



Research Activities



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Agency for Healthcare Research and Quality

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Guidance is available to help communities reopen former hospitals to care for survivors of Hurricane Katrina

Public health officials and emergency response teams now have information available to help them reopen former (shuttered) hospitals to care for survivors of Hurricane Katrina. The information includes lists of supplies and medications needed by stable medical/surgical patients and checklists to assess facility readiness, staffing needs and levels, and patient transport readiness.

The information comes from a new report from the Agency for Healthcare Research and Quality entitled *Use of Former (Shuttered) Hospitals to Expand Surge Capacity*, which gives emergency responders and public health officials useful, practical tools for opening shuttered hospitals when an emergency is underway. The information is available on AHRQ's Web site at <http://www.ahrq.gov/research/shuttered/>. The report also gives surrounding communities that aren't immediately affected by the hurricane a way to assess their existing facilities to meet future needs.

The new report includes separate, fill-in-the-blank checklists for chief administrators, facilities experts, medical personnel, security experts, equipment and supply experts, and medical gas system verifiers to use in evaluating a facility. It also contains action checklists that help emergency planners assess and fulfill staffing needs, additional expertise required, and management needs.

Included in the report is a tool kit with a list of supplies and equipment needed for operation of a reopened facility. These supplies include such items as nutritional and feeding supplies, gloves and masks, bandages and dressings, and microbiology needs and syringes. A preliminary, basic pharmacy list that details medications that would be needed for typical medically stable medical/surgery patients is also included. The report was prepared under contract to AHRQ by Abt Associates, Inc.

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Hurricane Katrina

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Editor's note: AHRQ has a number of tools and resources that can be used now during Hurricane Katrina response and recovery efforts that include the following: (1) emergency preparedness models with a practical application for care of contaminated or infectious hurricane victims or first

responders; (2) hospital bed definitions to help organizations track the availability of beds; (3) the Emergency Preparedness Resource Inventory that allows local or regional planners to assemble an inventory of critical resources such as equipment, personnel, and supplies; (4) a tool to help State and local officials quickly locate alternate health care sites if hospitals are overwhelmed by

patients; (5) a computer model that can help hospitals and health systems plan antibiotic dispensing and vaccination campaigns; and (6) a tool designed to help planners develop a public health emergency contact center. To access these resources and download the available tools, go to AHRQ's Web site at <http://www.ahrq.gov/path/katrina.htm>. ■

Disparities/Minority Health

Greater access to care at VA clinics lessens disparities in blood pressure control among black men

During 1999-2000, 10 percent fewer black than white men with hypertension achieved blood pressure (BP) control to below 140/90 mm Hg (26.5 vs. 36.5 percent), according to the National Health and Nutrition Examination Survey. However, this disparity in blood pressure control was about 40 percent less at Veterans Affairs (VA) than at non-

VA health care sites (6.2 vs. 10.2 percent), according to a study supported in part by the Agency for Healthcare Research and Quality (HS10871).

Greater access to care at VA sites seemed to underlie better control among black men, note the researchers who conducted the study. They compared BP treatment and control between black (4,379 at VA centers and 2,754 at non-VA centers) and white (7,987 at VA centers and 4,980 at non-VA centers) men with high blood pressure. In both groups, whites were older than blacks, had lower BP, and had their BP controlled to below 140/90 Hg more often at their last visit.

Blood pressure control to below 140/90 mm Hg was comparable among white men with hypertension at VA (55.6 percent) and non-VA (54.2 percent) sites. In contrast, BP control was higher among black men with hypertension at VA (49.4 percent) than non-VA (44 percent) sites, even after controlling for age, numerous comorbid conditions, and rural-urban location. Black men received a comparable number of prescriptions for BP medications at VA sites and more prescriptions at non-VA sites than did whites. Yet, blacks had more visits at VA sites and fewer visits at non-VA sites than whites. These results suggest that site of care (and especially more visits) had greater impact on BP control in blacks than in whites.

See "Ethnic differences in blood pressure control among men at Veterans Affairs clinics and other health care sites," by Shakaib U. Rehman, M.D., Florence N. Hutchison, M.D., Katharine Hendrix, Ph.D., and others, in the May 9, 2005 *Archives of Internal Medicine* 165, pp. 1041-1047. ■

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Ethnically diverse patients define what cultural competence means to them

To better meet the needs of ethnically diverse patients and reduce disparities in health and health care, efforts are underway in the United States to help doctors become more culturally competent. Identifying what culturally competent health care means from the standpoint of these patients will help in the design of training programs to address the cultural factors that impact the quality of care.

Researchers, supported in part by the Agency for Healthcare Research and Quality (HS10599), conducted a series of 19 community focus groups that included 61 blacks, 45 Latinos, and 55 non-Latino whites. They asked participants about the meaning of “culture” and what cultural factors influenced the quality of their medical visits.

Definitions of culture common to all three ethnic groups included value systems (25 percent of focus group comments), customs (17 percent), self-identified ethnicity (15 percent), nationality (11 percent), and stereotypes (4

percent). All groups agreed that the factors that positively or negatively influenced the quality of medical encounters were clinicians’ sensitivity to complementary/alternative medicine (17 percent), health insurance-based discrimination (12 percent), social class-based discrimination (9 percent), ethnic concordance of physician and patient (8 percent), and age-based discrimination (4 percent).

Physicians’ acceptance of the role of spirituality (2 percent) and of family (2 percent) and ethnicity-based discrimination (11 percent) were cultural factors specific to non-whites. Language issues (21 percent) and immigration status (5 percent) were Latino-specific factors. Overall, participants said they felt more satisfied with physicians who demonstrated cultural flexibility, that is, who were able to elicit, adapt, and respond to patients’ cultural characteristics.

See “Patients’ perceptions of cultural factors affecting the quality

of their medical encounters,” by Anna M. Nápoles-Springer, Ph.D., Jasmine Santoyo, M.P.H., Kathryn Houston, M.A., and others, in the March 2005 *Health Expectations* 8, pp. 4-17. ■

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Acculturation plays a pivotal role in the health status and behaviors of Latinos in the United States

Depending on the measure of acculturation used (for example, English language proficiency or years in the United States), and factors such as age or sex, acculturation may have a negative, positive, or mixed effect on the health of Latinos. According to a study supported in part by the Agency for Healthcare Research and Quality (HS00008), Latinos with greater acculturation tend to have more substance abuse

problems (drugs, alcohol, and smoking), poorer dietary practices, and worse birth outcomes (for example, low birthweight, prematurity, and teen pregnancy) than their less-acculturated peers.

On the other hand, Latinos who are more acculturated also tend to have more physical, vision, and dental checkups and are more likely to have health care insurance and use preventive services such as

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Acculturation of Latinos

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Pap smears and mammograms. The impact of acculturation is mixed in other cases, such as cesarean section (see editor's note below). Marielena Lara, M.D., M.P.H., of the University of California, Los Angeles, and her colleagues reviewed existing studies (most done on people of Mexican origin) on the possible relationships between acculturation and selected health and behavioral outcomes among Latinos.

The researchers recommend that clinicians promote the maintenance

of healthy behaviors (such as the traditionally healthy Latino diet) among less acculturated Latinos and promote the reacquisition of these behaviors among the more acculturated. They also encourage further research to examine the impact of acculturation on specific areas such as nutrition, substance abuse, birth outcomes, and mental health of Latinos.

See "Acculturation and Latino health in the United States: A review of the literature and the sociopolitical context," by Dr. Lara, Cristina Gamboa, M. Iya Kahramanian, M.P.H., and others,

in the April 2005 *Annual Review of Public Health* 26, pp. 367-397.

Editor's note: A related study found a mixed impact of acculturation on rate of cesarean section among Latinas born in the United States relative to Spanish-speaking women born in Mexico. For more details, see Zlot, A.I., Jackson, D.J., and Korenbrot, C. (2005, March). "Association of acculturation with cesarean section among Latinas." (AHRQ grant HS07161). *Maternal and Child Health Journal* 9(1), pp. 11-20. ■

Studies highlight the importance of providing interpreter and translating services for minorities

In 2000, nearly 18 percent of Americans spoke a language other than English at home, and physicians are caring for more patients who are limited in their ability to speak English. A new study supported by the Agency for Healthcare Research and Quality (HS11305) makes the case that by paying for interpreters now for patients who find it difficult to understand and speak English, insurers will save care costs later. A second AHRQ-supported study (HS10637) examines the problems encountered by Navajo interpreters in translating the standard research consent form for Navajo people with diabetes. Both studies are briefly discussed here.

Ku, L., and Flores, G. (2005, March). "Pay now or pay later: Providing interpreter services in health care." *Health Affairs* 24(2), pp. 435-444.

Federal civil rights policy obligates health care providers to supply language services to patients who can't speak English. However, Medicare and most private insurers do not pay for interpreters, and only 10 States pay for interpreters under Medicaid. The authors of this paper indicate that insurers may end up paying a lot more for extra tests and procedures to diagnose health problems, preventable hospitalizations, medical errors and

injuries, and expensive lawsuits when interpreters are not provided for patients who speak limited English.

The authors point out that language barriers can lead to inefficient care because clinicians are unable to elicit symptoms from patients with limited English speaking skills. As such, they may use more diagnostic resources or invasive procedures. Also, family interpreters are more likely than professional interpreters to commit errors that have potential clinical consequences. In contrast, patients who are provided with professional interpreters make more outpatient

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Translating services for minorities

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visits, receive and fill more prescriptions, and do not differ from English-proficient patients in test costs.

In 2002, the U.S. Office of Management and Budget estimated that interpretation costs an average of \$4.00 per patient visit or 0.5 percent of the total visit cost. This is far less than the large disparities in medical spending that exist between white patients and Latino and Asian patients. Paying for language services may help reduce the existing racial/ethnic disparities in health care, conclude the authors.

McCabe, M., Morgan, F., Curley, H., and others. (2005, Spring). "The informed consent process in a cross-cultural setting: Is the process achieving the intended

result?" *Ethnicity & Disease* 15, pp. 300-304.

This report describes the problems Navajo interpreters encountered when translating the standard research consent form for Navajo Indians participating in a diabetes clinical trial. Several interpreters and a Navajo language consultant developed a translation of the standard consent form. They maintained the sequence of information and exactly translated English words and phrases, but they often were unable to translate specific wording required by the Institutional Review Boards into something comprehensible in Navajo.

They found that the consent process often led to embarrassment, confusion, and misperceptions. For instance, potential Navajo participants felt that repeatedly discussing telephone communication was irrelevant when many did not have

telephones. Also, areas of contradiction raised issues of mistrust. For example, information about lack of compensation for injuries that might result from participating in the clinical trial seemed to contradict previous assertions that serious adverse effects were unlikely to occur.

To make consent forms more understandable to minority populations, the researchers suggest reducing strict legal and scientific jargon. They also recommend identifying and altering, when possible, standard consent form language that may engender mistrust. In addition, researchers suggest re-sequencing the form to facilitate logical translations into complex languages. Finally, those administering consent forms should be culturally competent to address questions and potential misunderstandings by people who participate in clinical trials. ■

Patient preference may underlie ethnic variation in knee replacement surgery

Knee osteoarthritis (OA) is a major cause of knee pain and disability. Individuals who obtain no relief from medication often undergo total knee replacement (TKR). Whites are twice as likely as blacks or Hispanics to undergo TKR, a difference that persists even after controlling for health insurance.

Patient preferences appear to underlie much of the variation in TKR, concludes a study supported in part by the Agency for Healthcare Research and Quality (HS10876). Researchers surveyed an ethnically diverse group of 198 patients with knee OA about whether their doctor recommended TKR, their thoughts about the procedure, and their trust in physicians and the health system.

Regardless of severity of OA, white patients were more likely than minority patients to have considered undergoing TKR. In addition, white patients were more likely to consider TKR if their OA worsened and their physician recommended the procedure. They also were more likely than minority patients to view TKR as a beneficial procedure.

Blacks had a higher physician recommendation rate than whites, and, although the rate was not statistically significant, it suggested that physician bias was not a factor in TKR in this group. Yet, many minority patients surveyed would not be willing to consider surgery even if their physicians recommended it. Major determinants of preferences were patients' beliefs about the efficacy of the procedure and knowing individuals in their close social environment who had undergone TKR. Improved physician-patient communication to provide more information and reassurance about the procedure could help more eligible patients benefit from TKR, note the researchers.

