



Research Activities



U.S. Department of Health and Human Services • No. 298, June 2005

Agency for Healthcare Research and Quality

Highlights

Departments

- 2 Clinical Decisionmaking**
- 5 Outcomes/ Effectiveness Research**
- 6 Primary Care Research**
- 8 Women's Health**
- 10 Disparities/ Minority Health**
- 11 Children's Health**
- 13 Long-Term Care**
- 14 Quality/Patient Safety**
- 19 Health Care Costs and Financing**

Regular Features

- 21 Agency News and Notes**
- 23 Announcements**
- 25 Research Briefs**

Physician supply increases in States with caps on malpractice lawsuit awards, with the greatest impact in rural areas

States that have capped malpractice lawsuit awards have seen a larger growth in the number of practicing physicians than those States without such caps, according to a new study from the Agency for Healthcare Research and Quality. Between 1970 and 2000, the number of physicians per 100,000 residents more than doubled in the 13 States that in the 1980s enacted caps on non-economic damages, compared with an 83 percent physician growth rate in the 23 States that did not cap malpractice awards before 2000. The study was conducted by William E. Encinosa, Ph.D., and Fred J. Hellinger, Ph.D., of AHRQ's Center for Delivery, Organization, and Markets.

Drs. Encinosa and Hellinger found that the dollar amount of the cap also had an impact on the supply of physicians, especially in rural areas. Between 1975 and 2000, the growth in the median number of rural physicians per 100,000 residents in States with caps of \$250,000 was 9 percent higher than in States with caps above \$250,000.

Currently, 27 States have caps on malpractice awards; of those, five States have caps with a \$250,000 limit.

Surgeons and obstetrician/gynecologists—who are most likely to be sued and who often pay the highest malpractice premiums—were the specialists most likely to be affected by caps of \$250,000. The median number of surgical specialists per 100,000 population increased by 41 percent for States with caps of \$250,000 but only by 31 percent for States with caps above \$250,000. The increases in obstetrician/gynecologists per 100,000 women ages 15 to 44 were 61 percent in States with caps of \$250,000 and 49 percent in States with higher caps.

Drs. Encinosa and Hellinger used county-specific data from the Area Resources Files maintained by the Health Resources and Services Administration. They compared physician supply in 49 States, excluding Alaska and the District

continued on page 2

Physician supply

continued from page 1

of Columbia, from 1985 to 2000 to study the impact of the malpractice caps.

Caps generally increased physician supply by 2 to 3 percent 3 years after adoption, after accounting for other factors that impact physician supply. These other factors included fixed

differences across counties, such as socioeconomic, political, cultural, and regulatory factors, as well as factors that could impact the demand for physicians, including HMO and Medicare enrollment, whether the county has a medical school, disease rates, and the county's birth rate. In addition, the authors also accounted for the effects of four other State malpractice reforms, including

collateral source rule reform, prejudgment interest reform, joint and several liability reform, and caps on punitive damages.

For more information, see "Have State caps on malpractice awards increased the supply of physicians?" by Drs. Encinosa and Hellinger, in the May 31, 2005 *Health Affairs* available online at www.healthaffairs.org. ■

Clinical Decisionmaking

Absence of chest pain in patients with suspected heart attack or angina does not signal a less severe condition

Not all patients with acute coronary syndrome (ACS), such as heart attack or angina, suffer from chest pain. The absence of chest pain in such patients does not necessarily signal a less severe condition, warn the authors of a recent study. They found that patients with suspected ACS who arrived at the hospital emergency department (ED) with no chest pain were more likely to die in the hospital than those who had chest pain.

Patients with painless ACS tended to be older, were more often women, and more often had diabetes and prior heart attacks. It may be that prior heart damage impairs pain perception due to disruption of sensory receptors, and that diabetes impairs pain perception, suggests Harry P. Selker, M.D., M.S.P.H., of the Tufts-New England Medical Center.

Dr. Selker and his colleagues studied the impact of lack of chest pain on triage and outcomes of 10,793 patients with symptoms suggestive of ACS who presented at the EDs of 10 California hospitals. A final diagnosis of ACS was confirmed in 24 percent of patients; 35 percent of these patients had a heart attack and 65 percent unstable angina pectoris. Pain was absent in 6.2 percent of patients with acute ischemia and 9.8 percent of heart attack patients.

Among ACS patients overall, there were no differences in ED triage between patients who did and did not have pain. However, significantly fewer heart attack patients without pain were admitted to a critical care unit than similar patients with pain (51 vs. 67 percent). After controlling for clinical features, lack of pain during acute ischemia predicted increased hospital mortality. Further investigation is needed to uncover the reasons for this increased mortality, concludes Dr. Selker.

See "Clinical features, triage, and outcome of patients presenting to the ED with suspected acute coronary syndromes but without pain: A multicenter study," by Boris E. Coronado, M.D., J. Hector Pope, M.D., John L. Griffith, Ph.D., and others in the November 2004 *American Journal of Emergency Medicine* 22(7), pp. 568-574. ■

Research Activities is a digest of research findings that have been produced with support from the Agency for Healthcare Research and Quality. *Research Activities* is published by AHRQ's Office of Communications and Knowledge Transfer. The information in *Research Activities* is intended to contribute to the policymaking process, not to make policy. The views expressed herein do not necessarily represent the views or policies of the Agency for Healthcare Research and Quality, the Public Health Service, or the Department of Health and Human Services. For further information, contact:

AHRQ
Office of Communications and Knowledge
Transfer

540 Gaither Road
Rockville, MD 20850
(301) 427-1360

Mary L. Grady, Managing Editor
Gail Makulowich, Contributing Editor
Joel Boches, Design and Production
Karen Migdail, Media Inquiries

Three clinical factors can determine the likelihood of cervical spine fractures in elderly victims of blunt trauma

Standard x-rays usually are used to diagnose cervical spine fractures in patients who have suffered blunt trauma. However, three clinical factors—focal neurologic deficit, severe brain injury, and injuries caused by high-speed mechanisms (for example, high-speed motor vehicle accident or high fall)—can help doctors decide which blunt trauma patients aged 65 or older are at high risk for cervical spine fracture and thus need a computed tomography scan, according to a recent study.

These three factors, which are evident on initial emergency department evaluation, can guide appropriate imaging and lead to earlier diagnosis to prevent spinal cord injuries, explains lead investigator C. Craig Blackmore, M.D., M.P.H., of the Harborview Medical Center, University of Washington. The study was supported in part by the Agency for Healthcare Research and Quality (HS11291).

Dr. Blackmore and his colleagues used the inpatient trauma registry of a regional trauma center to identify 103 blunt trauma patients aged 65 and older with cervical spine fractures (case patients) from 1995 through 2002. They compared these patients with 107 randomly selected same-aged blunt trauma patients without cervical spine fracture (control

patients) to identify clinical factors that could be used to stratify patients into fracture risk groups.

The prediction rule stratified patients into subgroups with fracture risks ranging from 0.4 percent to 24.2 percent. The three groups of older patients at highest risk for fracture included patients with neurologic deficit (24.2 percent), those with severe head injury (7.9 percent), and those with a high-energy mechanism of injury (3.4 percent).

Low-energy trauma (that is, a fall from standing or sitting) in the absence of a focal neurologic deficit or severe head injury was associated with the lowest risk of fracture (0.4 percent). The researchers note, however, that fractures caused by low-energy trauma occur more frequently in the elderly and may not include the clinical factors that are predictive of injury. Thus, a separate evaluation focusing on low-energy mechanisms of injury would be required to identify independent predictors for this group of patients.

See “Cervical spine fractures in patients 65 years and older: A clinical prediction rule for blunt trauma,” by Lawrence D. Bub, M.D., Dr. Blackmore, Frederick A. Mann, M.D., and Friedrich M. Lomoschitz, M.D., in the January 2005 *Radiology* 234, pp. 143-149. ■

Also in this issue:

Flexibility in advance care planning, see page 4

Improving outcomes for dialysis patients, see page 5

Use of herbal supplements by primary care patients, see page 6

Cancer screening for patients in gatekeeper plans, see page 7

Diagnosis of coronary heart disease in women, see page 8

Overscreening of low-risk women for cervical cancer, see page 9

Racial disparities in heart attack care, see page 10

Comparison of pediatric care in rural and nonrural hospitals, see page 11

Role of nurses in preventing pediatric medication errors, see page 12

Providing direct care to patients in supportive housing, see page 13

Effects of limiting residents' work hours on continuity of care, see page 14

Measures used to assess nursing home care, see page 16

Monitoring of patients on thyroid replacement therapy, see page 17

Errors made by hospital staff nurses, see page 18

Enrollment in managed care plans, see page 19

Effects of managed care penetration on cancer screening, see page 20

Photodynamic therapy is a cost-effective treatment option for patients with high-grade dysplasia in Barrett's esophagus

The incidence of esophageal cancer is growing faster than any other type of cancer in the United States and has risen 300 percent in the last few decades. Photodynamic therapy (a type of laser therapy combined with medication is used to destroy abnormal esophageal lining) is a cost-effective option to esophagectomy (surgical removal of all or part of the esophagus) for patients with Barrett's esophagus and precancerous cells, according to a study supported in part by the Agency for Healthcare Research and Quality (T32 HS00028).

Individuals who suffer from chronic regurgitation (reflux) of the stomach contents up into the esophagus are at increased risk for developing Barrett's esophagus. In this condition, the stomach's digestive acids and other chemicals damage the normal lining of the esophagus, which is replaced by intestinal tissue. The development of high-grade dysplasia (HGD) in Barrett's esophagus is associated with a significantly increased risk of esophageal cancer. In fact, up to 60

percent of patients progress to esophageal cancer within 5 years of HGD diagnosis.

Researchers led by Rohini Vij, M.D., M.S., of Stanford University Medical Center, estimated the lifetime costs and benefits of four strategies to manage HGD in Barrett's esophagus: esophagectomy, endoscopic surveillance, photodynamic therapy followed by esophagectomy for residual HGD, and photodynamic therapy followed by endoscopic surveillance for residual HGD. Esophagectomy cost \$24,045, with a life expectancy of 11.82 quality-adjusted life years (QALYs). Photodynamic therapy followed by surveillance for residual HGD was the most effective strategy, with a life expectancy of 12.31 QALYs, but it also resulted in the greatest lifetime cost (\$47,310).

See "Cost-effectiveness of photodynamic therapy for high-grade dysplasia in Barrett's esophagus," by Dr. Vij, George Triadafilopoulos, M.D., Douglas K. Owens, M.D., M.S., and others, in *Gastrointestinal Endoscopy* 60(4), pp. 739-756, 2004. ■

Advance care planning standards could be improved by giving patients more flexibility in conveying their wishes to others

Advance directives are an effort to maintain a patient's "voice" in their end-of-life care if they become unable to make their own decisions. These directives have become increasingly detailed and specific, often containing patient preferences for a variety of specific medical treatments in a number of hypothetical medical scenarios. However, this may run counter to

what many elderly people would prefer.

A recent study has found that although most elderly individuals prefer to maintain some control over certain aspects of their end-of-life medical care, they appear to have little interest in "micromanaging" their own death. The study was conducted by researchers from the University of California, Irvine; Kent State University; and the Family Practice

Center of Akron. For the study, the researchers analyzed data from interviews and questionnaire responses of 337 elderly outpatients and their designated surrogate decisionmakers.

Of the patients and surrogate decisionmakers who desired an advance directive, the largest proportion (50 and 44 percent, respectively) preferred one that contained only general statements

continued on page 5

Free and fast—Subscribe to AHRQ's Electronic Newsletter!

If you want the latest information from AHRQ on new RFAs, research findings, conferences, and more, just subscribe to AHRQ's Electronic Newsletter. All you need is a computer and an e-mail address. Here's how:

1. Send an e-mail message to: listserv@list.ahrq.gov
2. In the subject line type: Subscribe
3. In the body of the message type: sub public_list-L your full name
4. That's it. You will receive an e-mail confirmation.

Questions? Please send an e-mail to Nancy Comfort in AHRQ's public affairs office at ncomfort@ahrq.gov

Advance care planning

continued from page 4

about values or goals for care (for example, a dignified death or maintaining the ability to think clearly) that patients would want guiding medical decisions. Fewer patients and surrogates desired an advance directive that included both general statements and precise treatment directions, and fewer still preferred one that included only precise directions regarding specific medical treatments.

A substantial proportion of each group believed that surrogates should have “a lot” or “complete”

leeway in making medical decisions, whereas only 9 percent believed the surrogate should have “no” leeway. On average, patients believed surrogates should have significantly more leeway in decisionmaking than surrogates believed they should have. Surrogates also demonstrated a number of other significant misunderstandings of the values and process preferences that patients wanted to guide their end-of-life medical treatment.

