



Research Activities



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Researchers find that black and Hispanic children are much more likely than other children to be overweight

A recent study funded in part by the Agency for Healthcare Research and Quality (HS10771 and HS10856) shows that black and Hispanic children face much higher odds of being overweight than non-Hispanic white or Asian-American and Pacific Islander children. Black children ages 6 to 11 are more than twice as likely as non-Hispanic white children to be overweight, and Hispanic children are roughly twice as likely.

The odds change dramatically when children become teenagers. For example, as children, Asian-Americans and Pacific Islanders have the lowest prevalence of being overweight, but once they reach adolescence, the reverse is true. As teens, they have the highest prevalence of being overweight—more than four times that of non-Hispanic white teenagers.

Black children have the highest rate of being overweight, but once they reach their teen years, they are no more likely than white children

to be overweight. Hispanic teens are one-and-a-half times more likely than white or black teens to be overweight.

The researchers, who were led by Jennifer Haas, M.D., of Brigham and Women's Hospital in Boston, also found that regardless of their race or ethnicity, adolescents not covered by private health insurance and those enrolled in Medicaid are the most likely to be overweight. However, a relationship between insurance status and being overweight was not observed for younger children.

Although a previous study reported a lower risk of being overweight among adolescents from households with higher incomes, this study found that adolescents from higher income households were more likely to be overweight than their lower income counterparts. Such conflicting findings indicate the need for further research into the relationship between socioeconomic status and the prevalence of being overweight

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Overweight children

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among adolescents, notes Dr. Haas. Data for this study were drawn from interviews conducted as part of AHRQ's 1996 Medical

Expenditure Panel Survey Household Component.

For more information, see "The association of race, socioeconomic status, and health insurance with the prevalence of overweight in children and adolescents," by Dr.

Haas, Lisa B. Lee, B.S., Celia P. Kaplan, Dr.P.H., and others, in the December 1, 2003 *American Journal of Public Health* 93(12), pp. 2105-2110. ■

Outcomes/Effectiveness Research

South Carolina's initiative to reduce hypertension rates trains hypertension specialists and provides advice to doctors

Hypertension and its related problems continue to drain South Carolina of about \$9 billion a year in direct medical costs and indirect costs such as lost productivity. To reduce this burden, the State began a Hypertension Initiative in April 1999 to provide feedback and cardiovascular risk management advice to primary care providers and train hypertension specialists. By monitoring prescribing patterns through a data feedback program, providing evidence-based management approaches through continuing medical education (CME) seminars, and

applying improved treatment protocols, physicians can have a profound impact on hypertension, according to an update on the program, which was supported in part by the Agency for Healthcare Research and Quality (HS10871).

According to the update, the initiative has educated over 400 doctors throughout the State on management of hypertension, lipid disorders, and diabetes via a series of continuing medical education programs. The data monitoring and feedback component involving 20,000 hypertensive patients currently provides about 100 doctors with reports that indicate the percentage of patients who are meeting BP control targets, percentage of patients with high levels of blood lipids meeting LDL cholesterol goals, and percentage of diabetic patients achieving target blood-sugar levels. Finally, the State has certified 63 hypertension specialists in South Carolina. In the future, the investigators hope to add a dynamic health promotion program to active disease management efforts.

More details are in "2003 update on the hypertension initiative of South Carolina," by Melani Giese, R.N., B.S.N., Daniel Lackland, Dr.P.H., Jan Basile, M.D., and Brent Egan, M.D., in the June 2003 *Journal of the South Carolina Medical Association* 99(6), pp. 157-161.

Editor's note: A related AHRQ-supported study (HS10856) reveals that hypertensive patients' awareness of blood pressure targets and current hypertension control status is suboptimal. For details, see "Patient knowledge and awareness of hypertension is suboptimal: Results from a large health maintenance organization," by Alexander, M., Gordon, N.P., Davis, C.C., and Chen, R.S., in the July 2003 *Journal of Clinical Hypertension* 5, pp. 254-260. ■

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Researchers examine kidney disease progression and dialysis

Patients with diabetes, hypertension, and other medical conditions are at risk of developing chronic kidney disease, a major public health problem in the United States. An estimated 650,000 people are expected to have kidney failure (end-stage renal disease, ESRD) by 2010. People who have ESRD require renal replacement therapy, either ongoing renal dialysis or a kidney transplant; without one of these therapies, ESRD is fatal.

A recent study supported in part by the Agency for Healthcare Research and Quality (HS10064) identifies levels of blood pressure and urine protein excretion that are associated with the lowest risk for kidney disease progression. A second AHRQ-supported study (National Research Service Award training grant T32 HS00079) confirms the negative impact of weight gain between episodes of dialysis on mortality for certain ESRD patients. Both studies are described here.

Jafar, T.H., Stark, P.C., Schmid, C.H., and others. (2003, August). "Progression of chronic kidney disease: The role of blood pressure control, proteinuria, and angiotensin-converting enzyme inhibition." *Annals of Internal Medicine* 139, pp. 244-252.

Hypertension and proteinuria (excess protein in the urine) occur in most patients with chronic kidney disease, and they are risk factors for faster progression of the disease. Blood pressure-lowering agents, such as angiotensin-converting enzyme (ACE) inhibitors, reduce blood pressure and urine protein excretion and slow the progression of kidney disease. This study details the risk of these factors on kidney disease progression. The researchers found that systolic blood pressure of 110

to 129 mm Hg and urine protein excretion of less than 2.0 grams per day were associated with the lowest risk for kidney disease progression.

ACE inhibitors remained beneficial after adjustment for blood pressure and urine protein excretion, reducing the relative risk of disease progression by 33 percent. These findings are based on a meta-analysis of 11 trials comparing the efficacy of antihypertensive regimens with or without ACE inhibitors for 1,860 nondiabetic patients with kidney disease. The investigators analyzed the pooled data to assess the association of systolic and diastolic blood pressure and urine protein excretion with kidney disease progression for 22,610 patient visits. Over a mean followup period of 2.2 years, they documented kidney disease progression in 311 patients, among them 124 in the ACE inhibitor group and 187 in the control group.

Szczech, L.A., Reddan, D.N., Klassen, P.S., and others. (2003, August). "Interactions between dialysis-related volume exposures, nutritional surrogates and mortality among ESRD patients." *Nephrology, Dialysis, Transplantation* 18(8), pp. 1585-1591.

Fluid restriction is prescribed for dialysis patients to limit the amount of fluid that has to be removed during each dialysis treatment, since greater fluid removal during dialysis can precipitate a variety of problems. This study found that a greater percentage of interdialytic weight loss (IDWL%), one measure of weight gain between dialysis treatments, was associated with a greater mortality risk among patients with diabetes mellitus, those with greater post-dialysis weight, greater body mass index,

and lower serum sodium measurements.

The researchers retrospectively examined the IDWL% of patients receiving hemodialysis through one insurer in 1998. They defined

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Kidney disease progression

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IDWL% as the difference between the average of pre- and post-dialysis weights from the last 3 months of 1997 expressed as a percentage of post-dialysis weight. Among patients with diabetes,

increasing IDWL% was significantly associated with mortality, but it was not associated with increased mortality risk among patients without diabetes. Increasing IDWL% was associated with a greater mortality risk among patients with serum creatinine less than 7.26 mg/dl, but the risk

became insignificant at 7.26 mg/dl or greater (a level indicative of better nutrition). The researchers conclude that recommendations for suggested IDWL% should be made in the context of a patient's nutritional status and presence of diabetes. ■

Pharmaceutical Research

Acid suppressant therapy is effective for short-term relief of heartburn for patients with persistent symptoms

Gastroesophageal reflux disease (GERD) inflames the esophagus due to the abnormal backflow of gastric contents into the esophagus. GERD's chief manifestation, heartburn, is experienced monthly by about one-fourth of adults in developed countries, and 5 percent suffer from heartburn daily. Acid suppressant therapy with a proton pump inhibitor (PPI) or a histamine-2 receptor antagonist (H2RA) is more effective than placebo for short-term relief of heartburn in patients with persistent symptoms, concludes a study supported by the Agency for Healthcare Research and Quality (HS09796).

After reviewing 1,408 studies, Joseph Lau, M.D., of New England Medical Center, and his colleagues conducted a meta-analysis of 13 studies that compared the short-term use of PPIs and H2RAs with each other or with placebo for relief of heartburn in adults with

GERD. Adults were enrolled irrespective of endoscopic findings (3,433 empirical cases) or in whom endoscopy showed no signs of inflammation of the esophagus (2,520 with endoscopy-negative reflux disease, ENRD).

In the empirical treatment of GERD, H2RAs reduced the risk of heartburn by 23 percent over placebo, and in the only placebo-controlled trial, PPIs reduced the risk of heartburn over placebo by 65 percent. In treatment of ENRD, both PPIs and H2RAs were superior to placebo, and PPIs were superior to H2RAs.

See "Short-term treatment of gastroesophageal reflux disease," by Bart van Pinxteren, M.D., Mattijs E. Numans, M.D., Ph.D., Dr. Lau, and others, in the September 2003 *Journal of General Internal Medicine* 18, pp. 755-763. ■

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Few postmenopausal women who have suffered a fracture receive drug treatment to prevent further fractures

About one-fourth of women older than 50 years are estimated to suffer from osteoporosis, a loss of bone that can lead to disability, pain, deformity, and fractures. Yet a new study of postmenopausal women in seven health maintenance organizations across the United States found that only 24 percent of those who had suffered an osteoporosis-related fracture received drug treatment for osteoporosis within a year following the fracture.

Richard Platt, M.D., M.S., of Harvard Pilgrim Healthcare, and colleagues at the HMO Research Network Center for Education and Research in Therapeutics call for improved detection and treatment of osteoporosis in high-risk patients. These include

postmenopausal women, whose low estrogen levels increase their risk of bone loss and related fracture. This research was funded in part by the Agency for Healthcare Research and Quality (HS10391) through the Agency's Centers for Research and Education on Therapeutics (CERTs) initiative.

The researchers retrospectively evaluated the use of drugs recommended for preventing a second fracture (estrogen replacement therapy, bisphosphonates, and calcitonin) among 3,492 women aged 60 and older who were identified in a database of seven HMOs as having had a fracture of the hip, vertebra, or wrist between 1994 and 1996. Of these women, only 24 percent received a drug for osteoporosis

treatment during the year following the fracture.

Women who suffered a fracture of the vertebra were twice as likely to receive medication to treat osteoporosis (44 percent) as those with a hip fracture (21 percent) or wrist fracture (23 percent). Also, older women were less likely than younger women to receive osteoporosis treatment, even though aging increases the risk of fracture.

See "Low frequency of treatment of osteoporosis among postmenopausal women following a fracture," by Susan E. Andrade, Sc.D., Sumit R. Majumdar, M.D., M.P.H., K. Arnold Chan, M.D., Sc.D., and others, in the September 22, 2003 *Archives of Internal Medicine* 163, pp. 2052-2057. ■

Confounding factors may be the reason that randomized controlled trials of HRT conflict with observational studies

Recent clinical trials demonstrating that hormone replacement therapy (HRT) does not prevent coronary heart disease in women have raised doubts concerning observational studies that had shown a cardioprotective effect of HRT. Much of the explanation likely lies in what has been called the "healthy user" effect. Most women who decided to use HRT probably had a more favorable cardiovascular risk factor profile than nonusers, and these differences were due to factors not measured in many of the observational studies, explains Wayne A. Ray, Ph.D., of Vanderbilt University Medical Center, in a recent article.

Dr. Ray points out that another contributing factor may be that most of the observational studies included

women who had been taking HRT for some time before study followup began (prevalent users). This practice can cause two types of bias, both of which plausibly may have contributed to the discrepancy in findings between the observational and randomized studies of HRT.

First, prevalent users are "survivors" of the early period of medication, which can introduce substantial bias if risk varies with time, just as in studies of operative procedures that enroll patients after they have survived surgery. Second, covariates for drug users at study entry often are plausibly affected by the drug itself. Investigators often do not adjust for these

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Note: Only items marked with a single (*) or double (**) asterisk are available from AHRQ. Items marked with a single asterisk (*) are available from AHRQ's clearinghouse. Items with a double asterisk (**) are also available through AHRQ InstantFAX. Three asterisks (***) indicate NTIS availability. See the back cover of *Research Activities* for ordering information. Consult a reference librarian for information on obtaining copies of articles not marked with an asterisk.

Research on HRT

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factors on the causal pathway, which may introduce confounding. A new-user design, which eliminates these biases by restricting the analysis to people under observation at the start of the current course of treatment, should be used more frequently in pharmacoepidemiology research, concludes Dr. Ray. Dr. Ray's work was supported in part by the Agency for Healthcare Research and Quality through a cooperative agreement (HS10384) as part of the Agency's Centers for Education and Research on Therapeutics (CERTs) initiative.

See "Evaluating medication effects outside of clinical trials: New-user designs," by Dr. Ray, in the *American Journal of Epidemiology* 158(9), pp. 915-920, 2003.

Editor's Note: In a related study, Dr. Ray discusses the limitations of post-marketing studies of drug safety, which are usually observational studies of patients who receive drugs in the course of clinical practice. For details, see Ray, W.A. (2003, October). "Population-based studies of adverse drug effects." (AHRQ grant HS10384). *New England Journal of Medicine* 349(17), pp. 1592-1594. ■

British Columbia's reference pricing for a calcium channel blocker may be a model for pharmaceutical cost-containment

Reference pricing is a medication reimbursement policy that provides full coverage for medications that are less expensive than a standard reference price, and it also requires patients to pay the extra cost of higher-priced drugs in a class of therapeutically substitutable drugs. The concept is very similar to three-tier co-pay systems in the United States.