See "Ethnic variation in knee replacement: Patient preferences or uninformed disparity?" by Maria E. Suarez-Almazor, M.D., Ph.D., Julianne Soucek, Ph.D., P. Adam Kelly, Ph.D., and others, in the May 23, 2005 *Archives of Internal Medicine* 165, pp. 1117-1124. ■

Studies of two American Indian tribes reveal different rates of smoking but similarly high rates of life traumas

American Indians generally smoke more and suffer more life traumas than the rest of the U.S. population. Nevertheless, there remains substantial variation in smoking rates and trauma experience between tribal groups, according to two new studies. Both studies analyzed data from the American Indian Service Utilization, Psychiatric Epidemiology, Risk and Protect Factors Project (AI-SUPERPFP). They were supported in part by the Agency for Healthcare Research and Quality (HS10854) and are briefly described here.

Henderson, P.N., Jacobsen, C., Beals, J., and the AI-SUPERPFP Team. (2005, May). "Correlates of cigarette smoking among selected Southwest and Northern Plains tribal groups: The AI-SUPERPFP study." *American Journal of Public Health* 95(5), pp. 867-872.

This cross-sectional study of Southwest and Northern Plains American Indians (ages 15 to 54 years) found that about half of Northern Plains men and women currently smoked (49 and 51 percent, respectively), while 19 percent of Southwest men and 10 percent of Southwest women smoked. The study did not determine use of tobacco for ceremonial purposes. However, the Northern Plains tribe bases a large part of their spiritual philosophy around the concept of the "sacred pipe," considerably more so than

the Southwest tribe. Thus, the differences in smoking rates could have a significant cultural basis.

Men and younger people were more likely to smoke in the Southwest tribe, but not the Northern Plains tribe. This finding is consistent with other studies that suggest cigarette smoking among tribes of the Southwest region is on the rise, especially among younger men. People who were currently or formerly married and those who had spent less than 75 percent of their life on a reservation were more likely to smoke in the Northern Plains tribe.

Alcohol consumption was strongly associated with higher odds of smoking in both groups. The results underscore the need to consider each tribal group's unique characteristics when designing and implementing culturally sensitive smoking intervention programs in American Indian communities.

Manson, S.M., Beals, J., Klein, S.A., and others. (2005, May). "Social epidemiology of trauma among 2 American Indian reservation populations." *American Journal of Public Health* 95(5), pp. 851-859.

Southwest and Northern Plains American Indians more often witness a traumatic event, suffer trauma to loved ones, and are the victims of physical attacks than the general U.S. population, concludes this study of trauma exposure among the two tribes. Researchers

interviewed 3,084 members of the two tribes about their exposure to 16 types of trauma. They compared tribal prevalence rates of trauma with a sample of the U.S. general population in the National Comorbidity Survey (NCS).

Lifetime experience of any trauma was high across both tribes, ranging from 62.4 percent for male Southwest tribe members to 69.8 percent for female Northern Plains tribe members. This compares to lifetime exposure to any trauma among U.S. men and women at 60.7 percent and 51.2 percent, respectively. A third of the American Indians sampled reported that someone close to them had experienced a trauma. Female and male American Indians suffered equivalent levels of overall trauma exposures. Female tribal members were more likely than male tribal members to have suffered from interpersonal trauma, particularly physical abuse by a spouse.

The researchers suggest that high rates of trauma exposure may contribute to the increasing prevalence of cardiovascular disease among American Indian men and women, which is the leading cause of death in this group. Similarly, trauma is closely linked to pain, which negatively affects compliance with treatment, help-seeking behavior, and the speed of surgical recovery, all often compromised in American Indians.



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.

Black and low-income workers have worse outcomes than other workers after filing compensation claims for low back injuries

Black and low-income workers, who filed compensation claims for job-related low back injuries, suffered worse health and more financial problems after the injury than their white and higher income counterparts. Researchers at the Saint Louis University School of Medicine and University of North Carolina, supported by the Agency for Healthcare Research and Quality (HS13087), analyzed 3,181 workers' compensation claims settled in the State of Missouri between January 1, 2001 and June 1, 2002. They telephoned claimants an average of 21 months post-injury to determine their race, age, sex, socioeconomic status (SES), diagnosis, legal representation, treatment costs, temporary disability status, disability rating, and settlement costs. They then determined which of these factors predicted post-settlement outcomes, such as pain intensity,

psychological distress, disability, and financial struggle.

The result demonstrated consistent race and SES differences in post-settlement outcomes among claimants with occupational back injuries. Independent of other variables, black race and lower SES predicted higher levels of post-settlement pain intensity, psychological distress, limited daily activities due to pain, and financial struggle. Race continued to predict financial struggle even after adjustment for SES.

See "Race and socioeconomic differences in post-settlement outcomes for African American and Caucasian workers' compensation claimants with low back injuries," by John T. Chibnall, Ph.D., Raymond C. Tait, Ph.D., Elena M. Andresen, Ph.D., and Nortin M. Hadler, M.D., in the April 2005 *Pain* 114, pp. 462-472. ■

Child/Adolescent Health

Events surrounding a serious injury affect the likelihood that an adolescent will suffer from long-term post traumatic stress disorder

Like adults, over one-fourth (27 percent) of adolescents suffer from long-term post traumatic distress disorder (PTSD) after a serious injury, according to a study supported in part by the Agency for Healthcare Research and Quality (HS07611). The events surrounding injuries such as motor vehicle accidents, falls, or assaults, affect the likelihood that an adolescent will develop PTSD, explains Troy L. Holbrook, Ph.D., of the University of California, San Diego.

Dr. Holbrook and a team of researchers collected information from adolescent trauma patients ages 12 to 19 years, including patient demographics and injury event characteristics. They conducted several surveys to

measure the adolescents' functional status before and after an injury as well as early symptoms of acute stress disorder at discharge. Outcomes were assessed at hospital discharge and at 3, 6, 12, 18, and 24 months after discharge, and post-injury behavioral problems, evaluated at a 6-month followup.

The results indicate that perceived threat to life and intentional or violence-related injury doubled the likelihood of PTSD onset, as did having no control over the event leading to the injury. Death of a family member at the scene increased nearly five-fold the odds of suffering from PTSD.

Girls and older adolescents had higher rates of PTSD than boys and younger adolescents. Low

socioeconomic status was strongly associated with long-term PTSD. Adolescents who suffered from PTSD were more likely to have behavioral problems, abuse alcohol and drugs, have difficulty staying in school, and suffer from depression.

More details are in "Long-term posttraumatic stress disorder persists after major trauma in adolescents: New data on risk factors and functional outcome," by Dr. Holbrook, David B. Hoyt, M.D., F.A.C.S., Raul Coimbra, M.D., F.A.C.S., and others, in the April 2005 *Journal of Trauma, Injury, Infection, and Critical Care* 58, pp. 764-771. ■

Use of nurse case managers and physician peer leaders can reduce children's asthma symptoms but at a price

A primary care program that uses nurse case managers to educate children about their asthma and physician peer leaders to educate primary care physicians on asthma treatment guidelines can reduce children's asthma symptoms. In a recent study, the program gave children an average of two additional symptom-free weeks per year, but with increased asthma care costs. The study was supported in part by the Agency for Healthcare Research and Quality (HS08368).

The Pediatric Asthma Care Patient Outcomes Research Team II (PAC-PORT II) randomized 42 primary care practices to usual care or one of two asthma care strategies to determine their impact on symptom-free days (SFDs). The two strategies were a peer leader-based physician behavior change intervention (PLE) and a planned asthma care intervention (PACI) that combined PLE with nurse managers/educators. The researchers followed a total of 638 children (age 3 to 17 years) with mild to moderate persistent asthma for up to 2 years. The difference in annual SFDs was 6.5 days for PLE versus usual care and 13.3 days for PACI versus usual care. Annual costs per patient were as follows: PACI, \$1,292; PLE, \$504; and usual care, \$385. Compared with usual care, the incremental cost-effectiveness

ratio was \$18 per SFD gained for PLE and \$68 per SFD gained for PACI.

These results demonstrate the feasibility of increasing SFDs in children already receiving controller medications and improving the use of recommended guidelines for asthma care. However, the results may not apply to uninsured or Medicaid-insured groups.

See "Multisite randomized trial of the effects of physician education and organizational change in chronic asthma care," by Sean D. Sullivan, Ph.D., Todd A. Lee, Pharm.D., Ph.D., David K. Blough, Ph.D., and others, in the May 2005 *Archives of Pediatric and Adolescent Medicine* 159, pp. 428-434.

Editor's note: A related study of a program to improve management of children with asthma using a quality improvement collaborative model did not demonstrate a significant effect due to deficiencies in program implementation and other problems. More details are in Homer, C.J., Forbes, P., Horvitz, L., and others. (2005, May). "Impact of a quality improvement program on care and outcomes for children with asthma." (AHRQ grant HS10411). *Archives of Pediatric and Adolescent Medicine* 159, pp. 464-460.



Studies investigate watchful waiting over immediate antibiotics for young children with nonsevere ear infections

The widespread use of antibiotics for treatment of acute otitis media (AOM, ear infection) has contributed to the emergence of multidrug-resistant pathogens. Since most children with nonsevere AOM recover without antibiotics, current guidelines recommend that physicians consider watchful waiting rather than antibiotics for children 2 years and older who have uncomplicated, nonsevere AOM.

A new study supported by the Agency for Healthcare Research and Quality (HS10613) examined the effect of watchful waiting and

immediate antibiotics on ear infections. A second AHRQ-supported study (HS10247) explored physicians and parents attitudes about watchful waiting for nonsevere AOM. Both studies are described here.

McCormick, D.P., Chonmaitree, T., Pittman, C., and others. (2005, June). "Nonsevere acute otitis media: A clinical trial comparing outcomes of watchful waiting versus immediate antibiotic treatment." *Pediatrics* 115(6), pp. 1455-1465.

This study concluded that immediate antibiotic treatment for

nonsevere AOM in children 6 months to 12 years old provided superior early results, but, infection recurrences among children treated with antibiotics resulted in nearly identical outcomes between the antibiotics and watchful waiting groups by day 30 (77 vs. 76 percent cure, respectively). Investigators randomized 112 children to receive immediate antibiotics (amoxicillin plus symptom medication) and 111 children to watchful waiting (symptom medication only). Symptom scores on days 1 to 10 resolved faster in the antibiotics

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Nonsevere ear infections

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than the watchful waiting group. At day 12, among the immediate antibiotics group, 69 percent of tympanic membranes and 25 percent of tympanograms were normal compared with 51 percent of tympanic membranes and 10 percent of tympanograms among the watchful waiting group.

Two-thirds (66 percent) of the children in the watchful waiting group completed the study without needing antibiotics. Immediate antibiotics resulted in eradication of *Streptococcus pneumoniae* carriage in the majority of children, but *S. pneumoniae* strains cultured from children in the antibiotics group at day 12 were more likely to be multidrug-resistant than strains from children in the watchful waiting group. Also, more antibiotic-related adverse events (none serious) were noted in the antibiotics group compared to the watchful waiting group. Parent satisfaction with AOM care was not different between the 2 treatment groups at day 12 or 30. Costs of antibiotics averaged \$47.41 per child in the antibiotics group and

\$11.43 in the watchful waiting group.

Finkelstein, J.A., Stille, C.J., Rifas-Shiman, S.L., and Goldmann, D. (2005, June). "Watchful waiting for acute otitis media: Are parents and physicians ready?" *Pediatrics* 115(6), pp. 1466-1473.

Few physicians initially try watchful waiting for children with nonsevere acute otitis media (AOM) and many parents have concerns about this option, concludes a study supported by the Agency for Healthcare Research and Quality (HS10247). The investigators surveyed 160 physicians and 2,054 parents of children under age 6 in 16 Massachusetts communities about the acceptability of watchful waiting prior to release of recent guidelines endorsing this strategy.

A majority of physicians reported at least occasionally using watchful waiting, but few used it frequently. For instance, 38 percent of physicians treating children 2 years or older reported never or almost never using watchful waiting, 39 percent reported occasional use, 17 percent sometimes, and 6 percent most of the time. Younger

physicians reported more frequent use of watchful waiting than older colleagues. Education that promoted judicious antibiotic use (including information about watchful waiting for AOM) increased use of watchful waiting among doctors but did not significantly affect parental views.

When asked about this approach in a vignette of nonsevere AOM, about one-third (34 percent) of parents reported that they would be somewhat or extremely satisfied if watchful waiting was recommended, another 26 percent would be neutral, and the remaining 40 percent would be somewhat or extremely dissatisfied.

Parents with a high school education or less were half as likely as college-educated parents to be satisfied with initial watchful waiting, and Medicaid-insured parents were about 30 percent less likely than non-Medicaid insured parents to be satisfied with this approach. Higher antibiotic-related knowledge, belief that antibiotic resistance is a serious problem, and feeling included in medical decisions all were independently associated with higher predicted satisfaction with watchful waiting.



