



RESEARCH ACTIVITIES

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Family insurance premiums topped \$12,000 a year in 2008

The cost of insuring a family of four with an employer-sponsored health plan in the United States averaged \$12,298 in 2008, according to the latest data from the Agency for Healthcare Research and Quality (AHRQ). The Agency's new data for private industry further showed that the annual premium for covering an employee and one family member, known as an "employee-plus-one" plan, averaged \$8,535, while it cost \$4,386 for the employee only.

Almost 20 million of the 62.5 million workers enrolled in employer-based insurance in 2008 had family plans, while about 11 million had employee-plus-one plans. The 31.5 million remaining workers had single-coverage plans.

AHRQ's 2008 private-industry data also showed that:

- Nationally, workers enrolled in family plans last year contributed an average of \$3,394 toward the cost of their premiums, compared with \$2,303 for an employee-plus-one policy, and \$882 for a single-coverage plan.
- Across all States, workers in Florida contributed the most for a family plan (\$4,412) while Indiana workers contributed the least (\$2,472); for employee-plus-

one plans, New Hampshire workers contributed the most and Idaho workers the least (\$3,005 and \$1,736, respectively); and for single coverage, New Hampshire workers again contributed the most (\$1,264) and workers in Hawaii the least (\$451).

- Employers paid the entire premiums for about 22 percent of workers with single-coverage plans, just 11 percent for workers with family plans, and 9 percent for those with employee-plus-one plans.

These data are taken from the Insurance Component of the Medical Expenditure Panel Survey (MEPS), a source of detailed information on employer-sponsored health insurance coverage and costs at the National, State, and metropolitan area levels. For more information on the MEPS Statistical Brief #251, *Employer-Sponsored Single, Employee-Plus-One, and Family Health Insurance: Selection and Cost, 2008*, go to www.meps.ahrq.gov/mepsweb/data_files/publications/st251/stat251.pdf. For MEPS summary data on employer-based health insurance, go to www.meps.ahrq.gov/data_stats/summ_tables/insr/state/series_2/2008/ic08_iaa_f.pdf. ■

Access to Care

Bigger tax breaks for insurance premiums expands private coverage for self-employed workers and their spouses

The high cost of health care has long prevented many self-employed workers, who typically must purchase expensive nongroup or small-group coverage, from buying health insurance. Self-employed workers could deduct only 30 percent of health insurance premiums from their taxes in 1996, but were allowed to deduct 100 percent in 2003. This bigger tax subsidy expanded private coverage by 1.1 to 1.7 million self-employed workers and their spouses, according to a new study. As in any subsidy-based effort to expand private coverage, much of the cost arises from transfers to families that would have held coverage even in the absence of a subsidy increase. Nevertheless, the cost per newly insured person was less than \$2,300. This cost is lower than that of more broadly targeted tax subsidies, notes Thomas M. Selden, Ph.D., of the Agency for Healthcare Research and Quality (AHRQ).

He examined data from AHRQ's 1996-2004 Medical Expenditure Panel Survey to examine the impact of the larger tax subsidy on private coverage

among self-employed workers and their families. His analysis finds that the increased tax subsidy was associated with substantial increases in private coverage among self-employed workers and their spouses.

Private coverage for children in self-employed families appeared to be less sensitive to subsidies (consistent with parents being more risk-averse regarding children's coverage). There was some evidence suggesting that tax subsidies may have "crowded out" public coverage, especially among children, although the magnitude and significance of this effect varied across models.

See "The impact of increased tax subsidies on the insurance coverage of self-employed families: Evidence from the 1996-2004 Medical Expenditure Panel Survey," by Dr. Selden, in the Winter 2009 *Journal of Human Resources* 44(1), pp. 115-139. Reprints (AHRQ Publication No. 09-R023) are available from AHRQ.* ■

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

Barbara L. Kass, MPH, CHES
Managing Editor

Gail Makulowich
Assistant Managing Editor
Mark Stanton, Karen Fleming-Michael,
David Lewin, Kevin Blanchet
Contributing Editors
Joel Boches
Design and Production
Karen Migdail
Media Inquiries

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Studies examine the impact of both health insurance and a usual source of care on access to health care

Medicaid and the State Children's Health Insurance Program (SCHIP) have expanded health insurance coverage to millions of low-income U.S. children. Beyond expansions in health insurance coverage, recent efforts to improve children's access to care have focused on securing a "medical home" (usual source of care) for all children. A usual source of care has proven more important than health insurance under certain circumstances. Nevertheless, both health insurance and a usual source of care are needed to provide children with optimal access to needed care, concludes a new study. For low-income parents, insurance coverage was their primary concern, with care access and costs secondary, according to a second study. A third study found that adults with a usual source of care were more likely to perceive interactions with their health care provider as positive. The three studies were led by Jennifer E. DeVoe, M.D., D.Phil., of Oregon Health and Science University, and supported by the Agency for Healthcare Research and Quality (HS16181 and HS14645). They are summarized here.

DeVoe, J. E., Petering, R., and Krois, L. (2008, October). "A usual source of care: Supplement or substitute for health insurance among low-income children?" *Medical Care* 46(10), pp. 1041-1048.

Several policies are being proposed to improve children's access to care. Some policies, such as expanding the number of community health centers, aim to bolster the capacity of the safety net to deliver more services to improve access to a usual source of

care, but still leaving thousands of children without health insurance. Other proposals expand eligibility for SCHIP, or mandate statewide individual health insurance coverage, without a mechanism to ensure adequate provider capacity. However, this study demonstrates that these efforts must be simultaneous. It found that each approach added to the likelihood of children's improved access to needed care.

The researchers analyzed responses to 2,681 surveys of Oregon's food stamp program members to determine if insurance coverage or a usual source of care was superior for ensuring better access of children to necessary care services.

Low-income Oregon children with health insurance and a usual source of care reported the best access to health care. After adjusting for multiple factors, insured children without a usual source of care had double the rate of unmet medical need, nearly seven times the likelihood of no doctor visits in 12 months, and four times the likelihood of problems obtaining specialty care.

Similarly, having a usual source of care but no health insurance was associated with over four times the likelihood of unmet medical needs, nearly three times the odds of unmet prescription needs, and nearly five times the likelihood of problems obtaining dental care. In nearly every case, uninsured children without a usual source of care were at the highest risk of not receiving services.

DeVoe, J. E., Graham, A. S., Angier, H., and others. (2008, November). "Obtaining health care services for low-income children: A hierarchy of needs."

***Journal of Health Care for the Poor and Underserved* 19, pp. 1192-1211.**

In this survey of a random sample of families from Oregon's food stamp population with children eligible for public insurance, low-income parents revealed barriers to obtaining health care services for their children. The researchers examined data from 2,681 completed surveys and written narratives from 722 parents.

Parents of insured children were less likely than parents of uninsured children to report unmet health care needs. Health insurance coverage for both parents and children mattered greatly to this group. Parents were most concerned about health insurance instability, lack of access to services despite having insurance, and unaffordable medical costs. Once a family had secured insurance for the family, they then worried about accessing services (provider acceptance of insurance and insurance coverage of services) and costs.

Insurance coverage, while important, may not provide unfettered access to quality health care for low-income children. This study confirms that parents are aware of this.

DeVoe, J. E., Wallace, L. S., Pandhi, N., and others. (2008, September/October). "Comprehending care in a medical home: A usual source of care and patient perceptions about healthcare communication." *Journal of the American Board of Family Medicine* 21, pp. 441-450.

The ability to understand professional recommendations and to communicate with clinicians is

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Access to health care

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important to the receipt of good quality health care services and patient satisfaction. For adults, having a usual source of care is associated with positive perceptions of health care communications, concludes this study. The research team analyzed nationally representative data from the 2002 Medical Expenditure Panel Survey

to determine patient perceptions about health care communication.

About 78 percent of U.S. adults reported having a usual source of care. Those who did were more likely to report that care providers always listened to them, always explained things clearly, always showed respect, and always spent enough time with them. Among survey respondents with a usual source of care, patients who perceived themselves to have more decisionmaking autonomy were

non-Hispanic, had health insurance coverage, lived in rural areas, and had higher incomes.

The researchers recommend that once patients are provided with a usual source of care, educational programs need to target individual practices to increase awareness among clinicians about how to actively involve all patients' participation, to the extent that they desire, in decisions about their health. ■

Uninsured and partially insured patients with diabetes are less likely to be screened at Federally Qualified Health Centers

Federally Qualified Health Centers (FQHCs) provide medical care to more than 15 million patients each year regardless of their insurance status. A new study nevertheless points to some gaps in center care for partially insured and uninsured patients with diabetes. Jennifer DeVoe, M.D., D.Phil., of Oregon Health & Science University, and colleagues reviewed practice management data obtained from more than 100 FQHCs in Oregon. They focused on whether or not patients with diabetes received four evidence-based preventive care services: screenings for high cholesterol and kidney problems (a complication of diabetes); getting the flu vaccine; and getting a blood test for hemoglobin A1C (HbA1c, average blood-sugar level), an indicator of diabetes.

One-third (32 percent) of all patients with diabetes were vaccinated against the flu. A little over a third (36 percent) were screened for LDL cholesterol and only 21 percent were screened for kidney problems. Compared

with insured patients, those who were uninsured were 19 percent less likely to undergo LDL screening, 27 percent less likely to get a flu shot, and 22 percent less likely to be screened for kidney problems, but just as likely to get tested for HbA1c.

Partially insured patients were 21 percent less likely to get a flu shot, 25 percent less likely to have at least one HbA1c test, and 23 percent less likely to be screened for LDL cholesterol. Even those patients insured for 3 quarters had no better screening rates than those insured for just 1 month. The study was supported in part by the Agency for Healthcare Research and Quality (HS16181).

See "Insurance continuity and receipt of diabetes preventive care in a network of Federally Qualified Health Centers," by Rachel Gold, Ph.D., M.P.H., Dr. DeVoe, Amit Shah, M.D., and Susan Chauvie, R.N., M.P.A.-H.A., in the April 2009 *Medical Care* 47, pp. 431-439. ■

Visit the AHRQ Patient Safety Network Web Site

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

Community health workers can help poor and minority groups access some cancer screening services

Community health workers can improve appropriate use of some cancer screening services among minority and low-income patients and may boost their health knowledge, according to a new evidence report by the Agency for Healthcare Research and Quality (AHRQ). However, the report could not determine other ways these workers influence health behaviors, health outcomes, or use of other health services because of conflicting or absent study findings.

Community health workers often work as extensions of the health care system in medically underserved areas. They are viewed as important to strategies for narrowing health care gaps among low-income, less educated, and minority groups, as well as

Americans as a whole. Because they tend to be from the same background as the patients in the community they serve, community health workers can provide culturally competent health education and counseling about diseases, preventive health care, and use of health services.

Researchers at the AHRQ-supported RTI International-University of North Carolina Evidence-based Practice Center reviewed studies on the effectiveness of community workers compared with other health education methods, such as nurse-led education, mass marketing of health information, and usual care. They found evidence that community health workers can improve people's knowledge of

preventive health measures and boost their use of cervical cancer screening, mammography screening, and asthma self-management. However, the researchers did not find evidence that community health workers were more effective than other health care interventions when it comes to getting people into the clinic for clinical breast examination, colorectal cancer screening, management of their chronic diseases, and for most maternal and child health indicators. The evidence report, *Outcomes of Community Health Worker Interventions*, is available at www.ahrq.gov/downloads/pub/evidence/pdf/comhealthwork/comhwork.pdf. ■

Disparities/Minority Health

Blacks and Hispanics are less likely to receive outpatient rehabilitation after hip fractures

Hip fractures can be debilitating, particularly since more than 90 percent of them occur in persons aged 65 and older. In order for patients to regain their mobility, rehabilitation after hospital discharge is critical. Racial disparities in functioning after hip fracture may be due in part to the higher rate of discharge home for self-care among blacks and Hispanics compared with whites, suggests a new study.

Texas researchers examined the posthospital care of 34,203 patients hospitalized for hip fracture between 2001 and 2005. All were aged 65 or older (mostly women) and on Medicare. The racial breakdown was 95.3 percent whites, 3.5 percent blacks, and 1.3 percent Hispanics.