When British Columbia instituted reference pricing for dihydropyridine calcium channel blockers (CCBs), which are used to treat hypertension and angina, it saved money without adversely affecting patients or shifting costs to patients. That's the finding of a recent study supported in part by the Agency for Healthcare Research and Quality (HS09855 and HS10881).

This reference pricing approach may serve as a model for successful pharmaceutical cost-containment without adversely

affecting patients, conclude Harvard University researchers, Sebastian Schneeweiss, M.D., Sc.D., and Stephen Soumerai, Sc.D.

Along with their colleagues, Drs. Schneeweiss and Soumerai analyzed changes in drug use, physician visits, hospitalizations, long-term care admissions, and expenditures after the introduction of reference pricing for dihydropyridine CCBs. The study included 35,886 dihydropyridine CCB users at the time of the policy change (January 1, 1997) and a subgroup of 23,116 high-priced dihydropyridine CCB users. All study participants were elderly patients enrolled in the state-funded drug benefits plan in British Columbia, Canada.

The start of reference pricing was followed by a significant reduction in use of high-priced dihydropyridine CCBs (150 fewer monthly doses per 10,000 elderly individuals), with a corresponding increase in fully covered

dihydropyridine CCBs (116 more monthly doses). After reference pricing implementation, there was no increase in rates of physician visits, hospitalizations, or long-term care admissions among the overall group. Changes in drug expenditures and physician services resulted in net savings of \$1.6 million (Canadian dollars) in the first 12 months of policy implementation.

See "Clinical and economic consequences of reference pricing for dihydropyridine calcium channel blockers," by Drs. Schneeweiss and Soumerai, Malcolm Maclure, Sc.D., and others, in the October 2003 *Clinical Pharmacology & Therapeutics* 74(4), pp. 388-400. ■

Cervical cancer rates among younger women decreased over the past 25 years

The rate of cervical cancer detected among women less than 20 years of age over many decades of screening in the United States has not changed significantly, according to a study supported in part by the Agency for Healthcare Research and Quality (HS07373). This suggests a possible lack of screening effectiveness in very young women. It also supports the 2002 American Cancer Society cervical cancer screening guidelines, which recommend delay of initial screening until age 21 years or 3 years after beginning vaginal intercourse.

For the current study, researchers at the University of California, San Francisco, examined incidence trends of invasive cervical cancer in U.S. women less than 30 years old by analyzing incidence rates from the National Cancer Institute's Surveillance, Epidemiology and End Results (SEER) database from 1973 to 1999. Incidence rates of cervical cancer overall and squamous cell cancer specifically declined during the study period by nearly 1 percent per year. Rates of cervical adenocarcinoma increased by nearly 3 percent per year, though trends have been stable since 1990. For women younger than age 20, no significant changes were observed, but cervical cancers were rare (0-3 per million women annually).

Cervical cancer among women less than 30 years of age also is rare. To put this in perspective, the rate of breast cancer in men of all ages from 1995 to 1999 was similar to the rate of all cervical cancer in women less than 30 years old during the same period. However, because of the small number of actual observed cases, the researchers suggest caution in interpreting these trends. They point to the need for future research to address other possible explanations for the observed trends and to learn more about harms associated with cervical cancer screening in young women, including the long-term outcomes of cryotherapy and cone biopsy in large numbers of young women. Finally, the researchers call for cost-effectiveness and cost-utility analyses to craft rational policies concerning an optimal age to begin screening that maximize the benefits and minimize the harms in young women.

See "Changes in cervical cancer incidence after three decades of screening U.S. women less than 30 years old," by Pamela G. Chan, M.D., Hai-Yen Sung, Ph.D., and George F. Sawaya, M.D., in the October 2003 *Obstetrics & Gynecology* 102(4), pp. 765-773. ■

Children are at risk for certain drug-resistant strains of *Streptococcus pneumoniae*

Streptococcus pneumoniae (pneumococcus) is a leading cause of bacterial meningitis and other serious bacterial infections in children, as well as a major cause of ear infections. Many *S. pneumoniae* have become resistant to treatment with penicillin or other antibiotics, and some strains of antibiotic-resistant *S. pneumoniae* are not covered by the current pneumococcal vaccine, according to a study supported by the Agency for Healthcare Research and Quality (HS10247).

Universal immunization of all infants with the heptavalent pneumococcal conjugate vaccine (PCV7) against the seven most common invasive serotypes began in 2000.

Jonathan A. Finkelstein, M.D., M.P.H., of Harvard Medical School and the HMO Center for Education and Research on Therapeutics (CERT) in Boston, and his colleagues tested *S. pneumoniae* isolates from nasopharyngeal specimens of healthy children at 31 Massachusetts primary care

practices for resistance to commonly used antibiotics. The researchers serotyped and grouped isolates into PCV7-included serotypes, potentially cross-reactive serotypes (that is, an organism of a serogroup included in the vaccine), or non-PCV7 serotypes. They reviewed children's charts to determine recent antibiotic use, history of PCV7 immunization, and diagnosis.

S. pneumoniae was isolated from the nasopharynx of 26

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Drug-resistant *S. pneumoniae*

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percent of the 742 children studied. Of the 166 isolates tested, 33 percent were not susceptible to penicillin. Nonsusceptibility to other antibiotics was also common, including ceftriaxone (14 percent), erythromycin (22 percent), and trimethoprim/sulfamethoxazole (31 percent). One-fifth of the *S. pneumoniae* isolates were not susceptible to three or more antibiotics.

Overall, 36 percent of isolates were of serotypes covered by

PCV7, and 30 percent were of PCV7 serogroups and potentially cross-reactive. Forty-five percent of bacteria of covered serotypes were penicillin-resistant, as were 51 percent of potentially cross-reactive strains. Thirty-four percent were unrelated to PCV7 serogroups and therefore would not be covered by the vaccine. Only 8 percent of bacteria in vaccine-unrelated serogroups were resistant to penicillin.

See “Antibiotic-resistant *Streptococcus pneumoniae* in the heptavalent pneumococcal conjugate vaccine era: Predictors of carriage in a multicomunity

sample,” by Dr. Finkelstein, Susan S. Huang, M.D., M.P.H., James Daniel, M.P.H., and others, in the October 2003 *Pediatrics* 112(4), pp. 862-869.

Editor’s Note: An article describing a case-control study on bullous myringitis, a particularly painful ear infection in children that in some cases is caused by *S. pneumoniae*, appears in the same issue of *Pediatrics* and was supported in part by AHRQ (HS10613). For more information, see McCormick, D.P., Saeed, K.A., Pittman, C., and others, “Bullous myringitis: A case-control study,” pp. 982-986. ■

Premature birth increases infants’ risk of hospitalization and complications from respiratory syncytial virus

Respiratory syncytial virus (RSV) can cause bronchiolitis and pneumonia, which are major reasons for infant hospitalizations in the United States each year. Premature infants of 33 to 35 weeks gestational age (GA) are at much greater risk than term infants for severe RSV outcomes, according to a study supported by the Agency for Healthcare Research and Quality (contract 290-95-0042) and led by Susan D. Horn, Ph.D., of the Institute for Clinical Outcomes Research. A second study by the same group found that complications were common in infants hospitalized for bronchiolitis or RSV pneumonia, were more common among premature infants, and were associated with longer stays and higher costs. Both studies are summarized here.

Horn, S.D., and Smout, R.J. (2003, November). “Effect of prematurity on respiratory syncytial virus hospital resource use and outcomes.” *Journal of Pediatrics* 143, pp. S133-S141.

In this study, the investigators analyzed medical record data for 304 infants aged 1 year or less who were admitted to one of nine children’s hospitals in 1995 and 1996 for bronchiolitis or RSV pneumonia. They compared resource use—for example, intensive care unit (ICU) admission, intubation, and hospital and ICU length of stay—and outcomes of 215 term infants (GA 37 weeks or longer) with 89 infants with a GA less than 37 weeks (divided into three subgroups: 32 weeks or less, 33 to 35 weeks, and 36 weeks).

Infants who were 36 weeks GA had outcomes similar to term infants. However, after controlling for factors such as severity of illness and site-level medical practice variations in intubation and ICU admission rates, infants with a GA of 33 to 35 weeks had hospital and ICU lengths of stay greater than those of any other GA group and significantly higher intubation rates. This is the first multicenter study of laboratory-confirmed RSV hospitalizations to demonstrate that

infants born at 33 to 35 weeks GA have hospital resource use at least as great as infants of 32 weeks GA or less.

True alveoli (small air sacs in the lung) begin to form between 32 and 35 weeks GA, with all infants having alveoli by 36 weeks GA. Premature birth during this critical period of lung development (32-35 weeks GA) may result in significant alteration in lung function and physiology, explain the researchers. Their study also confirmed an independent effect of prematurity beyond that caused by severity of illness and many other confounding variables (including bronchopulmonary dysplasia and heart disease).

Willson, D.F., Landrigan, C.P., Horn, S.D., and Smout, R.J. (2003, November).

“Complications in infants hospitalized for bronchiolitis or respiratory syncytial virus pneumonia.” *Journal of Pediatrics* 143, pp. S142-S149.

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Respiratory infection

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Complications are common in infants hospitalized for bronchiolitis or RSV pneumonia, and they are associated with longer pediatric intensive care unit (PICU) and hospital stays and higher costs. However, infants born prematurely and those with congenital abnormalities are at significantly greater risk for complications, according to this study. The investigators analyzed medical record data on 684 infants 1 year old or younger with bronchiolitis or RSV pneumonia who were admitted to 10 children's hospitals in 1995 and 1996. They examined complication rates and their effects on hospital and PICU length of stay and hospital costs.

Most infants (79 percent) had one or more complications, with serious complications affecting 24 percent. Even minor complications were associated with significantly longer PICU and hospital stays and higher costs. Respiratory complications were most frequent (60 percent), but infectious (41 percent), cardiovascular (9 percent), electrolyte imbalance (19 percent), and other complications (9 percent) were common.

Complication rates were higher in infants born prematurely (87 percent), infants with congenital heart disease (93 percent), and infants with other congenital abnormalities (90 percent) relative to infants without risk factors (76 percent). Infants 33 to 35 weeks GA had the highest complication rates

(93 percent), as well as longer hospital stays and higher costs than other premature infants. The researchers suggest that broader use of RSV prevention be considered for these high-risk infants.

Editor's Note: Another AHRQ study on a related topic found that breastfeeding reduces by half the risk of neonatal respiratory tract infection among newborn girls but not boys. For more details, see: Sinha, A., Madden, J., Ross-Degnan, D., and others. (2003, October). "Reduced risk of neonatal respiratory infections among breastfed girls but not boys." (AHRQ grant HS10060). *Pediatrics* 112(4), pp. e303-e307. ■

Researchers explore parents' influence on the care of seriously ill children

When a child is critically ill, families face important treatment decisions at a time of grief, stress, and fatigue. Doctors must conduct highly demanding clinical tasks, provide constant updates on the child's progress, educate family members, help them cope, and also help them to make difficult decisions about their child's care.

A study supported in part by the Agency for Healthcare Research and Quality (K02 HS11285) recently identified the types of conflicts that can arise between the clinical team and family members of children receiving prolonged intensive care. A second AHRQ-supported study (National Research Service Award training grant T32 HS00063) found that most parents of children with cancer wanted to be involved in their care and the more involved the parents were, the more likely they were to use

complementary therapies for their child. Both studies are briefly summarized here.

Studdert, D.M., Burns, J.P., Mello, M.M., and others. (2003, September). "Nature of conflict in the care of pediatric intensive care patients with prolonged stay." *Pediatrics* 112(3), pp. 553-558.

Nearly half of the children treated in a pediatric intensive care unit (PICU) for more than 8 days had some conflict associated with their care, found this study. The majority of these conflicts involved disagreements between clinicians and family members. However, more than one-third of the conflicts occurred among clinicians, most frequently between intensive care doctors and surgical specialists.

The researchers prospectively tracked conflicts arising at the PICU of one university-affiliated

hospital over an 11-month period. They interviewed the treating physicians and nurses at two stages during the PICU stay. They classified detected conflicts by type: team-family, intra-team, or intra-family and source.

Clinicians identified 55 conflicts involving nearly half (51) of the 110 children in this group. Sixty percent of the conflicts (33) were team-family, 38 percent (21) were intra-team, and 1 was intra-family. Among team-family conflicts, nearly half (48 percent) were attributed to poor communication and more than one-third (39 percent) to the unavailability of the parents/guardians to discuss treatment options and make decisions.

Disagreements over the care plan also accounted for a significant portion (39 percent) of team-family conflicts. Poor

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Care of seriously ill children

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communication (38 percent) and disagreements over the care plan (33 percent) were the most common sources of intra-team conflicts. Patients with conflicts were significantly more likely to be minority race (45 vs. 25 percent) and to have Medicaid insurance coverage (43 vs. 14 percent). The researchers suggest that ethics consultations and family meetings may be able to improve the quality of PICU care and help resolve these conflicts.

Gagnon, E.M., and Recklitis, C.J. (2003). "Parents' decision-making preferences in pediatric oncology: The relationship to health care involvement and complementary therapy use." *Psycho-Oncology* 12, pp. 442-452.

Nearly half (46 percent) of the predominantly white, well-educated parents of children with cancer in this study used complementary therapy (CT) for their children, and 33 percent began using a new CT following their child's cancer diagnosis. Parents who were more involved in medical decisions about their children were more likely to use CT. The investigators asked 118 parents of children cared for in the pediatric oncology clinic of a comprehensive cancer center to complete the Krantz Health Opinion Survey (KHOS) and Control Preferences Scale for Pediatrics (CPS-P), which asked about their preferences for involvement in their child's care. Parents also were asked to specify which CTs out of a list of 27 CTs were used before and/or after their child's cancer diagnosis.

