Research Activities

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Coronary bypass surgery results in better 5-year outcomes than coronary angioplasty

Previous studies have not shown any substantial difference in how coronary artery disease (CAD) patients fare 2 to 3 years after either coronary artery bypass graft (CABG) surgery or percutaneous transluminal coronary angioplasty (PTCA), two procedures that are performed to restore adequate blood supply to blocked arteries. However, a recent meta-analysis performed by researchers at Tufts-New England Medical Center in Boston found that more CABG patients than angioplasty patients were alive 5 years later, and they had less angina (crushing chest pain) and fewer additional revascularization procedures than PTCA patients.

Yet, only 35 percent of PTCA patients had stents inserted during the initial procedures. Stents are expandable metal mesh tubes that are inserted during angioplasty, a procedure in which a balloon-tipped catheter is threaded through the blocked coronary artery. The balloon is inflated to flatten plaque against the arterial walls to reestablish cardiac blood flow. Placed at the site of the blockage, the stent pushes against the artery wall to keep it open after the surgery. The addition of stents and newer adjunctive therapies may improve outcomes for PTCA relative to CABG, but long-term data are not yet available, note the researchers who conducted the study. Their work was supported in part by the Agency for Healthcare Research and Quality (HS06503).

The meta-analysis involved 13 randomized trials on 7,964 patients comparing PTCA with CABG. The researchers found a 1.9 percent absolute survival advantage favoring CABG over PTCA for all trials at 5 years but no significant advantage at 1, 3, or 8 years. Patients randomized to PTCA had more repeat revascularization procedures at all time points. However, the addition of stents reduced the need for repeat revascularization by about half

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Coronary bypass surgery

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and resulted in a significant decrease in nonfatal heart attack at 3 years compared with CABG.

See "A meta-analysis of randomized controlled trials comparing coronary artery bypass graft with percutaneous transluminal coronary angioplasty: One- to eight-year outcomes," by Stuart N. Hoffman, D.O., John A. TenBrook Jr., M.D., Michael P. Wolf, M.D., and others, in the April 16, 2003 *Journal of the American College of Cardiology* 41(8), pp. 1293-1304. ■

Outcomes/Effectiveness Research

Regionalization of invasive cardiac procedures may explain seeming underuse of coronary angiography at VA hospitals

Regionalization policies that refer patients needing invasive cardiac procedures to high-volume centers that perform many such procedures each year are being implemented by some payers, since research has shown that cardiac patients usually fare better at high- versus low-volume centers. Due to this regionalization, the Department of Veterans Affairs (VA) health care system performs invasive cardiac procedures in only a few centers in each of its 22 networks. The lack of availability of cardiac services at other VA centers may be an important factor in the underuse of needed coronary angiography at VA hospitals, according to a recent study that was supported in part by the Agency for Healthcare Research and Quality (HS08071).

The researchers compared the use of angiography and 1-year mortality among 1,665 elderly male veterans from 81 VA hospitals and 19,305 elderly male Medicare beneficiaries treated at 1,530 non-VA hospitals. In contrast to the VA system, fee-for-service Medicare is a nonregionalized, dispersed system. Rates of angiography needed by eligible patients, for example, those with persistent reduced cardiac blood flow after heart attack, were significantly lower in VA than non-VA hospitals. However, when the researchers controlled for the on-site availability of cardiac procedures, VA patients were no less likely than Medicare patients to undergo needed angiography.

This finding suggests that a key factor in the underuse of angiography in the VA system is the lack of availability of invasive services at every VA hospital, partly a byproduct of regionalization. Since regionalization can improve the efficiency and quality of care, the solution to the problem of underuse is not to provide such services in more hospitals, but to improve the efficiency of the referral and transfer process for patients with heart disease, conclude the researchers.

More details are in "Regionalization and the underuse of angiography in the Veterans Affairs health care system as compared with a fee-for-service system," by Laura A. Petersen, M.D., M.P.H., Sharon-Lise T. Normand, Ph.D., Lucian L. Leape, M.D., and Barbara J. McNeil, M.D., Ph.D., in the May 29, 2003 *New England Journal of Medicine* 348, pp. 2209-2217. ■

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Nonsmokers and previous smokers have less angina and function better physically than smokers after coronary angioplasty

Nonsmokers and former smokers (including those who quit more than a month prior to surgery) suffer from fewer physical limitations, less angina (crushing chest pain), and have a higher quality of life than smokers following coronary angioplasty, concludes a study supported in part by the Agency for Healthcare Research and Quality (HS11282). The impact of not smoking on postoperative angina frequency was powerful, similar to that seen for the impact of coronary angioplasty itself on frequency of angina.

Researchers from the Mid America Heart Institute, St. Luke's Hospital, and the University of Missouri prospectively studied a group of 271 coronary angioplasty patients at a high-volume coronary treatment center. They assessed the patients' health with the Short Form-12 (SF-12) measure of physical and mental functioning and the 19-item Seattle Angina Questionnaire (SAQ) at baseline and at 6 and 12 months after surgery. Patients who were current smokers had poorer health status outcomes than other patients after angioplasty.

At 1 year after surgery, people who had never smoked and ex-smokers still scored significantly higher than current smokers in the physical component of the SF-12, indicating a better general physical quality of life (42.7 and 41.2 vs. 30.4). There was little impact of smoking on the SF-36 mental component scores at 6 or 12 months. Based on SAQ scores, 6 months after the procedures, smokers had significantly more physical limitations, more frequent angina, and poorer quality of life than nonsmokers and ex-smokers. Smoking status was unrelated to mortality rate during the year after coronary angioplasty. The researchers conclude that cardiologists should aggressively promote a tobacco-free lifestyle in their patients and advise patients to quit smoking before cardiac revascularization surgery.

See "Smoking and health outcomes after percutaneous coronary intervention," by C. Keith Haddock, Ph.D., Walker S. Poston, Ph.D., Jennifer E. Taylor, M.A., and others, in the *American Heart Journal* 145, pp. 652-657, 2003. ■

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Researchers examine medication effectiveness and depression among cardiac patients

Nearly 5 million people in the United States suffer from heart failure, a major cause of death. Depression, which affects many individuals who suffer from heart failure, heart attack, and other cardiac problems, increases the risk of further cardiac problems in these patients. A new study supported by the Agency for Healthcare Research and Quality (contract 290-97-0001) details medications that are effective for certain types of heart failure patients. A second study (AHRQ grant HS11282) focuses on the optimal timing for assessing depression in patients underoing coronary bypass surgery or coronary angioplasty. The articles are summarized here.

Shekelle, P.G., Rich, M.W., Morton, S.C., and others. (2003, May). "Efficacy of angiotensin-converting enzyme inhibitors

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Cardiac patients

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and beta blockers in the management of left ventricular systolic dysfunction according to race, gender, and diabetic status." *Journal of the American College of Cardiology* 41, pp. 1529-1538.

This study found that angiotensin-converting enzyme (ACE) inhibitors and beta-blockers provide life-saving benefits in most heart failure patients. However, women with asymptomatic heart failure may not gain a survival benefit when treated with ACE inhibitors. Data supported beneficial reductions in all-cause death for the use of beta-blockers in men and women, use of ACE inhibitors and some beta-blockers in black and white patients, and the use of ACE inhibitors and beta-blockers in patients with or without diabetes. The findings were based on a meta-analysis of the 12 largest randomized clinical trials on these medications to examine their impact on mortality on heart failure patients.

Poston, W.S., Haddock, C.K., Conard, M.W., and others. (2003, January). "Assessing depression in the cardiac patient." *Behavior Modification* 27(1), p. 26-36.

It is common to screen for depression in patients undergoing coronary artery bypass graft surgery or coronary angioplasty because depression can impair recovery. Some patients experience transient, reactive depression, while others suffer from persistent depression. Patients undergoing coronary revascularization procedures are best screened for depression 1 month after their procedure, according to the results of this study.

The researchers found that 75 percent of the patients who were depressed at 1 month would not have been identified as depressed by a screening questionnaire at the time of their revascularization procedure. Thus, screening at the time of surgery is not as predictive of depression 6 months after the operation as it is 1 month postprocedure. The researchers used questionnaires to identify depression at the time of the procedure and monthly thereafter for up to 6 months among 422 patients undergoing coronary revascularization. ■

Pneumonia triples the risk of death following hospitalization for acute stroke

Pneumonia is one of the most common causes of hospital readmission for stroke patients, and it triples the risk of death within a month after hospitalization for acute stroke, according to a study supported by the Agency for Healthcare Research and Quality (HS09969 and T32 HS00059). Pneumonia is thought to occur most often in stroke patients as a result of the difficulty they may have in swallowing, resulting in aspiration of food or liquid into their lungs. This underscores the need to identify at-risk stroke patients and reduce their risk of pneumonia, for example, by performing bedside swallowing evaluations, suggests Irene L. Katzan, M.D., M.S., of Case Western Reserve University, and her colleagues.

The researchers used medical chart and Medicare data to calculate the relative risk (RR) of pneumonia for 30-day mortality in a group of 11,286 Medicare patients admitted for stroke to 29 Cleveland hospitals between 1991 and 1997. They identified pneumonia in 5.6 percent of the patients. The rates of pneumonia were higher in patients with greater stroke severity and features indicating general frailty. After adjusting for pneumonia severity at hospital admission and propensity for pneumonia (for example, poor nutritional status), pneumonia increased the risk of 30-day death three-fold. The researchers estimate that one stroke-related death at 30 days could be avoided for each 11 cases of pneumonia that are prevented.

More details are in "The effect of pneumonia on mortality among patients hospitalized for acute stroke," by Dr. Katzan, R.D. Cebul, M.D., S.H. Husak, B.A., and others, in the February 2003 *Neurology* 60, pp. 620-625. ■

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Followup colonoscopy in patients with a history of nonmetastatic colorectal cancer improves survival

Colorectal cancer is the second leading cause of cancer deaths in the United States, and patients who have a history of nonmetastatic colorectal cancer should have a followup colonoscopy to reduce their risk of death from this cancer, recommends this study. The researchers found that the risk of death was decreased by 43 percent in a group of patients who had at least one followup colonoscopy compared with patients who had none. Those who did not have any followup colonoscopy were 1.8 times more likely to die (from all causes) at any given point during the 5-year followup than those who had a colonoscopy.

This is the first study to demonstrate a significant survival benefit for endoscopic followup for patients with colorectal cancer, note Deborah A. Fisher, M.D., M.H.S., of Duke University Medical Center, and her colleagues. Their findings are based on an analysis of data on 3,546 patients who were listed in Veterans Affairs national databases with a new diagnosis of colorectal cancer during fiscal years 1995 and 1996.

The researchers compared 5-year mortality rates of patients who received at least one colonoscopy after their diagnosis with patients who had no further procedures, after adjusting for age, race, chemotherapy, radiation therapy, and coexisting illness. Their research was supported in part by the Agency for Healthcare Research and Quality (NRSA training grant T32 HS00079).

