



# Research Activities



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Agency for Healthcare Research and Quality

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## Missed opportunities: Too few Americans are being screened or counseled to prevent colorectal cancer, obesity, and other conditions

The overall quality of the U.S. health care system is improving, but providers are missing important chances to help Americans avoid disease or serious complications, according to annual reports issued by the Agency for Healthcare Research and Quality (AHRQ).

The 2006 *National Healthcare Quality Report (NHQR)* and *National Healthcare Disparities Report (NHDR)* both found that the use of proven prevention strategies lags significantly behind other gains in health care:

- Only about 52 percent of adults reported receiving recommended colorectal cancer screenings. About 56,000 Americans die from colorectal cancer, and 150,000 new cases are diagnosed each year. In 2002, the AHRQ-supported U.S. Preventive Services Task Force urged initial screenings at age 50 and earlier for people at high risk.
- Fewer than half of obese adults reported being

counseled about diet by a health care professional. About one-third of American adults are obese, increasing the risks of high blood pressure, type 2 diabetes, stroke, heart disease, and osteoarthritis. The Task Force recommends “intensive counseling and behavioral interventions” for obese adults.

- Only 49 percent of people with asthma said they were told how to change their environment, and 28 percent reported receiving an asthma management plan. Asthma causes about 500,000 hospitalizations annually.
- Only 48 percent of adults with diabetes received all three recommended screenings – blood sugar tests, foot exams, and eye exams – to prevent disease complications. AHRQ estimates about \$2.5 billion could be saved each year by

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## Missed opportunities

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eliminating hospitalizations related to diabetes complications.

The findings from the two annual reports provide updated, congressionally mandated snapshots of the U.S. health care system. AHRQ's reports examine quality and disparities in four key areas of health care: effectiveness of health care, patient safety, timeliness of care, and patient centeredness.

The *National Healthcare Quality Report* tracks the health care system through quality measures, such as what proportion of heart attack patients received recommended care when they reached the hospital, or what percentage of children received recommended vaccinations. The *National Healthcare Disparities Report*,

meanwhile, summarizes which racial, ethnic, or income groups are most likely to benefit from improvements in health care.

Overall, the review of 40 core quality measures found a 3.1 percent increase in the quality of care – the same rate of improvement as the previous 2 years. Except for vaccinations for children, adolescents, and the elderly, which improved by almost 6 percent, the improvement rate for other preventive measures – screenings, advice, and prenatal care – was less than 2 percent.

The greatest quality gains occurred in U.S. hospitals, where quality improved 7.8 percent. Ambulatory care – health services provided at doctors' offices, clinics or other settings without an overnight stay – improved by 3.2 percent. Nursing home and home health care improved by 1 percent.

As in previous years, the Federal disparities report found access to care varied widely between racial, ethnic, and economic groups. Blacks received poorer quality care than whites for 73 percent of the core measures included in the disparities report. Hispanics received poorer quality of care than non-Hispanic whites for 77 percent of the measures. Poor people received lower quality of care than high-income people for 71 percent of the measures.

Both reports are available online at [www.ahrq.gov/qual/nhqr06/nhqr06.htm](http://www.ahrq.gov/qual/nhqr06/nhqr06.htm) and [www.ahrq.gov/qual/nhdr06/nhdr06.htm](http://www.ahrq.gov/qual/nhdr06/nhdr06.htm). Print copies of the *NHDR* (AHRQ Publication No. 07-0012) and the *NHQR* (AHRQ Publication No. 07-0013) are also available from AHRQ.\* ■

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## Disparities/Minority Health

### Black patients tend to ask fewer questions of their doctors and receive less information than other patients

Good doctor-patient communication is critical to making appropriate medical decisions. A new study suggests that less participation by black patients in medical discussions with their doctors—rather than race per se—may be why they receive less information from their doctors than white patients. Communication may be more difficult for black patients than for white patients for a number of reasons. For example, blacks may have different views of health and illness and may be less trustful of the medical profession. Communication issues are likely to be most prominent in interactions between patients and doctors who are different races, note the study authors.

Researchers found that black patients with suspicious or cancerous lung masses were less likely

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## Doctor-patient communication

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to bring a companion to physician consultations. Black patients and their companions received significantly less information during consultations with doctors than white patients (49.3 vs. 87.3 mean utterances) and made significantly fewer contributions to the discussion (21.4 vs. 37.2 comments or questions). Yet, after adjusting for patients' and companions' participation, clustering by doctor, and other factors, race no longer predicted how much information the doctor provided.

Similarly, information provided by doctors in response to comments or questions by patients was significantly less frequent among visits with patients of a different race than the same race as the doctor.

However, after controlling for patients' participation and other factors, racial discordance between patient and physician did not predict the amount of information given by the doctor. The findings were based on analysis of audiotapes of 137 patients receiving initial treatment recommendations in thoracic surgery or oncology clinics at a large Veterans Affairs Medical Center from 2001 to 2004. The study was supported in part by the Agency for Healthcare Research and Quality (HS10876).

More details are in "Racial differences in doctors' information-giving and patients' participation," by Howard S. Gordon, M.D., Richard L. Street Jr., Ph.D., Barbara F. Sharf, Ph.D., and Julianne Soucek, Ph.D., in the September 15, 2006 *Cancer* 107(6), pp. 1313-1320. ■

## Trust in medical care does not differ by race among indigent people with diabetes, but more trust can improve their quality of life

**D**istrust in the medical care system has been suggested as a source of blacks' higher morbidity and mortality from diabetes when compared with whites. However, a new study found that trust in the medical care system did not appear to differ significantly by race or ethnicity among indigent patients with type 2 diabetes. Medical mistrust was not significantly correlated with glycemic control, lipid control, or other health outcomes; however, less distrustful patients felt more in control of their diabetes and reported better physical and mental health.

It may be that distrust of the medical care system is not as important a contributor to health disparities in diabetes as it is in other disease conditions, something that would have to be confirmed in larger studies. On the other hand, strategies to build trust in the patient-provider relationship and between patients and the health

care system may help improve the quality of life of patients with type 2 diabetes, conclude Medical University of South Carolina researchers, Leonard E. Egede, M.D., M.S., and Yvonne Michel, Ph.D.

Drs. Egede and Michel analyzed survey responses of 216 people with type 2 diabetes recruited from an indigent clinic of an academic medical center. The surveys included the 15-item Medical Mistrust Index, the 23-item Diabetes Knowledge Test, the 15-item Perceived Control (of diabetes) Questionnaire, and a 12-item health status survey. The researchers abstracted patients' lipid levels, glucose levels, and other health measures from their medical records. Their study was supported by the Agency for Healthcare Research and Quality (HS11418).

See "Medical mistrust, diabetes, self-management, and glycemic control in an indigent population

with type 2 diabetes," by Drs. Egede and Michel, in the January 2006 *Diabetes Care* 29(1), pp. 131-132. ■

### Also in this issue:

Extended physician work hours and association with medical errors, see page 5

Pediatric hospitalists and use of evidence-based care for children, see page 9

Depression and quality of life for people with diabetes, see page 11

Pain assessment and improvements in analgesic prescribing, see page 17

Increase in obesity surgeries, see page 20

## American Indians and Alaska Natives are difficult to reach by mail for research or health care reasons

It is difficult to reach by mail the 4 million American Indians and Alaska Natives (AI/ANs) who live in the United States to involve them in research or their own health care, concludes a new study. Prior studies have found that recruitment of AI/ANs into research trials was more successful when they were approached at community events such as powwows and traditional celebrations rather than through mailings. However, such approaches often result in a select rather than representative sample, note the study authors. In this study, they identified factors associated with receipt of postal mailings among patients seen at an urban Indian health clinic (60 percent of whom were AI/AN).

The researchers sent a Native art calendar (with preventive health information for one group and no health information for the control group) via first class mail to 5,633 patients who had been seen at the clinic during the prior 2 years. Based on initial mailings and in-person location efforts, only an estimated 61 percent of patients actually received the calendars. The mail verification process was significantly less likely to identify working addresses for patients who were AI/AN and those who were seen more than 3 months before the study. In fact, AI/ANs were about half as likely as non-AI/ANs to have accurate addresses.

The results suggest that it is difficult, but possible, to use the U.S. Postal Service to reach

patients seen at an urban Indian health facility. Future studies should examine whether the use of mailing strategies aimed at highly mobile populations can achieve greater success when aligned with ongoing efforts that track group members after clinical or research visits. The study was supported in part by the Agency for Healthcare Research and Quality (HS10854).

See “Using mail to reach patients seen at an urban health care facility,” by Donna Duffy, R.N., M.P.H., Jack Goldberg, Ph.D., and Dedra Buchwald, M.D., in the August 2006 *Journal of Health Care for the Poor and Underserved* 17, pp. 522-531. ■

## African-American physicians were much more likely than white physicians to practice in HMOs in the 1990s

African-American physicians were 4.5 times more likely than white physicians to practice in HMOs in the 1990s. After controlling for greater debt among black physicians, the tendency of African-American physicians to locate in settings with more African-American patients (such as HMOs), and organizational hiring tendencies, African-American physicians were still 2.5 times more likely to practice in HMOs than white physicians. They were also one-third as likely to be academic physicians or physicians in large group practices, and two-thirds as likely to be hospital physicians as their white colleagues.

There are several reasons why more African-American physicians worked for HMOs in the 1990s, explain Forrest Briscoe, Ph.D., of Pennsylvania State University, and Thomas R. Konrad, Ph.D., of the University of North Carolina.

In many cases, HMOs were not the first choice for new physicians. HMOs were often considered less desirable practice locations, with lower remuneration and prestige. This led physicians with marginally better qualifications to avoid them, leaving those with poorer qualifications (a disproportionately larger number of African-American physicians) to accept employment in them with little choice. Similarly, HMOs

provided a guaranteed steady income and did not require the capital expenditure typically required by partners in private practices. This was appealing to African-American physicians, who were usually more financially burdened after medical school than their white colleagues.