The authors conclude that because very few individuals desire the kind of tight control over medical care implied in the

standard approach to advance directives, patient autonomy would be best served by emphasizing patient-surrogate discussion of process preferences and leeway in end-of-life decisionmaking. This research was supported in part by the Agency for Healthcare Research and Quality.

See “Micromanaging death: Process preferences, values, and goals in end-of-life medical decision making,” by Nikki Ayers Hawkins, Ph.D., Peter H. Ditto, Ph.D., Joseph H. Danks, Ph.D., and William D. Smucker, M.D., in the *Gerontologist* 45(1), pp. 107-117, 2005. ■

Outcomes/Effectiveness Research

More frequent sit-down rounds in dialysis units are associated with better patient outcomes

During sit-down rounds in dialysis units, members of the dialysis team typically review each patient’s progress, coordinate care among team members, and develop care plans for each patient. Patients with chronic kidney disease who are treated at dialysis units with monthly or more frequent sit-down rounds are 32 percent less likely to be hospitalized, 29 percent less likely to die, and more likely to achieve clinical targets than patients treated at dialysis units with less frequent or no sit-down rounds. That’s the conclusion of a study supported in part by the Agency for Healthcare Research and Quality (HS08365).

Sit-down rounds require dedicated time when team members can meet—usually outside regular shifts or when there is a low patient volume—which can be difficult in busy dialysis units that are short-staffed or under financial constraints. Sit-down rounds are not meant to supplant the regular weekly rounds by nephrologists, who assess patients during dialysis treatment, explains Neil R. Powe, M.D., of Johns Hopkins University School of Medicine. Dr. Powe and

his colleagues examined whether sit-down rounds improved the outcomes of 644 adult hemodialysis patients from 75 outpatient dialysis clinics in 17 States throughout the United States who survived at least 6 months after study enrollment.

Monthly or more frequent sit-down rounds were conducted in 48 percent of the clinics, representing 45 percent of patients. Patients who were treated at these clinics had nearly twice the odds (odds ratio 1.95) of achieving more of the five performance targets for albumin, hemoglobin, calcium-phosphate product, dose, and vascular access type (fistula). Collaborative discussion of short- and long-term care goals for individual patients during sit-down rounds may have influenced these results.

See “Frequency of sit-down patient care rounds, attainment of clinical performance targets, hospitalization, and mortality in hemodialysis patients,” by Laura Plantinga, M.S., Nancy E. Fink, M.P.H., Bernard G. Jaar, M.D., and others, in the December 2004 *Journal of the American Society of Nephrology* 15, pp. 3144-3153. ■

More than 13 percent of primary care patients do not know why they are taking at least one of their prescription medications

A new study of four primary care practices revealed that nearly one in seven adult patients did not know the indication for at least one of the prescription medications he or she was taking. The patients were least likely to understand the reason for prescribed cardiovascular medications. Patients who were older, black, or had a high school education or less were more likely not to know why they were taking a particular medication.

Patients who don't understand why they are taking a medication may be less likely to adhere to therapy, notes Stephen D. Persell, M.D., M.P.H., of the Northwestern University Feinberg School of Medicine. The study was supported in part by the Agency for Healthcare Research and Quality (T32 HS00020).

Dr. Persell and his colleagues surveyed adults at the four primary

care practices who had received a prescription from a participating physician during a clinic visit. They telephoned patients and asked them to retrieve the bottles of all medications they were currently taking, identify their medications, and state the reason they took each one. A total of 2,340 prescription medications were used by the 616 patients studied. Overall, 13.5 percent of those surveyed did not know the indication for at least one of their prescription medications.

The drug classes for which patients were most likely to report an incorrect indication were cardiovascular drugs (12 percent), asthma medications (5 percent), and estrogen therapy (5 percent). Black patients and patients who had a high school education or less were about twice as likely not to know a drug's indication as white patients and patients with more education. Age was also a factor;

older patients were less likely than younger patients to know why they were taking a particular drug.

More details are in "Understanding of drug indications by ambulatory care patients," by Dr. Persell, Heather L. Heiman, M.D., Saul N. Weingart, M.D., Ph.D., and others, in the December 1, 2004 *American Journal of Health-Systems Pharmacy* 61, pp. 2523-2527.

Editor's note: Another-AHRQ supported article on a related topic summarizes the research literature concerning barriers to disseminating research findings about medication use into clinical practice, including issues specific to women. For more details, see Col, N.F. (2005). "Challenges in translating research into practice." (AHRQ grant HS13329). *Journal of Women's Health* 14(1), pp. 87-95. ■

Herbal use is common among urban primary care patients and often is not disclosed to doctors

Use of herbal supplements remains popular in the United States. For instance, over one-third of patients visiting a network of primary care clinics in Houston, TX, used some type of herbal remedy in 2002 and 2003. However, herbal use varied widely among racial/ethnic minority groups, according to the study which was supported in part by the Agency for Healthcare Research and Quality (HS11187).

Half of Hispanics and half of Asians used herbs compared with 41 percent of whites and 22 percent of blacks. Also, patients were more likely to use herbs if they had an immigrant family history or other family members used herbs.

One-third of herbal users said they used herbs on a daily basis, and 60 percent said they had used them for longer than 3 years. Also, nearly half (46 percent) of herbal users reported taking herbal medicines and prescription medications at the same time. Yet, 43 percent of patients did not disclose their herbal use to their physicians or pharmacists. More whites (67 percent) disclosed their herbal use to their health care providers than blacks (45 percent), Hispanics, (31 percent), or Asians (31 percent).

This failure to disclose herbal use can cause problems, since certain herbs can interact negatively with prescription medications. Doctors need to know which herbs patients are taking to avoid adverse

continued on page 7

Herbal supplements

continued from page 6

drug-herb interactions, explains Grace M. Kuo, Pharm.D., of Baylor College of Medicine, in Houston. The researchers surveyed 322 adults visiting six Houston primary care practices for routine, nonacute care about their use of herbs. The reasons given for herbal use included faster resolution of symptoms (47 percent), the desire to try alternative therapies (33

percent), and preference for personal methods of care (20 percent).

More details are in “Factors associated with herbal use among urban multiethnic primary care patients: A cross-sectional survey,” by Dr. Kuo, Sarah T. Hawley, Ph.D., L. Todd Weiss, M.S.P.H., M.P.H., and others, in *BMC Complementary and Alternative Medicine* 4(18), published December 2004 online at www.biomedcentral.com. ■

Primary care physician specialty influences use of screening mammography and Pap smears in gatekeeper plans

Patients in gatekeeper health plans must have a referral from their primary care provider in order to see specialists or obtain special procedures such as mammograms. The impact of gatekeeper plans on cancer screening varies according to the specialty of a woman’s primary care physician, according to a study supported in part by the Agency for Healthcare Research and Quality (HS10771 and HS10856). For instance, the use of mammography to screen for breast cancer and Pap smears to screen for cervical cancer among patients of internal medicine physicians appeared to be unaffected by enrollment in a gatekeeper plan. In contrast, screening rates increased if family practice physicians were in gatekeeper plans.

Researchers from the University of California, San Francisco, and Brigham and Women’s Hospital in

Boston linked 1996 data on women who responded to the 1996 Medical Expenditure Panel Survey Household Component (MEPS-HC) with data from the MEPS Health Insurance Plan Abstraction (MEPS-HIPA) data file. They examined use of screening mammography (women aged 40 and over) and Pap smears (women aged 18 to 65) in the preceding 2 years in gatekeeper plans by physician specialty. Women in gatekeeper plans (about half of those surveyed) were more likely than women not in gatekeeper plans to receive screening mammography (77 vs. 71 percent) and screening Pap smears (84 vs. 74 percent).

However, women whose primary care physician was a family practice physician were 30 percent more likely to have a mammogram and 60 percent more likely to have a Pap smear if they were part of a

gatekeeper plan rather than a non-gatekeeper plan.

Among women seen by an internal medicine physician, screening did not vary significantly by gatekeeper status. Different cultures of practice may exist in the specialties of family practice and internal medicine, conclude the researchers.

See “Variation in screening mammography and Papanicolaou smear by primary care physician specialty and gatekeeper plan (United States), by David A. Haggstrom, M.D., Kathryn A. Phillips, Ph.D., Su-Ying Liang, Ph.D., and others, in *Cancer Causes and Control* 15, pp. 883-892, 2004. ■

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.

Existing coronary heart disease is undiagnosed in half of women who have a first heart attack

Coronary heart disease (CHD) is the leading killer of women in the United States. Yet, nearly half of women who suffer a first heart attack have not been diagnosed with CHD prior to the attack. Furthermore, many of these women have cardiac risk factors such as high blood pressure (hypertension), obesity, and diabetes that are not treated, according to a study supported by the Agency for Healthcare Research and Quality (HS10239). These findings show that there are missed opportunities to treat women to prevent cardiac problems, concludes Barbara P. Yawn, M.D., M.Sc., of the Olmsted Medical Center.

Dr. Yawn and her colleagues reviewed the medical records of women from one Minnesota county who had suffered a heart attack between 1996 through 2001. The researchers reviewed the women's records for 10 years prior to their heart attack and examined the timing of CHD diagnosis and assessment and treatment of their risk factors for cardiac problems.

A total of 150 women (average age 75) suffered a heart attack during the 6-year period. Even though the women made a total of 8,732 outpatient visits and had 457 hospitalizations during the 10 years prior to their first heart attack, only 52 percent of them had been diagnosed with CHD. Women 70 years or older at the time of heart attack were three times as likely as younger women to have been diagnosed with CHD prior to their first cardiac event.

Clinicians did identify one or more treatable cardiac risk factors among all but three women prior to their first heart attack, yet treatment of these risk factors varied. About 81 percent of women with hypertension were prescribed antihypertensive medications, but only 28 percent of women were prescribed drug therapy for abnormal cholesterol or other lipid levels. Women who were diagnosed with CHD were more likely than undiagnosed women to receive drug treatment for identified cardiac risk factors.

See "Identification of women's coronary heart disease and risk factors prior to first myocardial infarction," by Dr. Yawn, Peter C. Wollan, Ph.D., Steven J. Jacobsen, M.D., Ph.D., and others in the *Journal of Women's Health* 13(10), pp. 1087-1100, 2004.

Editor's Note: Another AHRQ-supported study on a related topic found that both recent and long-term diabetes puts men at similarly high risk for CHD death as heart attack. For women, the results are similar for short-term diabetes, but long-term diabetes puts them at even greater risk than heart attack for CHD death. These findings suggest the need for more intensive treatment of women with long-term diabetes. For more details, see Natarajan, S., Liao, Y., Sinha, D., and others. (2005, February). "Sex differences in the effect of diabetes duration on coronary heart disease mortality." (AHRQ grant HS10871). *Archives of Internal Medicine* 165, pp. 430-435. ■

Women respond differently to medications than men and should be proactive about their medication use

Women take more medications than men. They also respond differently to medications and are more likely than men to suffer medication-related injuries (adverse drug events). However, women have been underrepresented in clinical drug studies, and much still needs to be learned about the optimal, safe, and effective use of medications by women. Thus, women should be proactive about

their medication use, according to Rosaly Correa-de-Araujo, M.D., M.Sc., Ph.D., Senior Advisor for Women's Health at the Agency for Healthcare Research and Quality. She recommends that women take responsibility for their own health and ask clinicians questions about diagnosis, treatment, and medication use.

Women should make sure they understand the need for each medication they are taking and take

them at the right dosage and time. They should ask their doctor or pharmacist about side effects, as well as potential interactions with other prescription medications, dietary supplements, herbal products, foods, and beverages. Women who are scheduled to undergo surgery should ask about the need to stop taking medications before their surgery, since some drugs (including herbal products)

continued on page 9

Women and medications

continued from page 8

can interfere with anesthesia or blood clotting.

Women should inform doctors and pharmacists about all medications being taken, any allergies to medications, and if they are pregnant or plan to become pregnant in the near future. Finally, women should learn how to do their own research on medications and always read the Food and Drug Administration (FDA)-approved drug package inserts for

prescription and nonprescription medicines.

In a second article, Dr. Correa-de-Araujo introduces topics addressed in an April 2004 panel meeting of 35 multidisciplinary experts. The meeting was convened by AHRQ to provide a forum for discussing issues related to improving the use and safety of medications for women. Topics ranged from the impact of sex and race/ethnicity on drug formulations, drug delivery systems, and medication effects to ongoing efforts to include women in clinical

drug trials and drug company trials of over 350 new medicines for diseases of major concern to women.

