Agency for Healthcare Research and Quality

RESEARCH ACTIVITIES

U.S. Department of Health and Human Services • No. 338, October 2008

Highlights

Departments

Regular Features

New tool helps hospitals evaluate disaster drills

Hospitals can now identify the most important strengths and weaknesses in their disaster response plans using a new tool from the Agency for Healthcare Research and Quality (AHRQ). Ensuring that hospitals are prepared to respond appropriately during any type of disaster situation – manmade or natural – is a priority for the U.S. Department of Health and Human Services (HHS). Beginning in September, hospitals participating in the *Hospital Preparedness Program*, administered through HHS, will be required to provide executive summaries of the results of disaster drills they conduct. AHRQ's new *Tool for Evaluating Core Elements of Hospital Disaster Drills* can help hospitals meet this requirement.

Hospital disaster response drills are real-time tests of a facility's readiness to respond to a sudden demand for services resulting from a community-wide disaster. Routine evaluation of these drills can help a hospital make sure it is ready to meet community needs and provide high-quality care during a disaster event.

The tool is a series of evidence-based modules that provide standardized checklists to document observations during a disaster drill. Using the observations, hospitals can identify areas for improvement, make appropriate changes and set benchmarks to track those changes over time. The individual modules assess the adequacy of response by different functional "zones" set up within a hospital during a disaster: command center, decontamination, triage, and treatment. A pre-drill module is also included, and a debrief module helps capture feedback from all participants, including observations that occur across multiple functional zones.

The new evidence-based tool is an abridged version of a more comprehensive evidence report developed by AHRQ's Johns Hopkins University Evidence-based Practice Center in Baltimore. The new version singles out only the most critical elements that all hospitals should evaluate during disaster drills. AHRQ's Evidence-based Practice Centers are part of an important Federal effort to compare alternative treatments for significant health conditions and

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Disaster drills

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make the findings public. AHRQ's role in national emergency preparedness efforts is to conduct and support research and to develop tools and resources that communities can use to improve public health preparedness.

The *Tool for Evaluating Core Elements of Hospital Disaster Drills* is available on the AHRQ Web site at: www.ahrq.gov/prep/drillelements. Single, free copies are also available from ARHQ.*

For more information about the Hospital Preparedness Program, visit www.hhs.gov/aspr/opeo/hpp. ■

Child/Adolescent Health

Study provides new evidence linking antidepressants and risk of suicide in depressed children and adolescents

Recent studies have raised concerns that antidepressants paradoxically boost the risk of suicidal behavior among depressed children and adolescents (but not adults). A new study of Medicaid-insured adults and children from all 50 States provides additional evidence of these risks. It found a twofold increased risk of suicide attempts among children treated with any antidepressant medications. The researchers, affiliated with the Center for Education and Research on Therapeutics at Rutgers University, compared the risk of suicide attempts resulting in injury during the early stages of antidepressant treatment in children and adults. They wanted to find out whether children and adults beginning treatment with antidepressants had different risks of attempting suicide by matching cases (patients who attempted suicide) with controls (patients who did not) similar in age, sex, and race/ethnicity (white or nonwhite, Hispanic or non-Hispanic).

Most of the injuries from suicide attempts for both children and adults (73 percent and 79 percent, respectively) resulted from drug ingestion. The researchers found no significant relationship for adults between use of any antidepressant and more specifically use of any SSRIs (selective serotonin reuptake inhibitors and an increased risk of a suicide attempt. In contrast, for children and adolescents, treatment with any antidepressant was associated with a significant twofold increase in the risk of a suicide attempt. Also, treatment with any antidepressant significantly was linked to a reduction of two-thirds in suicide

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

Barbara L. Kass, MPH, CHES
Managing Editor

Gail Makulowich
Assistant Managing Editor

Mark Stanton, Karen Fleming-Michael, David Lewin
Contributing Editors

Joel Boches
Design and Production

Karen Migdail
Media Inquiries

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risk for adult males, but not for adult females. Although the case–control study found no significant effect of psychotherapy on reducing suicide risk for adults or children, the researchers warn against ignoring therapy on this basis. They note that other controlled studies have shown the effectiveness of psychotherapy in preventing repeat suicide attempts in adults. The study was funded in part by a grant from the Agency for Healthcare Research and Quality (HS16097) to the Center for Education and Research on Therapeutics (CERT) at Rutgers University. For more information on the CERT program, please visit http://www.ahrq.gov/clinic/certsovr.htm.

More details are in "A case–control study of antidepressants and attempted suicide during early phase treatment of major depressive episodes," by Mark Olfson, M.D., M.P.H., and Steven C. Marcus, Ph.D., in the March 2008 *Journal of Clinical Psychiatry* 69(3), pp. 425-432. ■

Children with asthma have more prescriptions filled when their health plans notify their doctors after a serious episode

Asthma is the most common chronic condition for children. Effective treatments, such as steroid inhalers, can help control it. When managed care programs inform health care providers that a child has had a serious asthmatic episode, providers tend to take action by writing prescriptions for asthma drugs to prevent these episodes, a new study finds. William O. Cooper, M.D., M.P.H., and Wayne A. Ray, Ph.D., of Vanderbilt University and colleagues surveyed 18 Medicaid managed care plans that served 4,498 children with moderate to severe asthma in Tennessee and Washington. These children visited the emergency department (ED), were hospitalized, or refilled two or more prescriptions for their asthma between 2000 and 2002.

Of the 18 managed care plans, 15 provided written feedback to providers on asthma care. Twelve offered the number of patients with asthma in the provider's care, 12 gave information on medication prescribing, and 13 presented data on asthma urgent care events. Eleven plans alerted the provider when a child visited the ED or was hospitalized. Communicating this information led to boosts in filling prescriptions for asthma prevention medications, the authors found.

Children whose plans offered feedback and notifications had the highest mean days of filling their prescriptions during the 1-year follow-up period. However, children whose plans did not communicate with providers had the lowest mean days for filling prescriptions medications. The authors suggest that health plan communication with providers may be useful in managing other chronic health conditions. This study was funded in part by the Agency for Healthcare Research and Quality (HS13076 and HS10384).

See "Health plan notification and feedback to providers is associated with increased filling of preventer medications for children with asthma enrolled in Medicaid," by Dr. Cooper, Dr. Ray, Patrick G. Arbogast, Ph.D., and others in the April 2008 *Journal of Pediatrics* 152(4), pp. 481-488. ■

Use of corticosteroids along with antibiotics for children with bacterial meningitis may not affect outcomes

Children and adults stricken with bacterial meningitis, a serious infection of fluid in the spinal cord and surrounding the brain, can suffer brain damage and even death within hours or days. Rapid treatment with antibiotics is critical. Use of corticosteroids with or shortly before the first dose of antibiotics significantly reduces mortality among adults felled by bacterial meningitis. Although use of adjuvant corticosteroids for children with the condition is increasing, a new study found no association between this therapy and children's time to death or hospital discharge.

Researchers at the Center for Education and Research on Therapeutics (CERT) at the University of Pennsylvania School of Medicine suggest more studies be done to explore the possible benefit of corticosteroid use for children with bacterial meningitis before it becomes routine. They retrospectively studied the association between use of adjuvant steroids among young children (median age of 9 months) discharged with bacterial meningitis from 27 children's

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hospitals in different States with time to death and hospital discharge. The most common cause of meningitis in this group was Streptococcus pneumoniae.

Adjuvant corticosteroids were administered to nearly 9 percent of the 2,780 children. The overall mortality rate was 4.2 percent, with 2.2 percent of children dying within a week and 3.1 percent dying within 28 days after hospital admission. Adjuvant corticosteroids did not reduce children's deaths regardless of their age. This therapy also did not affect their time to hospital discharge. Guidelines from the American Academy of Pediatrics acknowledge the unclear benefits of this therapy for children with bacterial meningitis, stating that use of dexamethasone "may be considered after weighing the potential benefits and risks."

The study was supported in part by a CERT grant from the Agency for Healthcare Research and Quality (HS16946). For more information on the CERT program, please visit http://www.ahrq.gov/clinic/certsovr.htm.

More details are in "Corticosteroids and mortality in children with bacterial meningitis," by Jillian Mongelluzzo, B.A., Zeinab Mohamad, M.S., Thomas R. Ten Have, Ph.D., and Samir S. Shah, M.D., M.S.C.E., in the May 7, 2008 *Journal of the American Medical Association* 299(17), pp. 2048-2055. ■

Guidelines for treating ear infections imply greater willingness to treat children older than 2 years with antibiotics

There is growing concern about increasing antibiotic resistance by the organisms that cause children's ear infections (acute otitis media, AOM), the most common bacterial illness in children. The American Academy of Pediatrics (AAP) guidelines for AOM were developed to address this issue and the uncertainty regarding which children should receive antimicrobial therapy. A new study has found that the guidelines reduce antibiotic use for children under age 2 with AOM, but at a relatively high cost of sick days and parental missed work days.

Researchers used decision analysis to compare the AAP guidelines' three-criteria strategy for diagnosing and treating AOM with a commonly used and less restrictive two-criteria strategy and a "watch and wait" strategy. In the AAP three-criteria strategy, all children are diagnosed with AOM if they satisfy illness acuity, tympanic membrane inflammation, and middle ear fluid buildup criteria. The two-criteria strategy includes the first two factors but excludes fluid buildup. All children diagnosed with AOM under the first two strategies receive antibiotic (amoxicillin) treatment. By contrast, the watch and wait strategy monitors all children following the initial visit for 2 days without antibiotic therapy.

The researchers found an age inconsistency in the results of following the AAP guidelines for children younger than 2 years and children older than 2 years. For children under 2 years, the researchers predicted that the three-criteria strategy resulted in 21 to 26 percent less antibiotic use, 13 to 14 percent more sick days, and 23 to 28 percent fewer adverse drug events (ADEs) than the two-criteria strategy. However, for children 2 to 12 years, the results predicted were 67 percent less antibiotic use, 4 percent more sick days, and 68 percent fewer ADEs. Using the two-criteria strategy vs. the AAP guidelines, 1.2 to 1.4 children under age 2 would need to be treated to avoid a sick day, compared with 6.3 children older than 2 years who

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Visit the AHRQ Patient Safety Network Web Site

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

Ear infections

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would need to be treated to avoid a sick day if using the AAP guidelines vs. the watch and wait strategy. Thus, based on the AAP criteria, the willingness to use antibiotics to avoid sick days for older children is considerably higher than for younger ones. The authors conclude that the AAP guidelines may be more cost effective for older children than for children under 2 years of age.

This study was supported in part by a Center for Education and Research on Therapeutics (CERT) grant from the Agency for Healthcare Quality and Research (HS10399). For more information on the CERT program, please visit www.ahrq.gov/clinic/certsovr.htm.

See "Age inconsistency in the American Academy of Pediatrics guidelines for acute otitis media," by Sharon Meropol, M.D., M.S.C.E., Henry A. Glick, Ph.D., and David A. Asch, M.D., in the April 2008 *Pediatrics* 121, pp. 657-666. ■

Head Start classrooms have lower-than-expected allergen concentrations

Children enrolled in Head Start preschool programs often spend 6 to 8 hours of every weekday in a classroom. Classroom exposure to allergens, such as mold, cat, dog, mouse, or cockroach can lead to the development of allergies. In turn, allergies can result in increased risk of symptoms due to asthma, the most common chronic childhood health condition. To determine the prevalence of allergen exposure in Head Start facilities, researchers examined concentrations of common allergens in dust samples collected in classrooms in 33 Pulaski County, Arkansas, Head Start centers between April 1 and June 30, 2003. They found dog and mouse allergens in all (100 percent) of the facilities, dust mites in 27 (82 percent), cat allergens in 23 (70 percent), cockroach allergens in 7 (21 percent), and mold spores in 31 (94 percent).

Despite the nearly ubiquitous presence of common allergens, concentrations were generally low. High concentrations of dust mites were present in 11 (33 percent) centers, however, researchers found high cockroach concentrations in only 2 (6 percent) and high mouse allergen concentrations in 1 (3 percent) center. This was an unexpected finding since the authors expected high levels of cockroach and mouse allergens at centers where children ate in their classrooms. They suggest that low allergen levels may be explained, in part, due to the majority (67 percent) of centers employing professional services to clean the rooms. The researchers concluded that exposure to low dose allergen concentrations in a preschool setting may play an important role in development of allergies and asthma in young children. This study was funded in part by the Agency for Healthcare Research and Quality (HS11062).

See "Classroom aeroallergen exposure in Arkansas Head Start centers," by Tamara T. Perry, M.D., Perla A. Vargas, Ph.D., Jeremy Bufford, M.D., and others in the April 2008 *Annals of Allergy, Asthma, and Immunology* 100, pp. 358-363. ■

Disparities/Minority Health

Higher education among American Indian elders increases their likelihood of engaging in physical activity

American Indians and Alaska Natives (AI/ANs) report lower levels of leisure-time physical activity than majority populations. This lack of exercise puts them at risk for obesity, hypertension, type 2 diabetes, and cardiovascular disease, which are becoming more prevalent in many AI/AN communities. However, as with many other groups, more educated AI/AN elders have higher levels of physical activity than their less educated counterparts, finds a new study.

University of Washington researchers correlated education with physical activity level among 125 sedentary AI/AN elders (age 50 to 74 years) enrolled in a 6-week trial comparing 2 approaches to physical activity monitoring. They correlated educational level with total caloric expenditure for moderate-intensity physical activities (leisure, work, exercise, and chore-related) and distance traveled during a 6-minute walk test of fitness (6MWT).

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Groups at different educational levels (less than high school, completed high school, General Education Degree or some vocational education, and college education) did not differ significantly in adjusted caloric expenditure due to all exercise activity. However, after controlling for relevant demographic and health factors, groups did differ significantly in caloric expenditure due to moderate to vigorous exercise, with the differences increasing significantly with higher levels of educational attainment. A similar significant positive trend was found between higher levels of education and increased distance covered during the 6MWT. The study was supported by the Agency for Healthcare Research and Quality (HS10854).

