Research Activities

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Agency for Healthcare Research and Quality

Highlights

Departments

Regular Features

Modest health care quality gains outpaced by spending

The quality of health care improved by an average 2.3 percent a year between 1994 and 2005, a rate that reflects some important advances but points to an overall slowing in quality gains, according to annual reports released by the Agency for Healthcare Research and Quality (AHRQ). The improvement rate, reported in AHRQ's 2007 *National Healthcare Quality Report* and *National Healthcare Disparities Report*, is lower than the 3.1 percent average annual improvement rate reported in the 2006 reports. Those reports measured trends between 1994 and 2004.

Quality improvement rates are lower than widely documented increases in health care spending. The Centers for Medicare & Medicaid Services estimate health care expenditures rose by a 6.7 percent average annual rate over the same period. The 2007 reports – the fifth editions since the reports' inaugural release in 2003 – show some notable gains, such as improvements in the care of heart disease patients. When measuring what portion of heart attack patients received recommended tests, medications, or counseling to quit smoking, the reports found an average 5.6 percent annual improvement rate from 2002 to 2005.

Measures of patient safety showed an average annual improvement of just 1 percent. That modest improvement rate reflected such measures as what portion of elderly patients had been given potentially harmful prescription drugs and how many patients developed post-surgery complications.

The reports also showed some reductions in disparities of care according to race, ethnicity, and income. For example, while Hispanics remain more likely than whites to get delayed care or no care at all for an illness, that disparity decreased between 2000 to 2001 and 2004 to 2005. In addition, while black children between 19 and 35 months old remain less likely than white children to receive all

continued on page 2

Advancing Excellence in Health Care

Health care quality

continued from page 1

recommended vaccines, that disparity also decreased.

Overall, however, many of the largest disparities remain. Black children under 18 are 3.8 times more likely than white children to be hospitalized for asthma. New AIDS cases are 3.5 times more likely among Hispanics than whites. Among pregnant women, American Indians or Alaska natives are 2.1 times less likely to receive first trimester prenatal care.

Editor's note: AHRQ's Quality and Disparities Reports, which are mandated by Congress, are read widely by policymakers, health care analysts, public health advocates, health insurers, journalists, and consumers. This year's *National Healthcare Quality Report* synthesizes more than 200 "quality measures," which range from how many pregnant women received prenatal care to what portion of nursing home residents were controlled by physical restraints. The *National Healthcare Disparities Report* summarizes which racial, ethnic, or income groups are benefiting from improvements in care. The 2007 reports draw on data from more than three dozen databases, most sponsored by Federal health agencies. The quality report serves as the basis for AHRQ's upcoming *State Snapshots*, which come out each spring and detail how health care quality trends vary from State to State. The reports are available online at www.ahrq.gov/qual/qrdr07.htm or from AHRQ.* ■

Child/Adolescent Health

State spending on parks and recreation and required physical education classes are linked to youth activity

To prevent rising childhood obesity, most State legislatures introduced bills during 2004 and 2005 to revise their physical education (PE) policies to boost youth physical activity. State high school PE unit requirements and curriculum development are correlated with improved participation by boys and girls in PE. State spending on parks and recreation is also correlated with greater overall physical activity by girls, concludes a new study.

Chad Meyerhoefer, Ph.D., an economist with the Agency for Healthcare Research and Quality, and fellow investigators examined which State policies were correlated with youth physical activity. They studied the effects of State policies on data for 37,000 high school students across the United States—8 policies related to PE classes and 1 policy on spending on parks and recreation facilities. They estimated that an extra year of required PE was associated with a 50.4 percentage point higher probability that boys reported PE participation and a 69.7 percentage point higher probability that girls reported PE participation.

Overall, a binding PE requirement was associated with an additional 20.7 minutes per week spent active in PE for boys and an additional 32.7 minutes for girls. Also, students were much more likely to be enrolled in PE when the State educational agency had developed its own PE curriculum. Specifically, boys were 31.9 percentage points and girls were 34.8 percentage points more likely to participate in PE class when their State had developed a PE curriculum. However, other policies had either no effect or an ambiguous impact on both physically active time in PE and overall physical activity measures.

continued on page 3

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Youth activity

continued from page 2

Finally, an extra $10 spent per capita on parks and recreation was associated with a third of a day more per week of vigorous exercise by girls. State spending on parks and recreation was also associated with more days of strength building exercise for both sexes. An additional day of this type of activity was associated with an extra $50 per capita spending for boys and $21 for girls. The authors note that it is not well known whether raising physical activity during the teenage years translates into higher physical activity in adulthood.

See "The correlation of youth physical activity with state policies," by John Cawley, Ph.D., Dr. Meyerhoefer, and David Newhouse, in the October 2007 *Contemporary Economic Policy* 25(4), pp. 506-517. Reprints (AHRQ Publication No. 08-R025) are available from AHRQ.* ■

Children from lower income families are not as likely to visit a dentist after a care provider's referral

When care providers recommended that children see a dentist, lower income children weren't as likely as higher income children to comply with that recommendation, a new study finds. May Chu, B.S., and Richard J. Manski, D.D.S., M.B.A., Ph.D., with the Agency for Healthcare Research and Quality, and fellow researchers looked at Medical Expenditure Panel Survey data from 2003 to determine the role of nondentist providers in referring children aged 2 to 17 to dentists for care. Of the 8,983 children in the survey, 51 percent had a dental checkup in 2003. Sixty percent of the children were from middle- or high-income families and 38 percent came from poor, near-poor, or low-income families.

About 50 percent of nondentist providers, such as pediatricians, recommended that children in any income category see a dentist. However, the likelihood of that advice translating into a child's seeing a dentist depended on several factors, such as income and education level. Children of families who made more than 200 percent of the Federal poverty guidelines in 2003 (which would have been $36,800 for a family of four) were more likely to have seen a dentist than children living in lower income families.

Income alone did not determine which children visited the dentist. Children whose parents graduated high school were more likely to visit a dentist than children whose parents who did not earn a diploma. The researchers suggest that high school graduates may have a keener sense of what constitutes good health and how to maintain it. Also, raising awareness of the importance of dental health through education may prove beneficial for getting children from lower income households to regular dental visits.

See "The dental care of U.S. children: Access, use and referrals by nondentist providers, 2003," by Ms. Chu, Luciana E. Sweis, D.D.S., Albert H. Guay, D.M.D., and Dr. Manski in the October 2007 *Journal of the American Dental Association* 138, pp. 1324-1331. Reprints (AHRQ Publication No. 08-R036) are available from AHRQ.* ■

White children are about twice as likely to use stimulants as black and Hispanic children

Stimulant medications are typically prescribed for children with attention-deficit/hyperactivity disorder (ADHD) to manage core symptoms such as impulsive behavior, restlessness, and inability to focus attention. These problems often hinder children's academic performance and relationships with peers and parents. White children are about twice as likely to use stimulants as black and Hispanic children, concludes a new study by researchers at the Agency for Healthcare Research and Quality. Julie L. Hudson, Ph.D., G. Edward Miller, Ph.D., and James B. Kirby, Ph.D., examined stimulant use

continued on page 4

Also in this issue:

Stimulant medications

continued from page 3

among U.S. children aged 5-17 in the Medical Expenditure Panel Survey between 2000 and 2002.

Overall, 5.1 percent of white children compared with 2.8 percent of black and 2.1 percent of Hispanic children purchased at least one stimulant medication during the year. Stimulants most commonly used by children were methylphenidate (Ritalin® and Concerta®) and amphetamine-dextroamphetamine (Adderall® and Adderall XR®).

Differences in family or individual characteristics accounted for about 25 percent of the differences between whites and Hispanics, but for none of the difference between whites and blacks. Specifically, characteristics such as health insurance, health status, and access to care, for which whites fared better, helped to explain some of the differences between whites and Hispanics. While the source of any remaining racial/ethnic differences in children's stimulant use is unclear, the authors show that children with otherwise similar reports of mental health problems have very different treatment outcomes with respect to stimulants use depending on their race/ethnicity. They point to other research that suggests these differences may result from cultural differences in how parents respond to behavioral cues of their children or from discrimination in medical treatment and/or access to care. Local school policies and norms may also affect the diagnosis of ADHD in school-age children.

More details are in "Explaining racial and ethnic differences in children's use of stimulant medications," by Drs. Hudson, Miller, and Kirby, in the November 2007 *Medical Care* 45(11), pp. 1068-1075. Reprints (AHRQ Publication No. 08-R044) are available from AHRQ.* ■

Adolescents are willing to have chlamydial screening by pediatricians during urgent care visits

Annual screening for *Chlamydia trachomatis*, the most common bacterial sexually transmitted infection (STI), is recommended for sexually active adolescent and young adult females. Early diagnosis of chlamydial infection is important to prevent reproductive problems such as pelvic inflammatory disease, infertility, and tubal pregnancy. In fact, the 15- to 24-year-old age group has the highest chlamydial infection rates. Adolescents are willing to be screened for chlamydia during urgent care visits, especially if their clinician can speak their language and clearly explain the meaning of confidentiality, reveals a new study. The fact that adolescents are willing to be screened in this context is important because two-thirds of sexually active adolescents use urgent care visits exclusively for their health care during a given year. Thus, limiting screening to well-care visits will miss the majority of adolescents at risk for chlamydial infection, explain the University of California, San Francisco investigators.

They found that most adolescents found it acceptable to discuss their sexual history (84 percent) and provide urine samples for chlamydial screening (80 percent) during urgent care visits to the pediatrician. Teens who accepted discussion about their sexual history were nearly 3 times more likely to believe that their clinician explained confidentiality, 9 times more likely to believe their clinician knew "how to talk to teens like me," and 14 times more likely to believe the doctor "listened carefully as I explained my concerns."

Similarly, teens were nearly four times as likely to be willing to provide a urine sample for chlamydial

continued on page 5

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/.

Chlamydial screening

continued from page 4

testing if they thought that their clinician knew "how to talk to teens like me" and "listened carefully as I explained my concerns." Educating pediatricians and other health care providers such as emergency room physicians in how best to communicate with adolescents may help expand chlamydial screening of this vulnerable group during urgent care visits. The findings were based on a survey of 365 ethnically diverse adolescents (58 percent were female) aged 13 to 18 receiving urgent care at four pediatric clinics in a large HMO. The study was supported in part by the Agency for Healthcare Research and Quality (HS10537).

More details are in "Chlamydial screening in urgent care visits," by Catherine A. Miller, M.D., Kathleen P. Tebb, Ph.D., Jody K. Williams, M.A., and others, in the August 2007 *Archives of Pediatric and Adolescent Medicine* 161(8), pp. 777-782. ■

Concerns about SCHIP expansions crowding out private insurance are not borne out in New York

Concerns that middle-class families might be using the State Children's Health Insurance Program (SCHIP), when they could have private insurance for their children, was a major point of contention in Federal SCHIP reauthorization. However, a recent study of New York State SCHIP families showed that this crowd-out of private insurance due to expanded income eligibility for SCHIP is not occurring frequently. SCHIP offers coverage to children in families who earn too much to qualify for Medicaid yet cannot afford private health insurance, and would otherwise remain uninsured.

To examine crowd-out in New York, researchers used State SCHIP files to identify new enrollees from November 1, 2000 to March 31, 2001. They used sampling methods designed to represent all SCHIP enrollees in New York State. Then, by interviewing parents of new SCHIP enrollees, they assessed enrollees' prior insurance coverage and reasons for its loss, estimated the incidence of crowd-out, and identified associations between crowd-out and enrollee characteristics such as age, race/ethnicity, and overall health status.

Of the 2,644 children studied, 62 percent of SCHIP enrollees had been uninsured for a year or more and a third had never had any insurance before SCHIP. Overall, 28 percent of SCHIP enrollees lost private insurance in the 6 months prior to entering SCHIP. Yet only 7.1 percent of children enrolled in SCHIP due to crowd-out of private insurance—similar to the crowd-out rate reported in a 10-State study. Reasons other than crowd-out, such as parental job change or loss, were the dominant reason for loss of private coverage, affecting nearly a third of all SCHIP enrollees. In addition, 10 percent of all enrollees lost prior coverage because an employer terminated health coverage options either altogether (7 percent) or just for children (3 percent). These are children who lack private insurance options and would be otherwise uninsured—the target population for SCHIP. The study was supported by the Agency for Healthcare Research and Quality (HS10450).