Studies reveal variations in preventive care and parental guidance among pediatric and family medicine practices

Private pediatric practices provide the majority of primary care for children, but little is known about the organizational characteristics of these practices and how they affect quality of care for children. Two new studies of 44 private pediatric and family medicine practices in North Carolina reveal tremendous variation in the organization of these practices, as well as low levels of preventive care and parental guidelines. The studies were

supported by the Agency for Healthcare Research and Quality (HS08509) and are briefly described here.

Randolph, G., Fried, B., Loeding, L., and others. (2005, June). "Organizational characteristics and preventive service delivery in private practices: A peek inside the 'black box' of private practices caring for children." *Pediatrics* 115(6), pp. 1704-1711.

This study of 44 private pediatric and family practices in North Carolina found low levels of preventive care, with substantial variation among practices. Only 39 percent of children received three of four recommended preventive services: immunizations, testing for anemia, tuberculosis testing, and lead screening by 2 years of age; the range among clinics was 2 to 88 percent. Also, actual preventive service rates were

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Quality of care for children

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19 to 42 percent lower than clinicians thought they were.

Few practices demonstrated evidence of a systematic approach to prevention. For instance, only 7 percent used preventive service prompting sheets, 9 percent measured immunization rates in the previous year, 9 percent had a majority of physicians using prompts, and 11 percent used tracking systems.

Furthermore, practice organizational characteristics varied greatly, some of which could cause problems that might impede delivery of high quality primary care for children. For example, turnover of clinicians and staff members was high, with practices losing an average of 27 percent of their clinicians every 4 years and 39 percent of their office staff members every 2 years.

Rosenthal, M.S., Lannon, C.M., Stuart, J.M., and others. (2005,

May). “A randomized trial of practice-based education to improve delivery systems for anticipatory guidance.” *Archives of Pediatric and Adolescent Medicine* 159, pp. 456-463.

Pediatricians are supposed to provide parents with anticipatory guidance, that is, counsel them about child development, injury prevention, nutrition, and other topics that will help them to become more effective caregivers. Yet, physicians typically spend less than 2.5 minutes of the well-child visit on anticipatory guidance. Coaching the staff of private pediatric practices to implement new care processes can improve the rate at which physicians provide anticipatory guidance, according to this study.

The researchers randomly assigned 22 pediatric practices in North Carolina to an intervention and 22 practices to usual care. In the intervention practices, project staff coached practice staff in auditing performance and identifying, testing, and implementing new care processes to improve delivery of anticipatory guidance. These

processes ranged from assigning an office prevention coordinator and creating a prompting system to establishing a tracking/recall system (for example, reminder postcards) for preventive care.

The researchers surveyed parents of 1- and 6-month-old infants about their recollection of this guidance and their behaviors as a result of the guidance to determine the effects of the intervention. The proportion of parents of 1-month-old infants who reported that they received all age-appropriate anticipatory guidance decreased from 15.9 percent to 10 percent in control practices and increased from 7.3 to 24 percent in intervention practices. The proportion of parents of 6-month-old infants who reported that they received all age-appropriate anticipatory guidance decreased from 8.2 percent to 5.4 percent in control practices and increased from 2.2 percent to 18.1 percent in the intervention practices. However, there were no differences in self-reported parent knowledge or behavior. ■

Adolescents underuse and receive little preventive health counseling during primary care visits

U.S. adolescents underuse primary care and, when they do seek care, few receive preventive counseling about healthy behaviors and risky behaviors. With support from the Agency for Healthcare Research and Quality (HS11313), researchers analyzed data from the National Ambulatory Medical Care Survey and the National Hospital Ambulatory Medical Care Survey to examine U.S. adolescents' use of outpatient care and the likelihood of receiving preventive counseling from 1993 through 2000.

Adolescents ages 13 to 18 had the lowest rates of outpatient visits among all age groups. For example, adolescent visits counted for 5.1 percent of the total outpatient visits made by the U.S. population in 2000, yet adolescents represent 8.6 percent of the population. Rates were particularly low among boys and ethnic minorities.

Researchers specifically examined counseling on three health topics: diet, exercise, and growth/development; and five risk reduction topics: tobacco use/exposure, skin cancer prevention, injury prevention, family planning/contraception, and sexually transmitted disease (STD) transmission. From 1997 to 2000, only 39 percent of visits for general medical/physical examinations included counseling of adolescents, with 26 percent receiving diet counseling and 22 percent receiving exercise counseling. Counseling rates for the other six topics ranged from as low as 3 to 20 percent, with skin cancer prevention, HIV/STD transmission, and family planning/contraception ranking the lowest.

See “U.S. adolescents receive suboptimal preventive counseling during ambulatory care,” by Jun Ma, M.D., R.D., Ph.D., Yun Wang, M.S., and Randall S. Stafford, M.D., Ph.D., in the May 2005 *Journal of Adolescent Health* 36, pp. 441e1-441e7. ■

Certain sociodemographic, environmental, and clinical factors predict asthma severity in children

Black or Puerto Rican ethnicity, sensitization to cockroach allergen, and spirometry tests showing reduced pulmonary function can predict asthma severity in children, according to a study supported in part by the Agency for Healthcare Research and Quality (HS11147). These factors increased the likelihood of severe asthma three to four times in children, 4 to 18 years of age, who were enrolled in the

Easy Breathing[®] asthma care program in Hartford, CT.

This is the first study to show an association between asthma severity and both Puerto Rican ethnicity and decreased forced expiratory volume in 1 second/forced vital capacity (FEV1/FVC). FEV1/FVC is the most sensitive parameter for detecting mild airflow obstruction, but it is rarely used in clinical trials or severity scores to predict asthma severity. Yet in this study,

FEV1/FVC was significantly decreased in children with severe versus mild asthma (81 vs. 87 percent, respectively).

More details are in "Predictors of disease severity in children with asthma in Hartford, Connecticut," by Clare D. Ramsey, M.S., M.D., Juan C. Celedon, M.D., Ph.D., Diane L. Sredl, M.P.H., Scott T. Weiss, M.D., M.S., and Michelle M. Cloutier, M.D., in the March 2005 *Pediatric Pulmonology* 39, pp. 268-275. ■

U.S. rates of Kawasaki syndrome are highest in Japanese American children living in Hawaii

Kawasaki syndrome (KS), which primarily strikes children under the age of 5, can cause serious heart disease due to inflammation of the blood vessels in the coronary arteries. KS, whose cause is not known, was first described among Japanese children in 1967. The disease currently affects Japanese American children who live in Hawaii more than any other children in the United States and even more than children living in Japan. This may indicate the influence of environmental risk factors, as opposed to a purely genetic predisposition in the etiology of the disease, explains Robert Holman, M.S. of the Centers for Disease Control and Prevention, along with his co-author, Claudia A. Steiner, M.D., M.P.H., of the Agency for Healthcare Research and Quality.

The researchers analyzed the State Inpatient Database for Hawaii residents hospitalized with KS during 1996 through 2001. During that period, 267 individuals younger than 18 years living in Hawaii were hospitalized for KS; 85 percent of those affected were

younger than 5 years. The average annual incidence of KS was 45.2 per 100,000 children younger than 5 years. The incidence was higher for children younger than 1 year than for those 1-4 years (74.3 vs. 37.5 per 100,000). The KS incidence for Asian and Pacific Islander children and for white children was 70.9 and 35.3 per 100,000 respectively.

Incidence was highest among Japanese American children living in Hawaii (197.7 per 100,000). The mean hospital stay for children with KS younger than 5 years was 2 days, and the median hospital charge was \$9,379. Given the high incidence of KS among young children and infants in Hawaii, monitoring of KS and its effect on these children is important, suggest the researchers.

More details are in "Kawasaki syndrome in Hawaii," by Robert C. Holman, M.S., Aaron T. Curns, M.P.H., Ermias D. Belay, M.D., and others, in the May 2005 *the Pediatric Infectious Disease Journal* 24(5), pp. 429-433. Reprints (AHRQ Publication No. 05-R073) are available from AHRQ.* ■

Delayed sternal closure increases the risk of mid-sternum infections in children following cardiac surgery

To correct life-threatening, complex congenital heart disease in children, most median sternotomies (cracking open of the rib cage for open heart surgery) are performed within the first few weeks of life. Infection of

the mid-sternum between the lungs (mediastinitis) strikes 1.4 percent of children who undergo this procedure and 3 percent of children who undergo the procedure for heart and lung transplant. Delayed sternal closure appeared to elevate

the risk of sternal infection according to a study supported in part by the Agency for Healthcare Research and quality (HS10399).

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Delayed sternal closure

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Researchers at the University of Pennsylvania Center for Education and Research on Therapeutics used hospital records to identify 43 children who developed mediastinitis at a children's hospital from 1995 through 2003. The incidence of mediastinitis was 1.4 percent. Median time to onset of infection after surgery was 11 days. Although Gram-positive organisms were the most common cause of

infection (67 percent of cases), Gram-negative organisms accounted for one-third (30 percent) of all cases.

After considering several factors such as duration of antibiotics before infection, chest tube at the time of infection, and duration of preoperative hospitalization, delayed sternal closure substantially increased by 9-fold the risk of infection with Gram-negative bacteria (for example, *Escherichia coli* and *Pseudomonas aeruginosa*). More than one-half

(53 percent) of patients with mediastinitis had concurrent bloodstream infection with the same bacteria.

See "Postoperative mediastinitis in children," by Caroline B. Long, M.D., Samir S. Shah, M.D., Ebbing Lautenbach, M.D., M.P.H., M.S.C.E., and others, in the April 2005 *Pediatric Infectious Disease Journal* 24(4), pp. 315-319. ■

Pneumococcal carriage tends to be more prevalent in communities where more children attend child care centers

Children are often carriers of the pneumococcal bacteria (called "pneumococcal carriage") that can cause pneumonia, ear infections, sinus infections, and other infections. The prevalence of carriage with pneumococcal bacteria in children varies from 14 to 52 percent across communities.

Factors such as age and number of siblings, account for some of these community differences. However, community-level factors can also be substantial, such as the proportion of children in a community who attend child care centers (CCCs), concludes a study supported in part by the Agency for Healthcare Research and Quality (HS10247).

Researchers led by Jonathan A. Finkelstein, M.D., M.P.H., of Harvard Medical School, developed a pneumococcal transmission model to evaluate whether the combined risks of attending CCCs and associating with playmates who attend CCCs account for a large proportion of the variability in the prevalence of pneumococcal carriage across communities. They used the model to analyze data from asymptomatic children in 16 Massachusetts communities. The model predicted that the odds of carriage associated with CCC attendance for an individual child were two to

three times the odds associated with no CCC attendance.

In addition, CCC attendance may account for variations of 4 percent to 56 percent in prevalence of carriage across communities, according to the model. Using the model, Dr. Finkelstein and his colleagues calculated that, in a community where 24 to 65 percent of the children attended CCCs, the odds of pneumococcal carriage for nonattendees were 3.7 to 5.8 times the odds of carriage in a community with no CCC attendees. In a community in which the mean weekly time spent in CCC attendance was 20 hours, the increased risk of carriage was 2.3, which increased to 3.3 when mean weekly time rose to 30 hours, and to 5 when it was 40 hours.

More details are in "Modeling community- and individual-level effects of child-care center attendance on pneumococcal carriage," by Susan S. Huang, M.D., M.P.H., Dr. Finkelstein, and Marc Lipsitch, Ph.D., in the May 1, 2005 *Clinical Infectious Diseases* 40, pp. 1215-1222. ■

Patient Safety and Quality

Medical groups want to improve chronic disease care but many feel constrained by limited resources and lack of financial incentives

Multiclinic medical groups are motivated to improve the quality of their chronic disease care but feel hampered by limited resources and lack of financial incentives to improve quality. In a study supported by the Agency for Healthcare Research and Quality (HS09946), researchers surveyed medical and administrative leaders of 18 medical groups, 84 of their constituent clinics, and their primary care physicians in one metropolitan area.

Of the 18 medical groups, 17 had an overall physician leader for quality improvement (QI), and 11 had a leader at each of their constituent clinics. Almost 100 percent of clinical leaders reported that their medical groups saw QI as important and expected clinics to

improve care for diabetes and heart disease. For example, 89 percent of clinic site leaders reported that their group had mapped steps to improve quality, and 83 percent held regular formal QI meetings. In addition, a majority of the medical groups were involved in QI initiatives for diabetes and heart disease care (83 and 67 percent, respectively).

Only one-third of medical group directors thought there were adequate resources for QI. About 17 percent thought that their incentives (bonuses or penalties based on quality of care) were aligned with quality or that physician compensation was affected by quality. However, 72 percent of medical groups measured physician performance

for diabetes, and 61 percent did so for coronary heart disease.

More details are in "The quest for quality: What are medical groups doing about it?" by Leif I. Solberg, M.D., Patrick J. O'Connor, M.D., M.P.H., Jon B. Christianson, Ph.D., and others, in the April 2005 *Journal on Quality and Patient Safety* 31(4), pp. 211-219.