The majority of patients (60.1 percent) were discharged to a skilled nursing facility or inpatient rehabilitation facility (23.5 percent). Fewer patients were discharged home to a home health care organization or outpatient therapy (5.8 percent), home to self-care (6.2), or other environment (4.4 percent). Hispanics were

nearly three times as likely to be discharged home to self-care as whites (16.4 vs. 5.9 percent). Blacks had nearly 50 percent higher odds of being discharged home to self-care than whites (8.7 vs. 5.9 percent).

The researchers offer some possible explanations as to why these higher rates of discharge home occur among minorities. First, minorities tend to have larger families with younger members who can care for older relatives. Also, minorities tend to have less favorable perceptions of rehabilitation facilities than do the family members of white patients. The study was supported in part by the Agency for Healthcare Research and Quality (HS11618).

See "Disparities in utilization of outpatient rehabilitative care following hip fracture hospitalization with respect to race and ethnicity," by Tracy U. Nguyen-Oghalai, M.D., Kenneth J. Ottenbacher, Ph.D., O.T.R., Young-fang Kuo, Ph.D., and others, in the April 2009 *Archives of Physical Medicine and Rehabilitation* 90, pp. 560-563. ■

Perceived racism among blacks boosts the odds of getting tested for HIV

Blacks remain disproportionately affected by HIV infection. While they represent less than 13 percent of the U.S. population, they account for 42 percent of HIV infections and 54 percent of new diagnoses each year. In a new study, researchers have found that perceived racism is associated with higher odds of HIV testing among blacks. The researchers asked 373 blacks seeking screening or diagnosis for HIV or other sexually transmitted diseases (STDs) to complete a 101-item questionnaire during their visit to a public STD clinic. Questions

were asked about perceived racism, perceived risk of HIV, coping mechanisms for stress, and sociodemographic characteristics.

Regardless of age or gender, the perceived risk of HIV infection was low among participants. Most reported perceptions of everyday racism (90 percent) even after researchers controlled for residential segregation and other factors. The more racism was perceived, the higher the odds of being tested for HIV during a clinic visit.

This result was not explained by patient satisfaction or stress coping mechanisms. The study's findings

challenge assumptions that awareness of racism necessarily inhibits HIV prevention among blacks, note the researchers. Their study was supported in part by the Agency for Healthcare Research and Quality (T32 HS00032).

See "Perceived everyday racism, residential segregation, and HIV testing among patients at a sexually transmitted disease clinic," by Chandra L. Ford, Ph.D., M.P.H., M.L.I.S., Mark Daniel, Ph.D., Jo Anne L. Earp, Sc.D., and others, in the 2009 Supplement 1 of the *American Journal of Public Health* 99(S1), pp. S137-S143. ■

No race and ethnic differences seen in pain severity among patients with long-bone fractures

Numerous studies document underuse of pain-relieving medications for minority patients compared with white patients. However, a new study of patients suffering from long-bone fractures found no major race or ethnicity differences in their self-report of pain severity. Only minor differences in baseline pain severity existed among Hispanics, blacks, and whites, and these were clinically unimportant.

Researchers from Montefiore Medical Center analyzed 838 patients in the emergency department with suspected long-bone fractures (fractures of the leg or arm bones). Patients were asked to rate their pain on a scale of 1 (no pain) to 10 (the worst pain possible). Nearly half of the patients (49 percent) were Hispanic, 29 percent were black, and 22 percent were white.

Although the researchers found small differences between the groups, no difference exceeded 0.5 units

on the pain scale. All three groups reported moderately high mean pain scores at baseline. Scores were slightly higher for patients with confirmed fractures regardless of race or ethnicity. Higher baseline pain scores were associated with older age and being female. The researchers conclude that previously reported racial and ethnic disparities in underuse of analgesics cannot be explained by differences in baseline pain severity. Their study was supported in part by the Agency for Healthcare Research and Quality (HS13924).

See "Race and ethnicity do not affect baseline self-report of pain severity in patients with suspected long-bone fractures," by Steven L. Bernstein, M.D., E. John Gallagher, M.D., Lisal Cabral, M.D., and Polly Bijur, Ph.D., in the 2009 *Pain Medicine* 10(1), pp. 106-110. ■

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.

Disparities persist in primary care referrals to cardiologists for cardiovascular disease

Women and patients at community health centers are less likely to have a cardiologist consultation than other outpatients with coronary artery disease (CAD) or congestive heart failure (CHF). Yet those who received consultations were more likely to reach target lipid or blood-sugar levels. Women in particular had more improvement than men when they received a cardiology consultation, according to a new study. Researchers retrospectively examined electronic records of 9,761 adults with CAD or CHF at primary care practices affiliated with two academic medical centers from 2000 to 2005.

During this 5-year period, 79.6 percent of patients with CAD and 90.3 percent of patients with CHF had a cardiology consultation.

Women were 11 percent and 7 percent less likely than men to receive a consultation for CAD and CHF, respectively. In a similar fashion, patients at community health centers were 21 percent and 23 percent less likely than those at hospital-based practices to receive consultation for CAD and CHF, respectively.

Overall, quality of care for both CAD and CHF was suboptimal, with patients receiving 69.7 percent and 68.8 percent of applicable care, respectively, during the study period. Performance of care processes included lipid measurement, attainment of low-density lipoprotein (LDL) cholesterol of less than 130 mg/dL, blood-sugar control for diabetic patients, and recording patient weight. The first year mean performance score was

69.7 percent for those who consulted a cardiologist compared with 60.4 percent for those who didn't get a consult (year 3, 69.7 vs. 55.8 percent; year 7, 71.8 vs. 58.8 percent). Blacks were more likely to obtain an initial consultation, but blacks with CHF had fewer followup consultations than whites, which may reflect weaker relationships with their specialists. The study was supported by the Agency for Healthcare Research and Quality (T32 HS00020).

See "Differences in specialist consultations for cardiovascular disease by race, ethnicity, gender, insurance status, and site of primary care," by Nakela L. Cook, M.D., M.P.H., John Z. Ayanian, E. John Orav, and LeRoi S. Hicks, in the May 12, 2009 *Circulation* 119, pp. 2463-2470. ■

Patient Safety and Quality

Shift workers suffer fatigue and poor performance

Nearly 15 percent of all people working full time in the United States are shift workers. Shift workers suffer fatigue and poor performance as a result of their unusual work schedules, concludes a new study. Shift work includes not only the traditional night shift or rotating shifts, but also extended-duration (12-hour) shifts, and other nonstandard hours worked. In a review of their work and others, researchers at Brigham and Women's Hospital in Boston found that shift workers are impaired to various extents in four major physiologic determinants of alertness and performance, depending on their occupation. These four determinants are circadian phase or time of day, the number of hours awake, the duration of nightly sleep, and impaired performance upon waking (sleep inertia).

Abnormal working hours not only produce immediate effects on alertness and performance. Shift

workers also suffer from significant short- and long-term health problems. Obesity, ulcers, cardiovascular disease, and cancer have all been linked to sleep deprivation and working during an adverse circadian phase. Shift workers are also at increased risk for daytime sleepiness and motor vehicle accidents.

The researchers have a particular interest in health care workers. Their prospective, nationwide survey of 2,737 physician residents in their first year of training found that the residents were in the hospital 70.7 hours per week and they were sleeping for only 3.2 hours of that time. Each month, the residents were called to work 3.9 extended-duration work shifts (24 or more hours), with each shift averaging 32 hours.

The researchers propose designing work schedules around circadian rhythms and principles and

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Shift workers

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eliminating extended work hours for medical interns. They also suggest the use of timed bright light, melatonin supplements, the use of caffeine and modafinil to promote wakefulness, and napping during extended-duration work shifts. The study was supported in part by the Agency for Healthcare Research and Quality (HS15906, HS12032, and HS13333).

See “Neurobehavioral, health, and safety consequences associated with shift work in safety-sensitive professions,” by Laura K. Barger, Ph.D., Steven W. Lockley, Ph.D., Shantha M.W. Rajaratnam, Ph.D., and Christopher P. Landrigan, M.D., M.P.H., in the 2009 *Current Neurology and Neuroscience Reports* 9, pp. 155-164. ■

Spine and pain clinics in North Carolina vary by types of practitioners and services offered

Back pain affects 8 out of 10 people at some point during their lives, making it one of the most common medical problems. Patients often seek care at clinics that specialize in managing chronic back pain. However, when researchers surveyed 46 spine and pain clinics in North Carolina, they found wide variation in the types of providers staffing clinics and the services offered.

Most sites had between one and five physicians, and practices were staffed on average by seven physician and nonphysician providers. Common provider types were anesthesiologists (56 percent); physiatrists, who are experts in treating muscular,

musculoskeletal, or neurological problems (33 percent), and surgeons (orthopedic surgeons: 18 percent, neurosurgeons: 16 percent). Further, 65 percent of sites employed physicians who were certified in pain management.

Physical therapists, mental health providers, and alternative medicine practitioners were on staff at less than a third of the clinics. This finding shows that many clinics have room to improve their staffing, because evidence supports a multidisciplinary active approach in treating chronic back and neck pain, the authors suggest.

The most common services offered were medications, trigger

point injections in which an anesthetic is injected in a knotted muscle, and epidural injections. Most of the clinics (30 of 33) that offered narcotics for pain relief monitored patients through urine testing. This study was funded in part by the Agency for Healthcare Research and Quality (T32 HS00032).

See “Spine and pain clinics serving North Carolina patients with back and neck pain: What do they do, and are they multidisciplinary?” by Liana D. Castel, Ph.D., M.S.P.H., Janet K. Freburger, P.T., Ph.D., George M. Holmes, Ph.D., and others in the March 15, 2009 *Spine* 34(6), pp. 615-622. ■

Health Care Workforce

Two studies explore radiologists' perceptions of malpractice risk and enjoyment of interpreting mammograms

Finding radiologists willing to interpret mammograms is becoming increasingly difficult. One reason is that delay in the diagnosis of breast cancer is the second most common cause for physician malpractice lawsuits. Two recent studies took a critical look at how radiologists feel about interpreting screening mammograms

and their perceived risk for malpractice. Both studies were funded in part by the Agency for Healthcare Research and Quality (HS10591).

Dick, J. F. III, Gallagher, T. H., Brenner, R. J., and others. (2009, February). “Predictors of radiologists' perceived risk of malpractice lawsuits in breast

imaging.” *AJR: American Journal of Roentgenology* 192(2), pp. 327-333.

Researchers mailed a survey in 2002 and then again in 2006 to radiologists in three States—Washington, Colorado, and New Hampshire—who routinely

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Malpractice risks

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interpreted mammograms as part of their workload. Information was compiled on practice characteristics, the radiologists' experience with malpractice, and their perceived risks of facing a lawsuit in the future.

The study found that the perception of being sued was significantly higher than the actual number of reported malpractice cases involving breast imaging. The average perceived risk for a lawsuit was nearly four times higher during 2001 to 2005 than the rate of malpractice claims reported in the 2006 followup survey (41 vs. 10 percent). This risk perception remained high over a 5-year period despite actual lawsuits remaining stable over the past decade.

Interestingly, those radiologists who spent more time on breast imaging or interpreting a high volume of mammograms did not have a significantly higher perceived risk of a lawsuit. Those

who felt more at risk for lawsuits were more likely to have had a malpractice claim in the past or knew of other radiologists who had been sued (81 percent knew of such cases in 2002). There was also a higher perceived risk among radiologists working at facilities that did not use double reading of mammograms (use of two radiologists to read each one).

Geller B. M., Bowles E. J. A., Sohng H. Y., and others. (2009, February). "Radiologists' performance and their enjoyment of interpreting screening mammograms." *AJR: American Journal of Roentgenology* 192(2), pp. 361-369.

In this study, 131 radiologists from the same three States completed surveys about their characteristics, clinical practices, and attitudes related to screening mammograms. The researchers also used performance data to determine the odds of an abnormal mammogram interpretation.

A little over half of the radiologists surveyed said they enjoyed interpreting screening mammograms. Those most likely to enjoy the task were older, female, and working part-time. All of the radiologists affiliated with academic medical centers enjoyed this type of work compared with only half of those without such primary affiliations. Radiologists on annual salaries or who spent 20 percent or more time working in breast imaging or interpreted more than 2,000 mammograms annually were also more likely to enjoy this work. Radiologists who did not enjoy the work reported it as being tedious. They also had high levels of uncertainty when interpreting mammograms. However, the researchers found no significant differences in abnormal mammogram interpretation and cancer detection rates among radiologists who enjoyed and did not enjoy interpreting screening mammograms. ■

Women's Health

Dysfunctional uterine bleeding carries large financial and quality-of-life costs

Surgical treatment can be a cost-effective option for women who suffer from dysfunctional uterine bleeding (DUB) and have found no relief with medical treatment, a new study finds. Women with DUB can experience unpredictable, heavy bleeding that can last several weeks. In fact, one-third of the 237 women with DUB in the study reported being bedridden for a day or more during a bleeding episode. After surveying the women, researchers found that average lost productivity costs at home and at work were \$2,291 per woman. Further, annual out-of-pocket costs for pharmaceuticals, pads, and tampons averaged \$333 per woman.