See "Education is associated with physical activity among American Indian elders," by Craig N. Sawchuk, Ph.D., Andy Bogart, M.S., Stephen Charles, B.A., and others, in the *American Indian Alaska Native Mental Health Research* 15(1), p. 1-17, 2008. ■

Education by mail is as effective as in-class training for Korean-Americans with high blood pressure

Competing life priorities and limited resources often prevent first-generation Korean-American immigrants, who suffer from high rates of high blood pressure (BP), from attending health-promotion classes. Miyong T. Kim, R.N., Ph.D., of the Johns Hopkins University School of Nursing, and colleagues recruited adults from the Baltimore/Washington Korean-American community to study effective ways to improve their BP self-management. The good news is that education by mail may be as effective as an in-class education for teaching this group to manage their high BP.

The researchers involved the community in planning the study and in recruiting the participants from Korean churches, grocery stores, and local Korean language publications. Study participants were all first-generation Korean-Americans, ages 40–65 years, who had systolic BP of at least 140 mm Hg and/or diastolic BP of at least 90 mm Hg, or were taking BP medications. Participants completed a baseline questionnaire and were assigned to either the in-class education group (184) or the mail education group (261).

The two interventions included education about blood pressure, its control, and reducing risk factors, such as avoiding high-salt diet and smoking. Each intervention also introduced and enhanced strategies for managing BP, addressed immigrant-related adversities in the participants' lives, and promoted self-care behaviors for control of high BP. At baseline, the mean systolic BP was 142 mm Hg for the in-class group and 144 mm Hg for the mail group, with mean diastolic pressures of 90 and 92 mm Hg, respectively. At 3 months after the beginning of each intervention, the mean reduction in systolic BP was 13 mm Hg for the in-class group and 16 mm Hg for the mail group; mean diastolic BP decreased by 10 mm Hg for the in-class group and 11 mm Hg for the mail group. The proportion of participants with controlled BP (under 140 mm Hg for systolic and under 90 mm Hg for diastolic) more than doubled by 3 months, to 78 percent for the in-class group and 80 percent for the mail group. Both groups also showed comparable improvements in psychological and behavioral outcomes. The study was funded in part by the Agency for Healthcare Research and Quality (HS13160).

More details are in "Mail education is as effective as in-class education in hypertensive Korean patients," by Dr. Kim, Eun-Young Kim, Ph.D., R.N., Hae-Ra Han, Ph.D., R.N., and others, in the March 2008 *Journal of Clinical Hypertension* 10(3), pp. 176-184. ■

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.

Race influences participation of companions in cancer consultations

Racial disparities in cancer care may be influenced by how the patient or their companion communicates with the doctor, according to a study of newly diagnosed lung cancer patients. The new study recorded and analyzed conversations between clinicians from a medical center's oncology or thoracic surgery clinics and newly diagnosed patients and (if accompanied) the patients' companions. The researchers found that the companions of black patients were less active participants in the conversation than were the companions of white patients. Earlier work at the same medical center found that black patients were less active participants in talking with their clinicians than were white patients.

Companions can play an important role in meetings between newly diagnosed patients and clinicians, the researchers noted. Whether family or friends, companions can help patients provide important parts of their medical history, as well as reinforce, confirm, and strengthen patients' statements. In the study of 48 unaccompanied patients, 84 accompanied patients, and 84 companions, overall participation by accompanied patients and their companions was comparable to that for unaccompanied patients. However, almost half of the 84 pairs had an actively participating patient and a relatively passive companion, while a third had a passive patient and an actively participating companion. Nearly one-fifth of the pairs acted more like equal partners.

Companions were more likely to be active participants when the physician's communication emphasized partnership building and supportive talk, and when there was a confirmed diagnosis of lung cancer before the visit. Patients were less satisfied with the consultation when they and their companion participated equally than when either one was more active in talking with the physician. It may be that the roles have been decided in advance when the patient or companion does most of the talking in the interaction with the physician. When participation is comparable, there may be a struggle between the patient and companion over their respective roles and control of the communication. Based on their findings, the researchers recommended developing interventions for the physician and the patient/companion pair to make it more likely that each participant in a cancer consultation can be as actively involved as they wish. The study was funded in part by the Agency for Healthcare Research and Quality (HS10876).

More details are in "Companion participation in cancer consultations," by Richard L. Street and Howard S. Gordon in *Psycho-Oncology* 17, pp. 244–251, 2008. ■

Patient Safety and Quality

Automated e-mail system helps identify adverse drug events

Sending automated e-mails to patients after they are prescribed new drugs may help detect and prevent adverse drug events, a new study finds. Saul N. Weingart, M.D., Ph.D., of Dana-Farber Cancer Institute, and colleagues examined actions 267 patients took after receiving 391 automated e-mail messages asking them about new medications they were prescribed from April 2001 to June 2002. E-mails were sent 10 days after prescriptions were issued at three primary care practices, and patient responses were sent to the prescribing physician.

Of the 267 patients, 128 responded to the initial e-mail. Seventy-seven percent of them opened the initial e-mail within a day of its being sent, and 13 percent sent responses. For example, they asked about the drug's effectiveness, drug-related side effects, and the dose. In return, 68 percent of physicians responded to the patients' e-mails, usually within a week. Typical responses included asking questions, providing information, writing a new prescription, or changing the dose. During chart reviews, physicians identified 17 adverse drug events that were brought to light because of the e-mail exchanges. These ranged from drug-related constipation and diarrhea to nausea and dizziness.

The authors contend that the e-mail messages helped continue the dialogue between patient and clinician after a therapeutic intervention. They believe the

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system could be useful in following up with surgical patients and those with chronic diseases, as well as promoting healthy lifestyles. However, for this system to be effective, patients and providers must be timely in their responses to e-mail messages. This study was funded in part by the Agency for Healthcare Research and Quality (HS11644).

See "Medication safety messages for patients via the web portal: The MedCheck intervention," by Dr. Weingart, Hope E. Hamrick, Sc.M., B.A., Sharon Tutkus, R.N., B.S.N., and others in the March 2008 *International Journal of Medical Informatics* 77(3), pp. 161-168. ■

No single formula may work to improve quality of care through collaborations of community health centers

Once someone develops an approach to improve the quality of health care, it's important to know whether the approach will work within hospitals or other health care facilities. Researchers found that quality improvement collaboratives (QICs) among 40 community health centers (CHCs) could use the Chronic Care Model (CCM) to develop and implement initiatives to improve the quality of asthma, cardiovascular disease, and diabetes care at the CHCs. However, further research is needed to understand how specific activities initiated by these collaboratives can contribute to improving the quality of care.

The researchers collected information on quality improvement initiatives at 40 CHCs participating in one of the federally funded Health Disparities Collaboratives. These groups of health centers were created to improve the quality of care for medically underserved populations. Overall, the centers undertook 1,754 quality improvement activities as part of the Health Disparities Collaborative, averaging just under 44 activities per center. The CCM subcategories with the largest numbers of improvement activities were community linkage for patients (accessing resources in the community for the immediate benefit of CHC patients) and patient registry (development or improvement of disease-specific patient registries). Patient registry was the only subcategory with activities undertaken by all of the centers. The researchers rated 50 (3 percent) of the implemented activities as having a "high" or "very high" potential for impact on care quality. These projects mostly fell within the CCM categories of collaborative decisionmaking with patients or institutionalization of guidelines, protocols, and prompts.

Based on their analysis, the researchers conclude that there is not a single, uniform formula for high-impact quality improvement interventions across multiple CHCs. Instead, different sites may require different combinations of initiatives to produce quality improvement. The study was funded in part by the Agency for Healthcare Research and Quality (HS13653).

More details are in "Inside the Health Disparities Collaboratives: A detailed exploration of quality improvement at community health centers," by Ellie Grossman, M.D., M.P.H., Thomas Keegan, Ph.D., Adam L. Lesser, B.A., and others, in the May 2008 *Medical Care* 46(5), pp. 489–496. ■

Better admissions data challenges the validity of some patient safety indicators

Some hospital measures of patient safety events—patient safety indicators (PSIs)—alert the hospital to problems that actually had arisen before admission, according to a new study. Without information on whether these patient safety events are present when the patient is admitted, the PSIs cannot help the hospital identify problems and solutions to those problems, explains Anne Elixhauser, Ph.D., of the Agency for Healthcare Research and Quality. Dr. Elixhauser and colleagues analyzed data from California and New York, two States that require hospitals to collect reliable information on potential patient safety problems present at admission (POA). The researchers looked at 13 of the 20 PSIs, designed to reflect in-hospital quality of care, that could be made unreliable by lack of POA

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information. They found that for three PSIs—decubitus ulcer (pressure sores), postoperative hip fracture, and postoperative pulmonary embolism/deep vein thrombosis—the majority of cases do not represent problems that developed during the patient's hospital stay. Thus, prevention of these conditions must be addressed elsewhere in the health care system. However, the other 10 PSIs are potentially useful measures even in the absence of POA codes. For these 10 measures—complications of anesthesia, foreign body left during procedure, iatrogenic pneumothorax, infection due to medical care, postoperative hemorrhage, postop physiologic derangement, postop respiratory failure, postop sepsis, accidental puncture and laceration, and transfusion reaction—the majority of events were not present on admission.

Dr. Elixhauser and her colleagues used 2003 data on hospitalized patients from the California and New York State Healthcare Cost and Utilization Program State Inpatient Databases, which included POA codes. After excluding records with suspect POA coding, the researchers found that most cases of decubitus ulcer (86–89 percent), postoperative hip fracture (74–79 percent), and postoperative pulmonary embolism/deep vein thrombosis (54–58 percent) were present at admission, and could not be considered in-hospital patient safety events. In contrast, no complications of anesthesia were eliminated when POA diagnoses were taken into account.

The study was funded by the Agency for Healthcare Research and Quality (Contract No. 290-00-0004).

More details are in "How often are potential patient safety events present on admission?" by Robert L. Houchens, Ph.D., Dr. Elixhauser, and Patrick S. Romano, M.D., M.P.H., in the March 2008 *The Joint Commission Journal on Quality and Patient Safety* 34(3), pp. 154-163. Reprints (AHRQ Publication No. 08-R069) are available from AHRQ.* ■

Faster new drug review is linked to more adverse drug reactions

The recent withdrawal from the market of several high-profile new drugs because of safety concerns has led some observers to wonder whether the faster review process for new drugs by the Food and Drug Administration (FDA) might be contributing to an increase in serious adverse drug reactions (ADRs)—including hospitalization and death. A new study found a link between the two. Nevertheless, this risk must be weighed against a drug's benefits, asserts study author Mary K. Olson, Ph.D., of Tulane University. The Prescription Drug User Fee Act (PDUFA), which became law on October 29, 1992, sought to speed up the process of bringing new drugs to market by giving the FDA additional resources (via user fees paid by the pharmaceutical companies), while setting deadlines of 6 months for consideration of priority-rated drug applications (drugs deemed therapeutically novel by the FDA) and 12 months (now 10 months) for other new drugs. Dr. Olson examined the links between the speed of FDA approval, industry user fees, drug novelty, and other important determinants on ADRs.

She used data on new drug approvals by the FDA, on ADRs reported to the FDA by clinicians and patients, the degree of use of these new drugs within 2 years after their approval (taken from the Agency for Healthcare Research and Quality's Medical Expenditure Panel Surveys), and other factors to construct a model of drug-specific ADR counts. The study focused on new chemical entities approved from 1990 to 2001. The 310 drugs included in the analysis had a total of 96,751 serious ADRs within 2 years after FDA approval—including 57,511 that required hospitalization and 17,797 ADRs that resulted in death. Mean review times for these drugs showed a declining pattern over the sample period. For example, new drugs approved from 1990 to 1992 had an average review time of 31 months while drugs approved in 1996 to 2001 had a mean review time under 17 months. Eighty-one percent of the drugs were approved after PDUFA passage, including 69 percent submitted after the Act became law. Therapeutically novel drugs comprised 42 percent of the approved drugs.

Faster drug review times were significantly associated with increased numbers of serious ADRs, ADR hospitalizations, and ADR deaths. A 10-month reduction in review time was associated with a 12 percent increase in serious ADRs reported during the first 2 years after FDA approval, an 11 percent increase in ADR hospitalizations, and an 11 percent increase in ADR deaths. More ADRs were associated with novel drugs, drugs having a black box warning, and drugs for AIDS, bacterial infections, other infections, cancer, epilepsy, arthritis, and mental health conditions, as well as anesthetics. After controlling for the effects of

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Faster new drug review

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review speed, user fee approvals and submissions showed little association with ADRs, which suggests that PDUFA's impact on drug-related risks occurs primarily through the speed of review. The study was funded in part by the Agency for Healthcare Research and Quality (HS13932).

More details are in "The risk we bear: The effects of review speed and industry user fees on new drug safety," by Dr. Olson, in the March 2008 *Journal of Health Economics* 27, pp. 175-200. ■

Women's Health

Women sexually abused by partners have worse health than never abused women, even years after the abuse has stopped

Thirty-four percent of women surveyed in a large health plan had suffered from physical and/or sexual intimate partner violence (IPV) during their adult lifetime. Sexual IPV took an enormous toll on women's health, whether or not they also suffered from physical IPV—their depression and physical symptoms persisted for many years after the abuse had stopped, according to a new study. The researchers analyzed the surveys of 3,429 insured women about whether they had ever suffered from physical or sexual IPV, as well as their mental, social, and physical health. Although 34 percent of the women had suffered from sexual and/or physical IPV, only 5 percent said they suffered the abuse within the past year. For the others, it had been a median of 19 years since the last episode of abuse.

Compared with never abused women, women with a history of sexual IPV had the worst overall health. Women with a history of sexual IPV only had scores on the mental and social health components of the Short Form-36 survey that were 4.28 to 6.22 points lower than nonabused women, and women with a history of both physical and sexual IPV had scores that were 4.95 to 5.81 points lower. Women who suffered from physical IPV only had scores that were 2.41 to 2.87 points lower than never abused women.