Editor's note: A related article gives six examples of quality-based payments that have been implemented in the United States and four developing countries to improve care quality. For more details, see McNamara, P. (2005). "Quality-based payment: Six case examples." *International Journal of Quality in Health Care* 17(4), pp. 357-362. Reprints (AHRQ Publication No. 05-R060) are available from AHRQ.* ■

Improving physician knowledge of psychiatric problems and relevant medications could improve quality of care

People with psychiatric disabilities such as depression and schizophrenia tend to suffer from worse physical health and face more barriers to care than others. In a recent focus group study supported by the Agency for Healthcare Research and Quality (HS10223), 16 people with psychiatric disabilities identified the major barriers to primary care they experience: (1) difficulty identifying a primary care physician with good empathic and communication skills; (2) physicians failing to recognize psychiatric disability as a chronic illness that can be managed; (3) primary care doctors having inadequate knowledge about the side effects of psychotropic medications; and, (4) problems related to the costs of care and inadequate insurance coverage.

To help improve their quality of care, the focus group participants suggested that primary care doctors develop effective communication techniques, become

more knowledgeable about psychiatric problems and the psychotropic drugs used to treat them, and use a patient-centered, respectful approach. Focus group members also stated that their psychiatric disability itself sometimes impeded their efforts to seek medical help or to develop healthy living habits. For example, many had trouble maintaining a healthy weight, since weight gain and lethargy are side effects of a number of psychotropic medications. Others felt too depressed or overwhelmed to follow medical advice. They stated that greater physician awareness of their struggles could support their efforts to improve their health.

See "Primary care experiences of people with psychiatric disabilities: Barriers to care and potential solutions," by Bonnie O'Day, Ph.D., Mary B. Killeen, M.A., Janet Sutton, Ph.D., and Lisa I. Iezzoni, M.D., M.Sc., in the Spring 2005 *Psychiatric Rehabilitation Journal* 28(4), available online at www.bu.edu/prj. ■

Patients in intensive care units are at significant risk for adverse events and serious errors

Patients face a significant risk for preventable adverse events and serious medical errors in hospital critical care units, according to a study supported in part by the Agency for Healthcare Research and Quality (HS12032 and HS13333). Researchers found that over 20 percent of the patients admitted to two intensive care units at an academic hospital—a medical intensive care unit (MICU), and a coronary critical care unit (CCU)—experienced an adverse event.

Because patients admitted to critical care units are among the sickest, they may be more vulnerable to errors in care and therefore more susceptible to injury. Almost half (45 percent) of

adverse events that occurred in the sample were preventable. A significant number of the adverse events involved medications—most commonly, giving patients the wrong dose. Over 90 percent of all incidents occurred during routine care, not on admission or during an emergency intervention.

The researchers conducted direct continuous observations in the MICU and CCU during nine 3-week periods distributed throughout 12 months from July 2002 through June 2003. This was supplemented by confidential incident reporting, a computerized adverse drug event detection monitor, and chart reviews.

According to lead study author Jeffrey M. Rothschild, M.D., M.P.H., critical care units provide an increasingly greater proportion of care, and people can expect to be admitted to an ICU at least once during their lifetimes.

See “The Critical Care Safety Study: The incidence and nature of adverse events and serious medical errors in intensive care,” by Dr. Rothschild, Christopher P. Landrigan, M.D., M.P.H., John W. Cronin, M.D., and others, in the August 2005 *Critical Care Medicine* 33(8), pp. 1694-1700. ■

Women's Health

Survey reveals shortage of radiologists and certified mammography technologists at U.S. community mammography facilities

A growing number of women are over 40 years of age and eligible for mammography screening for breast cancer. However, nearly half of community-based mammography facilities in the United States do not have enough radiologists and certified mammography technologists to meet their screening needs, according to a survey supported in part by the Agency for Healthcare Research and Quality (HS10591).

A 2000-2001 survey of mammography facilities in three states addressed radiologist and certified technologist staffing levels, annual volume of screening and diagnostic mammography examinations, and length of appointment waiting times.

All 45 mammography facilities that responded to the survey provided screening mammography. Nearly half (44 percent) of these facilities reported radiologist staffing shortages. A significant proportion of not-for-profit facilities (60 percent) reported a shortage of radiologists when compared with for-profit facilities (28 percent).

Twenty percent of facilities reported having unfilled technologist positions, and nearly half (47 percent) reported some difficulty maintaining adequate qualified technologists. Waiting times for diagnostic mammography ranged from less than 1 week to 4 weeks, with 85 percent of procedures performed within a week. Yet, only 30 percent of facilities were able to schedule screening mammography within a week, and 47 percent had a waiting time of 2 or more weeks. Some had waiting times of 1 to 2 months. Other career options with higher incomes for women and the strict certification requirements for technologists may be disincentives for radiologic technologists to obtain certification in mammography, suggest the researchers.

See “Current realities of delivering mammography services in the community: Do challenges with staffing and scheduling exist?” by Carl D. Orsi, M.D., Shin-Ping Tu, M.D., M.P.H., Connie Nakano, M.P.H., and others, in the May 2005 *Radiology* 235, pp. 391-395. ■

Certain factors predict chronic pelvic pain after pelvic inflammatory disease

One-third of women with pelvic inflammatory disease (PID) suffer from subsequent chronic pelvic pain, according to a study supported in part by the Agency for Healthcare Research and Quality (HS08358). As part of the PID Evaluation and Clinical Health (PEACH) Study, researchers assessed risk factors for chronic pelvic pain in a longitudinal study of 780 predominantly black urban women with suspected PID. Participants in the study had complaints of acute

pelvic pain for less than 30 days, a clinical finding of pelvic tenderness, and indications of lower genital tract inflammation.

Certain characteristics predicted which women were two to three times as likely as other women to suffer from chronic pelvic pain after PID. Race, other than black, being married, a low SF-36 mental health composite score, two or more prior PID episodes, and smoking independently predicted chronic pelvic pain. The investigators suggest that recurrent

PID can cause the formation of adhesions and indicate persistent, chronic infection or inflammation, all of which can result in chronic pelvic pain.

See "Predictors of chronic pelvic pain in an urban population of women with symptoms and signs of pelvic inflammatory disease," by Catherine L. Haggerty, Ph.D., M.P.H., Jeffrey F. Peipert, M.D., M.P.H., Sherry Weitzen, Ph.D., and others, in the May 2005 *Sexually Transmitted Diseases* 32(5), pp. 293-299. ■

Elderly/Long-Term Care

Elderly people commonly use herbs or vitamin-mineral supplements, but use varies by ethnicity

The use of herbs and vitamin-mineral supplements is common among the elderly and varies by ethnicity, according to a study supported in part by the Agency for Healthcare Research and Quality (HS11618). Elderly people using these complementary and alternative medicine (CAM) therapies often don't mention it to their physicians, and physicians often don't ask about CAM use. This undisclosed use of CAM is particularly risky for elderly people who are taking multiple medications. Elderly people usually have an age-related decline in drug metabolism, making them very vulnerable to adverse interactions between drugs the doctor prescribes and herbs they are using. Clinicians should routinely ask elderly patients about their use of herbs and vitamin-mineral supplements, suggest the researchers who conducted the study.

The researchers used in-home interviews in 1997 and 1998 to assess medication and herbal and supplement use among 125 community-dwelling

whites, 112 blacks, and 128 Hispanics age 77 years and older. Nearly half (47 percent) of the elderly men and women used CAM, similar to that reported in other studies. About 13 percent of whites, 16 percent of blacks, and 5 percent of Hispanics used herbs.

The most commonly used herbs were garlic, Ginkgo biloba, saw palmetto, and vinegar. Use of vitamin-mineral supplements, alone or combined with herbs, also varied by ethnicity, with use by 54 percent of whites, 31 percent of blacks, and 38 percent of Hispanics. Having two or more visits to a physician in the past year was significantly associated with use of vitamin-mineral supplements, suggesting that elderly people using CAM still use conventional medicine.

See "Ethnic differences in herb and vitamin/mineral use in the elderly," by Mukaila A. Raji, M.D., M.Sc., Yong-Fang Kuo, Ph.D., Soham Al Snih, M.D., and others, in the June 2005 *Annals of Pharmacotherapy* 39, pp. 1019-1023. ■

Hospitalization rates vary for nursing home residents with suspected pneumonia

Many nursing home residents are hospitalized for pneumonia each year. This is mostly due to the inability of nursing homes to assess and monitor acutely ill residents and administer intravenous (IV) therapy. To prevent hospitalizations, EverCare Medicare Advantage plans employ nurse practitioners to work with network physicians, nursing home staff, and family members to augment care in nursing homes. They also provide nursing homes an additional per diem reimbursement when a resident is admitted to intensive service days (ISDs) that include more extensive monitoring and IV therapy in the nursing home.

Although EverCare's approach to managing care of nursing home

residents has been shown to reduce hospitalizations, a study supported by the Agency for Healthcare Research and Quality (contract 290-00-0012) shows that the rate of hospitalization for residents with suspected pneumonia varies greatly by the geographical location of participating facilities. Residents in facilities with fewer RN staff per resident or whose pneumonia was detected on the weekends were more likely to be treated in the hospital. Nurse practitioners are not generally scheduled for weekend shifts. Extending nurse practitioner services to include weekends may further reduce hospital use, suggests William D. Spector, Ph.D., of the Agency for Healthcare Research and Quality, an author on the paper.

The researchers studied characteristics of the enrollee, nurse practitioner, physician, or nursing home to determine which factors affected whether an Evercare enrollee with suspected pneumonia received ISD or hospitalization. Study data were from 2002 for five metropolitan areas using Evercare administrative records.

More details are in "Pneumonia in nursing home residents: Factors associated with in-home care of EverCare enrollees," by Thomas S. Rector, Ph.D., Dr. Spector, Thomas J. Shaffer, M.H.S., and Michael D. Finch, Ph.D., in the March 2005 *Journal of the American Geriatrics Society* 53(3), pp. 472-477. Reprints (AHRQ Publication No. 05-R055) are available from AHRQ.* ■

Increased use of ACE inhibitors for elderly people with diabetes could improve outcomes and save money

Diabetes is a major cause of end-stage renal disease and cardiovascular disease in the United States. Angiotensin-converting enzyme (ACE) inhibitors can effectively reduce these diabetes complications. However, these medications are often underused because elderly people with diabetes may cut back on their drug use due to prescription copayments.

The Medicare program could improve clinical outcomes and save money by providing full coverage of ACE inhibitors with no out-of-pocket expense for patients with diabetes. Medicare would reap clinical and economic benefits even if full coverage only resulted in a modest 7.2 percent increase in ACE inhibitor use, concludes a study supported in part by the Agency for Healthcare Research and Quality (T32 HS00020).

Researchers used published study results and Medicare claims data to develop a model to estimate the cost-effectiveness of first-dollar coverage (no cost sharing) of ACE inhibitors for elderly Medicare beneficiaries with diabetes. When compared with the current practice of no coverage of ACE inhibitors, providing first-dollar coverage saved both lives and money (0.23 quality-adjusted life years gained and \$1,606 saved per Medicare beneficiary).

More details are in "Cost-effectiveness of full Medicare coverage of angiotensin-converting enzyme inhibitors for beneficiaries with diabetes," by Allison B. Rosen, M.D., M.P.H., Mary Beth Hamel, M.D., M.P.H., Milton C. Weinstein, Ph.D., and others, in the July 2005 *Annals of Internal Medicine* 143(2), pp. 89-99. ■

Health Information Technology

Computerized guidelines for psychotropic drug use can improve prescribing and reduce falls among hospitalized elderly patients

Psychoactive medications are typically used to treat anxiety, depression, and other mental health problems. Their use among elderly hospital patients has been implicated in falls, hip fractures, cognitive impairment, and oversedation. Efforts to reduce adverse drug events in the elderly due to psychoactive medications have focused on reducing drug doses (due to age-related slower metabolic clearance of drugs) and improving drug selection. A new study, supported in part by the Agency for Healthcare Research and Quality (HS11169), found that adding psychoactive medication dosing and selection guidelines to a computerized order entry system at one hospital improved prescribing and reduced falls among elderly inpatients.

The investigators developed a database of dosing and selection guidelines that were displayed on the screen when physicians ordered psychoactive medications through the hospital's computerized order entry system. After a 6-week study period, they examined use of the guided prescription system and agreement with the recommended dosing and drugs, as well as inpatient falls, altered mental status, and hospital length of stay.