CTs ranged from acupressure and acupuncture, magnets, massage, dietary supplements, herbal

remedies, and high-dose vitamins to shark cartilage, specific diets, guided imagery, tai chi, and hypnosis. The most common cancers among the children were leukemia, sarcoma, brain tumor, and lymphoma. Overall, 59 percent of parents preferred a collaborative role in making decisions about treatment, 28 percent wanted an active role, and 13.6 percent specified a passive role.

CT users had higher mean scores on the KHOS than non-users. Parents who reported greater desire to be active in their own medical care tended to give their child more CT. These findings reinforce the need for providers to form partnerships with parents and to openly discuss parents' questions about CT. For example, some types of CT, like St. John's Wort, typically used for depression, may interfere with cancer chemotherapy agents. ■

Health Care Disparities

Women and men with cardiovascular disease may not receive the same level of treatment for high cholesterol

Despite the fact that cardiovascular disease (CVD) is the leading cause of death among women, they are less aggressively screened and treated for cholesterol problems than men, according to a study supported in part by the Agency for Healthcare Research and Quality (HS11540). Following a review of studies on the topic, Timothy P. Hofer, M.D., M.S., of the University of Michigan and the VA Ann Arbor Healthcare System, and his colleagues conclude that women with CVD have suboptimal cholesterol management.

The majority of studies that examined screening and treatment for dyslipidemia characterized by high levels of low-density lipoprotein cholesterol (LDL-C, so-called "bad" cholesterol), low levels of high-density lipoprotein cholesterol (HDL-C, so-called "good" cholesterol), and elevated triglycerides, did not report analyses by sex or the degree of disparity between men and women. However, the studies that examined people with CVD indicated that men have cholesterol measured

more often, are treated more aggressively (for example, with statin drugs), and have lower levels of LDL-C than women.

The reasons underlying these differences and poor management of dyslipidemia overall are not well understood, and it is unclear how to reduce the disparities between men and women. Yet these disparities may translate to significantly higher rates of CVD events (for example, heart attack and stroke) and mortality for women, caution the investigators. They add that suboptimal management of dyslipidemia in women may occur through the same mechanisms that cause male-female disparities in referrals for CVD diagnostic and therapeutic procedures.

See "Review of evidence and explanations for suboptimal screening and treatment of dyslipidemia in women," by Catherine Kim, M.D., M.P.H., Dr. Hofer, and Eve A. Kerr, M.D., M.P.H., in the October 2003 *Journal of General Internal Medicine* 18, pp. 854-863. ■

Studies reveal disparities in cardiac care related to race, sex, and socioeconomic status

More than 1 million people in the United States undergo coronary revascularization with coronary artery bypass graft (CABG) surgery or percutaneous transluminal coronary angioplasty (PTCA) each year, and slightly more than half of these procedures are performed in elderly patients. Many studies have documented large and persistent differences in use of these procedures by race and sex.

A new study supported by the Agency for Healthcare Research and Quality went a step further to determine whether these discrepancies are clinically appropriate. The findings show that elderly whites and men are more likely to receive a revascularization procedure that is not needed, and that elderly blacks are less likely to undergo needed revascularization.

A second AHRQ-supported study (HS11612) of New York City residents found that lack of hospitals that perform revascularization procedures in disadvantaged neighborhoods further reduces revascularization (beyond race and socioeconomic factors) among residents of these neighborhoods. Both studies are summarized here.

Epstein, A.M., Weissman, J.S., Schneider, E.C., and others. (2003). "Race and gender disparities in rates of cardiac revascularization: Do they reflect appropriate use of procedures or problems in quality of care?" (AHRQ grant HS07098). *Medical Care* 41(11), pp. 1240-1255.

Among patients who receive angiography, a procedure used to diagnose the extent of heart damage, blacks and women are less likely than other patients to be rated necessary for revascularization

procedures (CABG or PTCA) to repair the damage, according to this five-State study of 5,026 elderly Medicare patients who underwent coronary angiography during 1991 and 1992. Study investigators compared the frequency of two problems in quality of care by race and sex: underuse or the failure to receive a clinically indicated revascularization procedure (based on criteria developed by RAND and the American College of Cardiology/American Hospital Association, ACC/AHA) and receipt of revascularization when it is not clinically indicated (overuse).

The researchers found that revascularization procedures were rated as clinically indicated more often among whites than blacks and among men than women. Failure to receive revascularization when indicated was more common among blacks than among whites (40 vs. 23-24 percent, depending on the criteria) but similar among men and women (25 vs. 22-24 percent). Racial disparities remained even after adjusting for patient and hospital characteristics.

Among patients for whom revascularization was rated inappropriate, use of procedures was greater for whites than blacks using RAND criteria (10.5 vs. 5.8 percent) and greater for men than for women (14.2 vs. 5.3 percent by RAND criteria and 8.2 vs. 4 percent by ACC/AHA criteria). These findings reflect quality of care problems, since patients in this study who failed to receive clinically indicated CABG surgery or angioplasty had higher mortality rates.

Fang, J., and Alderman, M.H. (2003). "Is geography destiny for patients in New York with myocardial infarction?" (AHRQ

grant HS11612). *American Journal of Medicine* 115, pp. 448-453.

The purpose of this study was to determine whether the ability of local hospitals to perform revascularization procedures (PTCA and CABG) influenced apparent racial disparities in revascularization and health outcomes. Using 1988-1999 data from the New York State Department of Health, the investigators determined revascularization rates among patients hospitalized with heart attack in two socioeconomically disadvantaged communities in New York City: the South Bronx, which has no hospitals that have revascularization facilities, and Harlem, which has three revascularization facilities, as well as in its most advantaged community, mid-Manhattan, which has six such facilities. The rest of New York City served as a reference.

Among patients hospitalized for heart attack, age-adjusted revascularization rates were 29.2 percent for whites, 12.5 percent for blacks, and 19.9 percent for Hispanics. Rates were 12 percent in the South Bronx, 24 percent in Harlem, 38.4 percent in mid-Manhattan, and 21.2 percent in the rest of New York City. After adjusting for other characteristics affecting revascularization such as age, race, sex, insurance status, and clinical factors, South Bronx patients were about 20 percent less likely to undergo bypass surgery or angioplasty than those in the rest of New York City.

Patients living in Harlem were twice as likely to receive such treatment as residents in the rest of

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Disparities in cardiac care

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New York City. However, among patients admitted to hospitals with cardiac revascularization facilities, after adjusting for patient characteristics, Harlem residents were significantly less likely to

undergo CABG surgery or PTCA than those from the rest of New York City.

Editor's Note: Another AHRQ-supported study on revascularization shows that use of a new procedure, transmyocardial revascularization, is expanding in community practice; so far its benefits are unclear. For more

details see Peterson, E.D., Kaul, P., Kaczmarek, R.G., and others. (2003). "From controlled trials to clinical practice: Monitoring transmyocardial revascularization use and outcomes. (AHRQ grant HS10548). *Journal of the American College of Cardiology* 42(9), pp. 1611-1616. ■

Disparities in cancer rates among U.S. men may be due in part to differences in occupational exposure to carcinogens

Although cancer rates among black and white women are similar, black men in the United States have a much higher cancer incidence than white men. This racial disparity among men may be due in part to greater occupational exposure of black men to carcinogens, suggests a study supported in part by the Agency for Healthcare Research and Quality (HS11640).

The investigators identified men with cancer from eight U.S. cancer registries and matched control subjects without cancer to cancer case patients by birth year and geographic region of cancer registry. They limited analysis to non-Hodgkin's lymphoma, Hodgkin's disease, and soft-tissue sarcoma because few black men were diagnosed with other cancers.

The researchers interviewed the men with cancer about their demographics, medical history, lifestyle, and occupation, as well as specific occupational exposures associated with cancer. Across 13 occupational exposures examined, significant cancer risks related to occupation were limited to blacks. Among black men, exposure to chromium dust—a known carcinogen often encountered in the metal, printing, paint, textile, and other industries—was

associated with nearly four times the risk of non-Hodgkin's lymphoma. Wood dust exposure was associated with nearly five times the risk of Hodgkin's disease and nearly four times the risk of soft-tissue sarcoma.

Black men who were exposed to pesticides and who reported working at a sawmill, pulp mill, or planing mill had nearly three-fold increases in their risk of soft-tissue sarcoma, although this risk did not reach statistical significance. No significant occupational risk factors for cancer among white men were identified. These findings suggest that black men have greater exposure to carcinogens on the job than white men. For example, a large retrospective study of U.S. chromate industry workers revealed that 41 percent of minorities had jobs involving exposure to the highest levels of chromate dust compared with only 16 percent of whites.

See "Occupational risk factors for selected cancers among African American and white men in the United States," by Nathaniel C. Briggs, M.D., M.Sc., Robert S. Levine, M.D., H. Irene Hall, Ph.D., and others, in the October 2003 *American Journal of Public Health* 93(10), pp. 1748-1752. ■

Racial differences exist in parents' opinions about the quality of primary care provided to their children

Parent reports of pediatric primary care quality vary by race/ethnicity, with Asian and Latino parents giving this care lower marks than black and white parents, according to a study supported in part by the Agency for Healthcare Research and Quality

(HS10317). When the study included English-language ability in the analysis, differences between Latino and white parents became insignificant, but it did not completely eliminate the care assessment differences for Asians. In addition to language, parental

perceptions of pediatric primary care quality were related to a child's chronic health condition status, maternal education, insurance status and type, and whether or not the family had a regular care provider.

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Quality of primary care

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These findings underscore the importance of increasing potential care access and encouraging linguistically appropriate health care services, concludes Michael Seid, Ph.D., of Children's Hospital Research Center in San Diego. Dr. Seid and his colleagues surveyed parents of elementary school students in a large California urban school district during the 1999-2000 school year. They

administered the surveys in English, Spanish, Vietnamese, and Tagalog (principal language of the Philippines).

The researchers examined the effects of race/ethnicity, language, and potential access to care (insurance status, presence of a regular care provider) on parents' reports of primary care quality, which they assessed via the Parents Perceptions of Primary Care (P3C) measure. The P3C asked parents about continuity of care,

convenient access to care, communication with the physician, how well the physician knew their child's medical history, comprehensiveness of care, and coordination of care.

See "Parents' perceptions of pediatric primary care quality: Effects of race/ethnicity, language, and access," by Dr. Seid, Gregory D. Stevens, Ph.D., and James W. Varni, Ph.D., in the August 2003 *Health Services Research* 38(4), pp. 1009-1031. ■

Studies focus on health care for Mexican Americans

Two recent studies, supported in part by the Agency for Healthcare Research and Quality (HS11618), focus on health care for Mexican Americans. In the first study, researchers examined the relationship between cognitive decline and stroke risk in Mexican Americans, and in the second study, they looked at receipt of inappropriate prescription medications among elderly Mexican Americans. The studies were carried out by researchers at the University of Texas Medical Branch in Galveston and are described here.

Ostir, G.V., Raji, M.A., Ottenbacher, K.J., and others. (2003). "Cognitive function and incidence of stroke in older Mexican Americans." *Journal of Gerontology: Medical Sciences* 58A(6), pp. 531-535, 2003.

Previous studies have shown that cognitive impairment is high among older Mexican Americans. This study links cognitive impairment to stroke risk in this group and highlights the need to more aggressively identify and address cognitive decline in Mexican Americans. The study found that over a 7-year period,

Mexican Americans with good cognitive function were about half as likely to report a stroke as those with poor cognitive function.

The researchers used data from the Hispanic Established Population for the Epidemiologic Study of the Elderly (H-EPESE) to prospectively study 2,682 elderly Mexican Americans living in the Southwestern United States. They assessed stroke incidence 2, 5, and 7 years after a baseline assessment of those with no prior history of stroke who had completed the Mini-Mental State Examination (MMSE, a 30-item instrument to assess cognitive function).

MMSE score at baseline predicted risk of stroke over the 7-year followup period. Those with an MMSE score of 21 or higher (good cognitive functioning) were half as likely to report stroke at followup as those with a score of less than 21. Similar results were found after controlling for relevant risk factors for stroke such as age, sex, smoking status, education, body mass index, diabetes, heart attack, systolic blood pressure, and depressive symptoms. In addition, each 1-point increase in MMSE score was associated with a 5 percent reduction in stroke risk.

Raji, M.A., Ostir, G.V., Markides, K.S., and others. (2003). "Potentially inappropriate medication use by elderly Mexican Americans." *Annals of Pharmacotherapy* 37, pp. 1197-1202.

Use of inappropriate prescription medicines has been linked to a host of problems in elderly individuals, ranging from falls and uncontrolled blood pressure to emergency department visits and hospital admissions. However, home interviews with 3,050 elderly Mexican Americans living in the Southwestern United States revealed that fewer of them used inappropriate medications than similar white and black populations.

About 12 percent of the Mexican Americans interviewed had used at least 1 of 32 potentially inappropriate prescription medications within 2 weeks of the interview. This rate is much lower than the rates reported in prior studies for older whites (27 percent) and blacks (24 percent) and similar to rates reported for older Alaska Natives (10 percent).

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Health care for Mexican Americans

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The four most commonly prescribed inappropriate medications in this study included chlorpropamide, propoxyphene, amitriptyline, and dipyridamole, accounting for 54 percent of all inappropriate prescribing. Unmarried individuals and those with one or more chronic diseases, many depressive symptoms, and more access to care (frequent physician visits and combined Medicaid and Medicare insurance) were more likely to have used at least 1 of the 32 potentially inappropriate drugs.