See "Mortality and follow-up colonoscopy after colorectal cancer," by Dr. Fisher, Amy Jeffreys, M.Stat., Steven C. Grambow, Ph.D., and Dawn Provenzale, M.D., M.S., in the *American Journal of Gastroenterology* 98(4), pp. 901-906. ■

PSA testing may deserve part of the credit for the recent decline in prostate cancer deaths, but more data are needed

Prostate specific antigen (PSA) testing has had a significant impact on the statistics that describe the natural history of prostate cancer. The decline in incidence and mortality from advanced prostate cancer, in particular, suggest that PSA may be a factor contributing to the recently observed fall in prostate cancer deaths. Population-based data are complex, however, and the relatively modest declines in prostate cancer mortality may be the result of multiple causes. Further followup is needed to ensure that the observed declines are sustainable, note Brian Kessler, M.D., and Peter Albertsen, M.D., of the University of Connecticut Health Center. Their work was supported in part by the Agency for Healthcare Research and Quality (HS09578).

Drs. Kessler and Albertsen reviewed key research that has contributed to the understanding of the natural history of prostate cancer and long-term outcomes in the pre-PSA and PSA eras. For instance, since the introduction of PSA testing during the late 1980s, the incidence of prostate cancer has risen dramatically, and mortality from the disease has declined. In 1991, prostate cancer caused 26.7 deaths per 100,000 men at risk, which declined to 24.9 per 100,000 by 1995, a decrease of 6.7 percent. Declining prostate cancer mortality is supported by the significant declines in the incidence of advanced prostate cancer noted among men with newly diagnosed disease.

More details are in "The natural history of prostate cancer," by Drs. Kessler and Albertsen, in the May 2003 *Urologic Clinics of North America* 30(2), pp. 219-226. ■

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Certain hospital practices may reduce the incidence of pneumonia requiring mechanical ventilation among critically ill patients

From 10 to 25 percent of critically ill patients develop pneumonia severe enough to require mechanical ventilation. Colonization of the oropharynx and the stomach with potentially pathogenic organisms precedes the development of ventilator-associated pneumonia in most patients, probably due to microaspiration of oropharyngeal or gastric secretions contaminated with these organisms. Following a systematic review of studies on methods to prevent ventilatory-associated pneumonia, researchers at the University of California, San Francisco-Stanford University Evidence-based Practice Center (EPC) found strong evidence that several hospital practices could help to prevent this serious problem. The EPC is supported by the Agency for Healthcare Research and Quality (contract 290-97-0013).

All eligible patients should be put in a semi-recumbent position to reduce risk for gastroesophageal reflux and aspiration. Sucralfate rather than H2-antagonists should be used to prevent stress ulcers in patients at low to moderate risk for gastrointestinal tract bleeding. H2-antagonists and antacids may increase gastric pathogenic organisms, since these organisms increase with decreasing gastric acidity, and thus increase the risk for ventilator-associated pneumonia. Sucralfate, an alternative prophylactic agent that does not affect gastric pH, may not increase this risk.

Subglottic secretions should be aspirated to prevent their accumulation above the endotracheal tube cuff where they can contribute to the risk of aspiration, particularly in patients requiring more than 3 days of mechanical ventilation. Oscillating beds for surgical patients or patients with neurologic problems can minimize their immobility. This helps, since immobility impairs clearance of bronchopulmonary secretions that increase the risk for ventilator-associated pneumonia. Selective digestive tract decontamination is not recommended because routine use may increase antimicrobial resistance.

For more information, see "Prevention of ventilator-associated pneumonia: An evidence-based systematic review," by Harold R. Collard, M.D., Sanjay Saint, M.D., M.P.H., and Michael A. Matthay, M.D., in the March 2003 *Annals of Internal Medicine* 138(6), pp. 494-501.

Editor's note: Copies of AHRQ Evidence Report/Technology Assessment No. 43, *Making Health Care Safer: A Critical Analysis of Patient Safety Practices* (AHRQ Publication No. 01-E058, full report, and 01-E057, summary), Shojania, K.G., Duncan, B.W., McDonald, K.M., and Wachter, R.M., editors, are available from AHRQ.* See the back cover of *Research Activities* for ordering information. ■

National Emphysema Treatment Trial examines benefits and costs of lung-volume-reduction surgery for severe emphysema

Lung-volume-reduction surgery has been proposed as a palliative treatment for patients with severe emphysema. The National Emphysema Treatment Trial (NETT), cosponsored by the Agency for Healthcare Research and Quality, the National Heart, Lung, and Blood Institute, and the Centers for Medicare & Medicaid Services, compared the effectiveness and cost-effectiveness of lung-volume-reduction surgery with medical therapy for severe emphysema.

After pulmonary rehabilitation, 1,218 patients at 17 medical centers were randomly assigned to undergo lung-volume-reduction surgery or to receive continued medical treatment. One NETT study recently reported on the surgery's impact on patient survival and exercise capacity. A second NETT study reported on its cost-effectiveness. Both studies are summarized here.

Fishman, A., Martinez, F., Naunheim, K., and others. (2003, May). "A randomized trial comparing lung-volume-reduction surgery with medical therapy for severe emphysema." *New England Journal of Medicine* 348, pp. 2059-2073.

Overall, lung-volume-reduction surgery increases the chance of improved exercise capacity, but it does not confer a survival

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Severe emphysema

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advantage over medical therapy for people with severe emphysema, according to findings from this NETT study. Surgery does yield a survival advantage for patients with both predominantly upper-lobe emphysema and low baseline exercise capacity. However, patients previously reported to be at high risk of death from surgery and those with non-upper-lobe emphysema and high baseline exercise capacity are poor candidates for lung-volume-reduction surgery because of increased mortality and negligible functional gain.

Overall mortality among study patients was 0.11 death per person-year in both the surgery and medical therapy groups. However, after 24 months, exercise capacity (based on a cycle ergometer) had improved by more than 10 W in 15 percent of the surgery patients but in only 3 percent of the medical therapy patients. Among patients with predominantly upper-lobe emphysema and low exercise capacity, mortality was lower in the surgery group than in the medical therapy group. Among patients with non-upper-lobe emphysema and high exercise capacity, mortality was higher in the surgery group than in the medical therapy group.

Ramsey, S.D., Berry, K., Etzioni, R., and others. (2003, May). "Cost-effectiveness of lung-volume-reduction surgery for patients with severe emphysema." ***New England Journal of Medicine*** **248, pp. 2092-2102.**

Lung-volume-reduction surgery for severe emphysema is less cost effective in the short term compared with medical therapy due to the high costs of surgery, the number of adverse clinical outcomes, long periods of hospitalization, and greater number of nursing home admissions during the first few months after surgery, concludes this study.

Investigators used Medicare claims and NETT data to analyze costs for the use of medical care, medications, transportation, and time spent receiving treatment. They determined cost-effectiveness with the use of modeling based on observed trends in survival, cost, and quality of life. When patients with excess mortality and little chance of improved functioning after surgery were excluded, the cost-effectiveness ratio for lung-volume-reduction surgery as compared with medical therapy was $190,000 per quality-adjusted life-year (QALY) gained at 3 years and $53,000 per QALY gained at 10 years.

The cost-effectiveness ratio was better for a subgroup of surgery patients who had predominantly upper-lobe emphysema and low exercise capacity after pulmonary rehabilitation who had lower mortality and better functional status than patients who received medical therapy. The cost-effectiveness ratio in this subgroup was $98,000 per QALY at 3 years and $21,000 at 10 years.

Given its cost and benefits over 3 years of followup, lung volume-reduction surgery is costly relative to medical therapy. The researchers note, however, that the procedure may be cost effective if benefits can be maintained over time. ■

Continuing use of autopsy appears warranted to uncover important unsuspected diagnoses

Substantial discrepancies still exist between clinical diagnoses and findings at autopsy. The likelihood that a given autopsy will reveal important unsuspected diagnoses has decreased over the past four decades, yet it remains sufficiently high that encouraging ongoing use of autopsy appears warranted, concludes a study supported by the Agency for Healthcare Research and Quality (contract 290-97-0013).

To examine the usefulness of autopsy as a tool for quality measurement and improvement, investigators at the University of California San Francisco-Stanford Evidence-based Practice Center systematically reviewed the research literature to estimate the frequency with which autopsy reveals important, clinically missed diagnoses. Of 53 autopsy series identified, 42 reported major errors (missed diagnoses involving a principal underlying disease or primary cause of death) and 37 reported class I errors (which, had they been detected during life, would or could have affected patient outcome). Twenty-six autopsy series reported both major and class I error rates. The median error rate was 23.5 percent for major errors and 9 percent for class I errors.

Analyses of diagnostic error rates, adjusting for the effects of case mix, country, and autopsy rate, yielded relative decreases per decade of 19.4 percent for major errors and 33.4 percent for class I errors. Despite these decreases, the researchers estimated that a contemporary U.S. institution could

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Autopsy

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observe a major error rate from 8.4 percent to 24.4 percent and a class I error rate from 4.1 to 6.7 percent. This suggests the continuing value of autopsies to uncover such errors.

More details are in "Changes in rates of autopsy-detected diagnostic errors over time," by Kaveh G. Shojania, M.D., Elizabeth C. Burton, M.D., Kathryn M. McDonald, M.M., and Lee Goldman, M.D., M.P.H., in the June 4, 2003 *Journal of the American Medical Association* 289(21), pp. 2849-2856.

Copies of Evidence Report/Technology Assessment No. 58, *The Autopsy as an Outcomes and Performance Measure* (AHRQ Publication No. 03-E002, full report; 03-E001, summary) are available from AHRQ.* See the back cover of *Research Activities* for ordering information. ■

Children's Health/Women's Health

Researchers examine the impact of prolonged middle ear disease on children's speech and language development

Otitis media (OM) is a common childhood illness that peaks in the first 3 years of life, in which fluid (effusion) accumulates in the middle ear. Some children suffer from OM for months and have repeated episodes of OM. The middle ear effusion (MEE) dampens the transmission of sound waves from the environment to the inner ear and may result in variable, mild to moderate hearing loss.

Despite many studies on whether prolonged OM contributes to long-term impairments in cognitive, language, speech, and psychosocial development, no consensus has been reached. Three new reports on this topic from the Pittsburgh Child Development/Otitis Media Study are summarized here. The study is cofunded by the Agency for Healthcare Research and Quality and the National Institute of Child Health and Human Development (HD26026).

