



RESEARCH ACTIVITIES

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Task Force recommends using aspirin to prevent cardiovascular disease when the benefits outweigh the harms

Patients and clinicians should consider risk factors such as age, sex, diabetes, blood pressure, cholesterol levels, smoking, and risk of gastrointestinal bleeding before deciding whether to use aspirin to prevent heart attacks or strokes, according to new recommendations from the U.S. Preventive Services Task Force. These recommendations do not apply to people who have already had a heart attack or stroke.

Cardiovascular disease is the leading cause of death in the United States. It is the underlying or contributing cause in approximately 58 percent of all deaths.

The Task Force reviewed new evidence from the National Institutes of Health's Women's Health Study published since the last Task Force review of this topic in 2002, including a recent meta-analysis of the risks and benefits of aspirin. They found aspirin may have different benefits and harms in men and women. The Task Force found good evidence that aspirin decreases first heart attacks in men and first strokes in women. In 2002, the Task Force strongly recommended that clinicians discuss

aspirin use with adults at increased risk for coronary heart disease and that discussions with patients should address both the potential benefits and potential harms of aspirin therapy. The new recommendation provides more specific guidance about benefits and harms to specific age groups and sex-specific benefits.

The Task Force recommends that men between the ages of 45 and 79 should use aspirin to reduce their risk for heart attacks when the benefits outweigh the harms for potential gastrointestinal bleeding. Women between the ages of 55 and 79 should use aspirin to reduce their risk for ischemic stroke when the benefits outweigh the harms for potential gastrointestinal bleeding. The risk of gastrointestinal bleeding with and without aspirin use increases with age and is twice as high in men as in women. Other risk factors for gastrointestinal bleeding include upper gastrointestinal tract pain, gastrointestinal ulcers, and using non-steroidal anti-inflammatory drugs.

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Task Force

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The Task Force recommended against using aspirin to prevent either strokes or heart disease in men under 45 or women under age 55 because heart attacks are less likely to occur in men younger than 45 and ischemic strokes are less likely to occur in women

younger than 55. In addition, limited evidence exists in these age groups.

The recommendations and materials for clinicians are available at www.ahrq.gov/clinic/uspstf/uspasm.htm

See “Aspirin for the prevention of cardiovascular disease: U.S. Preventive Services Task Force

recommendation statement,” in the March 17, 2009 *Annals of Internal Medicine*, 150(6), pp. 396-404.

Editor’s note: In March 2009, three new Members joined the U.S. Preventive Services Task Force. See page 23 for additional information. ■

Child/Adolescent Health

Boosting and preserving green spaces in urban neighborhoods may help reduce childhood obesity

Nearly one in five children and youth were obese (95th percentile of national weight standards or higher) in 2003-2004 and one-third were overweight (between the 85th and below the 95th percentile). Providing urban children with more green space to play in may reduce obesity, suggests a new study. Researchers found that low-income, mostly black youth who lived in high-density neighborhoods with abundant green space had lower body mass index (BMI).

The authors measured neighborhood density and normalized difference vegetations index (NDVI, “greenness”) derived from satellite images. NDVI was scaled by a factor of 10, so that a 1-unit increase corresponded to urban land-use changes such as from parking lots or industrial sites with little vegetation to school yards with moderate greenness, or from vacant land/right-of-ways to parks with lush vegetation.

More neighborhood greenness was significantly associated with

lower BMI 2 years after children’s initial BMI measurements. It was also associated with 13 percent lower odds of children and youth having higher BMI 2 years later, perhaps due to increased physical activity and time spent outdoors by children living in greener neighborhoods, note the researchers. Also, greenness might indicate proximity to parks, playfields, or other open spaces that promote either physical activity or increased time spent outdoors in

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Identifying adverse drug events, see page 5

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Childhood obesity

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active play. Finally, green landscaping might indicate people care about their homes and this could be linked to increased community surveillance that deters crime and thereby boosts parents' willingness to encourage their children to play outside. Higher

residential density, which has been associated with moderate physical activity among adults (due to street connectivity, land-use mix, etc.), was not associated with children's BMI 2 years later, regardless of greenness. The study was supported in part by the Agency for Healthcare Research and Quality (T32 HS13853).

See "Neighborhood greenness and 2-year changes in body mass index of children and youth," by Janice F. Bell, Ph.D., M.P.H., Jeffrey S. Wilson, Ph.D., and Gilbert C. Liu, M.D., M.S., in the December 2008 *American Journal of Preventive Medicine* 35(6), pp. 547-553. ■

Design of the public insurance plan can reduce the time to a child's first dental visit after enrollment

Historically, an inadequate supply of participating dentists, in part due to low payments, have made it difficult for children covered by public health insurance to find participating dentists and make appointments soon after enrollment. Letting a covered child go to any dentist and paying the dentist's full charges reduces the time between when the child becomes covered and the first covered visit to the dentist, according to a new study.

Peter C. Damiano, D.D.S., M.P.H., and his colleagues at the University of Iowa compared the time from enrollment in public insurance and the first visit to a dentist or for a dental cleaning. Medicaid accounted for 74 percent of Iowa children with public insurance. Iowa counties typically offered one of three separate State Children's Health Insurance Program (SCHIP) plans in addition to Medicaid, with only eight counties offering a choice of two SCHIP plans. SCHIP plans 1 and 2 each accounted for 7 percent of publicly insured children, while SCHIP plan 3 accounted for 12 percent. The SCHIP plans differed in the numbers of participating dentists and the amounts

that dentists were paid relative to their fee-for-service charges.

Of the children enrolled in SCHIP 2, which allowed children to see any dentist and paid the dentist's full fee-for-service charges, 36 percent had a dental visit within 6 months of enrollment and 88 percent by 3 years after enrollment. This compares with 23 percent at 6 months and 73 percent at 3 years after enrollment for Medicaid enrollees, and between 21–30 percent at 6 months and 80–82 percent at 3 years for enrollees in the other two SCHIP plans that had smaller panels of participating dentists and limited the amount paid for dental services. The study was funded in part by the Agency for Healthcare Research and Quality (HS13410).

More details are in "Time to first dental visit after initially enrolling in Medicaid and S-SCHIP," by Peter C. Damiano, D.D.S., M.P.H., Elizabeth T. Momany, Ph.D., Knute D. Carter, B.Sc., and others, in the December 2008 *Medical Care* 46(12), pp. 1234-1239. ■

Visit the AHRQ Patient Safety Network Web Site

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

Some patients choose safer hospitals when an insurer offers an incentive program

Researchers recently investigated whether patients will choose hospitals with excellent patient safety track records over other hospitals if their insurer provides financial incentives to go to the safer hospitals. They studied a large employer who offered a health insurance plan with a “hospital safety incentive” to two union groups: engineers and machinists. Under the safety incentive, the hospital copayments for union members or their family members would be waived if they were admitted to hospitals with good patient safety report cards in 2004, as measured by using the Leapfrog Group’s safety leaps. Nonunion employees were not subject to the hospital safety incentive and served as a control group for the study. (The self-funded employer believed it would also benefit if use of a safe hospital

results in fewer complications and shorter stays than an unsafe hospital.)

Patients affiliated with the engineers’ union and who were admitted to the hospital with a medical diagnosis were nearly three times more likely than nonunion patients to choose a hospital that met the safety criteria after the safety incentive took effect. The machinists’ union group, however, did not visit safer hospitals as frequently as the engineering group. The authors suggest that the engineers’ higher education levels may have helped them understand the incentive more readily than the machinists.

However, neither engineers nor machinists who needed surgery visited safer hospitals more frequently after the safety incentive when compared with their nonunion counterparts. This could be, in part, because only 18 percent

of hospitals in that market were considered eligible for the incentive. That, coupled with the fact that admitting physicians, including surgeons, do not necessarily have staff privileges at every hospital, may explain the low rates of use. The authors suggest that these types of incentives will continue to evolve as employers and insurers aim to receive greater value from their health care investments. This study was funded in part by the Agency for Healthcare Research and Quality (HS13680).

See “Steering patients to safer hospitals? The effect of a tiered hospital network on hospital admissions,” by Dennis P. Scanlon, Ph.D., Richard C. Lindrooth, Ph.D., and Jon B. Christianson, Ph.D., in the October 2008 *HSR: Health Services Research* 43(5), pp. 1849-1868. ■

Perception of patient safety climate in hospitals varies by management level and clinical discipline

Senior managers at a hospital are more likely to perceive the patient safety climate more positively than hospital personnel closer to the front lines of care, according to a new study. However, physicians in senior management were more likely to have a view of their institution’s patient safety climate similar to frontline and supervising physicians than did nurse senior managers relative to frontline and supervising nurses, the study found. The researchers conclude that interventions are needed to promote speaking up to senior management and encourage senior management to communicate downwards through activities that enhance their understanding of frontline workers’ perspectives.

Overall, 17 percent of the responses to a 38-question survey were inconsistent with an optimal culture of patient safety—a value termed the percent of “problematic” responses (PPR). Senior management

gave 12.4 PPR, while frontline employees yielded 17.6 PPR. Fear of being blamed or punished for making a mistake was cited by 31.5 percent of respondents (18.8 percent among senior management and 33.8 percent among frontline employees), while 30.0 percent of all respondents mentioned encountering at least one instance of unsafe care (a percentage that varied little between senior managers, supervisors, and frontline personnel). Relatively few managers or frontline personnel reported problems with safety norms on the clinical units, a PPR of 5.5 for senior managers and 10.3 for frontline employees.

The study indicated that differences in PPR between senior managers and frontline personnel varied with the respondent’s clinical profession. Nurse senior managers had overall PPRs that were observably lower (11.5)

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Patient safety climate

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than among frontline nurses (19.1), whereas physicians in senior management and on the front line of care differed little in their PPRs (16.1 versus 17.0 PPR, respectively). The researchers suggest that the result for physicians may be due to the fact that most physician-managers, even at the senior level, continue to practice medicine—unlike most non-physician senior managers who typically discontinue their work at the bedside upon promotion.

At the level of hospitals, those institutions with the greatest difference in percent of problematic responses

between senior managers and frontline workers tended to have the worst safety climates. The data were collected from a generally representative sample of 92 United States hospitals that administered a safety climate survey over a 14-month period. The 18,361 respondents were a random sample of the hospital personnel. The study was supported, in part, by the Agency for Healthcare Research and Quality (HS13920).

More details are in “Patient safety climate in U.S. hospitals: Variation by management level,” by Sara J. Singer, M.B.A., Ph.D., Alyson Falwell, M.P.H., David M. Gaba, M.D., and Laurence C. Baker, Ph.D. in the November 2008 issue of *Medical Care* 46(11), pp.1149-1156. ■

Voluntary reporting and computerized surveillance work best together to identify adverse drug events

Adverse drug events (ADEs) remain a major focus for detection and prevention in health care organizations. According to the Institute of Medicine (IOM), more than 1.5 million preventable ADEs occur each year in the United States. A new study finds that combining voluntary reporting with a computerized surveillance system offers a complementary and synergistic approach to detecting and preventing ADEs.

Each ADE detection system has its own distinct advantages, note the Duke University researchers. Voluntary reporting is effective at identifying medication errors resulting from system failures related to administration, transcription, orders, and omission. Computerized surveillance delivers more quantitative data by estimating actual rates of ADEs.

The researchers evaluated all ADEs identified in adult inpatients at Duke University Hospital during

a 7-month period. Computerized surveillance detected 710 ADEs, resulting in a rate of 6.93 events per 1,000 patient days. Voluntary reporting identified 205 ADEs for a rate of 1.96 events per 1,000 patient days.

Among high-risk drug categories, antidiabetic agents caused the most ADEs detected by computerized surveillance (68.2 percent), followed by anticoagulants (17 percent), and narcotics and benzodiazepines (12 percent). Voluntary reporting revealed that the largest event categories (where failure points were identified) were ordering (20.5 percent), administration (17.1 percent), monitoring (14.1 percent), and omissions (13.7 percent). Both detection systems found the postanesthesia care unit (PACU) to have the greatest rate of ADEs among nursing station units. Intensive care had almost a twofold higher rate of ADEs overall compared with general care.