See “It’s your health: Use your medications safely,” and “Improving the use and safety of medications in women through sex/gender and race/ethnicity analysis: Introduction,” by Dr. Correa-de-Araujo, in the *Journal of Women’s Health* 14(1), pp. 12-15, and 16-18, 2005. Reprints (AHRQ Publication Nos. 05-R020 and 05-R021) are available from AHRQ.* ■

Despite revised guidelines, most obstetrician/gynecologists continue to overscreen low-risk women for cervical cancer

Widespread use of Pap tests to screen for cervical cancer has led to a dramatic decline in U.S. cervical cancer deaths over the last several decades. Yet, despite recently revised screening guidelines designed to minimize harms resulting from overtesting, obstetricians/gynecologists continue to overscreen low-risk women, according to a study supported in part by the Agency for Healthcare Research and Quality (HS07373). For instance, the American Cancer Society (ACS) suggests that screening start within 3 years of the onset of sexual activity or age 21 and be less frequent than annually in women over age 30 who have had three or more previous normal Pap tests.

The ACS also endorses cotesting for human papillomavirus, which is associated with cervical cancer, and discontinuing screening in certain women. The American College of Obstetricians and Gynecologists has recently made similar recommendations. Researchers from the University of California, San Francisco, and Kaiser Permanente examined responses to questionnaires sent to 355 randomly selected U.S. obstetricians/gynecologists. The questions were structured as clinical vignettes.

Contrary to guidelines, 74 percent of the 185 eligible respondents (mostly private practice/managed care physicians) said they would begin screening girls who were not yet sexually active at age 18. Sixty percent of respondents said they would continue annual screening in a 35-year-old woman with three or more normal tests. Also, frequent screening was common in women after total hysterectomy for symptomatic fibroids and no history of dysplasia (abnormal cells) and in 70-year-old women with a 30-year history of previous normal tests.

Vigilant screening is commendable. Yet, the resources spent toward overzealous screening in low-risk populations and the harms incurred by false-positive tests (for example, due to invasive followup procedures) deserve attention, conclude the researchers.

More details are in “Current cervical neoplasia screening practices of obstetricians/ gynecologists in the US,” by Mona Saint, M.D., M.P.H., Ginny Gildengorin, Ph.D., and George F. Sawaya, M.D., in the February 2005 *American Journal of Obstetrics and Gynecology* 192, pp. 414-421. ■

Researchers find racial and socioeconomic disparities in compensation for work-related back injuries

Workers' Compensation laws require employers to provide workers who have been injured on the job with equal access to medical treatment. Nevertheless, a recent study of Missouri workers found significant racial and socioeconomic differences in management of job-related low back injuries that were not accounted for by insurance differences. Workers who were black or of low socioeconomic status (SES) received fewer benefits than other workers, according to Raymond C. Tait, Ph.D., of St. Louis University School of Medicine.

With support from the Agency for Healthcare Research and Quality (HS13087), Dr. Tait and his colleagues used a Worker's Compensation database, worker self-report, and telephone

interviews to examine differences in the case management of occupational low back injuries among 580 black and 892 white workers in Missouri. The workers had filed Workers' Compensation claims that had been settled over an 18-month period. They could not choose their initial health care provider, which equalized initial access to treatment. The injuries ranged from herniated disc and pinched nerve to fracture and degenerative joint disease.

Type of injury, race, age, and compensation rate significantly predicted whether a claimant did or did not receive temporary disability pay. Consistent with accepted models of disability management, claimants with disc injuries and those who underwent surgery incurred more treatment costs, had more compensated work absences,

and demonstrated longer claim periods. They also received higher disability ratings and larger settlement awards. Other findings were not consistent with accepted disability management models. After controlling for injury and other factors, blacks and lower SES claimants incurred lower treatment costs, fewer compensated work absences, shorter claim periods, lower disability ratings, and smaller settlements.

More details are in "Management of occupational back injuries: Differences among African Americans and Caucasians," by Dr. Tait, John T. Chibnall, Ph.D., Elena M. Andresen, Ph.D., and Nordin M. Hadler, M.D., in the December 2004 *Pain* 112, pp. 389-396. ■

Black/white disparities in time to treatment for heart attack patients depend on the admitting hospital

Black heart attack patients wait about 20 percent longer than similar white patients before receiving hospital treatment. Compared with white patients, black patients wait 7 minutes longer from hospital arrival until they receive a clot-busting drug (door-to-drug) and 19 minutes longer from arrival to the start of coronary angioplasty or bypass surgery (door-to-balloon). Hispanic and other ethnic patients also wait longer for treatment than their white counterparts, but their waiting times are more modest, according to a study supported in part by the Agency for Healthcare Research and Quality (HS10407). The study showed that these disparities in treatment depended on the specific hospital to which patients were admitted and not to differences in treatment inside the hospital.

For example, the crude difference in door-to-balloon time between black and white patients was

reduced by 33 percent and between Hispanic and white patients by nearly 75 percent after accounting for differences between the hospitals in which they were treated. These results highlight the importance of improving the quality of care in hospitals in which minority groups are more likely to be treated, notes lead author Elizabeth H. Bradley, Ph.D., of the Yale University School of Medicine.

Nonetheless, holding the hospital in which care was received constant, there remained racial and ethnic disparities in door-to-drug and door-to-balloon times that were independent of measured differences in patients' characteristics, insurance status, or hospital characteristics. The remaining differences may result from unmeasured clinical characteristics, differences in patient preferences, doctor-patient communication patterns, or clinician/institutional bias, which may influence patterns of care. These findings were based

continued on page 11

Heart attack patients

continued from page 10

on analysis of admission and treatment data on 73,032 patients in the National Registry of Myocardial Infarction who were admitted to participating hospitals for heart attack from 1999 through 2002.

See “Racial and ethnic differences in time to acute reperfusion therapy for patients hospitalized with myocardial infarction,” by Dr. Bradley, Jeph Herrin, Ph.D., Yongfei Wang, M.S., and others, in the October 6, 2004 *Journal of the American Medical Association* 292(13), pp. 1563-1572. ■

Study reveals racial/ethnic and income-related disparities in use of Web-based health services

Access to and use of Web-based health services are increasing rapidly. However, racial/ethnic minorities and low-income individuals are less likely to use electronic health care services (e-Health), perhaps exacerbating existing disparities in access to care, suggests a recent study of members of a large health maintenance organization (HMO) in California.

The HMO allowed members to use a password-protected account to access several e-Health services via a Web site. Members could use the site to request routine primary care visits or order refills for prescription drugs. They also could ask medical or prescription drug questions and receive a response within 24 hours from either a nurse or a pharmacist, as appropriate.

Individuals were not able to access their electronic medical record, however.

Lead author, John Hsu, M.D., M.B.A., M.S.C.E., of the Kaiser Permanente Medical Care Program, and his colleagues examined HMO members' use of e-Health from 1999 to 2002. The number of members with an e-Health account increased from 51,336 (1.6 percent) in 1999 to 324,522 (9.3 percent) in 2002. The percentage of households in which at least one person had an account increased from 2.7 to 14.1 percent. Also, the proportion who used their account at least once increased from 25.7 to 36.2 percent.

Nevertheless, minority individuals were significantly less likely to use e-Health services compared with whites in 2002. Indeed, the gap in use between

whites and minorities widened over the 4-year study period, after adjusting for other factors, including socioeconomic status (SES). Similarly, individuals living in low SES neighborhoods were 29 percent less likely than members in high SES neighborhoods to use e-Health services, and this gap also widened over time after adjusting for other factors, including race/ethnicity. The study was supported by the Agency for Healthcare Research and Quality (contract 290-00-0015).

See “Use of e-health services between 1999 and 2002: A growing digital divide,” by Dr. Hsu, Jim Huang, Ph.D., James Kinsman, and others, in the March 2005 *Journal of the American Medical Informatics Association* 12(2), pp. 164-171. ■

Children's Health

Rural hospitals appear to deliver care similar to nonrural hospitals for many common pediatric conditions

Rural hospitals apparently provide competent care to the more than 20 percent of children in the United States who live in rural communities, according to a study supported in part by the Agency for Healthcare Research and Quality (HS09983). Except for children hospitalized in large metropolitan areas, the study found no differences in length of hospital stays or readmission rates for

children with 19 medical and 9 surgical conditions treated at rural versus nonrural hospitals in New York and Pennsylvania. The cases studied were common childhood ailments such as asthma and appendicitis, which are frequently treated without referrals to large specialty centers.

continued on page 12

Pediatric care in rural hospitals

continued from page 11

The study, which was supported in part by the Agency for Healthcare Research and Quality (HS09983 and T32 HD07740), was led by Scott A. Lorch, M.D., M.S.C.E., of the Children's Hospital of Philadelphia. Despite these study findings, Dr. Lorch and his colleagues note that additional efforts to deregionalize pediatric care must also take into account the ability of smaller hospitals to care for sicker patients whom they currently transfer to more specialized centers.

The researchers examined the discharge records of hospitals in New York and Pennsylvania for children who were diagnosed with 1 of 19 medical conditions and those who underwent 1 of 9 surgical procedures from April 1996 to July 1998. They compared length

of stay (LOS), conditional length of stay (CLOS, for management of complicated cases), odds of prolonged stay, and 21-day readmission rates for children in hospitals in large urban, suburban, moderate urban, small urban, and rural areas. After adjusting for severity of illness and other factors, rural hospitals in general had similar or improved LOS for individual conditions compared with all other hospitals in the two States, except for large urban hospitals. The addition of hospital-level variables, such as presence of a pediatric intensive care unit or average yearly number of pediatric admissions, did not change these results.

More details are in "Equivalent lengths of stay of pediatric patients hospitalized in rural and nonrural hospitals," by Dr. Lorch, Xuemei Zhang, Ph.D., Paul R. Rosenbaum, Ph.D., and others, in the October 2004 *Pediatrics* 114(4), available online at www.pediatrics.org. ■

Nurses can take steps to prevent pediatric medication errors associated with dosing and administration

Children are more likely to be harmed by a medication error than adults due to their immature physiology and developmental limitations that affect their ability to communicate and self-administer medications. Often pediatric medications need to be calculated based on a child's weight, prematurity status, and particular disease or health status, which can affect a drug's metabolism. The inability to calculate the correct therapeutic drug dose accounts for the majority of pediatric medication errors, explain Ronda G. Hughes, Ph.D., M.H.S., R.N., and Elizabeth A. Edgerton, M.D., M.P.H., of the Center for Primary Care, Prevention, and Clinical Partnerships, Agency for Healthcare Research and Quality, in a recent article.

Drs. Hughes and Edgerton suggest several practical steps that nurses should take to improve pediatric medication safety. They recommend that nurses:

- Report medication errors; this is the first step in understanding how to avoid future errors.
- Know the medication before administering it, since lack of drug knowledge accounts for 15 percent of errors in medication administration.
- Double-check drugs prescribed for an off-label use and be particularly cautious when administering

high-alert medications such as corticosteroids, bronchodilators, insulin, and cardiac drugs.

- Confirm patient information, such as weight in kilograms, before administering medications.
- Double-check orders and collaborate with other clinicians to verify information, especially for illegible or verbal orders and discrepancies between standard drug protocols and the patient's order.
- Minimize distractions during medication administration.
- Communicate with parents and families and involve them in patient care, and improve communication among clinicians during transitions and handoffs from one setting or shift to another.
- Educate parents and family members about medication administration when the child is discharged home.

For more information, see "Reducing pediatric medication errors," by Drs. Hughes and Edgerton, in the May 2005 *American Journal of Nursing* 105(5), pp. 36-42. Reprints (AHRQ Publication No. 05-R052) are available from AHRQ.* ■

Nurses tend to use individual behavioral and visual cues to assess pain in nursing home residents

One-fourth of nursing home residents who suffer from daily moderate-to-severe pain receive no pain-relieving medication. Nursing home staff rarely incorporate formalized pain assessment protocols in their assessment of residents' pain, which they consider regulatory in nature and ill-suited to the nursing home population. Instead, they use visual and behavioral cues honed from personal knowledge of each resident, according to a study by Katherine Jones, R.N., Ph.D., F.A.A.N., of the Yale University School of Nursing, and her colleagues. The study was supported by the Agency for Healthcare Research and Quality (HS11093).

The researchers analyzed discussions of 21 focus groups involving staff from 12 nursing

homes. The discussions underscored the uncertainties of pain assessment and ambiguities of the pain experience. To overcome these ambiguities, nursing home staff used a variety of behavioral and visual cues to assess each resident's pain. Knowing a resident's usual behavior was central to identifying pain cues. However, pain cues were often complicated by challenging resident behaviors (family manipulation or desire for attention), generational attitudes about pain, such as stoicism, and fear of addiction to pain medication.