See "Crowd-out in the State Children's Health Insurance Program (SCHIP): Incidence, enrollee characteristics and experiences, and potential impact on New York's SCHIP," by Laura P. Shone, Dr.P.H., M.S.W., Paula M. Lantz, Ph.D., M.S., Andrew W. Dick, Ph.D., and others, in the February 2008 *HSR: Health Services Research* 43(1), Part II, pp. 419-434. ■

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.

Maternal asthma is associated with lower birth weight

Asthma in pregnancy is associated with complications for both the mother-to-be and the child, concludes a new study. Pregnant women with asthma are more likely to have high blood pressure, pre-birth bleeding, amniotic membrane-related disorders, gestational diabetes, and cesarean sections than women without asthma. In addition, infants born to women with asthma have lower birth weights and are smaller in size for their gestational ages than infants born to mothers who do not have asthma.

Rachel Enriquez, R.N., Ph.D., from the Vanderbilt University School of Medicine, and colleagues looked at 140,299 pregnancies of black and white women enrolled in Tennessee's Medicaid program from 1995 to 2003. Of the 6.5 percent (9,154) women who had asthma, nearly one-fourth visited the emergency room or were hospitalized because of their asthma (40 percent of black women and 23 percent of white women.)

Pregnant women with asthma typically delivered babies that weighed 1.3 ounces less (2 ounces less for those who visited the emergency room) than babies born to women who did not have asthma. Most of the women (77 percent) did not use daily asthma controller medications. Instead, 60 percent of them relied on quick-relief medications, and 26 percent used them excessively. These results suggest that controller medication is either not prescribed for or not refilled by pregnant women with asthma, either due to concern they may harm their unborn child or belief that the medication does not work. The authors found that preterm birth, birth defects, and post-delivery hemorrhage were not associated with maternal asthma. This study was funded in part by the Agency for Healthcare Research and Quality (HS10384).

See "Effect of maternal asthma and asthma control on pregnancy and perinatal outcomes," by Dr. Enriquez, Marie R. Griffin, M.D., M.P.H., Kecia N. Carroll, M.D., and others in the September 2007 *Journal of Allergy and Clinical Immunology* 120(3), pp. 625-630. ■

Patient/Physician Communication

Physicians and terminal patients need to communicate better with each other about end-of-life care options

A pilot study of physicians and their patients with terminal cancer or end-stage congestive heart failure suggests that physicians and terminal patients need to improve their communication about end-of-life care options. The researchers interviewed 22 physicians and 71 of their patients about the conversations they had related to end-of-life care.

Physicians and patients varied in their agreement on discussions in four areas of communication, with least agreement on the more sensitive issues. Agreement ranged from lows of 14 percent for physician's knowledge of patient's stated preferences for pain management and preferred place of death to 92 percent agreement on the patient's primary diagnosis. They agreed only 35 percent of the time about whether the physician understood the patient's financial circumstances and 35 percent of the time about the doctor's understanding of the patient's religious/spiritual concerns affecting their end-of-life care choices.

Doctors and patients were more likely to agree on whether they discussed care options, including advance directives (59 percent), possible need for hospice care (69 percent), possible need for referral to skilled nursing facilities (75 percent), and possible need for referral to religious/spiritual support or psychological/social support services (70 and 61 percent, respectively). Patients with less than a high school education were less likely than their more educated counterparts to agree with their doctors about what types of discussions had taken place. The study was supported by the Agency for Healthcare Research and Quality (HS10871).

See "Lack of concordance between physician and patient: Reports on end-of-life care discussions," by Susan DesHarnais, Ph.D., M.P.H., Rickey E. Carter, Ph.D., Winnie Hennessy, R.N., M.S.N., and others, in the June 2007 *Journal of Palliative Medicine* 10(3), pp. 728-740. ■

The best way to communicate uncertainty to patients about the harms and benefits of treatments remains unidentified

For patients to truly share in medical decisions with their doctors, they must understand their medical condition, know what treatments are available, and understand the expected outcomes of treatment. In the process, patients must interpret a great deal of medical information about the benefits and harms of certain procedures, much of which is uncertain. Research studies suggest many recommendations for and examples of communicating uncertainty, but few are supported by evidence, concludes a review of studies on the topic.

The studies also revealed the multiple sources of uncertainty in most medical decisions. These include uncertainty about future outcomes, the validity of evidence about risks, the personal significance of particular risks (for example, their severity or timing), and the uncertainty arising from the complexity of risk information (for example, multiplicity of risks and benefits and their changes over time). Also, researchers differ in how they define uncertainty and its sources, as well as its measurement.

There are multiple types of uncertainty that clinicians may want and need to communicate to patients, and the assessment of these uncertainties is often not straightforward. Also, both patients' and physicians' interpretation of and responses to uncertainty may depend on their personal characteristics, such as tolerance for risk, education, culture, and values. Patients' responses may be affected by the way in which uncertainty is communicated. The authors conclude that the best way to present uncertainty depends on the decision the patient must make and the type of uncertainty presented. They call for more studies on the topic. The study was supported by the Agency for Healthcare Research and Quality (Contract No. 290-05-0013).

More details are in "Communicating the uncertainty of harms and benefits of medical interventions," by Mary C. Politi, Ph.D., Paul K. Han, M.D., M.A., M.P.H., and Nananda F. Col, M.D., M.P.P., M.P.H., F.A.C.P., in the September-October 2007 *Medical Decision Making* 27, pp. 681-695. ■

Personality is linked to active and passive decisionmaking style

Patient involvement in medical decisions affecting their care is highly recommended. However, doctors should respect each patient's preference for the level of involvement in health care decisions, suggest Kathryn E. Flynn, Ph.D., of Duke University, and Maureen A. Smith, M.D., M.P.H., Ph.D., of the University of Wisconsin.

Their new study found that a patient's decisionmaking style appears to be linked to personality. Persons who are conscientious (usually self-disciplined and ambitious), less neurotic (less anxious and self-conscious), and open to experience, but also less agreeable, tend to be the most active decisionmakers. They prefer to make important medical decisions about their care and to participate in the discussion of treatment choices (deliberation process).

More agreeable individuals may be less confrontational with doctors and may not be bothered when doctors assume the traditional paternalistic role, explain the researchers. They surveyed 5,830 adults (63 to 66 years) to explore the relationship between 5 personality factors (extraversion, agreeableness, conscientiousness, neuroticism, and openness to experience) and preferences for the health care decisionmaking process: information exchange, deliberation, and selection of treatment. They examined the relationship between decisionmaking style and personal, health, social, and economic factors.

Decisionmaking style appeared to reflect primarily personal factors. Four of the five personality factors (all but extroversion) helped explain differences between the most and least active decisionmakers. Higher education was also associated with preferences for more active participation in decisionmaking. The study was supported in part by the Agency for Healthcare Research and Quality (HS15544).

More details are in "Personality and health care decision-making style," by Drs. Flynn and Smith, in the *Journal of Gerontology: Psychological Sciences* 62B (5), pp. 261-267, 2007. ■

Physicians tend to be more patient-centered with more positive, satisfied, and involved patients

Ideally, doctors should be informative and supportive in their communication with all patients and should strive to build partnerships with them. In reality, physicians and patients tend to feed off each others' communication style, reveals a new study by Texas A & M researchers. Physicians were more patient-centered with patients they perceived to be better communicators, more satisfied with care, and more likely to adhere to treatment. Doctors also showed more patient-centered communication and more favorably perceived patients who expressed positive feelings, were more involved in care discussions, and were less argumentative.

Physicians were more contentious with black patients, whom they also perceived to be less effective communicators (did not actively ask questions or express concerns/opinions) and less satisfied with care. Doctors who said they were patient-centered in their care orientation tended to be patient-centered in their communication. For example, they expressed genuine concern about patients' health, encouraged patients to express concerns, made them feel at ease, thoroughly explained things, and reassured and comforted them.

Clearly, doctors' communication behaviors were linked to their perceptions of patients, and both were influenced by a variety of factors. The most powerful factors were the patient's communication style and ethnicity, and the physician's orientation to the doctor-patient relationship.

See "Physicians' communication and perceptions of patients: Is it how they look, how they talk, or is it just the doctor?" by Richard L. Street Jr., Ph.D., Howard Gordon, and Paul Haidet, M.D., M.P.H., in the August 2007 *Social Science & Medicine* 65, pp. 586-598. ■

Men's Health

Despite lack of evidence of benefit, PSA testing for prostate cancer screening has increased dramatically

Evidence for the value of prostate-specific antigen (PSA) testing for prostate cancer screening remains tenuous. Yet primary care doctors were more likely to order PSA tests in 2004 than in 1995, with the most dramatic increase in testing among black men and younger men, according to a new study. Jeffrey A. Linder, M.D., M.P.H., of Harvard Medical School, and colleagues analyzed 1994-2004 data from the National Ambulatory Medical Care Survey on visits to primary care providers by healthy men aged 35 years and older.

Between 1995 and 2004, orders for a PSA test by primary care doctors during visits jumped nearly 50 percent (from 4.7 to 7 percent) and nearly tripled among clinic visits for a general medical examination (from 11.2 to 32.3 percent). The odds of PSA testing increased for nearly all subgroups from 1995-1999 to 2000-2004. However, the odds for testing more than doubled among black men (odds ratio, OR 2.3), who are at higher risk for prostate cancer, and nearly doubled among men 35 to 49 years of age (OR 1.8). Likelihood of PSA testing also increased more among men with private and Medicare insurance.

Some clinical guidelines recommend a baseline PSA test at age 40, while others recommend one for men younger than 50 only if they have defined risk factors for prostate cancer, such as being black or having a first-degree relative with prostate cancer. Yet the evidence for testing younger men remains weak, and whether screening this age group reduces mortality is unknown, note the researchers. They suggest that doctors may be ordering more PSA tests in part due to more patient requests, belief in the value of PSA screening by physicians and patients, and protection against malpractice suits. The study was supported in part by the Agency for Healthcare Research and Quality (HS14563).

See "Trends in prostate-specific antigen testing from 1995 through 2004," by Wildon R. Farwell, M.D., M.P.H., Dr. Linder, and Ashish K. Jha, M.D., M.P.H., in the December 10, 2007 *Archives of Internal Medicine* 167(22), pp. 2497-2502. ■

DNA time-out procedure may help reduce patient identification error among prostate needle core biopsy specimens

The elimination of patient identification error is a major goal of the patient safety movement. In surgical pathology, such errors are uncommon and yet potentially catastrophic events. Most malpractice claims against pathologists involve accidentally switched specimens among patients, with most of these errors involving breast needle or prostate needle core biopsy specimens. A DNA time-out procedure may help reduce patient identification error among prostate needle core biopsy specimens, suggests a new study. The authors had access to records on three cases of prostate needle biopsy identification errors and performed a root cause analysis to discover why the errors had occurred. They developed a surgical pathology work flow table listing 19 separate steps associated with the biopsy examination process, as well as the associated risks of error for each of the steps and potential error reduction strategies. Errors may occur at many stages in the process, and are usually due to slips or lapses of automatic actions. The authors believe that, even if laboratory work flow optimization could be implemented, it would be difficult to entirely prevent these types of errors.

They recommend a new method known as a DNA time-out, which may eliminate patient identification errors among needle biopsies. The DNA time-out procedure verifies correct patient identification through a DNA polymorphic microsatellite analysis before the patient undergoes surgery. In such an analysis, molecular analyses would be performed on two specimens, one taken from the prostate needle biopsy, and the other from a blood sample or saliva swab drawn from the same patient.

Surgery would not take place until any questions or concerns were resolved. Commercial kits for the highly accurate performance of this test are currently available. The direct lab costs of the DNA time-out would be approximately $110 per specimen pair. However, a formal evaluation of the cost-effectiveness of the DNA time-out cannot be performed at this time, since the true incidence of such errors is not yet known. The study was supported by the Agency for Healthcare Research and Quality (HS13321).

