to ensure that all patients receive the high-quality care needed to make their lives better.


Carolyn M. Clancy, M.D.

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Quality and disparities reports

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Hispanics received worse care than whites for about 60 percent of core measures. Poor people received worse care than high-income people for about 80 percent of core measures.

Of the 22 measures of access to health care services tracked in the reports, about 60 percent did not show improvement, and 40 percent worsened. On average, Americans report barriers to care one-fifth of the time, ranging from 3 percent of people saying they were unable to

get or had to delay getting prescription medications to 60 percent of people saying their usual provider did not have office hours on weekends or nights. Among disparities in core access measures, only one showed a reduction—the gap between Asians and whites in the percentage of adults who reported having a specific source of ongoing care.

Each year since 2003, AHRQ has reported on the progress and opportunities for improving health care quality and reducing health care disparities. The *National*

Healthcare Quality Report focuses on national trends in the quality of health care provided to the American people, while the *National Healthcare Disparities Report* focuses on prevailing disparities in health care delivery as it relates to racial and socioeconomic factors in priority populations.

The quality and disparities reports are available online at www.ahrq.gov/qual/qdr10.htm, by calling 1-800-358-9295, or by sending an e-mail to ahrqpubs@ahrq.hhs.gov. ■

Disparities/Minority Health

Regional poverty boosts adults' chances of having unmet health care needs

The more poverty in a county (households with income below the Federal poverty line), the more likely that county residents have unmet health care needs, concludes a new study. The researchers examined the impact of regional poverty on 11,255 individuals in Ohio's 48 rural counties and 28,698 individuals in the State's 40 urban counties. They found that almost identical proportions of each group reported an unmet health care need (14.6 percent for rural and 14.5 percent for urban county residents), a marker of health care access. Overall, higher regional poverty in Ohio was associated with a significant 8 percent increased risk of unmet health care needs for rural and urban county residents. This rose to an 11 percent greater risk after adjustment for other factors affecting unmet health care needs, such as health care resources, social capital, and social disruption.

Different measures of health care resources varied in their impact on rural and urban counties. For example, the proportion of physicians in primary care and

hospital beds per capita were associated with unmet health care needs in rural settings. Yet only the proportion of Medicare beneficiaries in managed care showed an association with health care needs in urban areas.

The findings were based on several regional data sources combined with the 2004 Ohio Family Health Survey (an adult sample of 39,953 persons from all 88 counties). Based on their findings, the researchers suggest that interventions to reduce regional poverty could improve health through better access to care. The study was funded in part by the Agency for Healthcare Research and Quality (T32 HS00059).

More details are in "County-level poverty is equally associated with unmet health care needs in rural and urban settings," by Lars E. Peterson, M.D., Ph.D., and David G. Litaker, M.D., Ph.D., in the Fall 2010 *The Journal of Rural Health* 26(4); pp. 373-382. ■ *DIL*

Blacks less likely than whites to use either statins or aspirin in the prevention of cardiovascular disease

Blacks at high risk of cardiovascular disease (CVD) are less likely than similarly at-risk whites to use statins (38 percent vs. 50 percent) or aspirin (29 percent vs. 44 percent). These disparities in use of CVD medications may contribute to the documented disparities in CVD outcomes, concludes a new study.

A team of researchers from the University of Chicago and the University of Illinois analyzed data derived from in-home interviews of a nationally representative sample of 3,005 older adults in the United States. Interviewers asked people about the medications they took and categorized them according to CVD risk as high (1,066 people), moderate (977 people), and low

(812 people). In general, older adults at high risk were more likely to use preventive therapies than those at moderate or low risk. Nearly half (48 percent) regularly used a statin and 41 percent regularly used aspirin. Statin use between whites and Hispanics did not differ for any of the three risk categories. However, Hispanics were less likely than whites to use aspirin and this difference was once again greatest in the high-risk category (30 percent vs. 44 percent).

This study suggests that policies and interventions to reduce racial disparities in statin use may need to extend beyond ensuring equal access to medical care. The disproportionately lower rates of

aspirin use (compared with statins) also suggest that racial/ethnic disparities are not solely due to medication costs or income. Patient preference may be important: statins may have been preferred or prioritized by patients because of their prescription-only status. This study was partly supported by the Agency for Healthcare Research and Quality (HS13599).

See “Racial and ethnic disparities in cardiovascular medication use among older adults in the United States,” by Dima M. Qato, M.D., Stacy Tessler Lindau, M.D., Rena M. Conti, Ph.D., and others in *Pharmacoepidemiology and Drug Safety* 19, pp. 834-842, 2010. ■ MWS

Korean Americans with high blood pressure who are confident they can achieve blood pressure control are more likely to do so

Among Korean-Americans with high blood pressure (hypertension), three factors—the individual’s age, how long they have had hypertension, and how strongly they believe in their ability to achieve blood pressure control—affect hypertension self-care behaviors, a new study finds. The likelihood of using self-care behaviors (taking medication, exercising, eating properly, and controlling one’s weight) was influenced most by the individual’s belief in their ability to control their blood pressure through self-care (hypertension control self-efficacy). In contrast, social support had little influence on hypertension self-care behaviors.

The association of older age and longer duration of hypertension with better self-care behavior might result from more learning opportunities among those living with the disease longer, note the researchers. Their statistical model, which included predictors of

hypertension self-care based on a series of questionnaires and interviews with 445 Korean Americans with high blood pressure, accounted for 18 percent of the variance in self-care scores.

Study participants had systolic blood pressure of 140 mmHg or higher, diastolic pressure of at least 90 mm Hg, or were on medicine to treat hypertension. Normal blood pressure for healthy adults ranges from 90/60 mm Hg to 120/80 Hg. The study was funded in part by the Agency for Healthcare Research and Quality (HS13160).

More details are in “Correlates of self-care behaviors for managing hypertension among Korean-Americans: A questionnaire survey,” by Jong-Eun Lee, Ph.D., R.N., Hae-Ra Han, Ph.D., R.N., Heejung Song, Ph.D., and others in the *International Journal of Nursing Studies* 47(4), pp. 411-417, 2010. ■ DIL

Medication safety indicators can guide improvement in primary care drug selection, dosing, and monitoring

The fact that nearly 4 billion outpatient prescriptions are purchased annually in the United States and a majority of U.S. adults takes at least one prescribed drug underscores the importance of medication safety in primary care practices to prevent adverse drug events (ADEs). Researchers examined 30 medication safety indicators in 20 primary care practices in 14 States. The indicators included preventable errors in therapy selection, dosing, drug-drug interactions, drug-disease interactions, and monitoring. Each practice used a common commercial electronic medical record (EMR).

Across all practices, inappropriate medication treatment was avoided in 75 percent of the eligible patients, dosing errors in 84

percent, drug-drug interactions in 98 percent, and drug-disease interactions in 86 percent.

Appropriate monitoring of potential ADEs occurred in only 75 percent of the eligible patients. The researchers suggest that the classes of medication safety indicators with high adherence (avoiding inappropriate treatment in elderly patients and preventing drug-drug interactions) may be attributed to embedded alerts in the EMR that require a clinician's response before completing the prescription. Those indicators with lower adherence tended to require further action by the clinician, such as calling up additional decision support modules in the software or ordering laboratory tests.

The 20 participating practices had 52,246 active adult patients and

included 74 physicians, 10 nurse practitioners, and 3 physician's assistants. The investigators used a consensus development process to identify 90 potential prescribing and monitoring indicators, which they reduced to 30 indicators of importance in primary care practice. The study was funded in part by the Agency for Healthcare Research and Quality (HS17037).

More details are in "Medication prescribing and monitoring errors in primary care: A report of the Practice Partner Research Network," by Andrea M. Wessell, Pharm.D., Cara Litvin, M.D., M.S., Ruth G. Jenkins, Ph.D., and others in the October 2010 *Quality and Safety in Health Care* 19(5)e21. ■
DIL

Hospital Compare data may not help surgical patients find hospitals with better outcomes

How well hospitals comply with recommended care processes, as reported on the Federal government's Hospital Compare Web site, does not seem to influence three types of key surgical outcomes, according to a new study. Hospital Compare is a Web site (www.hospitalcompare.hhs.gov/) maintained by the Centers for Medicare & Medicaid Services (CMS), which allows potential patients to choose a hospital for treatment by comparing each facility's rates of compliance with processes of care thought to influence patient outcomes. In this case, the care processes examined were use of prophylactic antibiotics to reduce surgical site infections and use of anticoagulants and compression stockings to prevent venous thromboembolism (either deep vein blood clots or blood clots in the lungs).

The Michigan researchers found that, over a 2-year period, 325,052 fee-for-service Medicare beneficiaries

underwent one of 6 relatively common, high-risk surgical procedures at 2,189 hospitals nationwide. Data on care processes meant to reduce the risk of surgical site infections or venous thromboembolism was available for 229,665 admissions at 2,038 hospitals during the same period. The mean surgical compliance rates varied from 53.7 percent for hospitals in the lowest fifth for compliance to 91.4 percent for those in the highest fifth.

There was no significant relationship between a hospital's compliance and three clinical outcomes: 30-day mortality, venous thromboembolism, and surgical site infection following surgery. The only significant difference was for extended length of stay, which could result from a number of postoperative complications. The risk of extended stay was 12 percent less likely at

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Hospital Compare data

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highest compliance hospitals than at middle or lowest compliance facilities. The findings were based on comparison of Hospital Compare data from January 2005 through the end of December 2006 with information on all Medicare fee-for-service hospitalizations for six surgeries in the Medicare Provider Analysis and Review data set for the same

time period. The study was funded in part by the Agency for Healthcare Research and Quality (HS17765).

More details are in “Hospital process compliance and surgical outcomes in Medicare beneficiaries,” by Lauren H. Nicholas, Ph.D., Nicholas H. Osborne, M.D., John D. Birkmeyer, M.D., and others, in the October 2010 *Archives of Surgery* 145(10), pp. 999-1004. ■ *DIL*

Chronic Disease

Obese patients with hypertension and diabetes have a greater risk of dying after noncardiac surgery

Simply being obese does not increase the risk of dying after noncardiac surgery. However, a new study found that extremely obese patients who also had hypertension and diabetes had double the risk of dying after undergoing noncardiac surgery than normal-weight patients. Out of 310,208 patients who had noncardiac surgery during the study period, 20,845 (6.7 percent) had modified metabolic syndrome (mMetS—obesity, hypertension, and diabetes). Most of these patients (62.8 percent) were obese (30 to 39.9 kg/m²), another 25.7 percent were morbidly obese (40 to 49.9 kg/m²), and 11.5 percent were super obese (>50 kg/m²). In contrast, 98,036 patients were obese, morbidly obese, or super obese, but did not meet the other mMetS criteria.

