



Research Activities



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Agency for Healthcare Research and Quality

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Children with complex chronic conditions are more likely to die in their homes than in the hospital

Of the U.S. children who died between 1989 and 2003, one in five (22 percent) died from an underlying complex chronic condition such as congenital heart disease, cancer, or neuromuscular disease. During that period, the place where these children died shifted from the hospital setting to their homes, according to a national study. Improved medical management of these diseases has prolonged children's survival. Also, technological advances such as tube feeding and home ventilators may allow more medically fragile children to be cared for at home. Finally, pediatric home care and hospice services are more available today, explain the researchers.

They found that during the study period, 82 percent of children died in the hospital and 15 percent died at home. However, the percentage of infants dying at home increased significantly from 4.9 percent in 1989 to 7.3 percent in 2003.

The percentage of 1- to 9-year-olds dying at home increased from 17.9 to 30.7 percent, and the percentage of 10- to 19-year-olds grew from 18.4 to 32.2 percent. However, black and Hispanic children were half as likely to die at home as white children, even after adjusting for medical condition, geographic location, and other factors.

Differential access to health care services or technology, cultural attitudes toward palliative and end-of-life care, and different levels of financial or other support in the family's social network may make dying at home more or less likely, suggest the researchers. Their findings were based on a retrospective study of the National Center for Health Statistics Multiple Cause of Death Files spanning 1989-2003. They studied the place of death of all children 19 years or younger with a complex chronic condition. The study

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Complex chronic conditions

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was supported in part by the Agency for Healthcare Research and Quality (T32 HS00002).

More details are in “Shifting place of death among children with complex chronic conditions in the

United States, 1989-2003,” by Chris Feudtner, M.D., Ph.D., M.P.H., James A. Feinstein, M.D., Marlon Satchell, M.P.H., and others, in the June 27, 2007 *Journal of the American Medical Association* 297(24), pp. 2725-2732. ■

Child/Adolescent Health

Parents of children with cancer are overly optimistic about a cure, but not about other outcomes of cancer therapy

Children who survive cancer sometimes have significant late effects of cancer and its treatment. Parents of children with cancer tend to be overly optimistic about the chances of a cure, but not about future problems related to cancer or cancer therapy, according to a new study. Physicians often do not communicate prognosis information clearly and explicitly; however, they do tend to detail the adverse effects related to treatment. To provide parents with

more realistic expectations about their child's prognosis, doctors need to be specific about the probability of cure as well as the possibility of long-term cancer- and treatment-related limitations, suggests Jennifer W. Mack, M.D., M.P.H., of the Dana-Farber Cancer Institute.

Dr. Mack and fellow investigators surveyed 194 parents of children with cancer treated at 1 hospital, along with the children's physicians. They compared parent and physician expectations for the likelihood of a cure and functional outcomes. The majority of parents (61 percent) were more optimistic than physicians about the chances that their child would be cured. Parental ratings of the likelihood of a cure matched physician ratings in only 29 percent of cases, and only 10 percent of parents were more pessimistic than the doctors about the chances of cure.

Most parents (70 percent) believed that their opinions about the likelihood of a cure were the same as those of their child's oncologist. Parents' beliefs about quality-of-life impairment due to cancer treatment were similar to physicians, but parents were more pessimistic than physicians about the impact of cancer treatment on physical and intellectual functioning. The study was supported in part by the Agency for Healthcare Research and Quality (T32 HS00063).

See “Understanding of prognosis among parents of children with cancer: Parental optimism and the parent-physician interaction,” by Dr. Mack, E. Francis Cook, Joanne Wolfe, and others, in the April 10, 2007 *Journal of Clinical Oncology* 25(11), pp. 1357-1362. ■

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Medication errors are made during care for half of the children seen at rural California emergency departments

Hospitalized children, whose medication needs to be calculated for their weight, suffer from three times as many medication errors as hospitalized adults. One-fourth of the U.S. pediatric population receives care in hospital emergency departments (EDs) each year, yet very little is known about the medication errors that occur among these children. However, a new study found that medication errors were made during the care of half of the critically ill and injured children who received medications at four rural EDs studied. In addition, 15 percent of these errors were due to erroneous physician orders, for example, wrong dose, wrong or inappropriate medication for the condition, wrong route, or wrong dosage form, but none of the errors was deemed to have caused significant harm.

Nevertheless, the results underscore the need to redesign care systems to decrease the likelihood of medication errors among pediatric ED patients, concludes James P. Marcin, M.D., M.P.H., of

the University of California, Davis. Dr. Marcin and colleagues identified the incidence, nature, and consequences of medication errors among all critically ill children treated at the four California rural EDs between January 2000 and June 2003.

Among the 69 children with medication errors, 16 percent had errors that had the potential to cause harm; however, none of the errors harmed the children treated. Potential solutions to medication errors among children treated at rural EDs might be computerized medication order systems, even though it is difficult for rural hospitals to afford them due to financial constraints. Other possible solutions include use of the Broselow tape to assess children's body weight (based on the tape's height measurement) for drug dosage calculation, use of preprinted medication order sheets, and use of telemedicine or telepharmacy (since there are few pharmacists or doctors in rural areas). The study was supported in part by the Agency for

Healthcare Research and Quality (HS13179).

See "Medication errors among acutely ill and injured children treated in rural emergency departments," by Dr. Marcin, Madan Dharmar, M.B.B.S., Meyng Cho, Pharm.D., and others, in the April 2007 *Annals of Emergency Medicine* 50(4), pp. 361-367.

Editor's note: Another AHRQ-supported study (HS11890 and HS14020) on a related topic found that pediatricians are willing to report errors to hospitals and disclose errors to patients' families. However, they believe that current error reporting systems are inadequate, and they struggle with error disclosure. For more details, see: Garbutt, J., Brownstein, D.R., Klein, R.J., and others. (2007, February). "Reporting and disclosing medical errors." *Archives of Pediatric and Adolescent Medicine* 161, pp. 179-185. ■

Disparities/Minority Health

Perceived discrimination does not appear to affect black women's adherence to screening mammography guidelines

Black women are more likely to have their breast cancer diagnosed later and to die from the disease than white women.

Perceived racial discrimination has been shown to play a role in lack of compliance with medical recommendations. However, a new study found that while 42 percent of black women reported experiencing racial discrimination

in their lifetime, there was no link between perceived racial discrimination and black women's adherence to screening mammography guidelines. These findings indicate that women who recognize and report racial discrimination may develop compensatory behavior that enables them to engage in health

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Perceived discrimination

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prevention behavior in spite of their past experiences.

Researchers examined receipt of index mammograms at 1 of 5 Connecticut urban hospitals between 1996 and 1998 among 484 black women and 745 white women. The women completed telephone interviews at the time of the initial mammogram and an average of 29 months later. The interviews addressed perceived racial discrimination as lifetime experience in seven possible situations: at school, getting a job, at work, at home, getting medical care, in a public setting, and

interactions with the police or in the courts.

About 42 percent of black women and 10 percent of white women reported discrimination at some point in their life. Perceived racial discrimination was not associated with nonadherence to age-specific mammography screening guidelines, even after adjusting for other factors. However, the researchers caution that if black women in the study underreported racial discrimination, then the researchers may have underestimated its prevalence and subsequently diluted its effect on regular mammography screening. They note that black women may underreport perceived racial discrimination due to the sensitive

nature of the topic, social desirability, discomfort in reporting discrimination to the white telephone interviewers, or other reasons. The study was supported in part by the Agency for Healthcare Research and Quality (HS15686).

See "Perceived racial discrimination and nonadherence to screening mammography guidelines: Results from the race differences in the screening mammography process study," by Amy B. Dailey, Ph.D., Stanislav V. Kasl, Ph.D., Theodore R. Holford, Ph.D., and Beth A. Jones, Ph.D., M.D., in the June 2007 *American Journal of Epidemiology* 165, pp. 1287-1295. ■

Elderly black men are less likely than white men to seek and receive care for lower urinary tract symptoms

Lower urinary tract symptoms (LUTS) are very common among aging men. This is often due to an enlarged prostate, which presses on the urethra, making it difficult or painful to urinate. Elderly black men are more likely to delay seeking care until their symptoms interfere with daily activities, and they are less likely to have ever had or to have regular digital rectal exams (DREs) that can detect an enlarged prostate, according to a new study. Daniel L. Howard, Ph.D., of the Institute for Health, Social, and Community Research, and colleagues examined health care seeking behavior for LUTS among black and white elderly men in five North Carolina counties. They analyzed responses of 889 male respondents from a 1994 survey, a group that had declined to 471 respondents by the 1998 survey.

In 1994, 49.4 percent of blacks sought care for LUTS compared with 56.8 percent of whites. By 1998, these percentages increased to 60.6 percent and 70.3 percent, respectively. Also, by 1998, blacks' LUTS continued to cause them more moderate to severe interference in daily activities than whites' LUTS. Yet in both years,

black elders were more likely to receive care in a public clinic/hospital or emergency room than a physician's office.

There is no reason to think the biology of the prostate is different among ethnic groups. However, the threshold at which blacks and whites perceive a symptom to be a problem may be different. For example, more blacks than whites reported that their LUTS interfered with daily activities. Yet blacks were not as bothered by LUTS as whites. In this study, access to care and poor health behavior had the greatest impact on health care seeking and receipt of diagnostic care for LUTS. More studies are needed on factors underlying undertreatment of LUTS among black elders. The study was supported in part by the Agency for Healthcare Research and Quality (HS13353).

See "Healthcare practices among blacks and whites with urinary tract symptoms," by Dr. Howard, Bennett G. Edwards, Ph.D., Kimberly Whitehead, Ph.D., and others, in the April 2007 *Journal of the National Medical Association* 99(4), pp. 404-411. ■

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.

Patient Safety and Quality

Hospitals that operate at or over capacity are more likely to have patient safety problems

Under pressure to maximize revenue and minimize costs, many hospitals are providing more complex care to more patients with fewer staff. Yet, hospitals that operate at or over capacity are likely to experience more patient safety problems, according to a new study. These hospitals should consider re-engineering the structures of care to respond better during periods of high stress on hospital capacity, suggests Joel S. Weissman, Ph.D., of Harvard Medical School and Massachusetts General Hospital. His team examined rates of adverse events—ranging from hospital-acquired infections and medication reactions to pressure sores and

falls—and peak hospital workload at two large urban and two smaller suburban teaching hospitals over a 1-year period in 2000 and 2001.

