



Research Activities



U.S. Department of Health and Human Services • No. 280, December 2003

Highlights

Departments

- 2** Quality of Care/
Patient Safety
- 7** Clinical
Decisionmaking
- 10** Women's Health
- 14** Child and
Adolescent Health
- 18** Minority Health
- 19** Health Care for
the Elderly
- 19** Complementary
and Alternative
Medicine
- 20** Health Care Costs
and Financing
- 23** HIV/AIDS
Research

Regular Features

- 24** Agency News
and Notes
- 27** Announcements
- 29** Research Briefs

New study suggests that death rates for some cardiac and cancer surgeries may be linked to surgeons' experience

Seeking out surgeons who frequently perform certain cardiac or cancer-related operations may increase older patients' odds of surviving major surgery, according to a new study supported by the Agency for Healthcare Research and Quality (HS10141). Previous research has suggested that hospitals with high annual volumes of certain types of surgical procedures have lower death rates than hospitals where the volume of such surgeries is low. However, few studies have closely examined why high-volume hospitals do better, and little is known about relationships between hospital volume and surgeon volume in relation to surgical patient death rates.

Researchers led by Dartmouth Medical School's John D. Birkmeyer, M.D., found that patients of high-volume surgeons had lower death rates for heart bypass surgery, carotid endarterectomy—an operation to prevent stroke—lung resection, and five other cardiovascular and cancer procedures than patients whose surgeons performed these operations less frequently. The likelihood of operative death

for patients of low-volume surgeons was 24 percent greater for lung resection—an operation in which part or all of a lung is removed—and nearly four times greater for pancreatic resection surgery as compared with patients of high-volume surgeons.

Surgeon volume accounted for much of the apparent effect of hospital volume, ranging from 100 percent for aortic valve replacement to 24 percent for lung cancer surgery. The study findings suggest that high-volume surgeons' patients had lower death rates even when operated on in low-volume hospitals, while the patients of low-volume surgeons had higher death rates regardless of where they had their surgery.

In the study, high-volume surgeons performed an average of more than 162 heart bypass operations a year, compared with fewer than 101 a year by low-volume surgeons, and over 40 carotid endarterectomy operations annually as opposed to the fewer than 18 performed by low-volume surgeons. High-volume surgeons also performed an average of

continued on page 2

Surgeon's experience

continued from page 1

more than 17 lung resections and more than four pancreatic resections annually, compared with fewer than seven and two, respectively, by low-volume surgeons.

The researchers defined surgical mortality as death during the procedure, before hospital discharge, or within 30 days of the operation. They adjusted their findings to take into account personal factors that could affect odds of surviving major surgery, such as patients' age, sex, race, average income, presence of other illnesses, and whether the surgery was done as an elective or emergency procedure.

Dr. Birkmeyer, who is an associate professor of surgery at Dartmouth Medical School and chief of surgery at Dartmouth-Hitchcock Medical Center, and his colleagues used information from the national Medicare claims

database on nearly 475,000 patients who underwent one of eight cardiovascular procedures or cancer surgeries between 1998 and 1999.

In a separate study examining hospital volume, Dr. Birkmeyer and fellow researchers analyzed how far Medicare patients would have to travel if they opted or were required to have specific operations on their esophagus or pancreas in high-volume hospitals. Findings from this study suggest that requiring patients to undergo these high-risk procedures at hospitals with minimum volume standards (defined as hospitals where one or more pancreatectomies and two or more esophagectomies are performed annually) would affect about 15 percent of patients undergoing these surgeries and would add fewer than 30 minutes to most patients' travel time.

Requiring patients to be operated on at hospitals with very high-volume standards (17 or more pancreatectomies and 20 or more

esophagectomies annually) would affect about 80 percent of patients undergoing these surgeries. However, setting hospital volume standards at higher levels would come at the cost of greatly increasing many patients' travel time to get to the hospital, especially for those living in rural areas.

The simulated trial was based on Medicare claims for more than 15,000 patients who had either esophagectomy or pancreatic resection between 1994 and 1999. The analysis was supported by AHRQ and the Centers for Medicare & Medicaid Services.

For more information, see "Regionalization of high-risk surgery and implications for patient travel times," by Dr. Birkmeyer, Andrea E. Siewers, M.P.H., Nancy J. Marth, M.S., and David C. Goodman, M.D., in the November 26, 2003 *Journal of the American Medical Association* 290(20), pp. 2703-2708. ■

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

Quality of Care/Patient Safety

Surgical patients fare better at hospitals with a higher proportion of registered nurses who have bachelor's degrees

Physicians and the public rank nurse understaffing as one of the greatest threats to patient safety in U.S. hospitals. Several studies have shown that patients fare better when hospitals have a higher proportion of registered nurses (RNs) on their staff. A new study goes a step further. It reveals that surgical patients fare better at hospitals with a higher proportion of RNs with a baccalaureate or higher degree. Generally, RNs receive their education either in 3-year diploma programs in hospitals, associate degree programs in community colleges, or baccalaureate nursing programs in colleges and universities.

continued on page 3

Surgery outcomes

continued from page 2

In the study, which was supported in part by the Agency for Healthcare Research and Quality (NR04513), researchers led by Linda Aiken, Ph.D., R.N., of the University of Pennsylvania, examined medical record outcomes data for 232,342 general, orthopedic, and vascular surgery patients discharged from 168 general hospitals in Pennsylvania in 1998 and 1999. They linked these data to administrative and survey data on nurse educational composition, staffing, and other hospital characteristics. The proportion of hospital RNs holding a bachelor's degree or higher ranged from 0 to 77 percent across the hospitals studied.

After adjusting for patient and hospital characteristics, nurse staffing, nurse experience, and whether the patient's surgeon was board certified, a 10 percent increase in the proportion of nurses holding a bachelor's degree was associated with a 5 percent decrease in both the likelihood of patients dying within 30 days of

admission and the odds of failure to rescue (deaths in surgical patients with serious complications). The researchers conclude that recruiting and retaining baccalaureate-prepared nurses in bedside care and investing in further education of nurses may improve quality of care.

See "Educational levels of hospital nurses and surgical patient mortality," by Dr. Aiken, Sean P. Clarke, Ph.D., R.N., Robyn B. Cheung, Ph.D., R.N., and others, in the September 24, 2003 *Journal of the American Medical Association* 290(12), pp. 1617-1623. ■

Hospital isolation policies to prevent spread of infection may inadvertently reduce care quality for isolated patients

Hospitals often isolate patients with infectious diseases to prevent transmission of the infection to other patients and hospital staff. The recommended infection control precautions depend on the infectious agent, but typically they involve placing the patient in a private room, requiring visitors to wear protective apparel (for example, gloves, gowns, and masks), and restricting the movement of the patient outside of the room. Unfortunately, these isolation policies may inadvertently lead to poorer quality of care and adverse events (injuries caused by medical management that prolong the hospital stay or produce disability) for isolated patients, concludes a study supported by the Agency for Healthcare Research and Quality (HS11169 and HS11534).

David W. Bates, M.D., M.Sc., of Harvard Medical School, and his colleagues found that

hospitalized patients who were isolated for methicillin-resistant *Staphylococcus aureus* infection at two large teaching hospitals (78 admitted with a variety of diagnoses, and 72 admitted for congestive heart failure) were twice as likely as similarly diagnosed patients who did not have to be isolated for infection (matched controls) to experience adverse events (mostly preventable ones) during their hospitalizations (31 vs. 15 adverse events per 1,000 days).

Isolated patients were eight times more likely than control patients to experience supportive care failures such as falls, pressure ulcers, and fluid or electrolyte disorders. They also were more likely to make a formal complaint to the hospital about their care than control patients (8 vs. 1 percent), to have their vital signs not recorded as ordered (51 vs. 31

continued on page 4

Also in this issue:

Care satisfaction among people with disabilities, see page 4

Systems for reporting medical errors, see page 5

CT scans for patients with pelvic fractures, see page 7

Diagnosis and treatment of low back pain, see page 8

Care for people with diabetes, see page 9

Reducing heart-disease related deaths among women with diabetes, see page 10

Racial disparities in care for women with breast cancer, see page 11

Reducing the incidence of false-positive mammograms, see page 12

Improving outcomes among low-income women and their newborns, see page 13

Parental misconceptions about antibiotics, see page 14

Followup care for children with asthma, see page 15

Effects of violence and risky behaviors on children, see page 16

Decreasing blood pressure among urban blacks, see page 18

Lowering costs of monitoring homebound elderly taking warfarin, see page 19

Results from CHIRI™ studies, see page 21

Controlling costs of prescription medicines, see page 22

New national reports on health care quality and disparities, see page 24

Hospital isolation policies

continued from page 3

percent), and to have days with no physician progress note (26 vs. 13 percent). Isolated patients with heart failure were less likely to achieve standards of care for heart failure management than similar patients not in isolation. These findings were based on analysis of medical records to compare processes of care, outcomes, and satisfaction for both groups.

The results of this study demonstrate a strong association between patient isolation and shortfalls of processes, outcomes,

and satisfaction, notes Dr. Bates. The results also illustrate the importance of balancing the risks and benefits of an intervention while highlighting that mandatory policies may not always be appropriate. Because the complexities of health care are likely to increase in the future, the detection of unintended adverse consequences may be even more difficult, according to Dr. Bates. He calls for well-designed, carefully evaluated, and appropriately implemented interventions to ensure the safety of all patients.

See "Safety of patients isolated for infection control," by Henry

Thomas Stelfox, M.D., Dr. Bates,, and Donald A. Redelmeier, M.D., M.Sc., in the October 8, 2003 *Journal of the American Medical Association* 290(14), pp. 1899-1905.

Editor's note: Another AHRQ-supported study (HS11540) on infection control compares the infection risk of multilumen and single lumen central venous catheters. For details see: Dezuflian, C., Lavelle, J., Nallamotheu, B.K., and others. (2003). "Rates of infection for single-lumen versus multilumen central venous catheters: A meta-analysis." *Critical Care Medicine* 31(9), pp. 2385-2390. ■

People with disabilities are generally satisfied with their care but report poor communication and lack of thorough care

People with impaired vision, hearing, or mobility confront special physical and communication challenges in the medical setting. Patients who have disabilities are generally satisfied with the care they receive, but they are significantly more likely than other patients to report poor communication with care providers and lack of thorough care, regardless of the disabling condition, according to a recent study supported by the Agency for Healthcare Research and Quality (HS10223).

Thoughtful systematic approaches are needed to improve communication with disabled patients and to reduce time pressures that might compromise their health care experiences, concludes Lisa Iezzoni, M.D., of Beth Israel Deaconess Medical Center.

Dr. Iezzoni and her colleagues identified people with disabling conditions by using a 1996 nationally representative survey of 16,403 community-dwelling

elderly and disabled Medicare beneficiaries. They controlled for demographic characteristics and managed care membership in predicting patient dissatisfaction with 12 dimensions of care quality.

Roughly 98 percent of those with and without disabilities believed their physicians were competent and well trained. But significantly more people with disabilities reported dissatisfaction with care for 10 of the 12 quality of care dimensions. People reporting any major disability were more than twice as likely as other people to be dissatisfied with physicians completely understanding their conditions, thoroughly discussing their health problems, and answering all their questions, and they were more likely to state that their physicians often seemed hurried.

See "Quality dimensions that most concern people with physical and sensory disabilities," by Dr. Iezzoni,

continued on page 5

Free and fast—Subscribe to the Agency'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

Care for disabled people

continued from page 4

Roger B. Davis, Sc.D., Jane Soukup, M.Sc., and Bonnie O'Day, Ph.D., in the September 22, 2003 *Archives of Internal Medicine* 163, pp. 2085-2092.

Editors note: Two other AHRQ-supported articles recently addressed other aspects of quality of care. They examined varied hospital actions to increase beta-blocker use following heart attack and efforts to improve communication in the intensive care unit (ICU) to reduce ICU stays. For more details, see:

- Bradley, E.H., Holmboe, E.S., Wang, Y., and others. (2003, August). "What are hospitals doing to increase beta-blocker use?" (AHRQ grant HS10407). *Joint Commission Journal on Quality and Safety* 29(8), pp. 409-415.
- Pronovost, P., Berenholtz, S., Dorman, T., and others. (2003, June). "Improving communication in the ICU using daily goals." (AHRQ grant HS11902). *Journal of Critical Care* 18(2), pp. 71-75. ■

Studies focus on systems for reporting medical errors and quality issues

In response to the alarming number of medical errors documented in the Institute of Medicine report, *To Err Is Human*, the Institute recommended creating a nationwide reporting system for serious care-related injuries. Such a reporting system could notify health officials about safety problems at individual institutions, increasing the likelihood that these issues would be addressed, and it might lead to a better understanding of their underlying causes.

A number of States currently have mandatory reporting systems, and the Joint Commission on Accreditation of Healthcare Organizations (JCAHO) has a voluntary reporting system for hospitals to report serious care-related injuries. Private-sector initiatives to improve quality of care have also begun.

A study supported by the Agency for Healthcare Research and Quality (National Research Service Award training grant T32 HS00053) found that State

reporting systems identified a greater number of care-related injuries than the JCAHO system. Participants in an AHRQ-supported workshop developed recommendations on the design and scope of a private-sector quality of care data monitoring system. Both projects are discussed here.

Williams, L.K., Pladevall, M., Fendrick, A.M., and others. (2003, September). "Differences in the reporting of care-related patient injuries to existing reporting systems." (NRSA training grant T32 HS00053). *Joint Commission Journal on Quality and Safety* 29(9), pp. 460-467.

This study found that hospitals reported fewer care-related injuries to the voluntary system offered by JCAHO than they did to States mandating such reporting. The investigators compared the number of care-related injuries reported in 1999 by accredited hospitals to JCAHO with the number reported

to 15 States requiring mandatory reporting of certain medical events. These included: an unanticipated death or major permanent loss of function not related to the patient's underlying condition; unanticipated death of a full-term infant, infant abduction or discharge to the wrong family; rape; hemolytic transfusion reaction involving administration of blood or blood products having major blood group incompatibilities; surgery on the wrong patient or wrong site; and suicide of a patient in a setting where the patient receives around-the-clock care.