According to the authors, there is very little overlap between voluntary reporting and computerized surveillance. Each system detects a different profile of ADEs. Therefore, hospitals need to implement both approaches combined into a comprehensive detection program. Computerized surveillance outperforms voluntary reporting when it comes to detecting ADEs in hospitalized adults. However, the two are complementary and work together synergistically. The study was supported by the Agency for Healthcare Research and Quality (HS14882).

See “A multifaceted approach to safety: The synergistic detection of adverse drug events in adult inpatients,” by Jeffrey Ferranti, M.D., M.S., Monica M. Horvath, Ph.D., Heidi Cozart, R.Ph., and others, in the September 2008 *Journal of Patient Safety* 4(3), pp. 184-190. ■

Note: Only items marked with a single (*) asterisk are available from the AHRQ Clearinghouse. Items with a double asterisk (**) are available from the National Technical Information Service. See the back cover of *Research Activities* for ordering information. Consult a reference librarian for information on obtaining copies of articles not marked with an asterisk.

Patient Safety Culture Surveys

As part of its goal to support a culture of patient safety and quality improvement in the nation's health care system, AHRQ is sponsoring the development of patient safety culture assessment tools for hospitals, nursing homes, and ambulatory outpatient medical offices. Health care organizations can use these survey assessment tools to:

- Assess their patient safety culture.
- Track changes in patient safety over time.
- Evaluate the impact of patient safety interventions.

The surveys and other toolkit materials are available on the AHRQ Web site at www.ahrq.gov/qual/hospculture. Free technical assistance for survey administration is available by e-mailing safetyculturesurveys@ahrq.hhs.gov.

Quality improvement collaborative fails to improve infection prevention in surgical patients

Hospitals randomly assigned to participate in a collaborative program for quality improvement (QI) in preventing health care-associated infections among surgical patients did not have significantly more patients who received a properly timed dose of antibiotics before their surgery than nonparticipating hospitals, according to a recent study. QI collaboratives draw on active training interventions to increase the use of best practices to improve patient safety and the outcome of treatments. The hospitals that received interventions had meetings with QI experts, participated in monthly teleconferences, and received supplementary materials on how to implement changes in presurgical antibiotic practices. The control group of hospitals received feedback only.

The researchers found that implementation of four measures of proper use of antibiotics to prevent infection in surgical patients (timing of antibiotic administration, receipt of preventive antibiotics, use of proper antibiotics, and use of a single preoperative dose) was high at the beginning of the study, ranging from 75 percent to 97 percent. Their use remained high or increased modestly by the end of data collection (ranging from 80 percent to 99 percent). Only the proper duration of preventive treatment increased substantially from baseline to the end of data collection (from 51 percent to 70 percent for the

QI collaborative hospitals, and from 55 percent to 67 percent for the feedback-only hospitals).

The researchers note that the QI program may not have shown an effect because hospitals volunteered to participate in the study. Therefore, before joining the study both groups may have already been motivated by recent reporting requirements instituted by governmental and nonprofit regulatory organizations to give more attention to infection prevention. The researchers caution that the results do not mean that QI collaboratives are ineffective. Instead, they suggest that a larger study with a more diverse set of hospitals may be able to determine which collaborative model is most likely to lead to improvement in preventing health care-associated infections among surgical patients in a particular type of hospital. The study was funded in part by the Agency for Healthcare Research and Quality (HS11331).

More details are in "The effect of a quality improvement collaborative to improve antimicrobial prophylaxis in surgical patients. A randomized trial," by Stephen B. Kritchevsky, Ph.D., Barbara I. Braun, Ph.D., Andrew J. Bush, Ph.D., and others, in the October 2008 *Annals of Internal Medicine* 149(7), pp. 472–480. ■

Focused review is more effective than random review in discovering errors in surgical pathology cases

Clinicians have debated whether taking a second look at randomly selected pathology samples is more likely to find diagnostic errors than reviewing all of the samples in specific pathology subspecialties. A new study that compared a targeted, random review of pathology case materials with focused review of materials in five difficult-to-diagnose situations found that focused review detected a much higher incidence of errors, including a much higher incidence of major errors. Most importantly, the researchers suggest that focused review of subspecialty pathology helps rule out or identify aspects of surgical pathology as topics where disagreement between pathologists is common.

Over a 5-year period, pathologists at one clinical institution performed secondary reviews on nearly 7,500 randomly-selected cases, representing 3.5 percent of all surgical pathology

cases seen at this locality. Errors were detected in 195 cases, representing 2.6 percent of the reviewed cases. This included 27 major errors (0.4 percent of the cases reviewed)—such as a change in diagnosis from benign to malignant—which were likely to affect the patient's treatment. Following the end of the targeted random review, the clinical institution chose to review a predetermined number of consecutive surgical pathology cases in five subspecialties over a 1-year period. Assuming an error rate of up to 5 percent, there was focused review of 380 cases (0.7 percent of all cases in these subspecialties), resulting in discovery of 50 errors (13.2 percent of the examined cases). The focused reviews turned up 12 major errors, representing 3.2 percent of the reviewed cases. Among the subspecialties, the major error rates varied from 0 percent for two of the

subspecialties to 6.0 percent for the highest, the researchers reported.

Follow-up found harm in 11 of the targeted random review cases (5 cases of minimal harm, 4 cases of mild harm, and 2 cases of moderate harm). Among the focused review cases, harm occurred in 18 cases (46 percent) of major errors, but only 2 cases (5 percent of reviewed cases) were associated with moderate harm. This study was funded in part by the Agency for Healthcare Research and Quality (HS13321).

More details are in “Effectiveness of random and focused review in detecting surgical pathology error,” by Stephen S. Raab, M.D., Dana M. Grzybicki, M.D., Ph.D., Laura K. Mahood, C.T. (A.S.C.P.), and others, in the December 2008 *American Journal of Clinical Pathology* 130(6), pp. 905–912. ■

ICU nurses handle medical errors differently than they say they do on survey

How nurses deal with medical errors on the intensive care unit (ICU) may differ broadly from what they report on surveys of patient safety culture, according to a new study. ICU nurses at a group of hospitals who completed the Agency for Healthcare Research and Quality (AHRQ) Hospital Patient Safety Culture Survey replied that they usually or always reported errors and received feedback from their administrators. However, ICU nurses from the hospitals who participated in focus groups on error communication and reporting said that they often did not report errors that caused no harm to patients—in contrast to the 55 percent of these nurses responding to the AHRQ survey who said that they reported such mistakes. The nurses in the focus groups also said that they rarely received feedback from administrators regarding the errors that they did report—again, in contrast to the 56 percent of the

nurse survey responses that said they did receive feedback.

Even though all of the hospitals had participated in training to reduce hospital-associated infections by improving teamwork, workplace power relationships remained the key to how medical errors were reported, according to the researchers. Although most medical errors are understood to be caused primarily by system problems rather than individual mistakes, the nurses were reluctant to report errors that they were involved with because of a sense of failure or fear of punishment or blame. Nurses who witnessed an error were more likely to report it to a supervisor than confront another nurse directly and nurses brought up physician errors to the doctor only indirectly, often in the form of a

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Medical errors

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question about what the physician meant to order or do, the researchers found.

The researchers conclude that hospitals must understand the realities of error reporting and talking about errors to make headway in improving the safety and quality of the patient experience. The study was

supported in part by Agency for Healthcare Research and Quality (HS13914).

Additional information can be found in “Nurses’ perceptions of error communication and reporting in the intensive care unit,” by Nancy C. Elder, M.D., M.S.P.H., Suzanne M. Brung, M.S.N., M.B.A., Mark Nagy, Ph.D., and others, in the September 2008 *Journal of Patient Safety*, 4(3), pp.162-168. ■

Women’s Health

More black than white women receive mammograms in St. Louis

Mammography is an effective way to catch breast cancer early, when it is easiest to cure. Yet some women over 40 still do not get annual screening mammograms. Researchers are now exploring whether offering interventions (such as flexible clinic hours, traveling mammography vans, or health education campaigns) in specific geographic areas can increase annual mammography rates. From March 2004 to June 2006, Mario Schootman, Ph.D., of the Washington University School of Medicine, and colleagues conducted telephone interviews with 429 black and 556 white women over the age of 40 who lived either within the

city limits of St. Louis or within an area known to have high rates of late-stage breast cancer diagnoses.

More black women (75 percent) than white women (68 percent) received mammograms. In an area known to have high rates of late-stage breast cancer diagnoses, 69.5 percent of white women obtained mammograms compared with 73.7 percent of black women. These results were unexpected and suggest that mammography screening rates have improved for black women who live in St. Louis, the authors state. Further, they point to a need to improve mammography screening for white women, especially those living in late-stage diagnosis areas.

The authors also suggest that this geographic clustering of late-stage breast cancer is a technique that can help target interventions to increase mammography use. This study was funded in part by the Agency for Healthcare Research and Quality (HS14095).

See “Racial and geographic differences in mammography screening in St. Louis City: A multilevel study,” by Min Lian, M.D., Ph.D., Donna B. Jeffe, Ph.D., and Dr. Schootman in the July 2008 *Journal of Urban Health: Bulletin of the New York Academy of Medicine* 85(5), pp. 677-692. ■

Young women with diabetes do not receive recommended preventive services

In the United States, 8.7 percent of women aged 20 and over have diabetes. Accompanying this chronic disease is a risk of contracting other conditions, including cancer and cardiovascular, kidney, and eye disease. However, a new report finds that women with diabetes are not receiving preventive services equally. The article discusses findings from the report *Women with Diabetes: Quality of Health Care, 2004-2005* (<http://www.ahrq.gov/populations/womendiab/>), which found that while 45.2 percent of all women with diabetes received preventive care for diabetes

(hemoglobin A1c test and foot and eye exams), just 30.5 percent women under age 45 reported receiving preventive care for diabetes. In addition, just 26.5 percent women age 65 or over had well-controlled blood pressure compared with 64.4 percent of women age 18 to 44. These age disparities for women with diabetes also appeared in screenings for breast, cervical, and colorectal cancers and immunizations for influenza and pneumonia.

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Diabetes

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Studies that use summary statistics to describe all women with diabetes do not paint a true picture of diabetes care because they do not address women's life stages, suggest Agency for Healthcare Research and Quality (AHRQ) researchers Karen Kar-Yee Ho, M.H.S., Jeffrey Brady, M.D., M.P.H., and Jackie Shakeh Kaftarian, Ph.D. For this reason, the researchers conclude in this article that programs to meet the needs of younger women who have diabetes are needed. The report used data from AHRQ's Medical Expenditure

Panel Survey, the National Health and Nutrition Examination Survey, and the National Health Interview Survey.

See "Women with diagnosed diabetes across the life stages: Underuse of recommended preventive care services," by Michelle D. Owens, Ph.D., Gloria L.A. Beckles, M.D., M.Sc., Ms. Ho, Paul Gorrell, Ph.D., Dr. Brady, and Dr. Kaftarian in the November 2008 *Journal of Women's Health* 17(9), pp. 1415-1423. Reprints (AHRQ Publication No. 09-R018) are available from AHRQ.* ■

Elderly/Long-Term Care

Enrollment in a program of all-inclusive elderly care is largely a matter of luck

As more and more of the baby boomer generation reaches retirement age, case managers have become more interested in keeping older adults in the community by maintaining independence. Services such as the community-based Program of All-Inclusive Care for the Elderly (PACE) that provide home-based, interdisciplinary assessment and service coordination for nursing home-eligible older adults can help to meet this need. But in determining whether older adults enroll in such programs, luck and happenstance play major roles, according to a new study by Anna Song Beeber, Ph.D., RN, of the University of North Carolina School of Nursing.

To explore how older adults come to enroll in the PACE program, she interviewed 5 older adults, 4 families, and 10 PACE staff. Key questions asked were

"Tell me how you (or your family member) came to PACE" and "What was going on with you (or your family member) prior to coming to PACE?" Several circumstances were identified that led to recognizing a need for help. They included an acute event or crisis such as a hospitalization, injury, or acute illness, the older adult's or caregiver's drive to avoid entering a nursing home, and the caregiver's recognition that they needed relief from their care demands. Finding out about PACE came about by chance conversations with someone who knew about the program, visiting a senior center, or seeing the PACE van in the neighborhood.