The researchers characterized daily workload for each hospital by volume throughput (number of daily admissions and discharges), intensity (case complexity or severity of illness of patients being cared for), and staffing (patient-to-nurse ratios). They screened medical records to find 6,841 patients who suffered an adverse event. One urban teaching hospital had occupancy rates over 100 percent for more than one fourth of the year. At that hospital, increasing the occupancy rate by 10 percent increased the rate of

adverse events by 15 percent, while a 0.1 increase in the patient-to-nurse ratio led to a 28 percent increase in the adverse event rate.

Results at the other three hospitals varied and were mainly nonsignificant. High workload may be risky at organizations with little room for slack, conclude the researchers. Their study was supported by the Agency for Healthcare Research and Quality (HS12035).

More details are in “Hospital workload and adverse events,” by Dr. Weissman, Jeffrey M. Rothschild, M.D., M.P.H., Eran Bendavid, M.D., and others in the May 2007 *Medical Care* 45(5), pp. 448-455. ■

Women in Medicare and private managed care plans receive worse care than men for cardiovascular disease and diabetes

Women in Medicare and private managed care plans receive worse care than men for cardiovascular disease and diabetes, concludes a new study. For example, both women with diabetes and women who had suffered a heart attack were far less likely than their male counterparts to have their low density lipoprotein cholesterol (LDL-C) controlled, a risk factor for more diabetic and cardiac problems. These disparities existed despite women’s more frequent visits to the doctor, which should have provided more opportunities to receive indicated care, note the study authors.

They analyzed data from 10 commercial and 9 Medicare managed care plans and calculated performance on 7 measures of quality of care. These included: beta blocker use after heart attack and LDL-C check after a cardiac event; in patients with diabetes, checking for elevated blood-sugar levels (glycosylated hemoglobin, HbA1c), LDL-C, abnormal kidney functioning (a diabetes-related complication), and eye checks for diabetic retinopathy; as well as use of angiotensin-converting enzyme (ACE) inhibitors for congestive heart failure. Some plans also provided information on four other measures: control of LDL-C

after a cardiac event, blood pressure control in hypertensive patients, and HbA1c and LDL-C control in diabetics.

There were significant gender differences on 5 of the 11 measures among Medicare enrollees, with 4 favoring men, after adjusting for age, race/ethnicity, socioeconomic status, and health plan. There were gender differences among commercial enrollees for 8 of 11 measures, with 6 favoring men. The largest gender disparity was in control of LDL-C among patients with diabetes. Medicare-insured women were 19 percent less likely and women in private HMOs were 16 percent less likely than men to achieve LDL-C control. These results underscore the need to improve the quality of care for cardiovascular and diabetes care for women. The study was supported by the Agency for Healthcare Research and Quality (Contract No. 290-00-0012).

See “Does quality of care for cardiovascular disease and diabetes differ by gender for enrollees in managed care plans?” by Chloe E. Bird, Ph.D., Allen M. Fremont, M.D., Ph.D., Arlene S. Bierman, M.D., M.S., and others, in the May/June 2007 *Women’s Health* Issues 17, pp. 131-138. ■

Women with coronary heart disease are less likely than men to use aspirin to prevent further problems

Aspirin protects against heart attack, stroke, and other vascular events and reduces deaths from coronary heart disease (CHD). In fact, daily aspirin is recommended for all patients with cardiovascular disease unless contraindicated. Yet, women with CHD are less likely than their male counterparts to use aspirin regularly, according to a new study. This difference was not fully explained by differences in patient characteristics or reported contraindications to aspirin. These findings contribute to the growing evidence of disparate care for women with CHD, which may place them at greater risk for cardiovascular events such as stroke and heart attack and premature death. Many of these events may be prevented by greater use of low-cost aspirin.

Researchers analyzed data from the nationally representative 2000-2002 Medical Expenditure Panel Surveys to determine the prevalence of regular aspirin use among men and women with CHD. They examined 1,869 men and women 40 years of age and older who reported CHD prior to a heart attack. Women were less likely than men to use aspirin regularly (62.4 vs. 75.6 percent), even after adjusting for demographic, socioeconomic, and clinical characteristics.

Women were more likely than men to report contraindications to aspirin (20.5 vs. 12.5 percent). When the analysis was limited to those without self-reported contraindications to aspirin, the difference in aspirin use narrowed, but remained significant (79.8 vs. 86.4 percent). Differences in

aspirin use were also greater between women and men with private health insurance (61.8 vs. 79 percent) than among those with public coverage (62.5 vs. 70.7 percent). The underlying disparity in the quality of care received by men and women with CHD may help explain why younger women have poorer outcomes than men in the first few years after a heart attack. The study was supported by the Agency for Healthcare Research and Quality (T32 HS00020).

See "Gender differences in aspirin use among adults with coronary heart disease in the United States," by Alexander R. Opatowsky, M.D., M.P.H., J. Michael McWilliams, M.D., and Christopher P. Cannon, M.D., in the January 2007 *Journal of General Internal Medicine* 22, pp. 55-61. ■

A multipronged quality improvement strategy can markedly improve the quality of diabetes care and patient outcomes

Primary care practices that participate in a quality improvement project, which involves regular performance reports, occasional practice site visits by expert clinicians or pharmacists, and annual network meetings, can improve the care and outcomes of their patients with diabetes. A multipronged quality improvement project was conducted between January 1, 2004 and July 1, 2005 within 66 primary care practices in 33 States. It included 372 providers and 24,250 adults with diabetes. Steven Ornstein, M.D., of

the Medical University of South Carolina, and coinvestigators measured improvement on practice adherence to 13 measures of diabetes care and a summary measure, the Diabetes Summary Quality Index (Diabetes-SQUID).

The average Diabetes-SQUID across all practices improved 7.8 percent from 50.6 percent on January 1, 2004 to 58.4 percent on July 1, 2005. Significant improvements (generally between 5 and 10 percent)

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Diabetes care

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occurred for 12 of the 13 individual measures of diabetes care quality and patient outcomes: blood pressure and urine microalbumin monitoring; measurements of HDL cholesterol, LDL cholesterol, triglyceride, and glycosylated hemoglobin; prescription of antiplatelet therapy; and control of blood pressure (less than 130/80), HDL-cholesterol (greater than 45 mg/dL), LDL-cholesterol (less than 100 mg/dL), triglycerides (less than 150 mg/dL), and glycosylated hemoglobin control (less than 7 percent).

Practice clinicians noted that the regular reports at site visits, network meetings, and other forms of

communication helped them face the inadequacy of the care they delivered. These approaches also helped stimulate efforts to overcome clinical inertia to intensify diabetes medications and redesign office practices to involve nurses and other staff. Many practices also implemented disease management protocols that required more frequent visits by their patients. The study was supported by the Agency for Healthcare Research and Quality (HS13716).

See “Improving diabetes care through a multicomponent quality improvement model in a practice-based research network,” by Dr. Ornstein, Paul J. Nietert, Ph.D., Ruth G. Jenkins, Ph.D., and others, in the January 2007 *American Journal of Medical Quality* 22(1), pp. 34-41. ■

Outpatient medication errors are common among patients who have received liver, kidney, and/or pancreas transplants

Transplant patients must take numerous medications on a daily basis, including drugs that suppress their immune system to reduce the likelihood of organ rejection. According to a new study, outpatient medication errors among patients with liver, kidney, and/or pancreas transplants are common, often hidden, and associated with significant adverse events. Monitoring the safety and efficacy of a medication depends on the assumptions that an appropriate prescription was properly transcribed, that the patient and pharmacist followed instructions, that no restricted payer formulary intervened, and that the patient or a surrogate can accurately report about all of these factors, explains Amy L. Friedman, M.D.

Dr. Friedman and colleagues at the Yale University School of

Medicine followed transplant patients from one transplant center at an outpatient clinic for 12 months during 2004 and 2005. The researchers reviewed the patients' expected and actual medication lists. They identified 149 medication errors in 93 patients who were prescribed a mean of 10.9 medications each. Adverse events were associated with 32 percent of errors, including hospitalizations or outpatient invasive procedures that were associated with 13 percent of errors. There were nine episodes of transplant rejection and six failed transplants.

The most common type of medication error was patient error (56 percent), such as missing medication doses, followed by prescription errors (13 percent), medication delivery errors (13 percent), availability errors (10

percent), and reporting errors (8 percent). Rarely did patients intentionally disregard or alter their medication regimen. Rather, in many cases, patients misunderstood the proper way to take their medicine, which should be viewed as an opportunity to improve communication. Finances were linked to 5 percent of errors. The study was supported by the Agency for Healthcare Research and Quality (HS15038).

More details are in “Medication errors in the outpatient setting,” by Dr. Friedman, Sarah R. Geoghegan, B.S.N., Noelle M. Sowers, R.N., and others, in the March 2007 *Archives of Surgery* 142, pp. 278-283. ■

Women's Health

Domestic violence victims have higher health care use and costs than other women, even long after the abuse has ended

Women who suffer from intimate partner violence (IPV) typically have more headaches, chronic pain, gastrointestinal and gynecologic problems, depression and anxiety, and injuries than other women. They also have significantly higher health care use and costs than other women, according to a new study supported by the Agency for Healthcare Research and Quality (HS10909). Forty-six percent of 3,333 women aged 18 to 64 years enrolled in a large HMO in Washington State and northern Idaho reported IPV in their lifetime. For 87 percent of them, the abuse had ended an average of 16 years prior to the interview. Although health care use decreased over time after the IPV stopped, it was still 20 percent higher 5 years after the abuse ceased compared with women who had never been abused.

After adjusting for age, education, and other factors, use of health care by women with IPV was about 50 percent higher than women with no history of IPV for emergency department visits, twofold higher for mental health visits, and sixfold higher for use of alcohol or drug services. Abused women also had 14

to 21 percent more primary and specialty care visits and pharmacy use than women with no history of IPV.

Adjusted annual total health care costs were 19 percent higher in women with a history of IPV (amounting to \$439 annually) compared with women without IPV. Based on the prevalence of IPV, the excess costs due to IPV were estimated at about \$19.3 million per year for every 100,000 women aged 18 to 64 years who were enrolled in the HMO. Women reporting IPV were slightly older, had somewhat lower household incomes, and were slightly more likely to be working at the time of the interview than women without a history of IPV. Routine screening can lead to increased identification of IPV, and interventions such as protection orders can reduce the risk of recurrent IPV by 50 percent, note the researchers.