See “Patient identification error among prostate needle core biopsy specimens – Are we ready for a DNA time-out?” by Eric J. Suba, M.D., John D. Pfeifer, M.D., Ph.D., and Stephen S. Raab, M.D. in the October 2007 *Journal of Urology* 178, pp. 1245-1248. ■

Elderly/Long-Term Care

Certain interventions have the potential to reduce costly and risky hospitalizations of the frail elderly

More than one-fourth of long-stay nursing home residents are hospitalized in any given 6-month period. These costly hospitalizations can lead to hospital-acquired infections and other risks to frail nursing home residents, and many are avoidable. For example, while hospitalization is necessary for conditions such as hip fracture and a second stroke, transfer to a hospital is often discretionary for conditions such as pneumonia and influenza.

William Spector, Ph.D., of the Agency for Healthcare Research and Quality, and colleagues conducted a review of 55 articles that identified strategies with the most potential to reduce hospitalizations among elderly long-term care recipients across settings ranging from nursing homes and assisted living facilities to adult day care centers and home health care. Promising interventions included more skilled staffing in nursing homes, especially physician assistants and nurse practitioners; improved care management at transitions from hospital to home or from hospital to skilled nursing facility; substitution of home health care for selected hospital admissions and instead of longer hospital stays; and alignment of reimbursement policies, so that providers do not have a financial incentives to hospitalize elderly persons receiving long-term care.

Two other approaches also have potential to reduce hospitalization of this group. They are prevention of high-risk clinical problems that lead to hospitalization via use of medication, equipment, and clinical care processes, and improving system quality of care, for example, with better patient assessment and

continued on page 10

Frail elderly

continued from page 9

end-of-life care. Nevertheless, the study authors note that much of the evidence is weak and could benefit from improved research design and methodology.

More details are in “Reducing hospitalizations from long-term care settings,” by Tamara Konetzka, Ph.D., Dr. Spector, and M. Rhona Limcangco, Ph.D., in the September 25, 2007 *Medical Care Research and Review*. Reprints are available from the Agency for Healthcare Research and Quality (Publication No. 08-R020).* ■

Self-rated health may not be the best way to identify mortality risks among less-educated, black older persons

For the past 20 years, studies have shown that how people rate their own health is a strong predictor of mortality. Indeed, self-rated health by older, more educated black and white persons is strongly linked to their mortality risk. In other words, they seem to have a good grasp of their health status and health risks. However, self-rated health may not be the best measure of mortality risk among less educated, black older adults, suggests a new study.

The University of California, San Francisco researchers looked at self-ratings of health and mortality among 14,004 white and 2,428 black adults aged 50 and older, who participated in the 1998 Health and Retirement Study. Self-rated health was a much stronger predictor of mortality in whites than blacks. For example, whites who rated their health as poor had 10.4 times higher risk of dying than whites who rated their health as excellent. However, blacks who rated their health as poor had nearly three times smaller risk of dying than whites who rated their health as poor.

Higher educational levels strengthened the relationship between self-rated health and mortality in blacks and whites. The authors suggest that whites may have more access to health providers and may incorporate health concerns noted by providers into their own self-ratings of health. On the other hand, blacks may value aspects of health that are less associated with mortality. It would be inaccurate to conclude that whites are more accurate in their health ratings than blacks, note the authors. Their study was supported in part by the Agency for Healthcare Research and Quality (HS00006).

See “The relationship between self-rated health and mortality in older black and white Americans,” by Sei J. Lee, M.D., M.A.S., Sandra Y. Moody-Ayers, M.D., C. Seth Landefeld, M.D., and others, in the October 2007 *Journal of the American Geriatric Society* 55, pp. 1624-1629. ■

Quality of care for geriatric-prevalent conditions is worse than general care among the hospitalized frail elderly

Among hospitalized frail elderly patients, the quality of care for geriatric-prevalent conditions, such as pressure ulcers, delirium, and dementia, is worse than the quality of general medical care, such as screening for pain and nutritional status, concludes a new study. University of Chicago researchers interviewed and reviewed the charts of 328 hospitalized vulnerable elders to assess their quality of care using 16 Assessing Care of Vulnerable Elders (ACOVE) quality indicators (QIs).

One example of a general care QI is prevention of the formation of blood clots (usually with anticoagulant medication) in a major vein, which can break off and travel to the lungs (venous thromboembolism). This problem can arise after recent surgery or due to other factors. Examples of QIs for geriatric-prevalent conditions include evaluation of cognitive status of elders within 24 hours of admission and screening for depression in any elder with dementia to offering an exercise program to elders who have problems with gait, strength, or endurance.

The QIs for general medical care at the hospital studied were met at a significantly higher rate than for pressure ulcer care (81.5 vs. 75.8 percent) and delirium and dementia care (81.5 vs. 31.4 percent). Nurses were more likely than physicians to screen elderly patients for pain, nutrition, functional status, and pressure ulcer risk. However, among the elderly with functional limitations, nurse hospital admission assessments of functional limitations often did not agree with those reported by patients. The

continued on page 11

Quality of care

continued from page 10

researchers conclude that hospital care QIs that focus on protocol-driven care may overestimate care quality for vulnerable elders, because they ignore care of geriatric-related conditions. The study was supported in part by the Agency for Healthcare Research and Quality (HS10597).

More details are in "Using assessing care of vulnerable elders quality indicators to measure quality of hospital care for vulnerable elders," by Vineet M. Arora, M.D., M.A., Martha Johnson, B.S., Jared Olson, B.S., and others, in the November 2007 *Journal of the American Geriatric Society* 55(11), pp. 1705-1711. ■

Conference on assisted living reveals its evolution, dearth of research, and quality of life for residents

When assisted living (AL) facilities emerged in the late 1980s, many frail, elderly persons and their families were relieved that they had an alternative to nursing homes. Unlike nursing homes, AL facilities provide private rooms or apartments that don't compromise privacy. They also provide people with care, help with medications and incontinence, assistance with activities of daily living (such as bathing and dressing), as well as meals and housekeeping. By 2000, variation in AL settings and programs was enormous, ranging from a long-term-care campus that includes a nursing home to a separately licensed wing of a nursing home, to a service offered within low-income housing complexes.

A working conference funded by the Agency for Healthcare Research and Quality, "Developing a Research Agenda to Shape and Improve Assisted Living," was held on June 12, 2004, to examine available research on AL and to identify future research needs in this area. The following papers, initially presented at the conference, were published in a special 2007 issue of *The Gerontologist,* Volume 47, and are briefly described here.

Wilson, K.B. "Historical evolution of assisted living in the United States, 1979 to the present," pp. 8-22.

The author of this paper traces the emergence of modern AL in the United States through four time periods. From 1979 to 1985, there was a growing distaste for the quality of life and care in nursing homes and more interest in residential, noninstitutional environments for the frail elderly. The period from 1986 to 1993 was marked by interest in three types of assisted living: hospitality, housing, and health care, which eventually merged to a hybrid model of all three. The apartment-style housing of many AL facilities included 24-hour staffing to provide onsite personal and health-related services, such as help with dressing or bathing. These facilities also included community space (for example, libraries, beauty salons, and dining rooms) and activities to encourage social interaction. Services were individualized to each resident's needs and preferences, including medication administration, dementia care, incontinence management, and hands-on-assistance with all activities of daily living.

The period from 1994 to 2000 was a period of expansion for assisted living. However, by 2000, the uneven quality of consumer experiences brought criticism, and there were little data to inform decisionmakers about needed improvements. The author calls for better data about the costs and benefits of assisted living.

Hawes, C. and Phillips, C.D. "Defining quality in assisted living: Comparing apples, oranges, and broccoli," (AHRQ grant HS10315), pp. 40-50.

The dramatic growth in AL facilities was largely an unregulated market response to both demographic trends and consumer preferences. Despite this growth, researchers and policymakers still know relatively little about AL facilities and their residents. The researchers know even less about the quality of life and care in these facilities, note the authors of this paper. They reviewed a variety of studies on the quality of AL facilities, and searched for available quality measures to see if facilities were meeting their stated goals. They concluded that any meaningful concept of quality must embrace several dimensions, including quality of care, quality of life, the physical environment, and resident rights. However, use of a multidimensional concept of quality is complicated by lack of consensus, confusion, and disagreement among consumers, providers, and regulators about the role of AL and other types of long-term care. This disagreement substantially confounds the tasks of comparing quality among AL settings and between AL and other types of long-term care.

continued on page 12

Assisted living

continued from page 11

Cutler, L.J. "Physical environments of assisted living: Research needs and challenges," pp. 68-82.

Research that examines the impact of the physical environment on quality of life and functioning among residents of AL facilities remains sparse, notes the author of this paper. Her review of studies focused on those that examined performance measures for physical environments, and environmental research findings themselves. Few studies dealt with resident behavioral outcomes linked to specific environments, such as the dining room or resident's room. Experts often used focus groups to determine residents' environmental preferences. Yet, AL environmental research needs to be a process that takes into account the goals of the setting, the management, the demographics of the occupants (needs, disabilities, preferences, etc.), overall resident satisfaction, building performance, and occupants' use of the space, asserts the author. She calls for a research agenda that looks at how the older person uses the AL environment, and the outcome of the interaction between the older person and the AL environment.

Hernandez, M. and Newcomer, R. "Assisted living and special populations: What do we know about differences in use and potential access barriers?" (AHRQ grant T32 HS00086), pp. 110-117.

This review of 51 studies examined how State policies and industry development efforts, particularly those favoring apartment-type AL, affected access to supportive housing for minority, low-income, and rural residents. The findings raise concerns about declining or uneven access to AL by all these groups. Some studies suggested that low-income and minority persons were either less likely to use AL or received AL in settings with less space and amenities and/or lower quality scores. However, generalizations from national or multi-State studies to specific populations have certain limitations. Moreover, numerous topics remain unstudied, such as pricing of AL, the experience of choosing an AL facility, discriminatory admission and retention practices, and the role of resident preferences. The data on access to AL in rural areas were inconclusive. The authors call for studies to illuminate the AL experience of low-income, racial/ethnic minority, and rural populations.

Kane, R.A., Chan, J., and Kane, R.L. "Assisted living literature through May 2004: Taking stock," pp. 125-140.

This review of studies on AL from 1989 to May 2004 revealed that the AL research base is still underdeveloped, despite its rapid growth. The authors coded research methods used and topics examined in the studies. They also compared 38 studies with quantitative data that permitted summaries of resident characteristics, AL settings, and entry and move-out patterns. Studies showed no consensus in either the definition of AL or in the measures used to describe AL residents or their progress. Also, there was little standardization in the way variables were measured, making it difficult to compare studies. The authors recommend that researchers pay more attention to measuring quality of life, overall social and psychological well-being, and perceived autonomy, choice, and control among AL residents. They note that lack of good nursing home outcomes on these dimensions prompted interest in AL in the first place.

Kane, R.A., Wilson, K.B., and Spector, W. "Developing a research agenda for assisted living," (AHRQ grant HS14027), pp. 141-154.

To develop a research agenda for AL, the authors reviewed Al literature and research-in-progress, and commissioned background papers critiquing knowledge on selected subtopics. Along with an advisory committee, they identified a comprehensive list of researchable questions of potential usefulness to consumers, providers, and/or policymakers, which they then rated based on their importance. Prior to a working conference of AL researchers, the authors identified five priority topics: consumer preferences, cost and financing, decisionmaking, developing quality measures, and resident outcomes. Conference discussions further underscored lack of standardized definitions and measures as barriers to building an empirically based AL literature. ■

Doctors override automated alerts on potential drug interactions

To reduce medication errors, many hospitals have adopted computerized order entry systems. These systems let clinicians enter drug orders electronically, and alert messages appear when a drug could negatively interact with another medication in the patient's drug portfolio. Clinicians can opt to override the alert, appending their rationale to assure the receiving pharmacist that possible adverse drug interactions were considered.

Amy J. Grizzle, Pharm.D., and colleagues conducted a study at six Veterans Affairs (VA) Medical Centers for one year (July 1, 2003, to June 30, 2004) to examine how often clinicians override drug interaction alerts and the reasons offered for overrides. The VA classifies interactions into two levels of severity: critical and significant. Clinicians are required to type in a reason when they override critical interaction alerts but typically not for significant interaction alerts.

Of the 291,890 overrides in the system, 72 percent were for critical alerts. Twenty percent of the override reasons for critical interaction, including no responses, were rated as useful. An override reason was not provided for 53 percent of the critical interaction alerts. When override reasons were documented for critical interaction alerts, only 43 percent of the reasons were determined useful to pharmacists to gauge clinical appropriateness and risk to the patient. For significant interaction alerts, half the reasons were useful. Overall, reasons for overrides were not provided 84 percent of the time.