The number of reports submitted by JCAHO-accredited hospitals to States equaled or exceeded the number reported to JCAHO in all categories examined. Although JCAHO received fewer reports from accredited hospitals, its process requires a root cause analysis (RCA) of the event and a prevention plan. Also, it disseminates the lessons learned from reported events.

continued on page 6

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

Medical errors

continued from page 5

The researchers note that hospitals have many disincentives for reporting to JCAHO. The process of investigating an event and writing up an action plan can be time-consuming and expensive. If JCAHO determines that there is a continued threat to patient safety, it may conduct an on-site review of the event, and the cost is billed to the organization. When JCAHO is notified of an event, failure of the hospital to submit an acceptable RCA or action plan may affect the hospital's accreditation status, which may result in the loss of Medicare reimbursement. Furthermore, information reported to JCAHO may be subject to legal discovery, a process of obtaining evidence for trial.

Blewett, L.A., Parente, S.T., Peterson, E., and Finch, M.D.

(2003, August). "The role of the private sector in monitoring health care quality and patient safety." (AHRQ grant HS10091). *Joint Commission Journal on Quality and Safety* 29(8), pp. 425-433.

Despite a number of public- and private-sector efforts, there is still no standard method for measuring and monitoring health care quality and safety across public and private payers. An AHRQ-sponsored workshop in fall 2000 examined the private sector's role in monitoring quality in the health care system. At the workshop, national experts outlined the design and scope of a private-sector data monitoring system, a longitudinal database that would use patient-level administrative data (with potential linkages) to produce real-time policy analysis and research applications.

They identified ten key attributes of the monitoring system, such as

efficiency, timeliness, secured data storage that meets privacy requirements, and flexibility and adaptability. In addition, system data must be scalable, that is, collected in such a way that it can be used for comparisons across patient populations, geographic areas, or other categories. The system should allow for additional linkages with other data systems or primary data collection efforts.

A type of data repository eventually would be required to provide needed links to inpatient, outpatient, laboratory, and pharmacy claims with member and provider administrative data, clinical classifications, and member satisfaction information. Barriers and gaps to the development of such a system include the cost of data collection, the diversity of the units of data collection, data privacy, and limitations of administrative data elements. ■

Ethics consultations can help resolve conflicts that may prolong unwanted or nonbeneficial ICU treatments

Ethics consultations can help doctors, nurses, and patients/surrogates resolve conflicts that otherwise may inappropriately prolong nonbeneficial or unwanted treatments in the intensive care unit (ICU), according to a study supported by the Agency for Healthcare Research and Quality (HS10251). The researchers found that ethics consultations were associated with nearly 3 fewer hospital days and 1.5 fewer ICU days in those patients who ultimately did not survive to discharge.

The majority (87 percent) of physicians, nurses, and patients/surrogates agreed that ethics consultations in the ICU were helpful in addressing treatment conflicts. The consultation and usual-care groups showed no difference in patient mortality rates, allaying fears that ethics consultations would simply provide a subterfuge for "pulling the plug," notes Lawrence J. Schneiderman, M.D., of the University of California, San Diego.

Dr. Schneiderman and his colleagues compared the number of ICU days and hospital days, life-sustaining treatments, and mortality rates among ethics consult (278) and usual care (273) patients who had value-

related treatment conflicts arise during the course of treatment at adult ICUs in seven U.S. hospitals. Physicians, nurses, and patients/surrogates were interviewed to obtain their views of the ethics consultation.

The ethics consultant framed the issues in easily understood ethical terms with the involved parties, drawing on relevant material, including hospital policy, published ethical consensus statements, statutes, and case law. At a minimum, the consultant addressed relevant medical factors, the patient's known or inferred values and preferences, quality of life considerations, and other contextual factors of importance. The consultant helped articulate consensus or disagreement and either helped implement the consensus or facilitated ways to address and resolve the disagreement.

See "Effect of ethics consultations on nonbeneficial life-sustaining treatments in the intensive care setting," by Dr. Schneiderman, Todd Gilmer, Ph.D., Holly D. Teetzel, M.A., and others, in the September 3, 2003 *Journal of the American Medical Association* 290(9), pp. 1166-1172. ■

Experts are uncertain whether full disclosure of medical errors will help avoid lawsuits

Mandatory disclosure of medical errors has been advocated to improve patient safety. At least 20 States have passed laws or regulations mandating that cases of medical errors and/or patient harm be reported to the State. One State, Pennsylvania, also requires disclosure directly to patients and/or families. However, many providers resist mandatory disclosure of errors due to concerns about malpractice suits. A recent review of the literature on the impact of full disclosure on malpractice liability concludes that the jury is still out.

Many studies examine why patients sue their doctors,

suggesting that some lawsuits may be averted by disclosure, but the studies do not allow researchers to estimate the additional suits that would be created by disclosure. On the other hand, some studies identified suspicion of a cover-up or the failure to acknowledge an error or apologize for it as major risk factors for malpractice suits. Additional studies addressing the effects of disclosure on malpractice liability are needed.

Arguments in favor of disclosure include reasons of ethics, patient autonomy, and equity, according to Sanjay Saint, M.D., M.P.H., Timothy P. Hofer, M.D., M.Sc., of the VA Center for Practice Management and Outcomes

Research, and colleagues. Their research was supported in part by the Agency for Healthcare Research and Quality (HS11540). They conducted an extensive literature search of over 5,200 citations on disclosure and malpractice liability, which yielded only one published study that directly examined malpractice liability when a policy of full disclosure was implemented.

For more information, see "Does full disclosure of medical errors affect malpractice liability?" by Allen Kachalia, M.D., J.D., Kaveh G. Shojania, M.D., Dr. Hofer, and others, in the October 2003 *Joint Commission Journal on Quality and Safety* 29(10), pp. 503-511. ■

Clinical Decisionmaking

CT scans of pelvic fracture patients can determine the extent of hemorrhage and need for pelvic arteriography and transfusions

Patients who suffer pelvic fractures are usually the victims of trauma and often have other trauma-related injuries. Up to 52 percent of emergency department (ED) patients with pelvic fractures will develop shock due to hemorrhage. However, it's hard for the trauma surgeon to determine whether the shock is due to the pelvic fracture hemorrhage or hemorrhage from another source. According to a new study, computed tomographic (CT) scans of pelvic hematoma (collection of clotted blood) in these patients can help predict fracture-related blood loss and the need for angiography (x-ray visualization of blood vessels following injection of a contrast dye) to investigate arterial injury, as well as the need for blood transfusion.

In the study, which was supported by the Agency for Healthcare Research and Quality (K08 HS11291), C. Craig Blackmore, M.D., M.P.H., of Harborview Medical Center, and his colleagues examined data from 759 blunt trauma patients who sustained pelvic fracture. Overall mortality was 13 percent. Over half (55 percent) of the patients received blood transfusions, and 34 percent received six or more units of blood in the first

72 hours. Angiography was performed on 163 patients, of whom 113 had arterial injury.

Patients with large pelvic CT hemorrhage volumes were nearly five times as likely to have pelvic arterial injury and require large-volume (six or more units) transfusions as patients with smaller pelvic hemorrhage volumes. A simple estimate of whether the amount of pelvic hemorrhage is less than 200 mL or more than 500 mL allows the trauma surgeon to differentiate between patients who have a 5 percent vs. 45 percent probability of pelvic arterial injury. In the absence of substantial extraperitoneal hematoma (blood outside the abdominopelvic membrane) on CT scans, the probability of significant arterial hemorrhage was less than 5 percent. In this case, doctors should give priority to evaluating other potential sources of hemorrhage, concludes Dr. Blackmore.

See "Assessment of volume of hemorrhage and outcome from pelvic fracture," by Dr. Blackmore, Gregory J. Jurkovich, M.D., Ken F. Linnau, M.D., and others, in the May 2003 *Archives of Surgery* 138, pp. 504-509. ■

Studies focus on diagnosis and treatment of low back pain, as well as related pain and disability

Low back pain often leads to disability and psychological distress. Individuals suffering from this problem are typically diagnosed with conventional x-ray of the lumbar spine. Magnetic resonance imaging (MRI)—either conventional or rapid MRI—may be used when the clinician suspects that the back pain stems from a serious condition, such as cancer or infection. Many people who suffer from low back pain seek complementary or alternative care from chiropractors, acupuncturists, or masseuses. Three recent studies supported by the Agency for Healthcare Research and Quality focus on the diagnosis and treatment of low back pain. The studies are summarized here.

Gray, D.T., Hollingworth, W., Blackmore, C.C., and others. (2003, June). "Conventional radiography, rapid MR imaging, and conventional MR imaging for low back pain: Activity-based costs and reimbursement." (AHRQ grants HS09499 and HS11291). *Radiology* 227(3), pp. 669-680.

When evaluating low back pain, conventional x-rays are not sensitive enough to detect cancer, infection, or many degenerative causes of the pain, such as spinal stenosis. Conventional MRI is often used as an alternative to diagnose these problems, but it is costly and requires long imaging time. This study found that the time and costs for rapid MRI are roughly three times those for conventional x-ray (primarily due to the higher costs of acquiring and maintaining MRI equipment) but half those for conventional MRI.

The researchers randomized low back pain patients at each of four Seattle Lumbar Imaging Project (SLIP) sites to undergo

conventional x-ray or rapid MRI of the lumbar spine. They compared imaging time and costs for these patients and for SLIP and non-SLIP patients undergoing conventional MRI as usual care in 2000, as well as Medicare reimbursements for imaging.

For 23 conventional x-rays, 27 rapid MRIs, and 38 conventional MRIs performed during 2000, all rapid MRI times exceeded those of conventional x-ray but were less than those of conventional MRI. Based on an activity-based analysis of equipment, radiologist, and technologist costs, average costs (in 2002 dollars) were \$44 for conventional x-ray, \$126 for 1.5-T rapid MRI, \$128 for 0.3-0.35-T rapid MRI, \$267 for 1.5-T conventional MRI, and \$264 for 0.3-0.35-T conventional MRI. In 2002, Seattle-area Medicare fee schedule reimbursement for conventional x-ray was \$44. Applying the ratio of reimbursement (\$620) to costs (\$264-\$267) for conventional MRI to rapid MRI costs predicted reimbursement of \$292 to \$300 for rapid MRI. Thus, while current conventional x-rays costs exceed reimbursement, current conventional MRI and projected rapid MRI reimbursements exceed costs.

The researchers conclude that such cost estimates must be combined with data on clinical outcomes, functional status, and provider and patient satisfaction to more fully evaluate the proper role of rapid MRI in the initial evaluation of low back pain.

Cherkin, D.C., Sherman, K.J., Deyo, R.A., and Shekelle, P.G. (2003, June). "A review of the evidence for the effectiveness, safety, and cost of acupuncture, massage therapy, and spinal

manipulation for back pain." (AHRQ grant HS09989). *Annals of Internal Medicine* 138, pp. 898-906.

The limited effectiveness of conventional treatments for low back pain has prompted many dissatisfied patients to seek complementary and alternative medical (CAM) therapies such as massage therapy, spinal manipulation performed mostly by chiropractors, and acupuncture. These researchers reviewed systematic reviews and randomized controlled trials, published since 1995, to examine the evidence for the safety, effectiveness, and cost of these alternative therapies for low back pain.

The three studies that evaluated massage found this therapy to be effective for persistent back pain, especially for improving patient functioning. Recent studies evaluating acupuncture were of poor quality, so the reviewers were unable to assess the effectiveness of this therapy. The preponderance of evidence from 26 trials evaluating spinal manipulation (including chiropractic manipulation) for back pain indicate that this treatment has real but modest benefits for both acute and chronic low back pain.

All of these treatments seem to be relatively safe. Serious problems are rare and generally not life-threatening. Because costs have rarely been measured in trials of CAM therapies, little is known about the cost-effectiveness of these treatments for back pain. Data from one trial suggest that the initial costs of a course of massage therapy may be justified by the substantial improvements in functional outcomes and reduced

continued on page 9

Low back pain

continued from page 8

use of health care services for back pain during the year after treatment. The modest benefits of spinal manipulation and questionable benefits of acupuncture were not associated with any future cost savings. The authors caution that trials of CAM therapies for back pain are complicated by the common use of various techniques; adjuncts to these techniques, for example, herbs for acupuncture, aromatherapy for massage, and ultrasound for manipulation; and lifestyle recommendations.

Hurwitz, E.L., Morgenstern, H., and Yu, F. (2003). "Cross-sectional and longitudinal associations of low-back pain and

related disability with psychological distress among patients enrolled in the UCLA low-back pain study." (AHRQ grant HS07755). *Journal of Clinical Epidemiology* 56, pp. 463-471.

Many studies have found an association between low back pain and depression and other types of psychological distress. However, this is the first longitudinal study of primary care low back pain patients to show the interrelationship between low back pain and disability and subsequent psychological distress. The investigators followed 681 primary care patients with low back pain for 18 months. They assessed patients' pain, disability, and psychological distress at 6 weeks and at 6, 12, and 18 months.

Results showed that current pain and disability increased by 36 percent and 23 percent, respectively, the likelihood of subsequent psychological distress, and that current psychological distress greatly increased the likelihood of subsequent pain and disability. Patients with clinically significant or frequent pain or disability were 5 to 10 times more likely to have appreciable pain or disability at the subsequent followup assessment, after controlling for psychological distress at the previous assessment. Similarly, psychologically distressed patients were more likely than less distressed patients to be distressed at the subsequent followup assessment, after controlling for each previous low back pain or disability variable. ■

Researchers focus on diabetes care

Diabetes affects nearly 8 percent of U.S. adults and 19 percent of the elderly. Although there have been promising advances in managing diabetes, much of the findings from recent research have not been integrated into clinical practice. A recent translating research into practice (TRIP) study supported by the Agency for Healthcare Research and Quality examined ways to increase the probability that research findings will make their way into clinical practice to improve diabetes care. A second AHRQ-supported study revealed that short-term treatment of depression in patients with diabetes can improve symptoms associated with depression. A third AHRQ-supported study found that patients with diabetic retinopathy and glaucoma are more satisfied when they receive eye care from specialists. The three studies are summarized here.

Glasgow, R.E. (2003, August). "Translating research to practice: Lessons learned, areas for improvement, and future directions." (AHRQ grant HS10123). *Diabetes Care* 26, pp. 2451-2456.