The findings of this study have several implications for case management practice. For families seeking care after the occurrence of an acute event, case managers need

to assess how prepared the family is for the older adult's long-term care needs, encourage the family and older adult to plan for long-term care, and provide the family with information about PACE and related programs. Because case managers are employed across the health care system, they are positioned to influence how older adults and their families obtain the information they need. This study was supported by the Agency for Healthcare Research and Quality (HS14697).

See "Luck and happenstance: How older adults enroll in a program of all-inclusive care for the elderly," by Dr. Beeber in the September/October 2008 *Professional Case Management* 13(5), pp. 277-283. ■

Nursing home residents with cognitive impairment are able to participate in a motivational intervention

Long-term care professionals are charged with ensuring that residents are restored to their highest level of physical functioning so they retain as much independence as possible. Staff members use many techniques to foster this independence, including encouragement, cueing, role modeling, and positive reinforcement. However, residents who have cognitive impairments such as memory loss or difficulty processing language (aphasia) may not benefit as readily from these restorative care interventions. Barbara Resnick, Ph.D, C.R.N.P., F.A.A.N., F.A.A.N.P., of the University of Maryland School of Nursing, and colleagues tested a Restorative Care Intervention for the Cognitively Impaired (Res-Care-CI) for 6 months on 41 residents with severe cognitive impairment who were 55 or older and living in a nursing home for people with dementia. The Res-Care-CI motivates nursing assistants by educating and mentoring them on restorative care and helping them develop goals for their nursing home's residents.

Residents experienced a decrease in depressive symptoms 2 months after the Res-Care-CI was implemented, but this improvement was not sustained. Behavioral symptoms (agitation) also lessened after the intervention when baseline measures were compared with 6-month measures. No significant differences in physical function and activity were detected. However, the authors conclude that it is possible to engage residents who suffer from cognitive impairments in physical and functional activities and these activities do not cause behavioral problems or aggravate depression. This study was funded in part by the Agency for Healthcare Research and Quality (HS13372).

See "Pilot testing of the Restorative Care Intervention for the Cognitively Impaired," by Elizabeth M. Galik, Ph.D., C.R.N.P., Dr. Resnick, Ann Gruber-Baldini, Ph.D, and others in the September 2008 *Journal of the American Medical Directors Association* 9(7), pp. 516-522. ■

Adequate staffing helps ensure patients in nursing homes receive proper treatment for pneumonia

Though guidelines exist to improve care and outcomes of nursing home-acquired pneumonia (NHAP), about 1 to 3 percent of nursing home residents suffer from this condition at any given time, and mortality averages 25 percent. In a recent study, Evelyn Hutt, M.D., of the Denver Veterans Administration Medical Center and University of Colorado, Denver, and colleagues reviewed charts to determine whether staff followed guidelines in detecting and treating pneumonia in 389 residents in 16 nursing homes in Colorado, Kansas, and Missouri.

Staffing and turnover rates were the best predictor of whether a

patient received recommended care, the researchers found. This care includes vaccinations, antibiotics, hospitalizations, and rapid communication with a physician about a change in a patient's status. Staff turnover rates averaged 60 percent, and facilities with high turnover rates tended not to adhere to the guidelines.

Higher staffing levels were linked to compliance, with nursing home residents receiving vaccinations for pneumonia and influenza, which can be a precursor condition for pneumonia. Patients at nursing homes with high licensed nursing staff to patient ratios and low turnover rates were also more

likely to be hospitalized when their conditions warranted it and not be hospitalized when they were well enough to be cared for in their nursing homes. This study was funded by the Agency for Healthcare Research and Quality (HS13618).

See "Associations among nurse and certified nursing assistant hours per resident per day and adherence to guidelines for treating nursing home-acquired pneumonia," by Dr. Hutt, Tiffany A. Radcliff, Ph.D., Debra Liebrecht, R.N., and others in the October 2008 *The Journals of Gerontology* 63A(10), pp. 1105-1111. ■

Nearly a fifth of elderly patients are readmitted after a hospital stay for psychiatric care

Older patients with psychiatric conditions often receive treatment in outpatient settings, but patients with severe symptoms often need inpatient care. A new study finds that 22 percent of elderly patients who were treated at and released from hospitals end up back in the hospital within 6 months. Researchers found that the readmission rate for patients suffering from schizophrenia and bipolar disorder was about 50 percent higher than for patients who were depressed or had substance abuse disorders.

Patients who had two or more psychiatric conditions were at greater risk for readmission than patients who had just one condition. However, patients who had some medical conditions and a psychiatric condition were less likely to be readmitted. The authors suggest that these patients' need for treatment of their medical conditions may outweigh their psychiatric concerns, or their regular contact with health care providers may help them avoid psychiatric hospitalizations.

Hospital stays of 5 days or longer decreased the chances that patients with affective disorders (for

example, depression or bipolar disorder) would be rehospitalized. Twenty-nine percent of patients with affective disorders who had stays of 4 or fewer days were readmitted, while just 16 percent with nonaffective disorders (for example, anxiety or substance abuse) were rehospitalized. The findings indicate that to prevent readmissions, patients should not be prematurely discharged, especially those with affective disorders. Patients could also benefit from tailored discharge plans and aftercare, suggest the authors, who used 2002 Medicare data for 41,839 patients for this study. The study was funded in part by the Agency for Healthcare Research and Quality (HS16097) to the Rutgers Center for Education and Research on Therapeutics (CERT). For more information on the CERT's program, please visit www.ahrq.gov/clinic/certsovr.htm.

See "Psychiatric rehospitalization among elderly persons in the United States," by Jonathan D. Prince, Ph.D., Ayse Akincigil, Ph.D., Ece Kalay, B.A., and others in the September 2008 *Psychiatric Services* 59(9), pp. 1038-1045. ■

Depression and substance abuse treatment hospitalizations declined for Medicare beneficiaries over a decade

The 1990s brought many changes in psychiatric care, including tighter admission criteria for hospital stays and a wealth of drug therapies available for conditions such as depression. To examine empirically how hospitalization rates might differ in two time periods, researchers from Rutgers' Institute for Health, Health Care Policy and Aging Research, compared Medicare data from 1992 and 2002 for patients over 65 who had psychiatric conditions and were insured by fee-for-service plans.

They found that, although epidemiological work by other

investigators did not report a significant decrease in mental disorders over the decade in question, overall rates of psychiatric admissions were 28 percent lower. A reduction in stays for depression accounted for nearly half of that decrease, and stays for substance use disorders declined as well. However, inpatient stays for bipolar disorder and schizophrenia did not change during the study period, most likely because these patients exhibit severe symptoms, such as psychosis or lack of behavior control. The authors observe that this pattern of use fits with an

"intensive care" model (i.e., a model that describes the treatment philosophy of psychiatrics) in which hospital use may be reserved for patients who are severely dysfunctional or may harm themselves.

Average hospital stay dropped from nearly 18 days in 1992 to just 12 in 2002, and costs per stay went from about \$6,500 to \$6,000. Though many policymakers worried that shorter stays would result in repeat hospitalizations, the authors did not find evidence that shortened stays resulted in

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readmissions later. This study was funded in part by the Agency for Healthcare Research and Quality (HS16097).

See “Hospitalizations for psychiatric illness among community-dwelling elderly persons in 1992 and 2002,” by Ayse Akincigil, Ph.D., Donald R. Hoover, Ph.D., James T. Walkup,

Ph.D., and others in the September 2008 *Psychiatric Services* 59(9), 1046-1048. ■

Rural Health

Care quality disparities exist for children seen in urban versus rural hospitals

An Institute of Medicine report recently found that less than 10 percent of emergency departments (EDs) are equipped to handle pediatric emergencies. A new study finds that EDs at urban children’s hospitals provide better care for seriously ill or injured children than rural EDs. James P. Marcin, M.D., M.P.H., of the University of California, Davis, and colleagues found that general and pediatric emergency medicine physicians provide high-quality care in children’s hospitals. These hospitals may feature standardized protocols and offer specialized resources, including nursing staff and equipment, that permit these physicians to provide similar, superior care.

Conversely, the authors found that all physicians, including those trained in pediatric emergency medicine, who work in rural hospital EDs provide poorer quality care to their young patients than similarly trained physicians working in urban settings. This may be a result of limited pediatric

resources at the rural hospitals or differences in the physicians’ knowledge base. The authors suggest that improving availability of pediatric resources, operational structures, and staffing at rural hospitals will bolster the care quality for the children they serve. Physicians trained in pediatric emergency medicine examined 166 charts from children seen at rural non-children’s hospitals and 138 charts from urban children’s hospitals from January 2000 to June 2003 for this study, which was funded in part by the Agency for Healthcare Research and Quality (HS13179).

See “Quality of care of children in the emergency department: Association with hospital setting and physician training,” by Madan Dharmar, M.B.B.S., Dr. Marcin, Patrick S. Romano, M.D., M.P.H., and others in the December 2008 *Journal of Pediatrics* 153(6), pp. 783-789. ■

Children in rural areas must travel far distances to receive pediatric specialty care

Adults generally need care for chronic conditions more often than children. However, children who need care from pediatricians specializing in areas such as cardiology, rheumatology, or endocrinology may not have ready access to these doctors if they are from low-income families and live in the Mountain or West North Central

regions of the United States, a new study finds.

Michelle L. Mayer, Ph.D., M.P.H., of the University of North Carolina at Chapel Hill, used zip code locations to determine the distance to 16 pediatric subspecialties. Children from low-income families and from the Mountain and West North Central

regions had to travel the farthest for pediatric specialty care. These geographic barriers may limit these children’s access to care and lead to poor outcomes, the author suggests. Families that are forced to travel long distances for care are burdened not only by travel costs,

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but adults also miss time from work and children are absent from school.

Regions where families faced the longest travel times to specialty care typically did not have adequate patient populations

to sustain a physician's practice. For example, when the population of children doubled in a region, this resulted in a 4- to 13-mile reduction in the distance a family needed to travel for specialty care. The author recommends novel approaches, such as telemedicine, be considered in these areas so that children have access to

quality care without long drives. This study was funded in part by the Agency for Healthcare Research and Quality (HS13309).

See "Disparities in geographic access to pediatric subspecialty care," by Dr. Mayer in the September 2008 *Maternal and Child Health Journal* 12(5), pp. 624-632. ■

A novel system lets rural hospitals obtain a remote pharmacist's review of medication orders around-the-clock

Having pharmacists review clinicians' medication orders has been posed as a solution to prevent medication errors from occurring in hospitals. However, hospitals in rural areas often encounter difficulty in providing 24-hour pharmacist coverage. A novel solution to this problem is an after-hours remote pharmacy order entry system (ARPOE) that lets rural hospitals submit medication orders to a hub hospital that offers round-the-clock pharmacy staff. A demonstration project was implemented to determine if eight rural hospitals in northern Minnesota would benefit from using an ARPOE. Pharmacists at a hub hospital in Duluth reviewed all medication orders written once rural pharmacy staff were off duty.

On more than 700 occasions in the first 20 months, pharmacists at the hub hospital identified potential drug problems for patients in the rural hospitals. The researchers suggest this shows the ARPOE system provided safer care for the patients than if no pharmacist review had been available. Additionally,

nursing staff at the rural hospitals who were surveyed indicated their satisfaction with the pharmacy services, including timeliness, availability, and helpfulness of the pharmacy staff.

The authors stress that several factors were critical in implementing the ARPOE system. Participating hospitals should craft policies and procedures for rural and hub staff to follow when writing, transmitting, entering, and acknowledging medication orders. These systems also require staff commitment to the process and trust among rural and hub hospital staff. This study was funded by the Agency for Healthcare Research and Quality (HS14965).

See "Implementing after-hours pharmacy coverage for critical access hospitals in northeast Minnesota," by Timothy P. Stratton, Ph.D., B.C.P.S., F.A.P.H.A., Marcia M. Worley, Ph.D., Mark Schmidt, B.S., and Michael Dudzik, B.S.Pharm, M.H.A., in the September 15, 2008 *American Journal of Health-System Pharmacy* 65(18), pp. 1727-1734. ■

Health Care Costs and Financing

Older patients stop using inhalers and end up in the hospital when insurers enact deductibles and copayments

Insurers have tried out many methods for reducing their drug benefit costs, including having patients share costs through copayments and deductibles. These methods may save the insurer money on drug expenses, but they can also produce the unintended consequence of patients foregoing their medications and ending up in the

hospital, according to a new study. The researchers studied how changes in drug benefit policies affected emergency hospitalizations of older patients in British Columbia who used inhaled medications to treat their respiratory conditions. The insurer first offered adults 65 and older full coverage for prescription medications. Later, the plan charged

fixed copayments of \$10 to \$25 for medications. Finally the plan switched to an income-based deductible (IBD) plus age-based copayments for prescription medications.