The researchers found that use of computerized guidelines increased adherence to recommended daily

doses from 19 to 29 percent. It also reduced the incidence of daily dosing that was 10 times higher than the average recommended daily dosing from 5 to 2.8 percent. In addition, using computerized guidelines reduced prescribing of nonrecommended drugs from 10.8 percent to 7.6 percent of total orders. Patients whose doctors used the guidelines also had a lower in-hospital fall rate (0.28 vs. 0.64 falls per 100 patient days). There was no difference in length of stay or days of altered mental status.

More details are in "Guided prescription of psychoactive medications for geriatric inpatients," by Josh F. Peterson, M.D., M.P.H., Gilad J. Kuperman, M.D., Ph.D., Caroline Shek, R.Ph., and others, in the April 11, 2005 *Archives of Internal Medicine* 165, pp. 802-807.

Editor's note: A related article examines the epidemiology of and solutions to inappropriate medication use in the elderly in nursing homes, hospitals, and other health care sites. For more details, see Zhan, C. (2005, May). "Inappropriate medication use in the elderly." *Journal of the Pharmacy Society of Wisconsin*, pp. 29-33. Reprints (AHRQ Publication No. 05-R058) are available from AHRQ.* ■

Decision support systems that minimize clinicians' efforts to receive and act on system recommendations can improve care

Four features are strongly associated with a decision support system's ability to improve clinical practice, according to a recent study conducted by researchers at Duke University Medical Center and Old Dominion University. All four of the features make it easier for clinicians to receive and act on system recommendations.

These features include providing decision support automatically as part of clinician workflow, delivering it at the time and location of decisionmaking,

providing actionable recommendations, and being computer-based. For example, systems that provided a recommendation (such as initiation of beta-blocker therapy in patients at high risk of coronary artery disease) were significantly more likely to succeed in improving patient care than systems that provided only an assessment of the patient (such as "Patient is at high risk of coronary disease"). The researchers correlated 15 decision support features with the systems' ability to significantly improve

patient care, after analyzing 70 randomized control trials on the topic.

Decision support systems significantly improved clinical practice in 68 percent of trials. Further analysis identified four features as independent predictors of improved clinical practice. Of 32 systems possessing all four features, 30 (94 percent) significantly improved clinical practice. Clinicians and other stakeholders should implement clinical decision support systems that incorporate these features

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Decision support systems

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whenever feasible and appropriate, suggest the researchers. Their work was supported in part by the Agency for Healthcare Research

and Quality (HS10472 and HS10814).

More details are in “Improving clinical practice using clinical decision support systems: A systematic review of trials to identify features critical to

success,” by Kensaku Kawamoto, B.A., Caitlin A. Houlihan, M.S., E. Andrew Balas, M.D., Ph.D., and David F. Lobach, M.D., Ph.D., in the March 2005 *British Medical Journal* 330, available online at www.bmj.com. ■

Adoption rates of electronic health records are low among physician groups

A comprehensive study by the Medical Group Management Association (MGMA) Center for Research and the University of Minnesota School of Public Health has captured the current state of adoption of electronic health records (EHR) by U.S. medical group practices. More than 3,300 medical group practices were surveyed in the Assessing Adoption of Health Information Technology project, which was supported by the Agency for Healthcare Research and Quality (Contracted 290-00-0017).

The survey, conducted in January and February 2005, indicates that just 14.1 percent of all medical group practices use an EHR, and just 11.5 percent have an EHR fully implemented for all physicians and at all practice locations. Only 12.5 percent of medical group practices with five or fewer full-time-equivalent physicians (FTE) have adopted an EHR. The adoption rate increased with the size of practice: groups with 6 to 10 FTE physicians reported a 15.2 percent adoption rate; groups with 11-20 FTE physicians reported an 18.9 percent adoption rate; and groups of 20 or more FTE physicians had a 19.5 percent adoption rate.

About 13 percent of groups were in the process of implementing an EHR, 14.2 percent said implementation is planned in the next year, and 19.8 percent said implementation was planned in 1 to 2 years.

The remaining 41.8 percent have no immediate plans for EHR adoption. Among those with no immediate plans for implementation, the difference between large and small groups is striking—47.8 percent of practices with five or fewer FTE physicians compared with only 20.7 percent of practices with 21 or more physicians.

Group practices cited lack of capital resources to invest in EHR as the top barrier to adoption. Researchers noted an important barrier to adoption is that practices are not convinced EHRs will improve their performance. They also note that the return on investment in terms of cost and quality is not yet evident.

The average purchase and implementation cost of an EHR was \$32,606 per FTE physician. Maintenance costs were an additional \$1,500 per physician per month. Smaller practices had the highest implementation cost per physician at \$37,204. Researchers also found that the average cost for EHR implementation was about 25 percent more than initial vendor estimates.

See “Medical groups’ adoption of electronic health records and information systems,” by David Gans, John Kralewski, Terry Hammons, and Bryan Dowd, in the September/October 2005 issue of *Health Affairs*, pp. 1323-1333. ■

Outcomes/Effectiveness Research

Patients with sciatica and lumbar disc herniation or spinal stenosis treated surgically or medically have similar 10-year outcomes

Sciatica, radiating pain in the lower back and legs, is generally caused by a herniated lumbar disc or lumbar spinal stenosis (mid-life degenerative changes in the spine). Both these conditions can be

treated with nonsurgical approaches or surgery. Three lumbar spine studies supported by the Agency for Healthcare Research and Quality (HS08194 and HS09804) found similar 10-year outcomes of sciatica patients

initially treated with surgery or with nonsurgical methods. They are described here.

Atlas, S.J., Keller, R.B., Wu, Y.A., and others. (April 2005). “Long-

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Spinal stenosis

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term outcomes of surgical and nonsurgical management of sciatica secondary to a lumbar disc herniation: 10 year results from the Maine Lumbar Spine Study.” *Spine* 30, pp. 927-935.

This study found similar 10-year outcomes among 217 patients with sciatica who had herniated lumbar discs initially treated with surgery and 183 similar patients initially treated with nonsurgical methods. A herniated lumbar disc can put pressure on the sciatic nerve that runs from the lower back down the back of each leg. The result can be debilitating lower back and leg pain, and perhaps numbness, burning or tingling in the legs or feet, a condition called sciatica. Surgery (discectomy) is generally reserved for patients who don't respond to conservative treatment such as medications, physical therapy, or manipulation.

Over a 10-year period, the investigators compared several outcomes of patients initially treated with surgery or nonsurgery. By 10 years, 25 percent of surgical patients had undergone at least one additional lumbar spine operation, and 25 percent of nonsurgical patients had at least one lumbar spine operation.

At 10 years, more surgical than nonsurgical patients reported that their low back and leg pain were much better or completely gone (56 vs. 40 percent) and were more satisfied with their current status (71 vs. 56 percent). Yet, a similar proportion of both groups reported improvement in their predominant symptoms of back or leg pain (69 vs. 61 percent) and disability status.

Atlas, S.J., Keller, R.B., Wu, Y.A., and others. (April 2005). “Long-term outcomes of surgical and nonsurgical management of lumbar spinal stenosis: 8 to 10 year results from the Maine lumbar spine study.” *Spine* 30(8), pp. 936-943.

Surgery rates for spinal stenosis have dramatically increased in the U.S. Medicare population. This study of 97 spinal stenosis patients with sciatica—56 initially treated surgically, and 41 initially treated nonsurgically—found similar outcomes at 10 years. Outcomes at 1 and 4 years favored initial surgical treatment. However, by 10 years, a similar percentage of surgical and nonsurgical patients reported that their low back pain was improved (53 vs. 50 percent), their predominant symptom (either back or leg pain) was improved (54 vs. 42 percent), and they were satisfied with their current status (55 vs. 49 percent). At 10 years, surgical patients reported less severe leg pain and greater improvement in back-specific functional status than nonsurgically treated patients. By 10 years, 23 percent of surgical patients had undergone at least one additional lumbar spine operation, and 39 percent of nonsurgical patients had at least one lumbar spine operation. Patients who underwent subsequent surgical procedures had worse outcomes than those continuing with their initial treatment. Thus, outcomes according to actual treatment received at 10 years did not differ.

Chang, Y., Singer, D.E., Wu, Y.A., and others. (May 2005). “The effect of surgical and nonsurgical treatment on longitudinal outcomes of lumbar spinal

stenosis over 10 years.” *Journal of the American Geriatric Society* 53, pp. 785-792.

This study included the 97 patients in the previous study who had 8 to 10 years of followup and 47 additional patients who completed at least one followup survey but not the 8 to 10 year survey. Seventy-seven sciatica patients with lumbar spinal stenosis initially treated surgically and 67 patients initially treated nonsurgically also revealed similar outcomes at 10 years, as well as an overall 10-year survival rate of 69 percent. The researchers used models to analyze the longitudinal data over the 10-year period. The models included initial treatment, time period, interaction between treatment and time, baseline health score, patient age and sex, and time-varying general health status score.

The 10-year rate of subsequent surgical procedures was 23 percent and 38 percent for patients initially treated surgically and nonsurgically, respectively. As in the previous two studies, patients undergoing initial surgical treatment had worse baseline symptoms and functioning than those initially treated nonsurgically. For all outcomes and at each time point, surgically treated patients reported greater improvement in symptoms and functional status and higher satisfaction than nonsurgically treated patients. However, the relative benefit of surgery diminished over time, so that the differences for low back pain and satisfaction were no longer significant between 5 and 10 years.



Collaboration between gastroenterologists and pharmacists improves the management of patients with chronic acid-related symptoms

At least 25 percent of the population suffers at some point from an acid-related disorder, such as gastro esophageal reflux disease (GERD), peptic ulcer disease, and dyspepsia (indigestion). There is little guidance for physicians in managing patients who have taken acid-suppressing medication such as proton pump inhibitors (PPIs) or histamine-2 blockers (H2Bs) for many years.

Chronic acid-suppressing medication use and long-term lifestyle changes may be reasonable for patients with GERD. However, patients without GERD who have upper gastrointestinal symptoms requiring the use of chronic acid suppressing prescription medications should have their blood tested for *Helicobacter pylori* (*H. pylori*) infection and undergo treatment if they test positive.

Educational outreach by gastroenterologists (academic detailing) and pharmacist reinforcement can improve management of patients without GERD who suffer from chronic acid-related symptoms. That's the conclusion of a study supported in part by the Agency for Healthcare Research and Quality (HS10391).

Researchers compared *H. pylori* testing and treatment and use of PPIs and H2Bs in three groups: usual care, low-intensity care (care guidelines and toolkits containing *H. pylori* testing and treatment information), and high-intensity care (care guidelines and toolkits plus academic group detailing by a gastroenterologist with reinforcement of care guidelines by pharmacists). High-intensity care increased *H. pylori* test ordering (29 percent) compared with usual care (9 percent) at 12 months. High-intensity care decreased PPI use by 9 percent per year but did not alter H2B use. The low-intensity intervention was ineffective.

See "Controlled trial of interventions to increase testing and treatment for *Helicobacter pylori* and reduce medication use in patients with chronic acid-related symptoms," by Sumit R. Majumdar, M.D., M.P.H., D. Ross-Degnan, Sc.D., Francis A. Farrayes, M.D., and others, in the April 2005 *Alimentary Pharmacology & Therapeutics* 21, pp. 1029-1039. ■

Training clinicians to support the autonomy of patients with diabetes may help improve outcomes

Getting patients with diabetes to manage the disease with diet, exercise, blood sugar measurements, and medication compliance is a huge challenge for doctors. According to a study supported by the Agency for Healthcare Research and Quality (HS10123), when doctors encourage patients to become actively involved in managing their diabetes and persuade them that they are competent to do so, the patients tend to be less depressed, more satisfied, and have lower blood sugar levels.

The researchers surveyed 634 patients with type 2 diabetes being cared for by 31 Colorado primary care physicians (PCPs) who were participating in a 4-year diabetes

quality improvement program. Researchers collected information on demographics, disease and treatment, and autonomy support. Autonomy support included how supportive their PCP was of patients managing their diabetes by providing them with information, choices, and options for handling their diabetes and respecting the patients' perspectives. Researchers also measured patient satisfaction, depressive symptoms, and perceived competence. The patients' blood glucose (HbA1c) levels were measured to check the average level of glycemic control they had maintained over the previous 3 to 4 months.

Autonomy support was positively associated with perceived

competence and patient satisfaction and negatively associated with depression and HbA1c levels. Thus, clinician support of a patient's management of their own diabetes had a significant direct effect on patients' perceived competence and satisfaction and significant indirect effects on depression and HbA1c levels.