There have been two positive examples of the adoption of research-based innovations in diabetes care, according to the author of this paper. First, is the paradigm shift away from provider-centered "compliance" approaches to patient "empowerment" via self-management, education, and behavior change. A second innovation that has been widely adopted, at least within leading medical centers and health care plans, involves "systems change" approaches to improving the delivery of evidence-based diabetes care.

The success of these two advances has helped to move

diabetes care from a perspective that blamed poor outcomes on either the patient or the primary care provider to one that realizes that quality care delivery needs to be supported by an appropriately designed system. The author makes several recommendations for reordering translation research, including studies that demonstrate the broad impact of interventions on quality of life and economic outcomes; designing programs that are adoptable in various settings and by different clinicians; and studies with a greater focus on policies (for example, reimbursement) and social environment.

Editor's Note: A related TRIP article addresses why we don't see more translation of health promotion research into practice. For details, see: Glasgow, R.E., Liechtenstein, E., and Marcus, A.C. (2003, August). "Why don't we see

continued on page 10

Diabetes care

continued from page 9

more translation of health promotion research to practice? Rethinking the efficacy-to-effectiveness transition.” (AHRQ grant HS10123). *American Journal of Public Health* 93, pp. 1261-1267.

Musselman, D.L., Betan, E., Larsen, H., and Phillips, L.S. (2003). “Relationship of depression to diabetes types 1 and 2: Epidemiology, biology, and treatment.” (AHRQ grant HS09722). *Biological Psychiatry* 54, pp. 317-329.

Some recent studies have shown that depression and its associated symptoms constitute a major risk factor in the development of type 2 (adult-onset) diabetes and may accelerate the onset of diabetes complications. These authors reviewed studies of the pathophysiological alterations related to glucose intolerance and diabetes in depressed patients. The few randomized controlled studies of treatment of depression in

patients with diabetes reveal that short-term treatment of depression in patients with diabetes improves their dysphoria (agitation or discomfort) and other signs and symptoms of depression. The researchers call for more studies to confirm whether response to psychotherapy and/or medication improves glucose control, encourages compliance with diabetes treatment, and perhaps even increases longevity among patients who have diabetes.

Escarce, J.J., Kapur, K., Solomon, M.D., and others. (2003, August). “Practice characteristics and HMO enrollee satisfaction with specialty care: An analysis of patients with glaucoma and diabetic retinopathy.” (AHRQ grant HS09942). *Health Services Research* 38(4), pp. 1135-1155.

Many patients with diabetic retinopathy (DR) and glaucoma prefer to be treated by specialists with expertise in their conditions. Financial arrangements of eye care practices are also associated with

patients’ eye care satisfaction, according to this study. The investigators surveyed 913 working age patients with open-angle glaucoma (OAG) or DR enrolled in six commercial managed care health plans, who were treated in 144 different eye care practices. A patient survey asked about patient characteristics and satisfaction with eye care. A survey of eye care practices gave information on practice characteristics (for example, provider specialties and financial features).

The researchers assessed the association of patient and practice characteristics with high levels of patient satisfaction. Treatment in a practice with a glaucoma specialist (for OAG) patients or a retina specialist (for DR patients) was associated with higher satisfaction. However, treatment in a practice that obtained a high proportion of its revenues from capitation payments or in a group practice, where providers obtained a high proportion of their incomes from bonuses, was associated with lower satisfaction. ■

Women’s Health

More aggressive treatment recommendations for women with diabetes may be needed to reduce their risk of heart disease-related death

The presence of established coronary heart disease (CHD) in men increases their risk of death from CHD more than the presence of diabetes. But the reverse is true for women; diabetes is associated with an increased risk of death from CHD, according to a study supported by the Agency for Healthcare Research and Quality (HS10871).

Current treatment recommendations for women with diabetes may need to be more aggressive to match their CHD mortality risk, according to the study’s lead author, Sundar Natarajan, M.D., M.Sc., of the Ralph H. Johnson Veterans Affairs Medical Center, Charleston, SC, and the Medical University of South

Carolina. Dr. Natarajan and colleagues analyzed data from the Framingham Heart Study and the Framingham Offspring Study with followup of 20 years.

At baseline (1971-1975), 134 men and 95 women had diabetes, while 222 men and 129 women had CHD. The researchers calculated the comparative effect of established CHD versus diabetes on the risk of CHD mortality after adjusting for other CHD risk factors such as age, hypertension, serum cholesterol levels, smoking, and body mass index.

continued on page 11

Women with diabetes

continued from page 10

Compared with men who did not have diabetes or CHD, men with only diabetes had double the risk of death from CHD, while men with only CHD had four times the risk of CHD death. Compared with women who did not have diabetes or CHD, women with only diabetes had nearly four times the risk for CHD death, and women with only CHD had nearly double the risk of CHD death. Men and women with both diabetes

and CHD were at greatest risk for CHD death. The researchers urge caution in interpreting these results, since almost all participants in this community-based study were white, and these results may not hold for other populations.

See "Sex differences in risk for coronary heart disease mortality associated with diabetes and established coronary heart disease," by Dr. Natarajan, Youlian Liao, M.D., Guichan Cao, M.D., and others, in the July 28, 2003 *Archives of Internal Medicine* 163, pp. 1735-1740. ■

Surgical complications and clinical outcomes are similar for total and supracervical hysterectomy

More than a half million hysterectomies are performed on U.S. women each year. Between 1988 and 1998, the rate of total abdominal hysterectomy, which includes removal of both the uterus and cervix, has declined, and supracervical hysterectomy, in which only the uterus is removed, increased substantially.

Proponents of supracervical hysterectomy argue that total abdominal hysterectomy may damage nerve structures important to bladder and sexual function and increase operative time and blood loss. However, a recent study supported by the Agency for Healthcare Research and Quality (HS09478) found that surgical complications and adverse clinical

outcomes 2 years after surgery were not less frequent in women who received supracervical hysterectomy.

The researchers, who are members of the Total or Supracervical Hysterectomy Research Group, randomly assigned 135 women at four clinical centers to receive a total (67) or supracervical hysterectomy (68) for symptomatic fibroids, abnormal uterine bleeding unresponsive to hormonal treatment, or both. They compared surgical complications and clinical outcomes for both groups 2 years after surgery.

Hysterectomy by either technique led to significant reductions in most symptoms, including pelvic pain or pressure,

back pain, urinary incontinence, and voiding dysfunction. There were no significant differences in the rate of complications, degree of symptom improvement, or activity limitation between the two groups. However, women weighing more than 220 pounds at study entry were twice as likely to be readmitted to the hospital during the 2-year followup period.

More details are in "A randomized comparison of total or supracervical hysterectomy: Surgical complications and clinical outcomes," by Lee A. Learman, M.D., Ph.D., Robert L. Summitt, Jr., M.D., R. Edward Varner, M.D., and others, in the September 2003 *Obstetrics & Gynecology* 102, pp. 453-462. ■

Black women with suspected breast cancer are more likely than white women to have delayed or incomplete followup

Over one-fourth of black women who have abnormal results from mammograms or clinical breast exams still have not resolved the diagnosis with followup tests 6 months later, according to this study which was supported in part by the Agency for Healthcare Research and Quality (HS08395). Delays of this magnitude may compromise survival because for women ultimately determined to have breast cancer, delays of 3 to 6 months have been associated with lower survival rates

compared with women who have shorter delays. In this study, black women with prior breast abnormalities or with higher levels of cancer anxiety were about half as likely as others to resolve the diagnosis in 3 to 6 months.

On the other hand, women who reported being told what was to happen next and those who remembered receiving the results of their mammograms were significantly more likely to have diagnostic resolution

continued on page 12

Breast cancer followup

continued from page 11

within 3 months. Improving communication during the mammogram process, particularly if women have had a prior breast abnormality, and ensuring that the patient is told about the next steps to take and fully understands the importance of quick followup may improve followup of abnormal breast cancer screening results, suggest the researchers. They identified 184 black women at three screening clinic sites who had abnormal mammograms or clinical breast exam results that required immediate followup.

The researchers interviewed the women and examined their medical records to assess the association between patient and health care system factors and diagnostic resolution of the abnormal

findings within 3 and 6 months. Nearly 37 percent of women reported some kind of symptom at the time of the abnormal finding. Overall, 39 percent of the women were without diagnostic resolution within 3 months and 28 percent within 6 months. Surprisingly, neither socioeconomic status nor system barriers (for example, health insurance status or regular source of primary care) were associated with timely diagnostic resolution.

For more information, see “Realizing the promise of breast cancer screening: Clinical follow-up after abnormal screening among black women,” by Jon F. Kerner, Ph.D., Michael Yedidia, Ph.D., Deborah Padgett, Ph.D., and others, in *Preventive Medicine* 37, pp. 92-101, 2003. ■

Radiologists' access to women's previous mammograms reduces by at least half the incidence of false-positive mammogram readings

Up to 10 percent of all mammograms are false positives, that is, they suggest abnormalities that upon further testing end up to be harmless. These false positives create anxiety for women and lead to costly further testing—such as additional mammography or ultrasound—to rule out breast cancer. When radiologists always have access to women's previous mammograms, the incidence of false-positive mammogram readings is reduced by at least half, concludes a study supported by the Agency for Healthcare Research and Quality (HS10068).

Andrew N. Kleit, Ph.D., of the Pennsylvania State University, and James F. Ruiz, M.D., of the

Women's Hospital of Baton Rouge, analyzed 1999 medical data on screening and diagnostic mammograms for 5,000 patients at a single Southern hospital. They compared the results of followup exams of women whose initial mammograms were positive (suggesting a problem). They also examined the influence of factors such as whether the woman had received a prior mammogram, her age, and individual physician identifiers on false-positive readings.

Results implied that if previous mammograms were always available, the number of false positives would decrease by at least half. The findings also indicated that there was no reason to believe

this decrease would be accompanied by an increase in the number of false negatives (mammograms said to be normal that were not). Other factors also affected the number of false positives. Mondays and Wednesdays appeared to be more prone to false positives than other days of the week. There was also some disparity in false-positive outcomes among the five physicians studied.

See “False positive mammograms and detection controlled estimation,” by Drs. Kleit and Ruiz, in the August 2003 *Health Services Research* 38(4), pp. 1207-1228. ■

Low-risk deliveries in a collaborative care birth center have outcomes similar to hospital deliveries by obstetricians

Whether low-risk women give birth in collaborative care birth centers that use certified nurse-midwife (CNM)/obstetrician management or in a hospital where care is managed by an obstetrician, maternal and infant outcomes are similar. However, the collaborative care birth centers have fewer surgical deliveries and use fewer medical resources, according to a study supported in part by the Agency for Healthcare Research and Quality (HS07161).

William H. Swartz, M.D., of the University of California, San Diego, Medical School and his colleagues studied the care and outcomes of 2,957 low-risk, low-income women from the time they began prenatal care to discharge home from a collaborative care birth center or hospital. Of these women, 1,801 received collaborative care, and 1,149 received traditional hospital care.

Major antepartum, intrapartum, and neonatal complications were similar in both groups, as were neonatal intensive care unit admissions. However, women in collaborative care had 15 percent more normal spontaneous vaginal deliveries, 23 percent fewer episiotomies, and 36 percent less use of epidural anesthesia.

Overall, more technical interventions (for example, induction and augmentation of labor with oxytocin, episiotomies, and epidural use) were more common in traditional care and less technical interventions (walking, tub or shower use, and oral fluids) were more common in collaborative care.

Also, collaborative care women had shorter lengths of stay in the birth facility, with 28 percent more being discharged before 24 hours, and almost 6 percent fewer having stays longer than 72 hours. Thus, operative deliveries and hospital stays, major determinants of the cost of perinatal care, were substantially reduced with collaborative care. The researchers conclude that managed care organizations, local and State governments, and obstetric providers may want to consider inclusion of collaborative management/birth center programs in their array of covered or offered services.

See "Outcomes, safety, and resource utilization in a collaborative care birth center program compared with traditional physician-based perinatal care," by Debra J. Jackson, R.N., M.P.H., D.Sc., Janet M. Lang, Ph.D., Sc.D., Dr. Swartz, and others, in the June 2003 *American Journal of Public Health* 93(6), pp. 999-1006. ■

Home visits by a nurse-health advocate team can improve the outcomes of low-income, minority mothers and their infants

Regular home visits by a nurse-health advocate team can improve maternal and infant outcomes for low-income, minority families, according to a study supported by the Agency for Healthcare Research and Quality (HS07624). However, to be effective, these programs must be culturally sensitive, intensive, and adequately staffed and financed, notes Kathleen F. Norr, Ph.D., of the University of Illinois at Chicago.

Dr. Norr and her colleagues recruited 406 black and 186 Mexican-American low-income pregnant women from two university-associated prenatal clinics in Chicago. They randomly

assigned them to the Chicago REACH-Futures Program or to a control group and interviewed the women during the last trimester of pregnancy and at 2, 6, and 12 months after delivery to assess maternal and infant outcomes.

Each REACH team of one nurse and two trained community workers followed a caseload of 150 families. The community workers, who were familiar with the social realities of the family's community, contacted the families once a month or more often if necessary. They assessed maternal concerns and problems, upcoming developmental changes, and appropriate parenting, as well as home safety, infant health status,

growth and nutrition, signs of illness and appropriate responses, and preventive care received and needed. The nurse accompanied the advocate at 1, 6, and 12 months and conducted infant health and developmental screening. The home visits did not replace regular well-child visits.

Many of the mothers were depressed and faced an average of nearly four difficult life circumstances, such as an abusive partner or an inability to pay bills. The effects of the REACH program varied by race/ethnicity. For blacks, the program was associated with better maternal documentation of infant immunizations, more

continued on page 14

Home visits to new mothers

continued from page 13

developmentally appropriate parenting expectations, and higher 12-month infant mental development scores. For Mexican Americans, the program improved the women's daily living skills

(such as money management or riding the bus) and scores on providing appropriate play materials. One explanation for comparatively few program effects was maternal depression and the extreme economic and environmental deprivation faced by families in the study.