Many patients stopped using their inhalers to control their chronic obstructive pulmonary

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Copayments and deductibles

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disease when they encountered fixed copayments and IBD, but the decrease was greater with IBD. The greater decrease under IBD was associated with increased visits to physicians and a surge in patient hospitalizations for chronic obstructive pulmonary disease, asthma, and emphysema (CAE). The authors suggest that instituting deductibles may have prompted patients to forego their inhalers because they were struggling to pay for their medicines until they reached the deductible threshold. Patients may have increased their visits to physicians in hopes of

receiving free drug samples or prescriptions for less expensive medications.

As solutions, the authors recommend that drug plans offer continuous coverage of one or more drugs per patient to prevent them from discontinuing their medicines. They also recommend that plans permit patients to pay deductibles in installments to ensure they have coverage throughout the year. This study was funded in part by the Agency for Healthcare Research and Quality (HS10881).

See “Emergency hospital admissions after income-based deductibles and prescription copayments in older users of inhaled medications,” by Colin R. Dormuth, M.A., Sc.D., Malcolm

Maclure, Sc.D., Robert J. Glynn, Ph.D., Sc.D., and others in the 2008 *Clinical Therapeutics*, 30, pp. 1038-1050.

Editor’s note: Also see “Impact of two sequential drug cost-sharing policies on the use of inhaled medications in older patients with chronic obstructive pulmonary disease,” by Colin R. Dormuth, M.A., Sc.D., Robert J. Glynn, Ph.D., Sc.D., Malcolm Maclure, Sc.D., and others in the 2006 *Clinical Therapeutics*, 28, pp. 964-978. A short summary of this article appears in the July 2007 issue of *Research Activities*, pp. 18-19 (www.ahrq.gov/research/jul07/0707RA.pdf) and (www.ahrq.gov/research/jul07/0707RA21.htm). ■

Negative effects are seen when patients reach drug benefit thresholds in Medicare Part D

Medicare beneficiaries who reach their drug benefit threshold under the Part D prescription drug benefit are older, high medication users who suffer negative consequences post-threshold. According to researchers from Kaiser Permanente Colorado and the University of Colorado at Denver, those reaching this threshold had greater morbidity, more hospitalizations, and less medication adherence levels compared to non-threshold-reaching beneficiaries.

The researchers collected data on 21,349 beneficiaries participating in the Kaiser Permanente Colorado direct-pay Medicare Advantage Part D prescription drug benefit plan in 2006. A total of 1,237 (6 percent) reached their threshold of \$2,250 in accumulated total prescription drug costs (approximately \$750 in out-of-pocket expenses). Identical data were also gathered on 9,088 group employer retirees who did not have a drug benefit threshold component in their health plan.

Those reaching their standard threshold were more likely to experience at least one hospital admission and emergency department visit compared to no-threshold beneficiaries. They also had more medical office visits and received more medications.

Medication adherence was also found to decline once beneficiaries reached their threshold. The most significant reductions in medication refill adherence were found for cholesterol-lowering agents, blood pressure medications, antidepressants, and diuretics. The researchers were unable to confirm that these decreases in adherence were associated with observed changes in the utilization of healthcare services.

This is one of the first studies to look at the health care utilization and characteristics of members who reach their drug benefit threshold under Medicare Part D. The authors underscore the need for studies of longer duration. Further investigation is necessary in order to create new benefit structures for Medicare beneficiaries and to provide them with the best possible health care. The study was supported in part by the Agency for Healthcare Research and Quality (HS15476).

See “Effects of reaching the drug benefit threshold on Medicare members’ healthcare utilization during the first year of Medicare Part D,” by Marsha A. Raebel, Pharm. D., Thomas Delate, Ph.D., Jennifer L. Ellis, M.S.P.H., and Elizabeth A. Bayliss, M.D., M.S.P.H., in the October 2008 *Medical Care* 46(10), pp.1116-1122. ■

Seniors use fewer generic drugs as a result of Medicare Part D

Generic drugs offer the same benefit as name-brand drugs but at greatly reduced prices. A new study shows that since the Federal government began offering seniors help in paying for their prescription medications through Medicare Part D in 2005, many seniors have opted for brand-name medications over less expensive generic drugs.

Instead of generics, seniors were slightly more inclined to choose brand-name anti-inflammatories, antihistamines, beta blockers, and cholesterol-control drugs in 2006. Thus, they incurred more out-of-pocket expenses than before they were offered assistance through Medicare Part D. Generics accounted for 58 percent of all prescriptions in 2006 and the authors estimate that each generic prescription dispensed that year saved consumers and insurers about \$120. When generics offer the same

benefits as their name-brand counterparts and provide significant cost savings for consumers and insurers, the authors contend that shunning generics wastes money.

This slight decrease in the uptake of generics suggests that Medicare Part D's cost-saving benefits have not come to fruition, found the study. It compared 2005 with 2006 Medicare prescription data for 117,970 Medicare beneficiaries aged 67 to 79. This study was funded in part by the Agency for Healthcare Research and Quality (HS15699).

See "The impact of the Medicare Part D prescription benefit on generic drug use," by James X. Zhang, Ph.D., Wesley Yin, Ph.D., Shawn X. Sun, Ph.D., and G. Caleb Alexander, M.D., M.S., in the October 2008 *Journal of General Internal Medicine* 23(10), pp. 1673-1678. ■

Chronic Disease

The chronic care model improves care delivery and patient outcomes, but practices need better tools to implement it

The goal of the chronic care model (CCM) is to transform the daily care of patients with chronic illnesses from acute and reactive to proactive and planned. Practices redesigned in accord with the CCM generally improve care delivery and the outcomes of patients with various chronic illnesses, concludes a review of the literature. However, practices need better tools to implement the model. Katie Coleman, M.S.P.H., along with colleagues that include Cindy Brach, M.P.P., of the Agency for Healthcare Research and Quality, examined the CCM's effectiveness by reviewing articles published since 2000 that used one of five key CCM papers as a reference.

The evidence suggests that the CCM works as an integrated framework to guide practice

redesign. The CCM was designed to build on the interrelationships between six evidence-based elements that lead to improved clinical quality. For example, for patients to engage in proactive care (delivery system redesign), practices need to be able to view all of the patients in their panels (clinical information systems) who need certain guideline-based treatments (decision support), and patients must agree to any changes in their care and integrate them into their lives (self-management support).

Practices seem to give the most attention to information systems and the least attention to community linkages. Early collaborative projects demonstrated that implementing the CCM costs practices money in the short term,

but doing so improves health outcomes and may save money in the long run. Evidence on the cost-effectiveness of the CCM is just beginning to emerge. External financial incentives and quality improvement support may be needed for widespread practice change, especially for small practices.

See "Evidence on the chronic care model in the new millennium," by Katie Coleman, M.S.P.H., Brian T. Austin, B.A., Ms. Brach, and Edward H. Wagner, M.D., M.P.H., in the January/February 2009 *Health Affairs* 28(1), pp. 75-85. Reprints (AHRQ Publication No. 09-R016) are available from AHRQ.* ■

Newest diabetes medications are more costly and widely prescribed than older diabetes drugs

Accompanying the increase in the number of Americans diagnosed with Type 2 diabetes is the number of new drug classes available to treat this chronic condition. A new study finds that the newest drugs are more expensive and prescribed more frequently than the traditional drugs, whose use has declined. For instance, in 2001, the average price of a diabetes medication was \$56. In 2007, that average rose to \$76. During that same period, expenditures for diabetes drugs swelled from \$6.7 to \$12.5 billion nationally, an 87 percent increase.

The newer drugs to treat diabetes (including insulin analogues, glitazones, exenatide, and sitagliptin) have high price tags. They can cost 8 to 10 times more than the older drugs (insulin and sulfonylureas). However, analyses have not shown that the newer diabetes drugs offer better outcomes than the traditional drugs, according to G. Caleb Alexander, M.D., M.S., of the University of Chicago.

The authors also point out that the U.S. Food and Drug Administration approved glitazones and exenatide to be used in combination with other diabetes drugs. However, they are now being used off label as stand-alone drugs to control diabetes. This prescribing practice could pose a health risk to patients because safety assessments for the drugs have not been completed. The researchers used diabetes data from the National Disease and Therapeutic Index from 1994 to 2007 for this study, which was funded in part by the Agency for Healthcare Research and Quality (HS15699).

See “National trends in treatment of Type 2 diabetes mellitus, 1994-2007,” by Dr. Alexander, Niraj L. Sehgal, M.D., M.P.H., Rachael M. Moloney, B.A., and Randall S. Stafford, M.D., Ph.D., in the October 27, 2008 *Archives of Internal Medicine* 168(19), pp. 2088-2094. ■

Older patients with multiple chronic conditions desire personalized care plans from their providers

Care models that offer strategies for treating patients with chronic conditions such as diabetes often focus on one condition. As adults age, many juggle multiple chronic conditions that have competing requirements, but no care model exists for those patients. Elizabeth A. Bayliss, M.D., M.S.P.H., of Kaiser Permanente Institute for Health Research, and her colleagues interviewed 26 elderly patients who suffered from at least 3 chronic conditions (diabetes, arthritis, and depression) to determine what elements should be included in a care model that addresses multiple chronic health conditions.

The patients, most of whom had four to nine chronic conditions, stressed the need to have an ongoing relationship with their

providers so they did not have to spend time educating new providers on their health histories. They also voiced a need for a single care coordinator who could serve as a liaison among providers so patients would not have to continually update all their providers on changes to their health status. They said they wanted convenient access to their providers, including specialists, via telephone, Internet, or in person. However, many viewed in-person visits as a last resort because they did not want to make appointments when they merely needed a question answered. These patients also wanted clear, written care plans so they did not have to rely on their memories. Because they believed themselves to be familiar with their conditions, patients

appreciated when their providers took their perspective into account when creating treatment plans.

A system that has these features, the authors suggest, may be labor intensive for the health care system. Identifying which patients would most benefit from this type of support and the right time to provide it should be a future research topic. This study was funded in part by the Agency for Healthcare Research and Quality (HS15476).

See “Processes of care desired by elderly patients with multimorbidities,” by Dr. Bayliss, Allison E. Edwards, John F. Steiner, M.D., M.P.H., and Deborah S. Main, Ph.D., in the August 2008 *Family Practice* 25(4), pp. 287-293. ■

Higher education and income levels are associated with increased willingness to pay for a psoriasis cure

Psoriasis is a chronic, incurable skin disease. It can affect patients' quality of life with symptoms that range from red, scaly patches on the skin to swollen, stiff joints when it is accompanied by arthritis. A new study from Harvard Medical School finds that 90 percent of patients report that their psoriasis causes physical discomfort with pain, itching, burning, or stinging. These patients also indicate a willingness to pay from \$500 to \$5,000 for a cure for these symptoms.

The disease can also take an emotional and social toll on patients. More than 80 percent reported their psoriasis made them anxious, depressed, or uncomfortable shaking hands with people. These patients indicated a willingness to pay an average of \$1,000 for a cure.

Individuals with high household incomes and high education levels often reported they were willing to pay

high amounts for a cure. By measuring a willingness to pay, the researchers believe they can generate quantitative quality of life data. In turn, this information can help physicians better understand how diseases like psoriasis affect their patients' quality of life and can be used in therapeutic decisionmaking. A larger study is needed to validate this willingness-to-pay research method, which was conducted with 40 patients with psoriasis. This study was funded by the Agency for Healthcare Research and Quality (HS14010).