However, African-American physicians in this study weren't particularly happy with their HMO choice. For example, nearly one-fifth (19 percent) of them reported being turned down for another job compared with 11 percent of non-HMO African-American physicians. Five years later, the same African-American physicians from HMOs were 7.5 times more likely than non-HMO African-American physicians to leave their current practice, and twice as likely to express serious doubts about selecting a career in medicine.

These findings were based on analysis of data from the 1991 and 1996 Young Physicians Surveys of 3,705 U.S. physicians who completed residency between 1986 and 1989. The study was supported in part by the Agency for Healthcare Research and Quality (HS10861).

More details are in “HMO employment and African-American physicians,” by Drs. Briscoe and Konrad, in the August 2006 *Journal of the National Medical Association* 98(8), pp. 1318-1325. ■

### Physicians' extended work shifts are associated with increased risks of medical errors that harm patients

**F**irst-year doctors-in-training reported that working five extra-long shifts—of 24 hours or more at a time without rest—per month led to a 300 percent increase in their chances of causing a fatigue-related preventable adverse event that contributed to the death of a patient, according to a new study. Preventable adverse events are defined as medical errors that cause harm to a patient.

The study, which was funded by the Agency for Healthcare Research and Quality (HS12032 and HS14130) and the Centers for Disease Control and Prevention's National Institute for Occupational Safety and Health, has a sample size large enough to demonstrate that the rate of preventable adverse

events grows when interns work shifts of 24 hours or more. Interns were three times more likely to report at least one fatigue-related preventable adverse event during months in which they worked between one and four extended-duration shifts. In months in which they worked more than five extended-duration shifts, interns were seven times more likely to report at least one fatigue-related preventable adverse event and were also more likely to fall asleep during lectures, rounds, and clinical activities, including surgery.

The researchers analyzed the results of a national, Web-based survey in which 2,737 interns completed 17,003 monthly reports and assessed the association between the number of extended-

duration shifts worked in the month and the reporting of significant medical errors, preventable adverse events, and attentional failures. The findings are significant because interns routinely work extended shifts in teaching hospitals. Guidelines for graduate medical education in the United States still allow up to nine "marathon" shifts (30 hours at a stretch) per month, even though the total number of hours worked is capped.

For more details, see "Impact of extended-duration shifts on medical errors, adverse events, and attentional failures," by Laura K. Barger, Ph.D., Najib T. Ayas, M.D., M.P.H., Brian E. Cade, M.S., and others, in the December 2006 *PLoS Medicine* 3(12), online at <http://medicine.plosjournals.org>. ■

### Extended resident work hours jeopardize both resident health and patient safety

**I**n 2003, the Accreditation Council for Graduate Medical Education mandated a maximum 80-hour work week for medical residents, restricted continuous on-call shifts to 30 hours, and insisted that residents have 1 day off per week. However, flexibility in meeting these

standards has largely permitted a continuation of the status quo in most hospitals. Very little data support the scheduling of medical trainees to work shifts longer than 24 hours, according to researchers at the Harvard Work Hours Health and Safety Group. In a recent paper, they reviewed the

physiological principles underlying fatigue, as well as the results of a series of studies by the Group which quantified the negative effects of extended work shifts on resident health and patient safety.

For example, a nationwide survey by the Group found that

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## Resident work hours

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residents who had worked 24 hours or longer were 2.3 times more likely to have a motor vehicle crash following that shift than when they worked less than 24 hours. Also, the monthly risk of a crash increased by 16 percent after each extended duration shift. A randomized trial by the Group showed that interns working a traditional on-call schedule (which routinely included shifts of more than 30 hours) slept nearly 6 fewer hours per week, had twice as many attentional failures on duty overnight, made 36 percent more serious medical errors, and made nearly 6 times more serious

diagnostic errors than when working on a schedule that limited continuous duty to 16 hours.

In contrast, an intervention study by the Group found that restricting residents to 16 hours of scheduled continuous duty increased sleep duration outside work, improved attentiveness on duty overnight, and reduced the rate of medical errors. These improvements occurred despite the addition of a fourth resident to the team and an increase in the number of hand offs between physicians. This suggests that the perceived risk of changing continuity of care due to shortened shifts is less than the risk of error due to sleep deprivation.

Eliminating these extended

duration shifts outright is likely to have a much greater impact of resident health and patient safety than attempting to achieve an arbitrary work-hour limit of 80 hours per week, conclude the researchers. Their work is supported in part by the Agency for Healthcare Research and Quality (HS12032, HS15906, and HS13333).

See “When policy meets physiology,” by Steven W. Lockley, Ph.D., Christopher P. Landrigan, M.D., M.P.H., Laura K. Barger, Ph.D., and Charles A. Czeisler, Ph.D., M.D., in the August 2006 *Clinical Orthopaedics and Related Research* 449, pp. 116-127. ■

## Health systems dedicated to improving patient safety are beginning their journey and need a roadmap to prioritize initiatives

**A**s part of its mission to close the gap between evidence-based research findings and their implementation, the Agency for Healthcare Research and Quality (AHRQ) supported a customer service survey to determine how eight health system leaders, known for their dedication to improving patient safety, were seeking to reduce medical errors. Specifically, the survey sought to answer the question of whether an overall error reduction framework, such as high reliability organizing (HRO), was being used and to determine how the Agency could work with these and similar leaders to improve patient safety.

HRO is typically found in industries—such as airlines and nuclear power—that experience fewer than expected errors because they take a certain approach to maintain a culture of safety. While this framework has been used outside of health care for a number of years, its use in health care systems is relatively recent.

Interview results found that health system leaders saw themselves as being at the beginning of their patient safety journey, and used the words “struggling” quite a bit to describe how they were thinking through patient safety issues and initiatives. They often turned to outside industries for ways to improve practice because those industries had been involved in quality improvement for some time. However, they were eager to learn from others in

health care as to how best to transform care in their organizations.

While not all were familiar with HRO, most stated that cultivating a culture of safety was an essential ingredient for medical error reduction. For example, health care systems were implementing culture initiatives such as patient safety surveys, executive walk-arounds, and safety audits. Focusing on a culture of safety was only one of four areas in which these systems are implementing changes. The others included technology-related projects such as computerized physician order entry and electronic medical records; microsystem initiatives such as surgical site infection, injuries from falls, and pressure ulcers; and system/staffing changes such as unit-based pharmacies, integrated teams, and rapid-response teams. Some of the larger organizations had as many as 15 separate initiatives taking place at any time.

A number of leaders expressed concern about the lack of a clear roadmap on how to phase in patient safety initiatives and the order in which to implement them. That included knowing which clinical conditions to address first and which clinical areas would provide the largest impact for dollars spent.

The insights gained from this customer needs assessment led AHRQ to build a learning network among leading edge healthcare systems. It is

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## Patient safety

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anticipated that this network, through the use of evidence-based research and shared learning, will support these systems in becoming more reliable.

See “Struggling to invent high-reliability organizations in health care settings: Insights from the field,” by Nancy M. Dixon, Ph.D., and Marjorie Shofer, B.S.N., M.B.A., in the August 2006 *HSR: Health Services Research* 41(4), pp. 1618-1632. Reprints (AHRQ Publication No. 06-R075) are available from AHRQ.\* ■

## Studies reveal that error disclosure is similar among American and Canadian doctors, despite different malpractice environments

Physicians disclose only 30 to 50 percent of harmful medical errors to patients, which can lead to patient distrust in physicians’ integrity and may increase the likelihood of lawsuits. Both Canadian and U.S. physicians have mixed feelings about disclosing errors to patients, according to two studies supported by the Agency for Healthcare Research and Quality (HS11898 and HS14012). The first study finds that individual physicians vary widely in how they would disclose errors to patients. The second study shows that the attitudes and experiences of U.S. and Canadian physicians concerning error disclosure are similar, despite the different malpractice environments in which they work. Both studies were led by Thomas H. Gallagher, M.D., of the University of Washington School of Medicine, and were based on responses to a mailed survey of 2,637 medical and surgical physicians in the United States (Missouri and Washington) and Canada (national sample).

**Gallagher, T.H., Garbutt, J.M., Waterman, A.D., and others. (2006, August). “Choosing your words carefully: How physicians would disclose harmful medical errors to patients.” *Archives of***

***Internal Medicine* 166, pp. 1585-1593.**

Individual Canadian and American physicians vary widely in how they would disclose errors to patients. While physicians generally support disclosing errors to patients, fear of lawsuits, shame, and lack of error disclosure training make them reluctant to do so. Physicians are also uncertain about what words to choose when discussing errors with patients. Patients want an explicit statement that an error has occurred, information about why the error happened, how recurrences will be prevented, and an apology.

Yet when presented with one of four scenarios depicting serious errors, which varied by specialty and how obvious the error would be to the patient if not disclosed, individual physicians had varied responses to what information they would disclose to patients. Overall, 56 percent chose statements that mentioned the harm to the patient (adverse event) but not the error, while 42 percent would explicitly state that an error occurred. Some physicians disclosed little information. For example, 19 percent would not volunteer any information about the error’s cause, and 63 percent would not provide

specific information about how they would prevent future errors.

Disclosure was affected by the nature of the error and physician specialty. For instance, 51 percent of physicians confronted with scenarios of more apparent errors (obvious to the patient) would explicitly mention the error. Yet, only 32 percent of physicians would explicitly mention the error in scenarios in which the error was not apparent to the patient. Also, 58 percent of medical specialists would explicitly mention the error compared with 19 percent of surgical specialists. Finally, physicians were likely to disclose more information if they had positive attitudes about error disclosure, felt responsible for the error, had prior positive disclosure experiences, and were Canadian.

**Gallagher, T.H., Waterman, A.D., Garbutt, J.M., and others. (2006, August). “U.S. and Canadian physicians’ attitudes and experiences regarding disclosing errors to patients.” *Archives of Internal Medicine* 166, pp. 1605-1611.**

The malpractice environment is considered a major factor in physicians’ willingness to disclose

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

## Error disclosure

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medical errors to patients. Due to the litigious environment of the United States, physicians must cope with escalating malpractice insurance premiums and the loss of insurability with malpractice lawsuits. While Canada shares the U.S. fault-based malpractice model, tort reforms and other legal differences (such as rare use of contingency fees or punitive damages) result in Canadian physicians being sued about one-fourth as often as their U.S. counterparts. They also pay much

lower malpractice insurance premiums.