See "Maternal and infant outcomes at one year for a nurse-health advocate home visiting program serving African Americans and Mexican Americans," by Dr. Norr, Kathleen S. Crittenden, Ph.D., Evelyn L. Lehrer, Ph.D., and others, in *Public Health Nursing* 20(3), pp. 190-203, 2003. ■

Child and Adolescent Health

Parental misconceptions about antibiotic use are widespread, but they may be modifiable by clinicians and the media

Some parents are more likely than others to pressure doctors to prescribe antibiotics for their children when they are not needed, and parental misconceptions about proper antibiotic use are widespread, according to a study supported by the Agency for Healthcare Research and Quality (HS10247). However, these misconceptions are potentially modifiable by clinicians and media sources, note the Harvard Medical School researchers who conducted the study. They surveyed parents in 16 Massachusetts communities about antibiotic-related knowledge, attitudes, and use during a 12-month period; their access to health information; and their demographic profiles.

A total of 1,106 parents responded to the survey. One-third of parents incorrectly believed that antibiotics could be helpful for viral illnesses (for example, most cases of bronchitis), and more than three-quarters believed antibiotics were needed for treatment of green nasal discharge in the absence of fever or other signs of illness. Nearly one-fourth (24 percent) of parents gave responses suggesting a tendency to demand unnecessary antibiotics for their child.

Greater knowledge about antibiotics was associated with increased parental age and education, having more than one child, white race, and receipt of information through the media on antibiotic resistance. Factors associated with a tendency to demand antibiotics included decreased knowledge, pressure from day care settings, lack of alternatives offered by clinicians, and lack of access to media information. Medicaid-insured parents were less knowledgeable about antibiotics than commercially insured parents, and they were more likely to report pressure from schools or day care to obtain antibiotics, more overall antibiotic prescriptions, and receipt of less information on antibiotic resistance through the media. These findings underscore the need to educate parents, particularly those in underserved communities, about appropriate treatment of infections.

See "Correlates of parental antibiotic knowledge, demand, and reported use," by Marianne Kuzujanakis, M.D., M.P.H., Ken Kleinman, Sc.D., Sheryl Rifas-Shiman, M.P.H., and Jonathan A. Finkelstein, M.D., M.P.H., in the July 2003 *Ambulatory Pediatrics* 3(4), pp. 203-210. ■

Antiinflammatory medications for the long-term treatment of childhood asthma are underused

Antiinflammatory medications control the chronic airway inflammation that causes recurrent episodes of wheezing, breathlessness, chest tightness, and

coughing in children with asthma. Underuse of these medications often results in emergency department (ED) visits for children with asthma, particularly

disadvantaged and minority children.

The view among many parents—especially poor, minority parents—that asthma is

continued on page 15

Childhood asthma

continued from page 14

uncontrollable, as well as their negative attitudes toward inhaled antiinflammatory medications may contribute to suboptimal asthma care for their children, according to the results of this study, which was supported by the Agency for Healthcare Research and Quality (HS10689). The study was conducted by researchers at the University of Rochester Medical Center and School of Nursing.

The investigators developed and administered a questionnaire to parents of children with asthma to explore their understanding of and attitudes about the nature of asthma, its cause, medications, treatment expectations, and health care provider relationship. Of the 109 children whose parents were surveyed, 27 had an appropriate

medication regimen, 31 had mild intermittent asthma, and 34 had a suboptimal regimen (parents reported antiinflammatory medication use, but the child was still symptomatic). Seventeen parents reported no antiinflammatory medication use, despite moderate to severe asthma. Parental responses to eight questions were significantly correlated with a child's suboptimal medication regimen. This questionnaire may be a useful way for health care providers to screen for nonadherence to asthma medication.

Parents who believed that there was little they could do to control their child's symptoms; that using inhaled steroids should be a last resort in treating asthma; that after a child has taken inhaled steroids for awhile, they won't work when

they are really needed; and that their child thinks taking daily medicine is a hassle were more likely to have the child on a suboptimal or inadequate regimen. These parents also had lower expectations than health care providers about their child's ability to lead a normal life. The parents felt that their children could not be symptom-free most of the time nor participate fully in gym, that asthma would affect school attendance, and that they would probably have asthma-related ED visits or hospitalizations.

Details are in "Barriers to anti-inflammatory medication use in childhood asthma," by H. Lorrie Yoos, Ph.D., Harriet Kitzman, Ph.D., and Ann McMullen, M.S., in the July 2003 *Ambulatory Pediatrics* 3, pp. 181-190. ■

Among children with asthma, those enrolled in Medicaid managed care fare better than those in a primary care case manager plan

Massachusetts children covered by Medicaid and enrolled in a health maintenance organization (HMO) were only half as likely as those in a State-administered primary care case manager (PCCM) plan to end up in the emergency department (ED) or be hospitalized for asthma. Furthermore, the HMO provided greater access to asthma specialists and more timely followup care after asthma ED visits than the PCCM plan, according to a study that was supported in part by the Agency for Healthcare Research and Quality (HS09327).

Alexandra E. Shields, Ph.D., of Georgetown University, and her colleagues analyzed Medicaid and HMO claims data and encounter data on 2,365 children enrolled in the Massachusetts Medicaid program in 1994. They used these data to assess performance on six pediatric asthma care measures, which were developed by the investigators, based on national guidelines. There were no differences between the HMO and the PCCM plan in asthma primary care

visits, asthma medications, or followup care after asthma hospitalization. However, children in the HMO were only 54 percent as likely as those in the PCCM plan to have an asthma-related ED visit or hospitalization.

Children in the HMO plan had less severe asthma. However, after controlling for asthma severity and other factors affecting need for care, children in the HMO were nearly three times as likely as children in the PCCM plan to receive timely followup care (within 5 days) after an asthma ED visit, and they were nearly twice as likely to receive a specialist visit during the year.

More details are in "Comparing asthma care provided to Medicaid-enrolled children in a primary care case manager plan and a staff model HMO," by Dr. Shields, Catherine Comstock, M.P.H., Jonathan A. Finkelstein, M.D., M.P.H., and Kevin B. Weiss, M.D., M.P.H., in the September 2003 *Ambulatory Pediatrics* 3(5), pp. 253-262. ■

Researchers examine the effects of family and community violence and risky behaviors on children and adolescents

Young people living in impoverished neighborhoods often are the victims of community violence, and sometimes they themselves are the perpetrators. For example, an estimated 10 million children in the United States witness the punching, kicking, and beating of a parent, usually their mother, each year. Some adolescents experiment with drugs or alcohol, or they engage in sexual activity or other risky behaviors. Two recent studies that were supported in part by the Agency for Healthcare Research and Quality examined the effects of violence on youths and families, and a third study looked at ways to reduce risky behaviors among adolescents. The three studies are summarized here.

McFarlane, J.M., Groff, J.Y., O'Brien, J.A., and Watson, K. (2003, September). "Behaviors of children who are exposed and not exposed to intimate partner violence: An analysis of 330 black, white, and Hispanic children." (AHRQ grant HS11079). *Pediatrics* 112(3), pp. e202, online at www.pediatrics.org.

This study found that children of abused mothers had far more behavior problems, anxiety, depression, and withdrawal than other children. As part of a study on treatments for abused women seen in urban primary care public health clinics, 258 abused mothers completed the Child Behavior Checklist (CBCL) for one of their children aged 18 months to 18 years. Sixty-nine percent of the children were Hispanic, and nearly half came from households with annual incomes below \$10,000. An ethnically similar sample of 72 mothers who had not been abused

also completed the CBCL (control group), and scores from the two groups were compared.

The CBCL asked about children's behaviors such as getting into fights, skipping school, cruelty to animals, physical attacks on people, and not wanting to sleep alone. Overall, children aged 6 to 18 years with abused mothers had significantly higher internalizing (anxiety, depression, and withdrawal), externalizing (attention problems, aggression, and rule-breaking), and total behavior problem scores than children in the control group. Doctors can use this information to talk with abused mothers about the potential effects of the abuse on their children's behavior. Early detection and treatment for intimate partner violence against women has the potential to interrupt and prevent behavioral problems for their children, conclude the researchers.

Howard, D.E., Kaljee, L., Rachuba, L.T., and Cross, S.I. (2003). "Coping with youth violence: Assessments by minority parents in public housing." (AHRQ grant HS07392). *American Journal of Health Behavior* 27(5), pp. 483-492.

Black parents in four Baltimore public housing projects live in constant fear of violence against their children, and they have developed several ways for coping with the dangers in their community, according to this study. Investigators analyzed audiotapes of focus group discussions with 38 predominantly black parents of adolescent children (aged 10 to 16 years) who resided in these public housing projects, in order to develop a community-based

violence prevention program. They asked parents about their children's exposure to and distress from violence, their assessment of community resources, and strategies they used to protect their children from violence.

Parents cited violence from drug trafficking as the most pervasive neighborhood threat, as well as the easy accessibility of guns on street corners and from car trunks. They were bothered that children were often the first ones to arrive at a courtyard or field and see a dead body, by their chronic exposure to the sound of gunfire, and by their children's fear of being hit by a stray bullet. Most parents adopted a state of hypervigilance and responded to their fears with the resources available to them.

Some of the parents took their children away from the housing development in the summer. For after school care, some parents left their children in the care of family or friends in less dangerous neighborhoods. Others spoke of putting bars on their windows and active attempts to take back their buildings and neighborhoods. Parents looked for signals that children were fearful, such as not leaving the house. They spoke of the need to establish a reasonable curfew, to have children inside when it got dark, and in some cases, parents frisked their children for weapons. Parents sought community support from police and city agencies, but these pleas for assistance often proved futile.

Rai, A.A., Stanton, B., Wu, Y., and others. (2003, August). "Relative influences of perceived parental monitoring and perceived peer involvement on adolescent risk behaviors: An analysis of six

continued on page 17

Effects of violence on children

continued from page 16

cross-sectional data sets.” (AHRQ grant HS07392). *Journal of Adolescent Health* 35(2), pp. 108-118.

Parental monitoring can have a protective influence on substance use and sexual activity during mid-adolescence, conclude these authors. The investigators surveyed 1,279 low-income black youths (aged 13 to 16 years) who were involved in urban community-based studies that were conducted from 1992 to 1999. The young people were asked about their risk behaviors during the past 6 months

and their perceptions of parental monitoring and peer involvement in risk behaviors. Risk behaviors included sexual experience, condom use, violence (fighting, beating), smoking cigarettes, drinking alcohol, using marijuana, selling drugs, and delivering drugs.

Survey results showed a significant increase with age in adolescent sexual activity, smoking, alcohol use, marijuana use, and drug selling. For example, 75 percent of 16-year-olds were sexually active compared with 36 percent of 13-year-olds, and marijuana use increased from 8 percent among 13-year-olds to 33 percent among 16-year-olds. Girls and 13-year-olds perceived greater

parental monitoring of their behavior.

There was an overall negative association between perceived parental monitoring (parents usually knew where they were and with whom) and risky behavior among the youths. Parental monitoring had a protective influence on substance use behaviors and sexual activity, but it had no impact on condom use or drug trafficking. Youths who perceived high levels of peer involvement in a behavior (whether high-risk or protective) were more likely to report that behavior. ■

Determinants of children's access to care in rural North Carolina are similar to those of urban and suburban children

One in five U.S. children lives in a rural area. Rural children tend to have less access to health care than urban and suburban children due to greater time and distance to care sites, less available transportation, and fewer doctors. However, children in rural western North Carolina have reasonably good access to care overall. In addition, key determinants of their care use are similar to those of urban and suburban children and likely are universal: health insurance coverage, household income, and parent perceptions of their child's pain, according to a study that was supported in part by the Agency for Healthcare Research and Quality (HS09624).

Programs in rural areas that strengthen health insurance coverage and reduce poverty will have a direct impact on child health, according to researchers from Wake Forest University and the University of North Carolina at Chapel Hill. They randomly surveyed rural households in western North Carolina in June 1999 and January 2000 to assess determinants of health care visits among children in a 12-county

region. For children younger than 5 years, the primary determinants of health care use during the previous year were age, insurance status, and household income.

Among children 5 to 17 years of age, determinants of care use were health insurance status, household income, pain during the past month, and race. Medicaid-insured children had almost four times as many health care visits as uninsured children. Those from households with annual incomes between \$20,000 and \$40,000 had twice as many health care visits as those with annual household incomes less than \$20,000. White children had almost twice as many visits in the past year as black children in this age group.

See “Determinants of health care use by children in rural western North Carolina: Results from the mountain accessibility project survey,” by Charles R. Woods, M.D., Thomas A. Arcury, Ph.D., James M. Powers, M.Sc., and others, in the August 2003 *Pediatrics* 112(2), e213, online at www.pediatrics.org. ■

Minority Health

Community-based hypertension control programs hold promise for decreasing blood pressure among urban blacks

A community-based program that partnered with an academic health center to train community health workers to make home visits and do community outreach to reduce hypertension in an impoverished black community in West Baltimore was effective in reducing high blood pressure in this group. Among the nearly 800 men and women involved in the study, 37 percent suffered from hypertension.

The researchers randomly assigned 387 patients to a more intensive group of education and support and 402 patients to a less intensive group. The less intensive group received a home visit from a nurse-supervised community health worker trained in blood pressure measurement, monitoring,

education, followup, and community outreach. Community health workers explained hypertension and its treatment and the importance of following treatment and achieving a target blood pressure (BP) and provided information on access to free community care for those who needed it. They gave each participant a card to record dates and levels of BP and a pamphlet that emphasized self-care behaviors, such as controlling weight, moderating salt and alcohol intake, and increasing physical activity.

The more intensive intervention added five home visits conducted over a 30-month period, as well as more extensive education, counseling, and outreach. Although both programs significantly

decreased blood pressure at the 40-month followup, the differences between the groups were insignificant. Blood pressure control doubled for both groups. The percentage of individuals with normal blood pressure increased by 12 percent in the more intensive group and 14 percent in the less intensive group.

Details are in "The effectiveness of a community/academic health center partnership in decreasing the level of blood pressure in an urban African-American population," by David M. Levine, M.D., Lee R. Bone, R.N., M.P.H., Martha N. Hill, R.N., Ph.D., and others, in the Summer 2003 *Ethnicity & Disease* 13, pp. 354-361. Reprints (AHRQ Publication No. 04-R003) are available from AHRQ.** ■

Racial disparities found in receipt of osteoporosis screening and management

Postmenopausal black women are two to three times less likely than postmenopausal white women to receive bone mineral density (BMD) testing to detect osteoporosis or to be prescribed osteoporosis medications. Even among women with a previous fracture, blacks still had a significantly lower likelihood of both BMD testing and prescription therapy, according to a recent study. This racial disparity was not fully explained by other demographic or risk factor differences. The study, which included a survey of more than 8,000 women, was supported in part by the Agency for Healthcare Research and Quality (HS10389) as part of the AHRQ-sponsored Centers for Education and Research on Therapeutics (CERTS) program.