The researchers offer alert fatigue as one explanation for why prescribers overrode the system. For example, at times, alerts appear for medicines that have no interactions, such as topical and oral drug combinations. (This has been remedied in the VA system.) Prescribers may also see the alerts as insignificant and annoying. In fact, some of the typed-in reasons for overrides included sarcasm. This study was funded in part by the Agency for Healthcare Research and Quality (HS10385).

See "Reasons provided by prescribers when overriding drug-drug interaction alerts," by Dr. Grizzle, Maysaa H. Mahmood, M.S., Yu Ko, M.S., and others in the October 2007 *American Journal of Managed Care* 13(10), pp. 573-580. ■

More work is needed to determine the impact of hospital information technology applications on patient outcomes

Hospital information technology (IT) applications range from computerized physician order entry and clinical decision support systems to technological devices that barcode patient wristbands and track tools used during operations. Although IT has been investigated as a key tool to improve hospital patient safety, a new study found little impact of IT on patient safety at Georgia community hospitals. The only patient outcome consistently associated with hospital use of IT applications was reduced risk of postoperative hemorrhage or hematoma. However, the complex nature of health care delivery systems may make it difficult to link one factor, such as IT applications, to patient risk-adjusted outcomes, note the researchers.

They examined the associations between the availability of IT applications at 66 Georgia community hospitals with patient safety problems via 15 patient safety indicators (PSIs) per 1,000 hospitalizations. PSIs, developed by the Agency for Healthcare Research and Quality (AHRQ), are indicators of poor quality care that threatens the safety of patients. The PSIs range from complications of anesthesia and foreign body left in during surgery to infection due to medical care and postoperative sepsis (blood poisoning) and hemorrhage.

Use of the 97 IT applications studied varied from a low of 10 applications at some hospitals to a high of 63 applications at others. The total count of functional IT applications available was negatively associated with postoperative hemorrhage or hematoma and foreign body left during procedure. The total count of technological devices was only associated with postoperative hemorrhage or hematoma. However, the few PSIs per 1,000 hospitalizations among the hospitals studied limited the ability to use PSI outcomes to compare care quality across hospitals, note the researchers. Their study was supported by AHRQ (contract no. 290-00-0011).

More details are in "Is the availability of hospital IT applications associated with a hospital's risk adjusted incidence rate for patient safety indicators: Results from 66 Georgia hospitals," by Steven D. Culler, Ph.D., Jonathan N. Hawley, Vi Naylor, R.N., and Kimberly J. Rask, M.D., Ph.D., in the October 2007 *Journal of Medical Systems* 31, pp. 319-327. ■

Cost-effectiveness of primary care treatment of sinusitis depends on individual, societal, and payer's perspectives

Most acute sinusitis cases diagnosed in primary care offices are due to viral upper respiratory tract infections and not bacterial infections that are treatable with antibiotics (Abx). However, there is no simple, quick, and inexpensive test to differentiate bacterial from viral sinusitis. This often leads to overprescribing of antibiotics for sinusitis and resulting antibiotic-resistant infections, which have become a major public health problem, note Yoshimi Anzai, M.D., M.P.H., and University of Washington colleagues.

They used a simulation model to compare four treatment strategies: no Abx, empiric Abx (based on sinus culture), computerized tomography (CT)-based Abx, and clinical guideline-based Abx (based on clinical signs and symptoms).

From an individual and short-term societal perspective, empiric Abx was the most cost-effective, because Abx typically shortens the length of illness and lost work days. However, Abx resistance will lead to increased costs and reduced efficacy of currently used antibiotics in the long-term.

The effectiveness of CT-guided Abx treatment was offset by the large additional cost of imaging. From the payer's perspective, clinical guideline-based treatment was the most cost-effective at $38,515 per quality-adjusted life year. The researchers conclude that clinical guidelines provide a low-cost method of targeting therapy. The study was supported in part by the Agency for Healthcare Research and Quality (HS13613).

See "The cost-effectiveness of the management of acute sinusitis," by Dr. Anzai, Jeffrey G. Jarvik, M.D., M.P.H., Sean D. Sullivan, Ph.D., and William Hollingworth, Ph.D., in the July-August 2007 *American Journal of Rhinology* 21(4), pp. 444-451. ■

Consultations on major surgeries bring higher costs and longer stays but not care improvements

Just 1 in 10 major surgeries involves the services of a medical consultant in the days before and after an operation. Further, these discussions do not result in higher quality care for the patient, a new study finds. Andrew D. Auerbach, M.D., M.P.H., undertook the study to understand the effect of consultations the day before, the day of, or the day after a major surgery in terms of costs and length of hospital stay.

Dr. Auerbach, from the Department of Medicine at the University of California, San Francisco, and his colleagues examined records for patients seen at the University's medical center from May 1, 2004 to May 31, 2006. Of the 1,282 patients studied, less than 10 percent underwent a surgical consultation. Those who received consultations had diabetes (29 percent), vascular disease (35 percent), or kidney failure (24 percent), and tended to have severe systemic, life-threatening diseases.

Costs almost doubled for patients who received consultations ($155,020) compared with those who did not ($74,237), and their median hospital stay was longer (10 days vs. 6 days). The authors suggest costs may be higher when consultants are brought in because they may request additional lab tests or procedures. Patients seen by generalists stayed in the hospital as long as those seen by consulting specialists but were more likely to pay less and receive therapies to prevent venous thromboembolism (a blocked blood vessel that can develop after an operation).

Care quality may not have improved when consultants were included for a couple of reasons. One, medical consultants may have been respecting their colleague's turf and opted to answer just the question they were asked. Two, the consultant's advice may not have been heeded. This scenario presents an opportunity to improve the consultation process, the authors suggest. This study was funded in part by the Agency for Healthcare Research and Quality (HS11416).

See "Opportunity missed: Medical consultation, resource use, and quality of care of patients undergoing major surgery," by Dr. Auerbach, Mladen A. Rasic, M.D., Neil Sehgal, M.P.H., and others in the November 26, 2007 *Archives of Internal Medicine* 167(21), pp. 2338-44. ■

Patients with unstable angina do not have better 1-year health status or rehospitalization outcomes than heart attack patients, despite better 2-year survival

Patients with unstable angina (UA) have better survival rates 2 years after hospitalization for heart problems than heart attack patients. However, they have similar or worse health status and cardiac rehospitalization rates 1 year after their initial hospitalization for acute coronary syndrome (ACS), concludes a new study. ACS includes ST-elevation myocardial infarction (STEMI), non-ST-elevation myocardial infarction (NSTEMI), and unstable angina (UA). STEMI and NSTEMI are types of heart attacks, whereas UA represents chest pain that may be a precursor to a heart attack.

A research team evaluated the associations between ACS presentation (UA, STEMI, and NSTEMI) and 1-year health status, 1-year cardiac rehospitalization rates, and 2-year mortality outcomes, among a group of 1,192 ACS survivors from 2 Kansas City hospitals. After adjustment for patient demographic, hospital, treatment, and other factors, UA patients were 42 percent more likely to experience angina at 1 year than STEMI patients and equally likely to experience angina as NSTEMI patients. In addition, UA patients fared no better than heart attack patients in physical functioning or quality of life. Finally, UA patients had similar rehospitalization rates as heart attack patients 1 year after hospitalization for ACS, despite better 2-year survival rates.

Thus, clinicians should remain as vigilant for persistent angina, functional limitations, and poor quality of life among UA patients as they are among heart attack patients, suggest the researchers. Multiple treatments, including medications and coronary revascularization, are available to improve patients' angina. The study was funded by the Agency for Healthcare Research and Quality (HS11282).

See "One-year health status outcomes of unstable angina versus myocardial infarction: A prospective, observational cohort study of ACS survivors," by Thomas M. Maddox, M.D., Kimberly J. Reid, M.S., John S. Rumsfeld, M.D., Ph.D., and John A. Spertus, M.D., M.P.H., in *BMC Cardiovascular Disorders* 7(28), 2007, which is available at http://www.biomedcentral.com/1471-2261/7/28. ■

Work-sponsored weight management programs offer losses for employees and gains for employers

Employers who offer their workers weight management programs may end up with thinner, happier employees who are out sick less frequently and use fewer prescription drugs, according to a new study. Researchers studied 516 people who elected to participate in their Fortune 500 companies' weight management program for either 26 or 52 weeks. The employees, who had body mass indexes that ranged from 27 to 30 (overweight to obese), paid 20 to 30 percent of the program's cost, and their employers picked up the rest of the tab. Weight loss interventions included exercise, diet, counseling, and physician oversight.

On average, participants saw losses in body weight (5.4 percent), body mass index (5.2 percent), waist size (7.2 percent), and blood pressure (5.7 percent systolic, 6.4 percent diastolic). They went from exercising 58 minutes a week to 236 minutes a week. Tests for depression showed that employees' moods moved from moderate to mild depression symptoms. A subgroup contacted one year after completing the program maintained their losses.

Employers who hope to quell the epidemic of obesity and its resultant chronic health conditions may want to consider sponsoring weight loss programs for their employees. By examining claims data, the researchers found that the average number of prescriptions the employees filled was cut from 7 to 3.9 (44 percent) saving participants an estimated $2,382. This reduction in prescriptions could theoretically help contain medical care costs for the companies, the authors suggest. In addition, employee productivity prospered during the program's duration as sick days went from an average of 3.1 to 1.1 per person. This study was funded in part by the Agency for Healthcare Research and Quality (HS13853).

See "A lifestyle-based weight management program delivered to employees: Examination of health and economic outcomes," by M. Courtney Hughes, M.S., Ph.C., Teresa M. Girolami, M.D., Allen D. Cheadle, Ph.D., and others in the November 2007 *Journal of Occupational and Environmental Medicine* 49(11), pp. 1212-7. ■

Patients with depression who receive mental health treatment and are involved in therapeutic decisions are more satisfied with their care

Primary care patients suffering from major depression who are involved in decisions about their care and receive mental health treatment (antidepressants and/or therapy) are more satisfied with their care, concludes a new study. As part of the Quality Improvement for Depression Study, patients with depression were randomized to 108 primary managed care practices around the country to receive either collaborative care or usual care. Collaborative care focused on active care management, provider education and decision support, and collaboration between primary care and mental health providers. Three-fourths of the sample were women and 30 percent were minority patients. Overall, less than half (43 percent) of patients received appropriate care for depression (25.9 percent received antidepressants, 27.6 percent counseling, and 10.2 percent both). On average, patients rated their provider a 3.3 out of 5 on the shared decisionmaking scale. This scale measured whether physicians involved patients in decisions about their care, gave them a choice of treatments, and explained their health problems to them.

Primary care patients who received mental health care were 1.6 times more likely to be satisfied with their care than those who did not receive such care. Those who shared decisionmaking with their doctors were nearly three times more likely to be satisfied with their care than those who were not involved in decisions. Gender did not seem to affect the relationship between quality of care and patient satisfaction. Also, women were no more likely than men to value shared decisionmaking when assessing their satisfaction with care than men.

The researchers suggest that future research on patients with depression should also assess their satisfaction with access to care, such as ease of getting an appointment, as well as their satisfaction with the office staff and the health plan itself. Their findings were based on analysis of responses to surveys administered to patients in the collaboration and usual care groups at baseline and 6 months later. The study was supported in part by the Agency for Healthcare Research and Quality (HS11407).

More details are in "Effect of mental health care and shared decision making on patient satisfaction in a community sample of patients with depression," by Karen A. Swanson, Sc.M., Roshan Bastani, Ph.D., Lisa V. Rubenstein, M.D., M.S.P.H., and others, in the August 2007 *Medical Care Research and Review* 64(4), pp. 416–430. ■

Primary Care Research

Individuals will use Web-based data about physician characteristics and performance to choose a doctor

Patients rarely use much of the care performance data available to them. One reason is that consumers are most interested in physician-level information rather than quality data on the hospitals, health plans, and medical groups that are typically profiled. When patients seeking a new primary care physician (PCP) were invited to view Web-based information to inform their choice, only 17 percent visited the Web site. However, according to a new study, those who did visit the Web site used the information to inform their choice of a PCP.