Depression was also more prevalent among sexually abused women than other women. Compared with never abused women, women with a history of sexual IPV only had 2.4 to 3 times greater prevalence of depressive and severe depressive symptoms. Women with a history of both physical and sexual IPV had 2.3 to 2.9 times greater prevalence, and women who had been physically abused only had 1.6 to 1.9 times greater prevalence of these symptoms than never abused women. Finally, compared with never abused women, women who were both physically and sexually abused were nearly twice as likely to report fair or poor health, had more overall symptoms, more limited involvement in voluntary groups, and less trust of individuals in their community. The study was supported by the Agency for Healthcare Research and Quality (HS10909).

See "Health outcomes in women with physical and sexual intimate partner violence exposure," by Amy E. Bonomi, Ph.D., M.P.H., Melissa L. Anderson, M.S., Frederick P. Rivara, M.D., M.P.H., and Robert S. Thompson, M.D., in the September 2007 *Journal of Women's Health* 16(7), pp. 987-997. ■

Gender discrimination is linked to mammogram nonadherence in affluent women

Less than half of all women receive regular mammograms, even though these images are effective in detecting breast cancer early. One group that does not adhere to mammography guidelines is women who earn more than $50,000 a year and experienced gender discrimination at some point in their lives, a new study finds. Amy B. Dailey, Ph.D., M.P.H., of the University of Florida, and colleagues conducted telephone interviews with 1,451 women who received a baseline mammogram in Connecticut between October 1996 and January 1998.

During telephone interviews, researchers asked the women if they ever experienced gender discrimination at school, while getting a job, at work, at home, while getting medical care, in public, or from the police. They also determined if the women

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adhered to the American Cancer Society's 1996 guidelines that recommended women between the ages of 40 and 49 receive one mammogram within 2 years and 2 months of their baseline mammogram.

Almost 38 percent of the women reported experiencing gender discrimination at least once in their lifetime, most commonly at work (19.7 percent) or in public (18.6 percent). Though 80.7 percent of the women said they received regular mammograms, only 52.5 percent adhered to the 1996 guidelines.

The researchers were unable to uphold their hypothesis that gender discrimination is linked to not adhering to mammography guidelines, with the exception of the high-earning group. This group of women may be experiencing "overperformance demand," a situation in which women work harder and longer than others in the workplace to gain recognition, the authors suggest. This overperforming may cause them to neglect other areas in their lives, such as getting routine mammograms. This study was funded in part by the Agency for Healthcare Research and Quality (HS15686).

See "Does gender discrimination impact regular mammography screening? Findings from the race differences in screening mammography study," by Dr. Dailey, Stanislav V. Kasl, Ph.D., and Beth A. Jones, Ph.D., M.P.H., in the March 2008 *Journal of Women's Health* 17(2), pp. 195-206. ■

Success rates for vaginal births after cesareans differ depending on whether the mother has certain conditions

Published success rates range from 60 to 80 percent for women who want to attempt to deliver a baby vaginally after a cesarean birth. However, a new study found actual success rates varied from 10 to 73.8 percent depending on whether certain maternal, fetal, or placental conditions were present. For example, women whose babies' heads were not in optimal position for a vaginal delivery had a success rate of only 9.8 percent when they attempted a vaginal birth after cesarean (VBAC), while women who had a history of herpes had a 71 percent success rate, those with mental conditions had a 71.7 percent success rate, and those with no conditions had a 73.8 percent success rate.

Kimberly D. Gregory, M.D., M.P.H., of Cedars Sinai Medical Center, and colleagues examined birth and discharge records from the California Office of Statewide Health Planning and Development from 2002. Of 41,450 women who attempted VBAC, they identified 12,324 who had high-risk clinical conditions. Rates for complications for mother and child ranged from 1 to 2 percent (except for maternal infection, which was 4.77 percent and neonatal respiratory conditions, which were 5.39 percent). Complication rates were higher for mother and baby when high-risk conditions were present. For example, when a baby's head was not in the correct position for delivery, the odds that the mother would experience a uterine rupture was 8.8 times greater than a woman whose baby's head was positioned correctly.

These findings indicate that VBAC is not an option for every woman, the authors suggest. Although many women are able to successfully complete a VBAC, women who have high-risk conditions may experience complications either for themselves or their children in attempting VBAC. While additional research is needed to determine specific risk factors, providing this information to women can assist them in making informed choices about their deliveries. This study was funded in part by the Agency for Healthcare Research and Quality (HS11334).

See "Vaginal birth after cesarean: Clinical risk factors associated with adverse outcome," by Dr. Gregory, Lisa M. Korst, M.D., Ph.D., Moshe Fridman, Ph.D., and others in the April 2008 *American Journal of Obstetrics and Gynecology* 198(4), pp. 452.e1-452.e12. ■

Men don't accurately perceive their risk of stroke due to their high blood pressure

High blood pressure (hypertension) is one of several risk factors for stroke, along with smoking, cardiovascular disease, diabetes, and other conditions. Yet perception of the risk of stroke among men with hypertension does not correlate with their actual risk as calculated using the Framingham stroke risk (FSR) scale, according to a new study. This suggests the need for better patient education on the stroke risks associated with hypertension, note the Duke University researchers. They used the FSR to calculate the actual stroke risk of 296 veterans enrolled in a study to improve hypertension control, and then asked them to assess their hypertension-related stroke risk using a 10-point scale (1 as lowest risk and 10 as highest risk).

About one in five men (22 percent) perceived themselves as having a high risk of stroke, which was accurate based on their high FSR. However, 78 percent of men underestimated their stroke risk as compared with their FSR. These men were significantly less likely to be worried about their blood pressure than men who accurately perceived their risk (12.4 vs. 69.6 percent). Also, those at highest stroke risk knew less about hypertension than men at lower risk.

Despite major efforts to boost public awareness of stroke risk, this study suggests that patients with hypertension may not adequately translate their vascular risk factors into an accurate estimate of their stroke risk. Developing tailored patient education materials that incorporate personal risk could be a promising strategy to correct inaccurate perceptions, suggest the researchers. Their study was supported in part by the Agency for Healthcare Research and Quality (T32 HS00079).

More details are in "Perceived and actual stroke risk among men with hypertension," by Benjamin J. Powers, M.D., Eugene Z. Oddone, M.D., M.H.S., Janet M. Grubber, M.S.P.H., and others, in the April 2008 *Journal of Clinical Hypertension* 10(4), pp. 287-294. ■

Task Force says men age 75 and older should not be screened for prostate cancer

Men aged 75 and older should not be screened for prostate cancer, and younger men should discuss the benefits and harms of the prostate-specific antigen (PSA) test with their clinicians before being tested, according to a new recommendation from the U.S. Preventive Services Task Force. The Task Force found evidence that screening for prostate cancer provided few health benefits but led to substantial physical harms and some psychological harms in men aged 75 and older. In men younger than 75, the Task Force concluded that current evidence is insufficient to assess the balance of benefits and harms of prostate cancer screening. An estimated 218,890 U.S. men were diagnosed with prostate cancer in 2007, and one in six men will be diagnosed in his lifetime.

Screening for prostate cancer is most often performed using PSA tests and digital rectal exams. The PSA test is more likely to detect prostate cancer than the digital rectal exam. However, prostate cancers that are found with a PSA test take years to affect health; most prostate cancers that grow serious enough to cause death take more than 10 years to do so. Since a 75-year-old man has an average life expectancy of about 10 years and is more likely to die from other causes such as heart disease or stroke, prostate cancer screening is unlikely to help men over 75 live longer.

For the same reasons, men younger than 75 with chronic medical problems and a life expectancy of fewer than 10 years are also unlikely to benefit from screening. There are also harms associated with prostate cancer screening, which include biopsies, unnecessary treatment and false-positive results that may lead to anxiety. Complications often result from treating prostate cancer and may include urinary incontinence and impotence. These slow-growing cancers might never have affected a patient's health or well-being had they not been detected by screening.

Current data show that one-third of all men in the United States over 75 are receiving PSA testing. Although most major medical organizations suggest

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Prostate cancer

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that prostate cancer screening may be discontinued in men with a life expectancy of fewer than 10 years, the Task Force is the first group to define an explicit age cutoff above which screening is likely to be ineffective or harmful. The results of two ongoing clinical trials—the National Cancer Institute's Prostate, Lung, Colorectal and Ovarian Cancer Screening Trial and the European Study of Screening for Prostate Cancer—should help to clarify the potential benefits of screening in men under the age of 75.

The recommendations and materials for clinicians will be available on the AHRQ Web site at www.ahrq.gov/clinic/uspstf/uspsprca.htm.

Editor's note: The Task Force is the leading independent panel of experts in prevention and primary care. The Task Force, which is supported by AHRQ, conducts rigorous, impartial assessments of the scientific evidence for the effectiveness of a broad range of clinical preventive services, including screening, counseling, and preventive medications. Its recommendations are considered the gold standard for clinical preventive services. Previous Task Force recommendations, summaries of the evidence, and related materials are available from AHRQ.* Clinical information is also available from AHRQ's National Guideline Clearinghouse at www.guideline.gov. For men who have been diagnosed with prostate cancer, AHRQ has two new plain-language guides that compare the effectiveness and risks of prostate cancer treatments. More information about the guides is available at www.effectivehealthcare.ahrq.gov. ■

Pharmaceutical Research

Study finds no differences in morphine's pain relief between women and men

Pain relief (analgesia) conferred by morphine does not appear to differ between men and women, although women suffer more related adverse effects than do men, concludes a new study of emergency department (ED) patients. Polly E. Bijur, Ph.D., M.P.H., at the Albert Einstein College of Medicine, and colleagues studied 355 patients with acute pain (211 women and 144 men) seen at a major urban ED, who received intravenous doses of morphine (0.1 mg/kg of body weight), as part of 6 clinical trials performed at the ED. The patients were asked to rate the intensity of pain verbally on an 11-point numerical rating scale that ranged from 0 ("no pain") to 10 ("worst possible pain"), just before and 30 minutes after morphine administration. The researchers calculated the mean reduction in pain intensity and recorded the incidence of adverse events (need for the opiate antagonist naloxone, vomiting, nausea, reduced respiration, and drop in systolic blood pressure) in the period from the administration of morphine to 30 minutes later.

They found that most of the predominantly Hispanic and African-American patients came into the ED with intense abdominal pain, and many had nausea before morphine was administered. Women had significantly more nausea and were more likely to suffer from abdominal pain than men. The mean decrease in pain was comparable for the men and women studied (a decrease of 3.6 pain-scale units in men and 3.7 in women). The proportional change in pain over a 30-minute period also did not differ significantly between women and men (42 percent and 40 percent, respectively). Among the 212 patients who were not nauseated at the time of morphine administration, women had an 18 percent incidence of adverse events compared with 11 percent for men. However, this difference was not significant after controlling for the site of the pain. The study was funded in part by the Agency for Healthcare Research and Quality (HS13924).

More details are in "Response to morphine in male and female patients: Analgesia and adverse events," by Dr. Bijur, David Esses, M.D., Adrienne Birnbaum, M.D., and others, in the March/April 2008 *The Clinical Journal of Pain*, 24(3), pp. 192–198. ■

The impact of drug formularies and other approaches to improve medication use in managed care needs more study

Many managed care organizations have turned to educational outreach, formularies of "preferred" drugs, and other approaches to reduce the cost and improve the quality of medication use. A recent review of studies of these approaches and similar interventions published over a recent 6-year period indicates that some approaches, such as computerized drug alerts, show promise for improving medication use in the short term, but little is known about longer-term effects on patient care.

Researchers searched the medical literature from July 2001 to January 2007 for articles describing interventions targeting drug use conducted in managed care settings in the United States. Of 164 relevant studies, the most frequent interventions were formulary interventions (66 papers), including identifying preferred medications and linking to copayment tiers. Other interventions included educational (20 papers), including dissemination of educational materials, outreach to groups, or one-on-one outreach to individuals; monitoring and feedback (22 papers), including audits of retrospective prescribing data with feedback or computerized alerts; collaborative care involving pharmacists (15 papers); and disease management programs with drug therapy as a primary focus (41 papers), including management of depression, asthma, and peptic ulcer disease.

Interventions that the researchers found to be effective included one-to-one educational outreach (also called academic detailing), computerized alerts and reminders, pharmacist-led collaborative care, and multifaceted disease management. Dissemination of educational materials alone had little impact, and the impact of group education was inconclusive, according to Dr. Lu and colleagues. Changes in drug formulary tier design and increases in associated copayments resulted in reduced use of specific drugs, but the increased out-of-pocket spending by patients in some studies reduced utilization of essential medicines for certain chronic illnesses. The study was funded in part by a grant from the Agency for Healthcare Research and Quality (HS10391) to the HMO Research Network Center for Education and Research on Therapeutics (CERT). For more information on the CERT program, please visit http://www.ahrq.gov/clinic/certsovr.htm.

More details are in "Interventions designed to improve the quality and efficiency of medication use in managed care: A critical review of the literature—2001–2007," by Christine Y. Lu, Ph.D., Dennis Ross-Degnan, Sc.D., Stephen B. Soumerai, Sc.D., and Sallie-Anne Pearson, Ph.D., in the April 2008 *BMC Health Services Research*, available on the Web only at http://www.biomedcentral.com/1472-6963/8/75. ■

Patients receiving free pharmaceutical samples have higher out-of-pocket prescription costs

Providing free pharmaceutical samples to patients is a major marketing tool for the pharmaceutical industry. Nearly $16 billion was spent on the provision of samples during 2004, twice that spent on direct office detailing to physicians and more than three times the amount spent on direct-to-consumer advertising. However, the benefit of this practice to patients is widely debated. For example, a new study shows higher out-of-pocket and total prescription costs for patients who receive drug samples.

In a study focusing on the relationship between sample receipt and out-of-pocket prescription costs, G. Caleb Alexander, M.D., M.S., and a team of researchers from the University of Chicago and the University of Illinois, used nationally representative data from the household component of the Agency for Healthcare Research and Quality's Medical Expenditure Panel Survey. The study sample consisted of 5,709 patients who received 2,343 samples during the analysis period. The predicted 6-month out-of-pocket cost for those who never received drug samples was $178. Yet, those who received samples had costs of $244 during the period of sample receipt and $212 for periods following sample receipt. The pattern was similar for total pharmaceutical expenditures. In addition, patients who received prescription drug samples were less likely to continue on the same medication than those who received the prescribed drug from the pharmacy (19 vs. 45 percent).