Because the incidence of osteoporosis and related fractures among black women is reported to be approximately half that of white women, physicians may be inappropriately less suspicious of osteoporosis and less aggressive in its management for black women,

according to the researchers who conducted the study. They examined results from an osteoporosis questionnaire mailed in April 2000, to women aged 50 or older in Alabama who were insured by a large regional managed care organization to determine their receipt of BMD testing and medical therapies for osteoporosis prevention.

Overall, 37 percent of women reported a history of fracture. Blacks had two- to three-fold lower odds of receiving BMD testing and all forms of prescription osteoporosis therapy. Differences by race were most notable for use of bisphosphonate medications (such as alendronate and risedronate). Among nonprescription therapies, white women reported significantly higher odds of using calcium and vitamin D or a multivitamin.

See "Racial disparities in osteoporosis prevention in managed care," by Amy S. Mudano, M.P.H., Linda Casebeer, Ph.D., Fausto Patino, M.D., Dr.P.H., and others, in the May 2003 *Southern Medical Journal* 96(5), pp. 445-451. ■

Health Care for the Elderly

Use of coagulometers by home health nurses could reduce costs of monitoring the homebound elderly taking warfarin

Use of portable coagulometers for monitoring the blood of homebound elderly patients taking the anticoagulant warfarin could save money and potentially improve quality of care, concludes a study supported by the Agency for Healthcare Research and Quality (HS10133). Warfarin is often used to treat elderly patients who have suffered a stroke, heart attack, or atrial fibrillation (fast, irregular heartbeat that can lead to stroke). Monitoring patients on warfarin is needed to ensure that their blood does not become so thin that it precipitates internal bleeding or so thick that it causes a stroke or other blood clot.

Portable coagulometers can be used to measure the prothrombin time (time required for clot formation) and calculate the

international normalized ratio (INR, ideal blood thickness; target INR in this study was 2.0-3.0) from a drop of whole blood.

Home health nurses traditionally draw blood samples from homebound patients and take the specimens to a central laboratory or a designated drop-box for INR determinations. Principal investigator Brian F. Gage, M.D., M.Sc., of the Washington University School of Medicine, St. Louis, and colleagues compared the cost of this approach with the cost of using a point-of-care coagulometer for 35 elderly patients receiving cardiac home health care and long-term oral anticoagulation.

The researchers totaled the costs for materials, procedures, transportation, and labor for both methods. The cost of INR

determination by the portable coagulometer was significantly less than the traditional method (\$6.86 vs. \$17.30). A plot of 180 paired INR values obtained by the coagulometer and traditional INR showed close agreement below an INR value of 3.5 but increasing scatter for higher values. The authors conclude that the cost savings and potential improvement in quality of care argue for equipping home health nurses with portable coagulometers.

See "Cost-savings analysis of using a portable coagulometer for monitoring homebound elderly patients taking warfarin," by Dorothy S. Cheung, M.D., Diane Heizer, R.N., Janice Wilson, R.N., and Dr. Gage, in the September-October 2003 *American Journal of Geriatric Cardiology* 12(5), pp. 283-287. ■

Complementary and Alternative Medicine

Many medical school faculty members have positive attitudes towards use of alternative medical practices

Complementary and alternative medicine (CAM) therapies were used by one-third of the U.S. population in 1990, growing to 42 percent in 1997. Indeed, many doctors use these therapies themselves, according to a study supported by the Agency for Healthcare Research and Quality (HS07400). A survey of 143 faculty members at one medical school revealed that the majority had used CAM therapies, considered several of them to be legitimate medical practices, and would like more training in some of them.

Researchers at the Program for Healthcare Effectiveness Research, Morehouse School of Medicine, found that of the 30 CAM therapies listed in the survey, five were considered legitimate medical

practices by more than 70 percent of the faculty members. These were nutrition and diet, counseling or psychotherapy, fitness and exercise, emotional support groups, and biofeedback. An additional six therapies (acupuncture, herbal medicine, massage therapy, chiropractic, hypnotherapy, and meditation) were considered a legitimate medical practice by more than 50 percent of the faculty members.

On the other hand, less than 25 percent of faculty members gave this classification to nine therapies (colon therapy, naturopathic medicine, macrobiotic diet, therapeutic touch, bioelectromagnetics, tai chi, Ayurvedic medicine, aromatherapy, and Reiki). Eighty-five percent of faculty members reported some

continued on page 20

Alternative medical practices

continued from page 19

training in alternative medical therapies, and 62 percent were interested in additional training, particularly in nutrition and diet, herbal medicine, and biofeedback. In addition, 83 percent of faculty members reported personal experience with alternative therapies, and most rated them as effective. Finally, 85 percent of those surveyed said they had a positive

attitude toward alternative medicine, which is gaining increased acceptance for insurance coverage.

More details are in "Complementary and alternative medical practices: Training, experience, and attitudes of a primary care medical school faculty," by Stephen M. Levine, M.A., Margaret L. Weber-Levine, Ph.D., and Robert M. Mayberry, M.P.H., Ph.D., in the July 2003 *Journal of the American Board of Family Practice* 16(4), pp. 318-326. ■

Health Care Costs and Financing

Expanding the number of poor children eligible for Medicaid has increased access to care, but gaps remain

Between 1984 and 1990, Medicaid coverage expanded to include more children beyond those in the traditional welfare assistance population in order to improve the health and access to care of low-income children. As a result, the number of Medicaid-eligible children doubled. This Medicaid expansion did increase access of impoverished children to care, but gaps remain, conclude Jessica S. Banthin, Ph.D. and Thomas M. Selden, Ph.D. of the Center for Financing, Access, and Cost Trends, Agency for Healthcare Research and Quality.

The researchers examined the changes in children's access to care, family financial burdens, and health insurance coverage between 1987 (which largely predates the Medicaid expansions in coverage) and 1996. This is the first study to examine the change in financial burdens associated with the Medicaid expansions and one of only a few that have looked at changes in access to care in

addition to coverage. The authors conducted their analysis using data from the 1996 Medical Expenditure Panel Survey and the 1987 National Medical Expenditure Survey.

Among eligible children, the Medicaid expansions reduced rates of uninsurance, increased access to physicians, and reduced families' risk of bearing a heavy financial burden. For instance, the percentage of eligible children who were uninsured the full year fell from 26 percent in 1987 to 16.1 percent in 1996, and more of this group had at least one visit to a doctor's office in 1996 than in 1987. Had the expansions not occurred, the study suggests that uninsurance rates would have risen instead to about 32 percent of eligible children uninsured for the full year in 1996. During this period, the proportion of Medicaid-expansion children whose families spent 10 percent or more of disposable family income on medical care dropped from 30.1 percent to 23.9 percent; yet 11.3

percent of the families still spent 20 percent or more of income on medical care in 1996.

Gaps remain between Medicaid expansion-eligible children and children from middle and upper income families who were never eligible for public coverage. Never-eligible children were less likely to be uninsured and more likely to have at least one visit to a doctor's office. Furthermore, while 11.3 percent of expansion-eligible children lived in families spending 20 percent or more of family income on medical care in 1996, this rate is much higher than the 1.7 percent of never-eligible children whose families spent 20 percent or more on medical care.

See "The ABCs of children's health care: How the Medicaid expansions affected access, burdens, and coverage between 1987 and 1996," by Drs. Banthin and Selden, in the Summer 2003 *Inquiry* 40, p. 133-145. Reprints (AHRQ Publication No. 03-R061) are available from AHRQ.** ■

One form of managed care was associated with declines in physician participation in Georgia and Alabama Medicaid programs

Primarily Care Case Management (PCCM) has been implemented by many State Medicaid programs over the past few years. Its success depends in part on the expanded availability of primary care physician sites to substitute for hospital-based outpatient care and to provide a medical home for enrollees. PCCM requires participating physicians to accept assignment of a caseload of patients and to provide all of their primary care. In addition, in the States considered in this study, doctors were instructed to provide around-the clock office or telephone access, better coordinate primary care services, and refer enrollees for specialty care and hospital services when needed.

In the absence of increased physician reimbursement, PCCM was associated with reductions in the proportion of physicians participating in Medicaid, reductions in the number of very small Medicaid practices, and

decreases in practice size, according to the study from the Child Health Insurance Research Initiative (CHIRI™), cosponsored by the Agency for Healthcare Research and Quality (HS10435), the David and Lucile Packard Foundation, and the Health Resources and Services Administration.

E. Kathleen Adams, Ph.D., of Emory University, and colleagues used Medicaid claims data to examine the effects of PCCM phase-in in Georgia (1994-1997) and Alabama (1996-1999) on several dimensions of Medicaid physician availability. In addition to the reductions in Medicaid participation by physicians, implementation of PCCM was associated with a drop in the number of primary care visits per Medicaid enrollee. However, preventive care services constituted a larger proportion of primary care visits in the post-PCCM period.

Details are in "The impact of Medicaid Primary Care Case Management (PCCM) on office-based physician supply in Alabama and Georgia," by Dr. Adams, Janet M. Bronstein, Ph.D., and Curtis S. Florence, Ph.D., in the Fall 2003 *Inquiry* 40(3), pp. 269-282. ■

Editor's note: Another recent AHRQ study examined the effects of changes in Medicaid reimbursement on receipt of dental services. In that study, elimination of Medicaid reimbursement to dentists for adult dental problems also reduced visits to doctors for dental emergencies. For details, see: Cohen, L.A., Manski, R.J., Magder, L.S., and Mullins, C.D. (2003, August). "A Medicaid population's use of physician offices for dental problems." (AHRQ grant HS10129). *American Journal of Public Health* 93(8), pp. 1297-1301. Reprints (AHRQ Publication No. 04-R005) are available from AHRQ.**

CHIRI™ studies children enrolled in the State Children's Health Insurance Program

The State Children's Health Insurance Program (SCHIP), enacted by Congress in 1997, provides health insurance coverage to low-income children who lack private health insurance coverage but are ineligible for Medicaid. In 2001, one in four U.S. children was insured by Medicaid or SCHIP.

Researchers taking part in the Child Health Insurance Research Initiative (CHIRI™), launched in 1999 to study which health insurance and delivery features work best for low-income children, recently examined children newly enrolled in SCHIP in five States (comprising 30 percent of SCHIP enrollees in 2001) with separate SCHIP programs. The result is the first collection of articles that report on the characteristics of new SCHIP enrollees and their health care experiences prior to enrolling in SCHIP.

The CHIRI™ findings indicate that SCHIP is indeed insuring the population intended by Congress: children from low-income working families who were uninsured for a substantial period of time; children who lost private insurance coverage, usually due to high insurance costs or a parent's job change, or became ineligible for Medicaid, either due to increased family income or children aging out of age-based eligibility categories. Findings from CHIRI™ projects in the study States show that: nearly two-thirds to three-quarters of SCHIP enrollees lived in working families with incomes equal to or below 150 percent of the Federal poverty level (\$27,600 per year for a family of four); many children were uninsured the entire year prior to SCHIP enrollment; although most children had received health care services in the year

continued on page 22

CHIRI™ studies

continued from page 21

before SCHIP enrollment, one-fourth to almost one-half of new enrollees had unmet health care needs; between 17 and 25 percent had a special health care need; and a significant proportion of new SCHIP enrollees were black or Hispanic.

CHIRI™ is cosponsored by the Agency for Healthcare Research and Quality, The David and Lucile Packard Foundation, and the Health Resources and Services Administration. More findings can be found in a December online supplement to the journal *Pediatrics*. The supplement, “Children who enroll in SCHIP: Findings on demographics and prior health care experiences from the Child Health Insurance Research Initiative (CHIRI™),” was edited by AHRQ’s Cindy Brach, M.P.P., and the Packard Foundation’s Eugene M. Lewit, Ph.D. A CHIRI™ Issue Brief, *Who’s Enrolled in SCHIP?* highlights key findings from the studies for policymakers. The following AHRQ-supported research papers are included in the online supplement:

- Brach, C., Lewit, E.M., VanLandeghem, K., and others, “Who’s enrolled in SCHIP? An overview of findings from the Child Health Insurance Research Initiative (CHIRI™)” e499; reprints AHRQ Publication No. 04-R015.
- Szilagyi, P.G., Shenkman, E., Brach, C., and others, “Children with special health care needs enrolled in SCHIP: Patient characteristics and health care needs” e508; reprints AHRQ Publication No. 04-R017.
- Shone, L.P., Dick, A.W., Brach, C., and others, “The role of race and ethnicity in SCHIP in four States: Are there baseline disparities, and what do they mean for SCHIP?” e521; reprints AHRQ Publication No. 04-R016.
- Shenkman, E., Youngblade, L., and Nackashi, J., “Adolescents’ preventive care experiences before entry into SCHIP” e533.
- Dick, A.W., Klein, J.D., Shone, L.P., and others, “The evolution of SCHIP in New York: Changing program features and enrollee characteristics” e542.
- Rosenbaum, S., and Budetti, P., “Low-income children and health insurance: Old news and new realities” e551.

Three additional papers on survey methods in States are presented as technical appendixes. The *Pediatrics* supplement and CHIRI™ Issue Brief (AHRQ Publication No. 04-0015) can be accessed on the CHIRI™ web site at www.ahrq.gov/chiri/. Reprints of AHRQ staff-authored articles are available from AHRQ. See the back cover of *Research Activities* for ordering information. ■

Formularies are not likely to control costs for psychotropic drugs as well as they do for some other types of drugs

To control rising pharmacy costs, insurers are increasingly turning to drug formularies (lists of drugs covered by a plan that often give patients financial incentives to choose lower cost drugs). However, formularies are not likely to control costs for psychotropic drugs (for example, antidepressants and antipsychotics) as well as they control costs for certain other classes of drugs, according to Haiden A. Huskamp, Ph.D., of Harvard Medical School. Her work was supported by the Agency for Healthcare Research and Quality (HS10803).