Paradise, J.L., Feldman, H.M., Campbell, T.F., and others. (2003)."Early versus delayed insertion of tympanostomy tubes for persistent otitis media: Developmental outcomes at the age of three years in relation to prerandomization illness patterns and hearing levels." ***Pediatric Infectious Disease Journal*** **22, pp. 309-314.**

Tympanostomy tubes often are surgically placed into the ear to drain accumulated fluid and to prevent fluid buildup in the ear in children with persistent MEE. Whether prompt insertion of tympanostomy tubes in the affected ears of these children protects against or minimizes subsequent developmental impairment has been the subject of conflicting opinions and differing approaches to managing the problem. Earlier, the researchers reported that prompt insertion of tympanostomy tubes in otherwise normal children with MEE did not measurably improve developmental outcomes at age 3 years. The present report provides details showing that this was true whether MEE had been continuous or discontinuous, unilateral or bilateral, and whether or not MEE was accompanied by mild to moderate hearing loss.

The researchers randomly assigned 429 children with persistent MEE before the age of 3 years to have tympanostomy tubes inserted either as soon as possible or up to 9 months later if MEE persisted. They found no significant differences at age 3 years between the two treatment groups (402 children) in mean scores on any measure of speech, language, or cognition, and in 401 of the children, no significant differences in measures of psychosocial development.

The researchers caution that these findings cannot be extrapolated to children with longer periods of effusion than those studied or to children whose effusion is consistently accompanied by moderately severe hearing loss. They also caution that associations not found at the age of 3 years might become apparent at later ages.

Feldman, H.M., Dollaghan, C.A., Campbell, T.F., and others. (2003, April). "Parent-reported language skills in relation to otitis media during the first 3 years of life." ***Journal of Speech, Language, and Hearing Research*** **46, pp. 273-287.**

As part of a larger study, this study found that longer duration (cumulative percentage of days) of MEE in young children was associated with lower scores at age 3 on three scales: vocabulary comprehension and production;

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Prolonged middle ear disease

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sentence length and complexity; and language use. In contrast, a higher level of maternal education was associated with higher scores on these scales. In light of findings from the larger randomized trial, the researchers suggest that additional, unmeasured environmental or sociodemographic factors contribute both to the duration of MEE in young children and to their relatively poorer language skills.

As part of the larger study of the potential impact of early-life OM on speech, language, cognition, and behavior, they studied the degree of association between parent-reported language scores at ages 1, 2, and 3 years and the cumulative duration of MEE during the first 3 years of life in a demographically diverse sample of 621 children. They evaluated the contribution of maternal education, as a proxy for socioeconomic status, to scores on the parents' reports on the MacArthur Communicative Development Inventories.

Correlations between scores at ages 1 and 2 years and the percentage of days with MEE were nonsignificant or of questionable clinical importance. However, the percentage of days with MEE and maternal education each contributed independently to scores at age 3 years. Regardless of the sex of the child, within each stratum of MEE duration, scores increased as the level of maternal education increased, and within each maternal-education subgroup, scores decreased as the duration of MEE increased.

Campbell, T.F., Dollaghan, C.A., Rockette, H.E., and others. (2003, March). "Risk factors for speech delay of unknown origin in 3-year-old children." ***Child Development*** **74(2), pp. 346-357.**

Speech delay is diagnosed when a child's conversational speech sample either is less intelligible than would be expected for his or her age or is characterized by speech sound error patterns not appropriate for his or her age. This study did not find that prolonged OM significantly increased the likelihood of speech delay in 3-year-old children. However, it did find that low maternal education, male sex, and a family history of developmental communication disorder did increase the likelihood of speech delay. In fact, a child with all three factors was nearly eight times as likely to have speech delay as a child without any of the factors.

These results suggest that the accumulation of risk factors rather than the influence of an individual risk factor may pose the greatest threat to children's development, note the researchers. They compared 100 3-year-olds with speech delay (based on the Speech Disorders Classification System) of unknown origin and 539 same-age peers with respect to six variables considered in earlier studies as linked to speech delay: male sex, family history of developmental communication disorder, low maternal education, low socioeconomic status (indexed by Medicaid health insurance), black race, and persistent OM.

The researchers also examined abnormal hearing in a subset of 279 children who had at least two hearing evaluations between 6 and 18 months of age. Black race, cumulative duration of OM from 2 to 36 months of age, and two abnormal hearing tests from 6 to 18 months of age were not associated with increased risk of speech delay of unknown origin. Medicaid insurance was no longer significant after accounting for low maternal education, male sex, and family history of communication disorder. ■

Lengthening postpartum hospital stays to meet minimum Federal standards is cost effective

Because of concerns about the health effects on newborns of short postpartum stays, Congress and many State legislatures passed laws prohibiting health plans and insurers from restricting insurance coverage to fewer than 48 hours after vaginal deliveries or 96 hours after cesareans. Lengthening postpartum stays to federally mandated levels is cost effective, even for hospitals that take on additional capacity costs, according to a study supported by the Agency for Healthcare Research and Quality (HS09342).

Jesse D. Malkin, M.Phil, Ph.D., of RAND, and colleagues estimated social costs in 2000 U.S. dollars using several studies and survey data. They estimated life-years saved from reduced infant mortality due to lengthening stays to mandated times for 113,147 infants born in Washington State in 1989 or 1990 who had postpartum stays short enough to be affected by length of stay legislation. They estimated the lower-bound cost per newborn life-year saved was $19,800, when only neonatal deaths were considered. This

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Postpartum hospital stays

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compares favorably to other medical interventions commonly provided to newborns, such as neonatal intensive care for premature newborns at $55,000 per quality-adjusted life year (QALY). The corresponding upper-bound estimate was $94,800.

Even at hospitals that experienced additional capacity costs, the cost-effectiveness of lengthening short postpartum stays seemed to be roughly equal to the benchmark of $100,000 per QALY considered to be cost effective. A 1 hour increase in length of stay was associated with a reduction in the probability of neonatal death of about 2.6 percent. The mean increase in estimated length of stay to conform to Federal mandate was 15 hours. The mean projected increases in total direct medical costs were $84 and $401 per birth for the lower and upper bounds, respectively.

See "Postpartum length of stay and newborn health: A cost-effectiveness analysis," by Dr. Malkin, Emmett Keeler, Ph.D, Michael S. Broder, M.D., M.S.H.S., and Steven Garber, Ph.D., in the April 2003 *Pediatrics* 3(4), online at www.pediatrics.org. ■

Later admission in labor and collaborative care increase spontaneous vaginal delivery in low-risk women

Women who are admitted into the hospital too early in labor (cervical dilation of 3 cm or less) tend to have long labors, more obstetric complications, and more technical interventions, including cesarean births (often done for lack of labor progress). Delaying hospital admission until active labor is established (cervical dilation of at least 4 cm) and collaborative care by a certified nurse midwife (CNM) and obstetrician increase the chance that a low-risk woman will have a spontaneous vaginal delivery, that is, unassisted by forceps, cesarean, or other intervention, according to a study supported in part by the Agency for Healthcare Research and Quality (HS07161).

Perinatal nurses should encourage low-risk women to wait until active labor before seeking admission to the birth facility, suggests AHRQ principal investigator William H. Swartz, M.D., of the University of California San Diego School of Medicine. The researchers studied 2,196 low-income, low-risk pregnant women admitted for delivery during spontaneous labor. Using data from medical records and two self-administered patient questionnaires, they compared the independent and joint effects of perinatal care provider (collaborative team care by a CNM and obstetrician or traditional obstetrician care) and cervical dilation at admission on delivery method.

Almost half of the women in the traditional obstetrician care group were admitted when dilated less than 4 cm compared with a quarter of the women in collaborative CNM care. Also, fewer (23.4 percent) of the collaboratively managed women were admitted directly upon presentation compared with those in the obstetrician care group. Women in obstetrician care had 9 percent to 30 percent fewer spontaneous vaginal deliveries than women in collaborative care. Women admitted early in labor, regardless of care provider, also had 6 to 34 percent fewer spontaneous deliveries than women admitted later in labor. There were no differences between the groups in neonatal complications and other outcomes such as Apgar score.

See "Impact of collaborative management and early admission in labor on method of delivery," by Debra J. Jackson, R.N.C., M.P.H., D.Sc., Janet M. Lang, Ph.D., Sc.D., Jeffrey Ecker, M.D., and others, in the March 2003 *Journal of Obstetric, Gynecologic & Neonatal Nursing* 32(2), pp. 147-157. ■

Physicians are more likely to intensify therapy for diabetes when they get unfavorable blood-sugar test results during visits

Controlling blood-sugar levels (keeping A1c less than 7 percent) can delay or prevent complications of both insulin-dependent (type 1) and noninsulin-dependent (type 2) diabetes. However, many patients continue to have inadequate glycemic control and are at risk for organ damage. Providers often fail to intensify diabetes therapy appropriately when patient glycemic control is poor. Making A1c test results available during medical visits may help to counteract this "clinical inertia," concludes a study supported in part by the Agency for Healthcare Research and Quality (HS09722).

Researchers at Emory University School of Medicine compared intensification of therapy at an urban neighborhood health center for 596 patients with inadequately controlled type 2 diabetes whose doctors received A1c results either during (rapid) or after (routine) patient visits. Rapid A1c results led to more frequent intensification of therapy than routine post-visit A1c results, when the A1c was 7 percent or greater at patients' baseline visits (51 vs. 32 percent), particularly when the A1c was over 8 percent and/or random glucose was in the 151-250 mg/dl range. In 275 patients with two followup visits, A1c fell significantly in the rapid group from 8.4 to 8.1 percent but not in the routine group (8.1 to 8.0 percent).

See "Rapid A1c availability improves clinical decision-making in an urban primary care clinic," by Christopher D. Miller, M.D., Catherine S. Barnes, Ph.D., Lawrence S. Phillips, M.D., and others, in the April 2003 *Diabetes Care* 26(4), pp. 1158-1163. ■

Ongoing distress from a traumatic event, not the trauma itself, is related to impaired functioning in patients with chronic pain

People who have experienced trauma—including trauma from assault, sexual abuse, or a car accident—may continue to experience varying levels of distress, and some may suffer posttraumatic stress disorder (PTSD). Past studies suggest that trauma history can be a key factor in predicting poor health or poor adjustment to chronic pain. However, preliminary findings from a new study show that ongoing distress from thoughts surrounding a traumatic event, not the trauma itself, is related to impaired physical and psychosocial functioning among primary care patients.

Researchers supported by the Agency for Healthcare Research and Quality (HS09368) and led by Tim A. Ahles, Ph.D., of Dartmouth-Hitchcock Medical Center, mailed a screening questionnaire to patients of four New England primary care practices. They asked respondents to assess their pain during the previous 4 weeks (intensity, duration, location, and adequacy of pain treatment), general health and specific health problems, and demographics (age, sex, etc.), as well as trauma history and whether they were bothered by the trauma.

Half of the patients who said they had pain reported that they had experienced at least one previous emotionally traumatic event. Nearly 31 percent of patients who had experienced trauma continued to be moderately to extremely bothered by the experience. Patients who continued to be bothered by the trauma also reported significantly more pain, emotional distress, poorer social functioning, and more difficulty with engaging in their daily activities than patients who had no trauma history or a trauma history that did not involve ongoing trauma-related distress.