It is unclear why elderly Mexican Americans are prescribed

fewer inappropriate medications than elderly whites and blacks. One possible explanation is that older Mexican Americans have lower rates of heart disease, cancer, and stroke than other populations, consequently requiring less medications. On the other hand, older Mexican Americans may simply have fewer contacts with clinicians and less access to health care services.

Editor's Note: Another AHRQ-funded study on a related topic found that white race was associated with use of complementary and alternative medicine for arthritis, while use of specialists and prescription arthritis medications was better explained by factors other than race/ethnicity.

For more details, see Mikuls, T.R., Mudano, A.S., Pulley, L., and Saag, K.G. (2003). "The association of race/ethnicity with the receipt of traditional and alternative arthritis-specific health care." (AHRQ grant HS10389). *Medical Care* 41(11), pp. 1233-1239. For another study on how AHRQ is strengthening research to reduce racial and ethnic disparities in health care, see Clancy, C.M., and Chesley, F.D. (2003, October). "Strengthening the health services research to reduce racial and ethnic disparities in health care." *Health Services Research* 38(5), pp. xi-xviii. Reprints of this staff authored article (AHRQ Publication No. 04-R011) are available from AHRQ. ■

Elderly/Long-Term Care

Transfusion after hip fracture surgery reduces the risk of rehospitalization for older patients with significant anemia

Older patients who receive blood transfusions after surgery for hip fracture are less likely to be readmitted to the hospital, according to a study supported by the Agency for Healthcare Research and Quality (HS09973 and HS09459). A research team led by Ethan A. Halm, M.D., M.P.H., and Albert Sui, M.D., M.S.P.H., of Mount Sinai School of Medicine, prospectively studied the effects of blood transfusion on clinical and functional outcomes of 551 patients older than 50 who underwent surgery for hip fracture at one of four hospitals.

Low level anemia is a hemoglobin (Hb) concentration of 10 to 11.5 g/dL; normal Hb is 12-16 g/dL for women and 14-18 g/dL for men. The researchers defined the trigger Hb level as the lowest value before the first postoperative transfusion. Overall, 54 percent of patients received transfusions at any time during their hip fracture hospitalization. Nearly three-fourths (72 percent) of patients with a lowest postoperative Hb level of less than 10 g/dL (significant anemia) received transfusions compared with nearly 20 percent of those whose lowest

measurement was at least 10 g/dL (traditional transfusion threshold). In the 60 days after discharge, 4 percent of patients died, and 17 percent were readmitted to the hospital.

Transfusion was associated with a 48 percent reduction in the odds of readmission for patients with a trigger Hb level of less than 10 g/dL, but it did not influence patients' mortality or mobility functioning (ability to walk and climb stairs). For patients with a trigger Hb level of at least 10 g/dL, transfusion did not affect rates of death or readmission, but it was associated with better functional mobility scores. It may be that only significant anemia (Hb less than 10 g/dL) influences the likelihood of subsequent deterioration serious enough to prompt rehospitalization, suggest the researchers.

See "Effects of blood transfusion on clinical and functional outcomes in patients with hip fracture," by Dr. Halm, Jason J. Wang, M.A., M.S., Kenneth Boockvar, M.D., M.S., and others, in the October 2003 *Transfusion* 43, pp. 1358-1365. ■

Age alone should not be a deterrent for recommending coronary bypass surgery

Despite a slower rate of physical recovery from coronary artery bypass graft (CABG) surgery than elderly patients who are younger, those older than 75 years derive similar health benefits from the procedure, according to a study supported in part by the Agency for Healthcare Research and Quality (HS11282). This finding suggests that age alone should not deter physicians from recommending bypass surgery, according to researchers from Saint Luke's Hospital and the University of Missouri-Kansas City.

They administered the Seattle Angina Questionnaire (SAQ), which quantifies clinical dimensions of coronary artery disease, to 690 elderly patients undergoing CABG at a single center at the time of their

procedure (baseline) and 1 year later. The patients were divided into two age groups: those 75 years of age and younger and those older than 75 years.

The first 224 patients enrolled in the study also were given monthly questionnaires for 6 months after CABG. The goal was to compare the health status changes of both age groups (relief of symptoms, improvement in physical functioning, and enhanced quality of life) after CABG. Although surgical mortality was similar for both the older (2.6 percent) and younger patients (2.2 percent), 1-year mortality was greater in older patients (11.5 percent vs. 5.4 percent).

Among survivors, similar health status benefits were observed 1 year after surgery. SAQ change scores 1 year after CABG for the

older and younger groups, respectively, were 21.5 versus 19.7 for physical functioning, 30.1 versus 24.6 for angina frequency, and 37.7 vs. 33.6 for quality of life. In the 224 patients assessed monthly, the older group's physical function scores were significantly lower than the younger group until 1 year, confirming a slower recovery of physical function. However, recovery speed for angina relief and quality of life improvement did not differ by age.

More details are in "The elderly: Health status benefits and recovery of function one year after coronary artery bypass surgery," by Darcy Green Conaway, M.D., John House, M.D., Kathleen Bandt, and others, in the October 15, 2003 *Journal of the American College of Cardiology* 42(8), pp. 1421-1426. ■

Elderly, low-income black women need more education about the importance of breast cancer screening

Elderly women account for more than 50 percent of breast cancer deaths, and black women—who are more likely than white women to be diagnosed when their cancer is at a later stage—die more often from the disease. Unfortunately, among low-income black women, the oldest women know the least about breast cancer and are least likely to obtain mammogram screening. One reason that elderly black women are underscreened might be their under assessment of their personal cancer risk, suggests Alma R. Jones, M.D., M.P.H., of Morehouse School of Medicine.

In a recent study, Dr. Jones and her colleagues found that over three-fourths of low-income black women in each of three age groups (65-74, 75-84, and 85 and older) underestimated their own risk of getting breast cancer. Moreover, with increasing age, the percentage of women who believed they had no chance of getting breast cancer tripled from 20 percent

in those 65-74 years to nearly 60 percent in those 85 years and older. These age-related trends in knowledge, beliefs, and practices strongly suggest that elderly black women, particularly those older than 84, need to be better educated about breast cancer, with an emphasis on screening, conclude the researchers.

Their findings are based on data collected at senior citizen facilities from 214 elderly black women. They assessed differences in breast cancer knowledge, beliefs, and screening practices across the three age groups and calculated the effect of these factors on compliance with American Cancer Society (ACS) screening guidelines. Age was inversely associated with knowledge and screening practices. The youngest group (65-74 years) was about twice as likely as the oldest group (85 years and over) to correctly recognize

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Breast cancer screening

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breast cancer risk factors. Women in the oldest group were also least likely to have had a mammogram or clinical breast examination within the past year, as recommended by the ACS. This research was supported in part by the Agency for Healthcare Research and Quality (HS10875).

Details are in “Breast cancer knowledge, beliefs, and screening behaviors among low-income elderly black women,” by Dr. Jones, Corleen J. Thompson, M.S.P.H., Ph.D., Robert A. Oster, Ph.D., and others, in

the September 2003 *Journal of the National Medical Association* 95(9), pp. 791-805.

Editor’s Note: Another study on a related topic shows that a higher level of perceived emotional support is significantly associated with increased breast cancer survival in black and white women. For more details, see Soler-Vila, H., Kasi, S.V., and Jones, B.A. (2003, September). “Prognostic significance of psychosocial factors in African-American and white breast cancer patients.” (AHRQ grant HS06910). *Cancer* 98, pp. 1299-1308. ■

Residents of assisted living facilities with a full-time RN are less likely to leave the facility for a nursing home

Many frail elderly people who live in assisted living facilities (ALFs) eventually have to leave that facility for a nursing home. According to a recent study involving a national sample of ALFs, over three-fourths (78 percent) of elderly individuals leaving their ALF did so because they needed more care, while 31 percent left because of dissatisfaction with some aspect of the facility.

Residents who had severe cognitive impairment were over twice as likely to enter a nursing home as those who were cognitively intact or had only mild impairment. Also, those who received assistance or supervision with bathing, dressing, or other activities of daily living (ADLs) were significantly more likely to enter a nursing home or to die than those who needed no ADL assistance in the assisted living facility.

Facility characteristics also influenced the likelihood of leaving the ALF for a nursing home.

Residents of ALFs with a full-time registered nurse (RN) had less than half the odds of moving to a nursing home compared with residents in facilities that were staffed differently. For people who want to avoid or delay nursing home placement, seeking out an ALF that has full-time RNs on staff may be a good choice in an ALF, suggests Charles D. Phillips, Ph.D., M.P.H., of the School of Rural Public Health at the Texas A & M University System Health Science Center.

The research team—which included William Spector, Ph.D., of the Center for Delivery, Organization, and Markets, Agency for Healthcare Research and Quality—defined ALFs as facilities that provided 24-hour supervision, at least two meals a day, and help in at least two of the following areas of personal need: bathing, medications, or dressing. To explore the impact of resident and facility characteristics on exit from ALFs to nursing homes, the researchers analyzed data on 1,483 residents in a nationally

representative sample of 278 ALFs in 1998 and 1999.

In the period between baseline interviews and followup contacts (an average of 7 months), 19 percent of those interviewed died or changed location, whereas 81 percent remained in the same facility in which they resided at baseline. Most surviving residents who left an ALF resided in a nursing facility at followup. The next most common site was another ALF or some other residential care setting.

More details are in “Effects of facility characteristics on departures from assisted living: Results from a national study,” by Dr. Phillips, Yolanda Munoz, M.S., Michael Sherman, Ph.D., and others, in the October 2003 *Gerontologist* 43(5), pp. 690-696. Reprints (AHRQ Publication No. 04-R019) are available from AHRQ.** ■

Providing rehabilitation to newly admitted nursing home residents increases the likelihood of community discharge and lengthens survival

The 1997 Medicare Prospective Payment System (PPS) includes reimbursement for nursing home rehabilitation services in the daily reimbursement for skilled nursing facility services. This policy may discourage some nursing homes from providing costly rehabilitation services. Yet, when stroke patients and others who need rehabilitation receive nursing home rehabilitation services, they are more likely to be able to return to the community, and they survive longer than residents who don't receive such services, according to a recent study that was supported in part by the Agency for Healthcare Research and Quality (National Research Service Award training grant T32 HS00059).

Researchers from Case Western Reserve University examined survival and community discharge outcomes related to rehabilitation services among 11,150 patients admitted to one of 945 Ohio nursing homes from 1994 to 1996 for stroke, hip fracture, congestive

heart failure, chronic lung disease, or other conditions. Rehabilitation was provided to 58 percent of the residents.

Residents who received rehabilitation were 48 percent more likely than those who did not to be discharged into the community, and the risk of death was 19 percent lower among rehabilitation recipients. Overall, relative risk for discharge back into the community improved by 3.6 percent with each additional hour of weekly therapy, with similar results across all conditions studied. There was only a weak association between additional hours of therapy and decreased risk of death.

See "Outcomes of rehabilitation services for nursing home residents," by Patrick K. Murray, M.D., M.S., Mendel Singer, Ph.D., Neal V. Dawson, M.D., and others, in the August 2003 *Archives of Physical Medicine and Rehabilitation* 84, pp. 1129-1136. ■

Researchers examine factors affecting diagnosis of acute illness and mental health conditions among nursing home residents

Nursing home residents are at high risk for developing acute illnesses such as pneumonia, dehydration, and gastroenteritis. Many of them also suffer from chronic illnesses such as depression, Alzheimer's disease, cancer, and emphysema. In many cases, early diagnosis of these conditions can prevent patient hospitalization and death. Two recent studies supported by the Agency for Healthcare Research and Quality focused on diagnosis of physical and medical conditions in nursing home residents. The studies are summarized here.

Boockvar, K.S., and Lachs, M.S. (2003). "Predictive value of nonspecific symptoms for acute illness in nursing home residents." (AHRQ grant T32 HS00066). *Journal of the*

American Geriatrics Society 51, pp. 1111-1115.

In this study, the investigators identified 11 nonspecific symptoms documented by nursing home staff in the medical records of 202 newly admitted residents of one large urban home. They then used nurse reports and medical records in 10-day intervals to determine which of these symptoms predicted acute illness. Overall, nonspecific symptoms and acute illnesses occurred in 21.7 percent and 12.5 percent of 10-day intervals, respectively. Lethargy, weakness, and decreased appetite each correctly predicted the presence of an acute illness one out of two times the symptoms were reported.

Agitation and disorientation predicted an acute illness one out of three times, and falls predicted

an acute illness one out of four times. Dizziness, delusions, depressed mood, and aggression had no statistical association with acute illness. Nursing home staff should pay particular attention to individuals with symptoms found to be predictive of acute illness, suggest the researchers.

Dobalian, A., Tsao, J.C., and Radcliff, T.A. (2003, Fall). "Diagnosed mental and physical health conditions in the United States nursing home population: Differences between urban and rural facilities." (AHRQ grant T32 HS00046). *Journal of Rural Health* 19(4), pp. 477-483.

These researchers found that residents in rural nursing homes were 25 percent less likely to be diagnosed with depression

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Acute illnesses among nursing home residents

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compared with those in homes in large metropolitan areas. It was not clear whether this difference was due to the greater stigma of depression felt among rural residents, treatment variations once care was sought, or other causes. The study also found that residents in homes in small metropolitan areas were 39 percent less likely to have cancer than those in large metropolitan areas. Diagnosis of six other conditions—anxiety, Alzheimer's and non-Alzheimer's dementia, emphysema/chronic obstructive pulmonary disease,

heart disease, and stroke/transient ischemic attack, were similar among rural and urban nursing home residents.