See "Healthcare utilization and costs for women with a history of intimate partner violence," by Frederick P. Rivara, M.D., M.P.H., Melissa L. Anderson, M.S., Paul Fishman, Ph.D., and others, in the February 2007 *American Journal of Preventive Medicine* 32(2), pp. 89-96. ■

Exam room reminders and physician feedback can improve screening for chlamydia in young women during preventive care visits

Genital *Chlamydia trachomatis* infection is the most common bacterial sexually transmitted disease in the United States. Peak incidence occurs in sexually active adolescent and young adult women, in whom this often asymptomatic infection can cause pelvic inflammatory disease, tubal pregnancy, infertility, and chronic pelvic pain. Despite recommendations to use a simple urine test to screen young sexually active women for chlamydia infection, screening rates remain low and the infection continues to be a major health problem. However, results from a

randomized trial provide evidence that use of exam room screening reminders, physician opinion leaders, and screening measurement and feedback to physicians can improve chlamydia testing rates in women making preventive care visits.

The researchers randomized 23 primary care clinics in 1 managed care plan to either standard care or intervention (enhanced) care. Clinic-level intervention strategies included use of clinic-based opinion leaders, who educated clinicians on screening and counseling of young women; computerized reports that provided

physicians with feedback on the proportion of eligible women screened by them, and exam room reminders to screen young women for chlamydia infection. The women were aged 14 to 25 years.

The clinic-level intervention did not significantly affect overall chlamydia testing. However, testing rates increased significantly for women making preventive care visits (by 23 percent for visits for Pap tests and by 22 percent for physical exam visits). The chart prompt to screen for chlamydia (delivered to a random subsample of women) had no significant

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Chlamydia Screening

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effect. A combination of clinic-level change and patient activation strategies may improve health plan-wide testing, particularly among asymptomatic women, note the

researchers. The study was supported as part of the Translating Research into Practice initiative by the Agency for Healthcare Research and Quality (HS10514).

More details are in “A randomized trial of strategies to

increase chlamydia screening in young women,” by Delia Scholes, Ph.D., Louis Grothaus, M.S., Jennifer McClure, Ph.D., and others, in *Preventive Medicine* 43, pp. 343-350, 2006. ■

Three clinical characteristics double the likelihood of hysterectomy for women with common noncancerous pelvic conditions

Over 600,000 hysterectomies are performed on U.S. women each year, mostly for noncancerous conditions. A new study recently identified three clinical characteristics that predict the likelihood of subsequent hysterectomy. It found that women who suffered from both abnormal uterine bleeding and chronic pelvic pain or symptomatic uterine fibroids (with abnormal bleeding or pressure), who previously used gonadotropin-releasing hormone (GnRH) agonists, or who reported no resolution of their symptoms, were at least twice as likely to have a hysterectomy as other women.

Researchers examined the hysterectomy status of 734 women within 4 years of their seeking care at several California clinics and practices. The women had sought care for abnormal uterine bleeding, chronic pelvic pain, or symptomatic uterine fibroids. Nearly half (45 percent) of the women had suffered from symptoms for more than 5 years. Some of the women had already endured surgical removal of fibroids (myomectomy, 11 percent), removal of the uterine lining (endometrial ablation, 7 percent), and GnRH agonist treatment (10 percent).

A total of 99 women (13.5 percent) underwent hysterectomies during the 4-year study period. Study results following the 4-year study period showed that women with multiple pelvic symptoms or symptomatic fibroids had nearly twice the likelihood of undergoing hysterectomy. Women who had previously used a GnRH agonist were 2.5 times more likely to undergo the surgical procedure and those who had no symptom resolution were 2.2 times more likely to undergo hysterectomy. Women also had an escalating risk of hysterectomy with each additional risk factor. For example, predicted hysterectomy rates ranged from 20 percent, if all three clinical factors were absent, to 95 percent, if all three were present. The study was supported in part by the Agency for Healthcare Research and Quality (HS09478, HS11657, and HS07373).

See “Predictors of hysterectomy in women with common pelvic problems: A uterine survival analysis,” by Lee A. Learman, M.D., Ph.D., Miriam Kuppermann, Ph.D., M.P.H., Elena Gates, M.D., and others, in the April 2007 *Journal of the American College of Surgeons* 204, pp. 633-641. ■

Elderly/Long-Term Care

Home health care following hospitalization for hip fracture may provide an opportunity to limit osteoporosis progression

Less than half of patients who have been hospitalized for hip fracture related to osteoporosis (loss of bone mass) are sent home with anti-osteoporosis medication to prevent further fractures. Since up to half of U.S. Medicare patients receive home health services after

hospitalization for hip fracture, the home health care period may provide a window of opportunity for osteoporosis intervention. Researchers analyzed databases of a large home health care agency to identify patients at high risk for fracture who received home health services during 2003 and 2004.

Patients were considered at high fracture risk if they had a history of fracture, diagnosis of osteoporosis, current use of systemic glucocorticoids that induce bone loss, or a history of stroke that can increase the risk of falls. Most

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Home health care

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patients were insured by Medicare. Only one-third of the high-risk group received any prescription (alendronate, risedronate, raloxifene, calcitonin, and terparatide) or over-the-counter calcium and vitamin D supplements to prevent or treat osteoporosis.

Nearly three-fourths of the patients diagnosed with osteoporosis received either prescription medications or over-

the-counter supplements. In contrast, fewer than half of the patients specifically referred to home health care after suffering a fracture received any therapy. This finding is consistent with national data showing widespread undertreatment of osteoporosis. Patients with a history of stroke had the lowest rates of treatment in this high-risk group. A total of 26 percent of patients with no comorbidities received prescription osteoporosis medicine, which declined to 17 percent of patients

with three or more coexisting conditions. The study was supported in part by the Agency for Healthcare Research and Quality (HS10389).

See "Osteoporosis in the home health care setting: A window of opportunity?" by Jeffrey R. Curtis, M.D., M.P.H., Young Kim, M.S., Tara Bryant, M.D., and others, in the December 15, 2006 *Arthritis & Rheumatism* 55(6), pp. 971-975. ■

Nurses and physicians have different perspectives and roles in medical decisions affecting nursing home residents

Nurses and physicians are both very involved in the care of nursing home residents. However, their roles in and perspectives on medical decisionmaking for residents can be very different, concludes a new study. Jiska Cohen-Mansfield, Ph.D., A.B.P.P., and colleagues interviewed nurses and physicians involved in the care of 28 cognitively impaired nursing home residents who were unable to communicate their own wishes. In these cases, the resident either had a change in health status, change in a nonchronic condition that required medical followup by a doctor, or died from a nonchronic illness.

Five male physicians and two female nurse practitioners answered the medical staff questionnaire. The nurses who answered the nursing staff questionnaire included 1 nurse manager and 17 primary charge nurses (3 RNs and 15 LPNs). Compared with physicians, nurses reported a greater degree of familiarity with the family's and resident's wishes. Physicians reported considering more treatment options and choosing more treatments for residents than nurses, probably because nurses did not see this as part of their role in some of the cases. In 65

percent of cases, doctors estimated that the condition was likely to improve with the treatment, while the nurses predicted improvement in only 48 percent of cases.

Both physicians and nurses agreed that physicians had a major role in decisionmaking that nurses did not. However, the gap in reported roles was greater based on physicians' reports compared with nurses' reports. Both physicians and nurses were generally comfortable with their medical decisions and had similar perceptions of the families' reactions to the decisions. However, the involvement of the nurse as a partner in these decisions was reported to be minor. In a third of the reported cases, physicians and nurses disagreed about whether advance directives had been followed. The study was supported by the Agency for Healthcare Research and Quality (HS09833).

See "Medical decision-making in the nursing home: A comparison of physician and nurse perspectives," by Dr. Cohen-Mansfield, Steven Lipson, M.D., and Debra Horton, R.N., in the December 2006 *Journal of Gerontological Nursing* 32(12), pp. 14-21. ■

Health Information Technology

Computerized drug-drug interaction alerts are useful, but can be improved

Drug-drug interactions (DDIs) can seriously harm patients. For example, combining the blood-thinner warfarin with nonsteroidal anti-inflammatory drugs can lead to serious problems, such as gastrointestinal bleeding, in up to one-fourth of patients taking warfarin. Clinicians and pharmacists believe that computerized DDI alerts can improve safe drug prescribing. However, they believe that these alerts require more work to increase their clinical utility, according to a survey of 725 prescribers and 142 pharmacists from 7 Veterans Administration medical centers in the United States.

Most respondents agreed the computerized patient record system

made their jobs less difficult. They did not view DDI alerts as a waste of time and 61 percent of clinicians thought that DDI alerts had increased their potential to prescribe medication safely.

Forty-four percent of clinicians were satisfied with the accuracy of the alerting system. However, they found that DDI alerts often provided them with information they already knew, and only 29 percent agreed that DDI alerts provided them with information they needed. Both clinicians and pharmacists agreed that DDI alerts should be accompanied by management alternatives (73 and 82 percent, respectively) and more detailed information (65 and 89 percent, respectively). When they were asked how they would improve DDI alerts, clinicians most

preferred including management options. However, pharmacists most preferred making it more difficult to override lethal interactions. The study was conducted by researchers at the Arizona Center for Education and Research on Therapeutics, which is supported by the Agency for Healthcare Research and Quality (HS10385).

See "Practitioners' views on computerized drug-drug interaction alerts in the VA system," by Yu Ko, M.S., Jacob Abarca, Pharm.D., M.S., Daniel C. Malone, Ph.D., and others, in the January/February 2007 *Journal of the American Medical Informatics Association* 14, pp. 56-64. ■

Pharmaceutical Research

Studies examine the safety of prescribing antipsychotics, acetylcholinesterase inhibitors, and beta-blockers to older adults

Antipsychotic medications are prescribed for over a fourth of U.S. Medicare patients in nursing homes for dementia, delirium, psychosis, agitation, and affective disorders, and for unapproved indications. Acetylcholinesterase inhibitors (AChEIs) and beta-blockers are commonly prescribed for patients with Alzheimer's disease (AD), up to 15 percent of whom also suffer from chronic airway disorders such as asthma and chronic obstructive pulmonary disease (COPD). Two studies supported by the Agency

for Healthcare Research and Quality recently examined the safety of prescribing these medications for the elderly. The first study (AHRQ Contract No. 290-20-0050) concluded that conventional antipsychotics and the newer atypical antipsychotics are equally risky for use in the elderly. The second study (HS10881) found that use of AChEIs, typically contraindicated for elderly persons with chronic airway disorders, is safe for this group as physicians are currently prescribing them, but

beta-blockers are not. Both studies are summarized here.

Schneeweiss, S., Setoguchi, S., Brookhart, A., and others. (2007, February). "Risk of death associated with the use of conventional versus atypical antipsychotic drugs among elderly patients." *Canadian Medical Association Journal* 176(5), pp. 627-632.