See "Willingness-to-pay stated preferences for 8 health-related quality-of-life domains in psoriasis: A pilot study," by Matthew Delfino, Jr., M.B.A., Elizabeth W. Holt, M.P.H., Charles R. Taylor, M.D., and others in the September 2008 *Journal of the American Academy of Dermatology* 59(3), pp. 439-447. ■

Acute Care/Hospitalization

Simulation exercise for hospital resuscitation teams pinpoints training and patient safety issues

Simulating real-world medical emergencies can help medical staff prepare for actual events. When a newly constructed hospital employed simulation to familiarize its cardiac resuscitation team (Code Blue Team) with the layout of the facility, researchers were able to identify several measures that could improve staff response times and patient safety. Jose F. Pliego, M.D., of Texas A&M Health Science Center College of Medicine, and colleagues examined the response of a hospital's Code Blue Team members as they practiced 12 mock code exercises. They found that 67 percent of Code Blue Team members readily knew where their assistance was needed, but 32 percent did not. The authors suggest that a classroom-based

orientation for a new facility is insufficient for ensuring that staff can rapidly reach a location where a code was being called. The simulation also uncovered the problems of nonfunctioning overhead speakers, locked stairways, and elevators that did not let passengers override other floor requests that prevented Code Blue Team members from promptly responding to a code.

Practice guidelines indicate that the shorter the time a patient must wait to be resuscitated, the better his or her chance of survival. At this hospital, the average time for the first medical staff member to arrive was 42 seconds. However, for 7 of the 12 mock codes, the first responder was not a member of the Code Blue Team. This led to the

recognition that non-Code Blue Team members should receive additional cardiac resuscitation training because they are often charged with managing a patient in cardiac arrest before the Code Blue Team members arrive. This study was funded in part by the Agency for Healthcare Research and Quality (HS16634).

See "Using simulation to orient Code Blue Teams to a new hospital facility," by Frank J. Villamaria, M.D., M.P.H., Dr. Pliego, Hania Wehbe-Janek, Ph.D., and others in the Winter 2008 *Simulation in Healthcare: Journal of the Society for Simulation in Health Care* 3(4), pp. 209-216. ■

Antibiotic use and diarrhea are factors in hospital room contamination with vancomycin-resistant organisms

The antibiotic vancomycin is often used as a last resort when others have failed, which is why vancomycin-resistant infections can be serious. Yet, a new study found that one-fourth of all patients colonized with vancomycin-resistant enterococci (VRE) contaminated their rooms during their intensive care unit (ICU) stay. Diarrhea, overall antibiotic use, and higher VRE colonization rates in the ICU (ICU colonization pressure) were risk factors for room contamination. For example, higher mean ICU colonization pressure increased by 44 percent the risk of room contamination. Presumably, health care workers carry VRE from colonized to noncolonized patients and their environment. The resulting room contamination may be one mechanism of increased VRE transmission, explain the researchers.

They examined room contamination among 143 VRE-colonized patients during a 14-month study in two ICUs at one hospital. One-fourth of the patients had an associated VRE-positive environmental culture. Not taking any antibiotic during VRE was protective against room contamination. Patients who contaminated their rooms were more likely to have diarrhea than those who did not contaminate their

rooms (66 vs. 38 percent) and were more likely to have received antibiotics while VRE colonized (94 vs. 80 percent).

There was no significant difference in room contamination rates between patients taking antianaerobic antibiotics and those taking nonantianaerobic antibiotics. However, diarrhea and antibiotic use were strongly confounded, since most of the patients with diarrhea were taking antibiotics that often cause diarrhea. Nevertheless, the data suggest that most of the increased risk of room contamination was the result of antibiotic use. The authors conclude that, although antibiotic therapy may be life-saving for ICU patients, limiting the use of antibiotics when possible and choosing less diarrheogenic antibiotics when feasible may help to limit room contamination. The study was supported by the Agency for Healthcare Research and Quality (T32 HS00060).

See “Antibiotic exposure and room contamination among patients colonized with vancomycin-resistant enterococci,” by Marci Drees, M.D., M.S., David R. Snyderman, M.D., F.A.C.P., Christopher H. Schmid, Ph.D., and others, in the August 2008 *Infection Control and Hospital Epidemiology* 29(8), pp. 709-715. ■

Older males with underlying health conditions are at a high risk of dying from intestinal bleeding in hospitals

Nearly 4 percent of hospitalized patients who have bleeding in their lower intestines die in the hospital, according to a national study. Compared with patients who were discharged from the hospital after a diagnosis of lower intestinal bleeding, the 8,737 patients who died in the hospital tended to be older than 70 and male. They also had underlying health conditions, including intestinal ischemia (diminished blood flow to the small intestine or colon).

The patients who died also tended to have clotting disorders and hypovolemia (an abnormal

decrease in blood volume), required blood transfusions (indicating that their bleeding was severe), and began bleeding after they were hospitalized with another condition. Patients who underwent diagnostic tests were also less likely to die than patients who did not undergo tests.

These findings indicate that supportive care and addressing the conditions that are causing the bleeding may do more to improve survival rates for lower intestinal bleeding than early therapeutic interventions, note Lisa L. Strate, M.D., M.P.H., of the University of Washington School of Medicine,

and her colleagues at Brigham and Women’s Hospital. Their findings were based on 2002 data from the Healthcare Cost and Utilization Project Nationwide Inpatient Sample. This study was funded in part by the Agency for Healthcare Research and Quality (HS14062).

See “Risk factors for mortality in lower intestinal bleeding,” by Dr. Strate, John Z. Ayanian, M.D., M.P.P., Gregory Kotler, Ph.D., and Sapna Syngal, M.D., M.P.H., in the September 2008 *Clinical Gastroenterology and Hepatology* 6(9), pp. 1004-1010. ■

Hospitalists and general internists provide similar quality of care for patients with congestive heart failure

Some research has suggested that the use of hospitalists to integrate inpatient treatment can reduce cost and length of a hospital stay without increasing readmissions or reducing patient satisfaction. A new study found that hospitalists did not improve the quality of care received by patients with congestive heart failure when compared with care provided by general internists. However, hospitalists' patients were nearly twice as likely to have a 30-day followup.

The researchers used retrospective data from the Multicenter Hospitalist Study, which tracked all 31,000 patients admitted to 6 academic medical centers over a 2-year period. Of the 372 patients with acute congestive heart failure, hospitalists cared for 120 patients and nonhospitalists cared for 252 patients. Each group of patients had comparable odds of assessment of left ventricular ejection fraction (a measure of the heart's pumping power), of treatment with an angiotensin-converting enzyme inhibitor and/or angiotensin receptor blocker, or of beta-blocker prescription. However, patients treated by hospitalists

were almost twice as likely as patients of internists to have a 30-day followup after release from the hospital, a significant difference.

There were no significant differences in the two groups regarding other quality measures examined: frequency of cardiac testing, length of hospital stay, costs, or risk for hospital readmission or death by 30 days after discharge. Although academic hospitalists and internists provide similar quality of care for heart failure patients, hospitalists seem to pay more attention to longitudinal (that is, followup) care, conclude the researchers. The study was funded in part by the Agency for Healthcare Research and Quality (HS10597 and HS11416).

More details are in "Quality of care for decompensated heart failure: Comparable performance between academic hospitalists and non-hospitalists," by Eduard E. Vasilevskis, M.D., David Meltzer, M.D., Ph.D., Jeffrey Schnipper, M.D., M.P.H., and others in the September 2008 *Journal of General Internal Medicine* 23(9), pp. 1399–1406. ■

Outcomes/Effectiveness Research

Two interventions to increase the physical activity of people with multiple sclerosis fare equally well

Exercise may help slow the progression of multiple sclerosis (MS), an incurable autoimmune disease that causes fatigue, poor balance, and muscle weakness. These symptoms, however, often discourage people with MS from exercising regularly. Matthew A. Plow, Ph.D., of Brown University, and colleagues studied the effects 2 exercise programs had on 39 patients with MS to determine how the programs affected the patients' attitudes toward exercise and themselves. Surprising the researchers, four one-on-one sessions with a physical therapist were as well-received as a 7-week group education program. The researchers expected the group sessions to be more effective in increasing physical activity because they incorporated behavioral change theory.

Participants may have succeeded equally in both interventions because they had a strong desire to please their instructors or because their physical therapists helped remove some of the barriers to exercise they had formerly experienced.

After the interventions, both groups had less fatigue, improved strength, lowered body fat percentages, and improved resting heart rates. Participants who were physically active before the intervention improved 51 to 73 percent after completing the exercise programs compared with those who did not have a history of physical activity.

What did not improve was the participants' belief that they could overcome obstacles to exercise regularly or their expectations that

they would be able to complete a 16-week exercise program on their own. The authors suggest that interventions to increase physical activity should include opportunities to exercise, so these perceived obstacles diminish. Social support for exercise from family members and friends is also necessary to ensure regular exercise occurs. This study was funded in part by the Agency for Healthcare Research and Quality (HS15554).

See "Multiple sclerosis: Impact of physical activity on psychosocial constructs," by Dr. Plow, Virgil Mathiowetz, Ph.D., O.T.R., and Linda Resnick, Ph.D., O.C.S., P.T., in the November/December 2008 *American Journal of Health Behavior* 32(6), pp. 614-626. ■

Lower socioeconomic status results in poor physical and mental health outcomes for patients with lupus

Systemic lupus erythematosus (SLE) is an autoimmune disease that predominantly affects women. Patients with SLE have twice the risk of dying compared to the general population. Socioeconomic status (SES) of patients—as well as their neighborhoods—can impact SLE outcomes. Researchers from the University of California San Francisco found that patients with SLE who also are in low SES have worse physical functioning and more depressive symptoms.

They looked at data from the Lupus Outcomes Study, which surveyed 957 patients with SLE over the telephone. Questions were asked about symptoms, physical functioning, and signs of depression. In addition, SES was determined for each patient as well as for the neighborhood where they lived. Most of the participants were female (91 percent) and white (66 percent), with equal numbers of blacks, Asians, and Hispanics.

Three factors were associated with increased disease activity: lower education level, lower income level, and poverty status. The study demonstrated a consistent and

significant association between lower SES and poorer physical functioning. It was also linked to a higher rate of depressive symptoms. Patients who were poor and living in high poverty neighborhoods had a depression rate of 76 percent compared with 32 percent of patients who were neither poor nor living in poverty areas. The rates of depressive symptoms remained significantly higher for residents of high poverty areas, even when the researchers controlled for education, household income, or household poverty status. Based on this finding, the researchers suggest that clinicians take into consideration a patient's residential environment when planning optimal care for SLE. The study was supported in part by the Agency for Healthcare Research and Quality (HS13893).

See “The role of neighborhood and individual socioeconomic status in outcomes of systemic lupus erythematosus,” by Laura Trupin, M.P.H., M. Christine Tonner, M.P.H., Jinoos Yazdany, M.D., M.P.H., and others, in the September 2008 *Journal of Rheumatology* 35(9), pp. 1782-1788. ■

Preventive Care

Immigrants use fewer preventive services than U.S. natives

Immigrants who come to the United States typically are in better health than U.S. natives. However, the longer they stay, the more their health assimilates to match that of U.S. natives. In a new study, Agency for Healthcare Research and Quality researchers Yuriy Pylypchuk, Ph.D., and Julie Hudson, Ph.D., compared immigrants' and U.S. natives' use of preventive care services to determine if this factor contributes to the decline in immigrants' health. When immigrants do not receive preventive services, they may be putting themselves at risk for having costly health conditions that might have been prevented if caught early, according to the authors.

Compared with immigrants, U.S. natives had more medical and dental visits, received more flu shots, and were screened more often for high cholesterol levels and cervical, breast, and prostate cancers. For example, 74 percent of natives had medical visits compared with 51 percent of immigrants, and 41 percent of natives had dental checkups compared with 22 percent of immigrants. Although immigrants' use of preventive services increases the longer they stay in the United States, their use never matches that of U.S. natives. Immigrants are more likely than natives to be uninsured when they arrive in the United States but tend to gain insurance the longer

they stay in the country. However, even immigrants who obtained continuous private health coverage were less likely than U.S. natives to use preventive services. Immigrants may forego preventive care services because they do not understand that these services are covered by their insurance, they have other bills to pay, or must devote time and effort to adapt to a foreign environment, leaving less time to devote to preventive care. The authors suggest that programs stressing the importance of preventive services may improve immigrants' behavior toward preventive care. The researchers used Medical

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Expenditure Panel Survey data from 2000 to 2004 for their study.