These findings suggest that for many health conditions, environmental factors such as rurality are less relevant for the nursing home population than for the community-dwelling population. Perhaps this is because nursing home residents frequently suffer from a greater number of chronic conditions, explain the researchers. They analyzed data derived from the 1996 Nursing Home Component of AHRQ's Medical Expenditure Panel Survey, a probability sample of 815 nursing homes and 5,899 residents, to

determine whether differences in likelihood of diagnosis among these eight conditions existed between urban and rural nursing home residents.

Editor's Note: Another AHRQ-supported study (HS07585) on a related topic suggests that nursing home case-mix levels and area hospital bed supply levels contribute to variations in hospitalization rates among nursing home residents. For details, see Carter, M.W. (2003, August). "Variations in hospitalization rates among nursing home residents: The role of discretionary hospitalizations." *Health Services Research* 38(4), pp. 1177-1206. ■

HIV/AIDS Research

Assay for HIV protease inhibitors in patient blood developed to improve patient care

Protease inhibitors (PIs) are a class of drugs often used in combination with other drugs to make up what is known as highly active antiretroviral therapy (HAART). Monitoring blood concentration of PIs, which can indicate both therapeutic and toxic levels of the drugs as well as patient noncompliance with the medication, may improve the care of both HIV-infected adults and children, but pediatric data are limited. A study was undertaken in 1998 by researchers at Ohio State University and the Columbus, OH, Children's Hospital in an attempt to develop an assay suitable for use with pediatric samples. The study was supported in part by the Agency for Healthcare Research and Quality (HS10397) through the agency's Centers for Education and Research in Therapeutics (CERTs) program.

Researchers used a high-performance liquid chromatographic (HPLC) assay to quantify blood concentrations of several PIs (indinavir, ritonavir, saquinavir, and nelfinavir) in 0.2 mL of plasma in 10 adults and 15 children with HIV disease. Nondetectable (ND) concentrations (below 25-50

ng/mL) were found in 33 percent of adult samples and 24 percent of pediatric samples. Four patients prescribed from 13.7 to 28 mg/kg/day of ritonavir had concentrations ranging from ND to 11.4 µg/mL, levels quite different from what would be expected given the doses they were prescribed.

Using HPLC drug monitoring, the clinicians were able to identify and correct important clinical problems, including drug-drug interactions, drug administration problems, and confirmed noncompliance. They conclude that routine PI monitoring and interpretation could improve the care of adult and pediatric HIV patients, especially those patients who do not respond as expected to treatment, develop viral resistance or toxicity, or have questionable compliance.

More details are in "Clinical use of a simultaneous HPLC assay for indinavir, saquinavir, ritonavir, and nelfinavir in children and adults," by Philip D. Walson, M.D., Shareen Cox, Ilya Utkin, and others, in the December 2003 *Therapeutic Drug Monitoring* 25, pp. 650-656. ■

Recent HCSUS studies focus on HIV infection in older individuals and women, use of complementary and alternative therapies, and insurance status

The HIV Cost and Services Utilization Survey (HCSUS) was the first study to examine the health status and health care use of a nationally representative sample of adults infected with the human immunodeficiency virus (HIV) that causes AIDS. The core study enrolled 2,864 U.S. men and women who were receiving ongoing medical care in the first 2 months of 1996. Respondents were sampled from 28 urban areas and 24 clusters of rural counties in the continental United States. The study design included an in-person interview (baseline) and two followup interviews at 6 and 12 months after baseline.

HCSUS was supported in part by the Agency for Healthcare Research and Quality (HS08578) and led by Martin F. Shapiro, M.D., Ph.D., of RAND and the University of California, Los Angeles, School of Medicine, and Samuel A. Bozzette, M.D., Ph.D., of RAND and the University of California, San Diego. The following HCSUS studies were published recently.

Crystal, S., Akincigil, A., Sambamoorthi, U., and others. (2003). "The diverse older HIV-positive population: A national profile of economic circumstances, social support, and quality of life." *Journal of Acquired Immune Deficiency Syndromes* 33, pp. S76-S83.

The characteristics and care needs of the older HIV-positive population are very diverse and vary sharply by HIV-exposure route, concludes this study. The goal of the study was to provide a national profile of the socioeconomic circumstances of the middle-aged and older population living with

HIV and to evaluate their social support and quality of life across age and HIV-exposure category. Results revealed that older gay men with HIV/AIDS were predominantly white and more likely to have health insurance than their younger counterparts; 38 percent were employed, and 48 percent reported an income of more than \$25,000.

Older injection drug users (IDUs) with HIV/AIDS were predominantly black and particularly disadvantaged; only 11 percent were employed, and 74 percent reported incomes of less than \$10,000. Older IDUs reported especially low levels of physical functioning and emotional support compared with their younger counterparts, whereas older gay men did not differ significantly from younger gay men in these respects. The researchers note the need to tailor care to the needs of these distinct groups and to develop supportive care interventions for older IDUs.

Sherbourne, C., Forge, N.G., Kung, F-Y., and others. (2003). "Personal and psychosocial characteristics associated with psychiatric conditions among women with human immunodeficiency virus." *Women's Health Issues* 13, pp. 104-110.

About 40 percent of newly diagnosed cases of HIV occur among women, particularly vulnerable, poor, and minority women. This study of 847 women participating in HCSUS found that 55 percent of them showed signs of mood disorders, drug dependence, or heavy drinking. Increased risk for psychiatric conditions among these women was associated with younger age, having AIDS

(rather than being HIV-positive but asymptomatic), using avoidant coping strategies, reporting increased conflict with others, prior physical abuse (20 percent), needing income assistance (52 percent), and putting off going to the doctor because of caring for someone else.

Emotional or substance abuse problems were 1.48 times more likely among women with a need for income assistance and 2.2 times more likely among women who put off going to the doctor because they were caring for someone else, compared with other HIV-positive women. These findings suggest the need to address women's need for safety from assaultive partners and the need for special programs for HIV-infected women burdened with having to care for others, conclude the researchers. They screened the women for psychiatric mood disorder using the short form of the University of Michigan's Composite International Diagnostic Interview (CIDI-SF). The screening items for drug use and drug dependence were based on the CIDI, but modified for this study.

Editors Note: Another AHRQ-supported, non-HCSUS study (HS11625) focused on women with HIV. It highlighted the vulnerability of HIV-infected women to substance abuse and noncompliance with antiretroviral therapy during the postpartum period. See Warner, L.A., Wei, W., McSpirt, E., and others. (2003). "Ante- and postpartum substance abuse treatment and antiretroviral therapy among HIV-infected women on Medicaid." *Journal of the American Medical Women's Association* 58(3), pp. 143-153.

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HCSUS studies

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Hsiao, A-F., Wong, M.D., Kanouse, D.E., and others. (2003).

“Complementary and alternative medicine use and substitution for conventional therapy by HIV-infected patients.” *Journal of Acquired Immune Deficiency Syndromes* 33, pp. 157-165.

This study found that 53 percent of those HIV-infected adults participating in HCSUS had recently used at least one type of complementary and alternative medicine (CAM), and 3 percent substituted CAM for conventional HIV therapy. HCSUS respondents were asked if they had used any of 15 types of CAM since their baseline interview. These ranged from spiritual healing, herbal medicine, acupuncture, and chiropractic to massage, hypnosis, megavitamins, and underground/unlicensed drugs.

Of the patients who had used CAM, one-fourth of them used CAM that had the potential for adverse effects. For example, St. John's Wort used for depression decreases levels of the antiretroviral drug, indinavir, which could potentially lead to treatment failure and development of HIV drug resistance. Also, one-third of CAM users had not discussed such use with their health care providers. Patients with greater desire for medical information and involvement in medical decisionmaking and those with a negative attitude toward antiretroviral therapy were more likely to use CAM. These findings underscore the need for doctors to openly discuss CAM use with their HIV-infected patients.

Goldman, D.P., Leibowitz, A.A., Joyce, G.F., and others. (2003).
“Insurance status of HIV-infected adults in the post-HAART era: Evidence from the United States.”

***Applied Economics and Health Policy* 2(2), pp. 85-91.**

HIV disease is very expensive to treat, with lifetime costs of up to \$150,000. Public insurance is the predominant source of health insurance coverage for those in care for HIV in the United States, and that coverage increases as the disease progresses, according to this study. Based on their analysis of HCSUS data, the investigators estimate that almost half the patients in care for HIV are covered by Medicaid or Medicare.

About 20 percent of the HCSUS population reported Medicare coverage in 1996 and 1997 (of which 13 percent were covered by both Medicare and Medicaid). Public coverage was more likely as HIV disease progressed. While 5 percent of asymptomatic and 10 percent of symptomatic patients were covered by Medicare or Medicaid, 20 percent of those who had developed AIDS were dually covered.

To explore the impact of disease severity on insurance coverage, the investigators used HCSUS data to develop a model to adjust for factors (for example, race, sex, HIV exposure route, education, time since diagnosis, and lowest CD4 lymphocyte count) that might affect insurance outcomes. Their findings indicate that the probability of having private insurance falls gradually from about 0.37 with a CD4 count of 700 (the normal count for healthy people is usually 600-1200) to 0.23 as lowest CD4 count approaches zero. On the other hand, the probability of having public insurance rises dramatically from 0.36 to 0.67.

Reprints (AHRQ Publication No. 04-R010) are available from AHRQ.**

Asch, S.M., Kilbourne, A.M., Gifford, A.L., and others (2003, June). “Underdiagnosis of

depression in HIV.” *Journal of General Internal Medicine* 18, pp. 450-460.

This study found that over one-third (37 percent) of 1,140 HCSUS patients studied suffered from major depression, a rate of depression similar to victims of heart attack, cancer, or stroke (33-39 percent). Yet, 45 percent of depressed patients did not have a depression diagnosis documented in their medical chart. Undiagnosed depression among people with HIV can lead to poorer adherence to medication regimens; self-medication of depressive symptoms with alcohol or illicit drugs, which can also be associated with poorer HIV treatment adherence; or use of alternative therapies such as St John's Wort, which can reduce the blood level of the protease inhibitor indinavir that is used to treat HIV.

The investigators interviewed patients about their mental health using the Composite International Diagnostic Interview (CIDI) survey. They also collected demographic information, asked patients about their socioeconomic status and HIV disease severity, and reviewed medical record data from 1995 to 1997. Based on the CIDI, 37 percent of patients suffered from major depression, but only 45 percent of them had a diagnosis of depression documented in their medical chart. After adjusting for demographic, socioeconomic, and provider factors likely to affect depression diagnosis, patients with less than a high school education were less likely than those with at least a college education to have their depression diagnosed.

Providers should be more aware of the potential for coexisting depression among HIV-infected patients, particularly less educated patients, and they should use depression screening instruments, conclude the researchers.

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HCSUS studies

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Ciccarone, D.H., Kanouse, D.E., Collins, R.L., and others. (2003, June). "Sex without disclosure of positive HIV serostatus in a U.S. probability sample of persons receiving medical care for HIV infection." *American Journal of Public Health* 93(6), pp. 949-954.

It is not uncommon for people who are infected with HIV to engage in risky (unprotected) sex without disclosure of their HIV-positive status. This study found that 42 percent of gay or bisexual men, 19 percent of heterosexual men, and 17 percent of all women said they had unprotected sex without disclosing their HIV status to their partner. Among gay or bisexual men, this practice was predominantly with nonexclusive partners. For gay or bisexual men, 13 percent of serodiscordant partnerships (sex between an HIV-positive and HIV-negative person) involved unprotected anal or vaginal sex without disclosure of HIV status, compared with 9

percent of heterosexual men's and 10 percent of women's serodiscordant partnerships.

About half of the sexually active gay or bisexual men (58 percent), heterosexual men (46 percent), and women (47 percent) had serodiscordant sexual partners during the 6 months before the interview. Most unprotected sex without disclosure in serodiscordant partnerships appeared to involve mutual nondisclosure (that is, with a partner of unknown HIV status). The rate of sex without disclosure found in this sample of HIV-positive individuals suggests that 17,400 gay or bisexual men, 2,000 heterosexual men, and 2,900 women, all of whom were HIV-infected, engaged in unprotected anal or vaginal sex without disclosing their HIV status during the 6-month reporting period.

These numbers are large enough to suggest that substantial numbers of new HIV infections could occur among partners of HIV-positive individuals who do not disclose

their status. Prevention efforts designed to promote disclosure and reduce unsafe sex among HIV-positive men and women may yield important public health benefits, conclude the researchers. These findings were based on data on 1,397 HIV-positive individuals from the Risk and Prevention Study subset of HCSUS. The authors examined the prevalence of abstinence, sex only with HIV status disclosure, sex without disclosure, and unprotected anal or vaginal sex without disclosure by risk group.

Editor's Note: Another HCSUS study analyzes patterns of coping among individuals with HIV infection. For more information, see Fleishman, J.A., Sherbourne, C.D., Cleary, P.D., and others. (2003, September). "Patterns of coping among persons with HIV infection: Configurations, correlates, and change." *American Journal of Community Psychology* 32, pp. 187-204. Reprints (AHRQ Publication No. 04-R009) are available from AHRQ.** ■

Patient Safety/Quality of Care

Interdisciplinary teamwork is a key to patient safety in the operating room, ICU, and ER

According to previous studies, 70 to 80 percent of medical errors are related to interpersonal interaction issues. Not surprisingly, interdisciplinary teamwork is a key to patient safety in high-risk hospital areas like the operating room (OR), intensive care unit (ICU), and emergency department (ED). However a survey of 261 nurses at four Midwest hospitals revealed aspects of teamwork in their EDs and ICUs that needed improvement. As part of an effort to implement team training at the hospitals, a group of researchers in Minnesota designed a questionnaire that they administered to the nurses to measure teamwork and patient safety attitudes.