There has been a rapid shift away from first-generation conventional antipsychotics (for

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Antipsychotic medications

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example, chlorpromazine, haloperidol, and loxapine) to more actively marketed second-generation atypical agents (for example, clozapine, olanzapine, quetiapine, and risperidone). Canadian and U.S. Food and Drug Administration health advisories warn that use of atypical antipsychotics increases the risk of dying among elderly patients with dementia. However, physicians should consider both conventional and atypical antipsychotics to be equally risky in elderly patients, according to this study. The researchers linked health care use data of all British Columbia residents to identify elderly persons who began taking antipsychotic medications between 1996 through 2004. They compared the 180-day death rates between those taking conventional and those taking atypical antipsychotics.

Of the 37,241 elderly people studied, 12,882 were prescribed a conventional antipsychotic and 24,359 were prescribed an atypical antipsychotic. Within the first 6 months of drug use, 14.1 percent of the conventional drug group died compared with 9.6 percent in the atypical drug group. This was a 32 percent greater, dose-dependent risk of death among conventional drug users, after adjusting for other factors affecting mortality. This is a greater risk of dying than all measured health conditions except

congestive heart failure and HIV infection, note the researchers.

Compared with the atypical agent, risperidone, the conventional agent, haloperidol, was associated with the greatest increase in risk of death (more than twice the risk), and loxapine, another conventional agent, with the lowest mortality increase (29 percent). The greatest increase in mortality (60 to 67 percent) occurred among people taking above median doses of conventional antipsychotic medications and during the first 40 days after the start of drug therapy.

Thacker, E.L. and Schneeweiss, S. (2006, November). "Inhibition of acetylcholinesterase inhibitors and complications of chronic airways disorders in elderly patients." *Drug Safety* 29(11), pp. 1077-1085.

Chronic airway disorders are considered contraindications for the beta-blockers and AchEIs (for example, donepezil, rivastigmine, and galantamine) commonly prescribed for Alzheimer's disease. This sequence-symmetry study concluded that physicians can safely prescribe AchEIs to elderly patients with chronic airway disorders, but beta-blocker prescribing continues to result in adverse health outcomes. The research team analyzed Medicare beneficiaries with a history of chronic airway disorders who had drug coverage between 1997 and 2002. One group of 922 patients began treatment with an AchEI, and the other group of 2,819

patients began treatment with a beta-blocker.

Elderly patients who began taking AchEIs had no significant increase in emergency room visits, hospitalizations, or physician visits for complications of chronic airway disorders compared with before the initiation. This group also had no dispensing of an antibacterial drug and an oral corticosteroid on the same day of such encounters, an indication of airway disorder complications, after adjusting for age, sex, race, and other factors. In contrast, patients who began using beta-blockers had a two- to three-fold increased rate of complications in the month after treatment began. These problems probably resulted from bronchoconstriction.

Physicians may be aware of the potential adverse effects of AchEIs and selectively prescribe them to patients who have less severe chronic airway disorders and who are at low risk of complications. On the other hand, AchEIs used for dementia treatment may not be associated with serious adverse respiratory effects, suggest the researchers. However, they caution that their results do not mean that AchEIs should be indiscriminately prescribed to elderly patients with chronic airway disorders or that warnings related to COPD and asthma patients in AchEI prescribing packets are unnecessary. Rather, the results indicate that in current clinical practice, doctors seem to be prescribing AchEIs but not beta-blockers appropriately for this group. ■

Medications that relieve pain and anxiety in acute trauma patients hold promise for prevention of posttraumatic stress disorder

Between 10 and 50 percent of injured youths and adults who are hospitalized develop high levels of posttraumatic stress disorder (PTSD) symptoms, which can range from insomnia, tormenting flashbacks, and nightmares to hypervigilance, anxiety, and depression. The medications doctors currently prescribe for trauma patients at hospital discharge may be candidate medications to test for prevention of PTSD among patients who have suffered traumatic injuries. For example, analgesics that often target both pain and anxiety might be potential target medications to prevent PTSD, note University of Washington School of Medicine investigators Douglas Zatzick, M.D., and Peter P. Roy-Byrne, M.D.

They assessed the medications prescribed at discharge to 113 adolescents and 152 adults hospitalized at a level 1 trauma center after physical injury. Opiate analgesic medications (such as oxycodone) were prescribed to between 82 and 88 percent of injury survivors; 34 to 46 percent of patients also received nonopiate analgesic medications (such as ibuprofen). Between 11 and 16 percent of patients were prescribed antihistamines.

Benzodiazepines, anticonvulsants, corticosteroids, beta-adrenergic blockers, and all other psychotropic medications were prescribed for less than 10 percent of patients.

In addition to providing pain relief, opiates are potent antianxiety medications in animal models. Also, opiates may prevent memory consolidation (the process by which recent memories are crystallized into vivid long-term memories) through beta-adrenergic mechanisms. Adequate levels of opiate pain control have been associated with development of lower PTSD symptoms levels among children who have survived burn injuries. The researchers conclude that medications with combined analgesic and anxiety-relieving properties may hold promise for prevention of PTSD. Their study was supported in part by the Agency for Healthcare Research and Quality (HS11372).

More details are in "From bedside to bench: How the epidemiology of clinical practice can inform the secondary prevention of PTSD," by Drs. Zatzick and Roy-Byrne, in the December 2006 *Psychiatric Services* 57(12), pp. 1726-1730. ■

Access to Care

The potency of laws equalizing coverage for mental health care varies between States

The 1996 Federal Mental Health Parity Act served as an impetus for stronger State-level policies to reduce the discrepancy between mental health and other health insurance benefits. Although many States have passed parity laws, the potency of the laws varies from State to State. This is primarily due to the exemptions for self-insured firms and small firms as well as limits on the types of conditions covered, according to a new study. Philip F. Cooper, Ph.D., and Samuel Zuvekas, Ph.D., of the Agency for Healthcare Research and Quality, and colleagues

analyzed the 1997 to 2003 Medical Expenditure Panel Survey Insurance Component. They examined the extent and scope of State parity legislation in terms of the number of insured private-sector employees covered.

The number of States with strong parity laws in effect grew from just 4 in 1996 to 23 (45 percent of States) by 2003. However, the actual impact of these State laws was greatly reduced by the exemptions for self-insured plans and small firms. On average, these exemptions cut the number of employees actually covered roughly

in half. As a result, by 2003, strong parity rules applied to only about one-fifth of private sector workers with employer-sponsored insurance, estimate the researchers.

The self-insurance exemption accounted for nearly all of the difference between potential and actual coverage. Small firm exemptions accounted for only 13 percent of the difference in 2003. Since the self-insurance exemption comes from Federal law, States can do little to increase the percentage of enrollees covered by parity rules. Even the actual coverage rates

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Mental health care coverage

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displayed may overstate the extent of coverage. This is because some laws that require a minimum level of coverage for mental disorders still limit the range of disorders covered. While about 20 percent of private sector employees with employer-sponsored insurance were

covered by strong parity laws in 2003, only 3 percent were covered by strong laws that applied to all mental illnesses. This suggests that full parity can be achieved only at the Federal level. The Congressional Budget Office suggests that parity would increase premiums by less than 1 percent. Yet employers and insurers remain concerned about the costs of parity mandates.

See “Parity for whom? Exemptions and the extent of State mental health parity legislation,” by Thomas C. Buchmueller, Ph.D., Dr. Cooper, Mireille Jacobson, Ph.D., and Dr. Zuvekas, in the June 7, 2007 *Health Affairs* 26(4), pp. w483-w487. Reprints (AHRQ Publication No. 07-R062) are available from AHRQ.* ■

Medicare Part D provides coverage protection for mental health-related drugs, but certain drugs still may not be covered

Legislation in 2003 created Medicare Part D, a voluntary prescription drug benefit available to all Medicare beneficiaries. Health plans are required to cover a minimum of two drugs in each therapeutic drug class. However, plans must cover “all or substantially all” distinct drugs in three psychotropic (mind-altering) drug classes: antidepressants, antipsychotics, and anticonvulsants. Health plans are not required to cover both the generic and brand version of the same drug. These special protections afforded to these drug classes under the Part D benefit will help to ensure that Medicare beneficiaries with a mental illness have access to needed medications. However, despite these protections, certain product formulations may not be covered, according to a new study.

Prescription drug plans serving individuals dually eligible for Medicare and Medicaid programs generally covered at least one formulation of all three of these drug classes. However, certain drug formulations were not covered by a number of plans, and use of prior authorization was common for a minority of plans. Thus, the effect of Part D will depend on the restrictiveness of the prior authorization of health plans and appeals processes, which is currently unknown, concludes Haiden A. Huskamp, Ph.D., of Harvard Medical School.

Dr. Huskamp and coinvestigators analyzed data from the Center for Medicare and Medicaid Services for all private prescription drug plans as of December 2005, which reflected coverage at the inception of Part D. They examined drug coverage and prior authorization policies of 519 prescription drug plans to which dual eligibles could be autoenrolled as of December 2005. Although a majority of plans did not require prior authorization for covered drugs in the three psychotropic drug classes, a sizable minority of plans required it for specific medications. Also, use of prior authorization varied considerably across drugs within a class. For example, use of prior authorization for plans that covered second-generation antipsychotics ranged from 8 percent for Clozaril® to 48 percent for Zyprexa IM®. Use of prior authorization was more common for covered second-generation antipsychotics and anticonvulsants than for antidepressants. The study was supported in part by the Agency for Healthcare Research and Quality (HS10803).

See “Coverage and prior authorization of psychotropic drugs under Medicare Part D,” by Dr. Huskamp, David G. Stevenson, Ph.D., Julie M. Donohue, Ph.D., and others, in the March 2007 *Psychiatric Services* 58(3), pp. 308-310. ■

Acute Care/Hospitalization

Intensive care nurses face noise, distractions, small workspace, and other obstacles to providing care to critically ill patients

A hospital intensive care unit (ICU) is typically an emotionally intense, loud, cramped, and stressful environment. ICU nurses face numerous obstacles to providing care to their critically ill patients, according to a new study of 217 nurses from 17 ICUs at 7 Wisconsin hospitals. Nearly half (46 percent) of the nurses were bothered by the noisy work environment. Others were distracted by family members (42 percent) and the hectic (40 percent) and crowded (37 percent) work environment. Another third spent a considerable amount of time teaching families about appropriate visiting times and support (34 percent), looking for equipment that someone else was using (32 percent), or looking for supplies in

patient rooms that were not well-stocked (32 percent).