In a recent paper, Dr. Huskamp examines several issues that

policymakers should consider when addressing formulary design for psychotropic drugs. She cautions that in setting formulary policy, any gains in price discounts must be weighed against the potential costs of restricting drug choice. For instance, patients often respond quite differently to different drugs within the same class, and often a trial-and-error approach with different drugs is needed to find the one that works best. Many patients and their clinicians will be unwilling to switch medications that are working well, so payers will have greater difficulty moving significant market share for these drugs.

As a result, incentive formularies are not likely to result in large discounts from manufacturers. On the other hand, an incentive formulary could shift costs from the plan to the patient, increasing the out-of-pocket burden for some people with chronic mental illness. One possibility is a stepped formulary that requires use of a generic drug as a first-line treatment for new users as a reasonable approach.

See “Managing psychotropic drug costs: Will formularies work?” by Dr. Huskamp, in the September 2003 *Health Affairs* 22(5), pp. 84-96. ■

Retrospective drug utilization review may not improve clinical outcomes or reduce the rate of potential prescribing errors

All State Medicaid programs and most private-sector drug benefit programs perform retrospective drug utilization review. These reviews interpret patterns of drug use in relation to predetermined criteria and attempt to minimize inappropriate prescribing. However, a recent study shows that researchers were unable to identify an effect of drug utilization review on the rate of potential prescribing errors or on clinical outcomes. Given the lack of evidence for effectiveness and suggestions of potential harm found in previous research, policymakers should consider the impact of retrospective drug utilization review programs, according to researchers at the Center for Education and Research in Therapeutics (CERT) at the University of Pennsylvania School of Medicine.

In the study, which was supported in part by the Agency for Healthcare Research and Quality (National Research Service Award fellowship F32 HS00066 and CERT's project HS10399), the researchers used data on dispensed prescriptions from Medicaid programs in six

States that used the same retrospective drug utilization review software vendor. For each State and for each month, they calculated the rate of potential prescribing errors (exceptions) per thousand prescriptions. They compared exceptions before and after implementation of utilization review.

The researchers found no reduction in the rate of exceptions coincident with retrospective drug utilization review implementation (rate increase, 0.064 exceptions per 1,000 prescriptions per month). They also found no effect of this review on two clinical outcomes: the incidence of all-cause hospitalization or cause-specific hospitalization. Results were consistent across subgroups, including high-dose subgroups where one would expect to find the largest effect.

See "Retrospective drug utilization review, prescribing errors, and clinical outcomes," by Sean Hennessy, Pharm.D., Ph.D., Warren B. Bilker, Ph.D., Lan Zhou, Ph.D., and others, in the September 17, 2003 *Journal of the American Medical Association* 290(11), pp. 1494-1499. ■

HIV/AIDS Research

HIV patients who are coinfectd with HCV and those who take a protease inhibitor are at increased risk of hyperglycemia

Use of highly active antiretroviral therapy (HAART) has substantially improved the health of HIV patients. However, a new study finds that HIV-infected people who are prescribed an HIV-1 protease inhibitor (PI) as part of their HAART regimen and those who are coinfectd with hepatitis C virus (HCV), common among HIV-infected individuals, are at increased risk of developing hyperglycemia (high blood sugar levels) that can lead to diabetes. This finding supports previous reports showing an association between diabetes mellitus and PIs and HCV coinfection among HIV-infected patients.

In the study, which was supported in part by the Agency for Healthcare Research and Quality (HS07809),

the researchers analyzed the prevalence of hyperglycemia among 1,230 patients on their first HAART regimen. They compared the prevalence and incidence of hyperglycemia (two random glucose levels over 220 mg/dL or documented diagnosis of diabetes) among people with and without HCV infection while on a PI-containing HAART regimen, a nonnucleoside reverse transcriptase inhibitor (NNRTI)-containing regimen, or a regimen that contained both a PI and an NNRTI. They followed the patients from January 1996 through May 2002 at an urban HIV hospital clinic.

The prevalence of hyperglycemia was significantly higher in the HCV-coinfectd patients (5.9 percent) compared with the HCV-uninfected patients (3.3 percent). Among people

receiving HAART, those coinfectd with HCV had 2.2 times greater risk and those on a PI had a five times greater risk of developing hyperglycemia. The incidence of hyperglycemia was highest among HCV-coinfectd patients receiving a PI (5.6 cases per 100-person years), suggesting an additive effect of either a PI or HCV on hyperglycemia.

See "The effect of HAART and HCV infection on the development of hyperglycemia among HIV-infected persons," by Shruti H. Mehta, Ph.D., Richard D. Moore, M.D., David L. Thomas, M.D., and others, in the August 15, 2003 *Journal of Acquired Immune Deficiency Syndromes* 33(5), pp. 577-584. ■

Agency News and Notes

HHS issues national reports on quality and disparities in the use of health care services

On December 22, HHS Secretary Tommy G. Thompson released two reports that represent the first national comprehensive effort to measure the quality of health care in America and differences in access to health care services for priority populations.

The reports, the *National Healthcare Quality Report* and the *National Healthcare Disparities Report*, provide baseline views of the quality of health care and differences in use of the services. Future reports will help the Nation make continuous improvements by tracking quality through a consistent set of measures that will be updated as new measures and data become available.

The reports point to an important priority for HHS to ensure that all Americans have the safest, highest quality health care services possible available to them when needed. They reports were prepared by the Agency for Healthcare Research and Quality as directed by Congress.

The reports present data on the quality of services and differences in access to services for seven clinical conditions, including cancer, diabetes, end-stage renal disease, heart disease, HIV and AIDS, mental health, and respiratory disease. The reports also include data on maternal and child health, nursing home and home health care, and patient safety.

The measures included in the reports provide an important snapshot of the Nation's health care system. The *National Healthcare Quality Report* offers hopeful signs in many areas. For example:

- The majority of women are screened for breast cancer (70 percent of women over 40 within the previous 2 years) and cervical cancer (81 percent of women 18 and over within the previous 3 years).
- Almost 90 percent of in-center kidney dialysis patients get adequate dialysis.
- Approximately 83 percent of women have prenatal care in their first trimester.
- Over 80 percent of Medicare enrollees hospitalized with pneumonia get blood cultures before they are given an antibiotic, get their initial antibiotic within 8 hours, and get the type of antibiotics they need consistent with current clinical guidelines.

The report also indicates that greater improvement in health care quality is possible. For example:

- Rates of children who are admitted to the hospital for asthma are 29.5 per 10,000.
- Only about 20 percent of patients prescribed a medication to treat diagnosed depression have at least three recommended followup visits to monitor their medication in the 12 weeks after diagnosis.
- Sixty-two percent of smokers who had a routine office visit reported that their doctors had advised them to quit. At the same time, less than half of acute heart attack patients who smoked were counseled to quit while in the hospital (42 percent).
- Rates for blood pressure screening are 90 percent, and rates for cholesterol screening in adults 45 or older are more than 80 percent. However, only about 25 percent of people with high blood pressure have it under control.

The *National Healthcare Disparities Report* presents data on the same clinical conditions and other measures as the Quality Report as they apply to the priority populations, including women, children, the elderly, racial and ethnic minority groups, low income groups, residents of rural areas, and individuals with special health care needs, specifically children with special needs, people with disabilities, people in need of long-term care, and people requiring end-of-life care.

The report indicates that priority populations do as well or better than the general population in some aspects of health care. For example:

- Asians and Pacific Islanders, American Indians/Alaskan Natives, and Hispanics have a lower death rate from all cancers.
- Blacks have higher rates of Pap smears and blood pressure monitoring and lower rates of postoperative hip fracture compared with whites.
- Black and Hispanic patients are more likely than others to report that their health care provider usually asks about medications prescribed by other doctors.
- Hispanics and Asians and Pacific Islanders have lower rates of hospitalization from influenza than other groups.

However, there is room for improvement in other areas. For example:

continued on page 25

National reports on quality and disparities

continued from page 24

- People of lower socioeconomic status (SES) and blacks have higher death rates for all cancers combined.
- Hispanics and American Indians and Alaska Natives are less likely than others to have their cholesterol checked.
- People of lower SES and some minorities are less likely to have a usual source of care.
- Rates of hospital admissions for conditions that are usually treatable outside the hospital are

generally higher for people who live in low income areas compared with those who live in high income areas.

The reports are available on a new Web site, www.qualitytools.ahrq.gov. The site serves as a Web-based clearinghouse to make it easier for health care providers, health plans, policymakers, purchasers, patients, and consumers to take effective steps to improve quality. Print copies of the reports (AHRQ Publication No. 04-RG003, quality; 04-RG004, disparities) are available from the AHRQ Clearinghouse. See the back cover of *Research Activities* for ordering information. ■

AHRQ director issues two statements on patient safety issues

Agency for Healthcare Research and Quality Director Carolyn M.

Clancy, M.D., recently issued two statements in support of initiatives to improve patient safety. The new initiatives were launched by the Institute of Medicine (IOM) and the Joint Commission on Accreditation of Healthcare Organizations (JCAHO).

In the first statement, Dr. Clancy commends the IOM Committee on Data standards for Patient Safety for development of the report, *Patient Safety: Achieving a New Standard for Care*. The report, which was requested and funded by AHRQ, provides timely input on a subject of critical importance to everyone in the health care field: how to continue improving patient safety and how best to harness information technology to achieve that goal.

Dr. Clancy notes that Secretary Thompson and all HHS agencies and programs share the common goal of ensuring that patients aren't harmed in the course of receiving care. As she points out, we agree with the IOM that a National Health Information Infrastructure is an essential tool for improving health care safety and quality and

that it should be the highest priority for all health care stakeholders.

HHS has played a leadership role in fostering the development of data standards and making investments to identify and speed the adoption of new technologies throughout the health care system. HHS leadership of the Consolidated Health Informatics Initiative and support for the National Health Information Infrastructure have resulted in the adoption of standards for Federal programs and fostered critical collaboration with the private sector to establish consensus on new coding and messaging standards essential to enabling information sharing within and across health care organizations.

Further, with the President's FY 2004 budget, HHS will provide \$50 million in funding through AHRQ for activities to demonstrate the role of information technology in improving patient safety and quality. This funding will go to grants, contracts, and other projects to speed the adoption of information technology solutions in hospitals and communities, including dollars specifically earmarked for efforts in rural and

small community hospital settings. HHS will also spend \$10 million to accelerate the adoption and diffusion of data standards and an additional \$3 million to continue efforts to promote the development of the National Health Information Infrastructure.

This new IOM report provides input that will assist with other ongoing patient safety improvement programs, including HHS work on a consolidated patient safety database and AHRQ's current patient safety research aimed at identifying how to improve safety and move those findings into practice.

Editor's note: See the announcements section of this issue of *Research Activities* to find out about a new RFA for health information technology projects aimed at improving patient safety and quality of care.

In the second statement, Dr. Clancy saluted JCAHO for the development and implementation of protocols to reduce surgical complications and improve patient safety. JCAHO's new universal protocol and guidelines for preventing wrong site, wrong procedure, wrong person surgery

continued on page 26

Patient safety issues

continued from page 25

represent a major safety advance. Further, the protocol and guidelines also provide an opportunity to take steps right now to address a persistent but preventable surgical problem.

AHRQ and all agencies and programs within HHS share the common goal of ensuring that

patients receive safe health care that is free from medical errors. Among the keys to achieving that goal is designing systems that standardize procedures where possible and institute a consistent approach to similar tasks. However, to facilitate their implementation, those procedures must also be adaptable for special situations and settings. As Dr. Clancy noted, JCAHO's protocols have the unique value of

providing clear and unambiguous standards, while allowing for maximum flexibility in their adoption and use. She reiterated AHRQ support for JCAHO's new protocols as one means of achieving that important goal.

For additional information on the surgical protocol, visit JCAHO's Web site at www.jcaho.org and click on "accredited organizations." ■

Task Force issues recommendations on screening adults for obesity

The U.S. Preventive Services Task Force has issued a recommendation that clinicians screen all adults for obesity and offer obese patients intensive counseling and behavioral interventions to promote sustained weight loss or refer them to other clinicians for these services. These recommendations are published in the December 2 issue of the *Annals of Internal Medicine*.

Obesity is associated with many significant health problems, including high blood pressure, diabetes, heart disease, premature death, and decreased quality of life. Health care providers should screen for obesity using the body mass index (BMI), which the Task Force said is a valid and reliable screening test. People with a BMI between 25 and 29.9 are considered overweight, and those with a BMI of more than 30 are considered obese. BMI is calculated either as weight in pounds divided by height in inches squared multiplied by 703, or as weight in kilograms divided by height in meters squared. An online BMI calculator can be found at www.cdc.gov/nccdphp/dnpa/bmi/calc-bmi.htm.

Clinicians also may consider measuring patients for centrally located body weight, which is independently associated with cardiovascular disease, using waist circumference as a measure. Men with a waist circumference greater than 40 inches and women with a waist circumference greater than 35 inches are at increased risk for cardiovascular disease, but these measurements may be inaccurate for people with a BMI greater than 35.

The Task Force defined intensive counseling for obese patients to include two or more individual or group diet and exercise counseling sessions per month for at least 3 months. Long-term maintenance interventions following initial weight loss can help sustain weight loss over time. According to the Task

Force, counseling is more effective in helping people lose weight if combined with behavioral interventions that assist them in developing skills, motivation, and support systems. Primary care clinicians have an important role in diagnosing obesity and in either providing intensive counseling and behavioral interventions or referring patients to receive these services, according to the Task Force. Health plan coverage and the use of professionals in other disciplines may help facilitate these interventions.

For obese adults, the Task Force found insufficient evidence to recommend for or against the use of moderate or low intensity counseling, which they defined as monthly or less frequently, to promote sustained weight loss. For adults who are overweight but not obese, the Task Force found insufficient evidence to recommend for or against the use of counseling of any intensity or behavioral interventions to promote sustained weight loss. The Task Force did not make a recommendation about screening for obesity in children at this time because the topic is considered so important that it is being reviewed separately for a future report.

Over the past 40 years, prevalence of obesity among adults in the United States has increased from 13 percent to 27 percent. The proportion of adults considered to be overweight has increased from 31 percent to 34 percent. Obesity is more common in women, but men are more likely to be overweight. Obesity is especially common in blacks, American Indians, Native Hawaiians, and some Hispanic populations.