Patients with mMetS and super obesity had a significant, twofold increased risk of death within 30 days after surgery compared with normal-weight patients (18.5 to 24.9 kg/m²). Patients with mMetS were two to three times more likely to have heart complications, and three to seven times more likely to have acute kidney injury, than normal-weight patients.

The researchers based this retrospective study on data on 310,208 patients in the American College of Surgeons National Surgical Quality Improvement Program database, who underwent general, vascular, or orthopedic surgery between 2005 and 2007. Because the database did not include information on glucose tolerance or waist circumference,

which constitute part of the formal definition of mMetS, the researchers used a body mass index (BMI) of 30 kg/m² or higher (obesity), treatment with an oral hypoglycemic drug or insulin (indicating diabetes), and hypertension to define mMetS. The study was funded in part by the Agency for Healthcare Research and Quality (HS16737).

More details are in “Perioperative outcomes among patients with the modified metabolic syndrome who are undergoing noncardiac surgery,” by Laurent G. Glance, M.D., Richard Wissler, M.D., Dana B. Mukamel, Ph.D., and others in the October 2010 *Anesthesiology* 113(4); pp. 859-872. ■ *DIL*

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

Medications differ in their effect on risk of foot ulcers and limb amputations in patients with diabetes

Diabetes is associated with several vascular complications, such as chronic kidney disease (CKD), diabetic foot ulcers (DFU), and lower extremity amputation (LEA). Two different types of medications are used to prevent CKD in those with diabetes: angiotensin-converting enzyme inhibitors (ACEIs) and angiotensin receptor blockers (ARBs).

In this new study, researchers evaluated whether the risk of developing DFU or LEA in those with diabetes was different in users of ACEIs versus ARBs. This study examined 40,343 individuals from the United Kingdom with diabetes who were first prescribed an ACEI or ARB between 1995 and 2006. Users of ACEIs were about 50 percent more likely than users of ARBs to develop foot ulcers and about 28 percent more likely to suffer limb amputations. The patients who had lower

extremity peripheral arterial disease and were taking ACEIs had a 50 percent increased risk of LEA.

The researchers noted that although both ACEIs and ARBs show similar clinical benefits for prevention of CKD and treatment of hypertension, they have different mechanisms of action that could result in the different safety profiles. The study was partly supported by the Agency for Healthcare Research and Quality (HS16946).

See “The differential effect of angiotensin-converting enzyme inhibitors and angiotensin receptor blockers with respect to foot ulcer and limb amputation in those with diabetes,” by David J. Margolis, M.D., Ph.D., Ole Hoffstad, M.A., Stephen Thom, M.D., Ph.D., and others in the September/October 2010 *Wound Repair and Regeneration* 18, pp. 445-451. ■ MWS

Diet and medication adherence can reduce cardiovascular disease for patients with type 2 diabetes

Cardiovascular disease (CVD) is a serious but preventable complication of type 2 diabetes. Managing the numerous risk factors responsible for CVD in people with diabetes is an ongoing challenge for primary care clinicians. A new study found that the mean 10-year risk of CVD in this group was 16.2 percent. Yet nearly one-third of this total risk was attributable to factors such as high cholesterol, hypertension, and smoking, which can be modified with diet, exercise, smoking cessation, and medication adherence. For example, patients who reported good management of their diets and adherence to prescribed medication regimens lowered their mean risk of any

cardiovascular event, such as a stroke or heart attack, by 44 and 39 percent, respectively.

The researchers examined the prevalence of CVD risk factors (elevated glycated hemoglobin or HbA1c levels, hypertension, high cholesterol, and smoking status), the attributable risk owing to these factors, and the association between attributable risk of CVD and diet, exercise, and medication adherence. The study population consisted of 313 patients with CVD who were being treated at 20 primary health care clinics in South Texas.

The primary driver of modifiable risk reduction was HbA1c levels (an indicator of blood-glucose

control), accounting for nearly two-thirds of the decrease in attributable risk. The next biggest contributors were lipid levels and smoking status. The researchers conclude that high-quality diabetes care requires targeting modifiable patient factors strongly associated with CVD risk, including self-management behavior such as diet and medication adherence. This study was supported by the Agency for Healthcare Research and Quality (HS13008).

See “Cardiovascular disease in type 2 diabetes,” by John Zeber, Ph.D., and Michael L. Parchman, M.D., in *Canadian Family Physician* 56, pp. e302-e307, 2010. ■ MWS

Provider's communication style boosts results for acupuncture on arthritic knees

Traditional Chinese acupuncture involves inserting needles at specific paths of the body, called meridians, to permit the flow of vital energy and relieve pain. A new study finds that patients who underwent authentic and simulated (fake) acupuncture for arthritis in their knees experienced similar pain relief. However, patients whose acupuncturists expressed optimism that the treatment would be beneficial had slightly better results than patients whose providers were more wishy-washy about the possible treatment outcome.

The 238 patients of acupuncturists who conveyed high expectations by using phrases such as, "I think this will work for you," had slightly less pain and greater satisfaction with their providers than the 242 patients whose acupuncturists used neutral phrases like, "It may or may not work for you." For instance, at 6 weeks, 41.2 percent of patients in the high expectations group had a 50 percent improvement in their pain scores compared with 33.6 percent of patients in the neutral group. At 3 months, 35.4 percent of patients in the high

expectations group reported 50 percent improvement in their pain scores compared with 27.5 percent of patients in the neutral group.

Because patients in the actual and fake acupuncture groups reported similar improvement, a placebo effect related to the acupuncturist's communication style may have affected patients' perceived benefits of acupuncture, according to Maria E. Suarez-Almazor, M.D., Ph.D., of the University of Texas MD Anderson Cancer Center, and colleagues. Their study was funded in part by the Agency for Healthcare Research and Quality (HS16093).

See "A randomized controlled trial of acupuncture for osteoarthritis of the knee: Effects of patient-provider communication," by Dr. Suarez-Almazor, Carol Looney, M.S., C.H.E.S., YanFang Liu, M.D., and others in the September 2010 *Arthritis Care & Research* 62(9), pp. 1229-1236. ■ *KFM*

Outcomes/Effectiveness Research

Certain hospital characteristics influence mortality after complications following high-risk surgery

Managing complications after surgery is an important part of hospital care, particularly for patients who undergo high-risk surgeries. Such patients may die after a major complication; hospitals call this "failure to rescue." Although hospitals with low and high mortality rates may have similar complication rates, there can be marked differences in failure-to-rescue rates. A new study has found that failure-to-rescue rates vary widely depending on the hospital. In addition, hospitals with the lowest rates have certain characteristics that can be attributed to better outcomes.

Researchers used 7-year data from the American Hospital Association's annual survey as well as from the Nationwide Inpatient Sample, an Agency for Healthcare Research and Quality (AHRQ) database on hospital admissions. A total of 8,862 patients at 672 hospitals were identified who had undergone removal of their pancreas (pancreatectomy), considered a high-risk surgery. The researchers examined the association between five hospital characteristics and failure-to-rescue rates: nurse-to-patient ratios, the teaching status of the hospital, the level of technology available, hospital size, and average daily census.

In general, patients undergoing this surgery at very high-mortality hospitals had a 16-fold increase in the odds of death compared with patients receiving the surgery at very low-mortality hospitals, as well as higher complication rates (33 percent vs. 18 percent). Close to a 10-fold difference was observed in failure-to-rescue rates between very low and very high mortality hospitals. Characteristics associated with favorable failure-to-rescue rates included being admitted to a teaching hospital with more than 200 beds and an average daily census of greater than 50

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High-risk surgery

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percent capacity. Increased nurse-to-patient ratios and strong use of hospital technology also had a positive influence. The study was supported in part by AHRQ (HS17765).

See “Hospital characteristics associated with failure to rescue from complications after pancreatectomy,” by Amir A. Ghaferi, M.D., M.S., Nicholas H. Osborne, M.D., M.S., John D. Birkmeyer, M.D., and Justin B.

Dimick, M.D., M.P.H., in the September 2010 *Journal of the American College of Surgeons* 211(3), pp. 325-330. ■ KB

Various factors influence the adoption of ergonomics in health care organizations

Human factors science (ergonomics) is a multidisciplinary field that looks at how humans interact with technology and other systems, particularly from design, engineering, and psychological standpoints. Human factors and ergonomics (HFE) involves designing the workplace environment to fit the user. HFE knowledge, methods, and tools can be used to improve patient safety when they are implemented in the health care setting. Researchers are now beginning to understand the characteristics that can either promote or hinder the development of HFE innovations in health care organizations. A recent review of the topic underscores the importance of local champions who can facilitate the adoption and long-term sustainability of HFE in these environments.

HFE encompasses the physical, cognitive, and organizational aspects of ergonomics when it comes to patient safety, notes the author, Pascale Carayon, Ph.D., of the University of Wisconsin-Madison. For example, research into HFE’s physical aspect can identify stressors placed on nurses that may affect how patients are handled and cared for. This may result in design changes for workstations, improved lighting, and noise-level reduction. The cognitive aspect of HFE assesses human error, workload, or the usability of a medical device. This may lead to

suitable training sessions and appropriate technology acceptance. Finally, the organizational elements of HFE focus on teamwork and the high-risk processes of patient care. From this, work schedules may be adjusted to reduce fatigue and other teamwork or organizational interventions may be put in place.

According to the review, several barriers can challenge the facilitation of HFE in health care organizations. If the HFE intervention or innovation is too complex or employees do not understand the benefits of HFE, adoption can be hindered. When employees can actually experience the positive impact of HFE on their day-to-day tasks (e.g., improved working conditions), it is more likely that these innovations will be accepted and used to their fullest over the long haul. Having individuals who champion the cause at the local user level, such as a head nurse, can influence the way other employees become early and lasting adopters. The study was supported in part by the Agency for Healthcare Research and Quality (HS15274).