All levels of staff mentioned the physician as a critical person involved in meeting the pain-management needs of residents. Certified nursing assistants viewed their contributions as minimized by

nursing staff and said that they were often reproved or ignored when they reported resident pain. As a result, some had lapsed into silent observation rather than pain relief advocacy.

Formal pain assessment protocols might identify pain missed by nurses' observations, note the researchers. They suggest that use of formal pain assessment protocols in nursing homes might improve if the protocols were refined to incorporate nurses' familiarity with pain cues and their awareness of residents' internal barriers to reporting pain.

See "Pain assessment practices with nursing home residents," by Lauren Clark, R.N., Ph.D., Dr. Jones, and Karen Pennington, R.N., M.S., in the November 2004 *Western Journal of Nursing Research* 26(7), pp. 733-750. ■

Resident and facility characteristics affect the amount of direct care time received by elders in supportive housing

A growing number of elders are dodging nursing homes to reside in assisted living facilities, board and care homes, continuing care retirement communities, and other types of supportive housing. Physical and cognitive functioning have the greatest impact on the amount of direct care time received by people in supportive housing. However, the amount of dementia-oriented care received is more strongly affected by the type of supportive housing facility, according to a study supported by the Agency for Healthcare Research and Quality (HS10315).

Charles D. Phillips, Ph.D., M.P.H., and Catherine Hawes, Ph.D., of the Texas A&M Health Science Center, analyzed care of 921 residents aged 55 and older at 60 facilities in four areas of North Carolina. Staff members provided resident health and functional status and recorded the amount of time they spent over a 3-day period providing care to residents. This

included both direct care time (for example, helping a resident bathe) and indirect staff time (for example, administrative duties), as well as care time provided by individuals from outside the facility (home health nurses, family members, volunteers).

The average resident received 181 minutes of direct care from facility staff during the 3-day period, about 1 hour each day, with about 5 minutes spent on cues (cueing a cognitively impaired resident to do something rather than doing it for him or her). Those who needed no assistance with activities of daily living (ADLs) such as dressing and bathing received 87 minutes of direct care time during the 3-day period. Those who needed at least supervision in all seven ADLs received nearly four times as much direct care time (343 minutes) as those who required no ADL assistance. Also, residents with no cognitive problems

continued on page 14

Elders in supportive housing

continued from page 13

received about a quarter of the direct care time received by the most cognitively impaired residents. However, while adding facility indicators to the models predicting care time increased somewhat the variation explained in assistance with ADLs, the addition of facility indicators more than tripled the variation explained in dementia-specific care (cueing).

These results imply that the provision of dementia-specific care is much more a function of staff practice in supportive housing than it is a function of individual need.

See “Care provision in housing with supportive services: The importance of care type, individual characteristics, and care site,” by Drs. Phillips and Hawes, in the February 2005 *Journal of Applied Gerontology* 24(1), pp. 55-67. ■

Quality/Patient Safety

Hospitals with internal support for quality improvement are most likely to prescribe beta-blockers for heart attack patients

Beta-blockers are recommended for patients following a heart attack (acute myocardial infarction, AMI) in order to reduce their risk of death and subsequent cardiac problems. Hospitals most likely to prescribe beta-blockers for these patients are those that have greater support for quality improvement (QI) from administrators, nurses, and physicians; physician leaders who champion QI; and more available resources for QI, according to a new study. The study, which was supported in part by the Agency for Healthcare Research and Quality (HS10407), also found that standing orders to prescribe beta-blockers for heart attack patients was the only specific QI intervention that was associated with beta-blocker

prescribing, but it had only borderline significance.

Unfortunately, nearly half of the U.S. hospitals studied did not employ standing orders for beta-blockers for heart attack patients, despite the potential effectiveness of this relatively simple intervention, notes AHRQ principal investigator Harlan M. Krumholz, M.D., of the Yale University School of Medicine. The researchers analyzed telephone survey responses from quality management directors at 234 hospitals. They linked these responses to data from the National Registry of Myocardial Infarction from October 1997 to September 1999 on 60,363 patients discharged with AMI from the hospitals.

Hospitals prescribed beta-blockers to a mean of 60 percent of AMI patients. However, prescribing

ranged from a mean of 19 to 89 percent across hospitals. The top performing 20 percent of hospitals and middle 40 percent of hospitals were nearly twice as likely to have organizational support for QI efforts and nearly 10 times as likely to have physician advocates for QI as the low performing 20 percent of hospitals. These findings underscore the important role of individual physicians in organizational efforts to improve patient safety and quality of care.

See “Quality improvement efforts and hospital performance: Rates of beta-blocker prescription after acute myocardial infarction,” by Elizabeth H. Bradley, Ph.D., Jeph Herrin, Ph.D., Jennifer A. Mattern, M.P.H., and others, in the March 2005 *Medical Care* 43(3), pp. 282-292. ■

Limiting residents' work hours may have unintended consequences on continuity of care

Physician fatigue and associated errors were the primary reasons for development of new rules that limit residents' weekly work hours. As residency programs work towards compliance with the new regulations, their impact on continuity of inpatient care should concern both physicians and patients, caution Sanjay Saint, M.D., M.P.H., of the University of Michigan Health System, and his

colleagues in a recent paper. Their work was supported in part by the Agency for Healthcare Research and Quality (HS11540).

The new rules, which went into effect in 2003, state that residents cannot work more than 80 hours per week and must take 1 day off-duty per week. They

continued on page 15

Limiting residents' work hours

continued from page 14

should have at least 10 hours between duty periods, and their tour of duty must be limited to 24 consecutive hours, with 6 additional hours allowed for teaching and transfer of care (to ensure continuity of care).

Transfer of care often increases the likelihood of misinformation and error. Frequent transfer of care also can disrupt patients' relationships with their doctors and care satisfaction. Furthermore, many doctors prefer to care for patients throughout their illness and say they learn from such experience. Float systems and shift work are two solutions being tried to balance resident fatigue with continuity of care. Night-float systems generally involve a resident or team of residents initiating their duties at night to relieve the

on-call team of some responsibilities. Day float systems have also been used.

The United Kingdom has implemented shift-work systems. On full shifts, trainees rotate through shifts that begin and end at different times; on partial shifts, they work normal daytime hours with an occasional extra shift. During partial-shift duty, residents often receive breaks and protected time for sleeping. Other potential solutions have been studied less or not at all, such as patient-admission caps, physician extenders, and reorganizing ward teams so that coverage is staggered.

See "Balancing continuity of care with residents' limited work hours: Defining the implications," by Kathlyn E. Fletcher, M.D., M.A., Dr. Saint, and Rajesh S. Mangrulkar, M.D., in the January 2005 *Academic Medicine* 80(1), pp. 39-43. ■

Publishing report cards about a surgeon's quality influences consumer selection of surgeons

Publicly disseminated report cards that evaluate the quality of cardiac surgeons have an impact on surgeon selection, according to a recent study of report card experience in New York State. The researchers examined the impact of the New York State Cardiac Surgery Reports on selection of cardiac surgeons. The reports included the number of coronary artery bypass graft (CABG) cases, risk-adjusted mortality rate (RAMR), and designation of outlier status (much higher or lower RAMR than others) for each hospital and for each cardiac surgeon. The reports were put on the World Wide Web and sent to New York cardiologists to aid their referral recommendations.

The study included all Medicare fee-for-service enrollees aged 65 and older in New York State who underwent CABG procedures during 1991 and 1992. Medicare

FFS enrollees are not limited in their selection of physicians and surgeons. The study was supported in part by the Agency for Healthcare Research and Quality (HS09803) and led by Dana B. Mukamel, Ph.D., of the University of California, Irvine. Dr. Mukamel and colleagues compared selection of surgeons in 1991 (pre-report publication) and 1992 (post-report publication). A higher RAMR (that is, lower quality) lowered a surgeon's odds of being selected by about 7 to 8 percent.

Explicit information in the report cards appeared to replace implicit factors consumers usually interpret as signals of quality—such as higher price and more years of experience—which carried less weight after report publication. However, referring physician loyalty did not change after report card publication, suggesting that physicians may need to observe

consistent RAMR scores over several years to change referral patterns.

Patients residing in more affluent and more educated neighborhoods (who are more capable of accessing and using the report information) were more likely to be treated by low RAMR (high quality) surgeons in the post-report period. Finally, selection of surgeons for black patients was as sensitive to the published information as it was for white patients.

See "Quality report cards, selection of cardiac surgeons, and racial disparities: A study of the publication of the New York State cardiac surgery reports," by Dr. Mukamel, David L. Weimer, Ph.D. Jack Zwanziger, Ph.D., and others in the Winter 2004 *Inquiry* 41, pp. 435-446. ■

Doctors who have been in practice longer may be more likely to provide lower quality of care

Doctors who have been practicing medicine for a long time are generally considered to have the skills and knowledge needed to deliver high quality care. However, the opposite may be true, according to a recent study. Although “practice makes perfect” in some situations, physicians’ knowledge and performance may decline with the passage of time, suggests Stephen B. Soumerai, Sc.D., of the HMO Research Network Center for Education and Research on Therapeutics (CERT), which receives support from the Agency for Healthcare Research and Quality (HS11843). This study was led by Niteesh K. Choudhry, M.D., of Harvard Medical School.

The researchers conducted a systematic review of studies from 1966 to June 2004 relating medical knowledge and health care quality to physician age and years in practice. Of 62 published studies, more than half (52 percent) suggested that physician performance declined over time for all outcomes measured. Only one study showed improved performance for all outcomes measured. For instance, a study of mortality for 39,007 patients hospitalized

for heart attack found a relative increase in mortality of 0.5 percent for every year since the treating physician (cardiologists, internists, and family practitioners) had graduated from medical school.

Another study of patients hospitalized for various conditions found that patients of physicians in practice for more years had longer hospital stays than patients of physicians in practice for fewer years. Also, 15 studies demonstrated that physicians in practice for more years were less likely to adhere to standards of diagnostic and screening tests than more recent medical school graduates. One study showed that physicians who had graduated more than 20 years prior to the survey were consistently less likely to adhere to cancer screening practices.

More details are in “Systematic review: The relationship between clinical experience and quality of health care,” by Dr. Choudhry, Robert H. Fletcher, M.D., M.Sc., and Dr. Soumerai, in the February 2005 *Annals of Internal Medicine* 142(4), pp. 260-273. ■

Nursing home complaints, taken together with other measures, can be used to assess nursing home quality of care

Nursing home consumer complaints can be used along with other data to assess nursing home quality of care, and complaints can be a source of valuable information for prospective residents and families when they are choosing a nursing home. These are the findings of a recent study conducted by David G. Stevenson, Ph.D., of Harvard Medical School. The study was supported in part by the Agency for Healthcare Research and Quality (HS10803).

For the study, Dr. Stevenson analyzed nursing home complaints data from Massachusetts during 1998-2002. He matched facility-level complaints data with standard nursing home survey assessment data (from the On-Line Survey

Certification and Reporting, OSCAR, and the Minimum Data Set Quality Indicator, MDS QI) to evaluate the association between consumer complaints, facility and resident characteristics, and other nursing home quality measures.

During the 5-year study period, 4,400 consumer complaints and 5,978 complaint allegations were received about care provided in 539 free-standing nursing homes in Massachusetts. The five most frequent complaints involved quality of care (29 percent), abuse/neglect (14 percent), residents’ rights/quality of life (13 percent), inadequate staff/services (13 percent), and injury (12 percent). Complaints were consistently and significantly

associated with standard survey quality of care deficiencies (for example, pressure sores), the presence of serious deficiencies, and nurse aide staffing.

Complaints were not significantly associated with nurse staffing, and associations with six of the MDS QIs were mixed. Nevertheless, the number of consumer complaints was significantly predictive of quality of care deficiencies identified at the subsequent survey inspection.

See “Nursing home consumer complaints and their potential role in assessing quality of care,” by Dr. Stevenson, in the February 2005 *Medical Care* 43(2), pp. 102-111. ■

Veterans Health Administration clinics provide better overall quality of care than many other sites

Patients seen at Veterans Health Administration (VHA) clinics receive better overall quality of care, chronic disease care, and preventive care than those seen at other community sites. The VHA has championed a more coordinated system of care since the early 1990s, when they initiated a sophisticated electronic medical record system, measurement of performance on several quality measures, and a system-wide commitment to quality improvement, explains Elizabeth A. McGlynn, Ph.D., of RAND Health.