The researchers invited adult patients seeking a new PCP at 2 California medical groups to view Web-based information on 14 adult PCPS in the medical groups.

The Web site provided physician credentials (such as years in practice, medical school, specialty certification, and hospital affiliations); personal characteristics (for example, age, gender, ethnicity, and languages spoken); office location and hours; and patient experience scores based on a survey of five summary measures of physicians (interpersonal quality, appointment access, care coordination, health promotion, and patients' willingness to recommend the physician).

Patients cited patient experience scores for individual physicians as the factor most often influencing physician choice (51 percent). Among these measures, patients' highest priorities were a physician's interpersonal quality (37 percent) and patient recommendations of the PCP (41 percent). Patients who cited these priorities had nearly 10 times the likelihood of choosing a

continued on page 17

Web-based data

continued from page 16

highly scored physician (well aligned with their priorities) after viewing the Web site data than they did by chance. Targeting patients known to be making a health care decision appears to promote the use of performance data, conclude the researchers. The study was supported in part by the Agency for Healthcare Research and Quality (T32 HS00060).

See "Providing patients Web-based data to inform physician choice: If you build it, will they come?" by Gary Fanjiang, M.D., M.B.A., Ted von Glahn, Hong Chang, Ph.D., and others, in the October 2007 *Journal of General Internal Medicine* 22(10), pp. 463-366. ■

Poverty-related factors rather than frequency of primary care visits underlie racial disparities in preventive care

Elderly black and Hispanic patients receive fewer preventive care services such as cancer screening and vaccinations than elderly whites. Poverty-related factors, such as lack of insurance and low income and education, appear to underlie more of this disparity than fewer primary care visits, which appear to contribute minimally to these disparities. Kevin Fiscella, M.D., M.P.H., and Kathleen Holt, Ph.D., of the University of Rochester School of Medicine and Dentistry, analyzed 1998-2002 Medicare claims data on receipt of five preventive care services: colorectal cancer testing, influenza vaccination, lipid screening, mammography, and Pap smear screening for cervical cancer.

Minorities had statistically lower rates of claims for each of the five preventive procedures, after adjusting for age. The effect of minority status was only slightly weakened after controlling for the number of primary care visits made by patients. Yet, after accounting for low income, low educational level, health status, and other poverty-related factors, minority status was significantly associated only with colorectal cancer screening (21 percent lower rate) and influenza vaccinations (44 percent lower rate).

The researchers suggest that patient recall systems can help target elderly patients overdue for preventive services. Also, longer office visits may be needed to work with impoverished patients to confirm their understanding and address financial barriers to adherence to therapy. Finally, newer reimbursement models are needed that take into account the increased costs (and time) of caring for poor patients. The study was supported by the Agency for Healthcare Research and Quality (HS13173).

See "Impact of primary care patient visits on racial and ethnic disparities in preventive care in the United States," by Drs. Fiscella and Holt, in the November-December 2007 *Journal of the American Board of Family Medicine* 20(6), pp. 587-597. ■

HIV/AIDS Research

Studies examine the HIV/AIDS epidemic in the South

HIV/AIDS infection in the United States is spreading the fastest in the South and its victims tend to be poor, minorities, and survivors of abuse. Also, Southern women and minorities are less likely than others to be on antiretroviral therapy (ART), according to a new study. A second study shows that psychosocial trauma, less time on ART, and other factors are associated with HIV disease progression and death. Both Coping with HIV/AIDS in the Southeast (CHASE) studies were supported by the Agency for Healthcare Research and Quality (T32 HS00079).

The CHASE studies correlated patient sociodemographic and psychosocial characteristics with care processes and clinical outcomes for 611 patients enrolled in 2001 and 2002. The patients received HIV/AIDS care at eight infectious disease clinics in five Southeastern States and were followed for a median of 30 months. The studies are briefly described here.

Pence, B.W., Reif, S., Whetten, K., and others. (2007, November). "Minorities, the poor, and survivors of abuse: HIV-infected patients in the US Deep South." *Southern Medical Journal* 100(11), pp. 1114-1122.

continued on page 18

HIV/AIDS epidemic

continued from page 17

This study revealed the shift in the HIV/AIDS epidemic in the U.S. South toward a greater proportion of women and blacks, who become infected through heterosexual contact. It also found that more than half (54 percent) of patients with HIV infection from five Southeastern States suffer from probable psychiatric disorders, nearly a third (30 percent) have a history of childhood sexual abuse, and 21 percent suffer from severe physical abuse. Overall, nearly two-thirds of the group (64 percent) were black (compared with 50 percent nationally), 31 percent were female (compared with 26 percent nationally), and 43 percent acquired HIV through heterosexual sex (vs. 28 percent nationally).

Only 25 percent of the group had private health insurance. Women on average had been diagnosed with HIV more recently than men (mean 6.1 vs. 7.1 years ago), were less likely to have a suppressed viral load at baseline (36 vs. 51 percent), and tended to be less likely to be on ART if eligible (86 vs. 92 percent). Blacks had been diagnosed with HIV more recently than whites (mean of 6.4 vs. 7.6 years), were more likely to have a CD4 cell count indicating advanced disease (27 vs. 14 percent), were less likely to have a suppressed viral load (39 vs. 60 percent), and were less likely to receive ART if eligible (88 vs. 94 percent).

Only one-fourth of this group (26 percent) was not affected by childhood trauma, mental illness, or substance abuse. Over half had suffered three or more different types of trauma in their lifetime, 40 percent had a history of sexual or severe physical abuse before age 18, and 54 percent were currently diagnosed with posttraumatic stress disorder or a probable psychiatric disorder. Also, 14 percent became intoxicated at least weekly or had used illicit drugs (beyond marijuana) in the past 9 months. This group is at high risk for poor HIV clinical outcomes, conclude the researchers.

Mugavero, M.J., Pence, B.W., Whetten, K., and others. (2007). "Predictors of AIDS-related morbidity and mortality in a Southern U.S. cohort." *AIDS Patient Care and STDs* 21(9), pp. 681-690.

Patients with HIV infection who had suffered more psychosocial trauma, had lower baseline CD4 counts (an indicator of more advanced disease progression), and who had spent less time on ART, were more likely to experience an HIV-related opportunistic infection or death 17 to 34 months later, found this study. Use of ART has dramatically reduced so-called opportunistic infections among persons with HIV/AIDS. Opportunistic infections, such as certain types of pneumonia or primary central nervous system lymphoma, typically develop when CD4 cell count drops below 200, and indicate advanced disease progression.

Ten percent of patients studied suffered an HIV-related opportunistic infection or death during followup. After adjusting for other factors, patients who had suffered more psychosocial trauma had nearly twice the likelihood and those without private health insurance had nearly three times the likelihood of experiencing an HIV-related infection or death. Patients who had lower baseline CD4 counts and who spent less time on ART were also more likely to develop an opportunistic infection or die.

These findings demonstrate a definite link between psychosocial trauma and development of opportunistic infections or death among patients with HIV/AIDS, even after adjusting for baseline CD4 counts and use of ART. These findings are striking, given the extremely high prevalence of sexual and physical abuse and other traumas among these HIV/AIDS patients in the Deep South, note the researchers. They suggest that early traumatic experiences are associated with later mental illness, substance abuse, and ART nonadherence, which place these patients at increased risk of poor health outcomes. ■

Acute Care/Hospitalization

Patients with heart problems fare better at cardiac hospitals than general hospitals

Patients who suffer heart attacks or congestive heart failure fare slightly better if they are in hospitals that specialize in cardiac care instead of general hospitals, a new study reveals. Brahmajee K. Nallamothu, M.D., M.P.H., of Ann Arbor Veterans Affairs Medical Center and the University of Michigan Medical School and colleagues compared the 30-day survival of Medicare patients who had heart attacks or congestive heart failure and were seen at one of 16 cardiac (1,912 patients) or 121 general hospitals (13,158 patients) in 2003.

continued on page 19

Cardiac hospitals

continued from page 18

Researchers found a lower 30-day mortality rate for patients with heart attacks who were treated in cardiac instead of general hospitals (14.8 vs. 16.2 percent). Similarly, the mortality rate for patients with congestive heart failure was 10.7 percent for cardiac hospitals and 11.4 percent for general hospitals. These modest differences in survival may be explained by the types of patients the different hospitals care for, the authors suggest. For instance, patients seen at general hospitals may have other health conditions that require the multidisciplinary care those hospitals provide, precluding them from being seen at a specialty hospital. This "cherry picking" may give the specialty hospitals better outcome scorecards and force general hospitals to take on more severely ill patients and more financial risk, the authors suggest.

On the other hand, specialty hospitals may score better than general hospitals, because they allow providers to concentrate on a specific area and to develop skilled staff and resources to deliver specialized care. Another possibility is that physicians who set up cardiac hospitals may just be better physicians than their counterparts who practice elsewhere. Although this study raised these issues, it was unable to document the extent to which these differences were explained by these factors. A better understanding of these issues and the dissemination of approaches to care that are unique to these facilities may ultimately improve care provided to all cardiac patients. This study was funded in part by the Agency for Healthcare Research and Quality (HS15571).

See "Acute myocardial infarction and congestive heart failure outcomes at specialty cardiac hospitals," by Dr. Nallamothu, Yongfei Wang, M.S., Peter Cram, M.D., M.B.A., and others in the November 13, 2007 *Circulation* 116, pp. 2280-2287. ■

Life challenges, not discharge problems, cause repeat hospitalizations

Patients who end up back in the hospital with the same condition that put them there just months earlier may need more than medical advice when they're discharged, a new study finds. Researchers interviewed 21 "rehospitalized" patients at Boston Medical Center over a 4-month period. A rehospitalized patient was one who had been previously admitted within 6 months for the same condition. Study participants were mostly low-income minorities who lived in the inner city of Boston.

Previous studies claim that poorly executed discharges are the reason one in four patients end up back in the hospital within 90 days of discharge. Examples of discharge problems include patients' lack of health literacy, poor coordination between the hospital and the patients' regular care providers, and inadequate followup after discharge. However, this study found that patients' life circumstances caused readmission more often than these discharge problems.

Patients could readily explain their conditions, list their medications, and repeat the medical instructions they received. Because of their home lives, however, the behavioral changes they were instructed to make were not simple tasks. For example, single mothers who were told to rest after their discharge often found they could not locate stand-in caregivers for their children. Alcoholic and diabetic patients found changing their drinking and eating habits difficult, because stressful living situations left them depressed.

The discharge process should include assessing what social support a patient needs to be successful after a hospitalization, the authors suggest. Providing information on nonprofit organizations that provide counseling, meals, child care, or housekeeping services could also reduce rehospitalization rates. This study was funded by the Agency for Healthcare Research and Quality (HS14289 and HS15905).

See "Understanding rehospitalization: Can hospital discharge be modified to reduce recurrent hospitalization?" by Lee Strunin, Ph.D., Meg Stone, M.P.H., and Brian Jack, M.D., in the September/ October 2007 *Journal of Hospital Medicine* 2(5), pp. 297-304. ■

Chest pain is a leading reason for hospital emergency department visits

Chest pain that does not appear to be a heart attack when examined in hospital emergency departments accounted for 1.6 million visits in 23 States in 2005. About one-fifth of the cases—345,000 people—were admitted to hospitals for observation or treatment.

"Nonspecific" chest pain was the fourth most common cause of emergency visits, after sprains and strains (2.4 million visits), bruises and other superficial injuries (2.0 million), and abdominal pain (1.7 million). In each of those categories, however, less than 5 percent of patients were admitted to hospitals. Additional highlights of the analysis show that:

- Rates of emergency department visits were nearly 2 times higher among persons from the poorest communities compared with those from the wealthiest communities (about 481 per 1,000 persons vs. 261 per 1,000 persons).
- Five additional conditions prompted at least 1 million emergency visits: back problems (1.4 million), leg and arm open wounds (1.3 million); headaches, including migraines (1.2 million); nose and throat infections, such as sinusitis and strep throat (1.1 million); and skin infections and urinary tract infections (1.0 million each). Of these, urinary tract infections were most likely to require hospitalization (18 percent).
- Among emergency department visits that resulted in hospitalization, pneumonia topped the list of reasons for the visit. Two-thirds of the 669,500 people who came to emergency rooms were admitted.
- The chances of being admitted were smaller for uninsured patients (roughly 7 percent were admitted) than patients with private insurance or Medicaid (about 14 percent each) or Medicare (nearly 40 percent). Patients who were uninsured accounted for about 18 percent of hospital emergency department visits.