Nearly all the nurses surveyed believed that good communication and coordination among team

members were as important as technical proficiency for patient safety. However, many reported reservations about raising patient safety issues with team leaders, confusion around team leadership roles, little emphasis placed on teamwork, too little input into patient care decisions, and dispute resolution that was not focused on patient interests. For example, only two-thirds of nurses agreed that conflicts in their department/unit were resolved based on what was best for the patient rather than who was right.

Overall, between 23 and 33 percent of the nurses rated their experiences with the primary physician, consulting physician/surgeon, and anesthesiologist as low or very low. Thirty percent of them rated their

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Patient safety

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experiences with the nurse manager as low or very low, and only 5 percent rated their experiences with fellow nursing staff as low or very low. Nurses in the ED and ICU were more likely than those in the OR to rate collaboration with the anesthesiologist and certified registered nurse anesthetist as low. The study

was supported in part by the Agency for Healthcare Research and Quality (National Research Service Award training grant T32 HS00036).

See “Measuring teamwork and patient safety attitudes of high-risk areas,” by Amer Kaissi, M.P.H., Trista Johnson, Ph.D., and Mark S. Kirschbaum, Ph.D., R.N., in the September 2003 *Nursing Economics* 21(5), pp. 211-218. ■

Using chlorhexidine gluconate solution for vascular catheter site care greatly reduces the risk of catheter-related infection

More than 150 million intravascular devices are used each year in the United States. Each catheter consists of a slender tube (and any necessary connecting fittings) that is inserted in a patient’s central or peripheral vein to facilitate blood sampling, monitor blood pressure, or administer fluids or medications intravenously. However, microbes that colonize the catheter hub and skin surrounding the insertion site can lead to life-threatening bloodstream infections. The good news is that use of chlorhexidine gluconate in place of the current standard solution (povidone iodine) to clean the site of catheter insertion reduces the risk of catheter-related bloodstream infection by half, according to a

study supported in part by the Agency for Healthcare Research and Quality (HS11540).

This is a simple and cost-effective way to improve patient safety in the hospital setting, concludes lead author, Nathorn Chaiyakunapruk, Pharm.D., Ph.D., of the University of Washington. He and colleagues used data from randomized, controlled trials, meta-analyses, and epidemiologic studies to construct a decision model to calculate the probability of catheter-related bloodstream infection and related costs, as well as the probability of death with use of each disinfectant on a hypothetical group of hospitalized patients requiring either a peripheral or central vascular catheter for 10 days or less.

Based on the model, they estimated that use of chlorhexidine rather than povidone reduced central catheter-related bloodstream infections by half (a decline from 31 to 15 cases per 1,000 catheters) and decreased infection-related deaths by 0.23 percent at a savings of \$113 per catheter used. For peripheral site care, the results were similar, although the differences were smaller.

See “Vascular catheter site care: The clinical and economic benefits of chlorhexidine gluconate compared with povidone iodine,” by Dr. Chaiyakunapruk, David L. Veenstra, Pharm.D., Ph.D., Benjamin A. Lipsky, M.D., and others, in the September 15, 2003 *Clinical Infectious Diseases* 37, pp. 764-771. ■

Health Care Costs and Financing

Greater deployment of automated external defibrillators at select public locations is likely to be cost effective

An estimated 250,000 Americans die each year from cardiac arrest suffered at public places such as a mall, sports stadium, or airport. Studies show that lay responders will use available automated external defibrillators (AEDs), which shock the heart back into normal rhythm, to revive cardiac arrest victims. The American Heart Association (AHA) recommends that AEDs be located in public places

where there is a reasonable probability of one AED use in 5 years (20 percent annual probability of AED use). However, AEDs could be deployed at sites with only a 12 percent annual probability of AED use and still be cost effective, according to a study supported by the Agency for Healthcare Research and Quality (National Research Service Award training grant T32 H00053).

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Use of defibrillators

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Peter Cram, M.D., M.B.A., of the University of Iowa College of Medicine, and his colleagues used a decision model to compare two strategies at selected public locations in the United States. In the first strategy, individuals experiencing cardiac arrest were treated by emergency medical services personnel equipped with AEDs (EMS-D). In strategy 2, individuals were treated with AEDs deployed as part of a public access defibrillation program. Under strategy 1, cardiac arrest victims had a 10 percent probability of survival to hospital discharge, but they had a 25 percent probability under strategy 2 (based on an average time-to-shock interval of 4.5 minutes).

Under the base-case assumption that a deployed AED will be used on one cardiac arrest every 5 years, the cost per quality-adjusted life year (QALY) gained was \$30,000 for AED deployment (\$3,400 per site per year) compared with EMS-D care. AED deployment cost less than \$50,000 per QALY gained (considered cost-effective for a medical intervention) even when the annual probability of AED use was only 12 percent or more.

More details are in "Cost-effectiveness of automated external defibrillator deployment in selected public locations," by Dr. Cram, Sandeep Vijan, M.D., M.S., and A. Mark Fendrick, M.D., in the September 2003 *Journal of General Internal Medicine* 18, pp. 745-754. ■

Changing health insurance plans might adversely affect a person's care as well as increase care costs during the first year

Recent economic pressures in the health insurance market have resulted in cycles of increased costs, reduced benefits, and consumer dissatisfaction. This, in turn, has led to more frequent changes in health insurance. However, changing insurance plans may have an adverse effect on a person's care and increase the costs associated with care during the first year, concludes a study supported by the Agency for Healthcare Research and Quality (HS09963).

Peter Franks, M.D., of the University of California, Davis, and his colleagues used 1996-1999 claims data on 335,547 adult

patients from a managed care organization in Rochester, NY, to examine the relationship between the first year of health insurance and receipt of Pap tests, receipt of mammograms in women older than 40, physician use, avoidable hospitalizations, and care expenditures.

After adjustment for factors such as age, case mix, and socioeconomic status, the first year of insurance was associated with a higher risk of not getting a mammogram, a higher risk of avoidable hospitalization, greater likelihood of visiting a physician, and higher expenditures, especially for testing. There was no

relationship, however, between Pap test compliance and year of enrollment. Together with studies showing decreased patient satisfaction with forced health plan switches, these findings suggest that there may be pervasive adverse consequences of the frequent rebidding of insurance contracts by employers.

See "On being new to an insurance plan: Health care use associated with the first years in a health insurance plan," by Dr. Franks, Colin Cameron, Ph.D., and Klea D. Bertakis, M.D., in the September 2003 *Annals of Family Medicine* 1(3), pp. 156-161. ■

Market Forces

Following an urban hospital closure, remaining hospitals operate more efficiently due to higher admissions

Advances in outpatient treatment, managed care preferences for less expensive outpatient care, and hospital closures contributed to a 12 percent decline in hospital beds between 1988 and 1998. When urban hospitals in a given area close, the remaining competitor hospitals significantly improve their efficiency, mainly by filling previously empty

beds, according to a study supported by the Agency for Healthcare Research and Quality (HS10730).

The findings indicate that overall, the costs per adjusted admission at competitor hospitals (those within 5 miles of closed hospitals) declined by 2 to 4 percent for all patients and about 6 to 8 percent for

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Hospital closure

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patients who would have been treated at the closed hospital. These lower costs per adjusted admission were primarily due to an increase in inpatient admissions and emergency room visits leading to higher capacity utilization. Furthermore, the hospitals that closed had been significantly less efficient than their competitors for several years prior to closure.

The difference in efficiency at closed versus remaining hospitals was due to two important differences. First, closed hospitals were operating on a significantly smaller scale, but did not appear to be specialty or niche hospitals. Second, the occupancy rate at eventual closures was about 48 percent versus over

64 percent at competitors, explains Richard Lindrooth, Ph.D., of the Medical University of South Carolina.

Dr. Lindrooth and colleagues estimated differences in costs at hospitals that eventually closed and their nearby competitors. Next, they examined how competitors were affected by (or reacted to) closure by estimating changes in admissions, case mix, input levels, and market concentration related to a competitor's closure. Finally, they estimated the effect of these changes on hospital cost.

Details are in "The effect of urban hospital closure on markets," by Dr. Lindrooth, Anthony T. Lo Sasso, Ph.D., and Gloria J. Bazzoli, Ph.D., in the *Journal of Health Economics* 22, pp. 691-712, 2003. ■

Announcements

AHRQ announces new chair and members of the U.S. Preventive Services Task Force

Five new members and a new chair have been named to the U.S. Preventive Services Task Force. The appointments were announced recently by Carolyn M. Clancy, M.D., director of the Agency for Healthcare Research and Quality. The Task Force, sponsored by AHRQ, is the leading independent panel of private-sector experts in prevention and primary care. The Task Force conducts rigorous, impartial assessments of the scientific evidence for a broad range of preventive services.

Bruce Nedrow (Ned) Calonge, M.D., M.P.H., a member of the Task Force for 2 years, has taken over leadership of the Task Force. The five new members are Leon Gordis, M.D., M.P.H., Dr. P.H.; Kimberly Gregory, M.D., M.P.H.; Judith Ockene, Ph.D. M.Ed.; Diana Petitti, M.D., M.P.H.; and Barbara Yawn, M.D., M.Sc.

Dr. Calonge is chief medical officer of the Colorado Department of Public Health and Environment and the State epidemiologist. He is an associate professor of family

medicine and of preventive medicine and biometrics at the University of Colorado Health Sciences Center in Denver.

Alfred O. Berg, M.D., M.P.H., professor and chair of the Department of Family Medicine at the University of Washington in Seattle, is stepping down as chair of the Task Force he has led since 1996. Dr. Berg will continue as a member of the group for an additional year.

Dr. Gordis is board certified in pediatrics and is a professor in the departments of Epidemiology and Pediatrics at the Johns Hopkins University in Baltimore. He is co-director of the Center for Epidemiology and Policy in the Department of Epidemiology of the Johns Hopkins Bloomberg School of Public Health.

Dr. Gregory is director of Maternal-Fetal Medicine and director of Women's Health Services Research at Cedars-Sinai Medical Center in Los Angeles. She is an associate professor at the David Geffen School of Medicine

at UCLA's Department of Obstetrics and Gynecology and at the UCLA School of Public Health's Department of Community Health Sciences.

Dr. Ockene is professor of medicine at the University of Massachusetts Medical School, where she is also the Barbara Helen Smith Chair and founder and chief of the Division of Preventive and Behavioral Medicine. She is a clinical psychologist and a fellow of the American Psychological Association, the American Heart Association Council on Epidemiology, and the Society of Behavioral Medicine, where she is also president-elect.

Dr. Petitti is director of research and evaluation at Kaiser Permanente of Southern California in Pasadena. She is a member of the American Public Health Association, the Society for Epidemiologic Research, and the American Epidemiologic Society and is a Fellow of the American

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New Task Force members

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Heart Association Council on Epidemiology.

Dr. Yawn is director of research at Olmsted Medical Center in Rochester, MN, and is an adjunct professor in the Department of Family Medicine and Community

Health at the University of Minnesota.

The Task Force has made recommendations on a range of preventive services, including screening for obesity, prostate cancer, and cervical cancer, as well as the use of aspirin to prevent heart disease, vitamins to prevent cancer and heart disease, and hormone therapy. Task Force

recommendations are considered the gold standard for clinical preventive services. Upcoming recommendations are expected on screening for dental caries and coronary heart disease, among others.

Go to www.ahrq.gov and click on “Preventive Services” for more information about the Task Force. ■

New MEPS data show a relationship between diabetes, obesity, and chronic disease

In 2001, about 12.4 million Americans age 18 and older not living in institutions had been told by a physician that they had diabetes, according to data from the Agency for Healthcare Research and Quality’s Medical Expenditure Panel Survey (MEPS). Medical research has shown that the increase in diabetes is linked to the obesity epidemic in this country.

Other data from MEPS show that:

- In 2000, over \$18 billion was spent on health care for people with diabetes.
- In 2001, adults with diabetes were more than three times as likely to be extremely obese (body mass

index—or BMI—greater than or equal to 40) as adults without diabetes, and over one-and-a-half times as likely to be obese (BMI of 30.0-39.9).

- Adults with diabetes were about one-and-a-half times as likely as adults without diabetes to have asthma, nearly three times as likely to have hypertension, more than three times as likely to have heart disease, and more than four times as likely to have a stroke.

To see these data in a statistical brief that includes bar charts, visit the MEPS Web site at www.meps.ahrq.gov and click on “What’s New?” ■

Research Briefs

Asplin, B.R., Magid, D.J., Rhodes, K.V., and others. (2003, August). “A conceptual model of emergency department crowding.” (AHRQ contract 290-00-0015). *Annals of Emergency Medicine* 42(2), pp. 173-180.

Emergency department (ED) crowding has become a major barrier to receiving timely emergency care in the United States. The authors of this article present a conceptual model of ED crowding to help researchers, administrators, and policymakers understand its causes and develop potential solutions. The conceptual model partitions ED crowding into

three interdependent components: input, throughput, and output. These components exist within an acute care system that is characterized by the delivery of unscheduled care. The goal of the model is to provide a practical framework on which to base an organized research, policy, and operations management agenda to alleviate ED crowding.