See "Variation in perceived competence, glycemic control, and patient satisfaction: Relationship to autonomy support from physicians," by Geoffrey C. Williams, M.D., Ph.D., Holly A. McGregor, M.S., Diane King, M.S., O.T.R., and others, in the April 2005 *Patient Education and Counseling* 57, pp. 39-45. ■

Clinical Decisionmaking

Distinct differences found in transient ischemic attacks with and without infarction

Transient ischemic attacks (TIAs), also called “mini strokes,” caused by limited blood supply to the brain, can cause symptoms ranging from temporary vision loss and difficulty speaking to weakness or numbness on one side of the body. If symptoms last longer than 24 hours, they are considered to be a stroke. However, TIAs with infarction (tissue death due to lack of blood supply) appear to have unique features separate from TIAs without infarction and ischemic stroke and should be considered a separate clinical syndrome, transient symptoms with infarction (TSI), suggests a new study.

The study was supported in part by the Agency for Healthcare Research and Quality (HS11392) and led by Walter J. Koroshetz, M.D., of Harvard Medical School. His team studied clinical and imaging features of 87 patients with TIA and 74 patients with ischemic stroke to establish similarities and differences among patients with ischemic stroke, TIA without infarction, and TSI.

Although TIA-related infarcts were smaller than those associated with ischemic stroke (mean 0.7 vs. 27.3 ml), there was no lesion size that distinguished ischemic stroke from TSI. Duration of symptoms did not distinguish TIA from TSI. Third, symptoms in patients with TIA or TSI were short, usually lasting a few minutes, and only very rarely longer than 200 minutes. Stroke, on the other hand, is defined as ischemic symptoms lasting more than 24 hours.

A history of recent prior TIA (within 30 days), non-penetrator artery location, and small infarct size were independent predictors of recovery. Most importantly, in this group, patients with TSI appeared to have substantially greater risk for recurrent ischemic stroke than patients with TIA without infarction or ischemic stroke.

More details are in “Transient ischemic attack with infarction: A unique syndrome,” by Hakan Ay, M.D., Dr. Koroshetz, Thomas Benner, Ph.D., and others, in the May 2005 *Annals of Neurology* 57(5), pp. 679-686. ■

Pharmaceutical Research

Study reveals a lower prevalence of a rare vasculitis syndrome among asthma drug users than previously reported

Only a small minority of people with asthma suffer from Churg-Strauss syndrome (CSS), a rare systemic vasculitis, which involves inflammation of the blood vessels in the lungs, skin, nerves, abdomen, and other organs. Some studies have linked the development of CSS with the use of relatively new drugs such as Singulair™ (montelukast). These drugs block the action of leukotrienes, which regulate allergic and inflammatory reactions. Leukotrienes are released during the inflammation process that occurs in asthma. A new study

shows a lower prevalence of CSS among asthma drug users, including users of leukotriene modifiers, than previously reported.

The study, supported in part by the Agency for Healthcare Research and Quality (HS10391), estimated the incidence of CSS among adults with asthma who had been dispensed three or more asthma drugs at three managed care organizations during any consecutive 12-month period between January 1, 1995 and June 30, 2000. Asthma drugs ranged from leukotriene modifiers and inhaled corticosteroids to

cromolyn-like medications, beta agonists, and theophylline.

From the medical records of 184,667 asthma drug users, the researchers identified 21 cases of CSS, for an overall incidence of 34.6 per million person-years. CSS rates did not differ by sex or age group.

The incidence rates for 1995, 1996, 1997, 1998, 1999, and the first 6 months of 2000 were 0, 22, 52, 75, 14, and 14 per million person-years respectively. Most of these estimates were below previous CSS estimates of 60 per

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Vasculitis syndrome

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million person-years among people with asthma using leukotriene modifiers and other asthma drugs,

but greater than that seen in the general population.

See "Incidence of Churg-Strauss syndrome in asthma drug users: A population-based perspective," by Leslie R. Harrold, M.D., M.P.H.,

Susan E. Andrade, Sc.D., Alan S. Go, M.D., and others, in the June 2005 *Journal of Rheumatology* 32(6), pp. 1076-1080. ■

Rural Health

Many rural primary care providers seek information to support patient care, but most still prefer print over online sources

Having current, evidence-based information available to answer clinical questions that occur during patient care is critical to providing high quality care. According to a study supported by the Agency for Healthcare Research and Quality (HS13487), more than three-fourths (76 percent) of practitioners in a rural primary care practice-based research network (PBRN) seek information to support patient care at least several times per week from colleagues, print, or online resources (not including information on drug dosing or interactions). However, many (60 percent) never or almost never get evidence-based medicine information from online sources, such as the Cochrane library.

Kevin A. Pearce, M.D., M.P.H., of the University of Kentucky, and coinvestigators surveyed every primary care practitioner who was a member of the Kentucky Ambulatory Network about their knowledge and use of medical online and print information resources. Of the 59 survey respondents, 58 percent stated that they sought information to support patient care several times per week, 18 percent daily, 22 percent rarely, and

2 percent never; and most (68 percent) did this while the patient waited.

Almost 40 percent of respondents never or almost never performed literature searches from online sources such as MEDLINE, although 44 percent said they did so a few times per month. Half (50 percent) sought drug information on the Internet a few times a week or daily. When asked about print resources, 61 percent of clinicians used drug references such as the *Physicians Desk Reference*, 58 percent used medical textbooks, 48 percent used handbooks or manuals, and 42 percent used print journals a few times a week or daily. Practitioners cited lack of time (76 percent), cost (33 percent), format of information sources (22 percent), and information-seeking skills (25 percent) as the main barriers to seeking health information.

See "Information-seeking behaviors of practitioners in a primary care practice-based research network (PBRN)," by James E. Andrews, Ph.D., Dr. Pearce, Carol Ireso, Ph.D., and Margaret M. Love, Ph.D., in the April 2005 *Journal of the Medical Library Association* 93(2), pp. 206-212. ■

Health Care Costs and Financing

Out-of-pocket health care expenses pose a significant financial burden for low-income families with children

Socioeconomic disparities exist in the financial burden of out-of-pocket (OOP) health care expenditures for families with children. In a new study supported by the Agency for Healthcare Research and Quality (HS11662), investigators analyzed data from the 2001 Medical Expenditure Panel

Survey on health care use and expenditures. They examined families' financial burdens (ratio of OOP family health care expenditures per \$1,000 of family income) for 4,531 families with children under 18 years. OOP expenses included direct payments,

deductibles, co-insurance, copayments, and premiums.

Families in the lowest income group paid a disproportionately larger share of family income for total OOP expenditures than all other income groups. More than a

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Out-of-pocket health care expenses

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quarter of families (28 percent) living below the Federal poverty level (FPL) had total OOP health care expenditures that exceeded 10 percent of family income, compared to 6.3 percent of families with incomes greater than 400 percent FPL. Families with incomes less than 100 percent of the FPL spent an average of \$119.66 OOP per \$1,000 of family income, while

families with incomes 100 to 199 percent of the FPL spent \$66.30 OOP per \$1,000, and families with incomes greater than 400 percent FPL spent \$37.75 OOP per \$1,000.

For low-income families, full-year public coverage provided significantly greater protection from financial burden than full-year private coverage. However, full-year public coverage was not associated with reduced financial burden compared with being uninsured all year. Despite similar financial burden, families with public

insurance had more physician visits and less need to forego needed care to pay for food and housing than the uninsured group.

See “Out-of-pocket financial burden for low-income families with children: Socioeconomic disparities and effects of insurance,” by Alison A. Galbraith, M.D., M.P.H., Sabrina T. Wong, R.N., Ph.D., Sue E. Kim, Ph.D., M.P.H., and Paul W. Newacheck, Dr.P.H., in the June 2005 *Health Services Research*, which is available online at www.biomedcentral.com. ■

At least one-fourth of older adults will be uninsured at some point during the years preceding eligibility for Medicare

Adults in late middle age who are uninsured may be particularly vulnerable to declining health and function due to their higher prevalence of chronic disease and ineligibility for Medicare. In addition, at least one-fourth of Americans ages 51 to 57 years will be uninsured at some point during the years preceding eligibility for Medicare concludes a study supported by the Agency for Healthcare Research and Quality (HS10283).

David W. Baker, M.D., M.P.H., of Northwestern University, and Joseph J. Sudano, Ph.D., of Case Western Reserve University interviewed a nationally representative sample of 6,065 U.S. adults aged 51 to 57 as part of the National Health and Retirement Study. The proportion of participants who were uninsured at the time of the interviews conducted in 1992, 1994, 1996, 1998, and 2000 was 14.3 percent, 10.8 percent, 9.7 percent, 8.8 percent, and 8.2 percent, respectively. Even though the prevalence of being

uninsured declined over the 8-year period, 23.3 percent of the 4,641 participants who completed the 2000 interview stated that they had been uninsured at least once during that time. Only 60 percent of participants were continuously enrolled in private insurance across all five interviews.

Among individuals who were uninsured at baseline, over one-fourth were covered by public insurance by the end of the study. The public insurance safety net is essential for older adults with severe health problems, note the researchers. The ability of this group to get private health insurance coverage is limited because of their restricted employment opportunities and the high cost of individual health insurance policies for people with preexisting conditions.

See “Health insurance coverage during the years preceding Medicare eligibility,” by Drs. Baker and Sudano, in the April 11, 2005 *Archives of Internal Medicine* 165, pp. 770-776. ■

Ethics consultations can reduce nonbeneficial treatments and costs among dying patients

Conflicts often arise within a family, among health care providers, or between providers and the family, about the use of aggressive life-sustaining treatment among adult patients in intensive care units (ICUs) who ultimately do not survive to hospital discharge. Ethics consultations can

help redirect the focus of treatment from aggressive and futile efforts at prolonging life to permitting a comfortable, dignified death, explains Lawrence J. Schneiderman, M.D., of the University of California, San Diego. In the process, ethics consultations can also reduce hospital days and

treatment costs among these patients, concludes a study supported by the Agency for Healthcare Research and Quality (HS10251).

Dr. Schneiderman and his colleagues estimated the costs of

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Ethics consultations

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nonbeneficial treatment (life-prolonging treatment for patients who do not survive to hospital discharge) using results from a randomized trial of ethics consultations at six hospitals with busy ICUs and active ethics consultation services. The study randomized about 500 patients with conflicts about care to either an ethics consultation or usual care (consultation not offered).

Among patients who survived to hospital discharge, there was no

difference in length of stay (LOS) or costs between the two groups. However, among patients who failed to survive to hospital discharge, patients in the ethics consultation intervention group had a shorter LOS than the control group (an average of 8 days vs. 11 days, respectively). The intervention group also had lower hospital costs with an average of \$24,938 compared to \$30,184 for patients in the control group.

Five of the six hospitals saw reductions in costs related to ethics consultations ranging from \$2,276 to \$5,573 per patient. The

researchers estimated that an ethics consultation practice would reduce treatment costs in a hospital with 40 ICU beds by \$157,380. More than 90 percent of nurses and physicians and 80 percent of patients or their surrogates said they would seek ethics consultations again and recommend them to others.

See "The costs of nonbeneficial treatment in the intensive care setting," by Todd Gilmer, Ph.D., Dr. Schneiderman, Holly Teetzel, M.A., and others, in the July 2005 *Health Affairs* 24(4), pp. 961-971. ■

Agency News and Notes

Task Force issues recommendation against routing testing for genetic risk of breast or ovarian cancer in the general population

Primary care physicians should not routinely refer all women for genetic counseling and DNA testing to detect the presence of specific BRCA1 and BRCA2 gene mutations that may be associated with breast or ovarian cancers, according to a new recommendation from the U.S. Preventive Services Task Force. However, if a woman has certain specific family history patterns that put her at risk for these gene mutations, her primary care physician should suggest counseling and possible DNA testing.

This is the first time the Task Force has addressed the issue of genetic counseling and DNA-based genetic testing for any disease. These recommendations, along with a review of the supporting evidence, appear in the September 6, 2005 issue of the *Annals of Internal Medicine*.

BRCA1 and BRCA2 are genes that help control normal cell

growth. Women who inherit specific changes or mutations in one or both of these genes have a greater risk of developing breast and/or ovarian cancer, especially if their family members have had one or both of these cancers. However, only a small number of women (about 2 percent) have the specific family history patterns that put them at risk for BRCA mutations. In the general population, only about 1 in 300 to 1 in 500 women are believed to have these harmful genetic mutations. Even among women with these mutations, not everyone will actually develop breast or ovarian cancer.

The Task Force found evidence in the scientific literature that women with BRCA1 and BRCA2 mutations can reduce their risk of developing breast or ovarian cancer by mastectomy or oophorectomy. Women may also choose to undergo intensive screening by frequent clinical breast examinations and mammography or

preventive chemotherapy, but the benefits remain uncertain. The Task Force does recommend that, starting at age 40, all women should be screened for breast cancer using mammography.

The Task Force recommends against routine referral for genetic counseling or BRCA testing for women whose family history does not indicate an elevated risk. The Task Force does recommend that women whose family history indicates an increased likelihood of harmful BRCA1 and BRCA2 mutations be referred for genetic counseling and evaluation for BRCA testing.