Nevertheless, this survey of both U.S. and Canadian physicians found that their error disclosure attitudes and experiences were similar. Both groups of physicians had mixed feelings about disclosing errors to patients. Nearly two-thirds (64 percent) of both groups agreed that medical errors are a serious problem. However, 50 percent disagreed that errors are usually caused by system failure.

Nearly all physicians (98 percent) endorsed disclosing serious errors to patients and 78

percent supported disclosing minor errors. However, 74 percent of physicians thought that disclosing a serious error would be very difficult. Overall, 58 percent of physicians had disclosed a serious error to a patient, and 85 percent were satisfied with the disclosure. Also, 66 percent agreed that disclosing a serious error reduced malpractice risk. Physicians were more likely to support disclosing serious errors if they thought that disclosure made patients less likely to sue, they were not in private practice, they were a surgeon, or they were Canadian. ■

## Adding lab data and refining secondary diagnosis information improves the ability to measure hospital quality of care

Use of new billing codes and readily available numerical laboratory data has been shown to dramatically increase the accuracy of comparisons of the quality of care provided by hospitals, according to a new study sponsored by the Agency for Healthcare Research and Quality (AHRQ, contract 233-02-0088). AHRQ researcher, Anne Elixhauser, Ph.D., and colleagues found that adding the new information to current claims data improved by 24 percent the accuracy of a common measure of hospital quality: risk-adjusted inpatient mortality. The researchers used data for patients admitted to 188 Pennsylvania hospitals between July 2000 and June 2003 for heart attack, congestive heart failure, stroke, gastrointestinal hemorrhage, pneumonia, abdominal aortic aneurysm repair, coronary artery bypass surgery, and craniotomy.

Accurate measurement of clinical performance is critical to ensure the integrity of public reporting, pay-for-performance programs, and the effectiveness of quality improvement initiatives. Clinical quality in hospitals is currently measured using administrative claims data such as a patient's age, sex, principal diagnosis, secondary diagnoses, and procedures

performed during hospitalization. Health care researchers have been concerned that these data are insufficient to measure hospital quality. By supplementing claims data with numerical results of 20 common laboratory tests performed on admission and limiting secondary diagnoses to those that were present at admission, the study's authors achieved levels of accuracy only 5 percent lower than were achieved using complete, often difficult to obtain clinical data. Methods used in this research study can be readily applied locally, regionally, and nationally.

In 2007, standards for claims data will enable users to distinguish between secondary diagnoses present at admission and secondary diagnoses acquired during hospitalization (complications of care). Most hospitals can already retrieve numerical laboratory data electronically.

For more details, see "Enhancement of Claims Data to Improve Risk-Adjustment of Hospital Mortality," by Michael Pine, M.D., M.B.A., Harmon S. Jordan, Sc.D., Dr. Elixhauser, and others, in the January 3, 2007 *Journal of the American Medical Association*, 291(1), pp. 71-76. Reprints (AHRQ Publication No. 07-R028) are available from AHRQ.\* ■



## Pediatric hospitalists are more likely than community pediatricians to use evidence-based care for hospitalized children

**P**ediatric hospitalists, who specialize in caring for hospitalized children, are more likely than community pediatricians to follow recommended care guidelines, according to a new study. They are also less likely to use therapies and tests with unproven benefits. Researchers found that hospitalists and community pediatricians made significantly different management decisions for 75 percent of the 48 tests and therapies evaluated. These care differences persisted even after controlling for physician sociodemographics, years out of residency, training, and hospital practice type.

The researchers conducted a national survey of hospitalists and

a random sample of community pediatricians asking about their use of 48 diagnostic tests and therapies for several common pediatric illnesses. A total of 213 hospitalists and 352 community pediatricians responded. Hospitalists were nearly 4 times more likely to report often or almost always using the following evidence-based therapies for asthma: albuterol and ipratropium in the first 24 hours of hospitalization. For an infant's first urinary tract infection, hospitalists were 3 to 4 times more likely to obtain the recommended renal ultrasound and voiding cystourethrogram.

Hospitalists were significantly more likely than community pediatricians to report rarely or

never using the following therapies of unproven benefit: levalbuterol, inhaled steroid therapy, and oral steroid therapy for bronchiolitis; stool culture and rotavirus testing for routine gastroenteritis; and use of ipratropium after 24 hours for hospitalization for asthma. The study was supported in part by the Agency for Healthcare Research and Quality (HS13333).

See "Variations in management of common inpatient pediatric illnesses: Hospitalists and community pediatricians," by Patrick H. Conway, M.D., Sarah Edwards, B.A., Erin R. Stucky, M.D., and others, in the August 2006 *Pediatrics* 118(2), pp. 441-448. ■

## Mandating more time in school PE classes may not increase exercise or weight loss among American children

**A**merican children are gaining weight at an alarming rate, with the percentage of overweight adolescents more than tripling since the late 1960s. At the same time, school physical education (PE) requirements have been shrinking. From 1991 to 2003, the percentage of U.S. high school students enrolled in daily PE classes dropped from 42 percent to 28 percent. In 2005, legislatures in 44 States introduced bills to increase or reform school PE; however, a new study suggests that mandating more time in gym classes may not result in more exercise or weight loss among American children. Agency for Healthcare Research and Quality researcher Chad Meyerhoefer, Ph.D., and colleagues analyzed data from a 2001 report of the National Association for Sport and Physical Education and a survey of youth risk behavior by the Centers for Disease Control and Prevention.

They compared the self-reported PE activity times, overall time engaged in vigorous exercise, lighter exercise, and strength-building activities, and body

mass index (BMI) of high school students in States with different PE requirements. When States raised their PE requirements, girls, but not boys, increased the number of days they exercised vigorously for at least 20 minutes. This positive effect for girls was tempered by a decrease in the number of days girls engaged in 30 minutes or more of light physical activity, especially girls not otherwise active in team sports.

These results, combined with the lack of a clear effect of PE on BMI or the probability of being overweight, cast doubt on the effectiveness of education reforms that merely target time spent suited up for gym class, note the researchers. They point out, however, that studying the relationships between PE, physical activity, and weight is complex and requires rigorous statistical analysis. Students can be thin, active, and engaged in a physical education, but figuring out which of these came first is difficult. Also, students can be "couch potatoes," overweight,

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## School PE classes

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and less likely to actively participate in gym class as a result. Furthermore, schools in wealthier areas may offer more and higher quality PE, but have student populations that are already thinner and healthier, which could lead to a correlation between PE and healthy

weight due to socioeconomic circumstances rather than program effectiveness.

See “Not your father’s PE: Obesity, exercise, and the role of schools,” by John Cawley, Ph.D., Dr. Meyerhoefer, and David Newhouse, Ph.D., in the Fall 2006 *Education Next*, pp. 60-66. Reprints (AHRQ Publication No. 07-R020) are available from AHRQ.\* ■

## Antidepressants may increase children’s and adolescents’ risk of suicide attempts after hospitalization for depression

Children and adolescents who have been hospitalized for depression are 52 percent more likely to attempt suicide if they take antidepressants after hospitalization for depression than if they do not take antidepressants, according to a new study. This finding supports careful clinical monitoring during antidepressant drug treatment of severely depressed young people. The results also tend to agree with the black box warning on antidepressants required by the U.S. Food and Drug Administration (FDA) that states these drugs may increase suicidal ideation and behavior in children and adolescents. The study authors nevertheless note that this risk must be balanced against evidence that depression itself is a key risk factor for suicide and that antidepressants are effective for adult and

adolescent depression. Fluoxetine, the only antidepressant drug approved by the FDA for the treatment of pediatric depression, was not associated with suicide attempts or deaths in any analyses.

The researchers analyzed suicide attempts and suicide deaths among Medicaid-insured children, adolescents, and adults from 50 States who received antidepressant drug treatment following a hospitalization for severe depression over a 2-year period. When compared with similar patients who did not receive antidepressants after hospitalization, antidepressant drug treatment was not significantly associated with suicide attempts or suicide deaths among adults. However, it was linked to more suicide attempts and suicide deaths among children and adolescents ages 6 to 18 years. Certain

antidepressants appeared to elevate the risk more than others. For example, the serotonin/norepinephrine reuptake inhibitor venlafaxine was associated with 2.3 times the risk of suicide attempts compared with no antidepressant drug treatment. Older tricyclic antidepressants were also significantly associated with suicide attempts in young people. The study was supported in part by the Agency for Healthcare Research and Quality (HS16097).

More details are in “Antidepressant drug therapy and suicide in severely depressed children and adults,” by Mark Olfson, M.D., M.P.H., Steven C. Marcus, Ph.D., and David Shaffer, M.D., in the August 2006 *Archives of General Psychiatry* 63, pp. 865-872. ■

## State children’s health insurance and premium-subsidy programs do not always provide a bridge to private health insurance

When families’ incomes increase and they are no longer eligible for State Children’s Health Insurance Programs (SCHIPs) and premium-subsidy programs, many of them are still not able to afford private health insurance premiums without help. Over 85 percent of parents in a study of low-income Oregon families—whose children were disenrolled from the SCHIP Oregon Health Plan (OHP) or Oregon’s premium-subsidy program, the Family Health Insurance Assistance Program (FHIAP)—said they would have kept their children in these programs, if possible.

One solution to ensuring children’s health insurance coverage would be to raise the income eligibility ceiling for these programs, suggest the study authors. Since their survey was conducted, Oregon has implemented a modest increase in the income limit for both programs, from 170 to 185 percent of the Federal poverty level. In this study, half of children disenrolled from Oregon’s SCHIP failed to requalify, because their families made too much money to meet the income eligibility requirements. Many of the remaining

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## SCHIPs

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children did not reapply, because their parents thought they were no longer eligible. The reasons were similar for children leaving FHIAP.