This summary is based on data in *Emergency Department Visits for Adults in Community Hospitals from Selected States, 2005.* The report uses statistics from the Healthcare Cost and Utilization Project State Emergency Department Databases and State Inpatient Databases, which contain statistics from 23 States. For more information, go to www.ahrq.gov/data/hcup/. ■

More consumers are buying medicines by mail

Of Americans who buy prescription drugs, the proportion who purchase them from mail order pharmacies rose from just under 9 percent in 2000 to just over 13 percent in 2005. During the same time frame, the proportion of Americans who bought their prescription medicines from other sources declined: drug stores (from 65 percent to 61 percent); pharmacies in clinics, HMOs, or hospitals (from 15 percent to 13 percent); and pharmacies inside supermarkets and super stores like Target and Wal-Mart stores (from 32 percent to 28 percent). About 37 percent of those who purchased drugs from mail order pharmacies in 2005 were age 65 and older, nearly 88 percent were white, almost 87 percent had private health insurance, and about 75 percent had at least one chronic illness.

These data are taken from the Medical Expenditure Panel Survey, 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, see *Comparing Population Characteristics of Persons Purchasing Prescribed Drugs from Mail Order Pharmacies with Persons Purchasing Prescribed Drugs from Others Outlets, 2005* at www.meps.ahrq.gov/mepsweb/. ■

Nearly one in three women have babies by C-section

The proportion of American women having their babies delivered by cesarean section (C-section) jumped to nearly one in three in 2005. In 1995, the proportion had been one in five. In addition:

- About 1.3 million women gave birth via cesarean section in 2005, a 62 percent increase over the 800,000 C-sections performed in 1995.
- The increase occurred as vaginal deliveries among women who gave birth in hospitals declined from about 3 million in 1995 to 2.9 million in 2005, a decrease of 3 percent.
- The sharpest decline in vaginal deliveries in hospitals was among women who had previously given birth via C-section. Vaginal deliveries among those women dropped 60 percent, from 157,200 in 1995 to 62,300 in 2005.
- Hospitals charged $21.3 billion for patient stays involving vaginal delivery in 2005 and $17.4 billion for those involving birth by C-section.

C-section is a surgical method usually performed when a vaginal delivery would put the baby's or mother's life or health at risk. Increasingly, however, the procedure is performed during births that would otherwise have been normal.

This summary is based on data in *HCUP Facts and Figures*, which highlights the latest data from the Agency for Healthcare Research and Quality's Healthcare Cost and Utilization Project (HCUP) on a range of hospital inpatient care subjects, including leading reasons for hospitalization, such as childbirth, diabetes, and heart conditions; weight-loss, cardiac and other surgical procedures; and hospital costs. For more information, go to www.ahrq.gov/data/hcup/. ■

Mental health woes remain one of the top reasons for doctor visits

Depression and other mental health problems prompted 156 million visits to doctors' offices, clinics, and hospital outpatient departments in 2005. Problems with mental health were one of the top three reasons for Americans to seek treatment. Also, the number of mental health visits has increased 30 percent since 1996.

The other top reasons for getting non-emergency ambulatory care in 2005 included:

- Back problems prompted 139 million visits and cost $17.6 billion.
- Trauma-related disorders, such as fractures, prompted 133 million visits that cost $27 billion.
- Chronic obstructive pulmonary disease and asthma, grouped together, resulted in 93 million visits that cost $12 billion.
- High blood pressure resulted in 79 million visits and cost $10 billion.

These data are taken from the Medical Expenditure Panel Survey (MEPS). Go to the MEPS Web site for tables with the medical care costs of other conditions in 2005 at www.meps.ahrq.gov/mepsweb/ and select "Summary Data Tables" under the heading "Data and Statistics." ■

Announcements

Task Force recommends against screening for chronic obstructive pulmonary disease using spirometry

Adults without symptoms of chronic obstructive pulmonary disease (COPD) should not be screened for the disease using spirometry, according to a new recommendation from the U.S. Preventive Services Task Force. The recommendation and the accompanying summary of evidence are posted online in the *Annals of Internal Medicine* and appear in the April 1, 2008, print edition of the journal.

COPD is a lung disease in which the airways in the lungs are damaged, making it hard to breathe. COPD is the fourth leading cause of death and affects more than 5 percent of the U.S. population. Current or past cigarette smoking is the most common cause of COPD. Breathing in chemicals or other kinds of lung irritants over a long period of time may also cause or

continued on page 22

Spirometry

continued from page 21

contribute to COPD, and individuals over the age of 40 are also at higher risk for the disease. Screening for COPD is most often performed using spirometry, a lung function test that uses a spirometer machine. Spirometry is performed by having a patient breathe into a tube attached to a spirometer machine, which calculates the amount of air the lungs can hold and the rate that air can be inhaled and exhaled. The results of the test are compared with those of healthy individuals of similar height and age and of the same gender and race.

The Task Force found that the benefits of screening individuals without symptoms of COPD were very small. Approximately 400 adults between the ages of 60-69 would need to be screened in order to identify a single patient who may later develop COPD symptoms severe enough to require immediate medical care. The Task Force also found that spirometry can substantially overdiagnose COPD in people over the age of 70 who have never smoked and can produce some false positives in younger adults. In those patients experiencing symptoms of COPD, including coughing that doesn't go away, coughing up large amounts of mucus, shortness of breath, wheezing, and chest tightness, spirometry may be used to confirm a dignosis of COPD. The Task Force found evidence that the diagnosis did not have an impact on the number of patients who quit smoking, nor could they find evidence that it increased the number of patients who received the flu vaccine. Quitting smoking is the single most important thing a patient can do to slow the progression of the disease, and there is some evidence that getting vaccinated against the flu can prevent worsening of COPD symptoms.

The Task Force is the leading independent panel of experts in prevention and primary care. The Task Force, which is supported by the Agency for Healthcare Research and Quality (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. The Task Force recommends against screening adults for COPD using spirometry (D recommendation). The recommendations and materials for clinicians are available on the AHRQ Web site at www.ahrq.gov/clinic/uspstf/uspscopd.htm.

Editor's note: 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. ■

National Conference on Reducing Diagnostic Error in Medicine is May 31–June 1

The Agency for Healthcare Research and Quality and the American Medical Informatics Association are co-sponsoring the first national meeting dedicated to diagnostic errors in medicine May 31-June 1, 2008 in Phoenix, Arizona. The goals of the meeting are to summarize the current state of the field and approaches to reducing diagnostic errors, examine the role of clinical decision support systems in addressing diagnostic errors, identify and discuss ongoing research on diagnostic errors, stimulate creative thought directed at reducing harm from diagnostic errors, and establish a community of stakeholders interested in reducing diagnostic errors. In addition, experts plan to explore both system-related contributions to errors and cognitive origins. For conference details and further information, go to www.amia.org/meetings/s08/dem.asp. ■

Ay, H., Benner, T., Arsava, E.M., and others. (2007). "A computerized algorithm for etiologic classifications of ischemic stroke. The causative classification of stroke system." (AHRQ grant HS11392). ***Stroke*** **38, pp. 2979-2984.**

Etiologic classification of ischemic stroke is important in both patient care and stroke research. Since stroke is a heterogeneous disorder with multiple potential causes, the reliable classification of a stroke's cause is a complex task. In order to facilitate classification in multicenter settings, the researchers developed a computerized Causative Classification System (CCS), derived from their evidence-based classification algorithm (SSS-TOAST). The CCS uses clinical, epidemiological, and diagnostic data to determine stroke type in five major categories (large artery atherosclerosis, cardio-aortic embolism, small artery occlusion, other causes, and undetermined causes). Five neurologists evaluated its reliability through assessment of 50 ischemic stroke patients. The neurologists' expert opinions on stroke subtype were different from the CCS assignment in only 6 of 250 ratings (2.4 percent). The high interexaminer and expert-CCS agreement rates strongly suggest a potential use for automated CCS for classifying the cause of stroke in multicenter settings.

Bao, Y., Fox, S.A., and Escarce, J.J. (2007, June). "Socioeconomic and racial/ethnic differences in the discussion of cancer screening: 'Between-' versus 'within-' physician differences." (AHRQ grant HS10770). ***HSR: Health Services Research*** **42(3), pp. 950-970.**

Researchers found that patients with less than a high school education were far less likely than college graduates to have discussed screening for colon, breast, and prostate cancer during medical visits with the same physicians. Patients' race/ethnicity also influenced discussion of cancer screening. Asians were much less likely than whites to discuss fecal occult blood testing for colon cancer, and prostate-specific antigen testing for prostate cancer. Black women were more likely than white women to discuss mammogram screening for breast cancer. The findings were based on patient and physician surveys of 2 community trials of 5,978 patients aged 50 to 80 treated by 191 primary care physicians who practiced in Southern California.

Clancy, C. M., Isaacson, S., and Henriksen, K. (2007). "Design of the physical environment for changing healthcare needs." ***Health Environments Research & Design Journal*** **1(1), pp.10-11.**

In an editorial in the first issue of *Health Environments Research & Design Journal*, Carolyn M. Clancy, M.D., Director of the Agency for Healthcare Research and Quality, and colleagues comment on improving the design of the health care environment. The physical environment of health care—including light, noise, air quality, toxic exposures, temperature, humidity, wayfinding, and aesthetics—as well as other workplace design features and physical layouts have an impact on staff communication and job satisfaction, as well as patient outcomes. Evidence-based design principles can help to tailor health care environments to the needs of multiple users. For example, decreasing distractions and noise leads to health care workers making fewer mistakes. However, the optimal methods for designing spaces that decrease noise and distractions remain to be discovered. More research is needed on this and related questions, and it is important that there be a central resource for architects, CEOs, and researchers to retrieve needed information. Reprints (AHRQ publication no. 08-R027) are available from AHRQ.*

Clancy, C.M., Kiley, J.P., and Weiss, K.B. (2007). "Eliminating asthma disparities through multistakeholder partnerships." ***CHEST*** **132, pp. 1422-1424.**

The Agency for Healthcare Research and Quality (AHRQ) has long been concerned about the burden of asthma and has sponsored research on the quality of care for children in the Medicaid programs and in the State Children's Health Insurance Program, according to AHRQ Director Carolyn M. Clancy, M.D. In addition, AHRQ encourages quality improvement and disparity reduction interventions at the health plan and policy levels. To this end, AHRQ has worked with six State asthma coalitions, five of them located in State government offices. Other Federal agencies are also involved, including the Centers for Disease Control and Prevention and the National Heart, Lung, and Blood Institute. A national workshop documented in a supplement to this issue of CHEST underscores the necessity of a sustained effort by multiple stakeholders: public and private, national and regional, and local to reduce asthma disparities. Reprints

continued on page 24

continued from page 23

(AHRQ publication no. 08-R045) are available from AHRQ.*

Clancy, C.M. and Slutsky, J.R. (2007). "Guidelines for guidelines: We've come a long way." *CHEST* 132, pp. 746-747.

Clinical practice guidelines have increasing potential to influence how medical care is delivered and measured. An article in this issue of CHEST outlines the approach to guideline development taken by the American College of Chest Physicians (ACCP), and describes an evolution in processes and methodologies for developing, assessing, and implementing clinical practice guidelines. The ACCP has outlined a detailed algorithm for managing many aspects of guideline development, including conflicts of interest. This algorithm provides clear direction for both guideline developers and users. Guidelines, to be credible, must be updated, and the ACCP has also addressed this issue. Guideline development has advanced steadily, embracing more rigorous evidence standards, explicit methods, broad disciplinary participation, and recognition of the importance of understanding patient perspectives. Health information technology, including the Internet, is helping to bring guidelines closer to the point of care. Since patients frequently have multiple illnesses, the next frontier in guideline development will be developing integrated guidance for complex cases. Reprints (AHRQ publication no. 08-R042) are available from AHRQ.*

Cohen, L.A., Harris, S.L., Bonito, A.J., and others. (2007, Winter). "Coping with toothache pain: A qualitative study of low-income persons and minorities." *Journal of Public Health Dentistry* 67(1), pp. 28-35.