In a study that was supported in part by the Agency for Healthcare Research and Quality (HS09463), Dr. McGlynn and her colleagues compared the quality of care at 26 clinical sites in 12 VHA health systems with care received by a random sample of adult males older than 35 years of age in 12 communities between 1997 and 2000. The researchers used a chart-based quality instrument consisting of 348 quality of care indicators targeting 26 conditions ranging from asthma and urinary tract infection to diabetes, depression, and

preventive care. After adjusting for clustering, patient age, number of visits, and medical conditions, VHA patients scored significantly higher than those at other sites for overall quality (67 vs. 51 percent), chronic disease care (72 vs. 59 percent), and preventive care (64 vs. 44 percent) but not for acute care.

The VHA advantage was most prominent in processes targeted by VHA performance measurement (66 vs. 43 percent) and least prominent in areas unrelated to VHA performance measurement (55 vs. 50 percent). To date, the VHA has not targeted acute care as part of its performance measurement system. These findings suggest that VHA performance measurement efforts are indeed contributing to better quality of care at VA clinics.

More details are in “Comparison of quality of care for patients in the Veterans Health Administration and patients in a national sample,” by Steven M. Asch, M.D., M.P.H., Dr. McGlynn, Mary M. Hogan, Ph.D., and others, in the December 21, 2004 *Annals of Internal Medicine* 141(12), p. 938-945. ■

Better monitoring of outpatients taking thyroid replacement therapy may reduce drug-related problems

Many patients with underactive thyroid glands receive either too much or too little thyroid replacement therapy, putting them at risk for drug-related injuries, so-called adverse drug events (ADEs). Monitoring of thyroid replacement therapy, levothyroxine, could prevent or reduce the consequences of ADEs. However, a recent study found that only half of outpatients taking levothyroxine received the recommended monitoring during 1 year of followup, and levothyroxine-related ADEs were more frequent in patients with lower quality monitoring.

In the study, which was supported in part by the Agency for Healthcare Research and Quality (HS11169 and HS11534), Henry T.

Stelfox, M.D., of Brigham and Women’s Hospital and Harvard Medical School, and his colleagues reviewed the medical charts of 400 outpatients who received levothyroxine therapy between January 2000 and January 2001 at one hospital. Overall, 12 patients experienced levothyroxine-related ADEs. Five patients experienced temporary disability: depression (three), unstable angina (one), and atrial fibrillation (one). Seven patients had symptoms such as heart palpitations, weight loss, headaches, fatigue, and cold intolerance. Nine of the 12 ADEs were considered preventable.

Overall, 56 percent of the patients prescribed levothyroxine received the minimal recommended monitoring. Patients who received

the recommended monitoring had fewer levothyroxine-related ADEs (1 vs. 6 percent) than those who did not. The incidence of levothyroxine-related ADEs was higher among Hispanics (14 percent) and blacks (4 percent) than among whites (2 percent) and among patients whose primary language was not English (20 percent) compared with English-dominant patients (3 percent).

For more details, see “An evaluation of the adequacy of outpatient monitoring of thyroid replacement therapy,” by Dr. Stelfox, Sofia B. Ahmed, M.D., Julie Fiskio, and David W. Bates, M.D., M.Sc., in the November 2004 *Journal of Evaluation in Clinical Practice* 10(4), p. 525-530. ■

One-third of a national sample of hospital staff nurses made an error or near error over a 1-month period

During a 28-day period, one-third of a random national sample of 393 full-time hospital staff nurses reported making a medical error or near error, according to a study supported by the Agency for Healthcare Research and Quality (HS11963). Patient consequences ranged from relatively benign mishaps to potentially life-threatening events. As part of a national study that examined the relationship between staff nurse fatigue and patient safety, nurses kept a daily log that included errors or near errors that happened during their work shifts.

Overall, 119 nurses (30 percent) reported making at least one error, and 127 (33 percent) reported at least one near error, for a total of 199 errors and 213 near errors during the study period. The majority of errors and near errors involved medication administration, and many nurses attributed these mistakes to heavy

patient loads and distractions and interruptions while preparing medications. However, over one-third of medication errors involved procedural errors (18 percent), charting errors (12 percent) and transcription errors (6 percent). This suggests the need for further examination of the way we currently deliver health care, cautions Ann E. Rogers, Ph.D., R.N., of the University of Pennsylvania School of Nursing.

Although 61 percent of the nurses only reported one error during the study period, 45 nurses reported making between two and five errors, and one nurse reported a total of eight errors. Also, 37 percent of the nurses stated that they had stopped themselves from making between two and seven errors. Errors were made due to giving the wrong drug (17 percent), omitting a medication (15 percent), or giving the medication at the wrong time (34 percent), at the wrong dose (24 percent), to the

wrong patient (8 percent), or via the wrong route (2 percent).

See “The prevalence and nature of errors and near errors reported by hospital staff nurses,” by Michele C. Balas, M.S., R.N., C.C.R.N., C.R.N.P., Linda D. Scott, Ph.D., R.N., and Dr. Rogers, in the November 2004 *Applied Nursing Research* 17(4), pp. 224-230.

Editor’s note: Another AHRQ-funded study on a related topic provides an overview of what is known about errors in medication administration, barriers to implementing safer practices, and current and potential mechanisms to improve medication administration. For more details, see Hughes, R.G., and Ortiz, E. (2005, March). “Medication errors: Why they happen, and how they can be prevented.” *American Journal of Nursing Suppl.*, pp. 14-24. Reprints (AHRQ Publication No. 05-R044) are available from AHRQ.* ■

Partnering with hospitalized patients to monitor medication use is a feasible strategy for reducing drug errors

Providing hospitalized patients with a list of their medications, a glossary of common drug prescribing terms (for example, BID for twice a day), and a one-page medication safety guide may be an effective way to reduce injuries due to drug errors (adverse drug events, ADEs), according to the results of a pilot study. Although the researchers found no significant differences in ADEs, close calls, or care experiences between intervention and control patients (controls received the one-page consumer guide only), more than one-fourth of nurses reported that medication errors were prevented because a patient or family member in the intervention group identified drug-related problems. The study was supported in part by the Agency for Healthcare Research and Quality (K08 HS11644).

Saul N. Weingart, M.D., Ph.D., of Beth Israel Deaconess Medical Center and Harvard Medical School, and his colleagues randomly assigned 209 adult patients on a hospital general medicine unit to intervention and control groups. The researchers reviewed medical charts and incident reports from nurses, pharmacists, and physicians to identify ADEs and close-call drug errors. They also surveyed patients and clinicians.

During the total 1,053 patient days, 11 patients experienced 12 ADEs, and 16 patients experienced 18 close calls. The ADE rate in the intervention group (8.4 percent) exceeded the rate in the control group (2.9 percent), while the close-call rate was lower in the intervention group (7.5 percent) compared with the control group (9.8 percent). Neither comparison

continued on page 19

Reducing drug errors

continued from page 18

resulted in a statistically significant difference. Twenty-nine percent of nurse respondents indicated that at least one medication error was prevented when an intervention patient or family member identified a problem.

The lack of intervention effect may have been due, in part, to the fact that half of ADEs and three-quarters of close calls occurred after admission but before

enrollment in the study the next morning, notes Dr. Weingart. Also, the study size may have been too small to detect a significant difference between the groups. Thus, the researchers call for further study to document the efficacy of this patient-partnering approach to drug safety.

See “Lessons from a patient partnership intervention to prevent adverse drug events,” by Dr. Weingart, Maria Toth, Jonathan Eneman, and others, in the *International Journal for Quality in Health Care* 16(6), pp. 499-507, 2004. ■

Health Care Costs and Financing

Maryland Medicaid saved millions of dollars by ending reimbursement of dentists for treating adult dental emergencies

The Maryland Medicaid program eliminated reimbursement to dentists, but not to physicians or hospitals, for treating adult dental emergencies in 1993. By 1995, 2 years after this change in reimbursement, Medicaid costs for adult dental care claims plunged to zero from more than \$7.5 million in the 2 years preceding the change. Medicaid reimbursement for routine adult dental services was eliminated by the State in 1976.

Surprisingly, Medicaid costs for emergency dental care for adults also dropped significantly in every other care setting, generating an additional \$232,470 savings during the post-change period (1993-1995). For instance, emergency department (ED) costs for dental emergencies dropped 10 percent from \$723,835

to \$651,649, even though the number of ED claims rose from 2,081 in the pre-change period to 2,245 in the post-change period. The largest drop in costs was seen in physician-linked ED claims, which dropped nearly 69 percent from the pre-change to the post-change phase. Thus, Medicaid’s goal to reduce dental costs was achieved but perhaps at a price, suggests Richard J. Manski, D.D.S., M.B.A., Ph.D., Dental Scholar-in-Residence at the Agency for Healthcare Research and Quality.

Dr. Manski and his colleagues point out that disadvantaged patients may have been confused by the policy change, perhaps believing that Medicaid would not cover any care for dental emergencies. They likely suffered poorer health outcomes and paid for emergency

dental treatment out of pocket, found free clinics, or received free care from generous dentists. These findings are based on analysis of Maryland Medicaid data on ED and other provider claims by adult Medicaid patients for the treatment of mouth pain and infections associated with the teeth and periodontal tissues during the 4-year period from February 16, 1991 to February 15, 1995.

See “Medicaid coverage and utilization of adult dental services,” by C. Daniel Mullins, Ph.D., Leonard A. Cohen, D.D.S., M.P.H., M.S., Laurence S. Magder, Ph.D., and Dr. Manski, in the *Journal of Health Care for the Poor and Underserved* 15, pp. 672-687, 2004. Reprints (AHRQ Publication No. 05-R042) are available from AHRQ.* ■

Despite predictions of the end of managed care, enrollment in HMO plans has stayed relatively constant in recent years

There was a tremendous increase in enrollment in health maintenance organizations (HMOs) in the early 1990s. A decade later, about half of all individuals who had job-related insurance were enrolled in managed care plans. However, in the later part of the 1990s, there was an erosion of trust in managed care that resulted in a so-called “managed

care backlash.” Many consumers were concerned that managed care did not always provide them with the health care they needed.

Despite this apparent loss of confidence and dire predictions that managed care was coming to an end, enrollments in HMO plans have stayed relatively

continued on page 20

Enrollment in managed care plans

continued from page 19

constant in recent years, according to a recent study. The study was supported in part by the Agency for Healthcare Research and Quality (HS10770) and led by Jose J. Escarce, M.D., Ph.D., of the University of California, Los Angeles.

Dr. Escarce and his colleagues used a database of sources describing HMO market penetration and other characteristics to examine trends in HMO enrollment in all metropolitan communities from 1994 to 2000. They found little retreat from managed care, even in metropolitan statistical areas (MSAs) where choice of leaving was more possible, such as MSAs with a predominance of large businesses, unionized industries, and low unemployment.

HMOs were more likely to maintain their presence in areas with high health care costs and greater managed care experience. Medicare managed care beneficiaries and the privately insured were more likely to exit managed care programs in areas with less experience with managed care prior to the backlash. Medicaid managed care enrollment continued to expand rapidly, even as private sector and Medicare enrollments were stagnant. Dr. Escarce points out that Medicaid beneficiaries may have less of a voice in their care choices. Also, with rising costs and tight budgets, States increasingly are looking for opportunities to contain Medicaid costs, perhaps via managed care plans.

See “The managed care backlash: Did consumers vote with their feet?” by M. Susan Marquis, Ph.D., Jeannette A. Rogowski, Ph.D., and Dr. Escarce, in the Winter 2004 *Inquiry* 41, pp. 376-390. ■

High managed care penetration boosts breast and cervical cancer screening, with spillover effects to non-managed care patients

Timely breast cancer screening via mammography and clinical breast exam and cervical cancer screening via Pap smears is greater in areas with greater health maintenance organization (HMO) market share, according to a new study. Breast and cervical cancer screening rates increased with area HMO market share. After accounting for individual and area characteristics, women in high HMO market share areas were nearly twice as likely to have recently received a mammogram or Pap smear and were 58 percent more likely to have had a recent clinical breast exam than women in areas with low managed care penetration. For prostate cancer screening, which is not universally recommended, the

relationship between screening rates and HMO market share was non-significant and inconsistent.

Managed care penetration also seemed to have a spillover effect on cancer screening practices for patients not enrolled in managed care plans. Indeed, increasing HMO market share tended to improve screening rates even more in the non-managed care group than in the managed care group. This effect was significant for clinical breast exam and Pap smear and marginally significant for mammography screening in high HMO market share areas.

The study was led by Laurence Baker, Ph.D., of Stanford University School of Medicine, and supported in part by the Agency for Healthcare Research and Quality

(HS10771, HS10856, and HS10925). The researchers linked data on cancer screening from the 1996 Medical Expenditure Panel Survey to data on HMO market share and HMO competition in metropolitan statistical areas. They examined the relationship between area managed care prevalence and use of the four types of cancer screening during the previous 2 years.