See “Human factors in patient safety as an innovation,” by Dr. Carayon, in the September 2010 *Applied Ergonomics* 41(5), pp. 657-665. ■ KB

Nursing shortage may have adverse impact on public health emergency preparedness

A robust nursing workforce is needed for a hospital to effectively respond to a public health emergency (PHE) such as a terrorist attack, infectious disease epidemic, or natural disaster. The shortage of nurses looming in the long run presents a challenge to public health preparedness and, thus far, has not been addressed by a comprehensive national strategy, according to Matthew D. McHugh, Ph.D., of the University of Pennsylvania. In a recent review of the topic, he argues for a national commitment to nursing education and workforce infrastructure to ensure emergency preparedness in the United States.

Surge capacity is the health care system's ability to quickly expand beyond normal services to meet the increased demand for medical care in the event of bioterrorism or other large-scale PHE. Nurses are an

integral part of disaster response. They are needed to staff surge beds, triage patients, and administer medications and emergency-related vaccines. However, nurse staffing and supporting systems are weak links in the emergency preparedness chain. In many cases, hospitals have little flexibility for unanticipated fluctuations in patient acuity and demand on a daily basis, and an absence of standby nursing capacity for large-scale emergencies.

In order to address the looming shortage of nurses, keep pace with demand, and maintain emergency preparedness, it is estimated that nursing schools need to graduate 25 percent more nurses each year. However, insufficient nursing faculty, inadequate financial resources, limited physical capacity, and insufficient clinical education sites mean that schools today

cannot produce this number of nurses. Hospitals will need the support of a federally funded, comprehensive program, asserts the author. This program will have to emphasize long-term investments in the U.S. nursing profession through expanding nursing faculty and schools, boosting incentives for the nursing profession and nursing education, and increasing incentives to hospitals with favorable nursing practice environments, clinical training sites, and adequate nursing surge capacity. This review was supported by the Agency for Healthcare Research and Quality (HS17551).

See "Hospital nurse staffing and public health emergency preparedness: Implications for policy," by Dr. McHugh, in the September 2010 *Public Health Nursing* 27(5), pp. 442-449. ■
MWS

Physicians cultivate colleagues' esteem differently at low- and high-prestige hospitals

Professionals are expected to act according to the expectations of both their clients and their colleagues. Physicians, in particular, experience conflict when determining what kinds of expertise should be used in patient care. On one hand, patients may expect them to provide treatment based on the most recent medical innovations and evidence, an ideal that may be rarely realized. At the same time, physicians feel pressured to behave in accordance with the standards cultivated by their colleagues. To understand how this tension is resolved across hospitals with different patient populations, researchers recently looked at means by which physicians in different hospitals could cultivate their reputation. They found two very different routes of cultivating esteem in low- and high-prestige hospitals.

For this study, a survey was sent to all physicians working in general medicine service at six academic medical centers. The hospitals differed in size, geographic location, and prestige. Researchers obtained extensive background information on the physicians' demographic features and social network connections.

Although consulting the medical literature did not raise the esteem of physicians in high-prestige hospitals, this activity positively affected a physician's reputation in the low-prestige hospitals.

In high-prestige hospitals, esteem was reserved for physicians with elite medical school training, as well as those physicians who allocated a smaller proportion of

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Physicians

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their time to clinical work. The authors conclude that high-prestige hospitals tended to focus on innovation and the creation of evidence-based guidelines for others to follow. Individually, physicians in each knowledge strata can strive to attain and maintain esteem from colleagues, while collectively advancing their field as a whole. By so doing, they can maintain professional autonomy from the influences of insurance providers, the medical industry, patients, and

State stakeholders seeking to structure the knowledge used in medical care, suggest the researchers. Their study was supported in part by the Agency for Healthcare Research and Quality (HS16967).

See “The cultivation of esteem and retrieval of scientific knowledge in physician networks,” by Daniel A. Menchik, Ph.D. (cand.) and David O. Meltzer, M.D., Ph.D., in the *Journal of Health and Social Behavior* 51(2), pp. 137-152, 2010. ■ KB

Health Care Costs and Financing

Some adults with disabilities covered by Medicaid have significant out-of-pocket health expenses

Many adults with disabilities who are not institutionalized have their health care covered by Medicaid. In fact, 17 percent of the Medicaid population consists of adults with disabilities, who also account for nearly half (46 percent) of all Medicaid spending. Despite Medicaid coverage, 10 percent of adults with disabilities not living in institutions have annual out-of-pocket medical expenses of \$1,200 or more. This can result in a significant financial burden for these individuals.

The researchers analyzed data from the Medical Expenditure Panel Surveys (MEPS) from 2001 to 2004. These surveys report on health care use, prescriptions, provider visits, and the costs of other services and equipment. The researchers looked at a sample of individuals aged 18 to 64 who were

covered by Medicaid and participating in Supplemental Security Income (SSI). This is a cash assistance program for individuals with physical or mental disabilities that limit their ability to work. To qualify, they cannot have more than \$2,000 in assets (except for car, home, etc.) or income higher than 75 percent of the Federal poverty line (\$6,983 in 2004).

During 2001 to 2004, there were 1.8 million non-institutionalized adults with disabilities receiving benefits from Medicaid. Annual Medicaid expenditures for this group were approximately \$11.6 billion. The total annual out-of-pocket expenses amounted to approximately \$873 million. Of this amount, prescription drugs accounted for \$637 million; ambulatory care accounted for

another \$151 million. The majority (82 percent) of these Medicaid enrollees reported having out-of-pocket expenses during any given year. Most of these expenses (80 percent) were for prescription drugs, followed by ambulatory care (11 percent). The researchers conclude that policymakers need to consider this vulnerable group of Medicaid enrollees when contemplating any type of benefit reductions in the program. The study was supported in part by the Agency for Healthcare Research and Quality (T32 HS00032).

See “Why some disabled adults in Medicaid face large out-of-pocket expenses,” by Marguerite Burns, Ph.D., Nilay Shah, Ph.D., and Maureen Smith, M.D., in *Health Affairs* 29(8), pp. 1517-1522, 2010. ■ KB

Medicare Part D enrollees have higher cost-sharing amounts for brand name prescription drugs than those in employer plans

Cost sharing is used by Medicare Part D prescription drug plans to discourage the use of unnecessary and more expensive brand-name medications in covered patients by raising the amount patients must pay out-of-pocket for brand name drugs versus generic drugs.

Indeed, a new study found that Medicare Part D enrollees had larger differences between cost sharing amounts for brand name and generic drugs than individuals with employer coverage. This difference resulted in more generic drug use among Part D enrollees.

The researchers surveyed individuals aged 65 and older in 2005 and conducted a followup survey 2 years later. It was during this period that the Medicare Part D prescription drug benefit was implemented. Both surveys asked for information on the individual's prescription drug coverage,

including cost-sharing amounts, and asked what prescription medications they were taking.

The proportion of respondents without drug coverage declined from 33.6 percent in 2005 to 8.6 percent in 2007. There was also a decrease in the percentage of individuals who were not responsible for any drug costs, from 7.5 percent in 2005 to 5.9 percent in 2007. At the same time, enrollment decreased in single- and two-tier plans and expanded in three-tier drug plans (generic, preferred brand, and nonpreferred brand drugs for which the individual paid progressively higher copayments). Copayment level was not significantly associated with the number of prescriptions used by enrollees.

For those in Medicare Part D three-tier plans, brand drug

copayments were higher compared with those in employer-based plans. For example, while Part D enrollees paid \$55 for nonpreferred brands, those in employer-based plans only paid \$39. The use of generics remained the lowest for participants in employer-based plans both before and after Part D went into effect. The study was supported in part by the Agency for Healthcare Research and Quality (HS15094).

See "Impact of cost sharing on prescription drugs used by Medicare beneficiaries," by Amber M. Goedken, Pharm.D., Julie M. Urmie, Ph.D., Karen B. Farris, Ph.D., and William R. Doucette, Ph.D., in *Research in Social and Administrative Pharmacy* 6, pp. 100-109, 2010. ■ KB

Many patients with diabetes who reach the Medicare Part D drug coverage gap don't talk about drug costs with their doctors

Begun in 2006, Medicare Part D is the outpatient drug coverage benefit for Medicare enrollees. Under this benefit, once total drug costs reach \$2,250, Medicare stops paying for drugs until individuals achieve an out-of-pocket maximum of \$3,600. The plan includes an initial \$250 deductible and 25 percent coinsurance until costs reach \$2,250. A recent study found that once patients with diabetes enter this coverage gap, they are less likely to communicate with their physicians about drug costs.

The researchers used data from a survey of 1,458 Medicare beneficiaries with diabetes who had entered the drug coverage gap in 2006. All were part of the Translating Research into Action for Diabetes (TRIAD) study, which investigated diabetes care in managed care

settings. The survey asked participants if they felt drug costs were important enough to mention them to their doctor. They were also asked if they ever talked with a doctor about their prescription drug costs and if they wanted doctors to consider costs when prescribing.

More than three-fourths (76 percent) of the group that had entered the drug coverage gap felt that communicating with doctors about medication costs was important. Yet, less than half of them (44 percent) actually reported having such a discussion. In addition, 80 percent of participants wanted their doctors to consider costs when prescribing medications for them. Nearly half (47 percent) said their physician had

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Medicare Part D

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switched one or more prescriptions to a less expensive drug due to costs. Physicians and diabetes educators should pay attention to these coverage gap issues and find ways to help patients with their prescription costs, suggest the researchers. Their study was supported in part by the Agency for Healthcare Research and Quality (HS13902).

See “Patient-provider communication regarding drug costs in Medicare Part D beneficiaries with diabetes: A TRIAD study,” by Julie A. Schmittdiel, Ph.D., Neil Steers, Ph.D., O. Kenrik Duru, M.D., and others in the *BMC Health Services Research* 10(164), pp. 1-7, 2010.

■ KB

Payment reform highlighted in special journal issue

The Affordable Care Act was signed into law on March 23, 2010. A key feature of this health care reform legislation is the realization that changes in the payment system must be part of the solution. A theme issue on payment reform in the December 2010 journal *HSR: Health Services Research* 45(6 Part II) presents key research in an area that will undoubtedly be of critical importance as the nation gears up to implement one of the largest American health reform initiatives in history. Specifically, the theme issue, sponsored by the Agency for Healthcare Research and Quality, focuses on four major challenges to payment reform: (1) structuring

payment bundles that reduce regional variation without hurting quality; (2) selecting performance measures that really measure performance; (3) fine-tuning pay-for-performance models; and (4) factoring in external market factors.