See “Immigrants and the use of preventive care in the United

States,” by Drs. Pylypchuk and Hudson in the August 2008 *Health Economics*. Reprints (AHRQ Publication No. 09-R025) are available from AHRQ.* ■

Agency News and Notes

Hospital outpatient department and office-based provider visits for high cholesterol and other conditions soared in a decade

Americans visited a hospital outpatient department or office-based provider for high cholesterol 300 percent more often in 2006 than they did in 1996, according to data from the Agency for Healthcare Research and Quality (AHRQ). This translates to 44 million visits for treatment of high cholesterol in 2006.

Trauma-related disorders and mental disorders prompted the most visits in 2006, just as they did in 1996. In addition to high cholesterol, AHRQ’s analysis included other health conditions that showed significant growth in visits between 1996 and 2006.

Visits for:

- Kidney disease grew 112 percent (41 million in 2006)

- Thyroid disease grew 96 percent (20.9 million)
- Diabetes grew 96 percent (70 million)
- Gallbladder, pancreatic, and liver disease grew 94 percent (8.6 million)
- Upper gastrointestinal disorders such as acid reflux grew 76 percent (22.3 million)

This analysis was based on data from AHRQ’s Medical Expenditure Panel Survey (www.meps.ahrq.gov/mepsweb). MEPS collects information each year from a nationally representative sample of U.S. households about their health care use, expenses, access to services, health status, and the quality of the health care they obtained. ■

New MEPS Statistical Brief examines the level of health expenditures over time

A new analysis by AHRQ’s Steven B. Cohen, Ph.D., and William Yu, M.A., found that the top 10 percent of Americans, in terms of the cost of treating their health problems, accounted for about 64 percent of medical care spending in both 2005 and 2006. About 45 percent of the 12 million people in this top 10 percent were age 65 or older, and 36 percent were between 45 and 64 years of age. The AHRQ researchers also found that roughly 81 percent were non-Hispanic whites, 11 percent were non-Hispanic blacks, 7 percent Hispanics,

and under 2 percent Asian or Pacific Islanders, while women comprised about 60 percent of the overall group. Of those under 65 years of age, approximately 65 percent had private health insurance, 33 percent had public-only insurance, and 2.5 percent were uninsured in 2006. The researchers further found that about 35 percent were high income, 26 percent middle income, 16 percent poor, 13 percent low income, and 9.5 percent were near poor. The analysis focused on community-dwelling people. AHRQ’s Medical Expenditure Panel Survey, the basis

for this analysis, does not include people in nursing homes or other institutions. For further information, including data on other tiers ranked by expenditures, such as the top 1 percent or bottom 50 percent, as well as changes in the composition of these groups between 2005 and 2006, see *The Concentration and Persistence in the Level of Health Expenditures over Time: Estimates for the U.S. Population, 2005-2006*, MEPS Statistical Brief 236 at www.meps.ahrq.gov/mepsweb/data_files/publications/st236/stat236.pdf. ■

The Northeast United States has the most hospitalizations for brain cancer

People in the Northeastern United States are one-third more likely than those in the South or West to be hospitalized for treatment of brain cancer or to have brain cancer when they are hospitalized for another illness or complication, according to data from the Agency for Healthcare Research and Quality (AHRQ).

In 2006, about 30 of every 100,000 people in the Northeast were hospitalized with brain cancer. That compares with 23 per 100,000 for people in both the South and West. The rate was slightly higher for people in the Midwest—25 per 100,000. AHRQ's analysis also shows that in 2006:

- Nationally, the hospitalization rate for brain cancer remained stable since 1995—about 35,000 hospital stays a year.
- An additional 38,000 hospital admissions were associated with brain cancer—mostly for chemotherapy or radiotherapy to continue treatment, or for convulsions, pneumonia, or other

complications from the disease. These hospitalizations increased 18 percent since 1995.

- Among people over 65, men were 62 percent more likely to be hospitalized primarily for brain cancer and 55 percent more likely to be hospitalized with brain cancer as a secondary diagnosis than were women.
- While 6.2 percent of hospital patients admitted for brain cancer died while hospitalized in 1995, the rate dropped to 4.4 percent in 2006.

For more information, see *Hospitalizations for Brain Cancer, 2006*, HCUP Statistical Brief #68. The report uses statistics from the 2006 Nationwide Inpatient Sample, a database of hospital inpatient stays that is nationally representative of inpatient stays in all short-term, non-Federal hospitals. The data are drawn from hospitals that comprise 90 percent of all discharges in the United States and include all patients, regardless of insurance type, as well as the uninsured. ■

Uninsured Americans with asthma are less likely to take daily preventive medicine

About 6.7 million Americans with current asthma take daily medicine to prevent asthma attacks, but uninsured people under age 65 are only about half as likely to take the drugs as are insured sufferers, according to data from the Agency for Healthcare Research and Quality (AHRQ).

Asthma is a chronic lung disease that inflames and narrows the airways (tubes that carry air in and out of the lungs). It causes recurring periods of wheezing, chest tightness, shortness of breath, and coughing. In 2006, about 21 million Americans had “current asthma,” meaning they experienced an asthma attack within the last 12 months or reported they still had the disease.

AHRQ also found that in 2006:

- About 30 percent of insured persons under age 65 with current asthma, but only 18 percent of those the same age without insurance, were taking asthma daily preventive medicine.
- Among people 65 and older with current asthma, about 48 percent were taking asthma daily preventive medicine. That was higher than all other age groups.
- While about 35 percent of whites with current asthma were taking asthma daily preventive medicine, the percentage was lower for both blacks (25 percent) and Hispanics (23 percent.)

- The likelihood of taking daily preventive medicine for asthma did not vary by family income.

AHRQ, which is part of the U.S. Department of Health and Human Services, works to enhance the quality, safety, efficiency, and effectiveness of health care in the United States. These data are taken from the Medical Expenditure Panel Survey (MEPS), a detailed source of information on the health services used by Americans, the frequency with which they are used, the cost of those services, and how they are paid. For more information, go to *Asthma Preventive Medicine in 2006 – Who Takes Them?* Statistical Brief #237 (www.meps.ahrq.gov/mepsweb/data_files/publications/st237/stat237.pdf) ■

A new tool helps companies estimate costs and possible savings for diabetes care

Developed by the Agency for Healthcare Research and Quality (AHRQ), the Diabetes Cost Calculator is designed to help companies better estimate how they can save money while still paying health care costs for employees who have diabetes.

Diabetes is one of the most common chronic conditions in the United States. More than 23 million Americans have diabetes and, of those, approximately 14 million are working-age adults. The direct medical costs for treating diabetes are \$116 billion, not including the costs for people with undiagnosed diabetes, with an additional \$58 billion spent for indirect costs such as missed workdays, according to data from the American Diabetes Association. In addition, according to AHRQ data, diabetes accounted for more than 70 million outpatient visits in the United States, a 96 percent increase between 1996 and 2006.

AHRQ'S Diabetes Cost Calculator will allow companies to estimate bottom-line costs for diabetes care and calculate the savings that could be realized through better management of the disease. The tool makes these estimates based on the type, location, and size of a business and other factors including:

- Number of people with diabetes

- Annual diabetes-related medical costs
- Annual diabetes-related productivity costs
- Potential savings associated with better management of diabetes

The potential savings can be adjusted based on the percentage of employees who are likely to be helped. For example, a 1 percent reduction in average hemoglobin levels, which help determine how well blood sugar has been controlled, could save an Illinois manufacturing company with 500 employees over \$40,000 a year in direct health care expenses and lost productivity costs among its employees and dependents with diabetes. In another example, that same reduction in hemoglobin levels for a college in Mississippi with 1,000 employees could save over \$100,000 by helping its employees and their dependents with diabetes better manage their diabetes care.

AHRQ developed the Diabetes Cost Calculator in response to a request from the Mid-Atlantic Business Group on Health and in partnership with the National Business Coalition on Health. To view the Diabetes Cost Calculator, go to www.ahrq.gov/populations/diabcostcalc. ■

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

Three new members have joined the U.S. Preventive Services Task Force. They are: Susan Curry, Ph.D., of Iowa City; Joy Melnikow, M.D., M.P.H., of Sacramento; and Wanda Nicholson, M.D., M.P.H., M.B.A., of Baltimore.

Dr. Curry is the dean of the College of Public Health and distinguished professor of health management and policy at the University of Iowa. She is currently vice chair of the American Legacy Foundation's board of directors and a member of the National Cancer Institute's board of scientific advisors. Dr. Curry's research focuses on disease prevention and behavioral risk factor modification with a primary focus on tobacco use. Dr. Curry's research in tobacco includes studies of motivation to quit smoking, randomized trials of promising smoking cessation and prevention

interventions, evaluations of the use and cost effectiveness of tobacco cessation treatments under different health insurance plans, and health care costs and utilization associated with tobacco cessation.

Dr. Melnikow is a professor in the Department of Family and Community Medicine and associate director of the Center for Healthcare Policy and Research at the University of California Davis. She is currently a deputy editor of *Medical Care*, standing member of the health services organization and delivery study section at the National Institutes of Health, contributing member of the California Health Benefits Program Task Force for the University of California's Office of the President, and associate medical director of Healthwise, Inc. Dr. Melnikow's

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research interests include cost-effectiveness analysis to assist clinical and public health policy formulation, cancer prevention in women, patient preferences and decision making, underserved populations, and health disparities.

Dr. Nicholson, a board-certified obstetrician-gynecologist and a perinatal epidemiologist, is an associate professor in the departments of gynecology and obstetrics and population, family, and reproductive health at the Johns Hopkins School of Medicine and Bloomberg School of Public Health in Baltimore. She is currently a member of the American College of Obstetricians and Gynecologists' committee on health care for underserved women and of the Centers for Disease Control and Prevention's public health working group on preconception care and health care. Dr. Nicholson's research focuses on the epidemiology of

chronic conditions in women, including gestational diabetes, type 2 diabetes, obesity, and the effect of depressive symptoms on health-related quality of life.

Editor's note: The U.S. Preventive Services Task Force is the leading independent panel of experts in prevention and primary care. The Task Force, which is sponsored by AHRQ, consists of 16 health care experts in the specialties of family medicine, pediatrics, internal medicine, obstetrics and gynecology, geriatrics, preventive medicine, public health, behavioral medicine, and nursing. It conducts rigorous, impartial assessments of the scientific evidence for the effectiveness of a broad range of clinical preventive services, including screening, counseling, and preventive medications. Its recommendations are considered the gold standard for clinical preventive services. More information about the Task Force can be found on the AHRQ Web site at www.preventiveservices.ahrq.gov. ■

AHRQ issues recommendations for safeguarding children during public health emergencies

The Agency for Healthcare Research and Quality (AHRQ) has released two new tools designed to protect and care for children who are in a hospital or a school during a public health emergency.

The first tool consists of guidelines to assist pediatric hospitals in converting from standard operating capacity to surge capacity and help community hospital emergency departments provide care for large numbers of critically ill children. Emergency response planners have to take into account differences between children and adults such as children's faster breathing rates, immature immune systems, limited self-preservation skills, greater risk of illness from exposure to extreme heat or cold, and greater risk of post-traumatic stress disorder. The tool addresses needs such as communications, staff responsibilities, triaging, stress management, and security concerns when handling large numbers of

children with either communicable respiratory diseases or communicable foodborne or waterborne illnesses.

The second tool is a national model for school-based emergency response planning. It provides guidance on the recommended steps for both creating and implementing a school-based emergency response plan. Steps outlined include performing needs assessments, conducting site surveys, developing training modules for school staff, and informing parents of the plan, as well as steps relating to building security and safety, preparation for large-scale emergencies, sheltering-in-place and lockdown, evacuation, relocation, and communications. Included with the guidance is a model school-based emergency response plan developed by the Brookline, Massachusetts, school district in cooperation with the Center for Biopreparedness, the division of Harvard Medical School

that prepared both sets of guidelines under contract to AHRQ.