These programs did not provide a bridge to nonsubsidized private health insurance for these children. Only one-third of OHP children and one-half of FHIAP children (whose parents were better educated and possibly had more access to job-related insurance) had

insurance coverage after leaving these programs. Care access for these children was driven largely by health insurance coverage. Insured children were more likely to have a usual source of care and to have seen a physician when they needed one. The study was supported by the Agency for Healthcare Research and Quality (HS10463).

See “What happens to children who lose public health insurance coverage?” by Janet B. Mitchell, Susan G. Haber, and Sonja Hoover, in the October 2006 *Medical Care Research and Review* 63(5), pp. 623-635. ■

## Management of emergency department information on children’s medication allergies needs improvement

Identifying a child’s allergies to certain medications is critical to their safety in the hospital emergency department (ED). However, there are significant gaps in the quality of information management of medication allergies in the pediatric ED, concludes a new study. Researchers found errors in medication allergy identification introduced at triage that persisted despite interactions with subsequent ED clinical personnel. Nursing triage in the typically noisy and hurried ED accurately identified children’s medication allergies with a 74 percent sensitivity of detecting true medication allergy and specificity of 93 percent for determining that no allergy existed.

More followup was clearly needed to completely capture children’s medication allergies. Yet

based on parental reports, in 10 to 25 percent of cases, no additional allergy history was solicited or reviewed by either the treating physician or nurse. These interrelated and error-prone steps can lead to patient harm, notes Stephen C. Porter, M.D., M.P.H., of Children’s Hospital Boston in a study supported in part by the Agency for Healthcare Research and Quality (HS11660). He and colleagues observed 256 parent-child dyads at one pediatric ED. They evaluated errors associated with ED information management of allergy data at five points: triage assessment, treating physician’s discussion with the parent, treating nurse’s discussion with the parent, use of an allergy bracelet, and documentation of allergy history on medication order sheets.

Overall, 28 of 48 patient cases (that parents thought were allergies or were “not sure”) were true allergies by guideline-based assessment. Of these 28 cases, only 16 children (57 percent) wore an allergy bracelet, and 2 bracelets had incorrect information. Also, five children with a true medication allergy had a medication order sheet on which the allergy history was documented as negative or was missing.

More details are in “Getting the data right: Information accuracy in pediatric emergency medicine,” by Dr. Porter, Shannon F. Manzi, Pharm.D., D. Volpe, and Anne M. Stack, M.D., in the August 2006 *Quality and Safety in Health Care* 15, pp. 296-301. ■

## Chronic Disease

### Depression worsens the health and quality of life of people with diabetes

Diabetes is the leading cause of cardiovascular disease, stroke, blindness, and lower limb amputations. People with diabetes are also twice as likely to suffer from depression than people without diabetes. A recent review of the literature points out the adverse health outcomes for people who

have both diabetes and depression, the challenges of treating these coexisting conditions in a fragmented healthcare system, and the need for integrated care to improve the quality of care for such patients. Leonard E. Egede, M.D., M.S., of the Medical University of

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## Depression

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South Carolina, cites the overwhelming evidence that people with diabetes who are also depressed have worse glycemic control, more diabetes complications, more lost productivity and disability, worse quality of life, and higher healthcare costs than people with diabetes who are not depressed.

People with diabetes and depression are less likely than their nondepressed counterparts to adhere to the multiple medications and self-care behaviors (such as proper diet and exercise and daily blood glucose monitoring) needed to control their diabetes. Those with major depression are also over twice as likely to die over a 3-year period.

Several studies suggest that collaborative treatment models for depression in people who have diabetes improve depression. However, this approach has little

to no effect on diabetes outcomes, unless some diabetes education or other diabetes care interventions are added. Similarly, depression is often overlooked by primary care doctors who treat people with diabetes because their symptoms, such as fatigue and weight change, are often similar to depression. The fragmentation of care between general health and mental health services is also a problem. Dr. Egede points out the need for integrated care to improve outcomes for both conditions in these medically complex patients. His study was supported by the Agency for Healthcare Research and Quality (HS11418).

More details are in “Disease-focused or integrated treatment: Diabetes and depression,” by Dr. Egede, in the July 2006 *Medical Clinics of North America* 90, pp. 627-646. ■

## Most quality improvement strategies produce only small to modest improvements in glycemic control among patients with diabetes

Diabetes is reaching epidemic proportions in the United States. Efforts to improve diabetes care to minimize serious diabetes-related complications result in many interventions; however, most quality improvement (QI) strategies examined in a recent study produced only small to modest improvements in glycemic (blood-sugar) control among patients with diabetes. Case management in which nurse or pharmacist case managers could make independent medication changes was associated with substantially larger improvements in glycemic control than any other strategy.

Researchers systematically reviewed studies to assess the impact of 11 QI strategies on the glycemic control of adults with type 2 diabetes. They measured

improved glycemic control based on the difference between baseline and post-QI intervention HbA1c (glycemic) values. Across 66 studies, QI interventions reduced HbA1c values by a mean of 0.42 percent over a median of 13 months of followup. QI strategies in trials with patients whose diabetes was poorly controlled (mean baseline HbA1c values of 8 percent or greater) reported significantly greater effects (0.54 vs. 0.20 percent).

Two of the 11 categories of QI strategies studied were associated with reduction in HbA1c values of at least 0.50 percent: team changes (0.67 percent) and case management (0.52 percent). QI programs involving team changes reduced HbA1c values by 0.33 percent more than those without team changes. Those involving case

management reduced values by 0.22 percent more than those without case management. QI strategies in which nurse or pharmacist case managers could make medication adjustments without awaiting physician authorization reduced HbA1c values by 0.80 percent versus only 0.32 percent for all other strategies.

See “Effects of quality improvement strategies for type 2 diabetes on glycemic control,” by Kaveh G. Shojania, M.D., Sumant R. Ranji, M.D., Kathryn M. McDonald, M.M., and others, in the July 26, 2006 *Journal of the American Medical Association* 296(4), pp. 427-440. ■

## New report finds little evidence to determine the usefulness of genetic tests in the treatment of depression

There is insufficient evidence to determine if current gene-based tests intended to personalize the dose of medications in a class of drugs called selective serotonin reuptake inhibitors (SSRIs) improve patient outcomes or aid in treatment decisions in the clinical setting, according to a new evidence report supported by a collaboration of the Agency for Healthcare Research and Quality (AHRQ) and the Centers for Disease Control and Prevention's (CDC's) National Office of Public Health Genomics.

This evidence report is the first step in the two-step process of the CDC's Evaluation of Genomic Applications in Practice and Prevention (EGAPP) pilot project to evaluate and make recommendations regarding the use of gene-based tests. Funding for the report was provided by the CDC.

The report found that tests evaluating differences in genes belonging to the Cytochrome P450, or CYP450, family that affect the rate at which a person metabolizes SSRIs are largely accurate. However, the researchers did not find any evidence that such tests led to improved patient outcomes or had an impact on treatment decisions for patients with depression. The researchers noted that other genetic factors and non-genetic factors such as diet and other medical conditions may have an impact on a patient's response to treatment.

Researchers performed a comprehensive review of the literature and found no well-designed studies that evaluated clinical outcomes of tests to detect differences in genes belonging to the CYP450 family. These genes produce enzymes that break down SSRIs and many other classes of drugs. Most studies included a small number of people, did not test for all variations of the enzymes, and were poorly designed, according to the researchers. The majority of studies also reported the rate of metabolism after just one dose or were done in patients without depression—factors that do not accurately represent the long-term use of these drugs in patients with depression.

Because patient response to SSRIs varies, there has been strong interest in using gene-based tests to predict whether the person will be a poor, intermediate, extensive, or ultra-rapid metabolizer. Theoretically, ultra-rapid metabolizers could require higher doses than those who metabolize the drug slowly. Poor metabolizers might respond to a lower

dose, which could also prevent side effects. The goal of testing is to personalize health care by selecting therapy based on a patient's genetic makeup.

The report found a relationship between genetic differences and the occurrence of adverse effects from SSRIs in depressed patients in only two of six studies. However, the researchers concluded that all six studies were poorly designed, which limits the ability to draw conclusions about how differences in CYP450 genes influence adverse effects of SSRIs.

Since their introduction in the late 1980s, SSRIs (such as citalopram, fluoxetine, paroxetine, and sertraline) have become the most commonly prescribed class of drugs for treatment of depression. However, the likelihood that a person will experience relief from all symptoms of depression after 1 year of treatment is approximately 40 percent, and side effects cause 12 percent to 15 percent of people who start treatment to stop taking the drug. Following the recent Food and Drug Administration approval of a test to predict differences in the CYP450 gene, clinicians and patients must decide whether using such tests to choose a type or dose of an SSRI might improve the patient's response to treatment.

In early 2007, the EGAPP working group, an independent, non-Federal panel that advises the CDC, will issue recommendations on the use of CYP450 tests in the treatment of depression based on the evidence report and other considerations, including alternative approaches for dosing and monitoring of drug therapy, patient access to testing, and cost. The working group will also assess current knowledge gaps and describe additional research needs identified by the report. Future evidence reports that are part of the AHRQ/CDC collaboration will evaluate the use of genomic tests for specific diseases or conditions, such as a rare type of inherited colorectal cancer.

The report was prepared by a team of researchers led by David Matchar, M.D. and Mugdha Thakur, M.D. of AHRQ's Duke University Evidence-based Practice Center in Durham, North Carolina. *Testing for CYP450 Polymorphisms in Adults With Non-Psychotic Depression Treated With SSRIs* can be found online at [www.ahrq.gov/clinic/tp/cyp450tp.htm](http://www.ahrq.gov/clinic/tp/cyp450tp.htm). Copies of the report (AHRQ Publication No. 07-E002) are also available from AHRQ.\* ■

### Women are more likely than men to suffer health problems and worse quality of life due to obesity

Nearly one-third of Americans are obese and nearly two-thirds of Americans are either overweight or obese. A national survey reveals that being overweight or obese profoundly affects the length and quality of life and increases the burden of disease. However, excess weight seems to harm women more than men, notes Erica Lubetkin, M.D., M.P.H., of City University of New York Medical School. Dr. Lubetkin and colleagues analyzed the 2000 Medical Expenditure Panel Survey of U.S. households and the 1990-1992 National Health Interview Survey, which they linked to National Death Index data through 1995. The study was supported by the Agency for Healthcare Research and Quality (HS13770).