The issue begins with an introduction by Irene Fraser, Ph.D., and William Encinosa, Ph.D., of AHRQ’s Center for Delivery, Organization, and Markets, and Laurence Baker, Ph.D., of Stanford University. They discuss the issue’s seven papers that provide new evidence on one or more of the challenges involved with payment reform. The papers reveal that creating payment systems that truly

work to improve value and quality will require a sophisticated and nuanced approach.

Two studies, Chien, A. T., Li, Z., and Rosenthal, M. B. “Improving timely childhood immunizations through pay for performance in Medicaid-managed care.” (*HS17146*), pp. 1934-1947; and Yu, H. and Dick, A. W. “Risk-adjusted capitation rates for children: How useful are the survey-based measures?” (*HS16742*), pp. 1948-1962, were funded by the Agency for Healthcare Research and Quality. Reprints of the Introduction (AHRQ Publication No. 11-R027) are available from AHRQ.* ■ MWS

Health Information Technology

Parents using electronic kiosk provide more accurate clinical information than emergency room providers

Parents using a software program, ParentLink, in an emergency department kiosk provide more accurate information relevant to the emergency care of their children than the medical charts completed by emergency department (ED) providers, reveals a new study. For example, parents’ reports of allergies to medications were significantly more valid than those of nurses and physicians (94 vs. 88 and 83 percent), according to a team of researchers headed by Stephen C. Porter, M.D., of the Children’s Hospital Boston. Parents of 193 children seen for head trauma who used

ParentLink produced more complete information on the head trauma than the medical record for five of seven elements, such as loss of consciousness and “sleepy/not right.”

The children were being treated at an urban or suburban hospital ED for a variety of complaints that included head trauma, ear pain, respiratory problems, fever, and painful or difficult urination. Parents used

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ParentLink

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ParentLink to enter data on a mobile kiosk that generated a printed report. Physicians completed patient charts via phone dictation or computerized documentation. Nurses charted on paper and transitioned to electronic charting during the study period.

The researchers abstracted the documentation by doctors and nurses and compared it with information generated by ParentLink. All participating parents (1,111) of pediatric ED patients also completed a post-ED telephone interview. The year-long study alternated 3-month intervention periods when ParentLink was

used with 3-month control periods when only provider entry was used. The researchers concluded that structured data collection produces more superior information than the unstructured documentation by providers. ParentLink is one mechanism that can support such a structured approach. This study was supported by the Agency for Healthcare Research and Quality (HS14947).

See “Patients providing the answers: Narrowing the gap in data quality for emergency care,” by Dr. Porter, Peter Forbes, M.A., Shannon Manzi, Pharm.D., and others in the *Quality and Safety in Health Care* 19, pp. 1-5, 2010. ■ MWS

Decision support intervention prompts clinicians to update patients' problem lists in their medical records

Every patient's medical record contains what is known as a “problem list,” where everything the patient suffers from is listed. Both paper and electronic medical records require the constant updating of this list. However, physicians may be slow to keep this documentation current. A new study has looked at how physician order entry and decision support in electronic medical records (EMRs) can help keep the problem list current and complete. It found that alerts issued during medication order entry prompted physicians to add accurate diagnoses to the list.

Physicians at a 450-bed teaching hospital used an EMR that included clinical decision support and computerized physician order entry. Any time a physician entered an order for a study medication, a pop-up screen alert

would appear, prompting the physician to enter one or more diagnoses for each medication ordered. The physician could also cancel or ignore the alert. Alerts were designed around six target diagnosis groups containing related diagnoses and their medication triggers. Each alert that was created for the system was studied for a 2-month period after being available for physicians to use.

A total of 1,011 alerts appeared for the 6 target diagnosis groups. The most alerts popped up for the diagnosis group consisting of high cholesterol and coronary artery disease. Diabetes came in second. When alerts did appear, additions to the problem list were made 76 percent of the time, with an accuracy rate of 95 percent. Both the HIV and diabetes diagnostic

groups had 100 percent accurate problem list additions. According to the researchers, additional work is needed to expand the system in order to include more medications and all variations of clinician order entry. The study was supported in part by the Agency for Healthcare Research and Quality (HS16973).

See “Computerized physician order entry of medications and clinical decision support can improve problem list documentation compliance,” by William L. Galanter, M.D., Ph.D., Daniel B. Hier, M.D., M.B.A., Chiang Jao, Ph.D., and David Sarne, M.D., in the *International Journal of Medical Informatics* 79, 332-338, 2010. ■ KB

Patients with limited health literacy less likely to use an Internet portal for diabetes and other health information

Patients with any difficulties in self-reported health literacy are less likely to use a patient-oriented Internet portal, even if they have regular access to the Internet, a new study found. The researchers examined Kaiser members' use of the Kaiser Permanente of Northern California's (KPNC's) Internet patient portal (KP.org), which includes a public Web site with information on health promotion and obtaining health insurance. Kaiser members who register for KP.org can also access their laboratory test results, communicate with their physicians by secure e-mail, refill medications, and make medical appointments.

The researchers studied the use of KP.org among an ethnically diverse sample of 14,102 persons enrolled in the Diabetes Study of Northern California, who were also members of the KPNC Diabetes Registry for all of 2006. After adjustment for other factors such as income and education, the researchers found that diabetes patients with limited health literacy were 70 percent more likely never to sign on to the portal than patients without literacy problems. Even among patients with Internet access, those with limited health literacy were 40 percent less likely to ever use the portal during the study.

Patients answered a three-question survey on health literacy in which they were asked to rate from 1 (high/often) to 5 (none/never): difficulty with reading information about their condition; discomfort filling out medical forms; and how often they need to ask someone to help them understand written health information from KPNC. The researchers concluded that, for maximum use of patient-oriented Internet portals, designers need to involve patients with health literacy problems when designing the portal and its applications. The study was funded in part by the Agency for Healthcare Research and Quality (HS17594 and HS17261).

More details are in "The Literacy Divide: Health literacy and the use of an Internet-based patient portal in an integrated health system—Results from the Diabetes Study of Northern California (DISTANCE)" by Urmimala Sarkar, M.D., Andrew J. Karter, Ph.D., Jennifer Y. Liu, M.P.H., and others in the *Journal of Health Communication* 15(Suppl. 2), pp. 183-196, 2010. ■ *DIL*

Parents find telemedicine care of children in school and childcare to be helpful and convenient

The city of Rochester, New York, through its Health-e-Access program, is using telemedicine to promote the health of inner city and suburban children in childcare and elementary schools. During telemedicine "visits," a telehealth assistant at the school or childcare center uses computer-linked instruments to capture a child's heart and lung sounds, and camera to visualize their eyes, ears, etc. These sounds and images are stored in a central server and then uploaded to the offsite primary care doctor to review. The doctor can also talk with and assess the child via videoconference to complete diagnosis and treatment

decisionmaking. In a recent study of the city's Health-e-Access program, parents found the telemedicine experience of care to be a great way to ease family burdens associated with a sick child. In addition to the welcomed convenience, parents liked not having to miss work and the ability to have medications delivered directly to the childcare or school site.

For this study, Kenneth M. McConnochie, M.D., M.P.H., and University of Rochester colleagues surveyed a diverse group of 578 parents before their child experienced at least one telemedicine visit. After the child's

visit, 318 parents were surveyed about the encounter. Parents were asked questions about their work responsibilities, any conflicts they had when the child was sick, and their perceptions about telemedicine.

Nearly 35 percent of parents admitted to losing pay if they took a day off to care for a sick child. When a child was sick, more than half of the parents (58 percent) said they would give fever-reducing medications and send the child to school if possible. There were little worries among the parents about the ability of clinicians using

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Telemedicine care
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telemedicine to adequately examine and treat their children. Positive comments about the experience far surpassed any negative ones. Most of the positive comments cited convenience and time saved as advantages to telemedicine, including being able to stay

working on the job and medication drop-off at school. The few negative comments included a preference for in-person care, concern over technical problems, and worry over a reliable diagnosis. The study was supported in part by the Agency for Healthcare Research and Quality (HS15165).

See “Telemedicine in urban and suburban childcare and elementary schools lightens family burdens,” by Dr. McConnochie, Nancy E. Wood, M.S., Neil E. Herrendeen, M.D., and others in *Telemedicine and e-Health* 16(5), pp. 533-542, 2010. ■ **KB**

Child/Adolescent Health

Electronic health record decision support improves the care of children with ADHD

Children with attention-deficit/hyperactivity disorder (ADHD) must be managed properly if they are to succeed in school, in their relationships, and in life. Critical to optimal care of these children is the role of the pediatrician. Although consensus guidelines exist on the diagnosis and treatment of ADHD, provider adherence to the guidelines is suboptimal. Offering decision support as part of the electronic health record (EHR) can improve the quality of care for these children, concludes a new study. This includes getting children in for a visit with their pediatrician to assess ADHD symptoms and review treatment effectiveness.

The study involved 79 pediatricians caring for 412 children with ADHD from 12 primary care practices in Massachusetts. Prior to the study, all were using the same EHR without decision support. Various sites were then selected to receive the decision-support intervention. Features included reminders to the pediatrician to assess children’s ADHD symptoms every 3 to 6 months. There was also a visit note template with prompts to assess and record symptoms, treatment effectiveness, and adverse effects. Half of the children in the study received this intervention.

A higher proportion of children in the intervention group had a visit during which ADHD was assessed (71 percent) than children in the control group (54 percent). Pediatricians in the intervention group were more likely to document and discuss ADHD symptoms and treatment during well-child visits than those in the control group (78 vs. 63 percent). At 32 percent of patient visits scheduled specifically for ADHD assessment in the intervention group, pediatricians used the ADHD template. The researchers found that this use was associated with better documentation of symptoms as well as treatment effectiveness and adverse effects. Satisfaction rates on managing ADHD were also higher among physicians in the intervention group who had access to the decision-support templates and tools. The study was supported in part by the Agency for Healthcare Research and Quality (HS15002).

See “Electronic health record decision support and quality of care for children with ADHD,” by John Patrick T. Co, M.D., M.P.H., Sarah A. Johnson, B.A., Eric G. Poon, M.D., M.P.H., and others in *Pediatrics* 126(2), pp. 239-246, 2010. ■ **KB**

Adolescents with higher socioeconomic status at greater risk for substance abuse during early adulthood

Previous research has shown that adolescents with low socioeconomic status (SES) are more likely to engage in substance abuse, as are adults with high SES. Yet a new study reveals that adolescents with high SES (measured by parental education and household income) are also at risk for substance abuse. It found that higher SES among adolescents was associated with greater rates of binge drinking and marijuana and cocaine use in early adulthood. There was no significant correlation between high SES in adolescence and crystal methamphetamine or other drug use.