Pediatric Hospital Surge Capacity in Public Health Emergencies (www.ahrq.gov/prep/pedhospital/) and *School-Based Emergency Preparedness: A National Analysis and Recommended Protocol* (www.ahrq.gov/prep/schoolprep/) are available on AHRQ's Web site. Free printed copies are available from the AHRQ Publications Clearinghouse.*

Editor's note: AHRQ has other tools that can be used for pediatric emergency preparedness planning. One such tool is *Decontamination of Children: Preparedness and Response for Hospital Emergency Departments*, a 27-minute video that illustrates for emergency responders and hospital emergency department staff how to safely decontaminate children who have been exposed to hazardous chemicals, including those from a

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bioterrorist attack. In addition, *Pediatric Terrorism and Disaster Preparedness: A Resource for Pediatricians*, is a comprehensive report that is a practical resource that pediatricians can consult to plan for and respond to natural

disasters and bioterrorist events. Its summary highlights significant parts of the report for quick reference.

AHRQ has supported more than 60 emergency preparedness-related studies, workshops, and conferences to help hospitals and health care systems prepare for

public health emergencies. Many of these projects were made possible through collaboration with HHS' Office of the Assistant Secretary for Preparedness and Response, and other Federal agencies. More information about these projects can be found online at www.ahrq.gov/prep/. ■

AHRQ releases a new tool to help improve patient safety

The *Medical Office Survey on Patient Safety Culture*, a new evidence-based tool from the Agency for Healthcare Research and Quality (AHRQ), can help health care providers assess how their staff views different areas of patient safety. The results can be used to target areas for improvement and build a stronger patient safety culture within the organization.

The survey captures opinions from all levels of staff on important dimensions that relate to patient safety and quality issues, communication about error, communication openness, information exchange with other settings, office processes and standardization, organizational learning, staff training, teamwork, and work pressure and pace.

It includes survey forms and a user's guide that explains the survey process, discussing such topics as overall project planning, data collection procedures and analysis and report creation. The free, easy-to-use survey toolkit provides:

- Easy-to-understand survey questions that take approximately 10-15 minutes to complete.
- Ability to gain knowledge of how all staff, from administrators and clerical staff to clinicians, view patient safety culture within the medical office.
- Ability to track changes in patient safety culture over time and evaluate improvement efforts.
- Access to a survey users' group for sharing success stories and implementation strategies.
- Data to compare your office's findings to others.
- Contact information for obtaining free technical assistance related to questions on survey administration, data collection, and analysis.

The new survey is an expansion of AHRQ's *Hospital Survey on Patient Safety Culture*. It is free and available on AHRQ's Web site at www.ahrq.gov/qual/hospculture. ■

Call for papers on payment reform

The Agency for Healthcare Research and Quality (AHRQ) is calling for original papers on payment reform for a special theme issue of the journal *HSR*. Experts agree that changing the way providers are paid must be part of the solution to the problems of rising costs, falling access, and uncertain quality in health care, but little

comparable evidence has been published to date about the intended and unintended consequences of different approaches. AHRQ, which is partnering with *HSR*, is especially interested in papers on comparative evidence, but also wants research, evaluations, or policy analysis papers, as well as models, simulations, and

theoretical work. The submission deadline for manuscripts is June 23, 2009, at 5 p.m. PT. The anticipated publication date in print for the *HSR* theme issue on payment reform is August 2010. For details please go to www.hsr.org/hsr/abouthsr/call-for-papers-payment-reform.jsp. ■

Chien, A. T., and Chin, M. H. (2009, January). "Incorporating disparity reduction into pay-for-performance." (AHRQ grant HS17146). *Journal of General Internal Medicine* 24(1), pp. 135-136.

One concern about pay-for-performance (P4P) strategies is their potentially negative impact on racial/ethnic disparities in care. The authors of this paper suggest four ways that payors and policymakers can incorporate disparity reduction goals into existing P4P programs. P4P strategies should take into account whether existing disparities are driven by differential treatment of minority patients by health care providers within the same institution, or by minority patients tending to be cared for by lower quality providers. These strategies should employ performance measures that target disparity reduction, such as treatment gaps in breast cancer screening and treatment. P4P programs should reward performance improvement in addition to achievement. Finally, payors and health care organizations should tie P4P incentives to disparity reduction by stratifying quality of care data by racial/ethnic groups.

Chou, R., Aronson, N., Atkins, D., and others. (2008, September). "Assessing harms when comparing medical interventions: AHRQ and the effective health-care program." *Journal of Clinical Epidemiology*, available online at [www.jclinepi.com/article/S0895-4356\(08\)00161-3/abstract](http://www.jclinepi.com/article/S0895-4356(08)00161-3/abstract).

Comparative effectiveness reviews (CERs) systematically review and evaluate the evidence on alternative interventions to help

clinicians, policymakers, and patients make informed treatment choices. The authors of this paper caution that CERs should assess harms and benefits to provide balanced assessments of alternative interventions. They provide guidance for evaluating harms when conducting and reporting CERs. They suggest prioritizing harms to be evaluated, use of consistent and precise terminology related to reporting of harms, and selection of a broad array of evidence sources on harms. They also discuss assessment of risk of bias in harms reporting, and the synthesis and reporting of evidence on harms. Finally, they suggest caution when drawing conclusions on harms when events are rare and risk estimates are imprecise.

Cohen, S. B., and Yu, W. W. (2009, January). "The utility of prediction models to oversample the long-term uninsured." *Medical Care* 47(1), pp. 80-87.

It is important to distinguish between persons who are uninsured for short periods of time and those who are uninsured for several years, who face high out-of-pocket costs. Prediction models to oversample the long-term uninsured are viable sampling methodologies for adoption in national health care surveys, conclude the authors of this paper. They used nationally representative data from the Medical Expenditure Panel Survey (MEPS) to examine national estimates of nonelderly adults without health insurance coverage for 2 consecutive years. They also used the MEPS data to develop prediction models to identify individuals most likely to experience long-term spells without coverage. Use of their models for

oversampling allowed the cost-effective selection of the targeted sample of individuals who are continuously uninsured for 2 consecutive years. Reprints (AHRQ publication no. 09-R029) are available from AHRQ.*

Frick, K., Clark, M., Steinwachs, D., and others. (2009, January-February). "Financial and quality-of-life burden of dysfunctional uterine bleeding among women agreeing to obtain surgical treatment." (AHRQ grant HS09506). *Women's Health Issues* 19(1), pp. 70-78.

Women who suffer from abnormally heavy uterine bleeding experience decreased quality of life as well as financial burdens. The cramps and pain they experience can lead to fatigue and limited physical activity, and the costs of medication, tampons, and pads also add up over time. A new study finds that lost productivity costs from missed work or not being able to manage their homes averaged \$2,625 a year for these women, and out-of-pocket costs for drugs and sanitary products averaged \$333 a year. Although hysterectomy is the only surgery that eliminates the dysfunctional uterine bleeding, it is a costly procedure that requires significant recovery time. However, considering the costs, both financial and to the women's quality of life, the researchers conclude that a surgical treatment that costs \$40,000 or more would be cost effective in lieu of unsuccessful medical treatment. They studied 237 women who had surgery for their dysfunctional uterine bleeding from 1997 to 2001.

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Harrison, M. I., and Kimani, J. (2009, January-March). “Building capacity for a transformation initiative: System redesign at Denver health.” *Health Care Management Review* 34(1), pp. 42-53.

This article examines prior factors that led to successful care system redesign at Denver Health (DH), a large, integrated, urban, safety-net system. For example, clinical reengineering projects to preserve DH’s safety-net services during the 1990s paved the way for introduction of lean design in 2004. DH leaders’ personal ties, status, knowledge, and past experience in improvement efforts also helped, including facilitating political and financial support by the city of Denver. DH’s preexisting organizational structure and expanded human resource capacities (for example, upgrading the skills of DH’s nurses, physicians, and middle managers) during the prior decade also contributed to the launch and implementation of system redesign. Finally, in the 1990s DH had built a sophisticated health information technology infrastructure and had modernized and expanded its physical infrastructure. Reprints (AHRQ publication no. 09-R017) are available from AHRQ.*

Hughes, R. G., and Clancy, C. M. (2009, January-March). “Nurses’ role in patient safety.” *Journal of Nursing Care Quality* 24(1), pp. 1-4.

Nurses, who work at the frontline of care delivery, play a critical role in improving patient safety, assert the authors of this commentary. They note that improving the quality and safety of health care will require purposeful redesign of health care

organizations and processes. Organizations committed to high quality and safe care will not blame nurses for mistakes at the “sharp end” of care, but will focus instead on system improvements. The Agency for Healthcare Research and Quality (AHRQ) has long been a partner in the national endeavor to improve health care quality. The handbook, *Patient Safety and Quality: An Evidence-Based Handbook for Nurses*, provides nurses with proven techniques and interventions they can use to enhance patient and organizational outcomes. The handbook (www.ahrq.gov/qual/nursesfdbk) was developed by AHRQ with support from the Robert Wood Johnson Foundation.

Liang, H., Tomey, K., Chen, D., and others. (2008, August). “Objective measures of neighborhood environment and self-reported physical activity in spinal cord injured men.” (AHRQ grant HS11277). *Archives of Physical Medicine and Rehabilitation* 89, pp. 1468–1473.

Obesity-related risk factors are associated with lower levels of physical activity in men with spinal cord injuries, according to a new study. The researchers gathered medical and address information for 131 young to middle-aged men with spinal cord injuries living in Chicago who used a wheelchair for mobility. A lower level of physical activity was associated with the following obesity-related risk factors: elevated triglycerides in the blood, metabolic syndrome (having at least three of the following: abdominal obesity, elevated triglycerides, reduced high-density lipoprotein levels, elevated blood pressure, and elevated fasting blood glucose), and high blood levels of C-reactive protein (an indication of inflammation). Men in the highest

third of the group in terms of physical activity had 81 to 85 percent lower risk of these risk factors compared with men in the lowest third. Although lower physical activity was associated with neighborhood environmental characteristics, only the total neighborhood crime rate was significantly associated with lower physical activity, after accounting for multiple factors.

Liu, S. Y. (2009, January-February). “Hospital readmissions for childhood asthma: The role of individual and neighborhood factors.” (AHRQ cooperative agreement with the Centers for Disease Control and Prevention). *Public Health Reports* 124, pp. 65-78.

Differences in health care coverage are linked to higher readmission rates for pediatric asthma. However, the relationship between neighborhood inequality and children’s repeat hospitalizations for asthma require further research, conclude the authors of this study. They analyzed Rhode Island hospital discharge data from 2001 to 2005 to identify 2,919 children at the time of their first asthma hospitalization. During the study period, 15 percent of those children were readmitted to the hospital for asthma. After adjusting for several factors, the crowded housing conditions, proportion of racial/ethnic minority residents, or poverty of disadvantaged neighborhoods did not affect rehospitalization rates. However, children insured by Medicaid at the time of their initial admission had readmission rates that were 33 percent higher than children who were privately insured. The authors suggest further

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study of the link between neighborhood markers of economic disadvantage and asthma disparities.

Platt, R., Madre, L., Reynolds, R., and Tilson, H. (2008). “Active drug safety surveillance: A tool to improve public health.” (AHRQ grant HS13474).

Pharmacoepidemiology and Drug Safety 17, pp. 1175-1182.

The Centers for Education and Research on Therapeutics recently convened experts from academia, government, and industry to assess strategies to improve the U.S. system for identifying and evaluating potential drug safety signals. They concluded that a public-private partnership to create a network of government and private data to enable evaluation of routine and priority safety questions is in the public interest. However, better methods are needed to address the limitations of pharmacoepidemiology, and a knowledgeable workforce is needed to conduct the studies and to understand how to interpret the results. The experts also suggested developing guidelines on when and how to communicate to stakeholders, particularly physicians and patients, that a drug safety signal exists and is being evaluated, as well as the outcome of that evaluation.

Rhee, M.K., Musselman, D., Ziemer, D.C., and others. (2008). “Unrecognized glucose intolerance is not associated with depression. Screening for Impaired Glucose Tolerance study 3 (SIGT 3).” (AHRQ grant HS07922). *Diabetic Medicine* 25, pp. 1361-1365.

Diabetes is compounded by concomitant depression in 11-32

percent of patients with diagnosed diabetes, a twofold higher prevalence than that in unaffected populations. Although the evidence of the relationship between depression and diabetes is strong, the mechanism of the association remains unclear: depression may lead to diabetes or diabetes may lead to depression. To learn whether depression is linked to the metabolic abnormality per se, the researchers determined the prevalence of depressive symptoms along the continuum of glucose tolerance in individuals without previously known diabetes. They used the oral glucose tolerance test to screen for diabetes or pre-diabetes and the Patient Health Questionnaire to screen for depression in a study population of 1,047 subjects without known diabetes. No association was observed between glucose tolerance and depressive symptoms or history of depression treatment.