The Task Force, sponsored by the Agency for Healthcare Research and Quality, is the leading independent panel of private-sector experts in prevention and primary care and conducts rigorous, impartial assessments of the scientific evidence for a broad range of preventive services. Its

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Task Force recommendation

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recommendations are considered the gold standard for clinical preventive services. For this recommendation, the Task Force based its conclusions on a report from a research team led by Heidi D. Nelson, M.D., M.P.H., at AHRQ's Evidence-based Practice Center at Oregon Health & Science University in Portland.

Details are in "Genetic risk assessment and BRCA mutation testing for breast and ovarian cancer susceptibility: Recommendation

statement," by the U.S. Preventive Services Task Force, in the September 6, 2005 *Annals of Internal Medicine*, 143(5), pp. 355-361.

See also, "Genetic risk assessment and BRCA mutation testing for breast and ovarian cancer susceptibility: Systematic evidence review for the U.S. Preventive Services Task Force," by Heidi D. Nelson, M.D., M.P.H., Laurie Hoyt Huffman, M.S., Rongwei Fu, Ph.D., and Emily L. Harris, Ph.D., M.P.H., in the same journal, pp. 362-379.

Editor's note: Task Force recommendations and materials for clinicians are available on the

AHRQ Web. Go to www.ahrq.gov and select "Clinical Information" for more information on this recommendation as well as previous Task Force recommendations, including screening for bladder, breast, colorectal, cervical, lung, ovarian, oral, pancreatic, prostate, skin, testicular, and thyroid cancers. Print materials are available from the AHRQ Publications Clearinghouse. See the back cover of *Research Activities* for ordering information. Clinical information is also available from AHRQ's National Guideline Clearinghouse at <http://www.guideline.gov>. ■

New evidence report on soy finds limited evidence for health outcomes

Daily consumption of soy protein found in tofu and other soybean products may result in a small reduction in low-density lipoprotein (LDL, also known as "bad" cholesterol) and triglyceride levels, according to a new evidence review, the *Effects of Soy on Health Outcomes*, supported by the Agency for Healthcare Research and Quality. In addition, isoflavones found in soy may reduce the frequency of hot flashes in postmenopausal women. However, the available studies on the health impacts of soy were limited in number, of poor quality, or their duration was too short to lead to definite conclusions.

Overall, across the 68 studies that examined the impact of soy on cholesterol levels, consumption of soy products resulted in about a 3-percent reduction in LDL and about a 6-percent decrease in triglyceride levels in the populations studied. These studies, examined a large variety of soy products, doses of soy protein, and doses of soy isoflavones. The average dose of soy protein in the studies was equivalent to about one pound of tofu or three soy shakes daily.

There was some indication that soy consumption may be more effective at lowering LDL among people with higher LDL levels. Also, larger amounts of soy protein, but not soy isoflavones, are more effective in people with abnormally elevated LDL levels. Similarly, soy consumption may be more effective at lowering triglycerides among people with higher triglyceride levels. However, there was no evidence of how much soy protein or isoflavones would be needed to affect triglycerides.

Reviews on the relationship between soy consumption and high-density lipoprotein (HDL, also known as "good" cholesterol) levels and between soy consumption and blood pressure did not find significant effects. Among 21 studies evaluating the consumption of soy isoflavones for menopause-related symptoms, there was a net reduction in hot flash frequency ranging from 7 percent to 40 percent, however, these trials were mostly rated as poor quality. Among studies with statistically significant improvements in symptoms, the dose of soy isoflavones ranged from 17.5 to 100 mg/day.

The evidence review also found insufficient data among the 200 human studies examined as part of this analysis to suggest that soy had an effect on bone health, cancer, kidney disease, endocrine function, reproductive health, neurocognitive function, or glucose metabolism. A wide variety of soy products were studied, including soybeans, soy flour, soy milk, tofu, miso, tempeh, natto, and okara; isolated and textured soy protein that is added to foods; and soy-derived isoflavone supplements. Aside from minor gastrointestinal problems reported in some short-term studies, consumption of soy products by study participants was not associated with adverse events. However, long-term safety data are lacking.

The evidence review was prepared by a team of researchers led by Ethan Balk, M.D., and Joseph Lau, M.D., of AHRQ's Tufts-New England Medical Center

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Evidence report on soy

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Evidence-based Practice Center in Boston. The researchers who conducted the evidence review, which was also supported by the National Institute of Health's National Center for Complementary and Alternative Medicine and Office of Dietary Supplements, considered the type of soy product used, amount consumed, frequency of consumption, and safety issues in their review of health effects.

Editor's note: There are 13 AHRQ-supported Evidence-based Practice Centers (EPCs). They

systematically review the relevant scientific literature on topics assigned to them by AHRQ and conduct additional analyses when appropriate prior to developing their reports and assessments. The goal is to inform health plans, providers, purchasers, and the health care system as a whole by providing essential information to improve health care quality.

All of AHRQ's EPC reports, as well as several technical reviews, that have been published to date are available online and through the AHRQ Clearinghouse. Visit the AHRQ Web site at www.ahrq.gov and click on "Clinical Information" or see the back cover of *Research Activities* for ordering information. ■

New publication helps consumers understand and get quality health care

The Agency for Healthcare Research and Quality has released a new publication, *Guide to Health Care Quality: How To Know It When You See It*, to help consumers identify high-quality health care. This booklet is part of AHRQ's new consumer education campaign to help people take a more active role in their own health care.

The *Guide to Health Care Quality* includes steps that consumers can take to improve their quality of care. It explains the difference between clinical

measures and consumer ratings. Clinical measures, such as those in AHRQ's *National Healthcare Quality Report* and *National Healthcare Disparities Report*, are used to track and improve the quality of care provided by doctors, hospitals, and other providers. While clinical measures can be used to assess quality of care, consumer ratings can indicate how satisfied people are with their health care. The booklet also lists Web sites and phone numbers for selected organizations and other resources.

The new booklet can be found online at AHRQ's Web site <http://www.ahrq.gov>. Select "Quality of Care" under the heading "Consumers & Patients" from the homepage. Free single copies of the *Guide to Health Care Quality: How To Know It When You See It* (AHRQ Publication No. 05-0088) are available through the AHRQ Publications Clearinghouse.* See the back cover of *Research Activities* for ordering information. ■

Announcements

AHRQ expands women's health program to include gender-based research

AHRQ is expanding its research on women's health to include gender-based analysis, a field that is receiving increased emphasis within the Department of Health and Human Services and among other stakeholders. To lead the Agency's involvement in this coordinated effort, AHRQ has designated Rosaly Correa-de-Araujo, MD, M.Sc., Ph.D., as the Director of Women's Health and Gender-Based Research.

In her new role, Dr. Correa will direct the development of an intramural and extramural research

agenda that will initially focus on gender analysis across diverse racial and ethnic groups on the quality and outcomes of care for chronic conditions. This new field of inquiry has created a broad range of research opportunities and, consequently, the chance to improve treatment and disease outcomes through interventions that address the specific needs of women and men of any age, race, ethnicity, or socioeconomic status. Dr. Correa will continue to direct all women's health priority issues for the Agency in close coordination with other Federal partners. ■

AHRQ grantee in the spotlight

Penny H. Feldman, Ph.D., and Margaret V. McDonald, M.S.W., C.S.W., of the Center for Home Care Policy and Research for the Visiting Nurse Service of New York are being honored by the Honor Society of Nursing, Sigma Theta Tau, for their article "Conducting translation research in the home care setting: lessons from a just-in-time reminder study." The article, based on research supported by AHRQ (HS10542), has been selected as the 2005 recipient of the "Best of Worldviews on Evidence-Based Nursing."

Worldviews on Evidence-Based Nursing is a peer-reviewed journal

that provides knowledge synthesis and research articles on best evidence to support best practices globally for nurses in a wide range of roles, from clinical practice and education to administration and public health care policy. This award is one of several international awards that are conferred biennially at the honor society's international convention in the areas of technology, media, chapter excellence, research, and leadership.

The article examines issues in implementing evidence-based practice in home health care, a decentralized setting that lacks strong peer contact or on-site

support and supervision compared with hospitals, clinics, and nursing homes. The authors demonstrate that translational research on the effectiveness of an E-mail reminder (by itself or augmented with other reminders) to nurses about treatment of heart failure or cancer pain patients can be successfully conducted in the home health care setting.

More details can be found in the article "Conducting translation research in the home care setting: Lessons from a just-in-time reminder study" by Dr. Feldman and Ms. McDonald, in *Worldviews on Evidence-Based Nursing* 1, pp. 49-59, 2004. ■

Grant final reports now available from NTIS

The following grant final reports are now available from the National Technical Information Service (NTIS). Each listing identifies the project's principal investigator, his or her affiliation, grant number, and project period and provides a brief description of the project. See the back cover of *Research Activities* for ordering information.**

Records of all 750,000 documents archived at NTIS—including many AHRQ documents and final reports from all completed AHRQ-supported grants—can now be searched on the new NTIS Web site. For information about findings from the projects described here, please access the relevant final reports at the NTIS Web site. Also, all items in the database from 1997 to the present can be downloaded from the Web site. Go to www.ntis.gov for more information.

Editor's note: In addition to the final reports, you can access information about these projects from several other sources. Most of

these researchers have published interim findings in the professional literature, and many of their articles have been summarized in Research Activities during the course of the project.

To find information presented in back issues of *Research Activities*, go to the AHRQ Web site at www.ahrq.gov and select "Research Activities" from the "A-Z Quick Menu." Then select "Search Research Activities" and enter either the grant or contract number or the principal investigator's last name in the query line. A reference librarian can help you find related journal articles through the National Library of Medicine's PubMed.®

***Nursing Home Outcomes as Quality Indicators*, Kathleen Cagney, M.A., University of Chicago, IL. AHRQ grant HS09827, project period 9/30/98-9/29/00.**

These researchers examined quality differentials for a multi-State census of nursing homes.

Analyses indicate that nursing homes with lower than expected mortality outcomes have a greater proportion of residents who use antidepressants and a smaller ratio of residents to nursing staff. nursing homes with higher than expected mortality outcomes have a disproportionate number of residents with feeding tubes and a higher number of black residents. Comparisons of this type, incorporating both resident-level and institutional characteristics, may assist policymakers in identifying opportunities for intervention. (Abstract, executive summary, and final report, NTIS accession no. PB2005-107594; 32 pp, \$29.50 paper, \$14.00 microfiche)**

***Assimilation of Information to Support Decisions*, Francois Sainfort, Ph.D., University of Wisconsin, Madison. AHRQ grant HS09975, project period 9/30/98-6/30/01.**

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Grant final reports

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This project involved the design of a cutting-edge Web-based system that applied information editing techniques to help consumers use all potential information available when making a health plan choice. Researchers compared use of this customizable display of information on costs, benefits, quality, rules, and choice of providers with static presentations of information using two media: a Web-based system without customization and paper. They also evaluated the various approaches for differences in the choices made, satisfaction with the decisionmaking process, and knowledge and understanding. (Abstract, executive summary, and final report, NTIS accession no. PB2005-108299; 116 pp, \$38.00 paper.)**

***Multi-institutional Test Bed for Clinical Vocabulary*, Christopher G. Chute, M.D., Ph.D., Mayo Foundation, Rochester, MN. AHRQ grant HS08751, project period 9/30/94-9/29/98.**

Researchers examined whether clinical descriptions of patients could be compared among different care environments and demonstrated the critical importance of having comparable patient data. They enhanced development of terminologies that are used by many health care providers and fostered the development of clinical concept navigation tools for integration into clinical record systems. (Abstract and final report, NTIS accession no. PB2005-103109; 12 pp, \$26.50 paper, \$14.00 microfiche.)**

***Quality Outcomes in Subacute and Home Care Programs*, John N. Morris, Ph.D., Hebrew Rehabilitation, Boston, MA. AHRQ grant HS09455, project period 9/30/96-9/29/00.**

The goals of this project were to operationalize and evaluate eight key performance measures for subacute and home care programs, identify covariance-risk factors for these measures, establish profiles of these measures in disease groups, and evaluate the performance of the measures. The measures included Activities of Daily Living, mobility, cognitive performance, communication, bowel continence, bladder continence, pain, and mood symptoms. Researchers operationalized seven of eight outcome measures. Bowel incontinence was not operationalized due to the extreme rarity of this outcome in the subacute population. (Abstract, executive summary, and final report, NTIS accession no. PB2005-106484; 24 pp, \$23.50 paper, \$14.00 microfiche.)**

***Functional Outcomes in Patients with Hip Fractures*, Albert L. Siu, M.D., Mount Sinai Medical Center, New York. AHRQ grant HS09459, project period 9/30/96-9/29/02.**