More details are in “The effect of area HMO market share on cancer screening,” by Dr. Baker, Kathryn A. Phillips, Ph.D., Jennifer S. Haas, M.D., M.S.P.H., and others, in the December 2004 *Health Services Research* 39(6), Part I, pp. 1751-1772. ■

Task Force recommends against routine use of estrogen to prevent chronic diseases in postmenopausal women who have undergone hysterectomy

The U.S. Preventive Services Task Force recently issued a new recommendation against the routine use of estrogen to prevent chronic conditions such as heart disease, stroke, and osteoporosis in postmenopausal women who have undergone a hysterectomy. This recommendation is based on recent evidence from the National Institutes of Health's Women's Health Initiative clinical trial and other studies.

In 2002, the Task Force found insufficient evidence to recommend for or against the routine use of estrogen alone to prevent chronic conditions in women who have completed menopause and had a hysterectomy. Now, after reviewing new findings from the Women's Health Initiative, the Task Force noted that although estrogen can have positive effects such as reducing the risk for fractures, hormone therapy should not be used routinely because it appears to increase women's risk for potentially life-threatening clots that block blood vessels (venous thromboembolism), as well as stroke, dementia, and mild cognitive impairment.

The Task Force noted that although the use of estrogen reduces the risk for fracture, drugs such as bisphosphonates and calcitonin are available and effective in helping prevent fractures in women diagnosed with osteoporosis. The Task Force concluded that for most women, the harmful effects of estrogen therapy outweigh any benefits for preventing fracture and other chronic conditions.

In addition, the Task Force reaffirmed its earlier recommendation against the routine use of combined estrogen and progestin for preventing chronic conditions in postmenopausal women. Although the combination therapy may reduce risk for fractures in women diagnosed with osteoporosis and for colorectal cancer, it has no beneficial effect on heart disease and may even put women at greater risk for the condition. Other potential harms of combined estrogen and progestin include increased risk for breast cancer, venous thromboembolism, inflammation of the gallbladder, dementia, and mild cognitive impairment. The Task Force concluded that the harmful effects of

combined estrogen and progestin are likely to exceed the chronic disease prevention benefits for most women.

The Task Force did not examine the effects of estrogen only or combined estrogen and progestin for the treatment of menopausal symptoms. Menopause occurs in most U.S. women between 41 and 59 years of age, although the body's production of estrogen and progestin may begin to decrease years before. The average woman going through menopause has a 46 percent likelihood of developing heart disease over her lifetime, a 20 percent likelihood of stroke, a 15 percent likelihood of bone fracture, and a 10 percent chance of developing breast cancer.

The Task Force, which is supported by AHRQ, is the leading independent panel of private-sector experts in prevention and primary care. Its recommendations are considered the gold standard for clinical preventive services. The Task Force conducts rigorous, impartial assessments of the scientific evidence for a broad range of preventive services.

The Task Force grades the strength of its evidence from "A" (strongly recommends), "B" (recommends), "C" (no recommendation for or against), "D" (recommends against), or "I" (insufficient evidence to recommend for or against). The Task Force recommends against the routine use of unopposed estrogen for the prevention of chronic conditions in postmenopausal women who have had a hysterectomy (a "D" recommendation). The Task Force recommends against the routine use of combined estrogen and progestin for the prevention of chronic conditions in postmenopausal women (a "D" recommendation).

Go to www.ahrq.gov and select "Clinical Information" for more information on this recommendation and to access previous Task Force recommendations, including screening for osteoporosis, high blood pressure, breast cancer, colorectal cancer, and lipid disorders, as well as summaries of the evidence and related materials. Print materials are available from the AHRQ Clearinghouse. See the back cover of *Research Activities* for ordering information. ■

AHRQ center director Dan Stryer dies at age 41

The Agency for Healthcare Research and Quality lost a leader, colleague, and friend on May 19 with the death of Daniel Benjamin Stryer, M.D. He died peacefully at home of complications from a brain tumor. For the past several years, Dr. Stryer had directed AHRQ's Center for Quality Improvement and Patient Safety, the Agency's component that works to improve the quality of care, reduce disparities, and enhance patient safety. His passion for finding ways to improve the quality and safety of health care and his capacity for bringing out the best in his colleagues will be sorely missed by all who knew him. Dr. Stryer is survived by his wife, two daughters, his parents, a brother, and a grandmother. ■

Journal supplement explores lessons to be learned in health care quality and disparities from AHRQ's first national reports

The first congressionally mandated National Healthcare Quality Report (NHQR) and National Healthcare Disparities Report (NHDR), published in December 2003 by the Agency for Healthcare Research and Quality, present national data on 140 quality of care and 100 access-to-care measures. Eleven articles featured in a March 2005 supplement to the journal, *Medical Care*, highlight methodological issues and research findings that arose in the process of creating the NHQR and NHDR but were not thoroughly discussed in the reports. Guest editors for the supplement are from AHRQ's Center for Quality Improvement and Patient Safety: Ernest Moy, M.D, M.P.H.,

director of the NHDR project and Ed Kelley, Ph.D., director of the NHQR project.

The supplement begins with an overview of key concepts, definitions, statistical methods, and findings from the reports. Several papers address methodological challenges faced during development of the reports. For instance, data gaps and Federal data restrictions limited assessments of racial/ethnic and socioeconomic disparities in care. Also, data for evaluating the quality of nursing home and home health care were limited and not as useful as they could have been.

Other papers specifically discuss quality of care for individuals with heart disease, patient safety from

measurement and disparities perspectives, and disparities in care among children, reproductive age women, and men. The final article explores how the reports can be used in the future to improve quality and eliminate disparities.

See "Health care quality and disparities: Lessons from the first national reports," March 2005 *Medical Care* 43(3)Suppl. Reprints of the journal supplement (AHRQ Publication No. 0M05-0003) are available from AHRQ.*

Editor's note: For more information about these reports, including the 2004 editions of both reports, go to www.qualitytools.ahrq.gov and look under "Featured Resources." ■

AHRQ is supportive of nursing research and encourages nurses to work with the agency in various capacities

Nurses have several opportunities to work with internal programs at the Agency for Healthcare Research and Quality and to apply for AHRQ extramural research grants. These opportunities are outlined in two recent articles by Agency staff.

The first article, by Beth A. Collins Sharp, Ph.D., R.N., and Heddy Hubbard, M.P.H., R.N., of AHRQ's Center for Outcomes and Effectiveness, and Cheryl Bland Jones, Ph.D., R.N., of the University of North Carolina at Chapel Hill, focuses on opportunities to

work with AHRQ through intramural programs and collaboration with external partners. For example, nurses routinely serve on research study sections and on other appointments. Also, several nurses have been appointed to AHRQ's National Advisory Council for Healthcare Research and Quality. Other opportunities range from carrying out research as a senior nurse scientist, serving as peer reviewers, and volunteering for AHRQ-related committees and evidence-based practice initiatives.

continued on page 23

Opportunities for nurses

continued from page 22

In the second article, Ronda G. Hughes, Ph.D., M.H.S., R.N., of AHRQ's Center for Primary Care, Prevention, and Clinical Partnerships, describes considerations that should be taken into account when applying for a Federal research grant. Although her remarks come from an AHRQ perspective, her advice can be applied to other funders as well.

To be successful in applying for funding from AHRQ, applications should reflect the direction and priorities of AHRQ, which can be found on the Agency's Web site at www.ahrq.gov. Nurses should define the importance of the proposed research, talk with staff in AHRQ program offices to vet ideas for possible research grants, and understand the difference between requests for applications and program announcements. Applicants also should target priority populations such as racial and ethnic minorities,

women, children, older adults, low-income groups, individuals with special health care needs, and residents of rural areas. Finally, Dr. Hughes discusses other considerations—such as study section review and budget limits—that should be considered when developing an application.

For more details, see "Translating research into nursing practice: Agency for Healthcare Research and Quality," by Beth A. Collins Sharp, Ph.D., R.N., Heddy Hubbard, M.P.H., R.N., and Cheryl Bland Jones, Ph.D., R.N., in the January/February 2005 *Nursing Outlook* 53(1), pp. 46-48. Reprints (AHRQ Publication No. 05-R040) are available from AHRQ.*

See also "Some tips on getting funding for health services research," by Ronda G. Hughes, Ph.D., M.H.S., R.N., in the November 2004 *Applied Nursing Research* 17(4), pp. 305-307. Reprints (AHRQ Publication No. 05-R035) are available from AHRQ.* ■

Announcements

AHRQ awards more than \$8 million to further implementation of evidence-based patient safety findings

The Agency for Healthcare Research and Quality has awarded over \$8 million in total funding for 15 projects that are designed to help clinicians, facilities, and patients implement evidence-based patient safety practices. The 15 projects funded as part of AHRQ's Partnerships in Implementing Patient Safety initiative will use interventions that are ready to be implemented now and have the potential for both an immediate and a long-term impact.

Many of the projects focus on reducing medication errors, an area known to be in need of patient safety solutions. Other projects will apply interventions to improve communication among members of the health care team caring for a patient, also a well-known source

of errors. The interventions are designed to be generalizable to other settings of care.

A key component of these projects is the development of a set of free, publicly available toolkits for health care providers and others. The toolkits will facilitate sharing of lessons learned on how to best implement patient safety practices. For example, toolkits will be developed to help patients keep track of their prescription medicines when they are admitted to or discharged from a hospital.

These grants build on AHRQ's investment in patient safety research over the past 5 years and support the implementation of innovative interventions aimed at reducing medical errors and improving health care for all

Americans. As a result of this initiative, providers across the country will have access to practical, proven tools they can implement in their own facilities.

The projects span a wide spectrum of settings—including small rural facilities and large urban hospitals, clinics, and emergency departments—as well as various patient groups, such as pediatric and geriatric patients. Because some of the projects involve health systems that have locations in multiple States, the research projects will include nearly half of the States. To access a complete listing of projects funded through this initiative, go to www.ahrq.gov/qual/pips.htm. ■

New Web-based tool helps planners inventory resources for public health emergencies

The Agency for Healthcare Research and Quality has released the *Emergency Preparedness Resource Inventory*, a new Web-based tool to help local, regional, and State planners compile customized inventories of health care and emergency resources. The tool allows communities to assess their regional supply of critical resources, prepare for incident response, estimate gaps, and support future resource investment decisions.

The new resource inventory helps first responders determine where emergency equipment and medicines are located, how much is available, and who they should contact to obtain these resources. Developed by Abt Associates and Geisinger Health System for AHRQ's Bioterrorism and Emergency Preparedness Program, the Web-based tool has been pilot-tested in an eight-county region of rural Pennsylvania with the support of county commissioners and emergency management coordinators. Planners in other areas may download the free software tool from AHRQ's Web

site and customize the inventory structure to meet their needs.

In addition to the software tool, an implementation report for project managers overseeing implementation and use of the resource inventory tool provides an overview of the system and describes the Pennsylvania pilot test and lessons learned. A separate technical manual summarizes the installation process, security and confidentiality protections, reporting functions, steps to monitor data quality, and communication with users.

The Emergency Preparedness Resource Inventory software tool and accompanying supporting documents can be found online at www.ahrq.gov/research/epri/. AHRQ has funded more than 50 emergency preparedness-related studies, workshops, conferences, and other activities to help hospitals and health care systems prepare for medical emergencies. For information about these projects, go to www.ahrq.gov and select "Public Health Preparedness." ■

AHRQ announces new triage tools for hospital emergency departments

The Agency for Healthcare Research and Quality has three new products for use by emergency department staff based on the Agency's Emergency Severity Index (ESI). The ESI is a five-level emergency department (ED) triage algorithm that yields rapid, reproducible, and clinically relevant stratification of patients into five groups to allow patients to be categorized according to both acuity and hospital resources.

These new products include a set of two DVDs, *Emergency Severity Index, Version 4: Everything You Need To Know* (AHRQ Publication No. 05-0046-DVD), a spiral-bound *Implementation Handbook* (AHRQ Publication No. 05-0046-2) covering all the

details of ESI, and a poster (included with the handbook) of the ESI triage algorithm that is designed for use in EDs. These materials provide information to help hospitals decide whether the ESI is right for their ED, tools for training ED nurses in the use of the ESI, advice on how to roll out ESI department-wide, and practice case scenarios and implementation strategies.