One-fifth to one-fourth of nurses also had to deal with insufficient work space to complete paperwork (26 percent), looking for supplies (24 percent) or patients' charts (23 percent), receiving many phone calls from families (23 percent), and misplaced equipment (20 percent). In addition, 18 percent of nurses received inadequate information from physicians and 21 percent faced delays in seeing new medical orders.

Since many of the ICUs still used paper-based charts, nurses had to look in the chart to see if the doctor wrote a new order. Yet a variety of caregivers need the chart to provide care in the ICU from time to time. Sometimes it could take 2 to 3 hours for a nurse to get the chart and find out about a new

order, a delay that could have a significant impact on critically ill patients. Also, some nurses had two problems with shift changes: 18 percent thought that it took too long and 9 percent felt they received inadequate information from the previous shift's nurse. Redesigning the ICU environment to minimize these obstacles may improve the ability of ICU nurses to deliver high-quality and safe patient care, conclude the researchers. The study was supported by the Agency for Healthcare Research and Quality (HS14517).

See "Performance obstacles of intensive care nurses," by Ayse P. Gurses, Ph.D., and Pascale Carayon, Ph.D., in the May 2007 *Nursing Research* 56(3), pp. 185-194. ■

HIV/AIDS

Drug therapy has reduced hospitalization for HIV patients, but those hospitalized are getting older and sicker

Hospitalized patients living with HIV are getting older and sicker, although the average number of admissions per person living with HIV continues to fall, according to a new study. It compared use of hospital care by persons living with HIV residing in six States from 2000 to 2004. During this period, the average age of a hospitalized patient living with HIV rose from 41 to 44 years, and the proportion of patients covered by Medicare rose from 22 to 25 percent. The older age of hospitalized HIV-infected patients reflects a similar aging trend among persons diagnosed with AIDS. In 2000, 19 percent of persons living with AIDS were 50 years or older compared to 23 percent in 2004, notes Fred J.

Hellinger, Ph.D., of the Agency for Healthcare Research and Quality.

Overall, there was a 39 percent decrease in the average number of hospital admissions per person living with HIV across the six States between 2000 and 2004, despite a 28 percent increase in the number of persons living with HIV in these States. The average number of admissions per person living with HIV ranged from a high of 0.51 in New York to a low of 0.17 in Washington State in 2000. Four years later, these averages fell to 0.26 in New York and 0.16 in Washington State.

During the study period, the average number of conditions each patient was diagnosed with rose from

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HIV drug therapy

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6 to 7.4. However, the average length of an HIV-related hospital stay, the percentage of female patients, and the percentage of black patients remained the same. The State in which a person resided was a major determinant of the average number of hospital admissions, the

average length of hospital stay, and the average hospital cost per person living with HIV.

See “The changing pattern of hospital care for persons living with HIV,” by Dr. Hellinger, in the June 1, 2007 *Journal of Acquired Immunodeficiency Syndrome* 45(2), pp. 239-246. Reprints (AHRQ Publication No. 07-R060) are available from AHRQ.* ■

Effectively treating other medical conditions in patients with HIV may reduce HIV's overall impact on functioning

With increased survival due to use of potent antiretroviral therapy and a growing incidence of HIV infection among older adults, the total number of AIDS cases in Americans over 50 years of age has increased more than fivefold since 1990. The adverse impact of HIV disease progression on physical functioning is well documented. Yet, given the strong association of comorbidity and function, effectively treating other medical conditions may improve physical functioning in HIV-infected adults, concludes a new study.

The researchers examined the demographic and clinical factors associated with physical functioning in 889 HIV-infected veterans and 647 HIV-negative veterans enrolled in the Veterans Aging Cohort Study (VACS-5 site) in 2001 and 2002. Increased age was associated with reduced

physical functioning in both HIV-infected and HIV-negative patients. The proportion of patients with reported difficulty performing basic activities of daily living (ADLs), mobility, and vigorous activities was similar in HIV-infected and HIV-negative patients, although the latter group was older. Impairment in basic ADLs was uncommon in both groups (less than 9 percent), but more than half of all patients had difficulty with vigorous activities such as heavy work and running. Among HIV-infected patients, results remained unchanged after controlling for the impact of antiretroviral therapy and HIV disease stage.

While aging was associated with physical disability in both groups, this effect was not independent of coexisting disease and lifestyle factors such as smoking and obesity. For example, when coexisting conditions (such as

chronic lung disease, hypertension, arthritis, and hepatitis C) were entered into the models for both groups, association with age was no longer significant. This suggests these coexisting conditions have an important role on functioning and treating them in persons with HIV may reduce the overall impact of disease on physical functioning. The use of veterans limits the generalizability of the study findings beyond patients in the VA medical centers. This study was supported in part by the Agency for Healthcare Research and Quality (HS16097).

See “Association of comorbidity with physical disability in older HIV-infected adults,” by Krisann K. Oursler, M.D., Sc.M., Joseph L. Goulet, Ph.D., David A. Leaf, M.D., and others, in *AIDS Patient Care and STDs* 20(11), pp. 782-791, 2006. ■

Available and timely access to AZT for HIV-infected mothers giving birth needs to be improved in Illinois birthing hospitals

HIV-infected mothers should be given the antiviral drug AZT (zidovudine), which can reduce mother-to-child HIV transmission up to 67 percent even when administered at labor and delivery. However, a study of all 137 Illinois birth hospital pharmacies in 2005 found that only 43.1 percent reported having AZT available in syrup or intravenous form. Also, only 37.2 percent could make AZT available on labor and delivery floors within 30 minutes during off hours (late at night or on weekends).

In addition, protocols for treating HIV-positive women in labor and HIV-exposed newborns were available in only 37.2 percent of pharmacies. Yet 72.4 percent of hospital pharmacies had protocols for antiretroviral therapy to treat hospital workers accidentally exposed to HIV on the job. Pharmacies at major academic hospitals and those serving mostly white patients were more likely to have AZT available. Also, timely provision of AZT was more likely to

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AZT availability

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occur in urban, major academic hospitals serving a predominantly white population.

Timing of AZT is critical, since HIV-exposed infants need to be protected during a critical window of time. States that initiate perinatal HIV reduction programs need to address AZT availability in hospital pharmacies

to ensure complete and timely implementation of their protocols, suggest the researchers. Their study was supported in part by the Agency for Healthcare Research and Quality (T32 HS00078).

See "AZT availability in Illinois birth hospitals: Is the perinatal HIV prevention safety net in place?" by Rebecca L. Eary, Ann E. Bryant Borders, M.P.H., Arden Handler, Dr.P.H., and others, in the July 2007 *Maternal and Child Health Journal* 11, pp. 313-318. ■

Health Care Costs and Financing

Physicians seem to manage potential conflicts with managed care financial arrangements to retain patient trust

Concerns have been raised about the potentially negative impact of managed care cost-containment strategies on the physician-patient relationship. However, a new study found that, despite the potential for conflicts of interest for physicians under financial arrangements designed to limit overuse of care, physicians have avoided compromising their patients' trust in and satisfaction with them. The investigators surveyed 595 patients with diabetes or hypertension enrolled in 1 of 3 health plans in Minnesota about their trust in and satisfaction with their physicians. They also surveyed the patients' 389 physicians about cost-containment strategies to which they were subject.

Patients were generally very trusting of their physicians: 43.5 percent trusted their physician completely, 50 percent mostly, 6

percent somewhat, and 1 percent a little. Patients also rated their physicians highly. After adjusting for patient and physician characteristics, patients whose physicians were required to serve as a gatekeeper (for specialty referrals and tests) for more than 50 percent of their patients tended to rate their physicians somewhat lower than other patients, but did not differ in levels of physician trust. Those whose physicians received performance reports on their use of diagnostic tests and other resources did not differ from other patients in level of trust or ratings of physicians.

Patients of doctors whose compensation was based on fee-for-service arrangements were less trusting of their physician than patients whose physicians were paid by salary, but did not differ significantly in levels of

satisfaction. The size of physicians' bonuses and withhold payments were not associated with patients' trust or satisfaction, nor were incentive payments to physicians based on a variety of factors. The findings are not generalizable to settings outside of Minnesota, a State where managed care organizations are nonprofit and there is little racial diversity. The study was supported in part by the Agency for Healthcare Research and Quality (HS09936).

See "The influence of cost containment strategies and physicians' financial arrangements on patients' trust and satisfaction," by Nancy L. Keating, M.D., M.P.H., Mary Beth Landrum, Ph.D., Bruce E. Landon, M.D., M.B.A., and others, in the April-June 2007 *Journal of Ambulatory Care Management* 30(2), pp. 92-104. ■

Physicians have positive attitudes about pay-for-quality programs, but are ambivalent about certain program features

Pay-for-quality (P4Q) programs have become a popular mechanism for improving care quality in the United States. P4Q programs offer providers (currently mostly primary care physicians) financial incentives for achieving predefined care quality targets. A recent survey of primary care physicians in California and Massachusetts, two States with

substantial P4Q activity, revealed that physicians have positive attitudes about P4Q programs. However, when reflecting on their own experience, they are ambivalent about certain program features.

Of the 1,243 responding physicians, three-fourths (76 percent) were aware of at least 1 quality-related

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Pay-for-quality programs

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financial incentive that applied to them. More than 80 percent of these physicians were aware of one of the following care quality targets: asthma medication use, breast cancer screening, cervical cancer screening, coronary artery cholesterol check, and the HbA1c (blood sugar) test for people with diabetes. Three-fourths of physicians in each State agreed that physicians should be financially rewarded for providing higher quality care. The majority of doctors also agreed that P4Q could improve care quality and is more effective than peer recognition alone.

Physicians were most positive about the clinical relevance of quality targets. In contrast, they were fairly negative about their understanding of the details of P4Q programs, the amount of incentive money being offered to them, and the actual impact of the incentive programs on quality of care. Few programs at the time of the survey appeared to offer incentive money that would likely translate into more than 10 percent of a typical primary care doctor's annual income. Physicians in both States had some

reservations about their capability to achieve P4Q quality targets, given other health system factors they cannot control. Overall, the results suggest that primary care physicians in the two States are neither disaffected from nor fully engaged in P4Q programs, conclude Gary Young, J.D., Ph.D., and colleagues from the Boston University School of Public Health. Their study was supported in part by the Agency for Healthcare Research and Quality (HS13591).

See "Physician attitudes toward pay-for-quality programs: Perspectives from the front line," by Dr. Young, Mark Meterko, Ph.D., Bert White, M.B.A., and others, in the June 2007 *Medical Care Research and Review* 64(3), pp. 331-343.