The researchers determined that a surgery costing \$40,000 or less would be considered cost-effective. The

factors used to determine this cost threshold for DUB treatment were quality-adjusted life years (QALYs) and women's out-of-pocket costs. QALYs were calculated using health utility measures, which measure quality of life over time with a scoring system based on individuals' responses to questions about tradeoffs they are willing to make to improve their health.

All the women in the study sought surgery for relief of their DUB. Currently, hysterectomy is the only surgical treatment that can eliminate bleeding, but it is costly and can require a long recovery period, the authors note. This study was funded in part by the Agency for Healthcare Research and Quality (HS09506).

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Dysfunctional uterine bleeding

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See “Financial and quality-of-life burden of dysfunctional uterine bleeding among women agreeing

to obtain surgical treatment,” by Kevin D. Frick, Ph.D., Melissa A. Clark, Ph.D., Donald M. Steinwachs, Ph.D., and others in the January-February 2009 *Women’s Health Issues* 19(1), pp. 70-78. ■

Elderly/Long-Term Care

Degraded white matter causes slower brain function as people age

About half of a brain’s volume is white matter, which connects different regions of the brain through networks to perform mental tasks. Using magnetic resonance imaging (MRI), researchers are now able to study changes in white matter and how they affect brain functioning. To determine the effects of age on white matter, researchers had 52 adults, aged 19 to 81, receive MRIs and participate in tests that involved multiple cognitive processes. Compared with younger adults, older adults were slower on tasks that tested processing speed, working memory, and cognitive flexibility, but not on tests that

measured their episodic memory and ability to switch tasks.

The researchers found that white matter in specific brain regions was related to a participant’s success with a task. For example, processing speed was slower when prefrontal and parietal white matter was degraded. Additionally, episodic memory was associated with temporal and medial temporal regions, working memory was linked to middle cerebral white matter, and executive function was mapped to the posterior brain.

White matter is a densely packed collection of neurons that moves information between sections of the brain’s gray matter. When white

matter is degraded, it hampers transmission between the regions that support cognition. Older adults’ brains may be forced to reroute information to compensate for poorly performing white matter, the researchers suggest. This study was funded in part by the Agency for Healthcare Research and Quality (HS13819).

See “Aging white matter and cognition: Differential effects of regional variations in diffusion properties on memory, executive function, and speed,” by Kristen M. Kennedy, Ph.D., and Naftali Raz, Ph.D., in the February 2009 *Neuropsychologia* 47(3), pp. 916-927. ■

To capture the burden of multiple diseases on seniors, self-report should be added to data-based measures

Self-reports of seniors suffering from three or more diseases (comorbidity) provide a better picture of their disease burden than quantitative measures that simply calculate the number and severity of their conditions, concludes a new study. In this study, Elizabeth A. Bayliss, of Kaiser Permanente and the University of Colorado at Denver, and colleagues surveyed by telephone 352 elderly HMO members diagnosed with, at a minimum, diabetes, depression, and osteoarthritis. The survey asked them to rate each condition on a 5-point scale from 1 (doesn’t interfere at all with daily activities) to 5 (interferes a lot). It also asked them about their confidence in managing their medical conditions and the burden of financial constraints imposed by them.

These conditions were chosen because they have potentially conflicting symptoms and treatment strategies, making them more complex for the patient

to self-manage, note the researchers. They assessed self-reported disease burden based on biopsychosocial factors, demographic variables, and two data-based comorbidity indices (The QUAN index based on diagnostic codes in the medical record and the Chronic Disease Score based on pharmacy data). Survey respondents, who had an average of nine chronic diseases, also completed a depression screen and measure of health status and answered questions about potential barriers to their medical self-management.

The measure of self-reported disease burden represented an amalgamation of functional capabilities, social considerations, and medical conditions not captured by the two administrative data-based measures of morbidity. The researchers suggest that a simple count of diagnoses should be supplemented by an

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Self-reports

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assessment of activity limitations imposed by these conditions. This approach is also well suited to studies of patient-centered outcomes such as quality of life. The study was supported in part by the Agency for Healthcare Research and Quality (HS15476).

More details are in “Seniors’ self-reported multimorbidity captured biopsychosocial factors not incorporated into two other data-based morbidity measures,” by Dr. Bayliss, Jennifer L. Ellis, and John F. Steiner, in the May 2009 *Journal of Clinical Epidemiology* 62, pp. 550-557. ■

Primary Care

Primary care providers often prescribe antiviral medications inappropriately for influenza patients

Antiviral medications can reduce symptoms, complications, hospitalizations, and deaths from influenza. However, they must be started within 2 days of symptom onset to be effective. Primary care providers are prescribing more antivirals for influenza patients, but often prescribe them inappropriately, concludes a new study. Out of 958 visits with a diagnosis of influenza, clinicians prescribed an antiviral medication to 557 (58 percent) patients. Only 62 percent of these prescriptions were considered appropriate. A team led by Jeffrey A. Linder, M.D., M.P.H., of Harvard Medical School, defined appropriate prescriptions as those given to specific patients. These included patients whose symptoms had lasted for 2 or fewer days, had a fever, and had two or more of the

following symptoms: headache, sore throat, cough, or muscle pain.

The most common reason for an antiviral prescription being deemed inappropriate (24 percent of all antiviral prescriptions) was symptoms lasting for more than 2 days. Patients more likely to receive antiviral prescriptions were older patients or those insured by Medicare, and patients with muscle pain or a positive influenza test. (However, 75 percent of patients with a negative test also received a prescription.) Patients who received an antiviral were less likely to have runny or stuffy noses or otherwise look sick.

The study also found that the antiviral prescribing rate went from 20 percent in the 2001-2003 influenza seasons to greater than 50 percent by the 2003-2004 season. Researchers used data collected by the Partners Primary

Care Practice-Based Research Network from primary care visits during influenza seasons between October 1, 1999 and May 31, 2007. They selected visits at which the patient received a diagnosis code of influenza, as well as those at which the provider prescribed one of four antiviral medications: amantadine, rimantadine, oseltamivir, and zanamivir. This research was supported in part by the Agency for Healthcare Research and Quality (HS14563).

More details can be found in “Antiviral and antibiotic prescribing for influenza in primary care,” by Dr. Linder, Harry Reyes Nieva, B.A., and William A. Blumentals, Ph.D., in the February 2009 *Journal of General Internal Medicine*, 24(4), pp. 504-510. ■

Increasing the number of primary care physicians can reduce the rate of hospitalizations for bacterial pneumonia

Bacterial pneumonia often strikes the elderly after a bout of flu or a cold. It is also considered a preventable condition because good outpatient care can potentially thwart the need for hospitalization, and early intervention can curb complications or more severe disease. University of Texas researchers Frank C. Lemus, Ph.D., Jean L. Freeman, Ph.D., and colleagues found that hospitalizations for bacterial pneumonia from 1999 to 2000 were 3 times the national rate in the

32 Texas counties that border Mexico. Additionally, hospitalization rates for Hispanic elders (aged 65 or older) were 41 percent higher than for white elders. However, an increase of 1 primary care provider per 1,000 people reduced pneumonia-related hospitalizations by a third in these largely Hispanic communities. This finding reinforces the importance of

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Bacterial pneumonia

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primary care physicians in reducing hospitalizations for preventable conditions, the authors note. The researchers found that each \$1,000 increase in county median household income was associated with a 3.36 percent increase in the hospitalization rate for bacterial pneumonia. They expected that people with health insurance would be less likely to be hospitalized for bacterial pneumonia, but nearly 96 percent of Hispanic and white elders were covered by Medicare or Medicaid. These findings suggest that placing additional primary care physicians in communities may

lower the hospitalization rates for this preventable condition. This measure would, in turn, reduce public health care costs and improve elders' quality of life. This study used hospital discharge, U.S. Census, and Healthcare Cost and Utilization Project data and was funded in part by the Agency for Healthcare Research and Quality (HS16381 and HS11618).

See "Correlates of bacterial pneumonia hospitalizations in elders, Texas border," by Drs. Lemus and Freeman, Alai Tan, Ph.D., and others published online in the March 18, 2009 *Journal of Immigrant and Minority Health* (e-pub). ■

Primary care practice structure affects control of risk factors for cardiovascular disease among patients with diabetes

Primarily care practices that have teams with well-defined leadership and effective teamwork, where the appointment and visit systems are well structured, and where followup and coordination of care after the visit are well planned, seemed to be better at controlling risk factors for cardiovascular (CV) disease among patients with diabetes, concludes a new study. Michael Parchman, M.D., M.P.H., of the University of Texas Health Science Center at San Antonio, and Amer A. Kaissi, Ph.D., of Trinity University, found that a primary care practice's community connections and its actual delivery of care during a patient's visit were linked to good control of three CV risk factors among patients with diabetes: glycosylated hemoglobin or A1C (a measure of blood-sugar level), blood pressure (BP), and low-

density lipoprotein (LDL) cholesterol.

These practice characteristics improved the likelihood of CV risk control by 65 percent and 38 percent, respectively. However, practice use of clinical information systems (such as disease registries and provider reminders) reduced by 42 percent the likelihood of good control. The researchers suggest that use of clinical information systems during a medical visit may compete with time devoted to addressing patient needs and concerns.

They asked patients with Type 2 diabetes from 20 Texan primary care clinics about their stage of change for 4 self-care behaviors: diet, exercise, glucose monitoring, and medication adherence. Clinicians in each clinic completed the Assessment of Chronic Illness Care survey about use of the six Chronic Care Model

components used in their clinic: organizational support, patient self-management support, delivery system design (actual delivery of care), decision support, clinical information systems, and community linkages (for example, with diabetes specialists and educators). Overall, only 13 percent of the 618 patients studied had good control of all 3 CV risk factors. The study was supported in part by the Agency for Healthcare Research and Quality (HS13008).

See "Are elements of the chronic care model associated with cardiovascular risk factor control in type 2 diabetes?" by Drs. Parchman and Kaissi, in the March 2009 *Joint Commission Journal on Quality and Patient Safety* 35(3), pp. 133-138. ■

Chronic Disease

Persons with lupus have trouble getting and staying employed

Individuals with systemic lupus erythematosus (lupus) struggle to find a job when they are younger and many lose jobs when they are older, reveals a new study. This predicament is typically due to the debilitating symptoms of the disease, which range from severe fatigue and depression to muscle and joint pain and swelling, note Edward Yelin, Ph.D., and colleagues at the University of California, San Francisco (UCSF). They analyzed 4 years of data on 957 patients from the Lupus Outcomes Study conducted at UCSF, as well as U.S. census and national labor statistics data. The researchers compared work loss and work entry, predictors of work loss/entry, and risk factors for employment outcomes among those with lupus with a matched national sample without lupus.

At the start of the study, just over half (51 percent) of those with lupus were employed. Of these, 23.4 percent had experienced some sort of work loss. Factors that predicted work loss included being older, having lower cognitive and physical functioning, and

being depressed. There were also 376 participants who were not employed at the time they entered the study. Only 20.2 percent were able to enter the work force during the 4-year study period. Factors that predicted work entry included a low level of disease activity, fewer lung problems, better physical functioning, and a shorter time since a person's last employment. Low rates of employment in participants under age 55 were due to lower rates of work entry. However, those participants over 55 had both high rates of work loss and low rates of work entry contributing to their low employment rate. The study was supported in part by the Agency for Healthcare Research and Quality (HS13893).

See "Work loss and work entry among persons with systemic lupus erythematosus: Comparisons with a national matched sample," by Dr. Yelin, Chris Tonner, M.P.H., Laura Trupin, M.P.H., and others, in the February 15, 2009 *Arthritis* 61(2), pp. 247-258. ■

Patient hopelessness is linked to poor participation in cardiac rehabilitation exercise

Depression and hopelessness can affect the development and progression of heart disease. For example, symptoms of hopelessness are associated with a higher risk of fatal and nonfatal heart disease. Now, a new study finds that patients who feel hopeless after a heart attack or severe episode of angina (crushing chest pain) are less likely to participate in exercise as part of their cardiac rehabilitation program.