Although 57 percent of men were overweight (body mass index or BMI of 25 to 30 kg/m<sup>2</sup>)

compared with 43 percent of women, 54 percent of women were obese (BMI of 30 or more) compared with 46 percent of men. Adults who were obese were more likely than normal weight (BMI of 23 to 25) people to report fair or poor health, diabetes, and hypertension. Health-related quality of life scores declined with increasing weight category, with a few notable exceptions.

In general, overweight men in the U.S. lost an additional 47,000 years of life due to disease annually, whereas overweight women lost 1 million additional years of life annually relative to normal weight people. Obese men lost an additional 1.21 million years of life annually, whereas obese women lost an additional 1.89 million years of life annually relative to normal weight people. Also, the decline in quality-adjusted life years (QALYs) due to

being overweight was nearly four times higher among women than among men (960,000 QALYs vs. 243,000 QALYs). Obese women had over twice the decline in QALYs than obese men (1.95 million QALYs vs. 912,000 QALYs). The burden of disease in total QALYs among overweight and obese women was 6.6 and 1.8 times higher, respectively, than overweight and obese men. Obese women younger than 45 years had lower excess mortality than younger obese men, but after age 45, mortality for obese women far surpassed that of men.

See "Gender and the burden of disease attributable to obesity," by Peter Muennig, M.D., M.P.H., Dr. Lubetkin, Haomiao Jia, Ph.D., and Peter Franks, M.D., in the September 2006 *American Journal of Public Health* 96(9), pp. 1662-1668. ■

## Clinical Decisionmaking

### Overprescribing of lipid-lowering agents is associated with several physician and practice characteristics

Overprescribing of statins and other lipid-lowering agents to patients with high levels of cholesterol is commonplace, and it has increased in recent years, according to a new study. Researchers surveyed 2,034 physicians in 1996-1997 (baseline) and again in 1998-1999. The survey asked physicians if they would recommend an oral lipid-lowering agent for 50-year-old men who had a total cholesterol of 240, low-density lipoprotein (LDL) of 150, and high-density lipoprotein (HDL) of 50 after 6 months on a low-cholesterol diet. The men had no other cardiac risk factors.

These are patients for whom the National Cholesterol Education Program (NCEP) guidelines do not recommend lipid-lowering agents. Nevertheless, 39 percent of physicians recommended lipid-lowering agents to these theoretical patients at baseline, which increased to 51 percent at followup. Doctors who were more likely to overprescribe these medications at baseline were half as likely to be board certified, and were nearly twice as likely to be in solo or two-physician practices or to be family physicians.

Physicians with large increases in overprescribing during the study period were more likely than those

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## Overprescribing

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with small increases to be international medical graduates and to spend more hours in patient care. Organizational incentives had little association with overprescribing. Publication of research studies about the benefits of stricter LDL control and direct-to-consumer advertising of statins may have led some physicians to prescribe beyond guideline recommendations. Efforts to raise awareness of

cardiovascular health and the importance of cholesterol screening could also have sparked more prescribing, suggest the researchers. Their study was supported in part by the Agency for Healthcare Research and Quality (HS13183).

More details are in “Overprescribing of lipid lowering agents,” by Maureen A. Smith, M.D., M.P.H., Ph.D., Elizabeth D. Cox, M.D., M.P.H., and Jessica M. Bartell, in the October 10, 2006 *Quality & Safety in Health Care* 15, pp. 251-257. ■

## National guidelines and clinical evidence only modestly influence prescribing of antihypertensive agents

According to a new study, physician prescribing of antihypertensive medications in the past 15 years has been only modestly influenced by clinical guidelines. Doctors tend to prescribe the newer, more expensive antihypertensive medications rather than older antihypertensive agents for patients with high blood pressure (hypertension). Yet the older agents, such as diuretics and beta blockers, are still recommended as first-line medications. The newer agents include angiotensin-converting enzyme (ACE) inhibitors, calcium channel blockers (CCBs), and angiotensin II receptor blockers (ARBs).

A range of clinical and market factors, such as drug promotion, market competition, medical coverage, and purchasing contracts may balance or even offset the effects of guidelines and clinical

evidence on physician prescribing, explains Randall S. Stafford, M.D., Ph.D., of Stanford University. He and colleagues call for strategies to align practice with the recommendations to use thiazide diuretics alone or in combination with other antihypertensive medications for treating most patients with elevated blood pressure. They analyzed data on antihypertensive prescribing from 1990 through 2004 from a survey of a national sample of U.S. office-based physicians.

Researchers found that diuretics ranked among the top three antihypertensive drug classes from 1990 through 2004. However, they were superseded by both ACE inhibitors and CCBs between 1993 and 1999, and subsequently by ACE inhibitors through 2004. Publication of study results in December 2002 which showed the clinical equivalence of thiazide diuretics to

CCBs and ACE inhibitors prompted an immediate increase in prescription of thiazide diuretics in the first half of 2003. Prescription of all diuretics significantly surpassed that of CCBs in 2003 as the second most prescribed antihypertensive drug class. Despite being another recommended class of first-line antihypertensive agents, beta-blockers were consistently the fourth most commonly prescribed antihypertensive until 2003, when they were exceeded by ARBs. The study was supported in part by the Agency for Healthcare Research and Quality (HS13405).

See “Long-term and short-term changes in antihypertensive prescribing by office-based physicians in the United States,” by Dr. Stafford, Veronica Monti, M.S., R.D., Curt D. Furberg, M.D., and Jun Ma, M.D., R.D., Ph.D., in the August 2006 *Hypertension* 48, pp. 213-218. ■

## A new classification scheme quantifies the risk of hemorrhage among atrial fibrillation patients taking anticoagulants

Warfarin and other anticoagulant medications can prevent stroke, heart attack, and venous thromboembolism (deep blood clot in the veins, usually the legs).

However, they often cause hemorrhaging, which makes physicians reluctant to prescribe anticoagulants for elderly patients with atrial fibrillation (AF, irregular heart beat) who are at increased risk

of stroke. A new clinical classification scheme can quantify the risk of hemorrhage and aid in the management of anticoagulant

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## Anticoagulant medications

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therapy for AF patients, concludes a new study. Brian F. Gage, M.D., M.Sc., of the Washington University School of Medicine, and colleagues combined bleeding risk factors from three existing classification schemes into a new scheme, HEMORR<sub>2</sub>HAGES.

They compared the accuracy of all 4 schemes in predicting hemorrhage among 3,791 Medicare beneficiaries with AF from 7 States, of whom 162 were hospitalized for hemorrhage. The researchers scored HEMORR<sub>2</sub>HAGES by adding 2 points for a prior bleed and 1 point for each of the other risk factors: hepatic or renal disease, ethanol

abuse, malignancy, older age (more than 75 years), reduced platelet count or function, uncontrolled hypertension, anemia, genetic factors, excessive fall risk, and stroke. With each additional point, the rate of bleeding per 100 patient-years of warfarin increased: 1.9 for 0 points, 2.5 for 1, 5.3 for 2, 8.4 for 3, 10.4 for 4, and 12.3 for 5 or more points.

HEMORR<sub>2</sub>HAGES better predicted hemorrhaging among AF patients prescribed warfarin than older bleed prediction schemes, but they all quantified the rate of hemorrhage in this group. High-risk patients identified by any of the schemes had a much greater hemorrhage rate (7.5-15.3 per 100 patient-years) than that of low-risk patients (1.1-2.9), validating the

ability of the schemes to risk-stratify elderly patients with AF. The researchers suggest that clinicians could use HEMORR<sub>2</sub>HAGES to help manage patients for whom more aggressive anticoagulant regimens can only be justified when they are unlikely to cause bleeding. The study was supported in part by the Agency for Healthcare Research and Quality (HS10133).

More details are in "Clinical classification schemes for predicting hemorrhage: Results from the national registry of atrial fibrillation (NRAF)," by Dr. Gage, Yan Yan, M.D., Ph.D., Paul E. Milligan, R.Ph., and others, in the March 2006 *American Heart Journal* 151, pp. 713-719. ■

## Acute Care/Hospitalization

### Identifying patients' medical conditions at hospital admission provides a more accurate picture of hospital performance

Many of the publicly available hospital quality report cards are based on administrative data. However, the diagnostic codes in administrative data are not date stamped to distinguish between conditions present at the time of hospital admission (CPAA) and complications that occur after hospital admission. Treating complications as pre-existing conditions gives poor-performing hospitals "credit" for their complications. This may cause some hospitals that are delivering low-quality care to be misclassified as average- or high-performing hospitals in hospital quality report cards, concludes a new study.

Laurent G. Glance, M.D., of the University of Rochester School of Medicine, and colleagues used data from the 1998-2000 California State Inpatient Database to analyze the impact of including CPAA modifiers (included in the database) in administrative data as a date stamp indicator. They examined the performance of 394 hospitals treating patients with 1 of 7 diagnoses: coronary artery bypass graft surgery (CABG), coronary angioplasty (PTCA), carotid endarterectomy (CEA), abdominal aortic aneurysm (AAA) repair, total hip replacement (THR), acute myocardial infarction (AMI, heart attack), and stroke. They compared the model

using the CPAA information (date stamp model) with another model that ignored the information present in the CPAA modifier (no date stamp model).

Forty percent of the CABG hospitals, 33 percent of the PTCA hospitals, 40 percent of the THR hospitals, and 33 percent of the AMI hospitals identified as low-performance hospitals by the date stamp models were not classified as low-performance hospitals by the no date stamp models. However, 50 percent of the CABG hospitals, 33 percent of the PTCA hospitals, 50 percent of the CEA hospitals, and 36 percent of the AMI hospitals identified as low-performance hospitals by the no date stamp models were not identified as such by the date stamp models. The inclusion of the CPAA modifier had a minor impact on hospital quality assessment for AAA repair, stroke, and CEA. The study was supported by the Agency for Healthcare Research and Quality (HS13617).