Editor's note: A related AHRQ-supported study (HS13591) by the same researchers found a modest one-time improvement in physician use of eye exams for people with diabetes a year after implementation of a pay-for-performance program. For more details, see: Young, G.J., Meterko, M., Beckman, H., and others. (2007, June). "Effects of paying physicians based on their relative performance for quality." *Journal of General Internal Medicine* 22, pp. 872-876. ■

Agency News and Notes

AHRQ's HCUP 2005 Nationwide Inpatient Sample is now available

AHRQ's Healthcare Cost and Utilization Project (HCUP) Nationwide Inpatient Sample (NIS) featuring 2005 data was released in July. This inpatient care database includes all patients, regardless of payer—including people covered by Medicare, Medicaid, 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. 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. Please refer to www.hcup-us.ahrq.gov/nisoverview.jsp for additional information about the NIS including how to purchase the data. ■

New publications are available from AHRQ

Effective Health Care

Renal Artery Stenosis Treatments: A Guide for Consumers (AHRQ publication no. 07-EHC004-2A)

Management of Atherosclerotic Renal Artery Stenosis, Clinician's Guide (AHRQ publication no. 07-EHC004-3)

Comparative Effectiveness and Safety of Oral Diabetes Medications for Adults with Type 2 Diabetes.

Executive Summary (AHRQ publication no. 07-EHC010-1)

Off-Label Use of Atypical Antipsychotic Drugs. A Summary for Clinicians and Policymakers (AHRQ publication no. 07-EHC003-2)

These reports and other information can be found online at <http://effectivehealthcare.ahrq.gov/>.

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New Publications

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Evidence-based Practice

Meditation Practices for Health: State of the Research, EPC Report 155 (AHRQ publication no. 07-E010)

Closing the Quality Gap: A Critical Analysis of Quality Improvement Strategies. Volume 7: Care

Coordination, Technical Review 9 (AHRQ publication no. 04(07)-0051-7)

A Critical Analysis of Care Coordination Strategies for Children With Special Health Care Needs, Technical Review 14 (AHRQ 07-0054)

These reports and other information can be found online at www.ahrq.gov/clinic/epcix.htm. ■

Announcements

AHRQ announces new grant awards for Health Services Research Dissertation (R36)

The Agency for Healthcare Research and Quality (AHRQ) supports dissertation research undertaken as part of an academic program to earn a research doctoral degree. Through this program, AHRQ seeks to expand the number of researchers who address its mission “to improve the quality, safety, efficiency and effectiveness of health care for all Americans.” Recently, the Agency awarded two dissertation grants to the following individuals from universities across the country:

- Norrina Allen
R36HS016959-01A1
Yale University
Geographic Patterns in Recurrent Stroke Rates by Gender and Race
Advisor: Christian Tschudi, Ph.D.
- Katherine Bellebaum
R36HS017381-01
Ohio State University
The Relationship between Nurses Work Hours, Fatigue, and Medication Administration Errors
Advisor: Craig A. Pedersen, RPh, Ph.D.
- Ezra Golberstein
R36HS0017379-01
University of Michigan
Essays on Long-Term Care Dynamics
Advisor: Richard A. Hirth, Ph.D.
- Eric Keuffel
R36HS016951-01A1
University of Pennsylvania
The Economics of Physical Activity
Advisor: Patricia M. Danzon, Ph.D.
- Lauren Hersch Nicolas
R36HS016836-01A1
Columbia University
Medicare Advantage?
Advisor: Irwin Garfinkel, Ph.D.
- Melinda Sandler
R36HS017375-01
University of Maryland
The Effects of Maternal Labor Supply on Child Health
Advisor: Judith K. Hellerstein, Ph.D.
- Laura Smith
R36HS017382-01
Brown University
Home Health Agency Quality: Profit Orientation, Competition and Rehospitalization
Advisor: Vincent Mor, Ph.D.
- Michael Stellefson
R36HS017387-01
Texas A&M University
Efficacy of DVD Technology in COPD Self Management Education of Rural Patients
Advisor: James M. Eddy, DEd ■

Research Briefs

Amarasingham, R., Pronovost, P.J., Diener-West, M., and others. (2007, May/June). "Measuring clinical information technology in the ICU setting: Application in a quality improvement collaborative." (AHRQ grant HS14246). *Journal of the American Medical Informatics Association* 14, pp. 288-294.

This study describes a new instrument to examine intensive care unit (ICU) information system effectiveness. The researchers surveyed medical directors of 19 Michigan ICUs, assessing their ICU information systems. The mean of 54 summed items on this instrument yielded the clinical information technology (CIT) index, a global measure of the ICU's information system performance on a 100 point scale. A 10-point increase in the CIT score was associated with 4.6 fewer catheter-related bloodstream infections (CRBSIs) per 1,000 central line days for ICUs that participated in a quality improvement program to reduce the rate of CRBSIs.

Banja, J., Eig, J., and Williams, M.V. (2007, May). "Discharge dilemmas as system failures." (AHRQ grant HS15882). *The American Journal of Bioethics* 7(3), pp. 29-37.

Health care professionals remain reluctant to improve or coordinate system processes so that predictable, safe, and timely discharges occur, note the authors of this paper. They cite three examples of how system or operational failures can contribute to ethical discharge dilemmas. A patient's projected discharge is a low priority for hospitals, yet it is critical in preparing patients and families for what will be needed at

home. Second, a patient's discharge is often delayed for a simple test, consult, or transportation, many of which unnecessarily prolong the hospital stay. Third, patients are often not ready for discharge for reasons such as social or financial issues, which should be addressed before the discharge process. Hospitals should implement system-based strategies for the discharge process that engage patients and confirm their understanding of their medical condition, treatment plan, and follow-up after discharge.

Bonomi, A.E., Allen, D.G., and Holt, V.L. (2006, May). "Conversational silence, coercion, equality: The role of language in influencing who gets identified as abused." (AHRQ grant HS10909). *Social Science & Medicine* 62(9), pp. 2258-2266.

By framing questions about intimate partner violence in a specific way, time-strapped clinicians can encourage women to reveal domestic abuse. The researchers suggest that clinicians ask close-ended questions combining the three approaches outlined in the Abuse Assessment Screen and the Ongoing Abuse Screen. In the outright approach, the physician asks, "Were you physically or emotionally abused or did your partner assault you?" In the behavioral tactic approach, the physician asks, "Did your partner kick, slap, punch, or choke you?" Finally, the impact approach asks women about the impact of their partner's behavior on their life. For example, the doctor might ask, "Are you afraid of your partner?" The researchers have developed an Intimate Partner Violence assessment tool to further refine these approaches. It separates

questions about physical and emotional abuse, and also asks women whether their partner's behavior has caused them feelings of sadness, shame, or hopelessness. **Brady, J., Ho, K., Kelley, E., and Clancy, C. (2007, June). "AHRQ's National Healthcare Quality and Disparities Reports: An ever-expanding road map for improvement." *HSR: Health Services Research* 42(3), pp. xi-xxi.**

This paper describes the National Healthcare Quality Report (NHQR) and National Healthcare Disparities Report (NHDR) of the Agency for Healthcare Research and Quality (AHRQ). The Agency recently released a new Web site that provides quality (and some disparities) data by State. The NHQR/NHDR State Snapshots allow each State to find out how it compares at the regional or national level for a type of care (preventive, acute, chronic), health care setting (ambulatory, hospital, nursing home, home health), or in a specific clinical area (cancer, diabetes, heart, maternal and child health, respiratory). The Agency is also poised to release a new online resource that will make national health care quality and disparities data even more accessible.

Cramer, S.C., Koroshetz, W.J., and Finkelstein, S.P. (2007, April). "The case for modality-specific outcome measures in clinical trials of stroke recovery-promoting agents." (AHRQ grant HS11392). *Stroke* 38, pp. 1393-1395.

Clinical trials for acute stroke recovery-promoting agents have often used composite clinical

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rating scales as primary outcome measures of treatment efficacy.

Recent preclinical and clinical studies highlight the opportunity to administer treatments in the subacute and chronic phase of stroke to promote neurological recovery. Because different neurological deficits recover to different extents at different rates after stroke, putative stroke recovery-promoting treatments may exert differential effects on various functional aspects of stroke recovery. Thus, the authors of this paper propose that use of modality-specific outcome measures may be best suited as primary end points in clinical trials of stroke recovery-promoting agents. The use of such end points may result in a more selective labeling of stroke recovery treatments.

Fein, S.P., Hilborne, L.H., Spiritus, E.M., and others. (2007, June). "The many faces of error disclosure: A common set of elements and a definition." (AHRQ grant HS11512). *Journal of General Internal Medicine* 22, pp. 755-761.

Error disclosure may mean different things to clinicians than it does to patients, conclude these authors. They conducted 20 focus groups that included 204 hospital administrators, physicians, residents, and nurses at 5 medical centers. The clinicians and administrators considered various forms of communication about errors to be error disclosure. The focus groups characterized full disclosure as communication that included admission of a mistake, discussion of the error, and a link from the error to harm. They described partial disclosure as communication that included deferral, misleading statements,

and inadequate information to "connect the dots." Descriptions involving nondisclosure of harmful errors were uncommon.

Feldman, P.H., Bridges, J., and Peng, T. (2007, June). "Team structure and adverse events in home health care." (AHRQ grant HS11962). *Medical Care* 45(6), pp. 553-561.

Several team-level organizational variables influence adverse events in home health care services, according to this study. It found that the number of home health care episodes, number of weekend home care visits, and workload distribution were negatively associated with the occurrence of adverse events, while higher weekend home care admissions were positively associated with adverse events. Also, the Fixed-Effects score was a more accurate measure of team quality than the traditional Z-score, given that it focuses only on "team attributable" adverse events by isolating and excluding random variation from the quality score.

Fox, E., Myers, S., and Pearlman, R.A. (2007, February). "Ethics consultation in United States hospitals: A national survey." (AHRQ grant HS09808). *The American Journal of Bioethics* 7(2), pp. 13-25.

The authors of this paper describe the prevalence, practitioners, and processes of ethics consultation in U.S. hospitals. They surveyed the "best informant" within each of 600 U.S. general hospitals, stratified by bed size. They found ethics consultation services (ECSs) in 81 percent of U.S. general hospitals and in 100 percent of hospitals with more than 400 beds. The median number of consults performed by ECSs in the year prior to the survey was three.