A study by Richard J. Manski, D.D.S., Ph.D., M.B.A., of the Agency for Healthcare Research and Quality, analyzed discussions from 8 focus group sessions with 66 low-income white, Hispanic, and black adults. This group had suffered tooth pain in the past year and used self-care or care from a nondentist to relieve their pain. These individuals described their toothache pain as intense, throbbing, miserable, or unbearable. The pain was bad enough to affect their ability to perform normal activities, such as their job, housework, social activities, sleeping, talking, and eating, and made them depressed, anxious, mean, irritable, and cranky. Some resorted to getting arrested to get dental care to relieve the pain. Others pulled their teeth out with pliers, or even rinsed with caustic substances such as gasoline, kerosene, and rubbing alcohol. Nearly two-thirds (63 percent) of the focus group participants said they never visited the dentist or only visited when they had a dental problem. However, they all had a history of multiple toothaches, with 36 percent having suffered 4 to 9 toothaches and 27 percent reporting 10 or more. Most reported the high cost of dental care as a predominant barrier to seeking care from a dentist. Some also cited fears or distrust of dentists and dental practice, problems obtaining transportation, long waiting lists for appointments, and lack of sick leave. Reprints (AHRQ publication no. 07-R072) are available from AHRQ.*

Coopey, M., Nix, M.P., and Clancy, C. (2007). "Evidence-based practice: ARHQ's role in generating and disseminating knowledge." *AORN Journal* 86(5), pp. 857-860.

Evidence-based practice depends on a research-based body of knowledge. This body of knowledge provides the foundation for clinical practice guidelines and care performance measures. The Agency for Healthcare Research and Quality (AHRQ) assists in providing this foundation by focusing on the development of evidence; synthesis of findings, dissemination, and implementation of those findings; and evaluation of health care quality. For example, since 1989, AHRQ has awarded 174 grants to nurse principal investigators whose research contributes to the evidence base of nursing. In addition, many of the reports developed under AHRQ's Evidence-Based Practice Program apply to nursing practice, including one recently released on nurse staffing and the quality of patient care, a topic suggested by the American Organization of Nurse Executives. Another AHRQ initiative, the National Guidelines Clearinghouse, provides detailed information on clinical practice guidelines. The Clearinghouse currently contains 105 guidelines developed by 13 nursing organizations and departments. Reprints (AHRQ publication no. 08-R023) are available from AHRQ.*

Go, A.S., Yang, J., Gurwitz, J.H., and others. (2007, August). "Comparative effectiveness of beta-andrenergic antagonists (atenolol, metoprolol tartrate, carvedilol) on the risk of rehospitalization in adults with heart failure." (AHRQ contract 290-05-003). *American Journal of Cardiology* 100, pp. 690-696.

Over half (54 percent) of elderly patients hospitalized for heart failure were rehospitalized within a year, according to a new study. The rehospitalization rate was similar

continued on page 25

continued from page 24

regardless of which of three types of beta-blockers they were taking: atenolol, short-acting metoprolol tartrate, or carvedilol. However, patients taking other beta-blockers had a 31 percent higher risk of rehospitalization and those taking no beta-blocker had a 12 percent higher risk of rehospitalization, after adjusting for factors such as cardiovascular history, other coexisting illnesses, and age. Even among a subgroup of 664 patients with known left ventricular systolic heart failure, who were taking both digoxin and a beta-blocker, readmission rates were similar for those taking atenolol, metoprolol tartrate, or carvedilol.

Researchers used pharmacy and hospital discharge databases to compare the risk of rehospitalization for heart failure associated with receipt of different beta blockers in 7,883 adults hospitalized for heart failure within two large health plans in 2001 and 2002.

More than two-thirds (68 percent) of this group received a beta-blocker at hospital discharge and/or during the first 12 months after discharge. The beta-blocker prescribed was usually atenolol, shorter-acting metoprolol tartrate, or carvedilol.

Goldman, L.E., Vittinghoff, E., and Dudley, R.A. (2007, June). "Quality of care in hospitals with a high percent of Medicaid patients." (AHRQ grant HS16117). *Medical Care* 45(6), pp. 579-583.

Researchers found that acute care hospitals with a high percentage of Medicaid patients had lower adherence than other nonteaching hospitals on 10 quality of care indicators for 3 conditions: heart attack, congestive heart failure, and community-acquired pneumonia (CAP). The researchers examined compliance with 10 processes of care for the 3 conditions among acute care hospitals that participated in the first Hospital Compare public report released in November 2004 and the 2004 American Hospital Association hospital survey. Among the 2,874 nonteaching hospitals, high Medicaid hospitals (1 standard deviation above the national mean, or more than 28 percent Medicaid patients) prescribed beta-blockers and aspirin less often at discharge for heart attack patients and were also less likely to administer antibiotics on time in CAP. These differences persisted after adjusting for potential confounders of this relationship such as hospital ownership, location, size, and region. However, among teaching hospitals there were few differences between high Medicaid and other hospitals.

Hall, B.L., Hirbe, M., Waterman, B., and others. (2007). "Comparison of mortality risk adjustment using a clinical data algorithm (American College of Surgeons National Surgical Quality Improvement Program) and an administrative data algorithm (Solucient) at the case level within a single institution." (AHRQ grant HS11913). *Journal of the American College of Surgeons* 205(6), pp. 767-777.

In evaluating health care outcomes to improve quality of care, risk adjustment methods based on either clinical data or administrative data sets may be used. However, there is some controversy from studies showing that administrative (claims-based) data could be less accurate, making risk adjustment less reliable. This study compares the American College of Surgeons' National Surgical Quality Improvement Program (NSQIP) risk adjustment algorithm, based on a strictly clinical data approach, to Solucient's risk adjustment algorithm based on a strictly administrative data approach. Both methods were used with a sample of 1,234 surgical patients at an academic teaching hospital. Actual mortality in this group was 3.32 percent; however, the NSQIP predicted mortality (2.99 percent) was lower and Solucient predicted mortality (3.83 percent) was higher than actual mortality. With respect to mortality risk estimation, the clinically-based NSQIP and the claims-based Solucient systems performed comparably. The authors concluded that because the use of claims-based data is potentially less expensive than clinical data, the Solucient-type algorithm should continue to be investigated.

Handrigan, M. and Slutsky, J. (2007). "Funding opportunities in knowledge translation: Review of the AHRQ's 'Translating Research into Practice' initiatives, competing funding agencies and strategies for success." *Academic Emergency Medicine* 14, pp. 965-967.

This article provides an overview of the Agency for Healthcare Research and Quality's (AHRQ) knowledge translation activities and relates them to the field of emergency medicine. Translating research into practice is the key to creating sustainable improvements in emergency medicine and other health care settings. However, scientific evidence alone rarely leads to improvements in practice or changes in policy. Beginning in 1999, AHRQ launched a two-phase grant program called Translating Research Into Practice (TRIP I and TRIP II). TRIP I was intended to develop new approaches that are effective in promoting the use of evidence in clinical settings. TRIP

continued on page 26

Research briefs

continued from page 25

II was intended to develop strategies for translating research into practice through the development of partnerships between researchers and health care systems and organizations. Investigators interested in funding opportunities in this area of concern are encouraged to visit AHRQ's Web site at www.ahrq.gov/fund/ragendix.htm. The role of emergency medicine in health services research and translating research into practice brings a unique perspective and a natural forum for linking evidence to action. Reprints (AHRQ publication no. 08-R043) are available from AHRQ.*

Harrison, M.I., Henriksen, K., and Hughes, R.G. (2007). "Improving the health care work environment: Implications for research, practice, and policy." *Joint Commission Journal on Quality and Patient Safety* 33 (11 Suppl), pp. 81-84.

This article reviews a group of articles in the same issue that focus on different aspects of improving the health care work environment. The articles address the following subjects: the implementation of work-hour limits, enhancing work flow to reduce crowding, nurse staffing in acute care settings, organizational climate and health care outcomes, the role of the physical environment in Crossing the Quality Chasm, and a sociotechnical systems approach to improving the work environment. An important implication for future research is the need to know more about how, where, and when such improvement practices work. Among the implications for practice are the importance of limiting work hours, improving schedules, and providing sleep hygiene training (a method to correct things a person does on a regular basis that disturb their sleep) to help combat clinician fatigue. Also, teams planning construction or renovation of health care facilities should include people with experience in evidence-based design. Suggestions for policymakers and payers include strict limits on the length of work shifts, greater emphasis on public reporting, and creation of incentives for demonstrated work environment improvements. Reprints (AHRQ publication no. 08-R026) are available from AHRQ.*

Harrison, M.I., Henriksen, K., and Hughes, R.G. (2007). "Improving the health care work environment: A sociotechnical systems approach." *Joint Commission Journal on Quality and Patient Safety* 33 (11 Suppl), pp. 3-6.

This article introduces a journal supplement containing a series of articles that synthesize findings on key elements in the hospital work environment and suggest operational and policy challenges in each area. These articles were based on research supported by the Agency for Healthcare Research and Quality (AHRQ) and other government and private agencies. The authors, all AHRQ researchers, outline a sociotechnical framework to provide context for the themes examined in this issue. The sociotechnical system consists of a social subsystem (people, tasks, and organization), a technical subsystem (technologies, equipment, and physical settings), and social and organizational context (regulatory forces, payers, markets, suppliers, along with science, technology, social norms, and values). All but one of the articles focus on the organizational component of the sociotechnical system. The sociotechnical approach emphasizes work environments as products of interactions among system components, stresses mutual relations between technologies and workplace processes and conditions, and highlights potential influences of forces outside of provider organizations such as markets, regulators, and payers. Reprints (AHRQ publication no. 08-R022) are available from AHRQ.*

Hughes, R.G. and Clancy, C.M. (2007). "So what? The challenge of doing 'need to know' versus 'would like to know' research." *Applied Nursing Research* 20, pp. 210-213.

Researchers need to be able to differentiate between research that addresses high-priority issues and research whose findings may be interesting, but are not necessarily usable or actionable. They need to be able to define who is experiencing positive or adverse effects from the current organization and processes of health care, and who wants the information derived from the research and for what purposes. Funding needs to be directed toward research that will facilitate evidence-based improvements in health care. It is important to distinguish critical research gaps that are preventing decisionmakers from improving the processes and effects of health care, a process that itself necessitates research. The goal of the Agency for Healthcare Research and Quality (AHRQ) in supporting research on the organization, delivery, and cost of care is to actually use what we know to be safe and of high quality. ARHQ seeks to bridge the gap between the information needs of decisionmakers and the nuances of research findings. Reprints (AHRQ publication no. 08-R024) are available from AHRQ.*

continued on page 27

Hughes, R.G. and Clancy, C.M. (2007). "Improving the complex nature of care transitions." *Journal of Nursing Care Quality* 22(4), pp. 289-292.

The potential for errors due to handovers and patient transfers—collectively known as "care transitions" is enormous. A key strategy for reducing errors is to examine the processes that occur when patients move from one site or clinician to the next. The Agency for Healthcare Research and Quality (AHRQ) has funded numerous studies assessing efforts to improve patient transfers from one site or one type of provider to another, according to AHRQ Director Carolyn Clancy, M.D. Coordination of care is important since it often involves many individuals—the patient, a friend or family members, and various clinicians and providers. The possibility of medication errors is also a concern during admission, transfer, and discharge. Avoiding communication failures through the accurate two-way communication of clear and up-to-date information is critical. The growing use of processes such as medication reconciliation (reconciling new medications prescribed during care transitions, such as from the emergency department to an intensive care unit, with a patient's current medications) and the Situation-Background-Assessment-Recommendation technique is helpful, but challenges remain. Reprints (AHRQ publication no. 08-R014) are available from AHRQ.*

Lambert, M.C., Essau, C.A., Schmitt, N. and others. (2007). "Dimensionality and psychometric invariance of the Youth Self-Report Form of the Child Behavior Checklist in cross-national settings." (AHRQ grant HS08385). *Assessment* 14(3), pp. 231-245.