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Free pharmaceutical samples

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This study is the first study using rigorously collected longitudinal data to examine the association between pharmaceutical sample use and patients' prescription expenditures. The researchers concluded that although free prescription drug samples may provide some patients with valuable short-term economic relief, an economic burden persists for patients both during and following periods of sample receipt. This study was supported by the Agency for Healthcare Research and Quality (HS15699).

See "Characteristics of patients receiving pharmaceutical samples and association between sample receipt and out-of-pocket prescription costs," by Dr. Alexander, James Zhang, Ph.D., and Anirban Basu, Ph.D., in the April 2008 *Medical Care* 46(4), pp. 394-402. ■

Health Care Costs and Financing

U.S. government spending on health care for seniors was five times that spent for children in 2002

U.S. health care spending is projected to near $2.4 trillion in 2008, with a large share of this sum paid by government outlays and tax subsidies. A recent analysis by economists at the Agency for Healthcare Research and Quality found that in 2002 the public sector accounted for more than half (56 percent or $752.9 billion) of all health spending within the civilian noninstitutionalized population. More than one-quarter of all public financing ($214.8 billion) took the form of tax preferences, primarily tax subsidies for private insurance and the exemption of most medical care spending from State and local sales taxes. Public spending disproportionately flowed to seniors, whose benefits were more than five times those of children despite program expansions in children's eligibility for public coverage.

These findings highlight the critical role the public sector plays in financing the care of seniors and people in poor health, as well as the role of tax subsidies in broadening the overall incidence of public spending on health care, note Thomas M. Selden, Ph.D., and Merrile Sing, Ph.D. They examined 2002 data from the Medical Expenditure Panel Survey aligned to the National Health Expenditure Accounts and augmented with simulated tax subsidies for insurance premiums and health care spending.

Public spending on health care among the civilian, noninstitutionalized population averaged $2,612 per person and tax subsidies averaged $745 per person, with public spending averaging more than half of total health spending. Public spending was strongly related to age. On average, children aged 18 and under each received $1,225 of public spending apiece, which was less than one-fifth of average public spending for seniors ($6,921). Also, public spending as a share of total spending was 10 percent higher for seniors than for children. The public sector played an especially large role in financing care for persons in poor mental or general health, accounting for approximately 80 percent of their health care consumption.

The study also examined the distribution of public financing across income groups. Whereas "means-tested" spending through Medicaid and SCHIP heavily benefited low-income families, the two largest spending categories—Medicare and tax subsidies—are not means tested, conferring benefits to families at all income levels. Indeed, the authors find that public spending in 2002 accounted for 45.8 percent of total health care spending for persons in families with incomes over four times the poverty line.

See "The distribution of public spending for health care in the United States, 2002," by Drs. Selden and Sing, in the July 2008 *Health Affairs* 27(5), pp. w349-w359. Reprints (AHRQ Publication No. 08-R077) are available from AHRQ.* ■

Most rural hospitals need financial assistance in adopting health information systems

President Bush's 2006 Executive Order directed Federal agencies that administer health insurance programs to encourage the use of health information technology (HIT) to improve the quality and delivery of services. However, a new study found that rural hospitals face a number of challenges in implementing HIT systems and electronic medical records.

The abundance of available HIT applications (more than 500 vendors) and the dearth of standards for security and confidentiality pose a challenge for rural providers. Further, many small practices lack the technical skills to operate and maintain HIT systems. Finally, the cost of these systems can dissuade a provider from adopting a high-tech solution for reporting medical data and creating patient medical records.

The authors suggest a multifaceted approach is needed to encourage more rural practices to adopt HIT systems. First, payers must come up with a unified performance measure and reporting mechanism. This would assure rural providers that the system they choose meets the reporting requirements. Second, to ensure that the data collected can be shared with other systems, uniform standards, strict security, and unique patient identifiers must be developed. Finally, rural providers must receive incentives from payers to help offset the costs of adopting HIT systems. This study was funded in part by the Agency for Healthcare Research and Quality (HS15009).

See "Health care information technology in rural America: Electronic medical record adoption status in meeting the national agenda," by James A. Bahensky, M.S., Mirou Jaana, Ph.D., and Marcia M. Ward, Ph.D., in the Spring 2008 *Journal of Rural Health* 24(2), pp. 101-105. ■

Patient perceptions of office visit copayments alter care-seeking behaviors

As health care costs have risen, patient cost-sharing through copayments for office visits and other mechanisms have increasingly been used to reduce unnecessary treatments and costs. Yet a new study found that one out of two patients did not know the amount of their physician visit copayment and 27 percent of patients said they changed their care-seeking behavior because of their perception of the amount of the copayment. Overall, 15 percent reported delaying an office visit and 14 percent avoided care altogether.

Researchers interviewed 479 adult members of a prepaid integrated delivery system by telephone about their knowledge of office visit copayments and their responses to them. The copayment amounts ranged from $5 to $40. Sixty-eight percent of patients knew their actual copayment amount within $5 and 89 percent were correct within $10 of the actual amount. Only 4 percent of patients reported talking with physicians about these costs. Most respondents believed that physicians cannot help with costs (79 percent) and that it is inappropriate to discuss costs with physicians (51 percent). The researchers suggest that the respondents' limited knowledge of copayment amounts raises questions about their ability to navigate newer, more complex benefits designs such as deductible plans. These plans may include exemptions for preventive services, but require the enrollee to pay the full cost for nonpreventive visits until the deductible is reached.

Earlier studies had shown that higher actual office visit fees were associated with fewer visits. This study differs from these earlier studies by finding that the perceived office visit copayment is more predictive of behavioral changes in response to costs than the actual copayment. More research will be needed to show whether patients who change their care-seeking behavior in response to office visit copayments experience adverse health outcomes. This study was supported by the Agency for Healthcare Research and Quality (HS11434).

See "Office visit copayments. Patient knowledge, response, and communication with providers," by Nancy J. Benedetti, B.S.B., Vicki Fung, Ph.D., Mary Reed, Dr.PH., and others, in the April 2008 *Medical Care* 46(4), pp. 403-409. ■

The gap between charges and payments for emergency department pediatric visits widened between 1996 and 2003

There is rising concern that the financial position of emergency departments (EDs) is threatened by efforts to contain health care costs. This was made clear in a recent study that found payments for pediatric ED visits that did not result in hospitalization did not keep pace with charges between 1996 and 2003, falling from 63 percent to 48 percent of charges during that time. This decline in ED reimbursements took place in all payer groups: public (Medicaid/State Childrens Health Insurance Program [SCHIP]), private, and uninsured. For all years, Medicaid/SCHIP had the lowest reimbursement rates, declining to 35 percent of charges in 2003. The use of managed care arrangements by Medicaid programs has led to aggressive moves to reduce ED payments over time.

Pediatric visits constitute one in every four ED visits. Thus, these problems raise doubts about the ability of EDs to recover the costs of caring for children. Researchers used national data from the Agency for Healthcare Research and Quality's Medical Expenditure Panel Survey to track charges and payments for pediatric ED visits for various groups. They found that 54 percent of visits by children to EDs were privately insured, 33 percent were covered by Medicaid/SCHIP, and the remaining 12 percent were uninsured. Although nationwide aggregate charges for pediatric visits rose from $7.4 billion in 1996 to $10.2 billion in 2003 (a 39 percent increase), total payments remained constant at $4.9 billion per year, a less than 1 percent increase over 8 years. In percentage terms, the payment rate for privately insured payments declined the most, but the payment levels for these patients started at the highest level. In all three cases, the declining payment rate was largely the result of rapidly increasing charges, and payments were not keeping pace. This study was supported by the Agency for Healthcare Research and Quality (HS13920).

See "Trends in charges and payments for nonhospitalized emergency department pediatric visits, 1996-2003," by Renee Y. Hsia, M.D., M.Sc., Donna MacIsaac, M.S., Erin Palmer, B.A., and Laurence C. Baker, Ph.D., in the April 2008 *Academic Emergency Medicine* 15, pp. 347-354. ■

One-third of health center CEOs view health disparities collaboratives as negatively affecting centers' finances

Health Disparities Collaboratives (HDC) is a quality improvement (QI) initiative to reduce health disparities and improve the quality of care in federally funded community health centers (CHCs), which typically are a safety net for treating poor, uninsured patients. CHCs participating in the HDC assemble a multidisciplinary team that spends 1 year learning and applying methods to improve their health care delivery, which the team then implements during ensuing years. Often, QI efforts include development of new workflow processes, such as electronic patient registries, or physician feedback and reminder systems.

Despite the promise of this approach to improve care, one-third of the 100 CHC chief executive officers (CEOs) surveyed believed that the HDC had a negative financial impact on their health center. The growing number of uninsured, rising costs of medical care, and decrease in Federal and State subsidies used to cover the cost of providing charity care all impose financial hardships on CHCs, with about 43 percent of CHCs reported operating deficits in 2005. Investing in QI apparently adds to the financial strain of these centers.

Close to three-quarters of the CHC CEOs indicated that the HDC increased the costs of providing patient care, as well as overall operating costs. This was partly due to the resource expenditures for staff participation in training sessions and staff time to learn, design, monitor, and document changes. QI initiatives such as the HDC may lead to higher clinical costs, because activities related to the initiative and some preventive services are not billable. They may also lead to lower clinical revenues if acute care visits are reduced as a result of better care or better adherence to treatment and disease management. CEOs reporting the harmful financial impact of the HDC were from centers with a higher percentage of Medicaid or uninsured patients compared with center CEOs who perceived no financial harm. The study was supported in part by the Agency for Healthcare Research and Quality (HS13635).

See "The perceived financial impact of quality improvement efforts in community health centers," by Karen Cheung, M.P.H., Adil Moiduddin, M.P.P., Marshall H. Chin, M.D., M.P.H., and others, in the *Journal of Ambulatory Care Management* 31(2), pp. 111-119, 2008. ■

Quality improvement endeavors often fail to cover their costs

Health care organizations that undertake quality improvement (QI) efforts for chronic disease management may find that their costs often overshadow their revenue, a new study finds. Researchers examined the short-term financial impact of a QI initiative addressing diabetes care as part of the Health Disparities Collaboratives (HDC) program. The HDC is conducted in federally qualified community health centers that provide outpatient care for underinsured and uninsured patients.

The research team surveyed 74 chief executive officers (CEOs) of centers that participated in the HDC in the Midwest. Additionally, they collected data on five centers to examine their financial performance. Most of the CEOs (72 percent) said that participating in the HDC program for managing diabetes increased their cost per patient. These costs ranged from $6 to $22 in the first year, depending on the center. Many of the centers received grants to implement the HDC program; however, these grants were not sufficient to cover the program's costs completely.

In theory, QI efforts can boost revenues for health care organizations by requiring more visits and services that are reimbursed at a higher rate by insurers. This was not the case at the five centers. Only one center's revenues exceeded its costs for treating patients with diabetes. However, all five centers reported improvements in managing chronic diseases and enhanced staff morale because of those improvements.

Given the costs of QI programs, most outpatient health care facilities serving vulnerable patients will be reluctant to adopt them, the authors suggest. As solutions, they propose redesigning payment structures and creating new incentives for facilities to embark on QI initiatives. This study was funded in part by the Agency for Healthcare Research and Quality (HS13635).

See "The cost consequences of improving diabetes care: The community health center experience," by Elbert S. Huang, M.D., M.P.H., Sydney E.S. Brown, James X. Zhang, Ph.D., and others in the March 2008 *The Joint Commission Journal on Quality and Patient Safety* 34(3), pp. 138-146. ■

Acute Care/Hospitalization

Fatigue effects during the night shift should be considered when designing work-rest schedules for clinicians

To reduce fatigue-related medical errors, medical resident work hours are now restricted to 80 hours per week. Nevertheless, fatigue from sleep deprivation and working through the night remains common for many physician residents. For example, a new study found that anesthesiology residents had lower task performance and mood than colleagues working similar cases on the day shift. Because night shift residents had been awake and working for more than 16 hours, the observed differences in task performance and mood may have been due to fatigue, note Matthew B. Weinger, M.D., of Vanderbilt University Medical Center, and colleagues. They suggest that fatigue effects during night shifts be considered when designing work-rest schedules for clinicians.

They looked at the impact of day and night shift on task times, workload ratings, response to an alarm light, and mood for 13 pairs of day-night matched anesthesia cases. The residents took significantly more breaks during the day than night cases (1.3 vs. 0.5) and total break time per case (27 vs. 9 minutes). Overall, day and night shift residents spent the same amount of time on clinical tasks, except manual tasks and observation tasks.

During night shift cases, residents spent significantly less time on manual tasks, but significantly more time on observing tasks. These differences were most notable during the maintenance phases of anesthesia (the longest of the three phases: induction, maintenance, and emergence), when night shift residents spent more time observing physiological monitors, the patient's airway, and intravenous fluids, perhaps to compensate for fatigue. Observers' workload ratings of residents during maintenance were significantly lower in the night cases than in the day cases (7.9 vs. 8.6). Night shift residents did not perceive a higher workload or respond slower to the alarm light, but did report more negative mood both

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pre- and post-surgery. The study was supported in part by the Agency for Healthcare Research and Quality (HS11375 and HS11521).

See "Differences in day and night shift clinical performance in anesthesiology," by Caroline G.L. Cao, Ph.D., Dr. Weinger, Jason Slagle, Ph.D., and others, in the April 2008 *Human Factors* 50(2), pp. 276-290. ■

Hospitals use rhythm- and rate-control strategies for patients diagnosed with atrial fibrillation equally

Patients diagnosed with atrial fibrillation (AF)— a typically rapid, irregular heart rhythm—are treated with one of two different strategies. One strategy uses drugs or procedures to restore and attempt to maintain a normal heart rhythm (rhythm control) while the other uses medication to only control the heart rate in AF (rate control). In clinical trials, neither strategy has been shown to significantly reduce mortality. In patients hospitalized with AF, both strategies are used equally, according to a new study.