Study author, Jennifer Humensky, Ph.D., of the University of Chicago,

analyzed data on 9,872 adolescents taken from the National Longitudinal Survey of Adolescent Health (AddHealth). AddHealth tracks students in grades 7-12 and their parents, and includes a follow-up interview when respondents are 18-27 years old. Results showed that higher parental education was associated with higher odds of binge drinking and marijuana use and cocaine use in early adulthood. Higher household income in adolescence was associated with a higher probability of binge drinking and marijuana use.

When stratified by race, results were consistent for whites but no significant results were found for non-whites. This may be related to

the smaller sample size of the non-white sample, but it could be that the results are driven primarily by white respondents, notes the author. The results of the study are consistent with previous research in adults, which found that demand for illicit substances is price-sensitive, and thus predicts that substance abuse will increase as income is higher. This study was supported by the Agency for Healthcare Research and Quality (T32 HS00084).

See “Are adolescents with high socioeconomic status more likely to engage in alcohol and illicit drug use in early adulthood?” by Dr. Humensky in *Substance Abuse, Treatment, Prevention, and Policy* 5 (19), pp.1-10, 2010. ■ MWS

Adverse drug event surveillance tailored to hospitalized children

Hospitalized children are at high risk for adverse drug events (ADEs). Novel detection strategies, such as computerized surveillance, are underexplored in this fragile population. In addition, trigger rules to detect ADEs have primarily been developed for adults. A new study looked at how to tailor trigger rules to identify pediatric ADEs at one hospital

Trigger rules are clinical indicators that an ADE such as hypoglycemia (low blood sugar) has occurred. For example, for adults, administration of 50 percent dextrose solution, typically used to treat hypoglycemia, would be a trigger to look at a patient's chart for hypoglycemia as an ADE.

The study hospital employed two ADE detection systems: a voluntary safety reporting system (SRS) and computerized ADE surveillance (ADE-S). Initially, the researchers identified problem areas by reviewing 5 years of incident reports from the SRS. They found that electrolyte preparations and total parenteral nutrition/lipids were primary causes of pediatric ADEs. For example, in one case, the administration of intravenous potassium was not halted in time and resulted in excessive potassium levels.

To pinpoint critical threshold values for trigger logic, the researchers gathered and analyzed the distribution of

historical pediatric lab results for the electrolytes ionized calcium, chloride, magnesium, potassium, and sodium, as well as triglycerides. Based on these findings, typically the upper and lower 0.5 percent of the values were chosen as critical values that would indicate an ADE. Over the 3-month study period, however, the lab value triggers did not identify any ADEs, since no objective evidence of patient harm was documented. In contrast, application of the pediatric hypoglycemia trigger rule, which alerted for insulin administration, as opposed to dextrose 50%, in the setting of low blood glucose (since dextrose 50% is not regularly used to treat pediatric hypoglycemia) produced 23 alerts in 103 pediatric patients, which uncovered 14 ADEs.

Compared with the older adult-focused hypoglycemia rule that found only 4 ADEs, the new tailored trigger rule increased the pediatric event detection rate from 0.43 to 1.51 events per 1,000 patient days. This study was supported by a grant from the Agency for Healthcare Research and Quality (HS14882).

See “Tailoring adverse drug event surveillance to the pediatric in patient,” by Andrea L. Long, Pharm.D., Monica M. Horvath, Ph.D., Heidi Cozart, R.Ph., and others in *Quality and Safety in Health Care* 19(e40), pp. 1-5, 2010. ■ MWS

Perceived lower social standing linked to unplanned pregnancies

More than a third of pregnant women in the San Francisco Bay area were not planning to become pregnant, according to a new study from the University of California, San Francisco. Of the 1,070 women who completed study questionnaires, black women reported the highest rate of unintended pregnancies (62 percent) while white women reported the lowest rate (23 percent). Further, although 18 percent of the study participants were black women, they accounted for 33 percent of the unintended pregnancies.

The authors examined fatalism and subjective social standing to determine if they were associated with unintended pregnancies.

Fatalism, or the *que será será* belief that events are inevitable, was not associated with unintended pregnancies. However, subjective social standing, a self assessment in which women rank themselves in comparison with others, was associated with unintended pregnancies for white women and women born in the United States. The lower the woman's level of self-perceived social standing, the more likely her pregnancy was unplanned.

Preventing unplanned pregnancies is a public health issue, because some studies indicate that women in this situation may not pursue early prenatal care or may not alter their health behaviors to ensure a healthy baby. The authors suggest

that while pregnancy prevention programs are often aimed at women with low socioeconomic status, these programs may be missing additional targets because they ignore at-risk women with higher incomes. This study was funded in part by the Agency for Healthcare Research and Quality (HS10856).

See "Race/ethnicity and pregnancy decision making: The role of fatalism and subjective social standing," by Allison S. Bryant, M.D., M.P.H., Sanae Nakagawa, M.A., Steven E. Gregorich, Ph.D., and Miriam Kuppermann, Ph.D., M.P.H., in the *Journal of Women's Health* 19(6), pp. 1195-1200, 2010.

■ KFM

Certain women are at greater risk for mental health problems during pregnancy

Mental health problems during pregnancy can have a serious effect not only on the expectant mother but also on her baby, such as low birth weight or prematurity. A new study reveals that certain women may have an increased risk for mental health problems during pregnancy. University of Wisconsin researchers examined data on 3,051 pregnant women from the nationally representative Medical Expenditure Panel Survey (MEPS) conducted between 1996 and 2006. They used data about the women's physical and mental health to determine the extent of these mental health problems and the potential risk factors. The researchers found that levels of social support, general health status, and a woman's history of mental health affected the risk for developing mental health problems during pregnancy.

Overall, 7.8 percent of the women reported poor mental health while pregnant. A history of mental health issues

prior to getting pregnant was strongly associated with poor mental health during pregnancy. In fact, 31 percent of women with poor mental health before pregnancy had poor mental health after getting pregnant. However, only 5 percent of women without any mental health problems before their pregnancy developed such problems while pregnant. The study was supported in part by the Agency for Healthcare Research and Quality (T32 HS00083).

See "The prevalence and determinants of antepartum mental health problems among women in the USA: A nationally representative population-based study," by Whitney P. Witt, Ph.D., M.P.H., Thomas DeLeire, Ph.D., Erika W. Hagen, Ph.D., and others in the October 2010 *Archives of Women's Mental Health* 13(5), pp. 425-437. ■ KB

Rates of pneumonia dramatically reduced in patients on ventilators in Michigan intensive care units

Hospital staff in Michigan intensive care units (ICUs) cut by more than 70 percent the rate of pneumonia in patients who are on ventilators by using a targeted quality improvement initiative funded by the Agency for Healthcare Research and Quality (AHRQ). This reduction in the rate of ventilator-associated pneumonia was sustained for the duration of the study's followup, a period of up to 2.5 years.

Ventilator-associated pneumonia is a lung infection that occurs in patients who are on ventilators to help them breathe. It is a common cause of increased rates of patient illness and death, as well as increased health care costs. The study, published in the February 2011 issue of *Infection Control and Hospital Epidemiology*, includes data from 112 ICUs in Michigan.

The quality improvement initiative, known as the Comprehensive Unit-based Safety Program (CUSP), includes tools to improve communication and teamwork among ICU staff teams and implement practices based on guidelines by the Centers for Disease Control and Prevention (CDC), such as checklists and hand washing, to reduce rates of catheter-related bloodstream infections and ventilator-associated pneumonia. The program also measures if ICUs reduce health care-associated infections (HAIs) and reports these results so they can improve care.

“We need to do more to ensure that when patients go to hospitals they get better, not sicker,” said AHRQ Director Carolyn M. Clancy, M.D. “This research gives us a roadmap for targeting the problem and working systematically to prevent patients from developing infections in the health care system—and for saving lives.”

The researchers also noted a marked increase—from 32 percent to 84 percent—in the routine use of five evidence-based therapies to prevent the complications, including pneumonia, associated with ventilator use.

The CUSP approach was used and studied in the Keystone Intensive Care Unit Project, an AHRQ-funded initiative to reduce HAIs in Michigan ICUs. Previous research from the Keystone Project has shown that Michigan hospitals using CUSP—the targeted quality improvement program evaluated in this study—sharply reduced the number of blood stream infections from central lines and reduced the risk that patients will die in the ICU.

“These results are exciting and help to advance the field of quality improvement. We knew the CUSP approach reduced blood stream infections; however, we did not know if it could be applied to other types of preventable harm,” said Peter J. Pronovost, M.D., Ph.D., a professor of anesthesiology and critical care medicine at the Johns

Hopkins University School of Medicine. “This study demonstrates that it is equally effective at reducing pneumonia. Broad implementation of this program may largely prevent the thousands of deaths from pneumonia each year.”

Dr. Pronovost led development of the AHRQ-sponsored Keystone Project and implemented it in Michigan hospitals in conjunction with the Michigan Health and Hospital Association.

“Far too many patients continue to suffer preventable harm from these respirator-linked pneumonias. This study documents one of the largest, most robust and longest sustained reductions in these infections,” added lead author Sean M. Berenholtz, M.D., M.H.S., an associate professor of anesthesiology and critical care medicine at the Johns Hopkins University School of Medicine and Bloomberg School of Public Health.

AHRQ is supporting the nationwide implementation of the CUSP model for reducing HAIs through a contract to the Health Research & Educational Trust, an affiliate of the American Hospital Association, by reaching more hospitals and other settings in addition to ICUs and by applying the approach to various HAIs. For more information on AHRQ's

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Pneumonia rates

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recently funded HAI projects, go to www.ahrq.gov/qual/haify10.htm.

For more information on CUSP, go to www.ahrq.gov/qual/haicusp.htm.