More details are in "Accuracy of hospital report cards based on administrative data," by Dr. Glance, Andrew W. Dick, Ph.D., Turner M. Osler, M.D., and Dana B. Mukamel, Ph.D., in the August 2006 *HSR: Health Services Research* 41(4), pp. 1413-1437. ■



### An enhanced pain assessment scale and feedback to hospital nurses can improve pain documentation and analgesic prescribing but not pain reduction

Use of a four-item pain assessment scale along with audit and feedback of patient pain scores to nurses can improve nursing assessment of pain to 85 percent and can significantly improve prescribing of appropriate analgesics. The study involved the staggered implementation of three interventions into two blocks of matched units in one large hospital from April 2002 to February 2003. It is the largest study to date in a U.S. hospital to examine ways to improve the assessment and management of pain among hospitalized patients. The researchers examined the impact of the interventions on pain assessment and severity and analgesic prescribing for 3,946 patients.

Interventions included nurse and physician education given by nurse educators; standardized pain assessment using a one-item or the

enhanced four-item pain scale (0 indicated no pain, 1 indicated mild, 2 indicated moderate, and 3 indicated severe); audit and feedback of pain scores to nursing staff; and a computerized decision support system (CDSS). Hospital units using enhanced pain scales had double the pain assessment rates of units using one-item pain scales (64 vs. 32 percent). Audit and feedback of pain results to nurses further increased pain assessment rates compared with units in which audit and feedback was not used (85 vs. 64 percent).

The addition of the CDSS was associated with significant increases in pain assessment only when compared with units without audit and feedback (79 vs. 64 percent). CDSS may not have contributed additional benefits when audit and feedback were used because it did not automatically prompt or require prescribers to use

it. The enhanced pain scale was associated with significant increases in prescribed analgesics for patients with moderate or severe pain compared with the one-item scale (83 vs. 66 percent). However, despite the improved prescribing of analgesics, none of the interventions led to reductions in patients' pain. This may have been due to failure to titrate the analgesics to pain relief or patients reporting severe pain may have declined additional analgesia. The study was supported in part by the Agency for Healthcare Research and Quality (HS10539).

See "Improving the management of pain in hospitalized adults," by R. Sean Morrison, M.D., Diane E. Meier, M.D., Daniel Fischberg, M.D., Ph.D., and others, in the May 8, 2006 *Archives of Internal Medicine* 166, pp. 1033-1039. ■

## Health Care Costs and Financing

### Increased use of prescription medicines is changing health care spending patterns

The 1 percent of Americans who spend the most on medical care experienced a 4 percent drop in their share of the nation's overall health care spending from 1996 to 2003 from 28 percent to 24 percent, according to a new study by researchers for the Agency for Healthcare Research and Quality (AHRQ).

In general, the concentration of health care spending in the United States has shifted partly because of rapid growth in prescription drug spending and slower growth in spending for hospital inpatient care. Between 1996 and 2003, inflation-adjusted

spending on prescription medicines increased by 125 percent, while spending for inpatient hospital care grew by only 11 percent. As a result, spending for prescription medicine accounted for 20 percent of overall medical care expenditures in 2003, up from 12 percent in 1996. During the same period, the share of spending for inpatient hospital care dropped from 39 percent to 34 percent.

The patients in the top spending brackets tended to have chronic illnesses, such as heart disease and cancer, which often require costly hospital inpatient

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## Prescription medicine usage

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care. The declines were apparent for people of all ages and for people younger than age 65 with both public and private insurance. Previous studies showed that their share of medical spending remained relatively stable for the three decades prior to 1996.

According to researchers, Samuel H. Zuvekas, Ph.D., and Joel Cohen, Ph.D., encouraging patients to be sensitive to drug prices, such as through health plan tiered formularies or high deductibles, may increase

the potential for cost savings, and Medicare's Part D drug benefit will probably increase prescription drug spending. However, the impact of Part D on the concentration of health care spending is not clear at this point.

For details, see "Prescription Drug Spending and the Changing Concentration of Health Care Expenditures," by Drs. Zuvekas and Cohen in the January-February 2007 *Health Affairs*, 26(1), pp. 249-257. Reprints (AHRQ Publication No. 07-R031) are available from AHRQ.\* ■

## Medicare payment reforms sparked changes in use of home health care services among the elderly

Medicare's home health (HH) care reimbursement policy changed dramatically during the late 1990s. HH agencies responded swiftly to reduced reimbursements with reductions in services, according to a study supported by the Agency for Healthcare Research and Quality (HS13168).

Under the Interim Payment System (IPS), implemented in October 1997, Medicare significantly reduced reimbursements to HH care agencies both per visit and per beneficiary. In turn, agencies reduced both the selection of HH care services they offered and sharply reduced the number of visits provided to HH users. Under the IPS, the probability of any HH use and number of visits per episode of HH care fell until the IPS was refined in October 1998. With the transition to the Prospective Payment System (PPS) in October 2000, which slightly relaxed reimbursements (mean payment per user improved for orthopedic patients), agencies further reduced the number of HH visits provided from the already depressed levels seen under the IPS. Use of HH visits fell commensurately.

It is difficult to tell if these changes reflected a reduction in inefficient services, as Medicare intended,

or a reduction in services needed by patients, note the researchers. They examined use of HH services by Medicare recipients undergoing either elective joint replacement or surgery for hip fracture between January 1996 and December 2001. Changes in month-to-month utilization of HH services were sharp and well correlated with policy implementation dates.

Although there was a reduction in the proportion of patients selected for HH care for the conditions studied, there was no evidence of differential access to HH care. However, there were larger reductions in HH visits at for-profit HH agencies and for the elderly, women, patients receiving State assistance, and patients first discharged to skilled nursing facilities and inpatient rehabilitation facilities.

See "Impact of changes in Medicare home health care reimbursement on month-to-month home health utilization between 1996 and 2001 for a national sample of patients undergoing orthopedic procedures," by John D. FitzGerald, M.D., Ph.D., Carol M. Mangione, M.D., M.S.P.H., John Boscardin, Ph.D., and others, in the September 2006 *Medical Care* 44(9), pp. 870-878. ■

## Clinical and social factors predict application for Social Security disability benefits by workers with back injuries

The Workers' Compensation (WC) system is intended to provide injured workers with health care access, appropriate medical treatment, and compensation for residual disability so that they can eventually return to

work. Another goal is to prevent long-term disability, as reflected by application for Social Security Disability Insurance (SSDI) benefits, which is often a marker for a permanent exit from the labor force. Yet the majority of injured

workers are dissatisfied with their employers and the medical care they receive under WC, according to a new study. Moreover, these dissatisfied workers are far more likely to apply for SSDI than those

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## Social Security disability benefits

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who are satisfied with how they are treated.

Improving satisfaction with medical treatment rendered through the WC system is likely to reduce long-term disability claims, concludes Raymond C. Tait, Ph.D., of the St. Louis University School of Medicine. Dr. Tait and colleagues examined SSDI claims among 1,372 black and white WC claimants who settled low back injury claims in areas of Missouri in 2001 or 2002. The claimants were about 42 months post-injury.

Nearly one in five claimants (19.3 percent) were either receiving SSDI or had applied for it. Black race, older age, herniated disc diagnosis, surgery, and longer time since injury (more than 49 months vs. less than 33 months) were associated with increased likelihood of SSDI.

Higher preinjury wage or compensation rate (more than \$344 vs. less than \$248 per week), more education, and higher satisfaction with medical treatment and/or treatment by employer were associated with decreased odds of SSDI. Finally, those who retained an attorney due to dissatisfaction with medical treatment related to

the injury were nearly twice as likely to apply for SSDI. Herniated disc diagnosis and surgery were expected predictors of SSDI, since they tend to be proxies for severity of injury. The study was supported by the Agency for Healthcare Research and Quality (HS13087).

More details are in "Clinical and social predictors of application for social security disability insurance by workers' compensation claimants with low back pain," by John T. Chibnall, Ph.D., Dr. Tait, Elena M. Andresen, Ph.D., and Nortin M. Hadler, M.D., in the July 2006 *Journal of Occupational and Environmental Medicine* 48(7), pp. 733-740. ■

## Access to Care

### People with significant health needs or barriers to care access are more likely to use the Internet for health information

**A** growing number of consumers are turning to the Internet to obtain information about health and health care. According to a study supported by the Agency for Healthcare Research and Quality (HS11668), individuals with chronic health conditions are more likely to use the Internet to search for health information and to communicate with others about health and health care. The uninsured, especially those with chronic conditions, are also more likely than their privately insured counterparts to use the Internet to search for information. Finally, individuals with longer travel times to their usual source of care are more likely to use the Internet for health-related communication with their provider, family, friends, and other patients than those with shorter travel times.

Thus, the cost associated with the time needed to visit providers in traditional settings affects demand for health information on the Internet, primarily in the form of communication with others. The costs of accessing information from providers include out-of-pocket payments for consultations as well as the time

spent seeking care. The costs of accessing information on the Internet include the costs of Internet access, the time spent searching for information, and the risks of obtaining faulty information.

If the costs of obtaining information from the Internet continue to decline and the costs of accessing providers remain constant, the resulting cost differentials will drive increasing Internet use. For providers, this suggests that Internet-based resources are likely to become an increasingly important tool to reach patients, particularly those for whom the expected benefits are high. These include patients with significant health care needs and those in remote areas, note the researchers. Their findings were based on a survey of 12,878 persons from a random sample of Internet-enabled households.

See "Who searches the Internet for health information?" by M. Kate Bundorf, Ph.D., M.B.A., M.P.H., Todd H. Wagner, Ph.D., Sara Jean Singer, M.B.A., and Laurence C. Baker, Ph.D. in the June 2006 *HSR: Health Services Research* 41(3), pp. 819-836. ■

## Obesity surgeries have jumped dramatically since 1998

Obesity surgeries for patients between the ages of 55 and 64 in the United States soared from 772 procedures in 1998 to 15,086 surgeries in 2004—a nearly 2,000 percent increase, according to a new report by the Agency for Healthcare Research and Quality (AHRQ). The report, the latest of several studies that AHRQ has done on obesity surgery, also found a 726 percent increase in surgeries among patients age 18 to 54. There were a total of 121,055 surgeries performed on patients of all ages in 2004.