The *Implementation Handbook*, which can be used while or after viewing the DVDs, discusses ESI and the research behind it and contains sections on the history of triage, evaluation and quality improvement, and cases to assess nurses' competency after training. See the back cover of *Research Activities* for ordering information.* ■

Amin, M.G., Wolf, M.P., TenBrook, Jr., J.A., and others. (2004, December). "Expanded criteria donor grafts for deceased donor liver transplantation under the MELD system: A decision analysis." (AHRQ training grant T32 HS00060). *Liver Transplantation* 10(12), pp. 1468-1475.

About 5,000 liver transplants are performed each year in the United States while three to four times as many candidates wait for liver transplants. In response to this unmet need, criteria for donor livers have been expanded to include so-called "marginal" donor livers. However, these expanded criteria donor (ECD) liver grafts have a higher likelihood of primary graft failure (PGF) compared with standard criteria donor (SCD) grafts. Despite the higher risk for PGF, transplantation with an available ECD graft should be preferred over waiting for an SCD organ for patients with advanced MELD scores (greater than 20, indicating more severe end-stage liver disease). At less advanced MELD scores, the survival benefit depends on the risk of PGF associated with the ECD organ, according to this study. The findings were based on a decision model that estimated 1-year survival comparing use of both types of donor livers.

Atkins, D., Eccles, M., Flottorp, S., and others. (2004, December). "Systems for grading the quality of evidence and the strength of recommendations. I: Critical appraisal of existing approaches." *BMC Health Services Research* 4(38), online at www.biomedcentral.com.

The authors of this paper critically appraise six prominent

systems for grading levels of evidence underlying health care recommendations and the strength of these recommendations. There was poor agreement among 12 raters on the sensibility of the six systems. Only one system was suitable for all four types of questions considered (effectiveness, harm, diagnosis, and prognosis). None of the systems was considered usable for all of the target groups considered (professionals, patients, and policymakers). The raters found low reproducibility of judgments made using all six systems. Systems used by 51 organizations that sponsor clinical practice guidelines include a number of minor variations of the six systems considered by these authors. Reprints (AHRQ Publication No. 05-R045) are available from AHRQ.*

Bell, J.F., Zimmerman, F.J., Cawthon, M.L., and others. (2004). "Jail incarceration and birth outcomes." (AHRQ grant T32 HS13853). *Journal of Urban Health* 81(4), pp. 630-644.

Women of childbearing age are the fastest growing segment of the U.S. jailed population, and at least 6 percent of them are pregnant at the time of arrest. Women in their 30s who are in an urban jail during pregnancy are more likely than similar women not in jail to have low-birthweight (LBW, less than 5.5 lbs) and preterm babies, while incarcerated women older than 39 years are less likely to have LBW or preterm babies. The researchers compared outcomes for 496 births to women who were in jail for part of their pregnancy with 4,960 Medicaid-funded births as matched community controls. There were no significant differences in the odds

of LBW between women in the jail and control groups at ages 18 to 29. However, jailed women ages 30-34 were nearly twice as likely as unjailed women to have an LBW infant and three times as likely to do so at ages 35-39. None of the incarcerated women older than 39 had an LBW infant. The researchers suggest that younger women may be more resilient to stress, in better general health, less drug dependent, and/or more successful in drug treatment programs.

Brazil, K., Ozer, E., Cloutier, M.M., and others. (2005). "From theory to practice: Improving the impact of health services research." *BMC Health Services Research* 5(1), online at www.biomedcentral.com.

These authors discuss how integrating theory into health services research can improve research methodology and encourage stronger collaboration with decisionmakers and ultimately improve the delivery of health care. However, this integration requires new expectations in the practice of health services research, including the formation of interdisciplinary research teams, broadening training for those who will practice health services research, and supportive organizational conditions that promote collaboration between researchers and decisionmakers.

Chamberlain, J.M., Patel, K.M., and Pollack, M.M. (2005, February). "The Pediatric Risk of Hospital Admission score: A second-generation severity-of-illness score for pediatric emergency patients." (AHRQ grant HS10238). *Pediatrics* 115(2), pp. 388-395.

continued on page 26

Research briefs

continued from page 25

These investigators developed and validated in a large sample of hospitals a second-generation severity-of-illness score, the Pediatric Risk of Admission (PRISA II) score, which is applicable to pediatric emergency patients. In the development sample, 442 mandatory admissions were predicated and 442 were observed, and in the validation sample, 136.6 were predicted and 145 were observed. These performance characteristics indicate that the PRISA II will be useful for institutional comparisons, benchmarking, and controlling for severity of illness when enrolling pediatric patients in clinical trials.

Hermann, R.C., Palmer, H., Leff, S., and others. (2004, December). "Achieving consensus across diverse stakeholders on quality measures for mental healthcare." (AHRQ grant HS10303). *Medical Care* 42(12), pp. 1246-1253.

In this study, a 12-member panel of stakeholders from national mental health care organizations used a structured consensus process to identify a core set of mental health care quality measures that would be meaningful and feasible for various stakeholders. The panel identified and rated 28 measures addressing a range of treatment modalities, clinical settings, diagnostic categories, vulnerable populations, and other dimensions of mental health care. Responses were obtained on a 9-point scale: 1 to 3 indicating agreement, 4 to 6 neither agreement nor disagreement, and 7 to 9 disagreement. Mean ratings for meaningfulness ranged from 2.29 for clinical importance and 2.59 for perceived gap between actual and optimal care to 2.61 for association

between improved performance and outcome. Mean ratings for feasibility were 3.39 for clarity of specifications, 4.77 for acceptability of data collection burden, and 4.20 for adequacy of case mix adjustment.

Horton, S. (2004). "Different subjects: The health care system's participation in the differential construction of the cultural citizenship of Cuban refugees and Mexican immigrants." (AHRQ grant HS09703). *Medical Anthropology Quarterly* 18(4), pp. 472-489.

In this article, the author explores the public health system's differential treatment of Mexican and Cuban immigrants. Faced with implementing Medicaid managed care with limited resources, hospital administrators created new categories of "deserving" and "undeserving" immigrants. For instance, a Mexican immigrant going to a New Mexico hospital will be referred to a public health clinic, since the hospital cannot provide care to undocumented immigrants unless they pay a \$50 fee, which few can afford. On the other hand, a Cuban refugee, recently resettled by the Federal Government, can be treated there because he or she is eligible for medical benefits for up to 8 months, food stamps, welfare, rental assistance, and even job training. The authors illustrate that this uneven treatment leads to unmet health needs and poor health outcomes.

Iezzoni, L.I., Davis, R.B., Soukup, J., and O'Day, B. (2004, December). "Physical and sensory functioning over time and satisfaction with care: The implications of getting better or getting worse." (AHRQ grant HS10223). *Health Services Research* 39(6), pp. 1635-1652.

The authors analyzed data from the 1996 and 1997 Medicare Current Beneficiary Survey (MCBS) to determine whether those individuals whose sensory or physical functioning improved or worsened over the course of 1 year were more or less satisfied with their health care. They assessed five categories of sensory or physical functioning for 9,974 MCBS respondents—vision, hearing, walking, reaching overhead, and grasping and writing—and compared 1996 and 1997 responses to identify whose functioning improved or worsened. Worsened functioning was strongly associated with older age, low income, and low educational attainment. Improved functioning was rarely significantly associated with care satisfaction. However, worsened function was often significantly associated with care dissatisfaction.

Jasso-Aguilar, R., Waitzkin, H., and Landwehr, A. (2004). "Multinational corporations and health care in the United States and Latin America: Strategies, actions, and effects." (AHRQ grant HS13251). *Journal of Health and Social Behavior* 45, pp. 136-157.

These authors analyze the corporate dominance of health care in the United States and the dynamics that have motivated the international expansion of multinational health care corporations, especially in Latin America. They identify the strategies, actions, and effects of multinational corporations in health care delivery and public health policies. Their findings are based on bibliographical research and in-depth interviews in the United States, Mexico, and Brazil. The researchers suggest that the falling rate of profit is an economic

continued on page 27

Research briefs

continued from page 26

motivator of corporate actions, silent reform, and the subordination of polity to economy.

Johnson, J.A., Luo, N., Shaw, J.W., and others. (2005, March). "Valuations of EQ-5D health states. Are the United States and United Kingdom different?" and Shaw, J.W., Johnson, J.A., and Coons, S.J., "US valuation of the EQ-5D health states: Development and testing of the D1 valuation model." (AHRQ grant HS10243). *Medical Care* 43(3), pp. 203-220, 221-228.

In the first article, the authors describe the development of a statistical model for generating U.S. population-based EQ-5D preference weights for assessing how individuals value various health states. They asked a sample from the U.S. adult community population to value 13 of 243 EQ-5D health states using the time trade-off (TTO) method (how much life they were willing to give up in one state to trade it for a better state). The model yielded a good fit for the observed TTO data. The second article compares directly elicited valuation for EQ-5D health states between the U.S. and U.K. general adult populations. The authors found meaningful differences in directly elicited TTO valuations of EQ-5D health states between the U.S. and U.K. general populations. They conclude that EQ-5D index scores from the U.S. population should be used for studies aiming to reflect health state preferences of the American public.

Lin, H-M., Lyles, R.H., Williamson, J.M., and Kunselman, A.R. (2005). "Estimation of the intervention effect in a non-randomized study with pre- and post-mismeasured

binary responses." (AHRQ grant HS11452). *Statistics in Medicine* 24, pp. 419-435.

Subjects in experimental studies often undergo an initial screening to determine the existence of a pre-specified condition, after which those so identified receive an intervention. Measurement of the outcome upon subsequent followup then provides a basis for estimating the intervention effect. In this paper, the authors analyze the change in event probability resulting from the implementation of an intervention in a single-arm (non-comparative) study. They consider a scenario in which the subjects are selected for a study based on a positive diagnostic test at screening. The disease status is then reassessed at the end of the intervention. The authors propose methods for estimating the change in event probability resulting from implementing the intervention, while adjusting for the misclassification that produces the regression effect.

Lukela, M., DeGuzman, D., Weinberg, S., and Saint, S. (2005, January). "Unfashionably late." (AHRQ grant HS11540). *New England Journal of Medicine* 352(1), pp. 64-69.

The authors describe the eventual diagnosis of a case of chronic granulomatous disease in an 18-year-old man whose presentation was atypical. The patient had a history of pneumonia but was otherwise in good health. Lung imaging and lack of fever over several weeks suggested a noninfectious inflammatory disease, specifically bronchiolitis obliterans with organizing pneumonia. He was given antibiotics and sent home on two occasions only to return to the hospital later. The lung biopsies were not conclusive. After ruling out other options and cystic

fibrosis, the doctors concluded that the young man did in fact have chronic granulomatous disease, a disease usually diagnosed in childhood. Even though he had two previous episodes of pneumonia, the reappearance of extensive lung disease and the subacute presentation should have raised the possibility of an underlying inherited disease at an earlier stage of his evaluation, conclude the authors.

M'ikanatha, N. M., Julian, K.G., Kunselman, A.R. (2005). "Patients' request for and emergency physicians' prescription of antimicrobial prophylaxis for anthrax during the 2001 bioterrorism-related outbreak." (AHRQ grant HS13036). *BMC Public Health* 5(2), online at www.biomedcentral.com.

Public fears may lead to a high demand for antibiotic prophylaxis during bioterrorism events, concludes this study. The investigators conducted a random telephone survey of emergency physicians in Pennsylvania to assess patients' request for and receipt of prescriptions for antimicrobial agents during the 2001 anthrax attacks. Two-thirds of the 99 physicians who completed the survey had received requests from patients for anthrax prophylaxis; 25 percent of these physicians prescribed antibiotics to a total of 23 patients. Ten physicians prescribed ciprofloxacin, and eight physicians prescribed doxycycline.

Moore, D.E., Feurer, I.D., Speroff, T., and others. (2005, March). "Impact of donor, technical, and recipient risk factors on survival and quality of life after liver

continued on page 28

Research briefs

continued from page 27

transplantation.” (AHRQ grant 13036). *Archives of Surgery* 140, pp. 273-277.

These researchers retrospectively studied 483 adults undergoing liver transplantation from 1991 to 1993 at one hospital to examine the impact of donor, technical, and recipient risk factors on survival and quality of life after liver transplantation. Five-year graft survival was 72 percent for recipients of livers from donors younger than 60 years and 35 percent for livers from donors 60 years and older. A shorter 5-year graft survival was associated with a cold ischemia time (CIT) of 12 hours or more (71 vs. 58 percent) and a United Network for Organ Sharing (UNOS) status 1 or 2A versus 2B or 3 (60 vs. 71 percent). Cumulative effects of these risk factors can be modeled to predict posttransplant survival.