The CUSP implementation initiative is part of a department-

wide effort to address HAIs, as outlined in the U.S. Department of Health and Human Services (HHS) Action Plan to Prevent Healthcare-Associated Infections (available at www.hhs.gov/ash/initiatives/hai/index.html). Partners across HHS, including AHRQ, CDC, the Centers

for Medicare & Medicaid Services, Food and Drug Administration, Health Resources and Services Administration, Indian Health Service, and the National Institutes of Health, are working together to achieve the goals of the Action Plan. ■

One in four U.S. adults reported having high blood pressure in 2008

More than 59 million Americans aged 18 and older were diagnosed with high blood pressure in 2008, according to the latest *News and Numbers* from the Agency for Healthcare Research and Quality (AHRQ). The Agency also found that in 2008:

- Three-quarters of people diagnosed with high blood pressure were overweight, obese, or morbidly obese. Roughly 15 percent of healthy-weight adults were diagnosed with high blood pressure.
- Adults who exercised vigorously for 30 minutes or more at least three times a week were one-third less likely to report high blood pressure than those who didn't (21 percent vs. 32 percent).
- Nearly 32 percent of black adults reported having high blood pressure, compared with 27 percent of white and 18 percent of Hispanic adults.
- Roughly 29 percent of adults less than 65 years old with public health insurance reported having high blood pressure, versus 19 percent with private insurance and 14 percent of the uninsured.

- Almost 59 percent of seniors aged 65 and older reported having been told they had high blood pressure, compared with nearly 34 percent of people aged 45 to 64, 10 percent of those aged 25 to 44, and almost 3 percent of younger adults.

The data in this AHRQ *News and Numbers* summary are taken from the Household and Pharmacy Components of the 2008 Medical Expenditure Panel Survey (MEPS), a detailed source of information on the health services used by Americans, the frequency with which they are used, the cost of those services, and how they are paid for. You can view Statistical Brief #315, *Hypertension in America: Estimates for the U.S. Civilian Noninstitutionalized Population Age 18 and Older, 2008*, at www.meps.ahrq.gov.

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. ■

Nearly 4 million adults reported being treated for kidney disease between 2003 and 2007

An average of 3.7 million adults in the United States were treated for kidney disease each year between 2003 and 2007, according to the latest *News and Numbers* from the Agency for Healthcare Research and Quality (AHRQ). Kidney disease can lead to renal failure and may be caused by diabetes, high blood pressure, and heart disease. The Federal agency also found that:

- Spending for kidney disease treatment averaged \$25.3 billion

(in 2007 dollars) a year from 2003 to 2007.

- About half this amount (\$12.7 billion) paid for outpatient care, while \$9.1 billion went for hospitalizations, \$1.5 billion for emergency room care, and \$1.4 billion for prescription drugs.
- Annual per-person costs averaged \$16,315 for hospitalizations, \$4,581 for outpatient care, \$1,607 for

emergency department care, and \$643 for prescription drugs.

- Medicare paid roughly one-fifth of overall kidney treatment expenses for people aged 18 to 64 through its End-Stage Renal Disease Program, which covers kidney dialysis and transplants for people of all ages. Medicare also covered two-thirds of kidney disease treatment for people aged 65 and older.

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Kidney disease

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- Medicaid paid for nearly 14 percent of the kidney disease treatment care of patients aged 18 to 64 and roughly 8 percent of patients aged 65 and older.

The data in this AHRQ *News and Numbers* summary are taken from

the Medical Expenditure Panel Survey (MEPS), a detailed source of information on the health services used by Americans, the frequency with which they are used, the cost of those services, and how they are paid for. For more information, go to: *Average Annual Health Care Use and Expenditures*

for *Kidney Disease among Adults 18 and Older, U.S. Civilian Noninstitutionalized Population, 2003-2007* at www.meps.ahrq.gov.

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

Spending for prescriptions to control diabetes, cholesterol, and other metabolic conditions exceeds \$52 billion

Insurers and consumers spent \$52.2 billion on prescription drugs in 2008 for outpatient treatment of metabolic conditions such as diabetes and elevated cholesterol, according to the latest *News and Numbers* from the Agency for Healthcare Research and Quality (AHRQ). Metabolic medicines were the class of drugs with the highest level of spending in 2008. According to data from the Federal agency, purchases of metabolic drugs by adults aged 18 and older accounted for 22 percent of the nearly \$233 billion spent overall to buy prescription medicines that year.

Ranked by total spending, the four remaining top therapeutic classes of outpatient prescription drugs in 2008 were:

- Central nervous system drugs, used to relieve chronic pain and control epileptic seizures and Parkinson's Disease tremors—\$35 billion.
- Cardiovascular drugs, including calcium channel blockers and diuretics—\$29 billion.
- Antacids, antidiarrheals, and other medicines for gastrointestinal conditions—\$20 billion.

- Antidepressants, antipsychotics, and other psychotherapeutic drugs—\$20 billion.

Overall purchases of these five therapeutic classes of drugs totaled nearly \$156 billion, or two-thirds of the nearly \$233 billion that was spent on prescription medicines used in the outpatient treatment of adults. The data in this AHRQ *News and Numbers* summary are taken from the Household and Pharmacy Components of the 2008 Medical Expenditure Panel Survey (MEPS), a detailed source of information on the health services used by Americans, the frequency with which they are used, the cost of those services, and how they are paid for. For more information, look for statistical brief #313, *Expenditures for the Top Five Classes of Outpatient Prescription Drugs, Adults Ages 18 and Older, 2008* at www.meps.ahrq.gov.

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

Patients' income and where they live influence hospitalization for chronic lung disease

Low-income Americans with chronic obstructive pulmonary disease (COPD) and those who lived in rural areas or the South or Midwest in 2008 had the highest rates of hospitalization for symptoms of the disease, according to the latest *News and Numbers*

from the Agency for Healthcare Research and Quality.

COPD is an incurable and often fatal disease that includes bronchitis, emphysema, or both. Nearly one out of every five patients 40 years and older

hospitalized in the United States has a diagnosis of COPD, either as the main reason for the hospital stay or as a contributing illness.

People with COPD periodically experience episodes—called “acute

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Chronic lung disease

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exacerbation”—in which breathing and other symptoms worsen rapidly and can require hospitalization. According to the analysis by the Federal agency,

- About 514,000 of the 822,500 hospitalizations primarily for COPD in 2008 were for patients with acute exacerbation.
- Compared with 40-60 year olds, patients 65 to 74 years old and 75 to 84 years old were 6 times and 4.5 times respectively as likely to be hospitalized for acute exacerbation.
- Rural Americans were 1.8 times more likely than residents in

large urban areas to be hospitalized for acute exacerbation.

- The hospitalization rate for low-income patients was 1.7 times higher than for patients from other income levels—533 stays per 100,000 people compared with 312 stays per 100,000 people.
- Compared with the West, patients in the South and Midwest were 2 times more likely to be hospitalized for acute exacerbation and patients in the Northeast were 1.6 times as likely to be hospitalized.

This AHRQ *News and Numbers* is based on data in *Overview of*

Hospitalizations among Patients with COPD, 2008, available at www.hcup-us.ahrq.gov. The report uses data from the 2008 Nationwide Inpatient Sample, a database of hospital inpatient stays 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. The report also includes regional population estimates.

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. ■

Announcements

U.S. Preventive Services Task Force updates vision screening recommendation for young children

In an update to its 2004 recommendation, the U.S. Preventive Services Task Force now recommends vision screening in all children at least once between the ages of 3 and 5 years to detect the presence of amblyopia or its risk factors. The Task Force found that the current evidence is insufficient to assess the

balance of benefits and harms of vision screening in children younger than 3 years of age. The recommendation was published in the February issue of *Pediatrics*. View the recommendation at www.uspreventiveservicestaskforce.org/uspstf/uspvsch.htm. ■

New AHRQ resource helps to improve nursing home care

A new Agency for Healthcare Research and Quality (AHRQ) resource could help nursing homes improve the services they provide to their residents. The *On-Time Quality Improvement Program Manual* presents a practical approach to establish and maintain quality improvement. The manual provides an overview of the tools, key action steps, implementation tips, and firsthand knowledge from current program users about what works best. It targets State health departments, Quality Improvement Organizations, nursing home decisionmakers addressing quality improvement

priorities, and the frontline staff providing the care. Another key component is the effective use of health information technology for clinical decisionmaking to identify and treat high-risk residents much earlier. The manual helps to reorganize nursing home operations and identify essential quality improvement elements needed in coordinating members of a multidisciplinary team with clear performance roles to improve efficiency and promote better clinical outcomes. You can access the *On-Time Quality Improvement Program Manual* at www.ahrq.gov/research/lrc/ontimeqimanual.

AHRQ releases Common Formats for patient safety reporting in skilled nursing facilities

New Common Formats for patient safety reporting in skilled nursing facilities have been released by the Agency for Healthcare Research and Quality (AHRQ). These new formats complement an existing set of Common Formats, Version 1.1, which is designed to help health care providers collect both generic and event-specific information about incidents, near

misses, and unsafe conditions in hospital settings.

The term “Common Formats” refers to the common definitions and reporting formats, specified by AHRQ, which allow health care providers to collect and submit standardized information on patient safety events. The Common Formats apply to all patient safety concerns, including incidents, near misses or close

calls, and unsafe conditions. Future versions of the Common Formats are being developed for ambulatory settings, such as surgery centers and medical offices.

All of the Skilled Nursing Facilities Formats are currently available in beta versions for public review and comment via the AHRQ Patient Safety Organization Web site: www.pso.ahrq.gov. ■

New AHRQ podcasts focus on coronary artery disease, reducing medication costs, and telemedicine in schools

The Agency for Healthcare Research and Quality (AHRQ) has developed new podcasts on coronary artery disease, reducing medication costs, and use of telemedicine in schools.

A third of all Americans have some type of heart disease. But there are ways to reduce your risks and you may have some medication options. To learn more, go to the podcast or transcript: www.healthcare411.ahrq.gov/radiocastseg.aspx?id=1178&type=seg.

E-prescribing systems help prevent medication errors and may save patients money on approved prescription

drugs. For the podcast or transcript, go to: www.healthcare411.ahrq.gov/radiocastseg.aspx?id=1174&type=seg.

With remote medical consultations right in school, children may miss fewer days of school and parents can stay at work. For the podcast or transcript, go to: www.healthcare411.ahrq.gov/radiocastseg.aspx?id=1179&type=seg.