Most individuals performing ethics consultations were physicians (34 percent), nurses (31 percent), social workers (11 percent), or chaplains (10 percent). Yet only 41 percent had formal supervised training in ethics consultation. Also, consultation varied widely. For example, 65 percent of ECSs always made recommendations, whereas 6 percent never did.

Fried, M.P., Sadoughi, B., Weghorst, S.J., and others. (2007, April). "Construct validity of the endoscopic sinus surgery simulator." (AHRQ grant HS11866). *Archives of Otolaryngology and Head and Neck Surgery* 133, pp.350-357.

This study assessed the discriminant validity of the endoscopic sinus surgery simulator (ES3) between various health care provider experience levels. The authors examined its use by 10 expert otolaryngologists, 14 otolaryngologist residents, and 10 medical students, who had completed the ES3's virtual reality curriculum (10 naive mode, 10 intermediate mode, and 3 advanced mode trials). The naive mode accurately distinguished the three groups at the onset of training. However, subjects were not distinguished beyond trial 5. The advanced mode did not show performance differences between groups. Expert scores were used to define benchmark criteria of optimal performance.

Gorelick, M.H., Alessandrini, E.A., Cronan, K., and Shults, J. (2007, April). "Revised pediatric emergency assessment tool (RePEAT): A severity index for pediatric emergency care." (AHRQ grant HS11359). *Academic Emergency Medicine* 14, pp. 316-323.

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The authors of this paper developed and validated a multivariable model, using information available at the time of patient triage, to predict the level of care provided to pediatric emergency patients for use as a severity of illness measure. They retrospectively studied 5,521 children treated at 4 emergency departments (EDs) over a 12-month period. They included eight predictor variables in the final models: presenting complaint, age, triage acuity category, arrival by emergency medical services, current use of prescription medications, and three triage vital signs (heart rate, respiratory rate, and temperature). The model was validated in the sample, and the Revised Pediatric Emergency Assessment Tool (RePEAT) score accurately predicted level of care provided for pediatric emergency patients.

Grijalva, C.G., Nuorti, J.P., Arbogast, P.G., and others. (2007, April). "Decline in pneumonia admissions after routine childhood immunization with pneumococcal conjugate vaccine in the USA: A time-series analysis." (AHRQ grant HS16784). *The Lancet* 369, pp. 1179-1186.

Since 2000, U.S. infants have been routinely immunized with a pneumonia vaccine that has markedly reduced hospitalizations for pneumonia related to *Streptococcus pneumoniae* among children younger than 2 years. By the end of 2004, pneumonia hospital admission rates had declined by 39 percent for children in this age group, representing about 41,000 pneumonia admissions that were prevented in 2004. Researchers at the

University's Center for Education and Research on Therapeutics analyzed data from the Nationwide Inpatient Sample, a national inpatient database of U.S. hospital admissions. They compared monthly admission rates for all-cause and pneumococcal admissions for the years after the introduction of pneumococcal conjugate vaccine (PCV7) vaccination (2001-2004) with expected rates calculated from pre-PCV7 years (1997-1999). There was no significant decline in rates of outpatient visits for pneumococcal pneumonia and unspecified pneumonia in children in this age group after the PCV7 was introduced. This suggests that the decline in hospital admissions for pneumonia was not caused by a shift to outpatient care of pneumonia.

Hahn, E.A., Cella, D., Dobrez, D.G., and others. (2007, April). "The impact of literacy on health-related quality of life measurement and outcomes in cancer outpatients." (AHRQ grant HS10333). *Quality of Life Research* 16, pp. 495-507.

A Talking Touchscreen (TT) is valid and useful for health-related quality of life (HRQL) assessment in low literacy populations, concludes this study. The authors developed a TT that they used in a HRQL study of 214 low-literacy and 201 high-literacy adult cancer outpatients; 70 percent were racial/ethnic minorities. Patients completed three questionnaires by TT, a cancer-specific one, a general health status one, and a standard gamble utility questionnaire (which examined how highly they valued their current health state). Nearly all (97 percent) of patients rated the TT easy to use. There was no systematic literacy bias in

reporting HRQL using the TT, and low literacy was not an independent risk factor for poor HRQL.

Jordon, H.S., Pine, M., Elixhauser, A., and others. (2007, June). "Cost-effective enhancement of claims data to improve comparisons of patient safety." *Journal of Patient Safety* 3, pp. 82-90.

There seems to be little justification for abstraction of medical records to obtain data for risk-adjusting the Agency for Healthcare Research and Quality Patient Safety Indicators (PSIs), conclude the authors of this study. The PSIs are based solely on hospital administrative or claims data. To construct risk-adjustment models, the researchers used hospital discharge data from July 2000 to June 2003 from 188 Pennsylvania hospitals. They augmented the hospital claims data with clinical data abstracted from medical records. They concluded that more accurate coding of specific secondary diagnoses, which are currently undercoded, could improve the validity of risk-adjustment equations without the added cost of abstracting clinical findings from medical records. Reprints (AHRQ publication no. 07-R063) are available from AHRQ.*

Kelley, E. (2007, March). "Health, spending and the effort to improve quality in OECD countries: A review of the data." *Journal of the Royal Society for the Promotion of Health* 127(2), pp. 64-71.

The author of this paper used data from the Organisation for Economic Co-operation and Development (OECD) to summarize what is known about health, spending, risk factors, and

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quality of care in OECD countries. He notes that health has improved dramatically since the 1970s in all of the OECD countries. Likewise, all of the OECD countries are spending many times more on health per person than in 1970. However, the gains in health as well as the spending levels vary tremendously across countries. Quality of care is relatively high in some areas, such as vaccination rates. In other areas such as breast cancer survival, most, but not all, countries are making progress. Finally, in other areas, such as inpatient care for heart attack, there is wide variation in quality of care among OECD countries. Reprints (AHRQ publication no. 07-R065) are available from AHRQ.*

Kelly, P.A., Kallen, M.A., and Suarez-Almazor, M.E. (2007, May). "A combined-method psychometric analysis recommended modification of the Multidimensional Health Locus of Control scales." (AHRQ grant HS10876). *Journal of Clinical Epidemiology* 60, pp. 440-447.

The Multidimensional Health Locus of Control (MHLC) scales are widely used to measure beliefs about determinants of peoples' health. These authors evaluated the scales with 1,206 subjects from 3 osteoarthritis studies using a combined-method psychometric approach. The results of this large-sample evaluation of the MHLC scales corroborated earlier findings that removal of certain items improved the scales. The combined Rasch-Confirmatory Factor model approach provided better insight into scale performance problems than either method alone provided.

Lee, T.A., Fuhlbrigge, A.L., Sullivan, S.D., and others. (2007, April). "Agreement between caregiver reported healthcare utilization and administrative data for children with asthma." (AHRQ grant HS08368). *Journal of Asthma* 44, pp. 189-194.

Administrative data and caregiver reported data don't always agree on health care use by children with asthma, according to this study. The researchers compared asthma-related hospitalizations, emergency department (ED) visits, oral steroid bursts, and outpatient visits as reported by caregiver and administrative data over 2 years. The percentage of individuals with disagreement between sources was 6.1 percent for hospitalizations, 20.2 percent for ED visits, 34.3 percent for steroid bursts, and 83.6 percent for outpatient visits. These differences could negatively affect the perceived quality of care provided by a physician. They could also reduce physicians' compensation in a pay-for-performance system when physicians are rated using administrative data, yet they provide treatment based on patient-reported information.

Lewis, J.D., Schinnar, R., Bilker, W.B., and others. (2007, April). "Validation studies of The Health Improvement Network (THIN) database for pharmaco-epidemiology research." (AHRQ grant HS10399). *Pharmacoepidemiology and Drug Safety* 16, pp. 393-401.

The Health Improvement Network (THIN) is a new medical records database that contains records from general practices, some of which have participated or continue to participate in the General Practice Research Database (GPRD) and others that

never participated in the GPRD. THIN data that are collected outside of the GPRD appear as valid as the data collected as part of the GPRD, concludes this study. The researchers used THIN data from 1986-2003 to conduct case-control studies of associations between diseases (for example, hypertension and stroke) and between diseases and drugs (for example, aspirin and colon cancer). In all cases, results obtained from the GPRD practices were similar to those obtained from the non-GPRD practices.

Longo, D.R., Hewett, J.F., Ge, B., and Schubert, S. (2006, September/October). "The long road to patient safety: A status report on Missouri acute-care hospitals." (AHRQ grant HS11885). *Missouri Medicine* 103(5), pp. 545-552.

A survey of Missouri acute care hospitals in 2002 and 2004 revealed modest improvement in patient safety systems, but they still fell short of national recommendations. By 2004, 8 percent of 93 hospitals improved on 40 or more of the 78 patient safety items in the survey, with the average hospital improving in 21 areas. Despite evidence that staff fatigue increases the likelihood of medical error, by 2004 only about half of the hospitals had policies requiring that clinicians involved in the medication process work no more than 12 consecutive hours and have at least 10 hours off duty between shifts; however, about three-fourths of hospitals had fully implemented the policy of not giving demerits to personnel who made a medical error, thus advancing a no-blame work environment. Three-fourths of hospitals also provided an employee patient safety/quality improvement continuing medical

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education program and identified error prevention targets. In addition, 73 percent of hospitals had fully implemented policies providing for anonymous adverse event reporting, 66 percent implemented voluntary adverse event reporting, and 73 percent encouraged employees to file error reports without fear/reprisal.

Ma, J., Lee, K-V., and Stafford, R.L. (2006, November). "Changes in antihypertensive prescribing during U.S. outpatient visits for uncomplicated hypertension between 1993 and 2004." (AHRQ grant HS11313). *Hypertension* 48, pp. 846-852.

The drugs prescribed for uncomplicated hypertension among outpatients varied between 1993 and 2004, according to analysis of data from National Ambulatory Care Surveys in those years. Clinical prescribing guidelines seemed to affect prescribing trends, but their impact appeared short-lived. Diuretic prescriptions comprised 39 percent of antihypertensive prescriptions through 2001, but increased to 53 percent in 2003, largely due to a 72 percent increase in thiazide diuretic prescriptions in the first quarter of 2003. At this time, the U.S. Joint National Committee (JNC) recommended that thiazide diuretics be prescribed alone or as part of combination therapy for most hypertensive patients. However, these increases were not sustained in 2004. Beta-blocker prescriptions increased modestly from 24 percent in 1993 to 33 percent in 2004. Prescription of calcium channel blockers and angiotensin-converting enzyme (ACE) inhibitors declined significantly following the sixth JNC report in 1997, which recommended diuretics and beta-

blockers as preferred first-line therapies. However, prescribing of both calcium channel blockers and ACE inhibitors subsequently rebounded to pre-report levels.