Among the reasons for the dramatic increases is that the mortality outcomes from obesity surgery have improved greatly. The national death rate for patients hospitalized for bariatric surgery declined 78 percent, from 0.9 percent in 1998 to 0.2 percent in 2004.

Bariatric surgery has been proven beneficial in obese persons who have tried and failed to lose excess weight by diet, exercise, and other means. The various bariatric surgical procedures include gastric bypass operations, vertical-banded gastroplasty, and gastric banding or “lapband.” Doctors may recommend

bariatric surgery for patients who have a Body Mass Index (BMI) of 40 or greater (an example would be a person who is 5 feet 2 inches tall and weighs 276 pounds) or a BMI of 35 or more for patients who have serious, obesity-related medical conditions such as type 2 diabetes or severe sleep apnea.

The report also found that:

- Patients ages 18 to 54 still account for the highest number of surgeries: 103,097 bariatric surgeries, or 85 percent of the total.
- Adolescents ages 12 to 17 accounted for 349 bariatric procedures in 2004.
- Women have bariatric surgery more often than men. They accounted for more than 99,000 operations, or 82 percent of the total.
- The in-hospital death rate for men in 2004 was only 0.4 percent, but it was 2.8 times higher than that of women. In 1998, the in-hospital death rate for men was six times higher than that of women.

- Gastric bypass surgery – which reduces the size of the stomach and bypasses a section of the intestines to decrease food absorption – accounted for 94 percent of bariatric procedures.
- The average hospital cost for a bariatric surgery patient stay, excluding physician fees, was \$10,395 in 2004 as compared with \$10,970 in 1998, adjusted for inflation.
- The vast majority (78 percent) of bariatric surgery patients were privately insured. Only 5 percent of patients were uninsured, but their numbers increased by 810 percent over the period.
- The overall hospital costs for bariatric surgery patients increased more than eight-fold — from \$147 million in 1998 to \$1.3 billion in 2004. However, the average cost per patient decreased by 5 percent.

For details, see *Bariatric Surgery Utilization and Outcomes in 1998 and 2004*, HCUP Statistical Brief #22 at <http://www.hcup-us.ahrq.gov/reports/statbriefs/sb23.pdf>. ■

## City vs. city: When it comes to health insurance costs, geography matters

A new Federal database allows companies, consumers, health care analysts, and others to compare health insurance costs among the nation’s largest cities and other geographical areas for the first time. This new metropolitan area data table, developed by the Agency for Healthcare Research and Quality (AHRQ), provides comparable statistics on average annual costs for companies and workers contributing to private-sector health insurance. The estimates, which are from AHRQ’s Medical Expenditure Panel Survey for 2004, show large geographical variations in how much Americans pay for family coverage and individual

coverage as well as how much employers contribute to workers’ health insurance premiums. The new data for the 20 largest metro areas indicates that:

- For family health insurance plans, Seattle workers contributed the most (an average \$3,299 per year) and New York City-area workers contributed the least (\$1,851).
- Average premiums for family coverage were highest in New York (\$11,244) and lowest (\$8,521) in the Riverside, California metro area, which includes San Bernardino and Ontario.

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## Health insurance costs

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- For individual coverage, Boston workers paid the most (\$867). Workers in Riverside paid the least (\$449).
- Premiums for single coverage were highest in San Francisco (\$4,185) and lowest in Riverside, (\$3,012).

The database includes statistical averages from the following cities and surrounding areas: New York; Los Angeles; Chicago; Philadelphia; Dallas-Fort Worth; Miami; Houston; Washington, DC; Atlanta; Detroit;

Boston; San Francisco; Riverside, CA; Phoenix; Seattle; Minneapolis; San Diego; St. Louis; Baltimore; and Tampa.

The database also provides comparisons within States. For example, in the northern and central counties of New Jersey and part of the New Jersey shore, workers contributed an average of \$1,676 for family coverage. In areas of New Jersey farther from New York City, such as Atlantic City and Camden, workers contributed an average of \$3,079—84 percent more.

This newest addition to AHRQ's extensive data on employer-based health insurance can be accessed at [www.meps.ahrq.gov](http://www.meps.ahrq.gov). ■

## Asthma sufferers favor quick relief

People who have asthma are much more likely to rely on drugs that offer quick relief for symptoms such as shortness of breath, wheezing, or coughing, than medications for long-term control, according to a new report by the Agency for Healthcare Research and Quality.

Approximately 31 percent of sufferers say that they use quick-relief medications to control symptoms of asthma, compared with about 14 percent who rely on longer-term preventive medicines for control. Another 31 percent use both

types of medications and 24 percent use none.

The Federal study further found that among people whose asthma was active when surveyed:

- More than one-fourth reported having a peak flow meter at home for measuring their ability to expel air from their lungs.
- Nearly half (48 percent) of adults said they had at least one asthma attack within the previous 12 months.

- Women were more likely to have asthma attacks than men – 50 percent versus 40 percent.

The data in this report come from the Agency's Medical Expenditure Panel Survey, a highly detailed source of information on the health services that Americans use, how frequently they use them, the cost of these services, and how they are paid. For more information, see *Asthma Treatment and Management among the U.S. Civilian Noninstitutionalized Population, 2004*, MEPS Statistical Brief #152 at <http://meps.ahrq.gov/mepsweb/>. ■

## Announcements

### AHRQ awards grants for health services research dissertation

The Agency for Healthcare Research and Quality (AHRQ) supports dissertation research undertaken as part of an academic program to earn a research doctoral degree. Through this program, AHRQ seeks to expand the number of researchers who address its mission "to improve the quality, safety, efficiency, and effectiveness of health care for all Americans." Recently, AHRQ awarded two dissertation grants to:

Cleo Richard  
R36 HS16826-01  
Living with Arterio-venous Fistula for Hemodialysis  
University of Texas Health Sciences Center, Houston  
Advisor: Joan Engebretson, Dr. PH., R.N.

Jean Yoon  
R36HS016815-01  
Adherence to Prescription Drugs and Adverse Health Events for the Chronically Ill  
University of California, Los Angeles  
Advisor: Susan Ettner, Ph.D. ■

**Ahn, A.C., Ngo-Metzger, Q., Legedza, A.T., and others. (2006, February). "Complementary and alternative medical therapy use among Chinese and Vietnamese Americans: Prevalence, associated factors, and effect of patient-clinician communication." (AHRQ grant HS10316). *American Journal of Public Health* 96(2), pp. 647-653.**

In the first national survey of complementary and alternative medicine (CAM) use among Chinese and Vietnamese Americans, researchers surveyed 3,258 patients who visited 11 community health centers in 8 major cities throughout the United States. Nearly 90 percent of those surveyed spoke little or no English. Two-thirds of the survey respondents reported that they had used some form of CAM therapy at some time. Overall, 55 to 72 percent had used CAM therapy in the past, and 10 to 18 percent had used CAM therapy in the week before their most recent health center visit. Vietnamese Americans and Cantonese-speaking Chinese Americans tended to use CAM therapies more often than Mandarin-speaking Chinese Americans. Chinese Americans most commonly used herbal medicine and acupuncture. The Vietnamese group most often used coining (rubbing a coin and menthol oil on a patient's spine and ribs), massage, and cupping (use of cups to apply suction to the skin by means of heat).

**Alexander, J.A., Weiner, B.J., Baker, L.C., and others. (2006, June). "Care management implementation and patient safety." (AHRQ grant HS11317). *Journal of Patient Safety* 2(2), pp. 83-96.**

Care management (CM) is a team effort using resources such as case managers and health educators across the continuum of care, and tools for managing patient care, such as general practice guidelines and prescribed patterns of care (critical pathways). Researchers surveyed 1,784 community hospitals about their quality improvement practices in 1997, and analyzed Medicare inpatient data, hospital survey data, and data on market variables. They assessed the relationship between CM implementation intensity and four hospital-level patient safety indicators: postoperative complications, technical adverse events, technical difficulty with procedures, and failure to rescue (from complications of care, such as blood infection).

Greater implementation of CM appeared to improve patient safety. For example, more extensive use of statistical and process management tools was positively associated with three of the four patient safety indicators: postoperative complications, technical difficulty with procedures, and failure to rescue. Hospital intensity of CM led to better patient safety results as the financial position of the hospital improved (presumably with enough resources to devote to CM efforts) and in markets with high managed care penetration.

**Beal, A.C., Chou, S-C., Palmer, R.H., and others. (2006, May 2006). "The changing face of race: Risk factors for neonatal hyperbilirubinemia." (AHRQ grant HS09782). *Pediatrics* 117(5), pp. 1618-1625.**

Black newborns are at the lowest risk for neonatal jaundice (hyperbilirubinemia). However, mothers often mark the baby's race

on the medical record as black when the baby is multiracial. If the baby's second race is American Indian or Asian, who have the highest risk for neonatal jaundice, it may lead the doctor to underestimate that baby's risk of developing jaundice. Researchers studied the racial classification of 3,012 babies born at least at 35 weeks gestation who were discharged from a hospital nursery between January 2001 and October 2002. They examined the classification of the infant's race entered into the medical record and surveyed the mothers by phone 6 months after birth. They found that when given one choice in medical record forms, mothers of multiracial infants overselected black as their newborn's ancestry. Yet only 70 percent of mothers who had recorded their race as black said they were black during the phone survey. Mothers identified 93 newborns as having 2 or more races with the primary race matching both parents for 41 percent, father for 25 percent, mother for 23 percent, and neither parent for 11 percent. Of 70 newborns whose parents were not the same race, mothers identified 64 percent as having 2 or more races.