Morikawa, Y., Marikainen, P., Head, J., and others. (2004). “A comparison of socio-economic differences in long-term sickness absence in a Japanese cohort and a British cohort of employed men.” (AHRQ grant HS06516). *European Journal of Public Health* 14, pp. 413-416.

These authors compared the magnitude of socioeconomic differences in sickness absence rates between Japanese and British groups of middle-aged employees over an 8-year period. The first-time sickness absence rates were about twice as high among British men compared with Japanese men. The rate ratio of lower to higher employment grade was 1.2, 1.3, and 2.1 among Japanese white-collar, Japanese blue-collar, and British white-collar employees, respectively. Baseline self-rated health and smoking habit predicted

sickness absence in both groups. However, socioeconomic differences in sickness absence were only partly explained by these factors.

Ness, R.B. (2004, December). “The consequences for human reproduction of a robust inflammatory response.” (AHRQ grant HS10592). *Quarterly Review of Biology* 79(4), pp. 383-393.

This article suggests that immune hyperresponsiveness may limit a woman’s reproductive capacity. Normal pregnancy elicits a maternal inflammatory reaction. This can be understood on the basis of maternal-fetal conflict theory: inflammation is a component of the maternal attempt to limit excessive fetal demands. However, an overly aggressive inflammatory reaction has been shown to be related to a variety of adverse reproductive outcomes. The author reviews several examples, including the fallopian tube damage that results from pelvic inflammatory disease, the upregulated inflammatory response among women who develop preeclampsia, an association between immune hyperresponsiveness and premature delivery, and the relationship between autoimmune diseases and multiple adverse pregnancy outcomes.

Piotrowski, M.M. (2005, January). “Introducing the national patient safety goals department: Sharing programs of excellence from individual organizations.” (AHRQ grant HS11540). *Journal on Quality and Patient Safety* 31(1), pp. 43-46.

This article introduces a new section in this journal of the Joint Commission on Accreditation of Healthcare Organizations (JCAHO). The section will focus on sharing programs of excellence in patient safety from individual

organizations, including innovative ways to meet JCAHO requirements. JCAHO is the leading health care accrediting body in the United States, which surveys about 16,000 health care organizations. JCAHO national patient safety goals are tailored for home care, ambulatory care, behavioral health care, disease-specific care certification, laboratories, long-term care, and assisted living.

Pronovost, P.J., Thompson, D.A., Holzmueller, C.G., and others. (2005). “Defining and measuring patient safety.” (AHRQ grant HS11902). *Critical Care Clinics* 21, pp. 1-19.

These authors review the definition of safety and error and discuss approaches to measuring safety. In doing so, they provide a framework for investigating incidents that reveal risk to patients and discuss how the systems in which care is delivered may contribute to adverse incidents. The authors discuss ways to measure quality, for example, by use of patient safety indicators and safety and process versus outcome measures. Efforts to evaluate adverse events, if done from a systems approach, can help to improve safety, contend the authors. Measuring defect rates, however, is more challenging. Finally process of care measures are probably more readily available than outcome measures.

Rector, T.S., Wickstrom, S.L., Shah, M., and others. (2004, December). “Specificity and sensitivity of claims-based algorithms for identifying members of Medicare+Choice health plans that have chronic medical conditions.” (AHRQ grant HS09630). *Health Services*

continued on page 29

Research briefs

continued from page 28

Research 39(6), Part I, pp. 1839-1860.

Highly specific and sometimes sensitive algorithms for identifying members of health plans with several chronic conditions can be developed using claims data, according to this study. The authors extracted physician, facility, and pharmacy claims data from Medicare+Choice health plans on 3,633 continuously enrolled beneficiaries who responded to a survey that included questions about chronic diseases. For instance, specificity of algorithms was significantly improved by 0.03 to 0.17 when both a medical claim with a diagnosis and a pharmacy claim for a medication commonly used to treat the condition were required. Sensitivity improved significantly by 0.01 to 0.20 when the algorithm relied on a medical claim with a diagnosis or a pharmacy claim, and by 0.05 to 0.17 when 2 years rather than 1 year of claims data were analyzed.

Shaffer, E.R., Waitzkin, H., Brenner, J., and Jasso-Aquilar, R. (2005, January). "Ethics in public health research: Global trade and public health." (HS13251). *American Journal of Public Health* 95(1), pp. 23-34.

Global trade and international trade agreements have transformed the capacity of governments to monitor and protect public health, regulate occupational and environmental health conditions and food products, and ensure affordable access to medications. Yet, public health professionals and organizations rarely participate in trade negotiations or in resolution of trade disputes. The linkages among global trade, international trade agreements, and public health deserve more attention than they

have received to date, note the authors of this paper. They analyze key global trade issues that affect public health, describe the forces shaping them, and discuss their implications for public health.

Shapiro, M.J., Morey, J.C., Small, S.D., and others. (2004). "Simulation based teamwork training for emergency department staff: Does it improve clinical team performance when added to an existing didactic teamwork curriculum?" (AHRQ grants HS11553 and HS11905). *Quality and Safety in Health Care* 13, pp. 417-421.

Simulator-based training may enhance didactic teamwork training, according to this study. The investigators compared team performance between emergency department (ED) staff who had recently received didactic training in the Emergency Team Coordination Course (ETCC) and also received an 8-hour intensive experience in an ED simulator in which they encountered three scenarios of graduated difficulty. A comparison group, also ETCC trained, was assigned to work together in the ED for an 8-hour shift. The experimental team showed a trend towards improvement in the quality of team behavior, while the comparison group showed no change in team behavior during the two observation periods.

Shea, J.A., Aguirre, A.C., Sabatini, J., and others. (2005, January). "Developing an illustrated version of the Consumer Assessment of Health Plans (CAHPS®)." (AHRQ grant HS10299). *Journal on Quality and Patient Safety* 31(1), pp. 32-42.

The Consumer Assessment of Health Plans (CAHPS) is the most commonly used tool to assess

member satisfaction with health plans. However, this complex survey may be confusing for less-educated patient populations. The authors of this article describe the development of an illustrated version of CAHPS for low-literacy groups. They developed illustrations to support the central themes in each of 63 CAHPS text items. Illustrations were tested and revised to reflect feedback. Following interviews with more than 900 patients, all but 7 (11 percent) of the 63 items met the criterion that no more than 25 percent of the sample who saw the illustration could be rated as having "limited/no understanding." By the final pilot test, a median of 66 percent of patients had "full understanding," 20 percent had "partial understanding," and 14 percent had "limited/no understanding" of the 43 illustrations that had been revised.

Wong, H.S., Zhan, C., and Mutter, R. (2005). "Do different measures of hospital competition matter in empirical investigations of hospital behavior?" *Review of Industrial Organization* 26, pp. 61-87.

Considerable controversy exists about the appropriate way hospital competition should be measured. These authors used data from the Healthcare Cost and Utilization Project, the American Hospital Association, and other supplemental data sources to create and evaluate hospital competition measures. Most measures were highly correlated. Inferences about the effect of competition on hospital cost remained the same when alternative hospital competition measures were employed. However, the authors caution researchers against using this finding to arbitrarily select a competition measure when the

continued on page 30

Research briefs

continued from page 29

magnitude of the estimates is important. Reprints (AHRQ Publication No. 05-R050) are available from AHRQ.*

Yaeger, K.A., Halamek, L.P., Coyle, M., and others. (2004, December). "High-fidelity simulation-based training in neonatal nursing." (AHRQ grant 12022). *Advances in Neonatal Care* 4(6), pp. 326-331.

Simulation-based training has the potential to greatly improve neonatal nursing, according to these researchers. Through realistic clinical scenarios, simulation-based training requires trainees to develop higher order cognitive skills and provides the opportunity to acquire and refine cognitive, technical, and behavioral skills by solving

complex, multidimensional problems in an environment without risk to patients' well-being. The constructive debriefings immediately following these scenarios further reinforce positive aspects of performance and pinpoint areas for improvement in a nonjudgmental manner. Finally, simulation-based training programs are better accepted by adult learners than traditional programs.

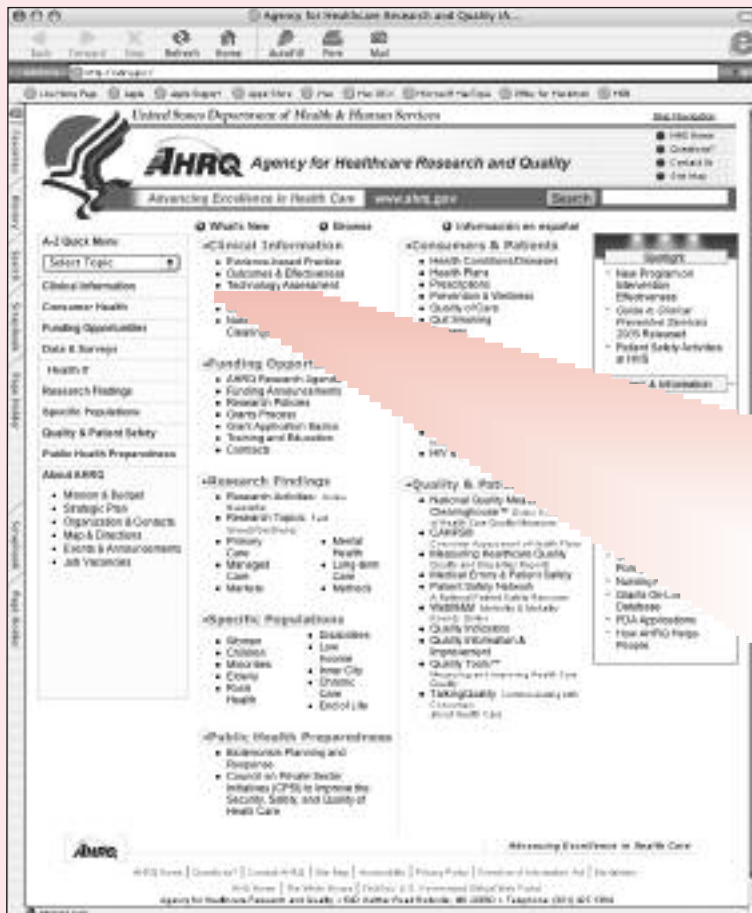
Zatzick, D.F., Russo, J., Pitman, R.K., and others. (2005). "Reevaluating the association between emergency department heart rate and the development of posttraumatic stress disorder: A public health approach." (AHRQ grant HS11372). *Biological Psychiatry* 57, pp. 91-95.

This study revealed an independent association between elevated emergency department

(ED) heart rate of 95 or more beats per minute (BPM) and posttraumatic stress disorder (PTSD) symptoms in a representative sample of 161 acutely injured surgical inpatients. The investigators assessed heart rate at ED presentation and PTSD symptoms at the time of hospitalization and at 1, 4-6, and 12 months postinjury. An ED heart rate of 95 BPM or higher was a significant predictor of PTSD symptoms in analyses that adjusted for relevant injury and patient clinical and demographic characteristics. Incorporating acute care biological parameters such as heart rate has the potential to improve the quality of mental health care delivered to injured survivors of individual and mass trauma, conclude the researchers. ■

Don't Forget— Visit AHRQ's Web Site

AHRQ's Web site—<http://www.ahrq.gov/>—makes practical, science-based health care information available in one convenient location. You can tap into the latest information about the Agency and its research findings and other initiatives, including funding opportunities and job vacancies. *Research Activities* is also available and can be downloaded from our Web site. Do you have comments or suggestions about the site? Send them to info@ahrq.gov.



Check out
what's new
this month in...

Preventive Services

<http://www.ahrq.gov/>

Ordering Information

Most AHRQ documents are available free of charge and may be ordered online or through the Agency's Clearinghouse. Other documents are available from the National Technical Information Service (NTIS). To order AHRQ documents:

(*) Available from the AHRQ Clearinghouse:
Call or write:

AHRQ Publications Clearinghouse
Attn: (publication number)
P.O. Box 8547
Silver Spring, MD 20907
800-358-9295
703-437-2078 (callers outside the
United States only)
888-586-6340 (toll-free TDD service;
hearing impaired only)

To order online, send an e-mail to:
ahrqpubs@ahrq.gov

() Available from NTIS:**

Some documents can be downloaded from the NTIS Web site free or for a nominal charge. Go to www.ntis.gov for more information.

To purchase documents from NTIS, call or write:

National Technical Information Service
(NTIS)
Springfield, VA 22161
703-605-6000, local calls
800-553-6847

Note: Please use publication numbers when ordering

U.S. Department of Health and Human Services

Public Health Service
Agency for Healthcare Research and Quality
P.O. Box 8547
Silver Spring, MD 20907-8547

Official Business
Penalty for Private Use \$300



AHRQ Pub. No. 05-0087
June 2005

ISSN 1537-0224