These findings suggest that providers who treat only the pain may not be treating the underlying problem that brought the patient into the office. Treating the range of psychological symptoms associated with a traumatic experience may be the key to managing related chronic pain syndromes and impaired functioning in these patients, conclude the researchers.

See "Ongoing distress from emotional trauma is related to pain, mood, and physical function in a primary care population," by Janette L. Seville, Ph.D., Dr. Ahles, John H. Wasson, M.D., and others, in the March 2003 *Journal of Pain and Symptom Management* 25(3), pp. 256-263. ■

Guidelines for improving the care of older people with diabetes emphasize reducing cardiovascular risk factors

Greater reduction in diabetes-related complications and deaths among people 65 and older who have diabetes may result from control of cardiovascular risk factors such as hypertension and high cholesterol than from the tight glycemic (blood-sugar) control emphasized by most diabetes guidelines, according to the California Healthcare Foundation/American Geriatrics Society Panel on Improving Care for Elders with Diabetes.

The panel has published an evidence-based guideline to improve the care of older people who have diabetes. Their work was supported in part by the Agency for Healthcare Research and Quality (HS09424).

The guideline recommendations cover eight components of care and emphasize the importance of individualized goal setting. They include:

- Hypertension should be treated gradually to avoid complications, with a target blood pressure of less than 140/80 if it is tolerated.
- Older patients with diabetes who have high blood lipids should be counseled about lifestyle changes or put on lipid-lowering medication.
- Providers should screen and treat for the following geriatric syndromes (i.e., age-related conditions that are more common in older peple with diabetes than in the general population): depression, polypharmacy, falls with injury, urinary incontinence, memory problems, and persistent pain.
- For glycemic control, target hemoglobin A1c should be individualized, with 7 percent or lower being a reasonable goal for relatively healthy adults with good functional status and 8 percent for frail older adults and others in whom the risks of intensive glycemic control outweigh the benefits.
- Unless there are contraindications, the older patient with diabetes should be offered aspirin therapy of 81 to 325 mg per day to reduce the risk of cardiovascular problems such as stroke or heart attack.
- Patients who smoke should be helped with counseling and medications to quit smoking.
- Patients should have regular eye exams, foot exams, and tests of kidney functioning.
- Patients and their family members and caregivers should be regularly educated about diabetes, including symptoms, monitoring, and risk of problems such as foot ulcers and amputation.

For more information, see "Guidelines for improving the care of the older person with diabetes mellitus," by Arleen F. Brown, M.D., Ph.D., Carol M. Mangione, M.D., M.S.P.H., Debra Saliba, M.D., M.P.H., Catherine A. Sarkisian, M.D., M.S.P.H., and the California Healthcare Foundation/American Geriatrics Society Panel on Improving Care for Elders with Diabetes," in the May 2003 *Journal of the American Geriatrics Society* 51, pp. S265-S280. ■

Researchers examine accuracy of patient reports of vaccination as well as vaccination barriers and facilitators among seniors

Influenza and pneumonia are the fifth leading cause of death among elderly people in the United States. Vaccines against these illnesses can prevent thousands of deaths each year, yet in the first quarter of 2002, only 66 percent of all seniors (43 percent of Hispanics and 50 percent of blacks) were vaccinated against influenza. Only 55 percent of all seniors (26 percent of Hispanics and 32 percent of blacks) were immunized against pneumococcus. These estimates are based on patient self-report.

Two studies supported by the Agency for Healthcare Research and Quality (HS09874) and led by Richard Kent Zimmerman, M.D., of the University of Pittsburgh School of Medicine, recently examined the accuracy of patient self-report of vaccination status and barriers and facilitators to vaccination. Both studies are discussed here.

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Flu and pneumonia vaccination

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Zimmerman, R.K., Raymund, M., Janosky, J.E., and others. (2003). "Sensitivity and specificity of patient self-report of influenza and pneumococcal polysaccharide vaccinations among elderly outpatients in diverse patient care strata." *Vaccine* 21, pp. 1486-1491.

Large national surveys showing moderate adult vaccination rates are based on patient self-report. To examine how accurately elderly patients report receipt of annual flu and one-time-only pneumonia vaccines, these researchers compared self-report on questionnaires with medical records for 820 people aged 66 or older from inner city health centers, Veterans Affairs (VA) outpatient clinics, and rural and suburban practices. Medical record reviewers marked whether the person had received an influenza vaccine from September 1999 through March 2000 or the pneumococcal polysaccharide vaccine (PPV) any time between January 1, 1995 and December 31, 2000.

The researchers found that sensitivity—the ability to accurately recall having received vaccine—when compared with the records of the primary care physician was high for both influenza vaccine and pneumococcal vaccine, but specificity—the ability to accurately recall not having received vaccine—was lower. Based on the relatively high negative predictive value of self-report (74 percent) in this study and the excellent safety record of adult vaccines, the researchers conclude that physicians can confidently recommend vaccination to adult patients who report not having received influenza and pneumococcal vaccines.

Zimmerman, R.K., Santibanez, T.A., Fine, M.J., and others. (2003). "Barriers and facilitators of pneumococcal vaccination among the elderly." *Vaccine* 21, pp. 1510-1517.

The Healthy People 2010 immunization goal, set at 90 percent for pneumococcal polysaccharide vaccine (PPV), remains elusive, with barely more than half of elderly people reporting receipt of PPV in 2000. To understand barriers to vaccination in diverse settings, these investigators surveyed patients 66 years of age and older at inner-city health centers, VA outpatient clinics, and rural and suburban practices. Among the 1,007 respondents, self-reported PPV rates were 85 percent for VA, 62 percent for rural, 66 percent for suburban, and 57 percent for inner city, with substantial variability among practices.

Half of the elderly people surveyed did not know they needed vaccination against pneumonia. Compared with those who had not been vaccinated, most of the vaccinated individuals thought that their doctor believed they should be vaccinated (95 vs. 23 percent) and believed that the vaccine "keeps a person from getting pneumonia" (75 vs. 54 percent). Predictors of vaccination included: belief that the doctor recommends the vaccine, feeling that vaccination is wise, recommendation by someone in the physician's office, and receipt of influenza vaccine. These variables accounted for over half (52 percent) of the variance in ever receiving PPV.

The most commonly reported reasons for not being vaccinated were: their doctor did not recommend a pneumonia shot (59 percent), they did not know they needed the shot (50 percent), and they did not think they were likely to get pneumonia (47 percent). The researchers conclude that physicians should give clear recommendations to patients that they need to be vaccinated against pneumonia. They also recommend that patient education programs emphasize vaccine indications and efficacy in a culturally competent manner. ■

Nursing home patients' quality of life is the most important consideration in medical decisionmaking

A new study supported by the Agency for Healthcare Research and Quality (HS09833) sheds some light on how decisions are made on whether or not to initiate different types of treatment when the patient's health status changes. Jiska Cohen-Mansfield, Ph.D., and Steven Lipson, M.D., M.P.H., of the Research Institute on Aging of the Hebrew Home of Greater Washington, asked six male physicians and three female nurse practitioners to complete several questionnaires that described the medical decisionmaking process for 70 residents of a large nonprofit nursing home. These residents had suffered from breathing difficulty, an infection, a fall, or other event that changed their medical status. The researchers also interviewed the clinicians within several days of the event to obtain their personal

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Nursing home patients

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opinion about these cases and the related decision process.

Based on questionnaire results, hospitalization was the treatment most frequently considered and chosen. Family members were involved in 39 percent and nurses in 34 percent of decisions. The resident's quality of life, relative effectiveness of the treatment options, and the family's wishes were the most important considerations in making a decision. Cost of alternate treatments and the resident's wishes, which were frequently unavailable, were least important.

For nearly half of the residents studied, the physician on call participated in the decision rather than their personal physician. Physicians lacked familiarity with the wishes of 70 percent of the residents concerning care but felt familiar or very familiar with family wishes in 51 percent of cases.

Treatment decisions also reflected the physicians' practice styles, which varied. For instance, there were significant differences across physicians in the ratings of importance of the following six factors to the decisionmaking process: resident's quality of life, family's wishes, treatment practices for this condition, prolongation of resident's life, potential liability issues, and cost of alternative treatments.

See "Medical staff's decision-making process in the nursing home," by Drs. Cohen-Mansfield and Lipson, in the *Journal of Gerontology: Medical Sciences* 58A(3), pp. 271-278, 2003. ■

Minority Health

Studies examine black-white differences in low birthweight, uterine surgery outcomes, and organ donations

The gap in the incidence of low-birthweight (LBW) babies (less than 5.5 pounds) between black and white women in the United States has widened over the past two decades. A new study supported by the Agency for Healthcare Research and Quality (HS10061) found that smoking and being uninsured are bigger risk factors for LBW babies among black women than white women. A second AHRQ-supported study (contract 290-97-0014) found that black women are more likely than white women to have in-hospital complications or need blood transfusions when underoing myomectomy (surgical removal of fibroids). A third AHRQ-supported study (HS08209) found that black families have less favorable attitudes than white families toward organ donation. The three studies are briefly described here.

Jaffee, K.D., and Perloff, J.D. (2003, February). "An ecological analysis of racial differences in low birthweight: Implications for maternal and child health social work." ***Health & Social Work*** **28(1), pp. 9-22.**

Black women are more likely than white women to live in high-poverty, drug-infested neighborhoods with few health care resources. To sort out the impact of neighborhood and access factors from individual risk factors on LBW, these researchers examined the association of neighborhood economic indicators, neighborhood quality, access to prenatal care, and individual perinatal risk factors and subsequent birthweight among 78,415 black and 60,346 white residents of New York City (NYC). They used data from NYC birth records, the 1990 U.S. Census, and a NYC community health database.

Overall, black women were twice as likely as white women to have an LBW baby. When only neighborhood factors were included in the analysis, LBW among babies of black and white women was strongly associated with living in a neighborhood that was low income, had a high proportion of black or Hispanic residents, and had a high rate of hospitalizations for substance abuse. However, when individual risk factors were included in the analysis, most of the neighborhood effect was eliminated, and odds of black women having an LBW baby shrunk from 2.9 to 2.1 times higher than white women.

Black women were at 58 percent higher risk of having LBW babies when they were uninsured, but white women were not. Being uninsured may be a function of neighborhood-level mechanisms that restrict access to health care in black communities but not in white communities. Also, black women who smoked were at greater risk of having an LBW infant than white women who smoked (OR 2.40 and 1.61, respectively). Previous studies suggest that black women are less likely to quit smoking and more

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Health care disparities

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likely to smoke higher nicotine cigarette brands.