Researchers at the Center for Education and Research on Therapeutics at Duke University Medical Center, and colleagues, looked at hospitalization records of patients with a primary diagnosis of AF from approximately 500 hospitals from January 1, 2000, to December 31, 2004. They categorized each hospitalization as using rhythm control or rate control on the basis of in-hospital procedures and medications. The researchers found that of 155,731 hospitalizations for AF during the study period, 48 percent of the patients received the rhythm control strategy and 52 percent received the rate control strategy. The rate control group included a higher proportion of hospitalizations in which patients had other cardiovascular and pulmonary diseases, but in-hospital ventricular arrhythmias and secondary atrial flutter were significantly less common.

The findings showed no significant difference in the two treatment classes for the use of low-molecular-weight heparin (a blood thinner) or the proportion of patients with rheumatic heart disease. However, there were 56 percent greater odds of warfarin (another type of blood thinner) use in the rhythm control group than in the rate control group, which is not consistent with clinical recommendations. Use of a rate control strategy was three times more likely for patients whose care was managed by a physician who was not a cardiologist and 15 percent more likely for every 5 years of age above 65 years. The current study was funded in part by a grant from the Agency for Healthcare Research and Quality (HS10548) to the Center for Education and Research on Therapeutics (CERT) at Duke University Medical Center. For more information on the CERT program, please visit http://www.ahrq.gov/clinic/certsovr.htm.

More details are in "Rhythm versus rate control in the contemporary management of atrial fibrillation in-hospital," by Nancy M. Allen LaPointe, PharmD., Jie-Lena Sun, M.S., Sigal Kaplan, Ph.D., B.Pharm., and others, in the April 15, 2008 *American Journal of Cardiology* 101, pp. 1134-1141. ■

Suspected heart attack patients triaged to noncardiology and cardiology units fare equally well short-term

On account of prolonged waiting times for available hospital beds, emergency department (ED) clinicians often lack the luxury of triaging all patients with possible acute coronary syndrome (ACS, heart attack or unstable angina) to beds on cardiology units. The good news is that potential ACS patients triaged to noncardiology units fare as well in the short term as those triaged to cardiology units, according to a new study.

David A. Katz, M.D., M.Sc., of the University of Iowa, and colleagues compared the outcomes of 544 ED patients who were admitted to 2 university hospitals for symptoms of possible ACS (ranging from dizziness and nausea to chest pain and abdominal pain) after a nondiagnostic initial evaluation. They assessed 30-day adverse events, in-hospital treatment, and follow-up care by

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Suspected heart attack patients

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telephone interview 30 days later and medical record review. One-third (34 percent) of admitted patients had confirmed ACS.

The 372 patients admitted to cardiology units were nearly 3 times more likely to undergo evaluation for ischemic heart disease than the 172 patients admitted to general noncardiology units. Also, patients on cardiology units were more likely to receive recommended therapies such as aspirin, heparin, or beta-blockers (although none of these differences were statistically significant after risk adjustment). Despite these differences in use of diagnostic procedures and treatment, admission to a cardiology unit did not translate into a significantly reduced incidence of adverse cardiovascular events, ED revisits or rehospitalizations, or better functional status at 30-day follow-up. The use of cardiology consultation in patients initially admitted to noncardiology units, which was a routine practice at both study hospitals, may have played a role in the similar outcomes of both patient groups. Also, ED physicians are well positioned to identify patients with multiple medical conditions and those with less clear-cut presentation, who may be more likely to benefit from generalist care. The study was supported in part by the Agency for Healthcare Research and Quality (HS10466).

See "Do emergency department patients with possible acute coronary syndrome have better outcomes when admitted to cardiology versus other services?" by Dr. Katz, Tom P. Aufderheide, M.D., Mark Bogner, M.D., and others, in the May 2008 *Annals of Emergency Medicine* 51(5), pp. 561-571. ■

Chronic Disease

A standing order to perform finger-stick HbA1c tests on patients with diabetes reduces patient blood sugar levels

Reducing blood sugar levels among people with diabetes reduces their risk of diabetes-related complications such as blindness, lower extremity amputation, and end-stage renal and cardiovascular disease. A standing order to use finger-stick glycosylated hemoglobin (HbA1c) testing on primary care patients with diabetes, which provides instant results to the doctor, can reduce patient blood sugar levels, according to a new pilot study at one urban community health center. Prior to this standing order protocol, the HbA1c test was not performed until the clinician ordered it. Once the test was ordered, the patient had to go to the lab to have blood drawn and sent out to a reference lab. If results were abnormal, the patient would have to be contacted and return for followup to intensify the treatment regimen (increased medication dosage, additional medication, change in medication, referral to a nutritionist and/or health educator, and/or a written exercise prescription).

The researchers reviewed the charts of center patients with diabetes to compare preintervention and postintervention HbA1c tests performed, patient HbA1c levels, and whether clinicians had intensified the diabetic regimen when HbA1c levels were greater than 8 percent (when the risk of diabetes-related complications is high).

Of the 106 adult patients studied (average age of 60 years), most were black women. HbA1c testing rates increased from 73.6 to 86.8 percent during the study period. For the 69 patients who had both pre- and post-intervention results, HbA1c levels declined significantly from 8.55 to 7.84. Also, the proportion of patients with HbA1c levels greater than 8 percent decreased slightly from 44.9 percent to 42.4 percent. The health center was delivering intensified diabetic regimens to less than 3 out of 10 patients who had elevated HbA1c levels prior to the intervention. This improved to more than half of patients (53.8 percent) with the intervention. The study was supported in part by the Agency for Healthcare Research and Quality (HS10875 and HS11617).

See "Point of care testing to improve glycemic control," by George Rust, M.D., M.P.H., Morna Gailor, M.P.H., Elvan Daniels, M.D., and others, in the *International Journal of Health Care Quality Assurance* 21(3), pp. 325-335, 2008. ■

Almost 9 in 10 adults may be overweight or obese by 2030

Obesity and overweight are worrisome conditions because of their impact on quality of life, premature death, and health care, as well as associated costs. Being overweight or obese increases the risk of many health problems, including diabetes, stroke, heart disease, osteoarthritis, sleep apnea, breast cancer, and certain other types of cancer. By the year 2030, about 86 percent of Americans aged 18 and older may be overweight or obese, with related health care costs doubling every decade and reaching $956.9 billion in 2030 according to a new study. The study was authored in part by Lan Liang, Ph.D., with the Agency for Healthcare Research and Quality (AHRQ), and was led by Youfa Wang, M.D., Ph.D., of International Health and Epidemiology at the Johns Hopkins Bloomberg School of Public Health. Coauthors included Drs. May Beydoun and Benjamin Caballero from Johns Hopkins and Shiriki Kumanyika from the University of Pennsylvania School of Medicine.

The study was based on several large national survey data sets collected over the past 3 decades, including those collected by AHRQ and the Centers for Disease Control and Prevention. Overweight is defined as having a body mass index (BMI) of 25 to 29.9. According to the researchers, by 2030 half of U.S. adults, as a whole, will become obese, as will 97 percent of black women and 91 percent of Mexican-American men. The authors also estimate that by 2022, about 80 percent of adults may be overweight or obese, and 100 percent could be by 2048. But the prevalence will reach 100 percent in black women by 2034.

Moreover, nearly one-third of all U.S. children and adolescents could become obese (body mass index is greater than the 95th percentile) by 2034, and the prevalence could increase to half by 2070. Black girls and Mexican-American boys are especially vulnerable—4 in 10 may become overweight or obese by 2030, and half by 2050.

For details, see "Will all Americans become overweight or obese? Estimating the progression and cost of the US obesity epidemic," by Drs. Wang, Beydoun, Liang, and others, published online in the July 24, 2008 *Obesity*. Reprints (AHRQ publication no. 08-R078) are available from AHRQ.* ■

Primary Care Research

Clinical distractions and care continuity affect antihypertensive treatment for patients with diabetes and hypertension

Tight control of high blood pressure (hypertension) is critical for reducing the vascular complications of diabetes. Yet, a new study shows that primary care providers (PCPs) often fail to intensify antihypertensive medications to maintain blood pressure (BP) control in patients with diabetes. Clinical distractions and shortcomings in continuity and coordination of care seem to underlie this oversight, notes T. Alafia Samuels, M.D., M.P.H., Ph.D., of the Pan American Health Organization. Dr. Samuels and coinvestigators followed 254 adults in a managed care plan, who had type 2 diabetes and hypertension, over a 2-year period. They looked for intensification of antihypertensive medications (upping the dose of a medication or prescribing a new medication) at the 1,374 visits when patients' blood pressure was suboptimally controlled (systolic BP of 140 mmHg or more or diastolic BP of 90 mmHg or more).

PCPs intensified antihypertensive treatment in only 13 percent of these visits. Clinicians were twice as likely to intensify therapy at visits that were "routine," (and thus may have lacked other clinical distractions, such as a new medical problem). Clinicians were nearly twice as likely to intensify therapy at visits in which patients were seeing their usual primary care provider (suggesting the benefit of continuity of care).

Several factors were linked to failure to intensify antihypertensive treatment. For example, co-management of the patient by a cardiologist accounted for 39 percent of the failure in medication intensification, suggesting problems in continuity and coordination of care. Also, clinicians were half as likely to intensify treatment if the patient's blood-sugar level was high (more than 150 mg/dl) and 40 percent less likely to do so if the patient had coronary heart disease.

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Diabetes and hypertension

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The study was supported in part by the Agency for Healthcare Research and Quality (HS11946).

More details are in "Failure to intensify antihypertensive treatment by primary care providers: A cohort study in adults with diabetes mellitus and hypertension," by Shari Danielle Bolen, M.D., M.P.H., Dr. Samuels, Hsin-Chieh Yeh, Ph.D., and others, in the May 2008 *Journal of General Internal Medicine* 23(5), pp. 543-550. ■

The doctor-patient relationship is strengthened when patients see themselves as similar to their physicians

Patients who perceive personal similarity with their physician rate more highly their trust and satisfaction with care and intention to adhere to treatment, finds a new study. However, race isn't the only factor underlying patients' perceptions of similarity with their doctor. This study found that perceived similarity in beliefs and values more than race affected their trust, satisfaction, and willingness to follow a doctor's recommendations. The researchers used audiotapes of medical visits to study the interactions of 214 black, Hispanic, and white patients and 29 primary care physicians from 10 private and public outpatient clinics. They correlated post-visit patient ratings of similarity to the doctor and satisfaction, trust, and intent to adhere to physician recommendations.

Factor analysis of the audiotapes revealed two dimensions of beliefs about similarity: personal (in beliefs and values) and ethnic (in race, community). Black and white patients whose doctors were racially similar to them reported more personal and ethnic similarity (mean of 87.6 and 78.8 on a 100-point scale) to their physicians than did minority patients (mean score 81.4 and 41.2) and white patients (mean score 84.4 and 41.9, respectively) whose doctors were of a different race than them.

However, when multiple factors were considered, perceived personal similarity was predicted by the patients' age, education, and physician's patient-centered communication (informative, supportive, and facilitative), not by racial or sexual patient-physician concordance. Perceived personal similarity and physicians' patient-centered communication predicted patients' trust, satisfaction, and intent to adhere to the physician's recommendations. The study was supported in part by the Agency for Healthcare and Quality (HS10876).

More details are in "Understanding concordance in patient-physician relationships: Personal and ethnic dimensions of shared identity," by Richard L. Street, Jr., Ph.D., Kimberly J. O'Malley, Ph.D., Lisa A. Cooper, M.D., M.P.H., and Paul Haidet, M.D., M.P.H., in the May/June 2008 *Annals of Family Medicine* 6(3), pp. 198-205. ■

HIV/AIDS Research

Pharmacy refills for antiretroviral drugs have advantages over T-cell counts for monitoring HIV disease progression

In the developed world, the standard of care for monitoring HIV response to antiretroviral drugs is measuring plasma HIV-1 RNA levels (viral loads). However, this approach is often unavailable in the developing world. The World Health Organization recommends monitoring patients with HIV disease in resource-limited countries with CD4 T-cell counts, which decline as HIV disease progresses. However, a less expensive way to monitor the effectiveness of first-line combination antiretroviral therapy (cART) may be pharmacy refill adherence, suggests a new study. Researchers found that this adherence predicted virologic failure (HIV load more than 1,000 copies/ml of blood), whereas CD4 counts simply detected current virologic failure. This is important because if virologic failure has already happened, patients have to be switched to the more expensive second-line cART.

Researchers at the University of Pennsylvania School of Medicine Center for Education and Research on Therapeutics and colleagues examined cART pharmacy refill adherence, CD4 count changes, and virologic failure among 1,982 HIV-infected adults in an AIDS disease management program in 9 southern

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Antiretroviral drugs

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African countries. These patients were assessed either 6 or 12 months after cART initiation and after a previous undetectable viral load (less than 400 copies/ml of blood).

Pharmacy refill adherence and CD4 counts were equally accurate in detecting current breakthrough viremia (increase in viral load to detectable levels of 400 copies/ml of blood). Adherence levels assessed 3 months prior to viral load assessments were as accurate for virologic failure occurring about 3 months later as were CD4 count changes calculated from cART initiation to the actual time of the viral load assessments. This indicates the potential usefulness of pharmacy refill adherence to predict virologic failure before it occurs, rather than afterwards, which is indicated by CD4 counts. The study was supported in part by a grant (HS10399) from the Agency for Healthcare Research and Quality to the University of Pennsylvania School of Medicine Center for Education and Research on Therapeutics (CERT). For more information on the CERT program, please visit http://www.ahrq.gov/clinic/certsovr.htm.

See "Pharmacy refill adherence compared with CD4 count changes for monitoring HIV-infected adults on antiretroviral therapy," by Gregory P. Bisson, M.D., M.S.C.E., Robert Gross, M.D., M.S.C.E., Scarlett Bellamy, Sc.D., and others, in the May 2008 *PLoS Medicine* 5(5), pp. 777-789. ■

Inability to trace patients with HIV disease receiving HAART may lead to global overestimation of survival rates

The purpose of global scale-up efforts to provide highly active antiretroviral therapy (HAART) to patients with HIV disease in resource-strapped countries, such as those in sub-Saharan Africa, is to improve survival. However, many patients in these countries are lost to followup. A new study found that nearly 60 percent of these "lost" patients died shortly after receiving HAART. This suggests that the effectiveness of global HAART scale-up efforts in resource-limited countries may be overestimated. Researchers at the University of Pennsylvania Center for Education and Research on Therapeutics and African colleagues analyzed data from a large public HAART program in sub-Saharan Africa, Botswana's National Antiretroviral Therapy Program.