Researchers interviewed 207 patients with acute coronary syndrome (unstable angina or heart attack) at 3 months after hospital discharge and then again at 8 months. All were treated at five community hospitals in central Michigan. A variety of measures were assessed, including the degree of hopelessness and depression,

activity status, coexisting conditions (comorbidities), and exercise participation.

Hopelessness, but not depression, predicted lower exercise participation during cardiac rehabilitation. For each additional point on the hopelessness scale used by the researchers, the odds of exercise participation declined by 32 percent. Medicaid patients were less likely than those with private insurance to participate. On the other hand, each additional comorbid condition increased the odds of participation in exercise. There was also more willingness to exercise if a patient had an ejection fraction (a measure of how well the heart pumps) of more than 34 percent.

The findings suggest that hopelessness can be present

independent of depression and should be studied separately. Development of interventions to prevent and treat symptoms of hopelessness may contribute to improved recovery of these cardiac patients, suggest the researchers. The study was supported in part by the Agency for Healthcare Research and Quality (HS10531).

See "Hopelessness and its effect on cardiac rehabilitation exercise participation following hospitalization for acute coronary syndrome," by Susan L. Dunn, Ph.D., R.N., Manfred Stommel, Ph.D., William D. Corser, Ph.D., R.N., and Margaret Holmes-Rovner, Ph.D., in the 2009 *Journal of Cardiopulmonary Rehabilitation and Prevention* 29, pp. 32-39. ■

Electronic health records help identify patients with hypertension and cardiac problems

Determining a patient's risk for hypertension (high blood pressure) typically involves measuring blood pressure, while determining their likelihood of cardiovascular problems involves identification of risk factors such as cholesterol levels and tobacco use. Electronic health records (EHR) can provide more detailed information on hypertension and make cardiovascular risk stratification automatic, according to two new studies supported by the Agency for Healthcare Research and Quality (HS15647) and led by Stephen D. Persell, M.D., M.P.H., of Northwestern University. The first study found that EHR data can be used to develop measures better able to determine who has uncontrolled blood pressure. In the second study, EHR data allowed for the automatic calculation of cardiovascular risk stratification, thus identifying more patients who can benefit from cholesterol-lowering drugs and other interventions. Both studies are described here.

Persell, S. D., Kho, A. N., Thompson, J. A., and Baker, D. W. (April 2009). "Improving hypertension quality measurement using electronic

health records," *Medical Care* 47(4), pp. 388-294.

In this study, the researchers looked at 5,905 adults with hypertension and 3 or more internal medicine clinic visits. Simple control of blood pressure was defined as the patient's last reading of less than 140/90 mm Hg (less than 130/80 mm Hg, if the patient had diabetes). This simple baseline measurement was compared with more sophisticated blood pressure measures determined at subsequent visits. These were determined from an analysis of the EHR and included changing the definition of blood pressure control, medical management, and undiagnosed hypertension.

Among patients without diabetes, using the simple measurement approach demonstrated a 58.1 percent rate of control at baseline. Quality performance was raised to 75.4 percent when patients with adequate control were included, whose last or mean blood pressure was at or below goal. Including patients receiving aggressive treatment increased control to 82.5 percent. Quality performance increases were also observed for patients with diabetes when more elaborate hypertension measures were included.

Persell, S. D., Dunne, A. P., Lloyd-Jones, D. M., and Baker, D. W. (April 2009). "Electronic health record-based cardiac risk assessment and identification of unmet preventive needs," *Medical Care* 47(4), pp. 418-424.

This study tracked 23,111 adults receiving care at a large primary care practice using an EHR. Using automated assessments of cardiovascular risk, the researchers classified patients into four cardiac risk groups. A separate, manual review was conducted on 100 patients in each group and on those deemed unclassified by a physician.

Using the EHR identified 9.2 percent of patients as candidates for cholesterol-lowering therapy and 8 percent of patients eligible for blood-thinning medications. When the researchers compared the automated findings with those from the physician manual review, they found a high level of agreement. Data elements common to those found in commercial EHR systems are able to estimate cardiovascular risk very accurately. Adoption of these automated techniques has the ability to identify patients who may be overlooked when their cardiovascular risk is assessed through more traditional methods, conclude the researchers. ■

Genetic factors are linked to symptoms in patients with chronic obstructive pulmonary disease

Chronic obstructive pulmonary disease (COPD) is the fourth leading cause of mortality in the United States. While smoking is a major cause of COPD, researchers have discovered genetic determinants that may raise people's risk for the disease. In a new study by researchers at Tufts Medical Center and Brigham and Women's Hospital in Boston, these genetic traits were associated with specific symptoms of COPD.

Patients with severe COPD provided blood samples for genetic analysis. The researchers looked for five genes already associated with susceptibility to COPD. They wanted to see if any links could be established between the various genes and COPD characteristics, such as hypoxemia (low oxygen in the blood), pulmonary artery hypertension, and the need for supplemental oxygen.

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Obstructive pulmonary disease

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Genetic variations in two genes were found to be associated with hypoxemia in two separate populations. Another gene variant was linked to pulmonary artery hypertension. The requirement for supplemental oxygen was associated with two other gene variants. Some genetic studies have examined COPD-associated traits such as reduced exercise capacity and shortness of breath. However, this is the first study to examine the relationship between genetic variation and

hypoxemia in patients with COPD. The findings provide additional information about the complex network of genes underlying the variety of clinical types of COPD. The study was supported in part by the Agency for Healthcare Research and Quality (T32 HS00060).

See “Genetic associations with hypoxemia and pulmonary arterial pressure in COPD,” by Peter J. Castaldi, M.D., Craig P. Hersh, M.D., M.P.H., John J. Reilly, M.D., F.C.C.P., and Edwin K. Silverman, M.D., Ph.D., in the March 2009 *Chest* 135(3), pp. 737-744. ■

Study examines outpatient use of medication and lifestyle counseling to manage osteoporosis

An estimated 12.5 percent of Americans aged 50 years and older have osteoporosis (severe loss of bone mass). Women are particularly affected, with one in two expected to have a fracture related to bone loss during their lifetime. Use of medication for osteoporosis does not differ significantly among patients in physician offices or hospital-based clinics. However, those treated in clinics are less likely to receive nonmedication interventions to manage the condition, according to a new study.

Researchers from Howard University and Washington Hospital Center in Washington, D.C., analyzed patient visits for osteoporosis made over a period of 5 years. The prevalence of osteoporosis and fracture was similar among office-based and clinic-based patients. More than

half (53.2 percent) of all patients received medication therapy, primarily in the form of bisphosphonates (36 percent), followed by calcium and vitamin D supplementation (23.9 percent). The most commonly used nonmedication interventions, documented in 31.5 percent of all visits, were diet/nutrition counseling (19.4 percent) and exercise (16.7 percent). Yet patients treated in hospital-based clinics were 40 percent less likely to receive them than patients in office-based clinics.

Patterns of care also varied by certain visit characteristics, including insurance type, age, and sex. For example, men were 40 percent less likely than women to receive some form of treatment for their osteoporosis. Patients aged 80 years or older were 40 percent less likely to receive nonmedication therapy than those

aged 60 to 69 years. Visits by publicly insured patients were 30 percent less likely to involve medication than visits by patients with other sources of payment. However, no racial differences in treatment were observed. The study was supported in part by the Agency for Healthcare Research and Quality (HS11673).

See “Osteoporosis pharmacotherapy and counseling services in US ambulatory care clinics: Opportunities for multidisciplinary interventions,” by Anna Teschemaker, B.S., Eunice Lee, Pharm.D., Ph.D., Zhenyi Xue, M.S., and Anthony K. Wutoh, Ph.D., in the December 2008 *American Journal of Geriatric Pharmacotherapy* 6(5), pp. 240-248. ■

Mental Health

Women who suffer abuse use mental health care services more than women who have never been abused

Women who were abused by their partners use significantly more mental health services than women who have never been abused, regardless of how recently the abuse occurred, a new study finds. Researchers surveyed 3,333 women aged 18 to 64 in the Pacific Northwest and found that mental health service use was highest when the physical or nonphysical (verbal threats or controlling behavior) abuse was ongoing. However, women who experienced abuse recently (within 5 years) or remotely (5 years ago or longer) still accessed mental health services at higher rates than women who were never abused. These findings indicate that abused women are higher users of mental health services even after the abuse ends, the authors suggest. They recommend that mental health professionals routinely ask women if they have suffered abuse so that interventions can be employed.

Compared with women who never experienced abuse, women who were physically abused used more

emergency, outpatient, pharmacy, and specialty services. These rates may be the result of the women seeking care for injuries that result from the abuse. Accordingly, women experiencing ongoing physical abuse had total annual health care costs that were 42 percent higher than women who never suffered abuse. Women who experienced recent nonphysical abuse had total annual health care costs that were 33 percent higher than women who never suffered abuse. This study was funded in part by the Agency for Healthcare Research and Quality (HS10909).

See “Health care utilization and costs associated with physical and nonphysical-only intimate partner violence,” by Amy E. Bonomi, Ph.D., M.D., Melissa L. Anderson, M.S., Frederick P. Rivara, M.D., M.P.H., and Robert S. Thompson, M.D., in the June 2009 *Health Services Research* 44(3), pp. 1-16. ■

States vary greatly in nursing home admissions for people with mental illnesses

State variation in services for people with mental illnesses and how they are admitted to nursing homes may result in longer-than-average stays for those individuals, a new study finds. Vincent Mor, Ph.D., of Brown University, and colleagues analyzed 2005 data from the Centers for Medicare & Medicaid Services. They found that States varied widely in nursing home admission rates for people suffering from mental illness. For example, nursing homes in Wyoming, Nevada, Arkansas, and South Dakota had the lowest rates for admitting individuals with schizophrenia and bipolar disorder, while Connecticut, Ohio, and Massachusetts had the highest rates. What's more, in 2004 nearly 46 percent of people with mental illnesses admitted to nursing homes in the United States remained in the facility 90 days

after admission compared with 24 percent of people who did not have a mental illness.

The authors suggest that the way Medicaid pays nursing homes may be one reason for State variations in admissions for people with mental illnesses. For instance, Medicaid pays nursing homes higher rates for people with mental illnesses who have minimal physical problems. Thus, these higher rates may give nursing homes an incentive to admit these patients. Further, some States may bypass the Federal policy requiring State mental health authorities to assess people for mental illnesses before admission to a nursing home. They do this by allowing people with mental illnesses to be admitted from a hospital for a 30-day nursing home stay under an attending physician's orders. Finally, variation could also be a result of some States being able

to offer home and community-based services or State psychiatric hospitals in lieu of nursing home care.

The authors assert that people with mental illnesses must navigate disparate care systems for medical care, mental health care, and aging services. They suggest the lack of a safety net for these patients may explain why so many of them become long-term nursing home residents. This study was funded in part by the Agency for Healthcare Research and Quality (T32 HS00011).

See “Mental illness in nursing homes: Variations across States,” by David C. Grabowski, Ph.D., Kelly A. Aschbrenner, Ph.D., Zhanlian Feng, Ph.D., and Dr. Mor in the May/June 2009 *Health Affairs* 28(3), pp. 689-700. ■

Acute Care/Hospitalization

Leakage problems following surgery for rectal cancer can be managed with a minimally invasive approach

About 1 in 10 patients who undergo surgery for rectal cancer face the complication of anastomotic leakage, whether they undergo open or laparoscopic surgery. This leakage occurs when the suture line breaks down between the newly joined sections of rectum and waste seeps into the body. Life-threatening inflammation (peritonitis) can occur in the worst cases. Fortunately, the majority of patients who suffer anastomotic leakage can be managed with a minimally invasive approach, suggests a new study.

Of 307 patients who had minimally invasive (laparoscopic) surgery for rectal cancer between 2001 and 2006, 29 patients experienced anastomotic leakage. Nearly 35 percent of leakage victims were successfully managed with conservative treatment (antibiotics and closed suction drainage). Another 60 percent of the patients were treated with additional laparoscopic surgery. This minimally invasive surgery can be used to

manage leakages if they are detected early, note the authors.