Roth, T.M., Gustilo-Ashby, T., Barber, M.D., and Myers, E.R. (2003, May). "Effects of race and clinical factors on short-term outcomes of abdominal myomectomy." ***Obstetrics & Gynecology*** **101, pp. 881-884.**

Black women undergoing surgery to remove uterine fibroids (leiomyomata or benign tumors) are more than twice as likely to have in-hospital complications or blood transfusion as white women, according to this study. These greater problems among black women compared with white women are largely attributable to differences in uterine size and number of fibroids. Black women underoing hysterectomy have more fibroids and larger uterine size compared with white women who have a hysterecomy. The researchers examined medical charts of 225 women (53 percent black and 47 percent white) who underwent abdominal myomectomies at one university medical center from 1992 to 1998. They examined patient characteristics, surgical indications, preoperative hematocrit, operative findings, and complications, including transfusion.

Black women were more likely to have uteri with more than four fibroids and less likely to have only one fibroid. Black women were also 2.48 times more likely to have a complication and 2.28 times more likely to require a transfusion than white women. However, race was no longer a significant predictor of complications after adjustment for uterine size, number of fibroids, and coexisting illnesses. A uterine size more than 500 g and more than four uterine fibroids each nearly doubled the likelihood of complications. Coexisting illnesses nearly tripled the risk. A similar pattern was seen for blood transfusion.

Siminoff, L.A., Lawrence, R.H., and Arnold, R.M. (2003). "Comparison of black and white families' experiences and perceptions regarding organ donation requests." ***Critical Care Medicine*** **31(1), pp. 146-151.**

Black families are less likely than white families to agree to organ donation and experience different interactions with the health care team related to donation. The researchers reviewed the medical charts of 415 organ donor-eligible deceased patients (61 black and 354 white) and conducted interviews with family members of the decedents and with health care providers and organ procurement organization staff about encounters with these families.

Black families had less knowledge than white families about their family member's wishes and expressed less-favorable attitudes toward organ donation and the health care system. They were less likely to believe that they would be treated fairly or that the system is equitable. Black families were less likely to be correctly perceived as receptive to organ donation at initial request. Black families were also less likely to have spoken to an organ procurement organization representative and were given fewer opportunities to consider the decision with members of the health care team.

The researchers suggest that openness about organ donation should be encouraged in the black community, and health care providers and organ procurement organizations should change their attitudes and practices toward black families as potential donor families. ■

HIV/AIDS Research

Strategies to increase adherence to therapy among HIV/AIDS patients should target different HIV risk groups

Patients who have HIV/AIDS must adhere to antiretroviral medication therapy in order to suppress the virus and maintain clinical well-being. However, the benefit of these often complex drug regimens can quickly be offset by even short-term nonadherence. Certain groups of patients are less likely than others to adhere to therapy, and the factors underlying their nonadherence are HIV risk-factor specific, according to a study supported in part by the Agency for Healthcare Research and Quality (Contract No. 290-98-0016).

Researchers at the Johns Hopkins University School of Medicine examined responses to a survey on antiretroviral adherence (percentage of prescribed doses taken over a 2-week interval) completed by 196

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HIV risk groups

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HIV-infected patients who were taking at least one antiretroviral medication. The survey was administered while the patients were waiting to see their primary care provider. Overall, 2-week adherence in the sample was 80 percent, while 71 percent of the sample reported adherence of 90 percent or greater with all prescribed antiretroviral medications.

In patients with a history of injection drug use, nonadherence was independently associated with eating fewer than two meals per day and active illicit drug use. In patients without any injection drug use, nonadherence was associated with social pressures outside of the clinic such as lack of food or money. Males who had sex with males were much more likely to adhere to their antiretroviral regimen than were patients with an HIV risk factor of high-risk heterosexual activity. Interventions that address social stresses, such as running out of money and food, and interventions that treat substance abuse are most likely to increase adherence in these patients, suggest the researchers.

More details are in "Association of social stress, illicit drug use, and health beliefs with nonadherence to antiretroviral therapy," by Kelly A. Gebo, M.D., M.P.H., Jeanne Keruly, M.S., C.R.N.P., and Richard D. Moore, M.D.,. M.H.S., in the February 2003 *Journal of General Internal Medicine* 18, pp. 104-111. ■

Agency News and Notes

AHRQ-supported Task Force issues new recommendations on high blood pressure screening and promotion of breastfeeding

The U.S. Preventive Services Task Force recently issued two new recommendations, one on screening of adults for high blood pressure and the other on programs to encourage new mothers to breastfeed their babies. The Task Force, which is the leading independent panel of private-sector experts in prevention and primary care, is sponsored by the Agency for Healthcare Research and Quality. The Task Force is chaired by Alfred O. Berg, M.D., who is also Chair of the Department of Family Medicine at the University of Washington in Seattle.

The Task Force conducts rigorous, impartial assessments of all the scientific evidence for a broad range of preventive services. Task Force recommendations are considered the gold standard for clinical preventive services. The Task Force grades the strength of the evidence "A" (strongly recommends), "B" (recommends), "C" (no recommendation for or against), "D" (recommends against) or "I" (insufficient evidence to recommend for or against screening).

The new recommendations are summarized here. Previous Task Force recommendations, summaries of the evidence, easy-to-read fact sheets explaining the recommendations, and related materials are available from the AHRQ Publications Clearinghouse. See the back cover of *Research Activities* for ordering information. Clinical information is also available from the National Guideline Clearinghouse at www.guideline.gov.

Screening for high blood pressure. The Task Force has reaffirmed its earlier recommendation that clinicians measure the blood pressure of all adults who are 18 and older because of good evidence that early detection and treatment of high blood pressure can significantly reduce the risk of cardiovascular disease. The recommendations, published in the August 1, 2003, issue of the *American Journal of Preventive Medicine*, update those made by the Task Force in 1996.

High blood pressure, also known as hypertension, affects approximately one-quarter of the adult population of the United States, or roughly 50 million people. It can cause heart attacks, heart failure, stroke, kidney failure, and other serious problems. However, one-third of patients with high blood pressure are unaware that they have the disease because they lack warning signs and symptoms and have not been screened.

The Task Force also looked at blood pressure measurement in children and adolescents but found insufficient evidence that it accurately identifies those who have a higher risk of developing cardiovascular disease and insufficient evidence that treating it decreases the incidence of CVD.

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Task Force recommendations

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The Task Force strongly recommends that clinicians measure blood pressure of all adults, an "A" recommendation. The Task Force found insufficient evidence to recommend for or against blood pressure screening of children and adolescents, an "I" recommendation.

The Task Force based its conclusions on an AHRQ-sponsored report prepared by a team led by Stacey Sheridan, M.D., of the RTI International-University of North Carolina at Chapel Hill Evidence-based Practice Center in Research Triangle Park, N.C.

The high blood pressure recommendations and materials for clinicians are available on AHRQ's Web site at www.ahrq.gov.

Breastfeeding. The Task Force recommends structured education and counseling programs to promote breastfeeding because such programs increase the proportion of women who begin and continue to breastfeed their babies. Simply telling mothers they should breastfeed or giving them pamphlets is not enough, according to the Task Force.

In issuing their recommendation, the Task Force noted that structured programs share some elements: they include from one to eight individual or group sessions that follow specific formats and last between 30 and 90 minutes; they are led by specially trained nurses, midwives, lactation specialists, and peer counselors; and they include lectures along with practical skills that help women master breastfeeding techniques and deal with problems that may arise from breastfeeding. In addition, structured programs include information about the benefits of breastfeeding for mother and child, how the body produces breast milk, training in positioning the baby and latch-on techniques, and the use of mechanical breast pumps.

The Task Force recommendations, which appear in the July/August issue of *Annals of Family Medicine*, are based on a systematic review of 35 studies, including 22 randomized controlled trials of breastfeeding counseling. They examined the effects of education, support, and written materials on increasing breastfeeding rates.

Meanwhile, the Task Force found insufficient evidence to recommend less-intensive interventions such as having primary care providers give mothers advice or written materials such as pamphlets. The Task Force also found insufficient evidence for peer counseling alone, although some studies show that peer support can enhance structured education programs by encouraging women after they begin to breastfeed to continue the practice longer than they otherwise might. Peer counselors are women who have practical training but not necessarily clinical expertise in breastfeeding techniques.

The Task Force found that supplementing successful programs by providing ongoing support to new mothers through in-person visits or telephone contacts by providers or counselors may help women to stay with breastfeeding for periods longer than 3 months. However, more research is needed in this area. It was clear that providing ongoing support to women is not effective as a stand-alone strategy for increasing rates of breastfeeding.

National data from 1998 showed that 64 percent of all mothers breastfed immediately after giving birth, but only 29 percent of all mothers and 19 percent of black mothers were still breastfeeding by 6 months. The goal for Healthy People 2010 is 75 percent of mothers to be breastfeeding right after having a baby, 50 percent at 6 months, and 25 percent at 1 year.

Although the programs reviewed by the Task Force did not all take place in primary care clinics, the Task Force highlighted the important role of primary care clinicians in referring women to breastfeeding programs to ensure they begin and continue to breastfeed.

The Task Force recommends structured breastfeeding education and behavioral counseling programs to promote breastfeeding, a "B" recommendation. The Task Force found insufficient evidence to recommend for or against brief education and counseling by primary care providers, peer counseling used alone and initiated in the clinical setting, and written materials, used alone or in combination with other interventions, an "I" recommendation. The Task Force based its conclusions on a report prepared by a team led by Jeanne-Marie Guise, M.D., M.P.H., at AHRQ's Evidence-based Practice Center at Oregon Health & Sciences University in Portland.

The counseling for breastfeeding recommendations and materials for clinicians are available on AHRQ's Web site at www.ahrq.gov. ■

AHRQ supports a variety of information technology initiatives to improve health care quality

The Agency for Healthcare Research and Quality is working together with other Federal agencies and public and private sector partners to develop a National Health Information Infrastructure (NHII) that can support the needs of clinicians, patients, researchers, public health officials, payers, and policymakers. The Agency is also working with public and private sector partners on a wide range of information technology (IT) initiatives to improve patient safety, health care quality, public health, and bioterrorism preparedness, notes Eduardo Ortiz, M.D., M.P.H., of AHRQ's Center for Primary Care, Prevention, and Clinical Partnerships.

In a recent article on Federal initiatives, Dr. Ortiz points out that in 2001, AHRQ funded 94 projects to reduce medical errors and improve patient safety in the United States. One such initiative is the Clinical Informatics to Promote Patient Safety (CLIPS) program. Projects funded through the CLIPS portfolio include studies assessing the use of a wide range of IT tools in diverse health care settings, such as handheld computerized decision support tools in ambulatory care, computerized simulation tools to train surgeons in hospitals, and electronic medical record systems with decision support in the management of patients with HIV infection.

AHRQ's bioterrorism portfolio focuses on the roles of clinicians, hospitals, and health care systems in public health preparedness and includes efforts to improve the linkages between clinical health care systems, emergency response networks, and public health agencies. It also includes efforts to train clinicians to recognize the manifestations of bioterrorism agents, respond to potential bioterrorism threats, and manage patients appropriately. For example, one project used computer simulations to develop models for planning city-wide responses to bioterrorism attacks, including the optimal distribution of antibiotics and improvement of hospital treatment capacity.