These researchers demonstrated the validity of functional status as a quality measure by showing that specific patient care activities (processes of care) could influence functional outcomes and that providers could improve certain functional outcomes by changing the way they deliver care. (Abstract and final report, NTIS accession no. PB2005-106485; 20 pp, \$26.50 paper, \$14.00 microfiche.)**

***Pediatric Disaster Preparedness and Response Conference*, David S. Markenson, M.D., Columbia University, New York. AHRQ grant HS13855, project period 9/30/02-9/29/03.**

Children have needs that are often poorly considered and rarely studied in disaster planning and response. This conference was held

to develop research methodologies and a research plan on the needs of children during disasters. The specific goals were to build a coalition of experts and professional organizations from the fields of pediatrics, disaster planning, emergency medicine, emergency response, trauma, and mental health and to identify States that have existing disaster plans and experience with a recent disaster to solicit their participation. The major result of the conference was a set of recommendations and guidelines to address the particular vulnerabilities of children to terrorist attacks or disasters and possible responses. (Abstract, executive summary, and final report, NTIS accession no. PB2005-103045; 60 pp, \$31.50 paper, \$14.00 microfiche.)**

***PEAT: Pediatric Emergency Assessment Tool*, Marc Gorelick, Medical College of Wisconsin, Milwaukee. AHRQ grant HS11395, project period 9/30/00-9/29/03.**

The primary objective of this study was to develop and validate a predictive model to be used as a risk-adjustment tool when evaluating outcomes of pediatric emergency care. The model uses information readily available and routinely recorded at the time of triage to predict the intensity of services required. (Abstract, executive summary, and final report, NTIS accession no. PB2005-105208; 34 pp, \$29.50 paper, \$14.00 microfiche.)**

***Quality Measures for Severe/Persistent Mental Illness*, Richard C. Herman, McLean Hospital, Beaumont, MA. AHRQ grant HS10303, project period 9/30/99-3/31/03.**

Researchers accomplished several goals toward advancing the

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status of quality measurement of mental health care. First, they developed a national inventory of 310 process measures for quality assessment of mental health and substance-related care, including

specifications, rationales, evidence bases, and conformance and testing results. Second, using a formal consensus development process and a framework for measure selection, they led a multi-stakeholder panel in the selection of 28 core measures for further development and testing. Third, they tested the

feasibility and validity of selected core measures. The inventory of quality measures is available in a searchable database at www.cqaimh.org. (Abstract, executive summary, and final report, NTIS accession no. PB2005-105209; 98 pp, \$34.00 paper, \$20.00 microfiche.)** ■

Research Briefs

Aujesky, D., Auble, T.E., Yealy, D.M., and others. (2005, April). "Prospective comparison of three validated prediction rules for prognosis in community-acquired pneumonia." (AHRQ grant HS10048). *American Journal of Medicine* 118, pp. 384-392.

Researchers found that the Pneumonia Severity Index (PSI) was slightly more accurate than two other methods used to identify pneumonia patients who are at low risk of dying and, therefore, are candidates for outpatient rather than inpatient care. The investigators compared the ability of the PSI with the CURB (confusion, urea nitrogen, respiratory rate, and blood pressure) and CURB-65 severity scores to identify low-risk patients among 3,181 pneumonia patients from 32 hospital emergency departments. The PSI classified more patients as low risk (68 percent) than either a CURB score less than 1 (51 percent) or a CURB-65 score less than 2 (61 percent). Patients identified by the PSI as low-risk had a slightly lower mortality (1.4 percent) than those classified as low risk by the CURB or CURB-65 (1.7 percent).

Aujesky, D., Stone, R.A. Obrosky, D.S., and others. (2005, April). "Using randomized controlled trial data, the agreement between

retrospectively and prospectively collected data comprising the pneumonia severity index was substantial." (AHRQ grant HS10049). *Journal of Clinical Epidemiology* 58, pp. 357-363.

The Pneumonia Severity Index (PSI) uses 20 clinical variables to assign patients with community-acquired pneumonia (CAP) into five risk classes. Whether the clinical data are collected prospectively or retrospectively seems to result in a similar classification of patient risk of dying. The researchers analyzed data from a randomized trial of CAP patients managed in 32 hospital emergency departments. Among the 3,220 enrolled CAP patients, percent agreement between retrospectively and prospectively collected data was greater than 90 percent for 18 of 20 PSI variables.

Baker, D.P., Salas, E., King, H., and others. (2005, April). "The role of teamwork in the professional education of physicians: Current status and assessment recommendations." (AHRQ contract 282-98-0029). *Journal on Quality and Patient Safety* 31(4), pp. 185-202.

The critical role that teamwork plays in patient safety is well recognized. Team members must possess specific knowledge, skills,

and attitudes (KSAs), such as the ability to exchange information, which helps individual team members coordinate care. The authors describe the roles of different regulatory bodies in assessing team performance of physicians, where and when these assessments might take place (during physician medical education, board certification, licensure, and continuing practice), and how performance might be measured. These issues, combined with team KSA competencies, form their approach for measuring team performance in health care.

Boehm, D.A. (2005, March). "The safety net of the safety net: How federally qualified health centers 'subsidize' Medicaid managed care." (AHRQ grant HS09703). *Medical Anthropology Quarterly* 19(1), pp. 47-63.

The author examines the impact that Salud! New Mexico's Medicaid Managed Care program—has had on federally qualified health centers (FQHCs). FQHCs are safety-net organizations on the front lines of health care delivery to the poor. According to the author, the role of FQHCs has been transformed as a result of Medicaid managed care and they now serve as a primary safety net for Salud!

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Research briefs

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Chang, R.K., Qi, N., Larson, J., and others. (2005, April). "Comparison of upright and semi-recumbent postures for exercise echocardiography in healthy children." (AHRQ grant HS13217). *American Journal of Cardiology* 95, pp. 918-921.

Placing children in a semi-recumbent position at a 70-degree angle with back support results in better quality images during exercise echocardiography procedures than a 90-degree upright position. In the semi-recumbent posture with back support, children were able to maintain torso stability during cycling to allow the acquisition of better quality images in a shorter period of time. Both positions had similar echocardiographic measurements.

Cook, R., and Rasmussen, J. (2005, July). "Going solid: A model of system dynamics and consequences for patient safety." (AHRQ grants HS11816 and HS14261). *Quality and Safety in Health Care* 14, pp. 130-134.

Practitioners are familiar with "bed crunch." It is a term used to describe situations where a busy unit in a hospital, such as a surgical intensive care unit, becomes saturated with work and results in an operational bottleneck. Other hospital units usually buffer the consequences of a localized bed crunch by absorbing workload, deferring transfers, etc. However, modern management techniques and information systems have allowed facilities to reduce inefficiencies in operation, which also reduces the buffers that previously accommodated care demand surges. This situation is called "going solid," a nuclear power slang term used to describe a technical situation that has become

difficult to manage and has very little room for error. The authors use a dynamic safety model to help understand the implications of how "going solid" in health care facilities may lead to accidents.

Fuhlbrigge, A.O., Carey, F.J., Finkelstein, J.A., and others. (2005, May). "Validity of the HEDIS criteria to identify children with persistent asthma and sustained high utilization." (AHRQ grant HS08368). *American Journal of Managed Care* 11, pp. 325-330.

The points in time when children with persistent asthma are identified and performance is assessed by HEDIS criteria should be closely related, concludes this study. The researchers examined whether a previously observed association between the HEDIS performance measure and asthma-related emergency department visits was robust when the period between the classification and outcome assessment was evaluated during a 2-year period. They studied nearly 3,000 children with asthma from three managed care organizations. The protective relationship between controller medication dispensing and asthma-related emergency department visits was no longer seen among children meeting the HEDIS criteria for persistent asthma when the period of observation was extended to 2 years.

Haukoos, J.S., and Lewis, R.J. (2005, April). "Advanced statistics: Bootstrapping confidence intervals for statistics with 'difficult' distributions." (AHRQ fellowship F32 HS11509). *Academic Emergency Medicine* 12(4), pp. 360-365.

The use of confidence intervals in reporting results of research has increased dramatically and is now required or highly recommended by

editors of many scientific journals. This article describes the concept and limitations of bootstrapping, a computationally intensive statistical technique that allows the researcher to make inferences from data without making strong distributional assumptions about the data or the statistic being calculated.

Kaul, D.R., Flanders, S.A., and Saint, S. (2005, May). "Clear as mud." (AHRQ grant HS11540). *New England Journal of Medicine* 352, pp. 1914-1918.

This paper describes how an expert clinician unravels the diagnostic puzzle of a 17-year-old previously healthy boy who suddenly develops a torso rash, several days of low back pain, a high fever, headache, diffuse muscle pain (myalgia), and vomiting. He soon develops renal failure, anemia, and jaundice. The boy's parents mention that 2 weeks before he became sick, the boy rode an all-terrain vehicle through a park that included a lake and wetlands and returned home covered in mud. This exposure put him at risk for illnesses such as Rocky Mountain spotted fever, ehrlichiosis, and leptospirosis with Weil's syndrome, which can cause severe myalgias and other problems affecting the boy. The clinician added doxycycline (for possible leptospirosis) to piperacillin and tazobactam, initiated hemodialysis, and cultured the blood and urine which tested positive for leptospirosis.

Lee, G.M., Salomon, J.A., LeBaron, C.W., and Lieu, T.A. (2005, March). "Health-state valuations of pertussis: Methods for valuing short-term health states." (AHRQ grants T32 HS00063 and H13908). *Health*

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and Quality of Life Outcomes 3(17).

Waning immunity from childhood pertussis (whooping cough) vaccines has been thought to contribute to the particularly steep rise seen in pertussis among U.S. adolescents and adults over the past two decades. Acellular pertussis vaccines for adolescents and adults have been developed and may soon be available for use as booster vaccines. A telephone survey of 515 adult patients and parents of adolescent patients with pertussis in Massachusetts revealed that the majority considered pertussis to be worse than adverse events that can result from vaccination. Infant complications due to pertussis were considered worse than adolescent/adult disease.

Nelson, N.L. (2005, March). Ideologies of aid practices of power: Lessons for Medicaid managed care.” (AHRQ grant HS09703). *Medical Anthropology Quarterly* 19 (1), pp. 103-122.

The increased linking of corporate interests with State and nongovernmental interests in medical aid programs is ultimately producing a less centralized system of power and responsibility, according to the author. Ultimately, the devolution of power produces many unintended consequences for aid policy, which the author demonstrates in an analysis of New Mexico’s Medicaid managed care program, Salud!. For the study, the author used interviews with welfare

and Medicaid recipients, clerks, nurses, nurse practitioners, doctors, phone system employees, and others.

O’Toole, M., Kmetik, K., Bossley, H., and others. (2005, Spring). “Electronic health record systems: The vehicle for implementing performance measures.” (AHRQ grant HS13690). *American Heart Hospital Journal* 3, pp. 88-93.

This paper recounts a cardiovascular group’s use of electronic health record systems to capture data needed for internal quality assessment and improvement as part of routine outpatient care. The 55-physician group has used an outpatient electronic health record system since 1997. Starting in 2003, the group integrated cardiovascular measurement sets developed by the Physician Consortium for Performance Improvement (convened by the American Medical Association) into its electronic health system. With this integration, the group has been able to capture critical disease management data for decision support, resulting in improvements in health care.

Shechter, S.M., Bryce, C.L., Alagoz, O., and others. (2005, March). “A clinically based discrete-event simulation of end-stage liver disease and the organ allocation process.” (AHRQ grant HS09694). *Medical Decision Making* 25, pp. 199-209.

The authors used data from multiple sources to simulate the

organ allocation process for patients with end-stage liver disease. To validate the model, they compared simulation output with historical data. Simulation outcomes were within 1 to 2 percent of actual results for measures such as new candidates, donated livers, and transplants by year. The model overestimated the yearly size of the waiting list by 5 percent in the last year of the simulation and the total number of pretransplant deaths by 10 percent. Nevertheless, the model includes sufficient detail to estimate the effects of a wide range of questions regarding liver allocation and policy change.

Schneeweiss, S., and Avorn, J. (2005, April). “A review of uses of healthcare utilization databases for epidemiologic research on therapeutics.” (AHRQ grant HS10881). *Journal of Clinical Epidemiology* 58, pp. 323-337.

This article addresses the strengths, limitations, and appropriate applications of health care utilization databases in epidemiology and health services research, with particular emphasis on the study of medications. Large health care utilization databases are often used in a variety of settings to study the use and outcomes of therapeutics. Their size allows the study of infrequent events that occur during routine clinical care, which makes it possible to study real-world effectiveness and utilization. In addition, their availability at relatively low cost without long delays makes them accessible to many researchers. ■

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