They recommend that surgeons first explore the abdomen with laparoscopy, because anastomotic leakages often can be treated with irrigation and an ileostomy, a procedure in which surgeons create an opening in the abdominal wall to let waste exit the body. Risk factors for experiencing leakage after laparoscopic procedures included being male, being younger (54 vs. 58 years old), having a surgery site in the lower rectum, and operation times longer than 3 1/2 hours. This study was funded in part by the Agency for Healthcare Research and Quality (HS00059).

See "Anastomotic leakage after laparoscopic proctectomy can be managed by a minimally invasive approach," by Yong-Geul Joh, M.D., Seon-Hahn Kim, M.D., Koo-Yong Hahn, M.D., and others in the January 2009 *Diseases of the Colon and Rectum* 52(1), pp. 91-96. ■

Hyperdense basilar artery on unenhanced CT scan predicts a clot in the artery and poorer outcome among stroke patients

Blockage of the basilar artery, which is located along the brainstem in the back of the brain, is typically a devastating event that can lead to major stroke-related disability and death. Early diagnosis is critical so that clot-busting therapy or other supportive measures can begin. However, most community medical centers do not routinely perform advanced imaging such as enhanced computerized tomography angiography (CTA) or magnetic resonance angiography. They rely instead on unenhanced computerized tomography (CT) for their clinical decisions. A new study suggests that community hospitals can use unenhanced CT to diagnose these dangerous blood clots. It found that a hyperdense basilar artery (HDBA) sign on unenhanced CT was a strong predictor of a blood clot in the basilar artery, as well as

short- and long-term patient outcome.

The researchers examined unenhanced CT scans obtained within 24 hours of symptom onset in 95 patients with suspected posterior circulation stroke. Three neuroimagers blinded to clinical outcomes and results of the concurrent CT angiography (used as the reference standard) rated the presence of HDBA sign on unenhanced CT scans on a 5-point scale for level of certainty (1 for definitely absent to 5 for definitely present).

Using a certainty cutoff score of 4 or more (probable, definite), HDBA sign had 71 percent sensitivity, 98 percent specificity, 94 percent accuracy, 83 percent positive predictive value, and 95 percent negative predictive value for basilar artery occlusion. The HDBA sign

increased fivefold the likelihood of poor long-term outcome. The only independent predictors of discharge stroke score were admission National Institute of Health Stroke Scale (NIHSS) and HDBA sign. Significant independent predictors of poor long-term outcome were patient age, admission NIHSS, history of stroke/transient ischemic attack (mini stroke), and HDBA sign. The study was supported by the Agency for Healthcare Research and Quality (HS11392).

More details are in "Hyperdense basilar artery sign on unenhanced CT predicts thrombus and outcome in acute posterior circulation stroke," by Gregory V. Goldmakher, M.D., Ph.D., Erica C.S. Camargo, M.D., M.M.Sc., Ph.D., Karen L. Furie, M.D., M.P.H., and others, in the January 2009 *Stroke* 40, pp. 134-139. ■

Air leak test does not accurately predict problems after breathing tube removal in children

Timing the removal of breathing tubes (endotracheal tubes [ETTs]) from critically ill children is important to help them breathe on their own again. The need to reinsert an ETT (reintubation) significantly increases the risk for problems such as longer intensive care stays or even death. Critical care specialists use an ETT air leak test (ALT) to determine if upper airway obstruction is likely after ETT removal (extubation). If the pressure required to produce an air leak is high (ALT equal to or greater than 30 cm H₂O), extubation will most likely result in the need for reintubation later. However, a new study finds that the ALT does not predict who will have a successful extubation and who will not.

The researchers performed an ALT within 12 hours of a planned extubation in 59 children in a pediatric intensive care unit. Extubations were successful in 50 patients. Air leak measurement at intubation did not correlate with extubation outcomes. For 33 of these patients, the air leak was absent within 12 hours of intubation; 23 of these patients recovered an air leak before extubation, and 10 patients had no air leak for the duration of the

mechanical ventilation. Only 3 of these 10 patients required reintubation. In measuring the preextubation ALT to predict outcomes, the researchers found that the air leak was absent in 28 of 59 patients. Regardless, 23 of the 28 were successfully extubated. Through the entire course of ventilation, an ALT equal to or greater than 30 cm H₂O did not predict extubation failures, nor did it increase the likelihood of having to reintubate after extubation.

According to the researchers, performing an ALT at intubation remains a useful tool to select tube size, to monitor ETT cuff inflation pressure, and to determine tracheal wall injury. However, it should not be used as the sole means to determine the timing of extubation. The study was supported in part by the Agency for Healthcare Research and Quality (HS14009).

See “The endotracheal tube air leak test does not predict extubation outcome in critically ill pediatric patients,” by Angela T. Wratney, M.D., Daniel Kelly Benjamin, Jr., M.D., Ph.D., M.P.H., Anthony D. Slonim, M.D., Dr.P.H., and others, in the *Pediatric Critical Care Medicine* 9(5), pp. 490-496, 2008. ■

Emergency Medicine

Out-of-hospital endotracheal intubation errors are not linked to deaths, but failed attempts may boost pneumonitis risk

To resuscitate out-of-hospital patients, paramedics often perform endotracheal intubation (ETI), insertion of a breathing tube into the windpipe. However, a new study found that they make three key errors when treating one-fifth of patients. The errors included tube misplacement or dislodgement, multiple ETI attempts, or failed ETI (patient arrives at the emergency department without the tube in place). Patients don't generally die due to these errors; however, they are more likely to develop pneumonitis (lung inflammation), according to the

study. If untreated, pneumonitis can lead to lung scarring and permanent difficulty breathing.

A team led by Henry E. Wang, M.D., M.P.H., of the University of Pittsburgh, examined the link between these three ETI errors and patient outcomes based on multicenter data on out-of-hospital ETI attempted by emergency medical service (EMS) rescuers from 40 advanced life support EMS Pennsylvania agencies. They linked these data to statewide EMS, death, and hospital discharge data to examine the impact of ETI errors on death and outcomes ranging

from esophageal perforation or injury to pneumonia and death.

EMS technicians made one or more errors while resuscitating one-fifth (22.7 percent) of patients during 1,954 out-of-hospital ETIs. Mistakes included tube misplacement or dislodgement in 3 percent of patients treated, multiple ETI attempts in 3 percent, and failed ETI in 15 percent. Of the 1,196 cases linked to patient outcomes, 73 percent died and 27 percent survived to hospital discharge. ETI errors were not associated with early or later death.

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Endotracheal intubation

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Cardiac arrest was linked to early death and clinical instability upon hospital admission was associated with later death. However, failed ETI was associated with more than twice the likelihood of the patient developing pneumonitis, after

adjustment for other patient clinical factors and intubation methods. The link between failed ETI and pneumonitis may be due to aspiration of particles into the lung that occurs prior to or independent of the ETI effort, note the researchers. Their study was supported in part by the Agency for

Healthcare Research and Quality (HS13628).

See “Outcomes after out-of-hospital endotracheal intubation errors,” by Dr. Wang, Lawrence J. Cook, Ph.D., Chung-Chou H. Chang, Ph.D., and others, in *Resuscitation* 80, pp. 50-55, 2009. ■

Ambulance stretcher-related injuries are not uncommon

Each year, emergency medical services in the United States transport 16 million patients to hospital emergency departments by ambulance. Stretcher-related injuries to patients, emergency medical technicians (EMTs), or others are not uncommon when patients are being transported to, from, or in an ambulance, concludes a new study. Henry E. Wang, M.D., M.S., of the University of Pittsburgh, and colleagues found that 671 adverse events involving stretchers were reported during a 10-year period (1996-2006). One in five adverse events caused injury to the patient, ambulance personnel, or other individuals.

The researchers used a Food and Drug Administration (FDA) database of medical device adverse events to identify and characterize stretcher-related adverse events, including injuries and deaths during the study period. Adverse events involving the stretcher's construction or mechanical operation are required to be reported by the manufacturer, and may also be reported voluntarily by emergency medical services or hospitals.

The most common stretcher-related adverse events involved a tipped or collapsed stretcher (54 percent); a broken, missing, or malfunctioning part (28 percent); or a dropped stretcher (7 percent). Injuries occurred to 130 individuals during 121 adverse events. Of 130 injuries, 71 (56 percent) happened to ambulance personnel, 50 (38 percent) happened to patients, and 9 (7 percent) happened to other individuals. Strains and sprains were most common among ambulance personnel, while fractures and lacerations were more common in patients. Three deaths occurred in patients, and each group had one traumatic brain injury.

The researchers note that the FDA database used was not comprehensive, and may underestimate the true frequency of these incidents. The study was funded in part by the Agency for Healthcare Research and Quality (HS13628).

More details are in “Ambulance stretcher adverse events,” by Dr. Wang, Matt D. Weaver, B.S., Benjamin N. Abo, B.S., N.R.E.M.T.-P., and others, in the 2009 *Quality and Safety in Health Care* 18, pp. 213-216. ■

HIV/AIDS Research

U.S. emergency plan for AIDS relief in Africa has reduced HIV-related deaths, but not HIV prevalence

In 2003, the President's Emergency Plan for AIDS Relief (PEPFAR) launched an ambitious initiative to address the global HIV epidemic in countries heavily burdened by the disease. The 5-year, \$15 billion program included HIV treatment, prevention, and care. After 4 years of PEPFAR activity, HIV-related deaths declined in sub-Saharan African

focus countries compared with control countries not served by the program, according to a new study. However, trends in adult prevalence did not differ between focus and control countries.

To assess the effect of PEPFAR on HIV-related deaths, number of people living with HIV, and HIV prevalence in sub-Saharan Africa, the researchers compared trends before (1997-2002) and after the

initiation of PEPFAR's activities (2004-2007) among 12 African focus countries and 29 control countries suffering from an HIV epidemic from 1997 to 2007.

Between 2004 and 2007, the difference in the annual change in the number of HIV-related deaths was 10.5 percent lower in the focus than in the control countries. The

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AIDS relief

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difference in trends between groups before 2003 was not significant.

The number of people living with HIV or AIDS accelerated in the later study period in focus compared with control countries, perhaps reflecting greater HIV survival rates. However, the difference in the change in HIV prevalence did not significantly

differ throughout the study period. The reduction in HIV-related deaths was probably due to the improved treatment and care of HIV-infected persons in the focus countries, especially the greater availability of highly active antiretroviral therapy. The added funding for antiretrovirals in the focus countries made an appreciable impact on HIV-related deaths. This indicates the power of these drugs to improve survival in a relatively short period, note the

researchers. Their study was supported in part by the Agency for Healthcare Research and Quality (T32 HS00028).

More details are in “The President’s emergency plan for AIDS relief in Africa: An evaluation of outcomes,” by Eran Bendavid, M.D., and Jayanta Bhattacharya, M.D., Ph.D., in the May 19, 2009 *Annals of Internal Medicine* 150, pp. 688-695. ■

HIV screening is cost-effective in Russia

The HIV epidemic is growing fast in Russia, driven by drug use and the commercial sex trade. More than 1 million people are estimated to be infected, with 80 percent of actual HIV cases under 30 years of age. While screening for HIV is widely available, little is known about just how cost-effective it really is. Now, a new study shows that such early detection and treatment of HIV in Russia is cost-effective and results in substantial benefits in life expectancy.

Using epidemiologic and economic data, researchers developed a model to estimate costs, quality of life, and survival associated with HIV screening. Their model followed individuals aged 15 to 49 years old over their lifetimes. Three screening approaches were evaluated: no HIV screening, once-per-lifetime HIV screening, and repeat HIV screening.

Early diagnosis of HIV as a result of screening produced a substantial gain of 2.1 years in life expectancy and 1.7 years in quality-adjusted life years (QALY). These gains are similar to those found in the United States through screening. One-time HIV screening was cost-effective with costs of \$56 more per person screened than HIV diagnosis based on symptoms alone. One-time screening cost \$13,396

per QALY gained, at a base-case prevalence of 1.2 percent. This continued to be the case even when the prevalence of HIV dipped as low as 0.04 percent.

Repeat screening was cost-effective when conducted as frequently as every 2 years. It was most cost-effective for individuals from high-incidence risk groups, who could benefit from annual screenings. However, the cost-effectiveness of screening depended on effective risk-reduction counseling (20 percent reduction in risky sexual behavior) and giving individuals some access to HIV medications. Since HIV testing is so inexpensive in Russia, even modestly effective counseling for risk reduction and less-than-universal access to HIV medications still make screening cost-effective in the country, note the researchers. Their study was supported in part by the Agency for Healthcare Research and Quality (HS00028).