The Youth Self-Report (YSR) form and other forms that are part of the Child Behavior Checklist are considered well-normed measures of children's behavioral and emotional problems within the United States. Yet there is little evidence that the YSR form is as psychometrically constant in other national settings in which it is widely used. The researchers thus decided to test this form with adolescent children who were not referred for emotional and behavioral problems in German and Jamaican schools. After administering the form to hundreds of these schoolchildren in both countries, they used item-response theory (IRT) procedures to reveal whether items on a focus dimension psychometrically varied across groups, a phenomenon known as "bias." The study found that the current YSR factor model might not be appropriately specified for nonreferred adolescents' ratings in Germany and Jamaica. In addition, most items seemed incapable of measuring levels of functioning across the two nations on an identical metric. More accurate and economical assessment might be achieved if psychometric variance and redundancy were addressed and children's psychological severity levels were matched with items measuring this severity.

Leppert, P.C., Legro, R.S., and Kjerulff, K.H. (2007, September). "Hysterectomy and loss of fertility: Implications for women's mental health." (AHRQ grant HS06865). *Journal of Psychosomatic Research* 63(3), pp. 269-74.

Young women who wanted to have children but needed a hysterectomy were more likely to put off the surgery and seek mental health counseling, a new study finds. Researchers interviewed 1,140 Maryland women before they underwent hysterectomies in 1992 and 1993 and followed up with them for 2 years after surgery. Of the women interviewed, 120 (10.5 percent) said they would have liked to have children, 40 (3.5 percent) said maybe they would have liked to have children, and 980 (86 percent) said they were fine with their baby days being over.

The women who wanted children tended to put off their surgeries for 4.5 years, despite severe pelvic pain. Women who wanted children or were ambiguous about the decision tended to be young; had never given birth; had uterine fibroids and indications of endometriosis; and had high test scores for depression, anxiety, anger, and confusion. The women who wanted children were twice as likely to have sought mental health counseling in the 3 months before surgery. Further, 2 years after surgery, these women were more likely to be depressed when compared with women who did not want children.

Liang, H., Chen, D., Wang, Y., and others. (2007). "Different risk factor patterns for metabolic syndrome in men with spinal cord injury compared with able-bodied men despite similar prevalence rates." (AHRQ grant HS11277). *Archives of Physical Medicine Rehabilitation* 88, pp.1198-1204.

Since men with spinal cord injuries (SCI) have increased mortality from type 2 diabetes and cardiovascular disease, it was thought that they had a higher rate of metabolic syndrome than able-bodied men. Metabolic syndrome is a cluster of risk factors for diabetes

continued on page 28

continued from page 27

and cardiovascular disease that includes abdominal obesity, elevated triglycerides, low high-density lipoproteins (HDL), elevated blood pressure, and elevated glucose. Researchers found, however, that men with SCI do not appear to have higher rates of metabolic syndrome than able-bodied men. They compared risk factors associated with metabolic syndrome and other risk factors among 185 men with SCI (between 20 and 59 years of age) who were at least one year postinjury with a control group of similar aged able-bodied men. Men with SCI were at higher risk for abdominal obesity and low HDL, but had a lower risk for elevated levels of glucose, total cholesterol, and triglycerides. There were no differences between the two groups for a history of hypertension, diabetes, or medication use for these disorders. The researchers conclude that for men with SCI and metabolic syndrome, future interventions should focus on abdominal obesity, low HDL, and other nontraditional risk factors.

Longo, D.R., Hewett, J.E., Ge, B., and Schubert, S. (2007, Summer). "Rural hospital patient safety systems implementation in two states." (ARHQ grant HS11885). *Journal of Rural Health* 23(3), pp. 189-197.

A study of two States reveals that rural hospitals are less likely than urban hospitals to implement patient safety systems such as computerized physician order entry (CPOE), alert systems, medication administration procedures, and error reporting systems. The researchers surveyed acute care hospitals in Missouri and Utah in 2002 and 2004. Rural hospitals had a lower mean score than urban hospitals for CPOE systems, computerized test results, and assessment of adverse events (33.63 vs. 46.39); use of specific patient safety policies (29.58 vs. 32.22); and use of data in patient safety programs (34.18 vs. 40.21). They also had lower mean scores for drug storage, administration, and safety procedures (69.26 vs. 75.19); manner of handling adverse event/error reporting (13.43 vs. 15.89); prevention policies (7.86 vs. 7.72); and root cause analysis (14.39 vs. 16.37).

Matheny, M.E., Gandhi, T.K., Orav, E.J., and others. (2007, November 12). "Impact of an automated test results management system on patients' satisfaction about test result communication." (AHRQ grant HS11046). *Archives of Internal Medicine* 167(20), pp. 2233-2239.

This study found that patients liked receiving test results via an automated management system that provides centralized test result tracking and facilitates contact with patients. Patients also liked receiving information on the conditions and treatments related to the chemistry, hematology, pathology, radiology, or microbiology tests they took. The automated system was built into the electronic health record system of a network of 26 primary care practices in Massachusetts. The researchers examined 570 patient encounters in both intervention and control practices. Doctors in 13 intervention practices were trained and given access to the physician test results management tool with imbedded patient notification functions. Physicians at the 13 control clinics had to track outpatient test results manually, which often required repeated checks of a patient's record. They were notified of new test results through paper printouts generated by the testing facilities. After adjusting for other factors affecting patient satisfaction such as age and insurance type, patients were nearly 2.4 times more satisfied with test results communication with the automated test management system than without it. They were also nearly 3.5 times more satisfied with the information given them for medical treatments and conditions regarding their test results.

Mosdol, A., Witte, D.R., Frost, G., and others. (2007). "Dietary glycemic index and glycemic load are associated with high-density-lipoprotein cholesterol at baseline but not with increased risk of diabetes in the Whitehall II study." (AHRQ grant HS06516). *American Journal of Clinical Nutrition* 86, pp. 988-994.

This study did not confirm the protective effect of low dietary glycemic index (GI) and glycemic load (GL) diets on the risk of developing type 2 diabetes in a healthy group of middle-aged men and women. A Whitehall II research team examined the associations of dietary GI and GL in 1991-1993 (baseline) among 7,321 middle-aged, nondiabetic British civil servants and development of diabetes 13 years later. The civil servants completed questionnaires about food intake for 13 years. Higher dietary GI and GL were not associated with increased risk of diabetes. On the contrary, higher dietary GL was associated with decreased risk of diabetes. This protective effect of GL remained after adjustments for employment grade, smoking, alcohol intake, and physical activity, and was only moderately weakened by adjustment for total carbohydrate and fiber intake. These findings are consistent with a possible protective role of dietary

continued on page 29

factors on disease risk. However, they do not support the idea that high dietary GI and GL may be a risk factor for type 2 diabetes.

O'Leary, J.F., Sloss, E.M., and Melnick, G. (2007, Summer). "Disabled Medicare beneficiaries by dual eligible status: California, 1996-2001." (AHRQ grant HS10256). *Health Care Financing Review* 28(4), pp. 57-67.

Nonelderly persons with disabilities are expected to comprise nearly 17 percent of the Medicare-insured population by 2010. Over one-third of this group is dually eligible, that is, receives health insurance from Medicare and Medicaid (Federal-State program for low-income persons). A California study from 1996 to 2001 revealed differences in profile and hospital use among dually eligible and Medicare-only beneficiaries in that State.

Dually eligible persons were younger (42 percent aged 18 to 44) than Medicare-only persons (48 percent aged 55 to 63), and fewer were white (66 vs. 76 percent) and enrolled in an HMO (8 vs. 34 percent). Throughout the study period, dually eligible beneficiaries had more hospitalizations than Medicare-only beneficiaries, with the difference in any given year ranging from 56 to 112 more discharges per 1,000 beneficiaries. Dual eligibles, especially blacks, also had longer average hospital stays than Medicare-only patients throughout the period (57 percent more days for those in fee-for-service plans and 30 percent more days for those in HMO plans), with a difference of about 1 day per stay between the two groups.

O'Malley, A.J., Marcantonio, E.R., Murkofsky, R.L., and others. (2007). "Deriving a model of the necessity to hospitalize nursing home residents." (AHRQ HS10645). *Research on Aging* 29, pp. 606-625.

There is widespread variation in nursing home hospitalization rates. Unnecessary hospitalizations should be avoided, since these can be traumatic to the patient and costly for payers. In order to find out the extent to which potentially controllable nonclinical factors contribute to variations in the hospitalization rates, it is first necessary to control for clinical factors. To do this, the authors developed a diagnosis-based model (NeccHosp) for the clinical necessity of hospitalizing a nursing home resident. They used an expert panel of 12 geriatricians to obtain information on the necessity of hospitalizing nursing home residents with common conditions. Using a 9-point scale of the necessity of hospitalization, the experts rated 38 scenarios based on Medicare diagnosis-related groups. The authors found that the most influential factor in the decision to hospitalize is the primary diagnosis, followed by the Do Not Hospitalize advance directive, and then the secondary diagnoses. The NeccHosp model can be used to find out if nursing homes with very high or low hospitalization rates lacked certain resources or had adopted particular policies regarding resident hospitalization.

Poon, E.G., Wald, J., Schnipper, J.L., and others. (2007). "Empowering patients to improve the quality of their care: Design and implementation of a shared health maintenance module in a U.S. integrated healthcare delivery network." (AHRQ grant HS13326). *MedInfo* 12(Pt. 2), pp. 1002-1006.

Researchers developed an online personal health record that lets patients prepare for discussions with their clinicians and communicate with them before a visit. The online system offers patients a portal for renewing prescriptions, looking at medication lists, accessing a health information library, scheduling appointments, and e-mailing providers. The system also reminds patients of health care services that are due, such as checkups, vaccinations, and screening tests. It allows providers to review patient comments before the visit.

From July 2005 to November 2006, 2,779 primary care patients at 7 study sites participated in a study of the system. Of the 970 patients invited to review their records before scheduled visits, nearly three-fourths (72 percent) of the patients did so and passed information to their clinicians. Clinicians reviewed data from 66 percent of patients before their visits. Eighty-one percent of the 437 patients who participated in the survey found the system easy to use and agreed that providers were able to gather accurate information on the patients.

Rosko, M.D. and Mutter, R.L. (2007). "Stochastic frontier analysis of hospital inefficiency. A review of empirical issues and an assessment of robustness." (AHRQ contract. no. 290-04-0005) *Medical Care Research and Review Online* First available at http://mcr.sagepub.com/pap.dtl.

Efforts to study and reduce hospital inefficiency have been hindered by a lack of commonly accepted measures. The authors focus on one approach to measuring hospital inefficiency, stochastic frontier analysis (SFA). Frontier methods, developed to overcome drawbacks associated with other methods, attempt to determine "best practice" relationships by measuring inefficiency as the distance between actual performance and a best

continued on page 30

Research briefs

continued from page 29

practice frontier. The authors sought to discover and summarize best practices for using SFA by reviewing SFA-based studies of U.S. hospitals, and by conducting an empirical analysis of the impact of varying research methods on inefficiency estimates. They conclude that findings from SFA are robust to certain suboptimal strategies (e.g., excluding quality variables because of data constraints). In addition, SFA can be used to identify the correlates of inefficiency, and the inefficiency estimates generated by SFA hold promise for use in schemes that reward efficient providers. Reprints (AHRQ publication no. 08-R021) are available from AHRQ.*

Stewart, K.A., Neumann, P.J., Fletcher, S.W., and Barton, M.B. (2007, August). "The effect of immediate reading of screening mammograms on medical care utilization and costs after false-positive mammograms." ***Health Services Research*****; 42(4), pp. 1464-1482.**

Immediate reading of mammograms and followup on false positives lessened anxiety among women. A group of 1,140 women aged 40 and older participated in the study at 7 sites in the Boston area between February 1999 and January 2001. Radiologists read the mammograms of 564 women immediately, while the films of 576 women were read in batches after the women left. The study found more false positives with the group whose mammograms were immediately read. However, that setting provided quick resolution of false positives and led to significantly lower anxiety (56 percent knew their mammograms were normal when they left the imaging center) than for the women whose mammogram results would be forthcoming (41 percent knew their mammograms were normal). Immediate reading of mammograms increased health care plans' cost by 10 percent ($4.40) because of less efficiency ($2.22) and extra films being taken ($2.18). About half of the additional cost may be attributed to the higher rate of false positives in the immediate reading setting (22.8 percent) compared with the batch reading setting (18.5 percent). Twelve-month costs for the patient, health plan, and society did not significantly differ between the two groups. Reprints (AHRQ publication no. 07-R067) are available from AHRQ.* ■

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