Peters, E., Hibbard, J., Slovic, P., and Dieckmann, N. (2007, May). "Numeracy skill and the communication, comprehension, and use of risk-benefit information." (AHRQ contract 290-05-0013). *Health Affairs* 26(3), pp. 741-748.

Current health care policy emphasizes improving health outcomes and the efficacy of health care delivery by supporting informed consumer choices. At the same time, health information often involves uncertainty, and many people may lack the skills and knowledge to process this information, manage their health and health care, and make informed choices. Innumeracy, an element of poor health literacy, is associated with lower comprehension and use of important health information. After examining studies on the topic, these authors discuss what can be done to help less numerate people act more effectively and take charge of their health.

Raebel, M.A., McClure, D.L., Chan, K.A., and others. (2007, February). "Laboratory evaluation of potassium and creatinine among ambulatory patients prescribed spironolactone: Are we monitoring for hyperkalemia?" (AHRQ grant HS11843). *Annals of Pharmacotherapy* 41, p. 193-200.

Spironolactone, used to treat heart failure, hypertension, and other chronic conditions, can cause hyperkalemia. Thus, serum potassium and creatinine evaluation is recommended for patients prescribed spironolactone. However, this study found that only

three-fourths of outpatients dispensed spironolactone received recommended laboratory evaluation. Monitoring was more likely to be completed in patients prescribed other drugs that also increased hyperkalemia risk, in older patients, and in patients with diabetes. The study retrospectively studied patients at 10 HMOs who had been taking spironolactone for 1 year.

Roberts, R.J., Stockwell, D.C., and Slonim, A.D. (2007, March). "Discrepancies in administrative databases: Implications for research and practice." (AHRQ grant HS14009). *Critical Care Medicine* 35(3), pp. 949-950.

These authors note the divergence of critical care days and costs in Medicare beneficiaries in two distinct databases: MedPAR supplemented by the Health Care Information System (HCIS) and the Healthcare Cost Report Information System (HCRIS). Two codes in particular, the intensive care and cardiac critical care post/intermediate codes in MedPAR/HCIS were responsible for the majority of the variance in critical care days between the two databases. The authors caution that it is only through accurate data acquisition and analysis that administrative databases retain their value for informing clinical, scientific, and financial decisionmaking. They assert that every critical care provider has a role in ensuring that medical record documentation accurately reflects the care delivered at the bedside, and that their institution uses proper standards and coding of these data.

Rye, C.B., and Kimberly, J.R. (2007, June). "The adoption of innovations by provider organizations in health care."

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(AHRQ grant T32 HS00009). *Medical Care Research and Review* 64, pp. 235-278.

A variety of health care innovations have flooded health care systems worldwide, offering potentially beneficial advances in the diagnoses and treatment of disease and delivery of medical services. The direct and indirect costs of acquiring and implementing innovations are often substantial, though the potential financial benefits can be large as well. This article develops a comprehensive census of studies examining the adoption of and disengagement from innovations in health care provider organizations. The authors organize these studies into an inductively derived classification scheme. Finally, they assess the studies' strengths and weaknesses and reflect on the implications of the review for future research.

Sangl, J., Buchanan, J., Cosenza, C., and others. (2007). "The development of a CAHPS instrument for nursing home residents (NHCAHPS)." *Journal of Aging & Social Policy* 19(2), pp. 63-82.

This paper describes a Federal initiative to develop a CAHPS® (Consumer Assessment of Healthcare Providers and Systems) survey to measure residents' experiences with quality of care and quality of life in nursing homes (known as NHCAHPS). The authors focus on development and testing of the instrument. They learned that in contrast to other CAHPS® surveys, ratings were more useful than reports because of the difficulty residents had with summarizing over time and people. Consistent with other CAHPS® surveys, the 0 to 10 response scale appeared to work well for many of the quality-of-care questions. However, a

different response scale was needed for many of the quality-of-life items. Reprints (AHRQ publication no. 07-R064) are available from AHRQ.*

Sangvai, S., Cipriani, L., Colborn, K., and Wald, E.R. (2007, April). "Studying injury prevention: Practices, problems, and pitfalls in implementation." (AHRQ grant HS13523). *Clinical Pediatrics* 46(3), pp. 228-235.

This study examined the effectiveness of a chronic care model (CCM) approach to injury prevention in primary care settings compared with standard anticipatory guidance. Caregivers of children aged 0 to 5 years in the CCM group received focused counseling from a doctor and health assistant, educational handouts, phone follow-up, and access to free safety devices and automobile restraint evaluations. The researchers used home visits to observe safety practices 6 months later. Medical record review showed no difference between the CCM group and anticipatory guidance group in the number of medically attended injuries. Thus, the impact of the CCM on injury prevention in primary care could not be determined with certainty.

Schneeweiss, S. (2007, April). "Reference drug programs: Effectiveness and policy implications." (AHRQ grant HS10881). *Health Policy* 81, pp. 17-28.

This paper summarizes the mechanism and rationale of reference drug programs (RDPs) and presents evidence of their economic effectiveness and clinical safety. If the goal is to achieve full drug coverage for as many patients as possible in the most efficient manner, then RDPs in combination with prior drug authorization programs are safer and more

effective than simplistic fiscal drug policies such as fixed copayments and deductibles, asserts the author. He notes that RDPs will reduce spending in the less innovative but largest market, while fully covering all patients. Prior drug authorization will ensure that patients with a specified indication will benefit from the most innovative therapies with full coverage. In practice, however, not all patients and drugs will fit neatly into one of the two categories.

Shaw, J.W., Johnson, J.A., Chen, S., and others. (2007, May). "Racial/ethnic differences in preferences for the EQ-5D health states: Results from the U.S. valuation study." (AHRQ grant HS10243). *Journal of Clinical Epidemiology* 60, pp. 479-490.

Cost-utility analysis (CUA) is a form of cost-effectiveness analysis that compares the costs of health care programs with their outcomes, which are measured in terms of both quantity and quality of life. In CUA, the EuroQol Group's EQ-5D system can be used to classify a respondent's current health status and to provide a preference for that health state. This study examined differences for EQ-5D health states among blacks, whites, and Hispanics selected from the adult U.S. population. Valuations differed among the groups for 7 of the 13 health states, and these differences persisted after adjusting for other sociodemographic factors.

Snyder, R.A., Abarca, J., Meza, J.L., and others. (2007, August). "Reliability evaluation of the adapted national coordinating council medication error reporting and prevention (NCC MERP) index." (AHRQ grant HS13131). *Pharmacoepidemiology and Drug Safety* 16(8), pp. 1006-1013.

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These authors used adapted National Coordinating Council for Medication Error Reporting and Prevention Index criteria in a study undertaken to evaluate the impact of the commercial computerized provider order entry system on community hospital medication errors. They used the criteria to classify a random sample of 17 percent of 2,251 medication safety events based on event type—adverse drug event (ADE) or potential ADE—preventability, and outcome severity. The adapted Index yielded substantial agreement on event type, preventability, and severity. The authors conclude that adaptation of the Index to support classification of nonpreventable ADEs was an important improvement.

Starks, H., Back, A.L., Pearlman, R.A., and others. (2007, February). “Family member involvement in hastened death.” (AHRQ grant T32 HS13853). *Death Studies* 31, pp. 105-130.

This paper discusses four cases that highlight the positive and negative consequences of family members’ participation in a hastened death—that is, when dying persons express an interest in physician-assisted suicide, or hastened death. In these cases, they often call upon family members to acquire “how to” information on approaching health care providers with a request for assistance, what medications to ask for, how to save and store medications for future potential use, and how to assure that the death is reported without prompting a legal investigation. Four cases reveal the main themes: “taking care” included mutual protection between patients and family members; “midwifing the death” without professional support

left families unprepared for adverse events; “tying up loose ends” included dealing with family members’ fear of legal consequences; and “moving ahead” involved a greater risk of complicated grief when families encountered complications during the dying process.

Stewart, A.L., Napoles-Springer, A.M., Gregorich, S.E., and Santoyo-Olsson, J. (2007, June). “Interpersonal processes of care survey: Patient-reported measures for diverse groups.” (AHRQ grant HS10599). *HSR: Health Services Research* 42(3), pp. 1235-1256.

This paper describes the development of a patient-reported, multidimensional physician/patient interpersonal processes of care (IPC) survey appropriate for patients from diverse racial/ethnic groups. The researchers interviewed adult general medicine patients stratified by race/ethnicity and language to develop data. They designed items to be appropriate for diverse ethnic groups based on focus groups. The final 29-item instrument assessed several subdomains of communication, patient-centered decisionmaking, and interpersonal style. Final scales exhibited moderate to high reliability. The authors conclude that the IPC survey can be used to describe disparities in interpersonal care, predict patient outcomes, and examine outcomes of quality improvement efforts to reduce health care disparities.

Tracy, J.I., Dechant, V., Sperling, M.R., and others. (2007, April). “The association of mood with quality of life ratings in epilepsy.” (AHRQ grant HS09986). *Neurology* 68, pp. 1101-1107.

Quality of Life in Epilepsy (QOLIE) scores, reflecting both general and specific aspects of

quality of life, are strongly influenced by mood state, such as depression. Factors such as seizure control exert a more limited effect on the QOLIE, according to this study. Thus, health-related quality of life measures are needed in which mood does not play such a dominant role, conclude the researchers. They had 435 outpatients with epilepsy complete the Quality of Life in Epilepsy 31 Inventory (QOLIE-31), a depression and anxiety measure, and a social survey to determine the relative contributions of psychological, social, and seizure-related variables to QOL scores in epilepsy.

Welch, W.P., Bazarko, D., Ritten, K., and others. (2007, May/June). “Electronic health records in four community physician practices: Impact on quality and cost of care.” (AHRQ Contract No. 290-00-0012). *Journal of the American Medical Informatics Association* 14, p. 320-328.

These researchers assessed the impact of the electronic health record (EHR) on cost (that is, payments to providers) and process measures of quality of care. They obtained claims of patients from 4 community practices that implemented the EHR with 50 comparison practices without the EHR in the same counties. They examined their rate of adherence to clinical guidelines for four chronic conditions. Guideline adherence increased across practices without EHRs and slightly faster in practices with EHRs. However, measuring the impact of EHRs on cost per episode was challenging, because of the difficulty of completely capturing the long-term episodic costs of a chronic condition. Nevertheless, few practices associated with the study managed care organization had implemented EHRs in any form. ■

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