They compared reports of clinical outcomes and risk factors for death among 410 patients with HIV disease within a year after HAART initiation both before and after tracing patients lost to followup. Of 68 patients initially categorized as lost, 59 percent were confirmed dead after tracing.

Patient tracing revealed significantly lower survival rates than before tracing (0.92 before tracing and 0.83 after tracing). Moreover, a nearly twofold increased risk of death after HAART among men would have been missed had patients not been traced. Thus, important risk factors for death may be missed if patients are not actively traced, note the researchers. Interventions designed to decrease death after HAART initiation will need to include methods to identify, locate, diagnose, and, if possible, treat incident illnesses among those who miss even a single clinic visit, suggest the authors. Their study was supported in part by a grant from the Agency for Healthcare Research and Quality (HS10399) to the University of Pennsylvania Center for Education and Research on Therapeutics (CERT). For more information on the CERT program, please visit http://www.ahrq.gov/clinic/certsovr.htm.

See "Overestimates of survival after HAART: Implications for global scale-up efforts," by Gregory P. Bisson, M.D., M.S.C.E., Tendani Gaolathe, M.D., Robert Gross, M.D., M.S.C.E., and others in the March 5, 2008 *PLoS ONE* 3(3), pp. e1725-e1730. ■

Quality of hospital HIV care is similar regardless of physician HIV experience or hospitalist status

With the advent of highly active antiretroviral therapy (HAART), fewer patients with HIV disease are hospitalized. When patients are hospitalized, however, it tends to be for problems such as HIV-related liver disease (such as hepatitis C) and medication toxicity rather than opportunistic infections due to dramatically weakened immune systems common in the pre-HAART era.

Outpatients with HIV generally fare better and are less likely to be hospitalized if treated by physicians with more experience treating the disease. Yet, a physician's HIV-related experience and treatment by a hospitalist (generalist physician specialized in caring for hospitalized patients) or nonhospitalist does not seem to affect the care or outcomes of hospitalized patients with HIV disease, suggests a new study.

Researchers found little difference in in-hospital mortality and processes of care measures for 1,207 patients treated by hospitalists and nonhospitalists at 6 academic medical centers during a 2-year period. Physician HIV-specific inpatient experience also did not seem to affect medical resource use, patient outcomes, or processes of care. However, both hospitalists and nonhospitalists with more experience with HIV-infected inpatients tended to use fewer medical resources. Also, patients who received hospitalist care trended toward having longer hospital stays than those who received nonhospitalist care (6 vs. 5.2 days).

Finally, inpatient providers with moderate experience with HIV-infected patients were twice as likely to coordinate care with outpatient providers (now the cornerstone of HIV care) than those with the least experience with HIV-infected patients, but this pattern did not extend to providers with the highest level of experience. The findings were based on analysis of administrative data and in-hospital and 30-day follow-up interviews with patients at the six medical centers. The study was supported in part by the Agency for Healthcare Research and Quality (HS10597).

More details are in "Do hospitalists or physicians with greater inpatient HIV experience improve HIV care in the era of highly active antiretroviral therapy? Results from a multicenter trial of academic hospitalists," by John A. Schneider, M.D., M.P.H., Qi Zhang, Ph.D., Andrew Auerbach, M.D., M.P.H., and others, in the April 1, 2008 *Clinical Infectious Diseases* 46, pp. 1085-1092. ■

Medical clinic structure influences use of mental health and substance abuse care by persons with HIV disease

Persons with HIV disease commonly suffer from mental health problems and substance abuse, which typically interfere with their treatment and health. The likelihood of these patients receiving treatment for these problems depends, in part, on the structure of their medical clinic, concludes a new study. Researchers found that patients who were cared for at HIV specialty clinics or clinics with a combination of case management and affiliated mental health care were twice as likely to be cared for by a mental health specialist as patients at other clinics. Those cared for at clinics with on-site case management and on-site or off-site affiliated substance abuse care were four and three times, respectively, more likely to receive outpatient substance abuse care than patients at other clinics.

Finally, patients treated at clinics with on-site case management were nearly twice as likely to have a 30-day abstinence from substances at follow-up 6 months later than those at other clinics. Case managers may facilitate linkage to mental health care and substance abuse care by making referrals, scheduling appointments, and arranging transportation, note the researchers. They surveyed patients and clinic directors at 200 clinics participating in the HIV Cost and Services Utilization Study, a nationally representative sample of persons in care for HIV. They examined the impact of medical clinic organizational characteristics on access to mental health and substance abuse care for patients with these problems. More than one-third (38 percent) of patients suffered from a psychiatric condition. The study was supported in part by the Agency for Healthcare Research and quality (HS10408 and HS10222).

See "Medical clinic characteristics and access to behavioral health services for persons with HIV," by Michael E. Ohl, M.D., M.S.P.H., Bruce E. Landon, M.D., M.B.A., Paul D. Cleary, Ph.D., and Joseph LeMaster, M.D., M.P.H., in the April 2008 *Psychiatric Services* 59, pp. 400-407. ■

Children are hospitalized less often for asthma but more have the disease

Hospitalizations of children principally for asthma fell by almost 60,000 between 1997 and 2006, according to data from the Agency for Healthcare Research and Quality (AHRQ). However, the number of children who were admitted to hospitals to treat other conditions but who also had asthma rose by nearly 70,000 during the same period.

In 2006, there were 335,000 hospital stays for children with asthma. In 137,000 cases, the children were admitted specifically to treat asthma. In the remaining 197,000 cases, the children had asthma but were being treated for another illness that is often directly related to asthma (for instance, pneumonia or bronchitis).

AHRQ also found that:

- Children from poorer communities, where the average income was less than $37,000 a year, were 76 percent more likely to be admitted than those from wealthier communities, where the average income was greater than $37,000 a year (2.7 admissions per 1,000 children versus 1.5 admissions per 1,000 children, respectively).
- Poor children with asthma as a coexisting illness were 54 percent more likely to be hospitalized than children from wealthier communities (3.5 admissions per 1,000 children versus 2.3 admissions per 1,000 children, respectively).
- Infants under 1 year of age were four times more likely to be hospitalized for asthma than children aged 15 to 17 (5.1 admissions per 1,000 children compared with 1.8 admissions per 1,000 children).
- Roughly 27 percent of all children admitted for pneumonia also had asthma, as did 9 percent of those hospitalized for acute bronchitis; and 5 percent for depression or bipolar disease.
- Asthma is the most common chronic disorder in children. Attacks, usually characterized by shortness of breath, wheezing, coughing, chest pain, anxiety, or panic, can be triggered by a wide range of causes including cigarette smoke, animal hair, colds, and allergies. Asthma is usually managed by office doctors but when the disease gets out of control, hospitalization is necessary.

For more information, see *Hospital Stays Related to Asthma for Children, 2006.* HCUP Statistical Brief #58 (www.hcup-us.ahrq.gov/reports/statbriefs/sb58.pdf). The report uses statistics from the 2006 Kids' Inpatient Database, a database of hospital inpatient stays of children that is nationally representative of pediatric inpatient stays in all short-term, non-Federal hospitals. Previous KID databases are for 1997, 2000, and 2003. The data in the KID are for all children, regardless of their type of insurance type or whether they were insured. ■

Health insurance premiums have more than doubled since 1996

Private-sector employers and their employees have seen their health insurance premium costs go up by more than 100 percent since 1996, according to data from the Agency for Healthcare Research and Quality (AHRQ). The data also show that for employment-based health insurance between 1996 and 2006:

- Nationwide, the average premium cost of a family insurance plan rose from $4,954 to $11,381 a year, while the average cost for a single premium went from $1,992 to $4,118.
- Employers paid for most of the increases; their share rose from $3,679 to $8,491 a year for family coverage and from $1,650 to $3,330 a year for single coverage.
- Employees saw their share rise significantly, as well – from $1,275 to $2,890 a year for family coverage, and from $342 to $788 a year for single coverage.

The data 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 more information, go to the MEPS Web site at www.meps.ahrq.gov/mepsweb/. ■

Rare forms of meningitis more deadly than viral meningitis

Hospital patients with rare types of meningitis, including fungal and parasitic meningitis, are 15 times more likely to die than patients hospitalized with viral meningitis, according to data from the Agency for Healthcare Research and Quality. Among hospitalizations in 2006, the death rate for fungal and other rare types of meningitis was approximately 9 percent (about 500 deaths among 5,300 stays) compared with 8 percent for patients with bacterial meningitis (nearly 1,300 deaths among 15,700 stays), and a death rate of 0.6 percent (about 200 deaths among 39,300 stays) for viral meningitisæthe most common form.

Meningitis is a rare but serious condition that mainly attacks younger people, or those whose immune systems are weakened from AIDS or other causes. By inflaming the tissue surrounding the spinal cord and brain, the infection can cause epilepsy, brain swelling or bleeding, cerebral palsy, stroke, and in severe cases, death. Symptoms include fever, lethargy, severe headache, neck stiffness, inability to tolerate bright light or loud noises, skin rashes, and seizures. Infants may have other symptoms, including jaundice. The data also showed that in 2006:

- About 72,000 hospitalized Americans had meningitis. It cost hospitals $1.2 billion to treat the patients.
- Patients from poor communities were more likely to be hospitalized for meningitis than people from wealthy communities. For example, nearly half of fungal or other rare types of meningitis hospitalizations were for patients from the poorest communities.
- Patients with fungal or other rare types of meningitis tended to be older (43 average age) than those with bacterial meningitis (38 average age) or viral meningitis (30 average age).

For more information, see *Meningitis-Related Hospitalizations in the United States, 2006.* HCUP Statistical Brief #57 (www.hcup-us.ahrq.gov/reports/statbriefs/sb57.pdf). The report uses statistics from the 2005 Nationwide Inpatient Sample, a database of hospital inpatient stays that is nationally representative of inpatient stays in all short-term, non-Federal hospitals. The data are drawn from hospitals that comprise 90 percent of all discharges in the United States and include all patients, regardless of insurance type, as well as the uninsured. ■

Workers at small companies are less likely to kick in cash for health coverage

Among workers at small, private-sector companies, only about half—48 percent—who had single-person health insurance in 2005 were required to contribute to monthly premiums, according to data from the Agency for Healthcare Research and Quality (ARHQ). By comparison, 86 percent of workers at large companies (with 50 or more on the payroll) with health insurance were required to pay for individual coverage.

The contrast was also seen among workers with family coverage. At small firms, 64 percent of them contributed to premiums. At larger firms, 91 percent contributed. The analysis also showed the portion of workers who contributed to premiums varied by geography in the 10 most populous States.

For small companies:

- California had one of the highest portions of workers who did not contribute to premiums for single-person coverage: 63 percent. Ohio had one of the lowest at 37 percent.
- New York had one of the highest portions of workers who had family coverage but did not contribute to premiums: 55 percent. Texas had one of the lowest at 29 percent.

For large companies:

- California had the highest portion of workers who had individual coverage but did not contribute to premiums at 27 percent. At 10 percent, Florida had one of the lowest.
- California also had one of the highest portions of employees with family coverage who did not contribute to premiums: 16 percent. Georgia had one of the lowest: 1 percent.

The data are taken from the Medical Expenditure Panel Survey. For more information, go to *State Differences in Offer Rates and Enrollment in Employer-Sponsored Health Insurance Plans that Required No Employee Contribution to the Premium Cost, 2005,* Statistical Brief #213, at www.meps.ahrq.gov/mepsweb/data_files/publications. ■

AHRQ requests planning ideas for new innovations research portfolio

The Agency for Healthcare Research and Quality (AHRQ), part of the U.S. Department of Health and Human Services, has issued a new Request for Information (RFI) called "Request for Planning Ideas for Development of an AHRQ Innovations Research Portfolio." The RFI can be found at http://www.ahrq.gov/fund/innovport.htm.

The goal of AHRQ's new Innovations Portfolio is to identify and support research that has the potential to accelerate improvements in the organization, delivery, and management of health care. These ideas will be novel and span a diverse array of disciplines. Research and activities supported under the Innovations Portfolio will reflect ideas substantially different from those already being pursued by AHRQ.

Since this is an emerging research area, AHRQ is interested in ideas on specific strategies to foster innovative approaches and programs. Comments and ideas may address new and emerging priority issues and areas that should be the focus of research in the Innovations Portfolio, mechanisms for identifying and engaging partners for this important work, or any related topic. ■

2007 HCUP Statewide data is now available

Release of the 2007 Statewide Databases for selected States began in July 2008, less than 7 months from the end of the calendar year. In the past, the HCUP Statewide databases were typically available 12 to 18 months following the end of a calendar year. Due to new process improvements and strong relationships with HCUP State Partners, the Agency for Healthcare Research and Quality (AHRQ) was able to begin releasing 2007 databases in half that time.

This recent database release includes the State Inpatient Databases (SID), State Ambulatory Surgery Databases (SASD), and State Emergency Department Databases (SEDD) of selected States. 2007 Statewide databases will continue to be released throughout the year. Researchers and policymakers use these State-specific HCUP databases to investigate questions unique to one State, compare data from two or more States, conduct market area research or small area variation analyses, and identify State-specific trends in utilization, access, quality, charges, and outcomes. As with all HCUP databases, the SID, SASD, and SEDD contain uniformly formatted data built around a core set of more than 100 clinical and nonclinical variables for all patient encounters, regardless of payer (i.e., Medicare, Medicaid, private insurance, self-pay). The core variables include all-listed diagnoses and procedures, patient demographics, expected payment source, and total hospital charges. The files include safeguards to protect the privacy of individual patients, physicians, and hospitals.