AHRQ is also developing many strategic partnerships to enhance patient safety and quality of care. One of these partnerships is with ePocrates, Inc., of San Mateo, CA, which maintains the largest network of clinicians using handheld computers in the United States. AHRQ will distribute recommendations of the U.S. Preventive Services Task Force to health care professionals through ePocrates' DocAlert® messaging system. AHRQ's Primary Care Practice-Based Research Networks and Integrated Delivery System Research Networks are also conducting important research on the use of IT in a variety of clinical settings.

For more information, see "The Agency for Healthcare Research and Quality supports an array of IT initiatives to improve healthcare quality," by Dr. Ortiz, in the January 2003 *Healthcare Informatics*, pp. 49-51. Reprints (AHRQ Publication No. 03-R023) are available from AHRQ.** ■

Announcements

AHRQ releases new evidence reports

The Agency for Healthcare Research and Quality has published two new evidence reports that were developed by AHRQ-supported Evidence-based Practice Centers (EPCs). There are 13 AHRQ-supported EPCs. They systematically review the relevant scientific literature on topics assigned to them by AHRQ and conduct additional analyses when appropriate prior to developing their reports and assessments.

The goal is to inform health plans, providers, purchasers, and the health care system as a whole by providing essential information to improve health care quality. EPC reports and summaries are published by AHRQ and are available online and through the AHRQ clearinghouse. Visit the AHRQ Web site at www.ahrq.gov and click on "Clinical Information" or see the back cover of *Research Activities* for ordering information.

Pharmacological Management of Heart Failure and Left Ventricular Systolic Dysfunciton: Effect in Female, Black, and Diabetic Patients, and Cost-Effectiveness.

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New evidence reports

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Evidence Report/Technology Assessment No. 82. Summary (AHRQ Publication No. 03-E044)** and full report (AHRQ Publication No. 03-E045).*

Effect of Supplemental Antioxidants Vitamin C, Vitamin E, and Coenzyme Q10 for the Prevention and Treatment of Cardiovascular Disease. Evidence Report/Technology Assessment No. 83. Summary** (AHRQ Publication No. 03-E042) and full report (AHRQ Publication No. 03-E043).* ■

New MEPS statistical brief is available online

The Agency for Healthcare Research and Quality has released a new statiscal brief that presents data from the Medical Expenditure Panel Survey (MEPS) on expenditures for prescription medicines. These data show that U.S. spending for prescribed medicines rose sharply from 1997 through 2000. Expenses for outpatient prescribed medicines increased from $72.3 billion in 1997 to $103 billion in 2000, according to the new MEPS data. Highlights from the data include:

- Outpatient prescription medications accounted for a greater proportion of total medical expenses, increasing from approximately 13 percent of total expenses in 1997 to more than 16 percent in 2000.
- Average out-of-pocket expenses for people age 65 and older were more than three times as high as they were for people under age 65 every year from 1997 through 2000.
- Between 1997 and 2000, the average expense for people age 65 and older with any prescription medicine expense increased about 35 percent, from $819 to $1,102. For people under 65, the amount increased about 40 percent, from $347 to $485.
- Each year from 1997 through 2000, the average number of prescriptions for people age 65 and older was more than twice the average number of prescriptions for those under age 65.

Details are in *Statistical Brief 21: Trends in Outpatient Prescription Drug Utilization and Expenditures: 1997-2000.* Go to www.meps.ahrq.gov for general information about MEPS; click on “What’s New” to access the statistical brief. ■

AHRQ publishes recommendations on community-based research

The Agency for Healthcare Research and Quality has published a new brochure that offers recommendations on how to increase the use of community-based participatory research (CBPR) in the United States. CBPR—which partners community leaders and organizations with researchers in studies largely conducted in disadvantaged communities—has been used successfully in social science research, but it is underused in health care research.

The recommendations call on community leaders and research funding organizations, as well as colleges and universities, to build and maintain mutually beneficial, trusting relationships and make use of powerful community-based organizations and other grassroots groups in the design and conduct of studies. The recommendations also urge researchers to involve community leaders in the grantmaking process and encourage community leaders to serve on university institutional review boards.

Copies of the brochure, *Creating Partnerships, Improving Health: The Role of Community-Based Participatory Research* (AHRQ Publication No. 03-0037), are available from AHRQ.* See the back cover of *Research Activities* for ordering information.

Editor’s note: These recommendations are part of a series made by community leaders, representatives of funding organizations, and health care researchers at a national conference held in November 2001, that was supported by AHRQ, the W.K. Kellog Foundation, and other organizations. For a summary of the conference, go to www.ahrq.gov/about/cpcr/cbpr/. The papers presented at the meeting were published July 16, 2003, in a special issue of the *Journal of General Internal Practice.* ■

Ardery, G., Herr, K.A., Titler, M.G., and others. (2003, February). "Assessing and managing acute pain in older adults: A research base to guide practice." (AHRQ grant HS10482). ***Medsurg Nursing*** **12(1), pp. 7-18.**

Research has demonstrated better patient outcomes, shorter hospital stays, and reduced resource use as a result of effective pain management and mobility. Older adults often undergo medical and surgical treatments that result in acute pain, yet they frequently receive much less medication for pain than younger patients suffering from similar pain. These researchers reviewed and critiqued existing literature on acute pain management in older adults and developed an evidence-based guideline on the topic that addresses the following general areas of practice related to acute pain in the elderly: pain assessment, pain assessment in confused elders, monitoring pain in older adults, education of the patient and family, pharmacologic management, and nonpharmacologic management. This article presents key recommendations from the guideline and selected references.

Blackmore, C.C., Richardson, M.L., Linnau, K.F., and others. (2003, May). "Web-based image review and data acquisition for multiinstitutional research." (AHRQ grant K08 HS11291). ***American Journal of Radiology*** **180, pp. 1243-1246.**

These authors describe a user-friendly Web-based interface that allows review of images, combined with integrated data collection and entry, for use at multiple sites involved in a large multicenter research project. The system simplifies the complex logistics of using multiple sites and reviewers for radiology research while preserving human subject confidentiality. The researchers tested the system using a large-scale multicenter cohort study of pelvic fracture-related hemorrhage and found it to provide seamless remote image interpretation and acquisition.

Bradley, E.H., Holmboe, E.S., Mattera, J.A., and others. (2003). "The roles of senior management in quality improvement efforts: What are the key components?" (AHRQ grant HS10407). ***Journal of Healthcare Management*** **48(1), pp. 15-28.**

Senior managers are personally engaged in five types of quality improvement (QI) efforts at higher versus lower performing hospitals, according to this study. These senior managers actively advocate for QI activities both within the hospital, for example, through QI teams, and with the board; have good working relationships with the medical staff; support norms of interdepartmental and multidisciplinary collaboration through shared goal setting and novel approaches; and ensure the availability of resources needed to conduct QI efforts, such as information technology capability and quality management and data collection staff. These activities were not apparent in the lower performing hospitals. These findings are based on interviews with 45 key clinical and administrative staff members involved with improving the prescribing of beta-blockers for heart attack patients discharged from eight hospitals. The researchers used data from the National Registry of Myocardial Infarction to identify high-performing and low-performing hospitals and compared beta-blocker use during the followup period (April 1998 to September 1999) with rates during the baseline period (October 1996 to March 1998) at each hospital.

Campbell, W.H., and Califf, R.M. (2003). "Improving communication of drug risks to prevent patient injury: Proceedings of a workshop." (AHRQ grant HS10548 and HS10397). ***Pharmacoepidemiology and Drug Safety*** **12, pp. 183-194.**

This paper presents the results of the first workshop in a series conducted by the Centers for Education & Research on Therapeutics (CERTs). The two-day meeting focused on communication of drug risks to health care professionals and patients. Fifty workshop participants from the medical products industry, academia, consumer groups, regulatory bodies, and the media sought to identify and understand barriers to successful risk communication, identify tools or methods to improve risk communication, and develop research and educational agendas that could lead to better risk communication in the future.

Carter, R., Holiday, D.B., Nwasuruba, C., and others. (2003, May). "6-minute walk work for assessment of functional capacity in patients with COPD." (AHRQ grant HS08774) ***CHEST*** **123, pp. 1408-1415.**

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The 6-minute walk (6MW) test is commonly used to assess exercise capacity in patients with COPD and to track functional change resulting from disease progression or therapeutic intervention. However, distance walked does not account for differences in body weight that are known to influence exercise capacity. This study evaluated the 6-minute distance x body weight product (6MWORK) as an improved outcome measure on 124 men and women with moderate-to-severe COPD. The researchers calculated correlation coefficients and receiver operative characteristic (ROC) curves for the 6-minute walk distance (6MWD) and 6MWORK with indexes of pulmonary function, work performance, and Borg scores for dyspnea and effort. They concluded the 6MWORK is an improved outcome measure for the 6MW.

Clancy, C.M. (2003, June). "Health services research: From galvanizing attention to creating action." ***Health Services Research*** **38(3), pp. 777-782.**

A critical challenge facing the field of health services research in general, and the Agency for Healthcare Research and Quality specifically, is to go beyond simply identifying a problem to doing what needs to be done to make a difference. In other words, health services research must go beyond galvanizing attention to creating action, notes AHRQ's Director in this editorial. Making sure that researchers conduct relevant studies and that the results are used by decisionmakers represent the next quantum leap for the field. When there is a clear hand-off between research and action, collaboration can lead to success. An excellent example is the Quality Improvement Organizations and their ongoing activity to improve quality in the Medicare program. A 2003 evaluation of the Medicare program indicated that a typical beneficiary had a 73 percent chance of receiving appropriate care on a given measure in 2000-2001, up from 69 percent in 1998-1999. Reprints (AHRQ Publication No. 03-R043) are available from AHRQ.**

Cornia, P.B., Amory, J.K., Fraser, S., and others. (2003, April). "Computer-based order entry decreases duration of indwelling urinary catheterization in hospitalized patients." (AHRQ grant HS11540). ***American Journal of Medicine*** **114, pp. 404-407.**

Urinary catheters are a leading cause of hospital-acquired infection, and about one in five is unnecessary. Computer-based order entry for inserting an indwelling urinary catheter and reminders to remove the catheter shortened the duration of catheterization by about one-third (3 days) in this study. The computer order also required that an indication be selected for its placement, provided routine catheter care instructions, and noted a default stop date of 72 hours after placement. Residents on the floor who used the computer-based system, could use the computer study order, enter a standard written order, or not enter an order. The computer study order was not available for residents located on the control ward. After 8 weeks, study and control wards switched.