**Bergman, D.A., Mayer, M.L., Pantell, R.H., and others. (2006, March). "Does clinical presentation explain practice variability in the treatment of febrile infants?" (AHRQ grant HS06485). *Pediatrics* 117(3), pp. 787-795.**

This study revealed that pediatricians hospitalized only 61.3 percent of febrile infants under 28 days of age, and that they varied considerably in how they evaluated

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and treated febrile infants. The intensity of their clinical approach primarily depended on how sick the infant appeared. Infants who had appeared very ill and moderately ill had expected evaluation and treatment intensity scores 0.92 points and 0.69 points higher, respectively, than those whom pediatricians characterized as appearing minimally ill.

A summary score was developed by a research team that analyzed data from the Pediatric Research in Office Settings network on the treatment of 2,712 febrile infants. A model that included the infant's clinical presentation, demographic, provider, and practice characteristics, and regional variables explained nearly half (46.5 percent) of the variation in treatment of febrile infants. Infant clinical characteristics explained nearly 30 percent and practice site factors explained nearly 15 percent of the overall treatment variation. Provider and practitioner characteristics and geographic region explained little of the variation.

**Fung, V., Ortiz, E., Huang, J., and others. (2006, May). "Early experiences with e-health services (1999-2002): Promise, reality, and implications." (Contract 290-00-0015). *Medical Care* 44, pp. 491-496.**

This study details variations in the specific types of electronic healthcare (e-health) use, such as online drug refill requests or appointment scheduling, and the characteristics of the users. Researchers calculated the amount and frequency of e-health use over time and characteristics of 3.3 million members of a large, prepaid integrated delivery system. The number of members registered for

access to e-health jumped from 0.7 percent of all members in 1999 to 8.6 percent in 2002. During that period, 1.3 percent of members used the drug refill service and 1.7 percent used the appointment scheduling service, compared with 0.3 percent who used the medical advice service and 0.1 percent who used the medication advice service. Over the same period, transactional service users averaged 3.5 uses per user versus 1.6 uses per user among care-related service users. Those most likely to use e-health services of all types had a high level of clinical need and a regular primary care provider, and were 30 to 64 years old, female, white, and lived in a neighborhood that did not have a low socioeconomic status.

**Hand, M.M., Chesley, F.D., Ho, K.K., and Clancy, C. (2006, August). "The third national reports on healthcare quality and disparities in the United States: National data for targeting improvements." *Journal of Nursing Care Quality* 21(4), pp. 283-289.**

Nurses are needed to participate in initiatives that can close gaps in care quality and disparities. They can use the Agency for Healthcare Research and Quality's 2005 *National Healthcare Quality Report (NHQR)* and *National Healthcare Disparities Report (NHDR)* as resources to accomplish this, suggest Agency Director Carolyn M. Clancy, M.D., and AHRQ colleagues in a recent paper. Using national data from these reports, nurses can find health care quality and disparities information for their clinical setting or population of interest. They can also find trend data to drive quality improvement efforts for relevant clinical conditions and in diverse patient care settings such as hospitals or nursing homes. Facilities and networks, in turn, can compare

their performance with their State and the nation. Nurses can address disparities through community-based projects and use the NHDR findings as benchmarks against which to compare their progress. State health departments can do regional and national comparisons using the new State Snapshot Web tool, which was released in January 2006 and is based on the 2005 *NHQR* and *NHDR*. Reprints (AHRQ Publication No. 07-R002) are available from AHRQ.\*

**Kalus, R.M., Shojania, K.G., Amory, J.K., and Saint, S. (2006, October). "Lost in transcription." (AHRQ grant HS11540). *New England Journal of Medicine* 355(14), pp. 1487-1491.**

This report describes how a medication transcription error was the source of life-threatening acute bone marrow failure in a 55-year-old bedridden woman who had been transferred from an assisted living facility to a skilled nursing facility due to progressive disability. She suffered from multiple sclerosis, had a fever, urinary problems, and a history of urinary tract infections (UTIs). The woman initially was given an oral antibiotic to treat a presumed UTI. However, further blood test results revealed acute bone marrow failure and prompted transfer to a hospital. The clinical team suspected methotrexate toxicity and examined her clinical records. The physicians found that the woman had been mistakenly prescribed methotrexate on a daily rather than weekly basis for 3 years prior to this hospital admission. The woman's initial methotrexate dose was erroneously recorded, 3 years before, as 10 mg per day instead of per week. When the patient was transferred to the skilled nursing facility, her primary care doctor transcribed the incorrect dose of 10 mg per day

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directly from the electronic record. Thus, she continued to receive the incorrect daily dose at that facility. Once the mistake was identified at the hospital and the methotrexate was cleared from her system, her bone marrow normalized and many of her symptoms resolved.

**Kirby, J.B. and Kaneda, T. (2006, June).** “Access to health care: Does neighborhood residential instability matter?” *Journal of Health and Social Behavior* 47, pp. 142-155.

In order to obtain needed health care, individuals need information about the availability of health care resources in their communities. Moreover, much of this information is specific to a given area and therefore is most readily available through informal social contacts. Residential instability may disrupt the development and functioning of social networks that help people find and obtain health care. Researchers linked individual-level data from the 2000 Medical Expenditure Panel Survey (MEPS) of U.S. households to data on area supply of health care providers and to neighborhood-level characteristics of the MEPS sample from 2000 block-level census data. They used responses to the MEPS questionnaire to construct whether individuals had poor access to health care (did not have a usual source of care, their usual source of care was a hospital emergency room, or they reported unmet medical need). A 10-percent increase in the number of residents in a neighborhood who had lived in their current homes for 1 year or less was associated with a significant 23-percent increase in the likelihood of having poor access to health care. Consideration of neighborhood poverty prevalence and supply of doctors and hospital

beds per 1,000 residents reduced this to a 15 percent increased likelihood of poor care access. Reprints (AHRQ Publication No. 06-R072) are available from AHRQ.\*

**Lin, W-C., Kane, R.L., Mehr, D.R., and others. (2006, August).** “Changes in the use of postacute care during the initial Medicare payment reforms.” (AHRQ grant HS13422). *HSR: Health Services Research* 41(4), pp. 1338-1356.

This study used Medicare data to examine changes in postacute care use for six major illnesses or procedures during the 1996-2000 period of Medicare payment reforms. During the first Interim Payment System (IPS) reform, which reduced reimbursement to home health (HH) agencies, HH use decreased consistently across disease groups. This decrease was accompanied by increased use of skilled nursing facilities (SNFs). Following the implementation of the Prospective Payment System (PPS) for SNFs, the use of inpatient rehabilitation facilities (IRFs) increased.

When comparing 2000 with 1996, SNF use did not change significantly for rehabilitative conditions, but it increased 15 to 20 percent for medical conditions. In contrast, IRF use did not increase until the PPS was implemented in SNFs between 1998 and 2000, most noticeably for hip and knee procedures. The number of IRFs also increased by 4 percent between 1997 and 1999. The increase in IRF supply and use may be attributable to the cost-based reimbursement for IRFs during the study period.

**Owens, P.L., Kerker, B.D., Zigler, E., and Horwitz, S.M. (2006).** “Vision and oral health needs of individuals with intellectual disability.” *Mental Retardation*

*and Developmental Disabilities Research Reviews* 12(1), pp. 28-40.

People with Down Syndrome and other types of intellectual disability (ID) suffer from more vision problems and oral health problems than the general population. People with ID are less likely than those without ID to receive preventive and early treatment of these conditions. Researchers reviewed research studies on vision and oral health related to individuals with ID, as well as those specific to individuals with Down Syndrome, and estimated the prevalence of specific vision problems and oral health conditions among individuals with ID. The greater needs of individuals with ID for visual and oral health care may be related to etiology, health behaviors, or lack of access to appropriate treatment. Reprints (AHRQ Publication No. 06-R035) are available from AHRQ.\*

**Ozdas, A., Speroff, T., Waitman, L.R., and others. (2006, March/April).** “Integrating ‘best of care’ protocols into clinicians’ workflow via care provider order entry: Impact on quality-of-care indicators for acute myocardial infarction.” (AHRQ grant HS10384). *Journal of the American Medical Informatics Association* 13, pp. 188-196.

This study was conducted by investigators at the Vanderbilt University Center for Education and Research in Therapeutics. Researchers examined the use of an ACS (acute coronary syndrome) order set or protocol that included diagnosis/procedure-specific guidelines relevant to the care of patients with ACS or acute myocardial infarction (AMI), including the early use of aspirin and/or beta-blockers. American Heart Association guidelines recommend that doctors prescribe

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aspirin and/or beta-blockers within the first 24 hours of hospital admission for unless there are contradictions such as an aspirin allergy.

Use of a care provider order entry system by hospital physicians markedly improved drug prescribing for heart attack victims. Among suspected AMI admissions at one medical center, implementation of an Admission Advisor support tool significantly increased use of the ACS order set from 60 to 70 percent. The trend was similar, but not significant, for confirmed AMI cases. Use of the ACS order set tripled the increase in the number of patients who received aspirin within the first 24 hours of hospitalization, and

showed an increase in the trend toward significant ordering of beta-blockers.

**Washington, E.L., Shen, J.J., Kocher, J., and Moseley, C.B. (2006, Summer). "Care patterns for affective psychosis across diverse ethnicities: Exploring potential contributors to complications and emergency room use." (AHRQ grant HS13056). *Ethnicity & Disease* 16, pp. 712-717.**

The proportion of emergency room (ER) admissions for affective psychosis decreased from 1995 through 1999. However, they increased in proportion to all ER admissions in 2001. This jump in ER admissions for affective psychosis may have been related to the stress of high unemployment that year compared to previous

years and the September 11, 2001 tragedy, suggests a new study. Researchers linked hospital data on people diagnosed with affective psychosis from the National Inpatient Sample of the Healthcare Cost and Utilization Project with hospital survey data on ER use and county-based data on care provider to population ratios for the years 1995-2001. From 1995 to 1999, the proportion of patients diagnosed with affective psychosis who were admitted to the hospital through the ER remained stable or decreased slightly—42.5 percent in 1995, 41.7 percent in 1997, and 40.1 percent in 1999—but increased to 44.7 percent in 2001. Blacks were more likely than whites to be admitted to the hospital through the ER for the first 3 years studied, but there was no difference between them in 2001. ■

## 2006 Author and Subject Index

### Research Activities - 2006 Author Index

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