This audio program features current news and information from AHRQ. ■

New AHRQ report on women at risk for diabetes is available

AHRQ has released a new report titled *Women at High Risk for Diabetes: Access and Quality of Health Care, 2003-2006*. Women account for nearly half of all cases of diabetes in this country, and projections indicate that that percentage will increase between 2010 and 2050. Yet, many studies

do not stratify by sex, so it is difficult to determine the quality of care received by women with diabetes or who are at risk of developing the condition. This report uses national datasets to provide information about the quality of care among women at high risk for being diagnosed with

diabetes compared with women not at high risk. It presents measures in several areas, such as access to care, general well-being, and evidence-based diabetes-specific preventive care. You can access the report at www.ahrq.gov/populations/womendiab2010. ■

CME module offered on in-hospital off-label uses of recombinant factor VIIa

A continuing medical education (CME) module offered by AHRQ's Effective Health Care Program, *Comparative Effectiveness of In-Hospital Off-Label Use of Recombinant Factor VIIa vs. Usual Care*, offers an American Medical Association PRA Category 1 Credit™ based on a comparative study of the utilization and effectiveness of the use of recombinant factor VIIa (rFVIIa). The study found that current evidence does not show that off-label use

of rFVIIa reduces mortality or improves other direct outcomes. Thromboembolic events are increased by use of rFVIIa to treat spontaneous intracranial hemorrhage and in adult cardiac surgery. The EHC program also offers a guide for clinicians, *Utilization and Clinical Data on In-Hospital Off-Label Uses of Recombinant Factor VIIa*. The course and guide can be found at www.effectivehealthcare.ahrq.gov. ■

Clarification

In an announcement in the February 2011 issue of *Research Activities*, “New Federal resources help hospitals plan, carry out, and evaluate emergency preparedness exercises,” an acknowledgement was misstated. *The Hospital Preparedness Exercises Guidebook*, *The Hospital Preparedness Exercises Atlas of Resources and Tools*, and *The Hospital Preparedness Exercises Pocket Guide* were developed for AHRQ by Cornell University's Weill Cornell Medical College as part of the National Hospital Preparedness Program.

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Abdus, S. (2010). “A game-theoretical interpretation of guaranteed renewability in health insurance.” *Risk Management and Insurance Review* 13(2), pp. 195-206. Reprints (AHRQ Publication No. 11-R024) are available from AHRQ.*

The author describes a game-theoretical model that explains why health insurance premiums do not vary that much over time, even when there is no legal restriction on premium prices. He next considers a finite period model and shows that no guaranteed renewal premium schedule can be supported as equilibrium in a finite period model. Finally, he considers an infinite period model and shows that some level premium schedules can be supported as equilibria. The threats of punishments in case of deviations force both the insurer and the individuals to stay on a constant premium path. This model does not presume the commitment of the insurer.

Castor, D., Pilowsky, D. J., Hadden, B., and others. (2010, January). “Sexual risk reduction among non-injection drug users: Report of a randomized controlled trial.” (AHRQ grant HS16097). *AIDS Care* 22(1), pp. 62-70.

Non-injection drug users (NIDUs), those who use drugs such as crack cocaine, are likely to engage in high-risk sexual behaviors, particularly while under the influence. Recently, a study looked at how well a sexual risk-reduction

intervention that promoted condom use worked in this population. The study included 264 NIDUs and 170 individuals identified by the users as their sexual partners or fellow users of drugs. Designed to promote condom use, the intervention consisted of four 1.5 hour sessions. While the intervention initially reduced high-risk sexual behaviors, there was an eventual return to the same level of risky behavior a year later. The researchers did not find any significant difference in high-risk sexual behaviors between the active intervention group and the control group. The findings show how difficult it is to reduce high-risk behaviors in these individuals. They also suggest that NIDUs may require more intensive sexual-risk reduction strategies.

Dimick, J. B., Staiger, D. O., and Birkmeyer, J. D. (2010, December). “Ranking hospitals on surgical mortality: The importance of reliability adjustment.” (AHRQ grant HS17765). *HSR: Health Services Research* 45, 6(Part I), pp. 1614-1629.

Surgical mortality rates are widely used to measure hospital-level quality of care for high-risk surgery. Using hierarchical modeling, the researchers adjusted hospital mortality for reliability using empirical Bayes techniques. Three procedures (pancreatic resection, abdominal aortic aneurysm, and coronary artery bypass graft or CABG) were

included in the study. The researchers found that reliability adjustments resulted in more stable estimates of mortality for the first two procedures by improving the ability to identify hospitals with lower future mortality. For CABG, the benefits were limited to the lowest volume hospitals.

Eden, K. B., McDonagh, M., Denman, M. A., and others. (2010, October). “New insights on vaginal birth after cesarean.” (AHRQ Contract No. 290-07-1005). *Obstetrics and Gynecology* 116(4), pp. 967-981.

The authors sought to evaluate existing vaginal birth after cesarean (VBAC) screening tools and to identify additional factors that may predict VBAC or failed trial of labor. They conducted a systematic review of the literature and identified 16 articles on scored models and 28 on individual VBAC predictors that met the inclusion and quality standards. Accuracy remained high across all models for predicting VBAC, but accuracy for predicting failed trial of labor was low, ranging from 33 percent to 58 percent. None of the models provided consistent ability to identify women at risk for failed trial of labor. The authors concluded that a scoring model is needed that incorporates known antepartum factors and labor patterns to allow women and clinicians to better determine individuals most likely to require repeat cesarean delivery.

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Fifield, J., McQuillan, J., Martin-Peele, M., and others. (2010). “Improving pediatric asthma control among minority children participating in Medicaid: Providing practice redesign support to deliver a chronic care model.” (AHRQ grant HS11068). *Journal of Asthma* 47, pp. 718-727.

Asthma, a leading chronic disease of children, currently affects about 6.2 million children in the United States. Poor, minority children have worse asthma rates, severity, and outcomes. The researchers assessed the effectiveness of practice redesign and computerized provider feedback in improving provider adherence to professional guidelines and improving outcomes for 295 poor minority children in four federally qualified health centers. They found that providers at intervention sites were more than twice as likely on average to prescribe guideline-appropriate medications after exposure to the computerized feedback system during the first phase of enrollment. In the second phase, asthma control improved significantly on average during each of four quarterly asthma visits.

Galanter, W. L., Moja, J., and Lambert, B. L. (2010, November). “Using computerized provider order entry and clinical decision support to improve prescribing in patients with decreased GFR.” (AHRQ grant HS16973). *American Journal of Kidney Diseases* 56(50), pp. 809-812.

A high rate of medication errors affect hospitalized patients with decreased glomerular filtration rate (GFR), an indication of kidney problems. The authors comment on

a paper by McCoy, et al. in the same issue of the journal that found that computerized physician order entry (CPOE) interruptive alerts improve the rate of order modification of potentially kidney-toxic medications or medications cleared by the kidneys from 35 to 56 percent during the first 24 hours after the detection of acute kidney injury (AKI). The refinements studied by McCoy et al., namely, using both passive and interruptive alerts and allowing clinicians to stop alerts for patients receiving dialysis, should improve the ability to design clinical decision support that helps clinicians care for hospitalized patients with AKI.

Goeschel, C. A., Holzmüller, C. G., Berenholz, S. M., and others. (2010, November).

“Executive/senior leader checklist to improve culture and reduce central line-associated bloodstream infections”;

Goeschel, C. A., Holzmüller, C. G., and Pronovost, P. J.,

“Hospital board checklist to improve culture and reduce central line-associated bloodstream infections.” (AHRQ Contract No. 290-06-0022). *The Joint Commission Journal on Quality and Patient Safety* 36(11), pp. 519-524, 525-528.

Two articles by the same group of authors focus on the use of checklists by senior hospital officers to improve culture and reduce central line-associated bloodstream infections (CLABSIs). The first article focuses on the role of hospital executives and senior leaders and the second discusses the role of the chair of a hospital board of trustees in reducing CLABSIs. The first article assumes that the hospital has already worked on CLABSI reduction, but that the

CLABSI rate could still be lower. To get CLABSI rates down and keep them there, the authors propose that executives and senior leaders use the Executive/Senior Leader Checklist. This checklist emerged from the authors’ experiences in working with hundreds of hospitals and chief executives in Michigan and other States to improve patient safety. The checklist is a one-page list of tasks for the Comprehensive Unit-based Safety Program (CUSP) and CLABSI components of the Stop BSI national program. The checklist describes ways that hospital leaders can comply with the Leadership Standards established by the Joint Commission. The second article directed at the hospital board chairperson is structured much the same as the first. It discusses the checklist as a project support tool that the chair of the board of trustees can use to facilitate CEO efforts and coordinate CUSP/CLABSI efforts for the Stop BSI program.

Hickner, J., Zafar, A., Kuo, G. M., and others. (2010, November/December). “Field test results of a new ambulatory care medication error and adverse drug event reporting system—MEADERS.” (AHRQ Contract No. 290-88-0008). *Annals of Family Medicine* 8(6), pp. 517-525.

To become an effective safety tool in office practice, event reporting systems must be tailored to meet the needs of busy primary care practices, note these authors. They developed and tested a Medication Error and Adverse Event Reporting System (MEADERS)—an easy to use, Web-based reporting system.

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During the 10-week field test, 220 physicians and staff from 24 urban, suburban, and rural primary care practices in 4 States were able to identify and report 507 medication events with little difficulty and minimal time demand. The most frequent contributors to the medication errors and adverse drug events were communication problems (41 percent) and knowledge deficits (22 percent).

Karsh, B-T., Weinger, M. B., Abbott, P. A., and Weaver, R. L. (2010). “Health information technology: Fallacies and sober realities.” (AHRQ grants HS17899, HS16651). *Journal of the American Medical Informatics Association* 17, pp. 617-623.

Current research demonstrates that health information technology (IT) can improve patient safety and health care quality in certain circumstances. At the same time, other research shows that health IT adoption rates are low, and that health IT might not reliably improve care quality or reduce costs. The authors discuss 12 misguided beliefs about health IT and their implications for design and implementation. These include: the “HIT is not a device” fallacy, the “learned intermediary” fallacy, and the “use equals success” fallacy. They conclude by making a plea to accelerate and support the design and implementation of safer health IT.

Klabunde, C. N., Marcus, P. M., Silvestri, G.A., and others. (2010, November). “U.S. primary care physicians’ lung cancer screening beliefs and recommendations.” (Inter-agency agreement between

AHRQ, National Cancer Institute, and The Centers for Disease Control and Prevention). *American Journal of Preventive Medicine* 39(5); pp. 411-420.

The lung cancer screening beliefs and recommendations of many primary care physicians (PCPs) are not consistent with current evidence and guidelines, according to a new study. The researchers surveyed a nationally representative sample of PCPs from September 2006 through May 2007. Overall, 25 percent of the respondents believed that at least one national expert group recommended lung cancer screening for patients without symptoms, although none of the groups cited in the survey currently does so. While only 17 percent of the PCPs would screen a healthy 50-year-old who never smoked for lung cancer, 67 percent would recommend screening for a healthy 50-year-old longtime (20 pack-years) smoker.