See “Cost-effectiveness of voluntary HIV screening in Russia,” by Swati P. Tole, M.D., M.S., Gillian D. Sanders, Ph.D., Ahmed M. Bayoumi, M.D., M.Sc., and others in the January 2009 *International Journal of STD and AIDS* 20, pp. 46-51. ■

Agency News and Notes

Health care spending for obese American adults soared 82 percent between 2001 and 2006

Spending on health care for obese American adults rose from \$167 billion to \$303 billion (82 percent) between 2001 and 2006, according to the latest data from the Agency for Healthcare Research and Quality (AHRQ). During the same period, total health care spending rose 36 percent (from \$202 billion to \$275 billion) for overweight adults and 25 percent (from \$208 billion to \$260 billion) for normal-weight adults. For an adult, a Body Mass Index (BMI)—measuring body fat in relation to height and weight—of 30.0 or more indicates obesity; a BMI between 25.0 and 29.9 indicates a person is overweight; and a BMI between 18.5 and 24.9 is in the normal weight range.

This analysis examined total health care spending, including doctor visits, hospital outpatient visits, emergency room visits, hospitalizations, home health care services, dental visits, other medical expenses, and prescription drugs in 2001 and 2006. It also found that:

- The proportion of overall medical care spending associated with obese adults grew from 28 percent to 35 percent in contrast to a decline from 35 percent to 30 percent among normal-weight adults.
- Obese adults also comprised the highest proportion of adults who reported having one or more chronic conditions (57 and 60

percent, respectively) for the years 2001 and 2006.

- The number of obese Americans increased from 48 million people to 59 million people between 2001 and 2006.

These data are taken from the Medical Expenditure Panel Survey (MEPS), a detailed source of information on the cost and use of health services by Americans and how they are paid. For more information, see MEPS Statistical Brief #247, *Trends in Health Care Expenditures by Body Mass Index (BMI) Category for Adults in the U.S. Civilian Noninstitutionalized Population, 2001 and 2006* at www.meps.ahrq.gov/mepsweb/data_files/publications/st247/stat247.pdf. ■

Sports-related injuries account for one in five of children's emergency department visits

Sports-related injuries, such as bruises, scrapes, and broken bones accounted for 22 percent of hospital emergency department (ED) visits for children aged 5 to 17 in 2006, according to recent data from the Agency for Healthcare Research and Quality. The Agency's analysis also shows that in 2006:

- Boys had three times more visits to treat sports injuries than girls (147 vs. 50 visits per 10,000 children).
- Teens were five times more likely than children to be treated for sports injuries in EDs (154 visits per 10,000 15- to 17-year-olds vs. 30 visits per 10,000 5- to 9 year-olds).
- Some 81 percent of all visits were for bruises, sprains and strains, arm fractures, or cuts and scrapes to the head, neck, or chest.

- Only 1.3 percent of visits resulted in hospital admissions, mostly for leg and arm fractures. In nearly 99 percent of visits, the children were treated and released.

These findings are based on data in the Healthcare Cost and Utilization Project (HCUP) Statistical Brief #75, *Sports Injuries in Children Requiring Hospital Emergency Care, 2006*, at www.hcup-us.ahrq.gov/reports/statbriefs/sb75.jsp. The report uses statistics from the 2006 Nationwide Inpatient Sample, a database of hospital inpatient stays that is nationally representative of inpatient stays in all short-term, non-Federal hospitals. ■

Targeted energy treatment helps correct irregular heartbeat in the short term, but long-term effects are unknown

A procedure that sends targeted energy into the heart through a catheter can be used to treat a common type of irregular heartbeat. However, little is known about the treatment's long-term benefits and the best methods and circumstances for applying it, according to a new report funded by the Agency for Healthcare Research and Quality (AHRQ). The report examines the use of a procedure called radiofrequency catheter ablation to treat a type of irregular heartbeat known as atrial fibrillation. This condition affects more than 2.2 million Americans, putting them at risk for heart failure, blood clots, or stroke.

The new comparative effectiveness report found that the procedure has been shown to provide benefits in maintaining normal heart rhythm over short periods of time (up to 1 year). It found little evidence indicating whether the procedure reduces the chance that patients will experience atrial fibrillation over the long term. The report, which compared radiofrequency catheter ablation with medication-based therapy, also found that the effect of the procedure on stroke, a major risk for patients with atrial fibrillation, is unknown.

Radiofrequency catheter ablation—a procedure in which a long, thin, flexible tube is threaded through a blood vessel into the heart—often is used when

medications do not work to prevent recurrence of atrial fibrillation (about half of patients). In this procedure, energy pulses are delivered through the catheter to the heart, destroying small areas of heart tissue where abnormal electrical signals may cause an arrhythmia to start. Earlier this year, the U.S. Food and Drug Administration (FDA) approved the first two ablation catheters indicated for use in treating atrial fibrillation in the United States. However, physicians often use other catheters that have not been approved by the FDA for atrial fibrillation. The FDA explicitly endorsed existing clinical guidelines that recommend that patients at risk for stroke continue to take preventive blood-thinning medications after radiofrequency catheter ablation.

The FDA recently approved a new medication, dronedarone, for treatment of atrial fibrillation. For more information go to: www.fda.gov/NewsEvents/Newsroom/PressAnnouncements/ucm170276.htm. AHRQ's new report, *Comparative Effectiveness of Radiofrequency Catheter Ablation for Atrial Fibrillation*, is the newest analysis from the Agency's Effective Health Care program. Information on the program, including the new report, can be found at www.effectivehealthcare.ahrq.gov. ■

Osteoporosis-linked fractures rise dramatically

The rate of patients hospitalized for treatment of hip, pelvis, and other fractures associated with osteoporosis jumped by 55 percent between 1995 and 2006, according to the latest data from the Agency for Healthcare Research and Quality (AHRQ). An estimated 10 million Americans suffer from osteoporosis, which causes bones to become brittle and weak. Fractures associated with osteoporosis can be slow to heal, and they also can cause debilitating pain, disability, deformities, and occasionally death.

AHRQ's study also found that fractures associated with osteoporosis:

- Accounted for one-fourth of the roughly 1 million hospitalizations

in 2006 of patients with osteoporosis.

- Cost hospitals \$2.4 billion in 2006.
- Caused women to be six times more likely to be hospitalized than men.
- Involved mostly older patients: 90 percent of hospitalizations were for patients aged 65 and older and 37 percent for patients aged 85 and older.
- Were highest in the Midwest (107 per 100,000 people) and lowest in the West (68 per 100,000 people).

These data are based on the Healthcare Cost and Utilization Project (HCUP) Statistical Brief #76, *U.S. Hospitalizations Involving*

Osteoporosis and Injury, 2006, available at www.hcup-us.ahrq.gov/reports/statbriefs/sb76.pdf. The report uses statistics from the 2006 Nationwide Inpatient Sample, a database of hospital inpatient stays that is nationally representative of inpatient stays in all short-term, non-Federal hospitals. The report also uses statistics from a special disparities analysis file created from the HCUP 2006 State Inpatient Databases.

For more information about osteoporosis, see *Osteoporosis Treatments that Help Prevent Broken Bones: A Guide for Women after Menopause*, at www.effectivehealthcare.ahrq.gov/. ■

Announcements

AHRQ launches monthly health advice column and enhanced Web site in Spanish

The Agency for Healthcare Research and Quality (AHRQ) recently launched *Consejos de Salud Para Tí* (Health Advice for You), a new monthly online health advice column for Spanish-speaking consumers. The column provides evidence-based tips on preventive health, safe and appropriate use of medications and other medical therapies, ways to get better health care, and other key health care issues. The column is part of AHRQ's *Información en Español* Web site (www.ahrq.gov/consumer/espanoix.htm), which has been enhanced and now includes audio and video in Spanish on a wide range of health care issues.

The inaugural advice column, by AHRQ physician Ileana Ponce-Gonzalez, M.D., focuses on preventive health practices and screening tests for men that are recommended by the AHRQ-supported U.S. Preventive Services Task Force. Dr. Ponce-Gonzalez, who also provides consumer health advice monthly on the Univisión Television Network's *Despierta América* morning news show, received her medical

degree from the National University of Nicaragua, a clinical genetics degree at the University of Chile, and a Master of Public Health degree from The Johns Hopkins Bloomberg School of Public Health. She has practiced medicine and public health in her native Nicaragua, the United States, Chile, and Mexico.

AHRQ's enhanced Spanish-language Web site includes more than 35 consumer guides on health care quality, surgery, health conditions and diseases, quitting smoking, safe use of medicines, understanding health insurance options, and prevention and wellness. The 30- and 60-second audio spots on the Web site focus on comparisons of pills for type 2 diabetes, pain medicines for osteoarthritis, tips for preventing blood clots, safe and effective use of blood thinner pills, tips for quitting smoking, preventive health, and more. The Web site also features "Superhéroes," a national public service campaign developed in partnership with the Ad Council to encourage Hispanics to become more involved in their health care. ■

New Spanish-language consumer guides compare treatments for depression, prostate cancer, and other conditions

Spanish speakers who want to know how soon they can expect to feel better when taking an antidepressant, which rheumatoid arthritis drugs work best against pain, or how surgery compares with other options for prostate cancer now can get this and other treatment information through new Spanish-language consumer guides released today by the Agency for Healthcare Research and Quality (AHRQ). The Agency also released consumer guides in Spanish that compare treatments for high blood pressure, osteoporosis in women after menopause, and renal artery stenosis—a narrowing of the renal artery that supplies blood to the kidneys. The six Spanish-language

guides join three previously published Spanish-language guides on oral medications for type 2 diabetes, osteoarthritis, and acid reflux disease.

AHRQ's recently released 2008 National Healthcare Disparities Report shows that while the quality of health care is slowly improving for the nation as a whole, it is getting worse for Hispanics, especially those who speak little or no English. The new Spanish-language consumer guides are produced by AHRQ's Effective Health Care Program, the leading Federal effort to conduct comparative effectiveness research. That program, authorized by the Medicare Prescription Drug,

Improvement, and Modernization Act of 2003, represents an important federal effort to compare alternative treatments for health conditions and make the findings public. The program is intended to help patients, doctors, nurses, pharmacists and others choose the most effective treatments.

To access the on-line Spanish-language consumer guides, as well as AHRQ's English-language consumer guides and companion guides for clinicians, go to www.effectivehealthcare.ahrq.gov/. Audio versions of many guides also are available. Copies of the guides, are also available from AHRQ.* ■

2007 Nationwide Inpatient Sample released

The Healthcare Cost and Utilization Project (HCUP) Nationwide Inpatient Sample (NIS) featuring 2007 data was recently released by the Agency for Healthcare Research and Quality (AHRQ). The NIS is the largest all-payer inpatient care database in the United States and is updated annually. It is available from 1988 to 2007, allowing analysis of trends over time.

The NIS is nationally representative of all short-term, non-Federal hospitals in the United States. It approximates a 20 percent stratified sample of hospitals in the United States and is drawn from the HCUP State Inpatient Databases, which include 90 percent of all discharges in the United States. The NIS includes all patients from each sampled hospital, regardless of payer—including persons covered by Medicare, Medicaid, or private insurance, and the uninsured.

The data can be weighted to produce national estimates, allowing researchers and policymakers to use the NIS to identify, track, and analyze national trends in health care utilization, access, charges, quality, and outcomes. The vast size of the NIS enables analyses of infrequent conditions, such as rare cancers; uncommon treatments, such as organ transplantation; and special patient populations, like

the uninsured. Its size also allows for the study of topics at both national and regional levels. In addition, NIS data are standardized across years to facilitate ease of use.

The 2007 NIS contains data from over 8 million hospital stays from more than 1,000 hospitals in 40 states. For most hospitals, the NIS includes identifiers that allow linkages to the American Hospital Association's Annual Survey Database and county identifiers that permit linkages to the Health Resources and Services Administration's Area Resource File. The NIS contains clinical and resource use information included in a typical discharge abstract, with safeguards to protect the privacy of individual patients, physicians, and hospitals (as required by data sources).