Bates, D.W., Kuperman, G.J., Wang, S., and others. (2003, November). “Ten commandments for effective clinical decision support: Making the practice of evidence-based medicine a

reality.” (AHRQ grant HS07107). *Journal of the American Medical Informatics Association* 10(6), pp. 523-530

While evidence-based medicine has increasingly broad-based support in health care, actually getting physicians to practice evidence-based medicine continues to be a challenge. Across most domains in medicine, practice has lagged behind knowledge by at least several years. The authors of this article believe that the key tools for closing this gap will be information systems that provide decision support to users at the

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time they make decisions. Ideally, this should result in improved quality of care. Such clinical decision support can also be useful for finding and preventing many of the medical errors that are made by health care providers. Over the last 8 years, the authors have implemented and studied the impact of decision support across a broad array of domains. They describe a number of common elements they have found to be important to success.

Bhattacharya, J., Goldman, D., and Sood, N. (2003). “The link between public and private insurance and HIV-related mortality.” (AHRQ grant HS10846). *Journal of Health Economics* 22, pp. 1105-1122.

This study estimated the impact of different types of insurance on the mortality of a nationally representative group of people infected with the human immunodeficiency virus (HIV) receiving regular medical care in the United States. The researchers found that ignoring observed and unobserved health status misleads one to conclude that insurance may not be protective for HIV patients. Second, after accounting for observed and unobserved heterogeneity among people with HIV disease, insurance does protect against premature death. Third, private insurance is more effective than public insurance. The better performance of private insurance can be explained in part by more restrictive Medicaid prescription drug policies that limit access to highly efficacious treatment.

Bliss, S.J., Moseley, R.H., Del Valle, J., and Saint, S. (2003, November). “A window of opportunity.” (AHRQ grant

HS11540). *New England Journal of Medicine* 349, pp. 1848-1853.

This article describes the gradual diagnosis of acute liver failure, due to herbal-induced liver toxicity, in a woman who was hospitalized after arriving at the emergency department with severe and constant abdominal pain of 5 days duration. The woman also reported having anorexia, nausea, fatigue, night sweats, and chills, but not fever, vomiting, diarrhea, melena (bloody stool), jaundice, or weight loss. Tests for hepatitis were negative, and she continued to be given intravenous fluid and broad-spectrum antibiotics for the abdominal pain of unknown cause. Her son revealed that she had begun taking an unknown herbal remedy for her rheumatoid arthritis 2 weeks before the onset of her illness. The doctors considered herbal-induced liver toxicity as a potential cause of acute severe hepatitis, which had progressed to liver failure. A diagnosis of HSV (herpes simplex virus) hepatitis was made after the patient died. The authors discuss how this case could have been handled to quickly diagnose and treat HSV infection in this patient.

Casebeer, L.L., Strasser, S.M., Spettell, C.M., and others. (2003). “Designing tailored Web-based instruction to improve practicing physicians’ preventive practices.” (AHRQ grant HS11124). *Journal of Medical Internet Research* 5(3), pp. e20.

Using Web design principles, these researchers designed and developed a Web site that included multimodal strategies for improving chlamydial screening rates among primary care physicians. The Web-based continuing medical education course introduced physician screening instructions in four phases over 11 months. The course provided a series of interactive, tailored, case vignettes with

feedback on peer answers. It also featured a quality improvement toolbox that included clinical practice guidelines and printable patient education materials. Preliminary evaluation data from a randomized, controlled trial showed a significant increase in chlamydia knowledge, attitudes, and skills among course physicians compared with a control group.

Chan, I. Wells, W., Mukern, R., and others. (2003). “Detection of prostate cancer by integration of line-scan diffusion, T2-mapping and T2-weighted magnetic resonance imaging: A multichannel statistical classifier.” (AHRQ grant HS13234). *Medical Physics* 30(9), pp. 2390-2398.

The authors of this study developed a multichannel classifier for detecting prostate cancer by combining information from three different magnetic resonance (MR) imaging methodologies: T2-weighted, T2-mapping, and line scan diffusion imaging. They concluded that, by integrating MR imaging information from multiple images and enhancing prostate tumor features in these images, summary statistical maps have the potential to improve image-guided prostate biopsy accuracy and enhance tumor target identification for the delivery of localized therapies. They demonstrated the utility of two multichannel classifiers with feature enhancements using machine vision techniques for prostate cancer detection. They also showed that the classifiers had statistically superior performance over single-channel intensity-based classifiers.

Col, N.F., (2003, October). “The use of gene tests to detect hereditary predisposition to

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chronic disease: Is cost-effectiveness analysis relevant?" (AHRQ grant HS13329). *Medical Decision Making* 23, pp. 441-448.

The ability to screen for genetic susceptibility to common diseases provides new opportunities for disease prevention. However, credible cost-effectiveness analyses (CEAs) are needed to provide guidance about screening decisions, according to this study. The author asserts that genetic tests have often proceeded directly from development and preliminary validation into clinical practice, with little understanding of their clinical, economic, and psychosocial implications. For example, the accuracy of the test to screen for BRCA mutations implicated in breast cancer, and the effectiveness of many interventions among those who screen positive, remain in question. CEAs do not seem to have played an important role in identifying whom to offer genetic testing nor how to manage those found to carry the gene marker.

Cole, S.R., Hernan, M.A., Robins, J.M., and others. (2003). "Effect of highly active antiretroviral therapy on time to acquired immunodeficiency syndrome or death using marginal structural models." (Women's Interagency HIV Study). *American Journal of Epidemiology* 158, pp. 687-694.

To estimate the overall effect of highly active antiretroviral therapy (HAART) on time to acquired immunodeficiency syndrome (AIDS) or death, these authors used inverse probability-of-treatment weighted estimation of a marginal structural model, which can appropriately adjust for time-varying confounders affected by prior treatment or exposure. They followed 1,498 HIV-positive men and women in two ongoing studies

between 1995 and 2002. Sixty-one percent of participants initiated HAART during 6,763 person-years of followup; 382 participants developed AIDS or died. The risk of AIDS or death among those taking HAART from a standard time-dependent Cox model was 0.81. In contrast, the risk of clinical AIDS or death was markedly reduced to 0.54 from a marginal structural survival model, suggesting a clinically meaningful net benefit of HAART (reducing risk of death or AIDS by nearly half).

Croskerry, P. (2003). "The importance of cognitive errors in diagnosis and strategies to minimize them." (AHRQ grant HS11592). *Academic Medicine* 78(8), pp. 775-780.

Diagnostic errors are associated with proportionately more problems than other types of medical errors. For example, about half of all malpractice suits brought against emergency physicians arise from delayed or missed diagnoses. Many diagnostic errors stem from cognitive errors, for example, those associated with failures in perception and biases (so-called cognitive dispositions to respond, CDRs). The author lists 32 CDRs, which range from anchoring (tendency to lock onto salient features in the patient's initial presentation too early in the diagnostic process and failing to adjust this impression in light of later information) to aggregate bias (when doctors believe that aggregated data, such as those used to develop clinical practice guidelines, do not apply to their patient, whom they believe is somehow exceptional or atypical). Several strategies may be used to eliminate bias and thereby reduce diagnostic errors. For example, consider alternatives. Decrease reliance on memory and use cognitive aids such as clinical practice guidelines and hand-held

computers. Use cognitive forcing strategies, that is, develop generic and specific strategies to avoid predictable bias in particular clinical situations. Minimize time pressures by providing adequate time for quality decisionmaking. Establish clear accountability and followup for decisions made. Provide rapid and reliable feedback to decisionmakers so that errors are immediately identified, understood, and corrected.

Dickersin, K., Munro, M., Langenberg, P., and others. (2003). "Surgical Treatment Outcomes Project for Dysfunctional Uterine Bleeding (STOP-DUB): Design and methods. (AHRQ grant HS09506). *Controlled Clinical Trials* 24, pp. 591-609.

The Surgical Treatment Outcomes Project for Dysfunctional Uterine Bleeding (STOP-DUB) was a multicenter, randomized clinical trial that assessed the efficacy and effectiveness of hysterectomy vs. endometrial ablation in women for whom medical management has not provided relief. The authors talk about recruitment, extending of followup, translation of study materials into Spanish, and other topics related to study design and the methods used in the study.

Gaba, D.M., Singer, S.J., Sinaiko, A.D., and others. (2003, Summer). "Differences in safety climate between hospital personnel and naval aviators." (AHRQ grant HS11114). *Human Factors* 45(2), pp. 173-185.

Hospitals may need to make substantial changes to achieve a safety climate consistent with the status of high-reliability organizations such as naval aviation, according to these authors. They administered safety climate

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surveys, containing a subset of 23 similar questions, to employees from 15 hospitals and to naval aviators from 226 squadrons. Overall, the problematic response (suggesting an absence of a safety climate) rate was 5.6 percent for naval aviators versus 17.5 percent for hospital personnel. The problematic response rate was 20.9 percent in high-hazard hospital domains such as emergency departments and operating rooms. Problematic responses among health care workers were up to 12 times greater than those of aviators on certain questions.

Gesteland, P.H., Gardner, R.M., Tsui, F.-C., and others. (2003, November). “Automated syndromic surveillance for the 2002 winter Olympics.” (AHRQ contract 290-00-0009). *Journal of the American Medical Informatics Association* 10(6), pp. 547-554.

This article describes implementation of the Real-time Outbreak and Disease Surveillance (RODS) system, an electronic biosurveillance system, to adequately cover the large region in Utah involved in the 2002 Olympic Winter Games. A team of specialists in informatics and public health from Salt Lake City and Pittsburgh implemented the RODS system in Utah for the Olympic Games in just 7 weeks. These authors discuss the strategies and challenges of implementing the system in such a short time. Overall, the system monitored over 114,000 acute care encounters between February 8 and March 31, 2002. No outbreaks of public health significance were detected. The system was successful and remains operational today.

Hargraves, J.L., Hays, R.D., and Cleary, P.D. (2003, December).

“Psychometric properties of the Consumer Assessment of Health Plans Study (CAHPS®) 2.0 adult core survey.” (AHRQ grant HS09205). *Health Services Research* 38(6), Part I, pp. 1509-1527.

The purpose of the Consumer Assessment of Health Plans Study (CAHPS®) surveys is to give employers and other purchasers, as well as consumers, the information they need to judge different aspects of health plan performance. This study used survey data from individuals in health plans serving public and private employers to assess plan-level and internal consistency, reliability, and the construct validity of five variables (getting care quickly, doctors who communicate well, helpful/courteous office staff, getting needed care, and health plan customer service) to summarize consumer experiences with health plans and health professionals. Two of the five CAHPS® 2.0 reporting composites had higher internal consistency and plan-level reliability. The other three summary measures were reliable at the plan level and approached acceptable levels of internal consistency. The researchers conclude that consumer reports using CAHPS® surveys should provide feedback using five composites.

Insinga, R.P., and Fryback, D.G. (2003). “Understanding differences between self-ratings and population ratings for health in the EuroQOL.” (AHRQ grant T32 HS00083). *Quality of Life Research* 12, pp. 611-619.

This study examined the source and magnitude of differences between self-ratings of health and ratings of corresponding health state profiles by the general population contained in the

EuroQOL (a multidimensional measure of health-related quality of life). Overall, mildly ill individuals provided lower self-ratings (3-4 points) and moderately ill individuals higher self-ratings (7 points) than ratings provided by the general population for the same health states. Sociodemographic characteristics and difficulties in rating task completion did not explain differences between self and general population ratings. The researchers conclude that EQ-5D health state descriptions may be too sparse to comprehensively describe certain health states. Adding new health state levels or dimensions or changing the nature and tone of health state descriptions may be useful steps for improvement.

Localio, A.R., Berlin, J.A., and Ten Have, T.R. (2003). “Confounding due to cluster in multicenter studies: Causes and cures.” (AHRQ grant HS10399). *Health Services & Outcomes Research Methodology* 3, pp. 195-210.

Investigators should anticipate the potential for bias from confounding by center when they employ common statistical methods for the analysis of multicenter studies, suggest these researchers. They performed simulations for 1,080 combinations of number of centers, center size, the baseline risk of outcome, the relative risk of exposure and outcome, and the degree of association between center and exposure and between center and outcome. They analyzed datasets using five commonly used methods of logistic regression for multicenter studies and found that the direction and size of the bias caused by confounding are unpredictable when the primary research interest lies in the within-center effects. Bias can be in either

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direction, depending not only on the degree and direction of association among exposure, outcome, and center, but also on the method employed to adjust for the effects of clustering of patients within centers.

McGuire, T.G. (2003). “Setting prices for new vaccines (in advance).” (AHRQ grant HS10803). *International Journal of Health Care Finance and Economics* 3, pp. 207-224.

New vaccines have high social value, but the incentives to firms to develop new vaccines appear to be weak. This author recommends setting a procurement price for a new vaccine prior to the vaccine’s development, with the price based on the anticipated benefits from developing the vaccine. The price paid to vaccine suppliers is not equal to the price charged to consumers supplied by public or private sources, so a high price does not choke off demand. A supply price leading to efficient levels of investment can be figured in advance base on cost-effectiveness analyses. Calculations indicate that efficient vaccine prices are considerably above prices currently paid for new vaccines.

Meenan, R.T., Goodman, M.J., Fishman, P.A., and others. (2003). “Using risk-adjustment models to identify high-cost risks.” (AHRQ grant HS10688). *Medical Care* 41(11), pp. 1301-1312.