Kozower, B. D., Sheng, S., O’Brien, S. M., and others. (2010). “STS database risk models: Predictors of mortality and major morbidity for lung cancer resection.” (AHRQ grant HS18049). *Annals of Thoracic Surgery* 90, pp. 875-883.

The objectives of this study were to create models for the perioperative risk of lung cancer resection using the Society for Thoracic Surgery’s (STS) General Thoracic Surgery Database (GTSB). The study group consisted of 18,800 patients from 111 centers who had had surgery for lung cancer. Perioperative mortality occurred in 413 patients (2.2 percent). Major morbidity occurred in 1,491 patients (7.9 percent). Composite major morbidity or mortality occurred in 1,612 patients (8.6 percent).

Predictors of mortality included pneumonectomy, American Society of Anesthesiology rating, Zubrod performance status, renal dysfunction, induction and chemoradiation therapy, among others. The models used will help surgeons and patients estimate perioperative risk and provide risk-adjusted outcomes for quality improvement.

Mardon, R. E., Khanna, K., Sorra, J., and others. (2010, December). “Exploring relationships between hospital patient safety culture and adverse events.” (AHRQ Contract No. 233-02-0087). *Journal of Patient Safety* 6(4), pp. 226-232.

This study examined the relationship between 15 patient safety culture indicators and a composite measure of adverse clinical events based on 8 risk-adjusted Patient Safety Indicators (PSIs) from 179 hospitals. Higher patient safety scores were associated with fewer adverse events at the hospitals. Data sources were the Agency for Healthcare Research and Quality’s (AHRQ’s) 2007 Hospital Survey of Patient Safety Culture and AHRQ’s Patient Safety Indicators, which measure rates of in-hospital complications and adverse events.

Meltzer, D. O., and Detsky, A. S. (2010, November). “The real meaning of rationing.” (AHRQ grant HS16967). *Journal of the American Medical Association* 304(20), pp. 2292-2293.

To limit health care use, decisions have to be made about the circumstances under which insurance will cover certain types of health care. Coverage policies,

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therefore, are rationing from a practical perspective just as much as rationing systems that explicitly prevent consumers from acting on their preferences. The recent debate has centered around who should do the rationing: private enterprises or government officials. What is needed is intelligent discourse on what approaches to rationing work best and what values Americans most wish to express as a nation to address this problem.

Acknowledging that the argument is not about whether rationing is required, but rather who should be trusted to ration care is a start, conclude the authors of this commentary.

Nakamura, M.N., McAdam, A. J., Sandora, T. J., and others. (2010, August). “Higher prevalence of pharyngeal than nasal *Staphylococcus aureus* carriage in pediatric intensive units.” *Journal of Clinical Microbiology* 48(8), pp. 2947-2959.

Healthcare-associated *Staphylococcus aureus* infections increase morbidity, mortality, and hospital costs. Although the nostrils have been considered the primary site of *S. aureus* colonization, recent studies indicate that pharyngeal carriage may be equally or more common. The researchers sought to determine the prevalence of pharyngeal carriage for methicillin-susceptible *S. aureus* (MSSA) and methicillin-resistant *S. aureus* (MRSA) and to compare the sensitivities of pharyngeal and nasal screening among children admitted to a hospital intensive care unit (ICU). There were 122 children who were carriers of MSSA and/or MRSA in the nostrils and/or pharynx. Of these, 113 were

pharyngeal carriers and 45 were colonized in the pharynx alone. Using culture-based methods, the sensitivity of pharyngeal screening for MSSA and MRSA was found to be 92.6 percent, compared to 63.1 percent for nasal screening.

Porterfield, D. S., Hinnant, L., Stevens, D. M., and others. (2010). “Diabetes primary prevention initiative interventions focus area. A case study and recommendations.” (AHRQ Contract No. 290-20-0600). *American Journal of Preventive Medicine* 39(3), pp. 235-242. Reprints (AHRQ Publication No. 11-R009) are available from AHRQ.*

The researchers examined how diabetes prevention research was being translated into practice by conducting a case study of five State Diabetes Prevention and Control Programs (DPCPs). To gather information for the case study, the researchers conducted site visits to the five programs and interviewed State staff and partners. The programs implemented activities in diabetes primary prevention and prediabetes awareness, screening activities and lifestyle interventions, and prediabetes-related health policy efforts. The researchers found out how important it was for the DPCPs to partner with other organizations to extend the cooperative work into diabetes prevention. The challenges included recruiting participants, establishing links with providers for diagnostic testing of people screened for prediabetes, and offering a lifestyle intervention.

Shaw, S. J. (2010). “The logic of identity and resemblance in

culturally appropriate health care.” (AHRQ grant HS14086). *Health* 14(5), pp. 523-544.

Culturally appropriate health care programs that include provider and patient ethnic similarity are emerging to mobilize demands for cultural authenticity and produce new forms of expertise. Claims for the efficacy of patient-provider similarity in addressing disparities in quality of care are proposed as a means to expand access to health care. Yet, these programs perpetuate segregation in health care by relying on minority health care providers to care for the minority poor, asserts the author. Both patients and providers interviewed by the author perceived benefits associated with ethnic resemblance. However, they were also critical of notions of identity that render ethnicity automatically efficacious. The author argues that this approach may help obscure the relations of power and inequality that produce the very health disparities it is meant to solve.

Slutsky, J. (2010, October). “Guiding comparative effectiveness research—A U.S. perspective.” *Pharmacoeconomics* 28(10), pp. 839-842. Reprints (AHRQ Publication No. 11-R025) are available from AHRQ.*

In this article, the Director of the Center for Outcomes and Evidence at the Agency for Healthcare Research and Quality is interviewed by Howard Birnbaum of Analysis Group, Inc., and guest co-editor of this issue. Ms. Slutsky discusses the impetus given to comparative effectiveness research (CER) by the \$1.1 billion investment made by the American Recovery and Reinvestment Act of 2009. She next

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reviews the challenges faced by physicians and how CER can help by filling gaps in evidence that physicians need. She points out that the new investment in CER presents an opportunity to re-evaluate how we approach patient-centered care. She calls for a framework that explicitly links policy interventions to the most important outcomes and raises several issues that this approach should include. Finally, she emphasizes that the true value of CER will be improvements in the quality of care and health outcomes.

Swan, B. A., Haas, S. A., and Chow, M. (2010, October). “Ambulatory care registered nurse performance measurement.” (AHRQ grant HS18885). *Nursing Economics* 28(5), pp. 337-342.

In March 2010, a state-of-the-science invitational conference titled “Ambulatory Care Registered Nurse Performance Measurement” was held to focus on measuring quality of ambulatory care by registered nurses (RNs). The goal was to formulate a research agenda and develop a strategy to study the testable components of the RN role related to care coordination and care transitions, improving patient outcomes, decreasing health care costs, and promoting sustainable system change. Expert participants came from the fields of nursing, public health, managed care, research, practice, and policy. The speakers identified priority areas for a unified practice, policy, and research agenda. They focused on the issues and implications for nursing and interprofessional

practice, quality, and pay-for-performance.

Vilhauer, R. P., McClintock, M. K., and Matthews, A. M. (2010). “Online support groups for women with metastatic breast cancer: A feasibility pilot study.” (AHRQ grant HS10565). *Journal of Psychosocial Oncology* 28, pp. 560-586.

Women often experience significant psychosocial problems after being diagnosed with metastatic breast cancer (MBC). The researchers report on the development and implementation of pilot peer-to-peer online support groups for women with MBC. Thirty women with MBC were assigned to either an immediate online support group or a wait-listed control group. They were assessed monthly for a 6-month period. Intervention retention rates, assessment completion rates, and support group participation were high compared with other published studies on this population. Reported satisfaction was also high. However, small sample size and study design precluded definitive conclusions about the intervention’s effectiveness.

Weinstein, J. R., and Anderson, S. (2010). “The aging kidney: Physiological changes.” (AHRQ grant HS17582). *Advances in Kidney Disease* 17(4), pp. 302-307.

The authors review the characteristics of age-related changes in kidney function and structure, and how physiological and biochemical changes act to produce age-associated loss of kidney function that can lead to chronic kidney disease (CKD). The primary measure of loss of kidney function is the age-related decline

per decade in glomerular filtration rate (GFR) from the adult maximum (140 mL/min/1.73 m²), which occurs around age 40. Renal blood flow also declines by 10 percent per decade (from about 600 mL/min) after this age. Diseases such as systemic hypertension and atherosclerosis are known to speed up the loss in renal function, the authors note. After pointing out some physical changes in kidney structure with age, the authors go on to discuss the possible role of several biochemical systems that affect the constriction and dilation of blood vessels in mediating the progression of CKD in the elderly.

Wen, K-Y., Gustafson, D. H., Hawkins, R. P., and others. (2010). “Developing and validating a model to predict the success of an IHCS implementation: The Readiness for Implementation Model.” (AHRQ grant HS10246). *Journal of the American Medical Informatics Association* 17, pp. 707-713.

Interactive health communications systems (IHCS) are the operational software program or modules that interface with patients and their families. They include health information and support, Web sites, clinical decision-support, and risk-assessment software. More health care organizations are adopting IHCS, making it important to understand the factors that predict a successful implementation. The researchers describe two studies used to formulate and validate the Readiness for Implementation Model (RIM). The model consists of seven weighted factors. They measured the weights of the RIM

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with a sample of 410 experts. Two of the seven factors, “organizational motivation” and “meeting user needs,” were found to be most important in predicting implementation readiness.

Zayas-Cabán, T. and Dixon, B. E. (2010). “Considerations for the design of safe and effective consumer health IT applications in the home.” (AHRQ Contract No. 290-04-0016). *Quality and*

Safety in Health Care 19*(Suppl. 3), pp. 233-271. Reprints (AHRQ Publication No. 11-R014) are available from AHRQ.

Consumer health applications of information technology (IT) would benefit from the application of human factors and ergonomics methods in their design and evaluation, suggests this study. Because human factors and ergonomics allows the developers of IT projects to understand and improve the interaction between the users of an application and the

application, the researchers analyzed how such issues were addressed during the development of five AHRQ-funded consumer health IT projects. Project proposals, progress reports, other documents, and discussions with the project teams were used to gather data. Key areas of focus in the analysis were design considerations; design approach, testing, and prototyping; implementation; training and support; use; provider interaction; and vendor support. ■

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