As part of the HCUP database family, the NIS is considered by health services researchers to be one of the most reliable and affordable databases for studying important health care topics. The 2007 NIS can be purchased through the HCUP Central Distributor at www.hcup-us.ahrq.gov. Some 2007 NIS data are available in HCUPnet (hcupnet.ahrq.gov), a free online query system. More information about the NIS and other HCUP products can be found on the HCUP-US Web site at www.hcup-us.ahrq.gov. ■

New hospital emergency department database available

The 2006 Nationwide Emergency Department Sample (NEDS) is the newest Healthcare Cost and Utilization Project (HCUP) database released by the Agency for Healthcare Research and Quality (AHRQ). The NEDS is the largest all-payer emergency department (ED) database in the United States. The NEDS was created to enable analyses of ED use patterns and to aid public health professionals, administrators, policymakers, and clinicians in finding the data they need to answer questions about care that occurs in U.S. hospital EDs.

NEDS information on hospital characteristics, patient

characteristics, geographic region, and the nature of ED visits has many research applications. It can be used to generate national estimates on the number of ED visits in all community hospitals, by region, urban/rural location, teaching status, ownership, and trauma designation. It also provides in-depth information on acute management of patients for all visits, including the reason for the visit, treatments received, and what happened to them at the end of the visit (for example, admitted to the hospital, discharged home, or transferred to another hospital), the charge for their care, and who was billed.

For example, the 2006 NEDS contains data from 26 million ED visits, and encompasses all encounter data from nearly 1,000 hospital-based EDs in 24 States. The NEDS approximates a 20 percent stratified sample of EDs from community hospitals. Weights are provided to calculate national estimates pertaining to the 120 million ED visits that took place in 2006.

The database was constructed using records from both the HCUP State Emergency Department Databases and the State Inpatient Databases. The NEDS provides information on "treat-and-release" ED visits, as well as ED visits in which the patient was admitted to

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the same hospital for further care. The 2006 NEDS can be purchased through the HCUP Central

Distributor at www.hcup-us.ahrq.gov. Some 2006 NEDS data are available in HCUPnet, at hcupnet.ahrq.gov, a free online query system. More information

about the NEDS and other HCUP products can be found on the HCUP-US Website at www.hcup-us.ahrq.gov. ■

Research Briefs

Bender, H. A., Cole, J. R., Aponte-Samalat, M., and others. (2009). "Construct validity of the Neuropsychological Screening Battery for Hispanics (NeSBHIS) in a neurological sample." (AHRQ grant HS16819). *Journal of the International Neuropsychological Society* 15, pp. 217–224.

The authors describe testing of a cross-cultural assessment instrument, the Neuropsychological Screening Battery for Hispanics (NeSBHIS), in a sample of native Spanish-speaking immigrants with epilepsy. This Spanish-language assessment battery—which evaluates the domains of language, memory functioning, visuospatial functioning, mental control, psychomotor functioning, and reasoning—was originally normed using a standardization sample of 300 community-referred, Spanish-speaking Hispanics. The authors' primary goal was to determine whether this screening battery remains useful in a clinical sample of 127 Hispanic participants with epilepsy, recruited over a 6-year period from Hispanic patients at a large urban Comprehensive Epilepsy Center. Although the authors used a different psychomotor test than had the original developers of NeSBHIS, they found their results on the clinical sample consistent with those found by the original developers. The authors suggest that further studies be undertaken

using NeSBHIS in patients with other neurological problems.

Bradford, D. W., Kim, M. M., Braxton, L. E., and others. (2008, August). "Access to medical care among persons with psychotic and major affective disorders." (AHRQ grant HS13353). *Psychiatric Services* 59(8), pp. 847–852.

This study found that people with psychotic disorders had a 45 percent lower likelihood and those with bipolar disorder had 26 percent lower likelihood of having a primary care doctor compared with people not suffering from mental disorders. Researchers compared access and barriers to medical care among 156,475 adults reporting psychotic and mood disorders or without mental disorders, who completed the National Health Interview Survey (NHIS) and NHIS-Disability Component for 1994 and 1995. People with psychotic disorders, bipolar disorder, or major depressive disorder had 2.5 to 7 times greater odds of any barriers to care, ranging from delaying medical care because of costs to being unable to get needed medical care or a needed prescription medication. However, those with major depression were as likely to report having a regular source of care as those who did not report psychiatric disorders.

Bundy, D. G., Rinke, M. L., Shore, A. D., and others. (2008, September). "Medication errors in the ambulatory treatment of pediatric attention deficit hyperactivity disorder." (AHRQ grant HS16774). *Joint Commission Journal on Quality and Patient Safety* 34(9), pp. 552–560.

The incidence of medication error related to the treatment of attention deficit hyperactivity disorder (ADHD) is significant, concludes this study. Researchers searched the U.S. Pharmacopeia MEDMARX database for reports involving medications used in the outpatient treatment of ADHD in children between 2003 and 2005. Of 361 error reports, 329 involved medications used only in the treatment of ADHD and 32 involved medications used for ADHD as well as other conditions. Among first-listed generic medications, methylphenidate (MPH) and its derivatives (43 percent) and dextroamphetamine, alone and combined with amphetamine salts (41 percent), accounted for more than four out of five error reports. Improper dose, wrong dosage form, and prescribing errors were the 3 most common errors listed in the 361 reports. Improper dose was a significantly more common error with MPH. Wrong dosage form was the second most common error type. This is particularly likely

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when multiple formulations of the same medication have names that sound or look similar.

Clancy, C. M. (2009, May/June). “More work is needed to protect medical residents from fatigue and potential errors, IOM report finds.” *American Journal of Medical Quality* 24(3), pp. 259–261. Reprints (AHRQ Publication No. 09-R065) are available from AHRQ.*

In this commentary, Carolyn Clancy, M.D., director of the Agency for Healthcare Research and Quality (AHRQ), outlines the issue of medical errors among medical residents due to sleep deprivation as well as regulations put into place to address this problem. She summarizes the findings of a recent Institute of Medicine (IOM) report, funded by AHRQ, on acute and chronic fatigue among medical residents. The report found that the work limits were not being followed, thereby continuing to put patients at risk. The commentary reviews the reactions of clinical educators and lists the new recommendations from the IOM panel. The author notes the usefulness of evidence-based tools from AHRQ that hospitals can employ to assess and improve their patient safety culture and teamwork. Balancing the issues of sleep deprivation and the demanding training requirement of certain specialties will require shifts in organizational and individual thinking, she concludes.

Daniels, T. L., Deppen, S., Arbogast, P. G., and others. (2008, November). “Mortality rates associated with multidrug-resistant *Acinetobacter baumannii* infection in surgical intensive care units.” (AHRQ grant

HS13833). *Infection Control and Hospital Epidemiology* 29(11), pp. 1080–1083.

Researchers found that mortality rates are similar for intensive care unit patients with drug-resistant and nonresistant *Acinetobacter baumannii*. They collected data from July 2003 to June 2006 to determine the 28-day mortality rate of patients who contracted multidrug resistant (MDR) and nonresistant *A. baumannii* infections in burn, surgical, and trauma intensive care units at a large university-affiliated hospital. Patients with MDR *A. baumannii* more frequently received two antibiotics (aminoglycosides and quinolones) and were ventilated 9.5 days compared with 6.8 days for patients whose infections were not drug-resistant. However, hospital stay lengths did not differ between the two groups. A total of 10 patients died: 6 infections were drug-resistant and 4 infections were not. The researchers did not find an increased mortality rate between the two groups; however, the small sample size may have limited the study’s ability to draw conclusions.

Dossett, L. A., Heffernan, D., Lightfoot, M., and others. (2008, November). “Obesity and pulmonary complications in critically injured adults.” (AHRQ grant HS13833). *CHEST* 134(5), pp. 974–980.

Studies have linked obesity with a high risk of pulmonary complications after severe injury. However, a new study found no greater risk of pulmonary complications among critically injured obese adults than their normal-weight counterparts. Nevertheless, severely obese patients stayed in the intensive care unit (ICU) nearly 5 days longer than normal-weight injury victims.

Researchers studied the outcomes of 1,291 critically injured adults admitted at 2 trauma ICUs. Overall, 30 percent of the patients were classified as either obese or severely obese. They examined rates of adult respiratory distress syndrome (ARDS), pneumonia, placement of a tracheostomy tube, and in-hospital deaths. Despite obese patients’ underlying risk factors for pulmonary complications, severely obese patients had a 64 percent lower rate of ARDS than normal-weight patients. Rates of pneumonia (37 percent), tracheostomy (10 percent), and in-hospital death (11 percent) were similar for obese and normal-weight patients. However, the severely obese group had a nearly 5-day-longer ICU stay.

Farley, D. O., Haviland, A., Champagne, S., and others. (2008, December). “Adverse-event-reporting practices by US hospitals: Results of a national survey.” *Quality and Safety in Health Care* 17(6), pp. 416–423. Reprints (AHRQ Publication No. 09-R021) are available from AHRQ.*

Nearly 95 percent of critical access hospitals (CAHs), typically smaller, rural hospitals that provide 24-hour emergency services but a limited range of other services, had centralized adverse event reporting systems; 98.2 percent of other hospitals had similar systems, according to this study. James B. Battles, Ph.D., and William B. Munier, M.D., of the Agency for Healthcare Research and Quality, and coinvestigators surveyed risk managers from a national sample of 2,050 hospitals, resulting in 1,652 completed surveys. Less than one-third of hospitals (32 percent) had established environments that supported adverse event reporting,

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and only 13 percent had broad staff involvement (beyond physicians and nurses) in reporting these events. Only one-fifth of hospitals fully distributed summary reports on identified adverse events to departments and committees that could bring about practice changes. All reporting systems collected the type and place of adverse events. Almost as many reporting systems collected time of occurrence (99 percent), patient demographics (95 percent), if any action was taken (94 percent), and needed followup treatment (94 percent).

Flanders, S. A., Centor, B., Weber, V., and others. (2009).

“Challenges and opportunities in academic hospital medicine: Report from the Academic Hospital Medicine Summit.” (AHRQ grants HS11416 and HS15701). *Journal of General Internal Medicine* 24(5), pp. 636–641.

The authors summarize the discussions at and results of the Academic Hospital Medicine Summit, a consensus conference on the status of academic hospital medicine and the clinical and financial issues that are limiting its growth. The conference brought together the major stakeholders in academic hospital medicine, including the Society of Hospital Medicine, the Society of General Internal Medicine, and the Association of Chiefs of General Internal Medicine. In particular, the limits placed on resident work hours have led to the use of hospitalists to provide general internal medicine care in teaching hospitals. They are often called on to implement quality or safety improvement initiatives, but little value is typically placed on

teaching or research—even at teaching hospitals. Another problem is that the relative youth of the hospitalist field means that there are few senior academic hospitalists to provide leadership to the field and influence staff negotiations with hospitals. Conference participants concluded that there is a need to define a sustainable job description for academic hospitalists, as well as develop a quality improvement portfolio that would be comparable to an educator's portfolio.

Fonkych, K., O’Leary, J. F., Melnick, G. A., and Keeler, E. B. (2008, August). “Medicare HMO impact on utilization at the end of life.” (AHRQ grant HS10256). *American Journal of Managed Care* 14(8), pp. 505–512.

Physicians practicing in HMOs in California have developed approaches that allow the use of fewer inpatient resources at the end of their patients' lives, according to this study. Because of fewer and shorter hospitalizations, Medicare patients in HMOs used 34 to 51 percent less inpatient care in the last 2 years of life than similar patients in Medicare fee-for-service (FFS) plans. Neither the timing of the last hospitalization nor the probability of having at least one hospitalization during the last 2 years of life was substantially different between HMO and FFS patients. These findings suggests that the California Kaiser and Independent Practice Association (IPA) HMOs primarily reduced the number of hospitalizations that preceded the last hospitalization, note the researchers. The findings were based on analysis of data from the Centers for Medicare & Medicaid Services, which were linked to California inpatient discharge data. The researchers

determined the HMO-FFS differences in patient use during the last 2 years of life among a sample of aged Medicare beneficiaries who died between January 1998 and June 2001. These patients were enrolled during the 2 years before death in an FFS Medicare plan, an IPA, or Kaiser.

Glance, L. G., Osler, T. M., Mukamel, D. B., and others. (2009, April). “Expert consensus vs empirical estimation of injury severity.” (AHRQ grant HS16737). *Archives of Surgery* 144(4), pp. 326–332.