Complete descriptions of the HCUP databases along with notification of which States and databases have been released and information on how to obtain HCUP databases (including the necessary Data Use Agreement forms and application kits) can be found in the HCUP Online Product Release Calendar located on the HCUP User Support Web site (www.hcup-us.ahrq.gov). ■

Updated report with national statistics on hospital stays—*HCUP Facts and Figures, 2006*—is available

The *HCUP Facts and Figures, 2006*, a report from the Agency for Healthcare Research and Quality (AHRQ) on hospital-based care, is now available. This report is updated annually with statistics from the HCUP Nationwide Inpatient Sample. This year's Facts and Figures report contains national statistics on hospital stays in the U.S. for 2006 and trends from 1993. In addition, each year the report provides insight into special topic areas. This year's topics include complications for C-section versus vaginal deliveries, depression, cancer, asthma, arthritis, and changes in procedure use over time.

For example, a new analysis shows that hospital cost increases appear to be slowing. The cost of patient care in U.S. hospitals rose just under 1 percent between 2005 and 2006, much slower than the average 5.3 percent per year between 1997 and 2005, according to data. However, over the 9-year period from 1997 to 2006, the overall cost for stays in the hospital nearly doubled from $177 billion to $329 billion.

AHRQ's new analysis also found that:

- Nearly half the increase in overall costs (47 percent) was due to the increased intensity of care in the hospital, such as increased use of procedures, technologies, and other interventions.
- About one-third of the cost increases were due to inflation and 16 percent resulted from an increase in the number of patients due to population growth.

The findings suggest that rapid growth in the adoption of managed care plans and the shift to outpatient care have slowed the growth in the use of inpatient care.

HCUP Facts and Figures, 2006 is a 65-page report that can be accessed from the Reports page of the HCUP User Support Web site, www.hcup-us.ahrq.gov/reports.jsp. ■

Research Briefs

Ay, H., Arsava, M., Rosand, J., and others. (2008, May). "Severity of leukoaraiosis and susceptibility to infarct growth in acute stroke." (AHRQ grant HS11392). *Stroke* 39, pp. 1409-1413.

Leukoaraiosis (LA) volume at the time of acute ischemic stroke is a predictor of infarct growth, concludes this study. LA is a term used to describe neuroimaging findings of diffuse hemispheric white matter abnormalities mainly characterized by loss of myelin and/or ischemic injury. LA is associated with structural and functional vascular changes that may compromise tissue perfusion at the microvascular level. The authors of this study examined 61 patients with diffusion-weighted imaging-mean transit time mismatch, who were scanned twice within 12 hours of symptom onset and between days 4 and 30. Using a model with percentage mismatch lost as response and LA volume, and other factors, they found that LA volume was an independent predictor of infarct growth. The adjusted mismatch lost in the highest quartile of LA volume was nearly two times greater than the percentage mismatch lost in the lowest quartile.

Bader, J.D., Perrin, N.A., Maupomé, G., and others. (2008). "Exploring the contributions of components of caries risk assessment guidelines." (AHRQ grant HS13339). *Community Dentistry and Oral Epidemiology* 36, pp. 357-362.

This study analyzed data from two dental insurance plans to determine how well a patient's current caries activity (tooth decay), caries experience in the past year (receipt of one or more caries-related restorative, endodontic, or surgical procedures), and their dentist's subjective assessment of the patient's caries risk was able to predict future risk of dental caries. In both plans, current caries activity alone had limited ability to predict who would develop later caries (sensitivity), but was good at identifying who would not develop them (specificity). Adding consideration of previous caries experience improved sensitivity, but at the cost of specificity. Sensitivity further improved when dentists' subjective assessment was included. However, overall accuracy suffered, due to the greater number of false-positives that resulted (prediction of more cavities than developed).

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Research briefs

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Badrick, E., Bobak, M., Britton, A., and others. (2008, March). "The relationship between alcohol consumption and cortisol secretion in an aging cohort." (AHRQ grant HS06516). *Journal of Clinical Endocrinology & Metabolism* 93(3), pp. 750-757.

This study links alcohol consumption with activation of the hypothalamic-pituitary-adrenal (HPA) axis (elevated cortisol levels), which has been shown to increase blood pressure, impair immune function, and alter metabolism. The researchers examined alcohol consumption and cortisol secretion (based on several daily saliva samples) among 2,693 men and 977 women during the 2002-2004 phase of the Whitehall II study of British civil servants. Among men, there was a 3 percent increase in cortisol per unit of alcohol consumed each week. The slope of cortisol decline during the day in heavy drinkers was reduced, indicating less control of the HPA axis in heavy drinkers. Among women, the cortisol awakening response was greater in heavy than in moderate drinkers. These findings suggest chronic changes of the HPA axis among heavy drinkers.

Calderón, J.L., Fleming, E., Gannon, M.R., and others. (2008, April). "Applying an expanded set of cognitive design principles to formatting the Kidney Early Evaluation Program (KEEP) longitudinal survey." (AHRQ grant HS14022). *American Journal of Kidney Diseases* 51(4, Suppl. 2), pp. S83-S92.

Health survey researchers must apply cognitive design principles to survey development to improve participation and response rates by populations with limited literacy skills, poor health literacy, and limited survey literacy, concludes this study. The researchers assessed the National Kidney Foundation's Kidney Early Evaluation Program (KEEP) followup form for adherence to six cognitive design principles: simplicity, consistency, organization, natural order, clarity, and attractiveness. They also looked at its readability and variation of readability across survey items. The form violated each cognitive design principle and readability principle, possibly contributing to item nonresponse and low followup rates in KEEP. The researchers revised the form to better reflect these principles and found it to be more user-friendly, simpler, better organized, more attractive, and easier to read.

Cooper, W.O., Hernandez-Diaz, S., Gideon, P., and others. (2008). "Positive predictive value of computerized records for major congenital malformations." (AHRQ grant HS10384). *Pharmacoepidemiology and Drug Safety* 17, pp. 455-460.

Depending on the congenital defect affecting an infant, computerized infant and maternal claims data linked to vital records may help identify birth defects in populations of vulnerable persons. However, for many defects, medical record confirmation will probably be required to validate occurrence of the defect. Those are the conclusions of this study drawn from cases from three studies of congenital malformations in the Tennessee Medicaid population. Among 1,430 potential congenital malformations identified from either birth certificates or inpatient claims, more than two-thirds (68 percent) were confirmed by medical record review. The positive predictive value (PPV) varied considerably depending on the data source and the organ system. For example, cardiac defects had a very low PPV when identified from birth certificates, but somewhat higher PPV when identified from inpatient claims. Orofacial defects had a 91 percent PPV from birth certificates and inpatient claims.

Devine, S., West, S.L., Andrews, E., and others. (2008). "Validation of neural tube defects in the full featured-General Practice Research Database." (AHRQ grant HS10397). *Pharmacoepidemiology and Drug Safety* 17, pp. 434-444.

This study found that the General Practice Research Database (GPRD), the world's largest longitudinal patient electronic medical records database, was useful in identifying three of four neural tube defects (anencephaly, encephalocele, and meningocele), but more information was needed to accurately identify cases of spina bifida. The GPRD provides clinical information based on general practitioner records. The authors first created algorithms to identify 217 potential neural tube defect (NTD) cases in either a child's or a mother's record, and validated cases by querying general practitioners via a questionnaire. They validated an NTD diagnosis for 117 cases, for an overall positive predictive value (PPV) of 0.71 (71 percent of cases predicted to have an NTD did). The PPVs varied by NTD type: 0.81 for anencephaly, 0.83 for cephalocele, 0.64 for meningocele, but only 0.47 for spina bifida.

Galliher, J.M., Stewart, T.V., Pathak, P.K., and others. (2008). "Data collection outcomes comparing paper forms with PDA forms in an office-based patient survey." (AHRQ grant HS11182). *Annals of Family Medicine* 6, pp. 154-160.

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The collection and management of survey data in office-based clinical research is challenging. According to these authors, handheld computers produce more complete data than the paper method for the returned survey forms. However, they are not superior, because of the large amount of missing data due to technical difficulties with the handheld computers or loss and theft. Other hardware solutions, such as tablet computers or cell phones linked via a wireless network directly to a Web site, may be better electronic solutions for the future, note the researchers. They asked each of 19 medical assistants and nurses in family practices to administer a survey about pneumococcal immunizations to 60 older adults, 30 using paper forms and 30 using electronic forms on handheld computers. They then analyzed the completeness of data obtained by both groups.

Gibbons, R.D., Segawa, E., Karabatsos, G., and others. (2008, May). "Mixed-effects Poisson regression analysis of adverse event reports: The relationship between antidepressants and suicide." (AHRQ grant HS16973). *Statistics in Medicine* 27(11), pp. 1814-1833.

These authors developed a new statistical methodology to analyze postmarketing surveillance data from the Food and Drug Administration's (FDA) Adverse Event Reporting System (AERS) to examine the relationship between antidepressants and suicide. The statistical method involved both empirical Bayes and full Bayes estimation of rate multipliers for each drug within a class of drugs, for a particular adverse event (AE), based on a mixed-effects Poisson regression model. Using this approach, they found that the newer antidepressants (selective serotonin reuptake inhibitors) were associated with lower rates of suicide AE reports compared with older antidepressants. They suggest several improvements to the existing AERS to improve its public health value as an early warning system.

Gorman, J.R., Madlensky, L., Jackson, D.J., and others. (2007, December). "Early postpartum breastfeeding and acculturation among Hispanic women." (AHRQ grant HS07161). *BIRTH* 34(4), pp. 308-315.

The American Academy of Pediatrics recommends exclusive breastfeeding for the first 6 months of life. Although Hispanic and white mothers in the United States have similar breastfeeding rates, more acculturated Hispanic mothers have lower rates of breastfeeding than their less acculturated counterparts. This study went one step further and linked higher acculturation among Hispanic women with lower odds of exclusive postpartum breastfeeding after hospital discharge. The researchers examined medical record data from 1,635 low-income, low-risk women at one birth center. After adjusting for other factors, Hispanic women in the low-acculturation group (who spoke Spanish) were 36 percent more likely and white women were 49 percent more likely to breastfeed exclusively at hospital discharge than Hispanic women in the high-acculturation group (who spoke English).

Hearld, L.R., Alexander, J.A., Fraser, I., and Jiang, H.J. (2008, June). "How do hospital organizational structure and processes affect quality of care?: A critical review of research methods." *Medical Care Research and Review* 65(3), pp. 259-299.

Interest in the role of organizational factors in the delivery of care has risen in recent years. This article reviews studies that examine the relationship between the structural characteristics and organizational processes of hospitals and quality of care, using Donabedian's structure-process-outcome and level of analysis frameworks. The authors found that most of the studies are conducted at the hospital level of analysis and are typically focused on the organizational structure-quality outcome relationship. They conclude with recommendations of how health services researchers can expand their investigations to better illuminate the understanding of the relationship between organizational characteristics and quality of care. Reprints (AHRQ publication no. 08-R083) are available from AHRQ.*

Kao, L.S. and Thomas, E.J. (2008, April). "Navigating towards improved survival safety using aviation-based strategies." (AHRQ grant HS11544). *Journal of Surgical Research* 145(2), pp. 327-335.

Despite the apparent similarities between surgery and aviation, there are several differences between the two fields that should be considered before universally adopting and instituting aviation-based strategies in health care, concludes this review of studies on the topic. The health care system is more complicated than aviation in terms of the regulatory structure. Surgery and aviation also differ in terms of interpersonal relationships between professionals. Also, a flight is one interval in time, while patient care involves multiple caregivers and

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locations without clear beginnings and endings. New technologies are developed and incorporated more rapidly in health care than in aviation, resulting in challenges in determining and assessing competency. Finally, people are far more complex than airplanes.

McGowan, J.J., Cusack, C.M., and Poon, E.G. (2008, May-June). "Formative evaluation: A critical component in EHR implementation." (AHRQ Contract No. 290-04-0016). *Journal of the American Medical Informatics Association* 15(3), pp. 297-301.

This viewpoint paper evolved from a presentation at the American College of Medical Informatics 2007 Winter Symposium, the ensuing discussion, and activities related to implementation of electronic health records (EHR) outside of academia or research institutions. The authors assert that successful EHR implementation is facilitated and sometimes determined by formative evaluation that typically focuses on process rather than outcomes. They note that with more Federal funding to implement EHR systems in health care organizations unfamiliar with research protocols, the need for formative evaluation assistance (in the form of tools and protocols) is growing. It should be provided by practicing medical informaticians.

Neumann, P.J., Palmer, J.A., Daniels, N., and others. (2008, April). "A strategic plan for integrating cost-effectiveness analysis into the US healthcare system." (AHRQ Contract No. 290-2005-0006). *The American Journal of Managed Care* 14(4), pp. 185-188.

This commentary outlines a strategic plan for policymakers to address obstacles and to integrate cost-effectiveness analysis (CEA) into health policy decisions, drawing on stakeholders as part of the solution. The plan was developed by the Panel on Integrating Cost-Effectiveness Considerations into Health Policy Decisions, which is composed of medical and pharmacy directors at public and private health plans. The strategic plan involves a series of activities to advance the use of CEA in the United States. These include research and demonstration projects to illustrate potential gains from using the technique and ongoing consensus-building steps (for example, workshops, conferences, and town meetings) involving a broad coalition of stakeholders. The panel calls for funding and leadership from policymakers and nonprofit foundations, active engagement of legislators and business and consumer groups, and leadership by the Medicare program.

Pierre-Jacques, M., Safran, D.G., Zhang, F., and others. (2008, April). "Reliability of new measures of cost-related medication nonadherence." (AHRQ grant HS16955). *Medical Care* 46(4), pp. 444-448.

The new Medicare prescription drug benefit increases the need for reliable ways to monitor beneficiaries' medication use, spending, and access. Most previous research on this subject had been cross-sectional, so there was no research reporting the test-retest reliability of commonly used measures of cost-related medication nonadherence. These researchers developed a questionnaire to test the reliability of three measures of cost-related medication nonadherence (skipping doses, taking smaller doses, and not filling or delaying refills of prescriptions) and five general cost-reduction strategies for a group of Medicare HMO members in eastern Massachusetts who were surveyed twice (30-60 days apart). The cost reduction strategies were using generic drugs; purchasing drugs via mail, Internet, or from outside the United States; using prescription samples from a physician; sharing medicines with another person; and spending less on other basic needs. The estimated test-retest reliability of the measures of nonadherence was high, and they have been integrated into the Medicare Current Beneficiary Survey. Researchers and policymakers will now be able to identify changes in cost-related nonadherence among Medicare beneficiaries.