Rothman, A. A., Park, H., Hays, R. D., and others. (2008, December). “Can additional patient experience items improve the reliability of and add new domains to the CAHPS hospital survey?” (AHRQ cooperative agreement with the National Institute on Aging). *HSR: Health Services Research* 43(6), pp. 2201-2222.

Adding new questions on hospital discharge and coordination of care can significantly improve the psychometric properties of the CAHPS® Hospital Survey, concludes this study. The CAHPS® contains 18 questions about hospital care. To determine whether adding questions would increase the reliability and validity of the survey, the authors analyzed survey responses of patients at 181 hospitals participating in the California Hospitals Assessment

and Reporting Taskforce (CHART), which added nine questions to CAHPS®. Of the 40,172 surveys analyzed, adding two new discharge information questions improved the internal consistency reliability from 0.45 to 0.72 and the hospital-level reliability from 0.75 to 0.81. Adding five new coordination-of-care questions had good internal consistency reliabilities ranging from 0.58 to 0.70 and hospital-level reliabilities ranging from 0.84 to 0.87.

Rubenstein, L.V., Hempel, S., Farmer, M.M., and others. (2008). “Finding order in heterogeneity: Types of quality-improvement intervention publications.” *Quality and Safety in Health Care* 17, pp. 403-408.

An important challenge confronting stakeholders in promoting quality-improvement intervention (QII) publication and synthesis has been the lack of agreed-upon standards for evaluating QII research. The authors report on the development and preliminary testing of a classification framework for QII articles. Their aim was to create categories homogeneous enough to support coherent scientific discussion on QII reporting standards and facilitate systematic review. The final framework screened articles into the following categories: empirical literature on development and testing of QIIs, QII stories, theories, and frameworks, QII literature syntheses and meta-analyses, and development and testing of QII-related tools. The first category (empirical literature on development and testing of QIIs) was subdivided into development of QIIs, history, documentation, or description of QIIs, and success, effectiveness, or impact of QIIs.

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The article contains detailed descriptions of each of these categories, as well as the process by which the participating experts reached agreement on how to properly categorize the 80 articles that were selected to test the framework.

Schuber, P. A. (2008). “Measuring attitudes toward participation in cancer treatment and cancer prevention trials: The Attitudes toward Cancer Trials Scales (ACTS).” (AHRQ grant HS10583). *Journal of Nursing Measurement* 16(2), pp. 136-152.

This paper describes the development of a questionnaire to measure attitudes toward participation in cancer treatment and cancer prevention trials, the Attitudes toward Cancer Trials Scales (ACTS). The researchers collected survey data within multiple settings, targeting an ethnically diverse sample of 312 individuals. Item and principal component analyses empirically supported the ACTS, a two-dimensional survey containing an 18-item cancer treatment (CT) scale and a 16-item cancer prevention trial (CPT) scale. Four components comprised the CT scale: personal benefits, personal barriers and safety, personal and social value, and trust in the research process. Three components comprised the CPT scale: personal barriers and safety, altruism, and personal value. Study results provided evidence that the ACTS has sufficient reliability and validity for use in adult populations.

Schultz, D., Seid, M., Stoto, M. A., and Bustain, J. M. (2008, November). “The Agency for Healthcare Research and Quality’s children’s health

research portfolio.” (AHRQ Contract No. 282-00-0005). *Maternal and Child Health Journal*, available online at www.springerlink.com/content/u854143451713m85/fulltext.pdf.

This article describes and assesses the potential impact of the Agency for Healthcare Research and Quality’s (AHRQ) children’s health activities. The authors used AHRQ databases and publication lists and generic search engines to develop a comprehensive list of the Agency’s funded children’s health activities from 1990 through 2005 and related publications (1996-2002). They found that the child health portfolio has changed over time, with a growing number of activities related to patient safety and health information technology. The Agency has contributed a substantial body of new knowledge as a result of its funding for children’s health activities. Most of these new findings can be building blocks early in the translation continuum rather than findings that directly inform policy or change clinical practice, suggest the authors. They conclude that, while AHRQ has successfully engaged the child health services research community, efforts to broaden into policy, practice, and patient arenas have been less successful.

Slutsky, J. R., and Clancy, C. M. (2009, January-February). “AHRQ’s Effective Health Care Program: Why comparative effectiveness matters.” *American Journal of Medical Quality* 24(1), pp. 67-70.

This article describes the Agency for Healthcare Research and Quality’s (AHRQ) Effective Health Care Program, which was launched 3 years ago. The core question of comparative effectiveness research—which treatment works best, for whom, and under what

circumstances—is a fundamental concern for patients and clinicians confronting a health problem. The Effective Health Care Program focuses on 14 priority conditions that include arthritis, cancer, cardiovascular disease, dementia, autism, diabetes, infectious disease, obesity, and substance abuse. The program publishes the following four types of products: comparative effectiveness reviews of studies that make head-to-head comparisons of treatments; technical briefs on emerging clinical interventions; DECIDE reports, which draw on existing health care databases to evaluate health care interventions; and summary guides, tailored to a variety of audiences (including clinicians), which summarize report findings. Reprints (AHRQ publication no. 09-R028) are available from AHRQ.*

Soumerai, S., Zhang, F., Ross-Degnan, D., and others. (2008, May-June). “Use of atypical antipsychotic drugs for schizophrenia in Maine Medicaid following a policy change.” (AHRQ grant HS10391). *Health Affairs* 27(3), pp. w185-w195.

In July 2003, Maine implemented a Medicaid policy requiring a prior authorization for new users of atypical antipsychotics, which are commonly prescribed for conditions such as schizophrenia or bipolar disorder. When individuals with schizophrenia experience disruptions in their medication, this can lead to psychotic episodes and hospitalizations. As a result of the Maine policy, patients experienced a 29 percent greater risk of treatment discontinuity than patients who were able to receive atypical antipsychotics before the preauthorization policy was effected. There was a 3 percent

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increase in preferred atypical antipsychotic use and a 5.6 percent decrease in nonpreferred atypical antipsychotic use, which led to an overall decrease in spending for atypical antipsychotics. However, Maine suspended the prior authorization policy in March 2004 after many reports of adverse effects. The researchers suggest that these sorts of restrictions on prescribing atypical antipsychotics should not apply to patients with severe mental illnesses.

Sterling, R. (2008, November). “The on-line promotion and sale of nutrigenomic services.” (AHRQ grant T32-HS00034). *Genetic Medicine* 10(11), pp. 784-796.

Nutrigenomics (NG) examines relationships among genes, diet, and health. Despite the methodological challenges confronting NG research that have contributed to inconsistent findings across genetic association studies, biotechnology companies and laboratories are offering genetic services based on findings from NG research. The researcher performed a systematic search and analysis of Web sites promoting nutrigenomic services in order to evaluate the promotion and sales practices of the host organizations. There were 82 identified Web sites hosted by 64 organizations, one of which was not-for-profit. At-home testing was offered by 24 organizations. Twenty-six organizations either sold services online or provided a direct link to

online sales. Few organizations provided information about laboratory certifications, nutrigenomic test or research limitations, test validity or utility, or genetic counseling. Evidence suggests that current findings in NG research do not support the use of genetic information to improve individual health. However, service provider Web sites described NG tests as a useful tool for understanding and improving the health of patients.

Stout, N.K., and Goldie, S.J. (2008). “Keeping the noise down: common random numbers for disease simulation modeling.” (AHRQ grant HS00083). *Health Care Management Science* 11, pp. 399-406.

Disease simulation models are used to conduct decision analyses of the comparative benefits and risks associated with preventive and treatment strategies. Applied to disease simulation modeling, common random numbers (CRN) reduces stochastic noise between model runs and has the additional benefit of enabling modelers to conduct direct “counterfactual-like” analyses at the individual level. This technique uses synchronized random numbers across model runs to induce correlation in model output thereby making differences easier to distinguish as well as simulating identical individuals across model runs. The CRN technique allows statistics such as the change in life expectancy from a treatment or the lead-time due to screening to be estimated by comparing individual

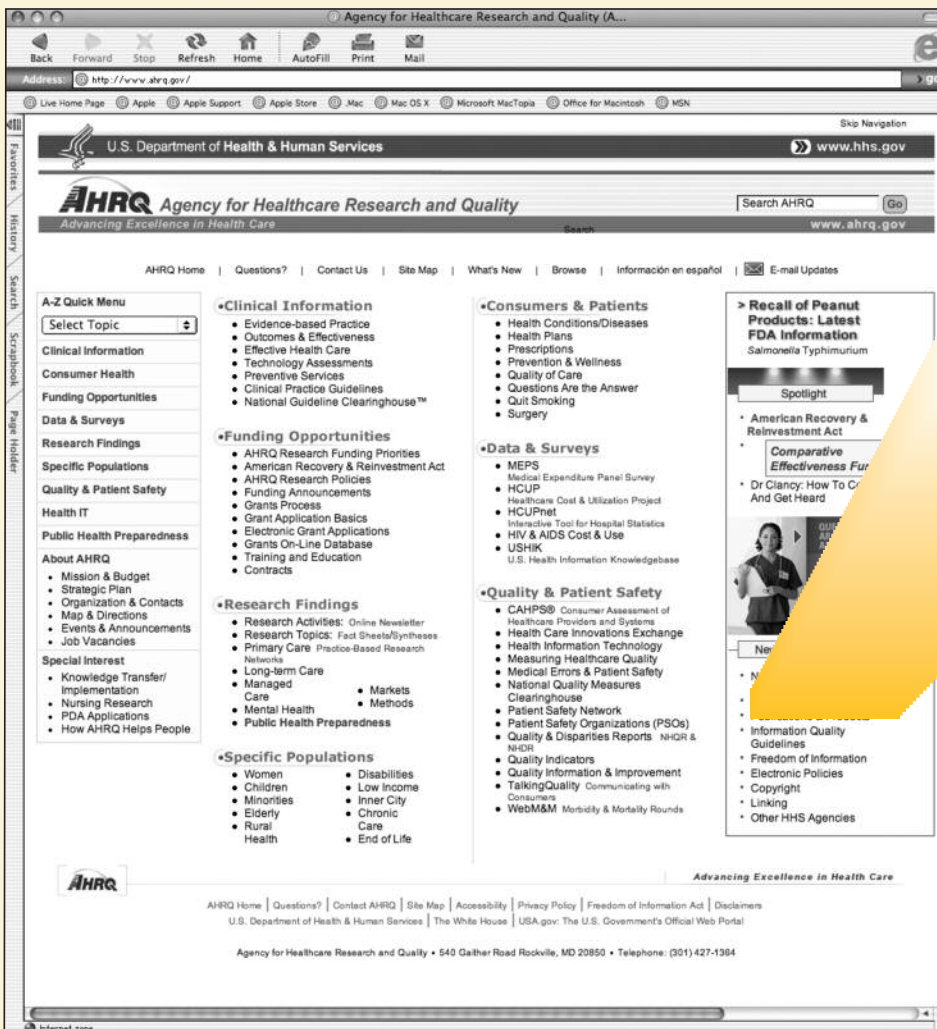
level data between simulation runs. The researchers provide a tutorial introduction and demonstrate the application of common random numbers in an individual-level simulation model of the epidemiology of breast cancer.

Tang, L., Duan, N., Klap, R., and others. (2009). “Applying permutation tests with adjustment for covariates and attrition weights to randomized trials of health-services interventions.” (AHRQ grant HS09908). *Statistics in Medicine* 28, pp. 65-74.

The authors of this paper describe their development of a permutation test. Their method first permutes treatment status according to the original study randomization design, and then reconstructs study attrition weights using the permuted data. The researchers then rerun weighted regressions using the reconstructed weights. They illustrate their proposed permutation test using data from a randomized controlled trial, the Youth Partners-in-Care (YPIC) study, which was aimed at evaluating a quality improvement intervention for adolescent depression in primary care clinics. Their goal was to demonstrate the viability of permutation tests based on permuting treatment indicators in the context of complex randomization protocols, the availability of covariates, the use of logistic regression or other nonlinear procedures, and the application of attrition weighting. ■

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