The authors of this paper compare two trauma injury scores that can be used as outcome measures for quality comparisons of hospital trauma care. The smaller the hospital's ratio of observed-to-estimated mortality for injuries, the higher the quality, they note. One score, the Injury Severity Score, depends on expert consensus of the severity of each injury on a scale ranging from 1 (minor) to 6 (currently untreatable). An alternate score, the Trauma Mortality Prediction Model, is based on empirical estimates of injury severity, and can be derived using hospital billing data. Both models were augmented by use of demographic information, mechanism of injury, and the motor function component of the Glasgow Coma Scale. Using data from the National Trauma Data Bank, which collects trauma registry data from hospitals, the authors applied both augmented scoring models to data from 66,214 patients in 68 hospitals. The two score models gave an interclass correlation coefficient of 0.93, indicating almost perfect agreement. The authors conclude that either injury scoring model can be used to give

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accurate and valid results for calculating estimated mortality, and hence quality of trauma care.

Gooden, K. M., Howard, D. L., Carpenter, W. R., and others. (2008, November). “The effect of hospital and surgeon volume on racial differences in recurrence-free survival after radical prostatectomy.” (AHRQ grant HS13353). *Medical Care* 46(11), pp. 1170–1176.

Researchers examined data from the 1991 to 2002 Surveillance, Epidemiology, and End-Results—Medicare databases for 962 black and 7,387 white men who underwent prostatectomy (surgical removal of the prostate) for prostate cancer within 6 months of diagnosis. They wanted to determine if less experience with prostatectomy among hospitals and surgeons treating black men contributed to racial disparities in postoperative survival. Prostate cancer recurrence-free survival rates improved with hospital and surgical volume of prostatectomies performed. Black men were 34 percent more likely to suffer a cancer recurrence than white men, even those treated at high- and medium-volume hospitals by high- and medium-volume surgeons.

Guisse, J.-M. D. and Segel, S. (2008, October). “Teamwork in obstetric critical care.” (AHRQ grants HS15800 and HS16673). *Best Practice & Research Clinical Obstetrics & Gynaecology* 22(5), pp. 937–951.

The authors provide a history of teamwork approaches in industry, reviewing the key components and delivery methods of the teamwork programs being used in medicine today to reduce safety risk. The aviation industry developed Crew

Resource Management (CRM) after determining that human error caused most aviation accidents. Focusing on obstetric critical care, the authors provide an overview of 11 currently available medical team training programs that use many CRM principles. At the core of CRM are communication techniques, situational awareness, and leadership. Communication techniques in medical teamwork training include SBAR, in which a team member provides the situation, background, assessment, and response to ensure all information is conveyed to a receiving team member. Situational awareness ensures team members know what resources are available and where they are, so that they can be obtained quickly. Good leadership ensures every team member feels comfortable speaking up.

Heslin, K. C., Gore, J. L., King, W. D., and Fox, S. A. (2008, December). “Sexual orientation and testing for prostate and colorectal cancers among men in California.” (AHRQ grant HS14022). *Medical Care* 46(12), pp. 1240–1248.

Gay/bisexual men differ from heterosexual men in their use of colorectal cancer (CRC) screening and prostate-specific antigen (PSA) screening for prostate cancer, according to this study. The researchers analyzed responses of 19,410 men to the California Health Interview Survey to correlate the sexual orientation of men age 50 and over with their receipt of PSA and CRC screening tests. More men received CRC than PSA tests, with nearly 80 percent of gay/bisexual men ever receiving a CRC test. After adjusting for race/ethnicity, education, and language proficiency, gay/bisexual men were nearly twice as likely as

heterosexual men to have ever received a CRC test. In contrast, gay/bisexual men were 39 percent less likely than heterosexual men to have up-to-date PSA testing. However, interactions between sexual orientation and living situation showed that gay/bisexual men who lived alone had nearly twice the likelihood of receiving PSA tests than did other men.

Horowitz, C. R., Robinson, M., and Seifer, S. (2009, May). “Community-based participatory research from the margin to the mainstream. Are researchers prepared?” (AHRQ grant HS16471). *Circulation* 119, pp. 2633–2642.

The authors review the usefulness and growth of community-based participatory research (CBPR), an approach to clinical research that involves community members beyond being research subjects. Because representatives of community organizations are involved in the selection of the research topic, design of the study, recruitment of participants, writing up the results, and communicating the findings, the community has a stake in the project and implementing the results. The article compares the traditional approach with CBPR, explains why an approach partnering with the community is important—especially in addressing health care disparities—and highlights the potential benefits of CBPR. Using examples from cardiovascular medicine, the authors discuss key issues, such as team building, study selection and design, funding and ethics review, research conduct and analysis, dissemination of findings and their translation into policy and practice, and sustaining research partnerships with the community.

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Howard, D. L., Taylor, Y. J., and Ross, L. E. (2008, October).

“Differences in lower urinary tract symptoms, treatment and mortality among African-American and white elderly men.” (AHRQ grant HS13353). *Journal of the National Medical Association* 100(10), pp. 1146–1152.

Moderate to severe lower urinary tract symptoms (LUTS), usually associated with benign prostatic hyperplasia (BPH) or enlarged prostate, affect an estimated third of older men. This study found a 40 percent higher probability of use of prostate surgery for elderly black than white men, after adjusting for other factors. However, it found no racial differences in treatment by catheter insertion to relieve blockages or drug therapy for BPH/LUTS. All three treatment types increased from 1994 to 1998, with drug therapy showing the largest increase. Catheter insertion increased over time and increased for men who had ever resided in a nursing home and men with no named physician. Men with coexisting conditions were less likely to receive drug therapy. Prostate surgery increased for black men, older aged men, those in poor self-reported health, men with cancer, and men having regular rectal exams.

Jaar, B. G., Plantinga, L. C., Crews, D. C., and others. (2009, February). “Timing, causes, predictors and prognosis of switching from peritoneal dialysis to hemodialysis: A prospective study.” (AHRQ grant HS08365). *BioMedCentral Nephrology* 10(3), pp. 1–12.

The authors investigated factors associated with dialysis patients switching from peritoneal dialysis

(PD) to hemodialysis (HD), and whether this switch influences mortality. Although PD is capable of being done at home, its use has fallen, while that of clinic- or hospital-based HD is on the increase. To understand why this has changed, the authors undertook a prospective study of 262 PD patients enrolled at 28 PD clinics in 13 States. Among the patients in the study, 25 percent switched to HD during the study period. The majority of switchers (70 percent) did so within the first 2 years. The leading cause of switching (37 percent) was infection, either peritonitis or catheter-related. Cardiovascular problems (fluid overload) accounted for nearly 19 percent of the switchers. Black patients were three times more likely than white patients to switch, and this association became stronger after adjusting for demographic factors, diabetes status, body-mass index, and baseline serum creatinine. No statistically significant difference in mortality was observed between the switchers and nonswitchers. Further studies are needed to understand why black PD patients are more likely to switch to HD.

Keyser, D. J., Dembosky, J. W., Kmetik, K., and others. (2009, May). “Performance improvement: Using health information technology-related performance measures and tools to improve chronic care.” (AHRQ grant HS13690). *The Joint Commission Journal on Quality and Patient Safety* 35(5), pp. 248–255.

A collaborative initiative described by the authors sought to explore the usefulness of health information systems in collecting clinical performance measures to improve the quality of care for patients with selected chronic

diseases. The initiative, led by the American Medical Association and assessed by the RAND Corporation, consisted of four pilot projects. Pilot 1, which focused on physician practices with electronic health information systems, found that paper-based data collection systems and an attempt to create a community-based central data warehouse were not effective. Pilot 2, conducted at an integrated network of outpatient clinics with electronic disease registries, was able to enhance the use of a limited set of clinically based quality measures and tools, such as measurement of glycosolated hemoglobin in patients with diabetes, resulting in improvements in outcomes of care. Pilot 3, conducted at a multispecialty physician’s organization affiliated with a major medical school, used the practice’s office-based electronic medical record to collect information to analyze the quality of care. Physicians in the practice received regular feedback on selected performance measures, and their compliance improved. Pilot 4, conducted at a large specialty group, documented the challenges of exporting quality performance data from physician practices to external organizations (health plans and Quality Improvement Organizations).

Lyons, M. S., Lindsell, C. J., Haukoos, J. S., and others. (2009, February). “Nomenclature and definitions for emergency department human immunodeficiency virus (HIV) testing: Report from the 2007 Conference of the National Emergency Department HIV Testing Consortium.” (AHRQ HS17526). *Academic Emergency Medicine* 16(2), pp. 168–177.

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Emergency departments (EDs) are increasingly being asked to make testing for human immunodeficiency virus (HIV) a routine part of emergency care. As HIV testing of patients grows beyond a small number of pioneering centers and demonstration projects, the need has increased for a common set of definitions for reporting HIV and other information. The authors of this paper summarize the consensus process and results of the first conference of the National Emergency Department HIV Testing Consortium, held in Baltimore in November 2007. They report the consensus definitions related to setting (geographic and epidemiologic, facility, and the HIV testing program), patient recruitment and consent, testing methods, preresult and postresult communication with the patient, outcome measures, and key summary measures. The authors discuss some of the important distinctions included in the definitions, such as the difference between “testing” and “screening,” and defining “patient” for outcome measures as a distinct individual rather than a distinct visit to the ED.

Needham, D. M., Sinopoli, D. J., Dinglas, V. D., and others. (2009, February). “Improving data quality control in quality improvement projects.” (AHRQ grant HS14246). *International Journal for Quality in Health Care* 21(2), pp. 145–150.

The authors emphasize the importance of data quality control in projects aimed at improving quality of care. They use as their example the successful statewide project in Michigan to reduce the rate of central line-associated

infections among patients in intensive care units. The authors note that data quality issues for quality improvement (QI) projects should be addressed during the project design phase. Standardized forms with clear definitions of data items and written instructions for collecting each data item are very important to the ultimate quality of the data, as are quality assessment reviews and use of an electronic database. The authors recommend the use of statistical methods to review the data for errors. They also urge researchers to account for missing data during data analysis, manage outlier data, and convey the precision of the QI results. Researchers also should test for the influence of confounding variables (such as teaching status of the hospital and bed size). High quality QI data are vital to appropriate decisionmaking based on the research, the authors conclude.

Newsome, B. B., McClellan, W. M., Allison, J. J., and others. (2008, August). “Racial differences in the competing risks of mortality and ESRD after acute myocardial infarction.” (AHRQ grant HS13852). *American Journal of Kidney Disease* 52(2), pp. 251–261.

Blacks have a higher risk than whites of developing end-stage renal disease (ESRD), almost complete kidney failure, but they have lower rates of kidney disease. Researchers used baseline information from 1,261 Medicare patients who had heart attacks between February 1994 and July 1995 and developed ESRD after their hospital discharge to explore the reasons for this “renal paradox.” Black patients tended to have lower prevalence of kidney disease but greater incidence and risk of developing ESRD in the 10

years after their heart attacks than white patients. The incidence rate for developing ESRD for black patients was 9.25 per 1,000 person years and 3.39 per 1,000 person years for white patients. Both blacks (77.4 percent) and whites (76.3 percent) died at similar rates before their kidney disease progressed to ESRD. The study does not explain why blacks have less kidney disease at baseline but have a higher risk of developing ESRD than whites. The presence of other diseases, such as diabetes and high blood pressure, which are the most important risk factors for ESRD and are prevalent in blacks, did not account for the differences. The authors suggest that ESRD may be associated with poverty and health care access.

Volpp, K. G., Loewenstein, G., Troxel, A. B., and others. (2008). “A test of financial incentives to improve warfarin adherence.” (AHRQ grant HS11530). *BioMedCentral Health Services Research* 8(272), pp. 1–6.

Financial incentives, in the form of a lottery, appear effective in getting patients on anticoagulating therapy to take their medicine as prescribed. The authors describe a pilot study to test whether a lottery with a daily expected value of either \$3 or \$5 improves adherence to warfarin, an anticoagulating medication. One set of 10 patients was entered into a daily lottery with a 1 in 5 chance of winning \$10 and a 1 in 100 chance of winning \$100; a second group of 10 patients had a 2 in 5 chance of winning \$10 and a 1 in 100 chance of winning \$100. If the lottery winner had not taken his or her medicine that day, they forfeited the prize. In both cases, the percentage of incorrect pills taken

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fell from the range of 26-28 percent before the study to a range of 3-6 percent during the study.

Improvement was also observed for

out-of-range international normalized ratios on the prothrombin time test, a measure of anticlotting therapy effectiveness.

These studies provide initial evidence that lottery-based financial incentives may be useful

in improving medication adherence in patients taking warfarin, as well as for other medications used to treat chronic conditions, the authors say. ■



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