Fisman, D.N., Hook III, E.W., and Goldie, S.J. (2003). "Estimating the costs and benefits of screening monogamous, heterosexual couples for unrecognized infection with herpes simplex virus type 2." (T32 HS00020). ***Sexually Transmitted Infections*** **79, pp. 45-52.**

About one in five Americans is infected with Herpes simplex virus type 2 (HSV-2), the most common cause of genital ulcers. However, HSV-2 infection is commonly unrecognized. To evaluate the cost-effectiveness of strategies to prevent HSV-2 transmission in couples with no history of the infection, these researchers created a mathematical model to simulate the natural history and costs of HSV-2 transmission and the expected impact of HSV-2 prevention strategies (ranging from universal condom use to blood screening) in monogamous, heterosexual couples. They concluded that serological screening for unrecognized HSV-2 infection in this group is expected to decrease the incidence of HSV-2 infection but will increase health care costs.

Frank, R.G., Huskamp, H.A., and Pincus, H.A. (2003, May). "Aligning incentives in the treatment of depression in primary care with evidence-based practice." (AHRQ grant HS10803). ***Psychiatric Services*** **54(5), pp. 682-687.**

Deficits in the quality of treatment for depression in the primary care sector have been documented in multiple studies. Several clinical models for improving primary care treatment of depression have been shown to be cost effective in recent years but have not proved to be sustainable over time due to a variety of financial and organizational barriers. The authors of this paper provide a brief overview of models for improving depression treatment in primary care and discuss

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financial incentives that discourage improvements. They also describe recent institutional changes that influence incentives and give examples of economic and organizational changes that could address the problems inhibiting the long-term sustainability of clinical models of quality improvement.

Gelberg, L., Leake, B., Lu, M.C., and others. (2002, December). "Chronically homeless women's perceived deterrents to contraception." (AHRQ grant HS08323). *Perspectives on Sexual and Reproductive Health* 34(6), pp. 278-285.

This survey of 974 homeless women in Los Angeles County in 1997 revealed that they had substantial deterrents that reduced their use of contraceptives to prevent unintended pregnancy. The most commonly cited deterrents to contraceptive use were side effects, fear of potential health risks, partner's dislike of contraception, and cost (20-27 percent). Women who reported substantial deterrents were significantly less likely than others to use contraceptives consistently. Hispanic women were much more likely than white women to cite not knowing how to use contraceptives or which method to use as a deterrent. Black women were more likely than white women to cite not knowing which method to use, lack of storage, health risks, and discomfort as barriers to use.

Goldie, S.J., and Kuntz, K.M. (2003, June). "A potential error in evaluating cancer screening: A comparison of 2 approaches for modeling underlying disease progression." (AHRQ grant HS07317). *Medical Decision Making* 23, pp. 232-241.

To illustrate a potential error in modeling disease progression among healthy people with a history of a precancerous lesion, these researchers constructed two models with four basic health states: disease-free, presence of a precancerous lesion, presence of cancer, and dead. They calibrated the models to predict the same 10-year cancer incidence. Using the first model, life expectancy without screening was 2.4 months longer than with screening. This error did not occur using the second model, in which the transition from precancerous lesions to cancer was not conditional on a history of a lesion.

Gustafson, D.H., Sainfort, F., Eichler, M., and others. (2003, April). "Developing and testing a model to predict outcomes of organizational change." (AHRQ grant HS10246). *Health Services Research* 38(2), pp. 751-776.

These authors used a panel of experts and literature on organizational change to identify factors predicting the outcome of 221 healthcare improvement projects in three countries. They developed a Bayesian model to estimate probability of successful changing using subjective estimates of likelihood ratios and prior odds elicited from the panel of experts. They validated the model by a retrospective empirical analysis of change efforts in 198 health care organizations. Results showed that the subjective Bayesian model was effective in predicting the outcome of actual improvement projects. The researchers suggest additional prospective evaluations, as well as testing the impact of this model as an intervention.

Hadley, J., Polsky, D., Mandelblatt, J.S., and others. (2003). "An exploratory instrumental variable analysis of the outcomes of localized breast cancer treatments in a Medicare population." (AHRQ grant HS08395). *Health Economics* 12, pp. 171-186.

These investigators compared two statistical approaches, ordinary least-squares and instrumental variables regression analysis, to estimate the outcomes (3-year posttreatment survival) of three treatments for early stage breast cancer in elderly women: mastectomy, breast conserving surgery with radiation therapy, and breast conserving surgery only, using Medicare claims data. Contrary to randomized clinical trial results, analysis with the observational data found highly significant differences in survival among the three treatment alternatives. The researchers conclude that such observational data should not be used for cost-effectiveness studies on outcomes of treatment for localized breast cancer.

Haggerty, C.L., Ness, R.B., Amortegui, A., and others. (2003, January). "Endometritis does not predict reproductive morbidity after pelvic inflammatory disease." (AHRQ grant HS08358). *American Journal of Obstetrics & Gynecology* 188, pp. 141-148.

This study investigated the association between endometritis and reproductive problems among 614 women in the PID Evaluation and Clinical Health (PEACH) Study. The researchers compared women with endometritis, *Neisseria gonorrhea*, or *Chlamydia trachomatis* upper genital tract infection (UGTI), or both to women without endometritis/UGTI for outcomes of pregnancy, infertility, recurrent pelvic inflammatory disease (PID), and chronic pelvic pain, adjusting for age, race, education, PID history,

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and baseline infertility. Among women with clinically suspected mild-to-moderate PID treated with standard antibiotics, endometritis/UGTI was not associated with reduced pregnancy, elevated infertility, or recurrent PID.

Hahn, E.A., and Cella, D. (2003, April). "Health outcomes assessment in vulnerable populations: Measurement challenges and recommendations." (AHRQ grant HS10333). *Archives of Physical Medicine and Rehabilitation* 84(Suppl. 2), pp. S35-S42.

Innovative techniques are required for collecting and evaluating data on health outcomes of vulnerable populations. Research is also needed to better understand the causal pathways linking vulnerability with health outcomes, note these authors. In this article, they focus on patients with a chronic illness (cancer) who also have low literacy and/or poor English language skills. They summarize the association among literacy, language, ethnicity, and health outcomes; describe innovative technologies to enhance communication; and discuss the advantage of using psychometric measurement models in health outcomes assessment. Finally, they offer specific recommendations for clinical practice and research to address medically underserved and vulnerable populations.

Hermann, R.C., and Provost, S. (2003, May). "Interpreting measurement data for quality improvement: Standards, means, norms, and benchmarks." (AHRQ grant HS10303). *Psychiatric Services* 54(5), pp. 655-657.

These authors discuss how to interpret measurement data to improve the quality of mental health care: standards, means, norms, and benchmarks. Each can be useful in measuring quality, identifying best practices, and improving care, note the researchers. They describe a common situation: a community mental health center decides to adopt a report card of performance measures to assess quality of care. The center selects measures that reflect the needs of its patient population and staff concerns about where care might fall short, for example, patients not completing prescribed courses of antidepressants. The center can compare its results with statewide or nationwide studies, as well as benchmarks for ideal care. However, local patient characteristics may influence results for reasons unrelated to quality of care, and require case-mix adjustment. Once clinicians identify an opportunity for improvement, they can look for possible interventions and continue to assess quality of care.

Herndon, B., Asch, S.M., Kilbourne, A.M., and others. (2003, May). "Prevalence and predictors of HIV testing among a probability sample of homeless women in Los Angeles County." (AHRQ grant HS08323). *Public Health Reports* 118, pp. 261-269.

This 1997 interview survey of homeless women in Los Angeles County revealed that 68 percent of the women had an HIV test in the past year, and 1.6 percent of them had been diagnosed with HIV at some point. Women who had been pregnant in the past year were three times more likely and women with a regular source of care were twice as likely to have had HIV testing in the past year. About one-fourth of homeless women with indications for HIV testing had not been tested in the past year. The reported HIV seroprevalence of greater than 1 percent suggests that providers should offer and encourage HIV testing for all homeless women in LA County.

Joines, J.D., Hertz-Picciotto, I., Carey, T.S., and others. (2003). "A spatial analysis of county-level variation in hospitalization rates for low back problems in North Carolina." (AHRQ grant HS06664). *Social Science & Medicine* 56, pp. 2541-2553.

This study examines geographic variation in hospitalization rates for low back problems, while controlling for special dependence in the data. The researchers calculated county-level surgical and medical hospitalization rates using North Carolina hospital discharge data from 1990-1992. They estimated both non-spatial and spatial regression models using socioeconomic and health resource predictors. Non-spatial models explained 62 percent of the variation in surgical rates and 66 percent of variation in medical rates. However, using simple contiguity spatial weights, surgery rates increased with higher percent urban population, primary care physician density, and discharge rate for other causes. They decreased with higher percent college graduates, percent disabled, and occupied and unoccupied hospital bed density. The authors conclude that spatial effects are important and should be considered in small area analyses.

Lautenbach, E., LaRosa, L., Marr, A.M., and others. (2003, February). "Changes in the prevalence of vancomycin-resistant enterococci in response to antimicrobial formulary

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interventions: Impact of progressive restrictions on use of vancomycin and third-generation cephalosporins." (AHRQ grant HS10399). *Clinical Infectious Diseases* 36, pp. 440-446.

These researchers analyzed all clinical enterococcal isolates identified at a large medical center during a 10-year period to assess the impact of restricting use of vancomycin and third-generation cephalosporins on vancomycin-resistant enterococci (VRE) prevalence. They evaluated changes in VRE prevalence after sequential restrictions on use of these medications. They also examined correlation between antibiotic use and VRE prevalence. Vancomycin use initially decreased by 23.9 percent but returned to preintervention levels by the end of the study. Third-generation cephalosporin use decreased by 85.8 percent. However, VRE prevalence increased steadily from 17.4 percent to 29.6 percent during the 10-year period. Clindamycin use was significantly correlated with VRE prevalence.

Lynn, J., and Goldstein, N.E. (2003, May). "Advance care planning for fatal chronic illness: Avoiding commonplace errors and unwarranted suffering." (AHRQ grant HS11558). *Annals of Internal Medicine* 138, pp. 812-818.

Patients with terminal illnesses often receive routine treatments in response to health problems rather than treatments arising from planning that incorporate the patient's situation and preferences. This paper considers the case of an elderly man with advanced lung disease. He underwent mechanical ventilation and aggressive intensive care, in part, because his nursing home clinician did not complete an advance care plan and his do-not-resuscitate order did not accompany him to the hospital. The authors use this case as a foundation to discuss serious, recurring, and generally unnoticed errors in planning for care near the end of life and possible steps toward improvement.

Macinko, J., Starfield, B., and Shi, L., (2003, June). "The contribution of primary care systems to health outcomes within Organization for Economic Cooperation and Development (OECD) countries, 1970-1998." (NRSA training grant T32 HS00029). *Health Services Research* 38(3), pp. 831-865.

These authors examined published studies and data from OECD Health Data 2001 to assess the contribution of primary care systems to a variety of outcomes in each of 18 wealthy OECD countries from 1970 to 1988. The strength of a country's primary care system was negatively associated with all-cause mortality, all-cause premature death, and cause-specific premature death from asthma and bronchitis, emphysema and pneumonia, cardiovascular disease, and heart disease. This relationship was significant, albeit reduced in magnitude, even while controlling for determinants of population health (for example, percent of elderly and per capita income).