Risk models can efficiently identify HMO enrollees who are likely to generate future high costs and thus could benefit from case management, according to this study. The researchers examined the ability of five risk models: the Global Risk-Adjustment Model

(GRAM), Diagnostic Cost Groups (DCGs), Adjusted Clinical Groups (ACGs), RxRisk, and Prior-expense, to identify high-cost individuals and enrollee groups using multi-HMO administrative data for 1995 and 1996. For high-cost prevalence targets of 1 percent and 0.5 percent, ACGs, DCGs, GRAM, and Prior-expense were very comparable in overall discrimination. Given a 0.5 percent prevalence target and a 0.5 percent prediction threshold, DCGs, GRAM, and Prior-expense captured about 3 percent more high-cost sample dollars than other models. DCGs captured the most high-cost dollars among enrollees with asthma, diabetes, and depression.

M’ikanatha, N.M., Southwell, B., and Lautenbach, E. (2003, September). “Automated laboratory reporting of infectious diseases in a climate of bioterrorism.” (AHRQ grant HS10399). *Emerging Infectious Diseases* 9(9), pp. 1053-1057.

Newly available electronic transmission methods can increase timeliness and completeness of infectious disease reports. However, limitations of this technology may unintentionally compromise detection of, and response to, bioterrorism and other outbreaks, caution these investigators. They reviewed implementation experiences for five electronic laboratory systems and identified problems with data transmission, sensitivity, specificity, and user interpretation. The results suggest a need for backup transmission methods, validation, standards, preserving human judgment in the process, and provider and end-user involvement. Challenges encountered in deployment of existing electronic laboratory reporting systems could guide

further refinement and advances in infectious disease surveillance.

Olsen, I.E., Richardson, D.K., Schmid, C.H., and others. (2003). “The impact of early transfer bias in a growth study among neonatal intensive care units.” (AHRQ grant HS07015). *Journal of Clinical Epidemiology* 56, pp. 998-1005.

Transfer of infants between hospitals or their discharge home may bias comparisons of the performance across neonatal intensive care units (NICUs). This study found that sampling strategies to minimize infants lost to followup were more successful than replacement strategies in limiting transfer bias in an NICU growth study. To limit transfer bias in a neonatal growth study of extremely premature infants in six tertiary NICUs, the investigators restricted eligibility to infants younger than 30 weeks gestation at birth and substituted matched replacements for early transfers (infants transferred or discharged prior to the 16th day of life). The restriction strategy was successful, reducing the overall early transfer rate from 16.4 to 3.6 percent and the range of transfer rates among individual NICUs from 0.6-32.7 percent to 0-11 percent. Replacement of matched substitutes had a much smaller effect because of the small number of early transfers and the inability to match on all factors distinguishing early transfer.

Ornstein, S. (2003, August). “Practicing beautiful medicine beautifully: Hiram Curry’s vision in the 21st century.” (AHRQ grant HS11132). *Journal of the South Carolina Medical Association* 99, pp. 227-232.

This author discusses the vision of Dr. Hiram Curry, the founding

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Chair of Medical University of South Carolina's Department of Family Medicine, reviews the quality of health care in the United States today, and discusses how Dr. Curry's vision applies to 21st century health care. The author points out that much of Dr. Curry's vision agreed with recommendations to improve quality of care in a recent Institute of Medicine report. For example, he recommended multidisciplinary team care, respect for behavioral science and the patient, practice analysis, and performance evaluation.

Pace, W.D., Staton, E.W., Higgins, G.S., and others. (2003, December). "Database design to ensure anonymous study of medical errors: A report from the ASIPS collaborative." (AHRQ grant HS11878). *Journal of the American Medical Informatics Association* 10(6), pp. 531-540.

These authors present the design and implementation of a database and administrative system to ensure anonymous study of medical errors as reported in the voluntary Applied Strategies for Improving Patient Safety (ASIPS). ASIPS is a multi-institutional, practice-based research project that collects and analyzes data on medical errors in primary care and develops interventions to reduce error. This system captures anonymous and confidential reports of medical errors. Confidential reports, which are quickly de-identified, provide better detail than do anonymous reports. However, concerns exist about the confidentiality of those reports should the data be subject to legal discovery or other security breaches. Standard database elements, for example, serial ID

numbers, date/time stamps, and backups, could enable an outsider to link an ASIPS report to a specific medical error.

Polverejan, E., Gardiner, J.C., Bradley, C.J., and others. (2003). "Estimating mean hospital cost as a function of length of stay and patient characteristics." (AHRQ grant HS09514). *Health Economics* 12, pp. 935-947.

This paper describes two regression models that permit estimation of mean hospital charges as a function of patient length of stay (LOS) and adjust for the influence of patient characteristics and treatment procedures on LOS and charges. In the first model, the mean charge over a specified duration is a weighted average of the expected cumulative charge, with weighting determined by the distribution of LOS. The second model for LOS and charge explicitly accounts for their correlation and yields estimates of the average charge per average LOS. The researchers applied these methods to assess mean charges and mean charge per day by cardiac procedure in a group of patients hospitalized for heart attack. They concluded that, for relatively short hospital stays when only total hospital charges are available, these models provide a flexible approach to estimating summary measures of resource use while controlling for the effects of covariates on LOS and charges.

Roeloffs, C., Sherbourne, C., Unutzer, J., and others. (2003). "Stigma and depression among primary care patients." (AHRQ grant HS08349). *General Hospital Psychiatry* 25, pp. 311-315.

This study found that depression-related stigma was common in depressed primary care patients and was related to age, sex,

ethnicity, social support, and chronic medical conditions. The investigators examined whether 1,187 depressed patients from 46 U.S. primary care clinics felt that the stigma of depression affected their employment, health insurance, and/or friendships. Results showed that 67 percent expected depression-related stigma to have a negative effect on employment, 59 percent on health insurance, and 24 percent on friendships. Stigma associated with depression was greater than for hypertension or diabetes but not for stigma associated with HIV. Stigma was not associated with use of health care services, but individuals with stigma concerns related to friendships reported greater unmet mental health care needs.

Segal, J.B., Bolger, D.T., Jenckes, M.W., and others. (2003). "Outpatient therapy with low molecular weight heparin for the treatment of venous thromboembolism: A review of efficacy, safety, and costs." (AHRQ contract 290-97-0006). *American Journal of Medicine* 115, pp. 298-308.

These authors summarize the evidence comparing the efficacy, safety, and costs of outpatient and inpatient treatment of venous thromboembolism. Eight studies compared outpatient use of low molecular weight heparin with inpatient use of unfractionated heparin in 3,762 patients. The incidence of recurrent deep venous thrombosis was similar in the two groups, as was major bleeding. Use of low molecular weight heparin was also associated with shorter hospitalization and lower costs. The evidence indicates that outpatient treatment of deep venous thrombosis with low molecular

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weight heparin is likely to be efficacious, safe, and cost-effective.

Selby, J.V., Scanlon, D., Lafata, J.E., and others. (2003, September). "Determining the value of disease management programs." (AHRQ grant HS12067). *Joint Commission Journal on Quality and Safety* 29(9), pp. 491-499.

This article summarizes a conference held in October 2002, which explored new approaches to measuring and reporting the value of disease management (DM) programs for diabetes mellitus. The participants concluded that quantifying the value of DM programs for diabetes requires measuring clinical benefit and net impact on health care costs for the entire population with diabetes. Natural history models combine the expected benefits of improvements in multiple indicators to yield a single, composite measure, the quality-adjusted life-year. Such metrics could fairly express, in terms of survival and prevention of complications, relatively disparate benefits of DM programs. Comparing value across programs may provide more accurate assessments of performance, enhance quality improvement efforts within systems, and contribute generalizable knowledge on the utility of DM approaches.

Sherman, K.J., and Cherkin, D.C. (2003, September). "Developing methods for acupuncture research: Rationale for and design of a pilot study evaluating the efficacy of acupuncture for chronic low back pain." (AHRQ grant HS09989). *Alternative Therapies in Health and Medicine* 9(5), pp. 54-60.

Despite the publication of more than 10 randomized trials evaluating acupuncture as a treatment for chronic low back pain, the efficacy and effectiveness of acupuncture for this common problem remains unclear. These authors discuss the rationale for and design of a five-arm randomized controlled pilot clinical trial to address the major methodological shortcomings of previous studies, for example, poorly justified treatment and control groups and lack of masking. This pilot study also lays the groundwork for a full-scale trial evaluating acupuncture as a treatment for chronic low back pain.

Stewart, A.L., and Napoles-Springer, A.M. (2003). "Advancing health disparities research: Can we afford to ignore measurement issues?" (AHRQ grant HS11293). *Medical Care* 41(11), pp. 1207-1220.

The current national commitment to reduce health disparities may be compromised without more research on measurement quality. Integrated, systematic efforts are needed to move this work forward, including collaborative efforts and special initiatives, according to the conclusions of a conference convened by six Resource Centers for Minority Aging Research. This paper, based on the conference, presents two broad conceptual frameworks for health disparities research and describes the main research questions and measurement issues for four key concepts hypothesized as potential mechanisms of health disparities: socioeconomic status, discrimination, acculturation, and quality of care. Problems in the quality of the conceptualizations and measures were found for all four concepts, and little is known

about the extent to which measures of these concepts can be interpreted similarly across diverse groups.

Tunis, S.R., Stryer, D.B., and Clancy, C.M. (2003). "Practical clinical trials: Increasing the value of clinical research for decision making in clinical and health policy." *Journal of the American Medical Association* 290(12), pp. 1624-1632.

Decisionmakers need reliable evidence to improve health care quality and to support efficient use of limited resources. These authors discuss the importance of consistent efforts to conduct clinical trials that are designed to meet the needs of decisionmakers. Clinical trials for which the hypothesis and study design are developed specifically to answer the questions faced by decisionmakers are called pragmatic or practical clinical trials. The characteristics of these trials are that they (1) select clinically relevant alternative interventions to compare, (2) include a diverse population of study participants, (3) recruit participants from heterogeneous practice settings, and (4) collect data on a broad range of health outcomes. A limited number of these trials are conducted. According to the authors, increasing the supply of such trials will depend on greater involvement of clinical and health policy decisionmakers in all aspects of clinical research, including priority setting, infrastructure development and funding. Reprints (AHRQ Publication No. 04-R006) are available from AHRQ.**

Weinick, R.M. (2003, November). "Researching disparities: Strategies for primary data

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collection.” *Academic Emergency Medicine* 10(11), pp. 1161-1168.

Comparatively little disparities research to date has focused on emergency medicine. However, the body of disparities research developed in other areas of health care has identified a number of issues that are directly applicable. To promote research on disparities in emergency medicine, this author addresses several issues related to collecting and classifying data on race/ethnicity and socioeconomic status, as well as selected methodologic issues that are particularly important for evaluating disparities. Reprints (AHRQ Publication No. 04-R013) are available from AHRQ.**

Whitehall II Study: Martikainen, P. Adda, J., Ferrie, J.E., and others. (2003). “Effects of income and wealth on GHQ depression and poor self-rated health in white collar women and men in the Whitehall II study.” *Journal of Epidemiology and Community Health* 57, pp. 718-723; and Singh-Manoux, A., Britton, A.R., and Marmot, M. (2003). “Vascular disease and cognitive

function: Evidence from the Whitehall II study.” *Journal of the American Geriatrics Society* 51, pp. 1445-1450. (AHRQ grant HS06516).

The Whitehall II study, established in 1985, is a longitudinal study of 10,308 British civil servants to examine the socioeconomic gradient in health and disease. Baseline screening took place during 1985-1988. The first study of Whitehall participants reinterviewed between 1997-1999, concludes that the associations between income, particularly personal income, and morbidity can be largely accounted for by preexisting health and other measures of social position. The strong independent association between household wealth—a measure of income earned over decades and across generations—and morbidity are likely to be related to a set of early and current material and psychosocial benefits. The second Whitehall II study reveals an association between indications of vascular disease during the baseline screening (for example, angina or heart attack) with poor cognitive function during the 1997-1999 data collection. These findings support the view that vascular disease is predictive of

poor cognitive function in the general population.

Ziv, A., Wolpe, P.R., Small, S.D., and Glick, S. (2003, August). “Simulation-based medical education: An ethical imperative.” (AHRQ grants HS11553 and HS11905). *Academic Medicine* 78, pp. 783-788.

Medical training must at some point use live patients to hone the skills of health professionals. But there is also an obligation to provide optimal treatment and to ensure patients’ safety and well-being. Balancing these two needs represents a fundamental ethical tension in medical education. Simulation-based learning can help mitigate this tension by developing health professionals’ knowledge, skills, and attitudes while protecting patients from unnecessary risk, note these authors. They examine four themes that provide a framework for an ethical analysis of simulation-based medical education: best standards of care and training, error management and patient safety, patient autonomy, and social justice and resource allocation. They explore these themes from the perspectives of patients, learners, educators, and society. ■

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15; Jul, 7, 28; Aug, 6, 18, 20, 21, 23;
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11; Jun, 1, 2, 3, 9, 16; Jul, 7; Aug, 6,
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Sep, 4; Oct, 10; Dec, 12

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23; Sep, 31; Oct, 25, 26; Nov, 21, 23,
25, 29; Dec, 29

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Apr, 3, 5; Oct, 5; Nov, 2;
Dec, 14, 33

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Nov, 26; Dec, 29

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Aug, 25

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Pneumonia, Mar, 12; Apr, 13, 14;
Jul, 13, 16; Aug, 4, 6, 13;
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Oct, 13

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25; Apr, 8; Aug, 3; Sep, 5

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2; Jun, 9; Jul, 13, 29; Dec, 1, 2

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May, 2; Jul, 7; Aug, 2; Oct, 5;
Nov, 4; Dec, 1

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14, 15; May, 15, 16; Jun, 11; Jul, 28;
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23; Aug, 19

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Oct, 10, 17

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