The Task Force noted that prescription drug therapy and surgery, such as gastric bypass, can be considered

continued on page 27

Screening adults for obesity

continued from page 26

for treating obese adults but only as part of a comprehensive program that also includes intensive counseling and behavioral interventions. Surgical guidelines from the National Institutes of Health restrict bariatric procedures to people with a BMI of 40 or greater and those with a BMI of 35 or greater who also have at least one other obesity-related illness. The Task Force noted that the long-term effectiveness and safety of drug therapy and surgery are unknown.

The Task Force, which is sponsored by the Agency for Healthcare Research and Quality, is the leading independent panel of private-sector experts in prevention and primary care. The Task Force conducts

rigorous, impartial assessments of the scientific evidence for a broad range of preventive services. Its recommendations are considered the gold standard for clinical preventive services. The Task Force based its conclusions on a report from a team led by Kathleen McTigue, M.D., M.P.H., at AHRQ's Evidence-based Practice Center at RIT International-University of North Carolina.

For more information, see "Screening and interventions for obesity in adults: Summary of the evidence for the U.S. Preventive Services Task Force," by Dr. McTigue, Russell Harris, M.D., M.P.H., Brian Hemphill, M.D., M.P.H., and others, in the December 2, 2003 *Annals of Internal Medicine* 139(11), pp. 933-949. ■

Announcements

AHRQ to support health information technology projects to improve patient safety and quality of care

As part of a larger initiative to support investments in information technology in the Nation's health care delivery system, the Agency for Healthcare Research and Quality is seeking applications for approximately 100 grants to plan, implement, and demonstrate the value of health information technology to improve patient safety and quality of care. These grants will be part of a \$50 million portfolio of grants, contracts, and other activities to demonstrate the role of health information technology in improving patient safety and the quality of care.

The \$41 million grant program, "Transforming Healthcare Through Information Technology," includes grants for planning and implementation of health information technology in communities as well as grants to examine the value of health information technology. The awards, which will support over 100 new research and demonstration projects, will make up the core of AHRQ's Health Information Technology portfolio. Applications

will be accepted from public and private nonprofit organizations, including universities, clinics, and hospitals; for-profit organizations (for implementation grants only); faith-based organizations; and State and local government agencies throughout the United States.

The Agency expects to award up to \$24 million to fund as many as 48 new implementation grants under the first Request for Applications, with up to \$14 million going to small and rural hospitals and communities. The RFA emphasizes the importance of community partnerships. AHRQ will provide up to 50 percent of the total costs in matching funds, not to exceed \$500,000 per year, for each project. Letters of intent are due February 22, 2004, and applications are due April 22, 2004. For more information, see the *NIH Guide* at <http://grants.nih.gov/grants/guide/rfa-files/RFA-HS-04-011.htm>.

AHRQ expects to award as much as \$7 million under the second RFA to fund up to 35 new planning grants to provide communities and organizations with the resources needed to develop their health

information technology infrastructure and compete for future implementation grants. At least \$5 million is expected to be used to support applicants from rural and small communities. Projects can last up to 1 year, and applicants may request a budget of up to \$200,000 in total costs. Letters of intent are due March 22, 2004, and applications are due April 22, 2004. For details, see the *NIH Guide* at <http://grants.nih.gov/grants/guide/rfa-files/RFA-HS-04-010.htm>.

Demonstrating the value derived from the adoption, diffusion, and use of health information technology will be the focus of the third RFA, under which AHRQ will award approximately \$10 million to up to 20 new grantees. The objective of these projects will be to provide health care facilities and providers with the information they need to make informed clinical and purchasing decisions about using health information technology. Applicants may request a budget of

continued on page 28

Health information technology projects

continued from page 27

up to \$500,000 per year in total costs. Letters of intent are due March 22, 2004, and applications are due April 22, 2004. For further information, go to the *NIH Guide* at <http://grants.nih.gov/grants/guide/rfa-files/RFA-HS-04-012.htm>.

The remainder of the \$50 million portfolio will be spent on other activities, including the creation of a

Health Information Technology Resource Center to aid grantees by providing technical assistance, provide a focus for collaboration, serve as a repository for best practices, and disseminate needed tools to help providers explore the adoption and use of health information technology to improve patient safety and quality of care.

AHRQ also will provide \$2 million in fiscal year 2004 to the Indian Health Service toward the enhancement of the IHS electronic

health record. This will give individual facilities flexibility in how they configure their electronic health record systems. The creation of an IHS electronic health record is consistent with tribal leaders' identification of the need for a user-friendly data system that can provide community-specific health care data and track the health status of patients. This need has been identified as one of seven top tribal priorities during HHS tribal consultation. ■

AHRQ awards five new surge capacity grants to address bioterrorism preparedness

Five new grants totaling nearly \$5 million have been funded under the Agency for Healthcare Research and Quality's grant program, "Building the Evidence to Promote Bioterrorism and Other Public Health Emergency Preparedness in Health Care Systems." Each of the five grants addresses a vital area of bioterrorism preparedness concern known as surge capacity, which is a health care system's ability to rapidly expand beyond normal services to meet the increased demand for qualified personnel, medical care, and public health in the event of a large-scale public health emergency or disaster. The new awards were made to:

- Weill Medical College, Cornell University, "Modeling the U.S. Health System's Epidemic Response Capacity," \$840,262.

- Johns Hopkins University School of Medicine, "Discharge Criteria for Creation of Hospital Surge Capacity," \$911,199.
- University of Florida, Gainesville, "Bioterrorism Preparedness in Rural and Urban Communities," \$889,072.
- Vanderbilt University Medical Center, Nashville, "Preparing Volunteer Nurses for Public Health Emergencies," \$1,090,145.
- Johns Hopkins University, "Evaluation of Bioterrorism Training for Clinicians," \$991,843.

To learn more about these and other projects in the Agency's bioterrorism research preparedness and response portfolio, visit www.ahrq.gov/research/bioterport.htm. ■

Former AHRQ researcher receives prestigious award from APHA

The 2003 Jay S. Drotman Memorial Award was presented to Denys Tsz-Wai Lau, Ph.D., in November 2003, at the 131st Annual Meeting of the American Public Health Association (APHA) in San Francisco. The award recognizes a young health worker or student who has demonstrated potential in the health field by challenging traditional public health policy or practice in a creative and positive

manner. Denys Lau was a program analyst with the Agency for Healthcare Research and Quality from 2000 to 2002. While at the Agency, he worked with other AHRQ researchers on the 1996 Nursing Home Component of the Medical Expenditure Panel Survey (MEPS).

Denys Lau is a postdoctoral fellow at the University of Michigan and Pfizer Global Outcomes Research Group. He

earned his doctoral degree in Health Services Research from the Johns Hopkins University Bloomberg School of Public Health last year. Dr. Lau used the 1996 MEPS Nursing Home Survey in his dissertation work investigating potentially inappropriate medication use among nursing home residents. His dissertation received the AcademyHealth 2002 Outstanding Dissertation Award in Health Services Research. ■

Research Briefs

Bird, C.E., Fremont, A., Wickstrom, S., and others. (2003, July-August). "Improving women's quality of care for cardiovascular disease and diabetes: The feasibility and desirability of stratified reporting of objective performance measures." (AHRQ contract 290-00-0012). *Women's Health Issues* 13, pp. 150-157.

These authors examined evidence that supports stratifying measures of management of primary and secondary cardiovascular risk factors by sex and discuss potential use of these stratified data. They evaluated differences between male and female patients in rates of receipt of 10 National Committee for Quality Assurance (NCQA) Health Plan Employer Data and Information Set (HEDIS) measures of recommended cardiovascular disease and diabetes care for enrollees in 10 commercial and 9 Medicare plans. They found small to moderate average differences for a number of care quality indicators. Among commercial plan enrollees, an average of 73.6 percent of men and 63.8 percent of women without a contraindication were prescribed a beta-blocker after a heart attack. However, among the three plans with significant male-female differences, all favored men (ranging from an advantage of 23.4 to 40 percentage points). They discuss potential benefits of and barriers to routine stratified reporting of objective performance measures for evaluating quality of care. Reprints (AHRQ Publication No. 04-R020) are available from AHRQ.**

Cao, H., Stetson, P., and Hripcsak, G. (2003). "Assessing

explicit error reporting in the narrative electronic medical record using keyword searching." (AHRQ grant HS11806). *Journal of Biomedical Informatics* 36, pp. 99-105.

Identifying medical errors is a critical step for managing and preventing errors. These authors assessed the explicit reporting of medical errors in the narrative sections (discharge summaries, signout notes, and outpatient notes) of the electronic medical records of a medical center from 1991 to 2000. They used five search terms: "mistake," "error," "incorrect," "inadvertent," and "iatrogenic." This keyword search combined with manual review identified 222 explicitly reported medical errors, but it had a low sensitivity and moderate positive predictive value, which varied by search term. The identified errors covered a broad range and were related to several types of care providers as well as non-health care professionals.

Carter, R., Holiday, D.B., Stocks, J., and Tiep, B. (2003, August). "Peak physiologic responses to arm and leg ergometry in male and female patients with airflow obstruction." (HS08774). *Chest* 124, pp. 511-518.

To examine the work capacity for the arms and legs of patients with moderate to severe chronic obstructive pulmonary disease (COPD), these researchers completed demographic and medical history questionnaires, pulmonary function studies, and peak exercise ergometry with gas exchange for the arms and legs. They also asked patients to rate their assessment of perceived dyspnea and extremity fatigue using Borg scores during exercise.

Arm work was reduced by 38 percent of that of the legs. More modest reductions were noted for oxygen uptake and minute ventilation, suggesting greater mechanical efficiency for leg work compared with arm work. These data may help clinicians in prescribing rehabilitation or estimating arm exercise ability when arm testing is unavailable.

Ensign, J. (2003). "Ethical issues in qualitative health research with homeless youths." (AHRQ grant HS11414). *Journal of Advanced Nursing* 43(1), pp. 43-50.

This author points out the main challenges of conducting qualitative research with homeless youths. These include establishing and maintaining healthy researcher roles and boundaries, addressing the risks of researcher burn-out and safety issues, assuring optimal confidentiality, and avoiding sensationalism and voyeurism. The findings were based on a review of professional guidelines for the ethical conduct of adolescent health research, national and international bioethics bibliographic searches, and personal experiences with qualitative research among homeless youths.

Hartz, A., and Marsh, J.L. (2003). "Methodologic issues in observational studies." (AHRQ grant HS10739). *Clinical Orthopaedics and Related Research* 413, pp. 33-42; and Hartz, A., Benson, K., Glaser, J., and others. (2003). "Assessing observational studies of spinal fusion and chemonucleolysis." (AHRQ grant 10739). *Spine* 28, pp. 2268-2275.

continued on page 30

Research briefs

continued from page 29

The first of these papers explores the methodologic issues in observational studies. The authors point out that all observational studies should report factors influencing relevance (characteristics of patients, treatments, and outcome measures), and factors that influence validity (methods to obtain information and patient risk factors that may differ between treatments). They assert that improved standards for reporting observational studies will facilitate the interpretation of results and the comparison of studies with conflicting results. In the second study, the researchers reviewed the literature to find several observational studies that compared the same spinal surgeries. They identified potential confounding factors by a survey of spinal surgeons. Results suggest that review of several comparable observational studies may help evaluate treatment, identify patient types most likely to benefit from a given treatment, and provide information about study features that can improve the design of subsequent observational or randomized controlled studies.

Hays, R.D., Chong, K., Brown, J., and others. (2003, September). "Patient reports and ratings of individual physicians: An evaluation of the DoctorGuide and Consumer Assessment of Health Plans Study provider-level surveys." (AHRQ grant HS9204). *American Journal of Medical Quality* 18(5), pp. 190-196.

Because consumers place a high value on being able to choose their doctors, there is increasing interest in assessing health care delivered at the individual physician level. This study compared physician-level

survey instruments, the Consumer Assessment of Health Plans Study (CAHPS®) survey and the DoctorGuide survey, to estimate the number of patients needed per physician to provide reliable estimates of health care. The researchers mailed surveys to patients of 100 primary care physicians in three health plans and one large physician group. A total of 4,245 CAHPS® surveys and 5,519 DoctorGuide surveys were returned. The number of patient responses needed to obtain a reliability of 0.70 at the physician level for the access to care, communication, and preventive care scales was similar for both survey instruments, suggesting parallel psychometric performance.

Heslin, K.C., Andersen, R.M., and Gelberg, L. (2003, September). "Use of faith-based social service providers in a representative sample of urban homeless women." (AHRQ grant HS08323). *Journal of Urban Health* 80(3), pp. 371-382.

This survey of 974 homeless women in Los Angeles found that 52 percent of those surveyed were using the services of faith-based providers. Homeless women with no religious affiliation were less likely than Christian women to use faith-based providers, and blacks and Latinas were less likely than white women to use them. The benefits of increased funding through a Federal faith-based policy initiative may accrue primarily to subgroups of clients already using faith-based programs, conclude the researchers. They interviewed homeless women at 78 homeless shelters and meal programs in Los Angeles County.

Hope, C., Overhage, J.M., Seger, A., and others. (2003). "A tiered

approach is more cost effective than traditional pharmacist-based review for classifying computer-detected signals as adverse drug events." (AHRQ grant HS11169). *Journal of Biomedical Informatics* 36, pp. 92-98.

These investigators compared the sensitivity and cost of two approaches to identifying outpatient adverse drug events (ADEs) and medical errors (MEs) using electronic medical records and human review at two health care systems. A traditional pharmacist-based review process was used at one site while a tiered approach—using tiers of layers of personnel of varying expertise—was used at the other. The proportion of computer-generated signals identified as ADEs was similar using the two approaches, while the number of MEs was nearly double with tiered reviews, suggesting the same or better sensitivity. The tiered approach cost \$42.40 to detect an ADE compared with \$68.70 for the traditional pharmacist review. Thus, the tiered approach was more cost-efficient.

Hripcsak, G., Bakken, S., Stetson, P.D., and Patel, V.L. (2003). "Mining complex clinical data for patient safety research: A framework for event discovery." (AHRQ grant HS11806). *Journal of Biomedical Informatics* 36, pp. 120-130.

Given the volume of patients seen at medical centers, detecting medical events automatically from electronic medical record data would greatly facilitate patient safety work. Toward that end, these authors created a framework for electronic detection. Key steps include: selecting target events, assessing what information is available electronically,

continued on page 31

Research briefs

continued from page 30

transforming raw data such as narrative notes into a coded format, querying the transformed data, verifying the accuracy of event detection, characterizing the events using systems and cognitive approaches, and using what is learned to improve detection.