Meldon, S.W., Mion, L.C., Palmer, R.M., and others. (2003, March). "A brief risk-stratification tool to predict repeat emergency department visits and hospitalizations in older patients discharged from the emergency department." (AHRQ grant HS09725). *Academic Emergency Medicine* 10, pp. 224-232.

The goal of this study was to evaluate the predictive ability of a simple six-item triage risk screening tool (TRST) to identify elderly emergency department (ED) patients at risk for ED revisits, hospitalization, or nursing home (NH) placement within 30 and 120 days following ED discharge. The researchers used the TRST to prospectively evaluate 650 community-dwelling elderly people who arrived at two urban EDs. Increasing cumulative TRST scores were associated with significant trends for ED use, hospital admission, or nursing home admission. Older ED patients with two or more risk factors on the TRST were at significantly increased risk for subsequent ED use, hospitalization, and nursing home admission.

Neumayer, L., Jonasson, O., Fitzgibbons, Jr., R., and others. (2003, May). "Tension-free inguinal hernia repair: The design of a trial to compare open and laparoscopic surgical techniques." (AHRQ grant HS09860). *Journal of the American College of Surgeons* 196, pp. 743-752.

This multicenter clinical trial plans to randomize 2,200 men with inguinal hernias to either open tension-free inguinal hernia repair or laparoscopic tension-free repair. Randomization is stratified by hospital, whether the hernia is unilateral or bilateral, and whether the hernia is primary or recurrent. The researchers will compare patient outcomes over a minimum period of 2 years. When followup is complete, this study will provide data regarding both clinical (recurrence rates) and patient-centered outcomes.

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Norman, G.R., Sloan, J.A., and Wyrwich, K.W. (2003). "Interpretation of changes in health-related quality of life." (AHRQ grant HS11635). ***Medical Care*** **41(5), pp. 582-592.**

These investigators systematically reviewed the research literature to identify studies that computed a minimally important difference (MID) and contained sufficient information to compute an effect size (ES). Their goal was to determine whether there is consistency in the magnitude of MID estimates from different health-related quality of life (HRQOL) measures. For all but 6 of the 38 studies that met the criteria, the MID estimates were close to one half a standard deviation (SD). The researchers conclude that in most circumstances, the threshold of discrimination for changes in HRQOL for chronic diseases appears to be about half a SD.

Pekoz, E.A., Shwartz, M., Iezzoni, L.I., and others. (2003). "Comparing the importance of disease rate versus practice style variations in explaining differences in small area hospitalization rates for two respiratory conditions." (AHRQ grant HS09832). ***Statistics in Medicine*** **22, pp. 1775-1786.**

This paper describes a model-based approach for estimating the relative importance of the practice style effect (chance that patients diagnosed with a disease are admitted to a hospital) and the disease effect (geographic differences in the total amount of diagnosed disease) in explaining small area variations in hospitalization rates for two respiratory conditions (chronic bronchitis and emphysema and bacterial pneumonia). The researchers used 1997 Medicare data on both inpatient and outpatient visits across 71 small areas in Massachusetts. Results showed that for the two conditions, disease rate variation explained at least as much of the variation in hospitalization rates as did practice style variation.

Reeves, S.W., Tielsch, J.M., Katz, J., and others. (2003, May). "A self-administered health questionnaire for the preoperative risk stratification of patients undergoing cataract surgery." (AHRQ grant HS08433). ***American Journal of Ophthalmology*** **135, pp. 599-606.**

A self-administered health status questionnaire completed by candidates for cataract surgery can help identify patients with coexisting medical conditions and those at risk for adverse intraoperative and postoperative medical problems, concludes this study. The investigators analyzed data from a large, randomized clinical trial of 19,250 cataract surgeries performed between 1995 and 1997. They obtained preoperative data from a self-administered patient health questionnaire and a history and physical form completed by the patient's physician. Responses to 21 questions on the questionnaire were highly specific for 12 comorbid conditions identified by the physician history and physical.

Schneeweiss, S., Manstetten, A., Wildner, M., and others. (2003, January). "Costs of measuring outcomes of acute hospital care in a longitudinal outcomes measurement system." (AHRQ grant HS09855). ***American Journal of Medical Quality*** **18(1), pp. 3-9.**

The goal of this study was to evaluate the personnel and financial resources spent for a prospective assessment of outcomes of acute hospital care by health professionals in internal medicine. The study included 15 primary care hospitals and 2,005 patients over an average 6-month assessment period. Results showed that the total estimated cost for each hospital to assess outcomes of care for accreditation would be £9,700 and that continuous monitoring of outcomes would cost £12,400 per year. The researchers conclude that outcomes of acute hospital care can be assessed with limited resources, and that standardized training programs would reduce variability in overall costs.

Sutton, K., Logue, E., Jarjoura, D., and others. (2003, May). "Assessing dietary and exercise stage of change to optimize weight loss interventions." (AHRQ grant HS08803). ***Obesity Research*** **11(5), pp. 641-652.**

This study describes a multi-item algorithm of stage of change (SOC) for weight loss-related behaviors. The investigators collected data from participants randomly assigned to the treatment arm of a clinical trial comparing an SOC-based, cognitive-behavioral intervention (in which the intervention is geared to the patient's stage of readiness to change) with enhanced usual care for weight loss. Fifty percent fewer patients were classified in action or maintenance for dietary fat intake and portion control by the multiple-item algorithms, providing staging more consistent with the clinical presentation of obese individuals. For weight-loss interventions that target portion control and decreased fat intake, the multi-item SOC algorithms seem to be better guides for matching treatments to SOC, conclude the researchers.

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Tallia, A.F., Stange, K.C., McDaniel, R.R., and others. (2003, January). "Understanding organizational designs of primary care practices." (AHRQ grant HS08776). *Journal of Healthcare Management* 48(1), pp. 45-61.

These authors performed an in-depth case study of the organizational design of 18 family practices, including nine affiliated with five separate hospital systems. Results revealed a great variety in the organizational design of primary care practices. This variety appears to be influenced by the initial conditions under which the practice was organized. Hospital system design in and of itself did not predict the design of affiliated practices. However, hospital systems that allowed greater flexibility of practice organizational designs were more effective at integrating and managing practices.

Taxis, K., and Schneeweiss, S. (2003). "Frequency and predictors of drug therapy interruptions after hospital discharge under physician drug budgets in Germany." (AHRQ grant HS10881). *International Journal of Clinical Pharmacology and Therapeutics* 41(2), pp. 77-82.

This survey of 890 hospitalized patients found that discontinuation of drug therapy after hospital discharge was common, with the high costs of prescription drugs the most common reason. Overall, 95 percent of patients used prescription drugs at discharge. Of those, drug therapy was interrupted in 14 percent of patients. Reasons for discontinuation included excessive drug costs (54 percent), excessive number of drugs prescribed (26 percent), and differences in judgment on the clinical appropriateness of a drug (19 percent). Patients with gastroduodenal ulcer disease were more likely to discontinue medication after hospital discharge. Discontinuation also tended to be more likely in elderly patients but was slightly less likely in male patients.

Wolinsky, F.D., Wyrwich, K.W., Kroenke, K., and others. (2003). "9-11, personal stress, mental health, and sense of control among older adults." (AHRQ grant HS09692, HS07632). *Journal of Gerontology: Social Sciences* 58B(3), pp. S146-S150.

Older adults who worked for pay, had a comfortable income, and reported greater religiosity were more likely than other older adults to lose a sense of control as a result of the September 11, 2001 terrorist attacks on the World Trade Center and the Pentagon, according to these authors. The increased risk of loss of control among this group may reflect the greater affinity of older adults with these characteristics for the "just world" perspective, which was shattered by the event, and the similarity of the 9/11 victims to themselves. These findings are based on six bimonthly followup interviews—three before 9/11 and three afterwards—with 1,662 patients from several outpatient facilities, as part of a larger study of a clinically relevant change in health-related quality of life. The researchers measured personal stress, mental health, and sense of control at each interview; 291 patients completed all six interviews. There were no noticeable changes in trends for personal stress or mental health associated with 9/11. However, 9/11 was associated with an aggregate decline in sense of control. This decline was greater among those who were working for pay, had more comfortable incomes, and reported being more religious. ■

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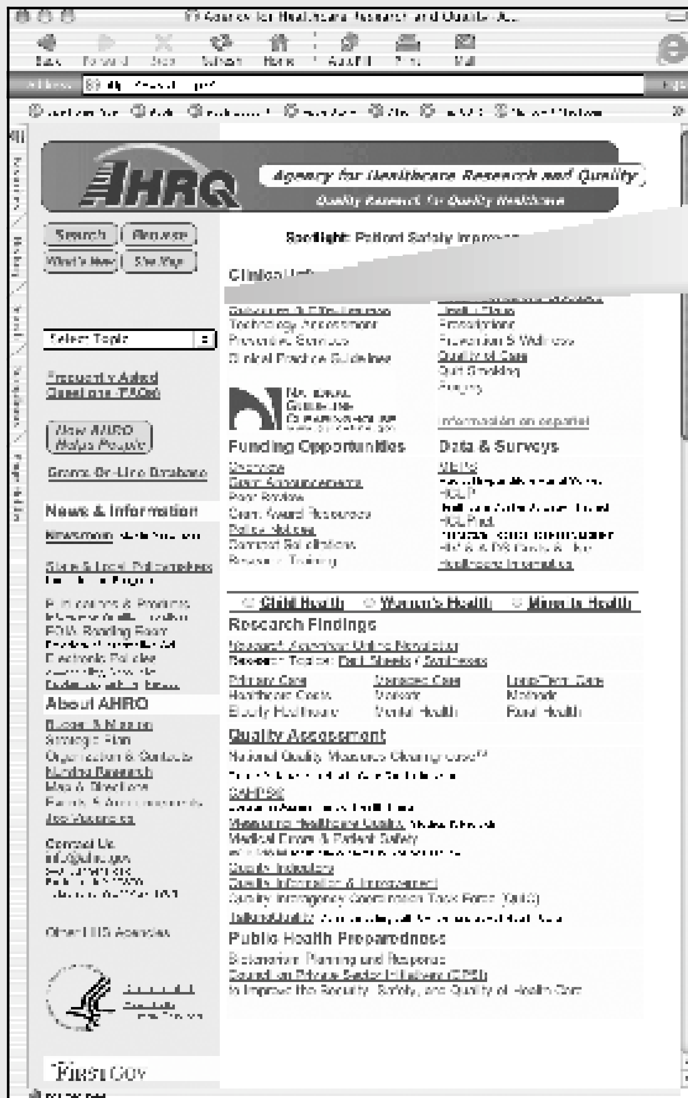

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