Pylypchuk, Y. and Selden, T.M. (2008, July). "A discrete choice decomposition analysis of racial and ethnic differences in children's health insurance coverage." *Journal of Health Economics* 27(4), pp. 1109-1128.

Children of different racial and ethnic groups vary substantially with respect to health insurance coverage. In order to get a better understanding of how much a given characteristic contributes to coverage differences, these researchers adapted a recently developed matching decomposition method for use with sample-weighted data from the 2004-2005 Medical Expenditure Panel Survey. They also developed a full nonparametric approach that implements decomposition through weight adjustments. Using these approaches, they determined that observable characteristics such as poverty, parent educational level, family structure (for black children), and immigration-related

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factors (for Hispanic children) account for 70 percent or more of the coverage differences among white, black, and Hispanic children (who have the highest uninsurance rates). The most important immigration-related factor for Hispanic children is the disproportionate prevalence of native-born children with noncitizen parents. These results suggest that the lower coverage levels among ethnic and racial minorities are due to the fact that uninsurance is concentrated among socioeconomically disadvantaged children who happen to be minorities.

Rivera, A.J. and Karsh, B. (2008). "Human factors and systems engineering approach to patient safety for radiotherapy." (AHRQ grant HS13610). International *Journal of Radiation Oncology, Biology, and Physics* 71 (Supplement 1), pp. S174-S177.

Since the publication of the Institute of Medicine report "To Err is Human," there has been a call to use human factors and systems engineering methods and principles to solve patient safety problems. These authors discuss three tools for better understanding how systems and human factors engineering can be used to improve patient safety. The first is work system analysis, the outcome of which is typically a graphic map depicting the inputs, transformations, and outputs of the system under study. The second tool is the Systems Engineering Initiative for Patient Safety (SEIPS) model of work system and patient safety. This model categorizes interactions between the person and the system and identifies interactions that can be improved. The system itself is divided into five main components (person, tools and technologies, organization, physical environment, and tasks). To show processes and outcomes, the SEIPS model integrates the work system model and Donabedian's structure-process-outcome framework. A third tool, developed from the SEIPS model by Karsh, et al., focuses on demonstrating how the structure of the health care system can influence provider performance and patient and provider safety.

Rosen, A.K., Gaba, D.M., Meterko, M., and others. (2008, May). "Recruitment of hospitals for a safety climate study: Facilitators and barriers." (AHRQ grant HS13920). *The Joint Commission Journal on Quality and Patient Safety* 34(5), pp. 275-284.

Little is known about factors affecting hospital participation in hospital safety assessment studies. These researchers studied factors affecting recruitment of 30 Department of Veterans Affairs (VA) hospitals into a study to evaluate perceptions of safety culture. To minimize selection bias, hospitals were recruited that represented the spectrum of safety performance on the basis of scores derived from the Agency for Healthcare Research and Quality's Patient Safety Indicators. Despite attempts to optimize recruitment, it was necessary to contact more than 90 hospitals to obtain a 30-hospital sample. Hospitals with a more entrepreneurial culture (associated with risk-taking, innovation, and quality improvement) were recruited more quickly. Also, hospitals with better safety performance were more likely to be recruited than lower-performing hospitals. The researchers concluded that it was important to recruit representative samples of hospitals based on measures of safety performance rather than just accepting the first hospitals that applied to participate.

Schootman, M., Jeffe, D.B., Gillanders, W.E., and others. (2007, May). "The effects of radiotherapy for the treatment of contralateral breast cancer." (AHRQ grant HS14095). *Breast Cancer Research Treatment* 103, pp. 77-83.

Radiation therapy following breast-conserving surgery (BCS) for primary breast cancer is the widely used standard of care. Although radiation therapy undisputedly reduces the risk of breast cancer recurrence in the first breast, it has only a small overall survival benefit. In contrast, omission of radiation therapy following BCS for a primary cancer that later develops in the second breast, doubles the risk of dying, according to this study. Researchers used population-based data from the 1985-2000 Surveillance, Epidemiology, and End Results program to identify women with stage 0-III cancer that occurred in a second breast at least 6 months after a stage 0-III primary cancer in the first breast. The women's tumors were typically grade I-II, less than 1 cm in size, invasive ductal or lobular cancers, and without lymph node involvement. The researchers compared mortality rates of women aged 40-69 years who did not receive radiation therapy following BCS for the second breast cancer with those who did. Overall, 43 percent of 1,083 women who later developed cancer in the second breast did not receive radiation therapy after BCS. This group of women had 2.2 times greater risk of dying from breast cancer and 1.7 times greater risk of dying from all causes.

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Singh-Manoux, A., Britton, A., Kivimaki, M., and others. (2008, April). "Socio-economic status moderates the association between carotid intima-media thickness and cognition in midlife: Evidence from the Whitehall II study." (AHRQ grant HS06516). *Atherosclerosis* 197(2), pp. 541-548.

Cerebrovascular disease has been linked to dementia in older patients and also, to a lesser extent, to reduced cognitive function in middle-aged patients. These researchers, using intima-media thickness (IMT) of the carotid artery as a measure of generalized atherosclerosis, sought to determine how IMT's relationship to cognitive function was affected by socioeconomic status (SES) and whether IMT was more strongly associated with specific aspects of cognitive function. The subject population consisted of 4,112 middle-aged adult British civil servants enrolled in the Whitehall II study. Their cognitive function was assessed with a battery of six standard tasks and SES by civil service grade of employment at baseline. The researchers found that carotid artery IMT in stroke-free middle-aged individuals (average age: 60.9) was associated with reduced cognition only among those with the most socioeconomic disadvantage. IMT in this group was not associated with short-term visual memory or global cognitive status but, after adjustment for prevalent coronary heart disease, vascular, and behavioral risk factors, it was significantly associated with inductive reasoning, vocabulary, and phonemic fluency.

Silenas, R., Akins, R., Parrish, A.R., and Edwards, J.C. (2008, January-March). "Developing disaster preparedness competence: An experiential learning exercise for multiprofessional education." (AHRQ grant HS13715). *Teaching and Learning in Medicine* 20(1), pp. 62-68.

Concerns about bioterrorism, hurricane disasters, and outbreaks of pandemic infectious diseases compel medical educators to develop emergency preparedness training for medical and other health care professional students. The researchers describe an experiential tabletop exercise for learning general core competencies discussed in the Association of American Medical Colleges 2003 report on "Training Future Physicians about Weapons of Mass Destruction." The 3-hour exercise was preceded by 4 half-days of lectures given to 69 second-year medical students and 20 veterinary students. The scenario involved an emerging zoonotic disease (highly pathogenic avian influenza). The students were expected to develop an understanding of community emergency response systems, learn about unusual clinical scenarios, and become informed about the major concepts of disease reporting. All students were pre- and post-tested on their knowledge of these and other areas included in the course. The post-test revealed students improved knowledge in eight of nine areas. These results confirmed the findings from a previous study that a short interactive exercise is sufficient to improve physicians' knowledge about bioterrorism preparedness.

Tolomeo, P., Wheeler, M., Metlay, J.P., and others. (2008, February). "Patient attitudes regarding participation in studies of antimicrobial resistance." (AHRQ grant HS10399). *Infection Control and Hospital Epidemiology* 29(1), pp. 155-159.

Some recent studies of antimicrobial resistance have focused on the role of antimicrobial-resistant pathogens that colonize the intestinal tract. Participation rates in such studies, which involve perirectal swabs, have been low (less than 60 percent). The researchers sought to determine patients' attitudes and beliefs regarding such studies and why a substantial proportion of eligible study participants refuse to participate. The 90-person study group of hospital inpatients was almost evenly divided between a group that had just participated in a fluoroquinolone-resistant *E. coli* study, a group that had refused to participate in that study, and a third group that had not been asked to participate. The study found that 31 of the individuals surveyed believed that the researchers might run additional tests without informing them, and 25 individuals believed that someone other than the researchers might gain access to the results. People who had previously refused to participate in the earlier study were significantly more likely to believe that a person could get sicker as a result of the study.

Whitney, S.N., Alcser, K., Schneider, C. E., and others. (2008, April). "Principal investigator views of the IRB system." (AHRQ grant HS11289). *International Journal of Medical Sciences* 5(2), pp. 68-72.

The human subjects protection system is constantly expanding, yet its quality and efficiency are cast in doubt by experts, review bodies, and field- or discipline-specific committees. These researchers decided to survey federally funded principal investigators for their

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views of this system. Their study had a 14 percent response rate, with 28 investigators submitting their views. Respondents disagreed about how well the system is functioning. Some supporters of the system endorsed it without reservation, while others expressed frustration but believed that their local institutional review board (IRB) did its best to make a difficult system work well. Those investigators who were most critical mentioned multiple flaws in the system, such as inappropriate and incomprehensible consent forms, an emphasis on minutiae, and concern with protecting the institution more than the research subject. The IRB system was viewed as particularly burdensome in the areas of neurology, emergency medicine, repositories, and social sciences.

Zatzick, D.F., Russo, J., Rajotte, E., and others. (2007, Fall). "Strengthening the patient-provider relationship in the aftermath of physical trauma through an understanding of the nature and severity of posttraumatic concerns." (AHRQ grant HS11372). *Psychiatry*, 70(3), pp. 260-273.

Researchers used open-ended, semi-structured questions to elicit up to three major concerns from each patient hospitalized injury survivor (18 years of age or older) within an average of 3 days following hospital admission. The injury survivors had endured either unintentional (e.g., motor vehicle accidents) or intentional (e.g., assault) injuries; patients with self-inflicted injuries were excluded. To measure post-traumatic stress disorder (PTSD) symptoms at 1, 3, 6, and 12 months following injury, the researchers used the PTSD Checklist (PCL), a 17-item self-report questionnaire. Of 120 hospitalized injury survivors, 84 percent expressed 1 or more severe concerns and 14.3 percent expressed 3 severe concerns. Physical health concerns (68 percent) were predominant, with the patients focusing on extent of their injury, pain, and worries about being able to take care themselves. These concerns were followed by work and finance (59 percent); social, such as the impact of the trauma on family and friends (44 percent); medical (8 percent); and legal (5 percent) concerns. Patients with three severe concerns had significantly elevated PCL scores compared with the other groups. ■

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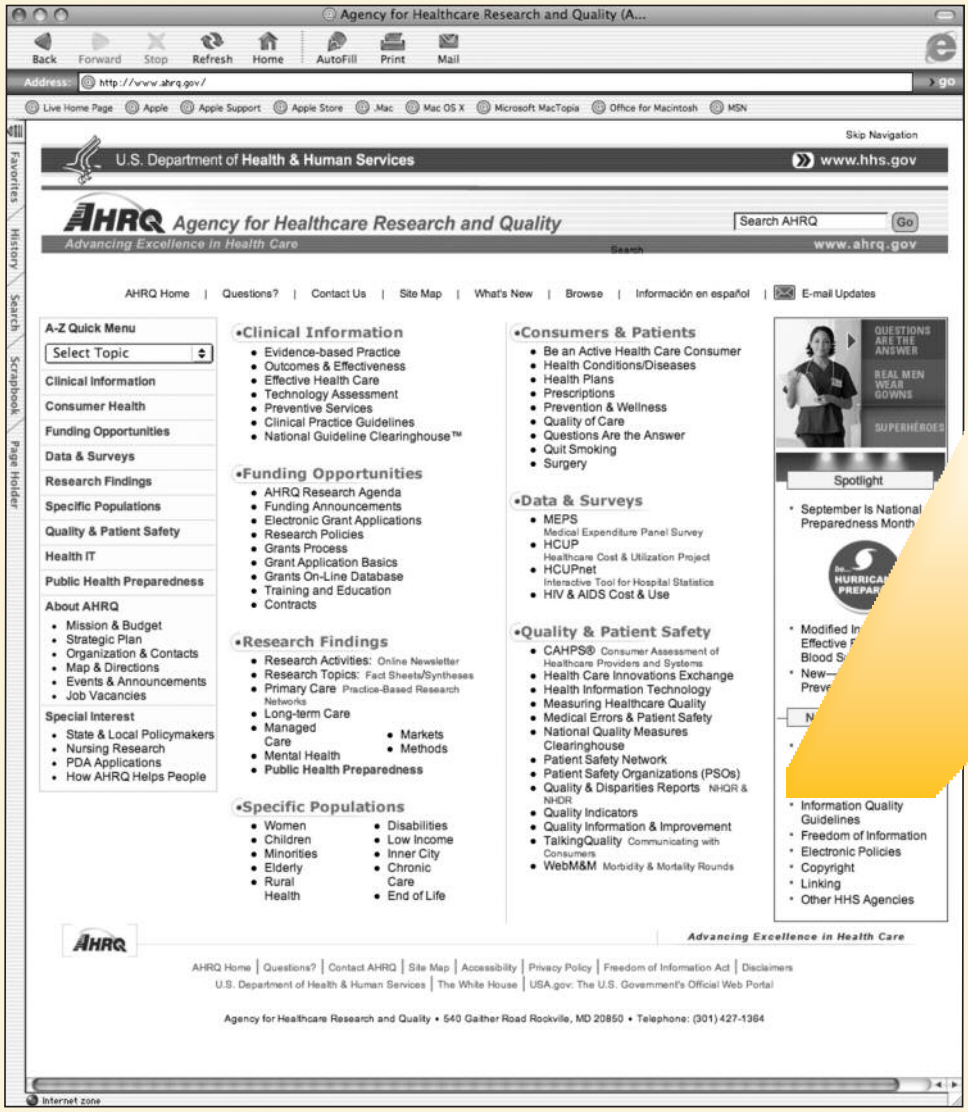

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AHRQ Pub. No. 09-RA001
October 2008

ISSN 1537-0224