Kivimaki, M., Head, J., Ferrie, J.E., and others. (2003, August). "Sickness absence as a global measure of health: Evidence from mortality in the Whitehall II prospective cohort study." (AHRQ grant HS06516). *British Medical Journal* 327, pp. 364-368.

Routinely collected sickness-related work absence data could be used as a global measure of health differentials between employees. However, such approaches should focus on medically certified or long-term absences rather than self-certified absences, according to this study. The researchers examined the association between sickness absence and mortality compared with associations between established health indicators and mortality. They used results from a medical exam and survey conducted in 1985-1988 and sickness absence records from 1985-1998 for personnel at 20 civil service departments in London. In a multivariate model including numerous health indicators and additional health risk factors, medically certified sickness absence (but not self-certified absence) remained a significant predictor of mortality.

Paneth, N., Qiu, H., Rosenbaum, P., and others. (2003, September). "Reliability of classification of cerebral palsy in low-birth weight children in four countries." (AHRQ grant HS08385). *Developmental Medicine and*

***Child Neurology* 45(9), pp. 628-633.**

This study assessed the reliability of classification of cerebral palsy (CP) in low birthweight children (2 to 8 years of age) by using clinical and research study records sampled from population-based cohort studies in the United States, the Netherlands, Canada, and Germany. The researchers submitted records of neurological examination findings and functional motor assessments to up to five pediatricians with expertise in CP diagnosis, who grouped children into three categories: disabling CP, non-disabling CP, and no CP. Discrimination between any CP and no CP was only fair. However, when motor function information was used, children with disabling CP could be distinguished on the basis of records from those without CP or non-disabling CP.

Rudy, E.T., Detels, R., Douglas, W., and Greenland, S. (2003, May). "Factors affecting hepatitis vaccination refusal at a sexually transmitted disease clinic among men who have sex with men." (AHRQ training grant T32 HS00046). *Sexually Transmitted Diseases* 30(5), pp. 411-418.

Rates of vaccination for hepatitis A virus (HAV) and hepatitis B virus (HBV) among men who have sex with men (MSM) attending sexually transmitted disease (STD) clinics are suboptimal. This survey of MSM eligible for vaccinations at one STD clinic identified a few factors affecting vaccination refusals. Rates of refusal of HAV and HBV were 36 percent and 38 percent, respectively. Health motivation was associated with acceptance, while clinical barriers such as "want to test first for immunity" and "want to talk to own doctor first" were associated

with refusal. "Not enough time this evening" was most strongly predictive of refusal and may be a partial excuse. Clinic staff should address other factors that may underlie refusal.

Saint, S., Zemencuk, J.K., Hayward, R.A., and others. (2003). "What effect does increasing inpatient time have on outpatient-oriented internist satisfaction?" (AHRQ grant HS11540). *Journal of General Internal Medicine* 18, pp. 725-729.

Findings from this study imply that there may be a tension between the practice of inpatient and outpatient medicine by general internists and suggest that fewer hospital duties may increase career satisfaction for outpatient-oriented internists. The investigators analyzed responses from 339 clinically active outpatient-oriented general internists to a national survey that measured sociodemographic and practice characteristics of physicians, as well as aspects of job satisfaction. Even after controlling for total hours worked and other factors, they found that increased time working in the hospital was significantly associated with decreased satisfaction with administration, specialty, autonomy, and personal time and significantly associated with an increase in life stress and burnout.

Schneeweiss, S., Wang, P.S., Avorn, J., and Glynn, R.J. (2003, August). "Improved comorbidity adjustment for predicting mortality in Medicare populations." (AHRQ grant HS10881). *Health Services Research* 38(4), pp. 1103-1120.

In epidemiologic studies of the elderly, a modified diagnosis-based score using empirically derived

continued on page 32

Research briefs

continued from page 31

weights provides improved adjustment for comorbidity and enhances the validity of findings, concludes this study. The goal was to define and improve the performance of existing comorbidity scores in predicting mortality in Medicare enrollees. The researchers computed frequently used comorbidity scores for 235,881 New Jersey Medicare enrollees in 1994 and 230,913 Pennsylvania Medicare enrollees in 1995 to determine 1-year mortality during the following year. A score based on ICD-9 diagnoses (Romano score) performed 60 percent better than one based on patterns of medication use (Chronic Disease Score). The Romano score was slightly improved by including the number of different prescription drugs used during the past year. It was further improved when elderly-specific weights for 17 conditions included in the score were considered.

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

Despite the publication of more than 10 randomized trials evaluating acupuncture as a treatment for chronic low back pain, its efficacy and effectiveness for this common problem remains unclear due to poorly designed studies. These authors discuss the rationale for and design of a five-arm randomized controlled pilot clinical trial that addresses the major methodological shortcomings of previous studies (for example, poorly justified

treatment and control groups and lack of masking). The pilot study also lays the groundwork for a full-scale trial evaluating acupuncture as a treatment for chronic low back pain.

Shiffman, R.N., Shekelle, P., Overhage, M., and others. (2003). "Standardized reporting of clinical practice guidelines: A proposal from the conference on guideline standardization." (AHRQ grant HS10962). *Annals of Internal Medicine* 139, pp. 493-498.

The quality of clinical practice guidelines varies considerably. The Conference on Guideline Standardization (COGS) was convened in April 2002 to define a standard for guidelines reporting that would promote guideline quality and facilitate implementation. A group of 23 guideline experts agreed on which guideline components they considered to be necessary. In a second round of discussions, they rated necessity for validity and necessity for practical application, eventually resulting in a number of items considered as necessary guideline components. After their review by representatives of 22 organizations active in guideline development, items were consolidated into 18 topics to create the COGS checklist. This checklist provides a framework to support more comprehensive documentation of practice guidelines.

Sirio, C.A., Segel, K.T., Keyser, D.J., and others. (2003, September). "Pittsburgh Regional Healthcare Initiative: A systems approach for achieving perfect patient care." (AHRQ grant HS11926). *Health Affairs* 22(5), pp. 157-165.

This paper describes the Pittsburgh Regional Healthcare Initiative (PRHI), an innovative model to improve health care on a regional basis. By linking patient outcomes data with processes of care and sharing that information widely, PRHI supports measurable improvements in region-wide clinical practice and patient safety. In addition, through the redesign of problem solving at the front lines of care, PRHI helps health care organizations to evolve toward becoming sustainable systems of high quality patient care. The authors detail PRHI's design for change, review the progress and limitations of the shared learning model, and offer a set of broader policy considerations.

Spettell, C.M., Wall, T.C., Allison, J., and others. (2003). "Identifying physician-recognized depression from administrative data: Consequences for quality measurement." (AHRQ grant HS09446). *Health Services Research* 38(4), pp. 1081-1102.

Several factors limit identification of patients with depression from administrative data, which are often used to drive many quality measurement and reporting systems. This study's findings raise concern about interpreting depression quality reports based on administrative data. The authors investigated two algorithms for identification of physician-recognized depression among a sample of patients of primary care physicians of a large managed care organization. The first algorithm required at least two criteria in any combination: an outpatient diagnosis of depression or a pharmacy claim for an antidepressant. Algorithm 2 included the same criteria, but required a diagnosis of depression

continued on page 33

Research briefs

continued from page 31

for all patients. Both algorithms had high false-positive rates.

Swanson, K.A., Andersen, R., and Gelberg, L. (2003). "Patient satisfaction for homeless women." (AHRQ grant HS08323). *Journal of Women's Health* 12(7), pp. 675-686.

Homeless women are not very satisfied with the care they receive, concludes this study. The researchers interviewed 974 homeless women from 60 shelters and 18 meal programs in Los Angeles County about satisfaction with the care they receive. Care satisfaction was associated with care at homeless-focused health care sites (shelter/outreach clinics and mobile vans). Health care at private doctors' offices was also associated with quality, access, and appointment satisfaction when compared with care received at county/government clinics. The researchers suggest that policymakers encourage health care sites that serve homeless women to improve their care by learning from shelter-outreach clinics and private doctors.

Weinger, M.B., Slagle, J., Jain, S., and Ordonez, N. (2003). "Retrospective data collection and analytical techniques for patient safety studies." (AHRQ grant HS11521). *Journal of Biomedical Informatics* 36, pp. 106-119.

This paper provides an overview of some of the methods available to collect and analyze retrospective data about medical errors, near misses, and other relevant patient safety events. Second, it introduces a methodological approach that focuses on non-routine events (NRE), defined as all events that deviate from optimal clinical care.

Using this approach, the authors identified 27 percent of completed anesthetic cases that contained a non-routine event, of which 17 percent had patient impact, and 7 percent led to patient injury. Using traditional quality improvement processes in the same hospitals over a 2-year period identified only 0.7 to 2.7 percent of NREs; 89 percent had patient impact, and 55 percent led to patient injury. These findings show the potential value of the NRE approach for early detection of risks to patient safety.

Wyrich, K.W., Nelson, H.S., Tarn, W.M., and others. (2003, August). "Clinically important differences in health-related quality of life for patients with asthma: An expert consensus panel report." (AHRQ grant HS10234 and HS11635). *Annals of Allergy, Asthma, and Immunology* 91, pp. 148-153.

These investigators organized an eight-person panel of expert physicians familiar with measuring health-related quality of life (HRQOL) to reach consensus on clinically important difference (CID) standards for small, moderate, and large changes in the Juniper Asthma Quality of Life Questionnaire (AQLQ) and Medical Outcomes Study Short-Form 36-Item Health Survey (SF-36) for patients with asthma. The expert panel's thresholds for detecting CIDs in the domains of the AQLQ were much higher than previously established levels using patient-perceived changes. CIDs for asthma for the SF-36 were also markedly greater than previously cited cross-sectional differences between patient groups. Thus, the expert panel's CID standards identify a potential distinction between patient and physician perspectives of important HRQOL changes in patients with asthma.

Youngblade, L.M., and Shenkman, E.A. (2003). "Congruence between parents' and adolescents' reports of special health care needs in a Title XXI program." (AHRQ grant HS10465). *Journal of Pediatric Psychology* 28(6), pp. 393-401.

Parents and adolescents tend to agree on whether or not the adolescent has a special health care need, according to this study. Using the Children with Special Health Care Needs (CSHCN) Screener, the researchers conducted telephone surveys with 522 adolescents and their parents who were new enrollees in Florida's State Children's Health Insurance Program. Analyses revealed substantial agreement as to whether or not the adolescent had a chronic condition. However, a full 15 percent of pairs disagreed, usually for parents reporting adolescents' mental health conditions that the adolescents did not report. These results showed higher parent-adolescent congruence using the consequence-based CSHCN screener than is typically reported for diagnosis-based approaches.

Yu, F., Morgenstern, H., Hurwitz, E., and Berlin, T.R. (2003). "Use of a Markov transition model to analyze longitudinal low-back pain data." (AHRQ grant HS07755). *Statistical Methods in Medical Research* 12, pp. 321-331.

These investigators used a Markov transition model to analyze longitudinal data on low back pain for 681 adult managed care patients with low back pain. The patients were randomized to four treatment groups: medical care with and without physical therapy, and chiropractic care with and without physical modalities. Followup information (including the patient's

continued on page 34

Research briefs

continued from page 33

perception of pain) via questionnaires was obtained at 2 and 6 weeks, 6, 12, and 18 months, and by telephone interview at 4 weeks. Since a patient's perception of improvement may be influenced by past experience, the outcome was analyzed using a transitional Markov model. This approach allowed the researchers to assess not only the effects of treatment assignment and baseline characteristics, but also the effects of past outcomes in analyzing the longitudinal data.

Zhang, J., Johnson, T.R., Patel, V.L., and others. (2003). "Using usability heuristics to evaluate patient safety of medical devices." (AHRQ grant HS11544). *Journal of Biomedical Informatics* 36, pp. 23-30.

Heuristic evaluation, when modified for medical devices, is a useful, efficient, and low cost method for evaluating patient safety features of medical devices through the identification of usability problems and their severities, concludes this study. The researchers modified heuristic evaluation—a usability inspection method commonly used for

software usability evaluation—and extended it for medical devices. They used the modified method to evaluate and compare the patient safety of two one-channel volumetric infusion pumps. The method categorized 192 heuristic violations for 89 usability problems identified for pump 1 and 121 heuristic violations for the 52 usability problems identified for pump 2. ■

NLM unveils new exhibit honoring John Eisenberg

A new exhibit is now on display outside the National Library of Medicine's History of Medicine Division reading room. "John Eisenberg: A Life In Service, 1946-2002" includes plaques, awards, photos, and documents. It is expected to be available for viewing for about 6 months. NLM also has papers by Dr. Eisenberg's in its regular collection that may be accessed.

John Eisenberg, M.D., former director of the Agency for Healthcare Research and Quality, combined a unique sense of society and politics with clinical medicine to become a leader in the field of health services research. As a leader of institutions and mentor to scholars, he guided his field of expertise

into a powerful force for understanding the economics of health care so that all Americans would receive quality, affordable, and safe medical services.

This exhibit is a tribute to Dr. Eisenberg and his many accomplishments. He died prematurely from a brain tumor in the Spring of 2002 at the age of 55.

The exhibit is located in the lobby of NLM, Building 38, 8600 Rockville Pike, at the south end of the NIH campus in Bethesda, MD. For a map of the NIH campus, go to www.nih.gov/od/ors/graphic/visitorsecuritymap.gif

For security considerations, go to the NIH Web site at www.nih.gov/od/ors/graphic/visitorsecurity.htm. ■

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...

Funding Opportunities



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

Ordering Information

AHRQ makes documents available free of charge through its publications clearinghouse and AHRQ InstantFAX. Other AHRQ documents are available from the National Technical Information Service (NTIS) or the Government Printing Office (GPO). 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
410-381-3150 (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 the AHRQ Clearinghouse and from AHRQ InstantFAX:**

For instructions on using InstantFAX, call 301-594-2800. Use the key pad on your telephone or fax machine when responding to prompts. AHRQ InstantFAX operates 24 hours a day, 7 days a week.

(*) 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

Available from GPO:

Call the GPO order desk for prices and ordering information 202-512-1800.

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



AHRQ Pub. No. 04-0024
December 2003

ISSN 1537-0224