



Research Activities



U.S. Department of Health and Human Services • No. 328, December 2007

Agency for Healthcare Research and Quality

Highlights

Departments

- 3** Child/Adolescent Health
- 6** Patient Safety and Quality
- 8** Acute Care/Hospitalization
- 8** Health Information Technology
- 11** Elderly/Long Term Care
- 13** Chronic Disease
- 15** Primary Care Research
- 16** Outcomes/Effectiveness Research
- 17** Emergency Medicine
- 18** Mental/Emotional Health
- 22** Access to Care

Regular Features

- 19** Agency News and Notes
- 20** Announcements
- 21** Research Briefs

Common medications provide equal blood pressure control

Two common classes of blood pressure medications—angiotensin-converting enzyme inhibitors (ACEIs) and angiotensin receptor blockers (ARBs)—are equally effective at controlling high blood pressure, according to a report released by the Agency for Healthcare Research and Quality (AHRQ). The report, which analyzed published results from 61 studies, also found that ACEIs are slightly more likely than ARBs to cause a harmless but persistent dry cough. A summary of the report will be posted online in the *Annals of Internal Medicine*.

Authors of the report also said that more research is needed to learn how ACEIs and ARBs may differ when it comes to longer-term benefits and harms. In particular, more information is needed about how the medications may differ in decreasing the risks of heart attack, stroke, or death.

Blood pressure is the force of blood pushing against artery walls. Systolic pressure measures pressure during a heartbeat, while diastolic pressure

measures pressure between beats. The cause of high blood pressure (140/90 mmHg or higher) is often unknown. Because it typically has no symptoms, high blood pressure—also known as hypertension—is often called “the silent killer.”

More than 65 million American adults—about one-third of the adult population—have high blood pressure. If left untreated, high blood pressure can cause catastrophic health problems: the heart may enlarge, which can lead to heart failure; small bulges—aneurysms—may form in blood vessels, including the aorta (the main artery to the heart) and others in the brain, legs, and intestines; blood vessels in the kidney may narrow, causing kidney failure; blood vessels in the eyes may burst or bleed, possibly leading to blindness; and arteries throughout the body may “harden” faster, potentially leading to heart attack or stroke.

The AHRQ-funded study, completed by the Agency’s Duke

continued on page 2

Blood pressure control

continued from page 1

University Evidence-based Practice Center in Durham, N.C., compared both the benefits and harmful effects of ACEIs and ARBs. Both classes of drugs control blood pressure effectively by targeting a key hormone that helps regulate blood pressure. The AHRQ-funded study did not include other blood pressure treatments such as diuretics or beta blockers.

The ACEIs included in the AHRQ analysis were benazepril (sold as Lotensin), captopril (Capoten), enalapril (Vasotec), fosinopril (Monopril), lisinopril (Prinivil, Zestril), moexipril (Univasc), perindopril (Aceon), quinapril (Accupril), ramipril (Altace), and trandolapril (Mavik). The ARBs included were candesartan cilexetil (Atacand), eprosartan (Teveten), irbesartan (Avapro), losartan (Cozaar), olmesartan medoxomil (Benicar), telmisartan (Micardis), and valsartan (Diovan).

Among the report's conclusions:

- ACEIs and ARBs are equally effective at controlling blood pressure. This conclusion is based on studies that included 16,597 patients who were followed for periods from 12 weeks to 5 years.
- In studies of patients in everyday clinical settings, a dry cough was reported by about 1.7 percent of

patients who took ACEIs and about 0.6 percent who took ARBs. Patients who took ACEIs in clinical trials were slightly more likely than patients who took ARBs to withdraw from the studies.

- It is unknown whether ACEIs and ARBs differ when it comes to long-term benefits and risks. Among available studies, there are not enough cases of death or stroke to make conclusions. More research is needed.
- There are no consistently apparent differences between ACEIs and ARBs when it comes to impacting blood fats known as lipids, managing or slowing the progression of diabetes, controlling renal disease, or impacting heart function.
- More research is needed to compare the drugs' benefits and harms for hypertension patients who have additional health problems, such as diabetes, congestive heart failure, chronic kidney disease, and dyslipidemia (an imbalance in lipid/cholesterol metabolism). Future studies should include more patients who are older and from ethnic and racial minorities.

The new report, *Comparative Effectiveness of Angiotensin-Converting Enzyme Inhibitors (ACEIs) and Angiotensin II Receptor Antagonists (ARBs) for Treating Essential Hypertension*, is the newest analysis from AHRQ's Effective Health Care program. That program is an ongoing Federal effort to compare alternative treatments for significant health conditions and make the findings public. The program helps patients, doctors, nurses, and others choose the most effective treatments.

The full report is available at AHRQ's Effective Health Care Web site, <http://effectivehealthcare.ahrq.gov/index.cfm>. Also available at the site are links to guides that summarize the report in plain language. A guide for consumers offers basic information on treating high blood pressure, the drugs' effectiveness and possible side effects, and average wholesale pricing. A guide for clinicians contains similar information and a "confidence scale" that measures the strength of current scientific evidence, plus it identifies clinical areas where knowledge is lacking. Both guides warn that the medications can cause birth defects or fetal death when taken during pregnancy. ■

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

AHRQ
Office of Communications and Knowledge
Transfer
540 Gaither Road
Rockville, MD 20850
(301) 427-1360

Barbara L. Kass, MPH, CHES,
Managing Editor
Gail Makulowich, Contributing Editor
Joel Boches, Design and Production
Karen Migdail, Media Inquiries

Over 5 million eligible children remain uninsured, despite SCHIP enrollment gains

The State Children's Health Insurance Program (SCHIP) began in 1997 and expanded its enrollment criteria in 2001. SCHIP helped to significantly reduce the number of the Nation's uninsured children, yet 5.5 million eligible children remain uninsured. Julie L. Hudson, Ph.D., and Thomas M. Selden, Ph.D., of the Agency for Healthcare Research and Quality, analyzed 1996 to 2005 data from the national Medical Expenditure Panel Survey. They determined how expansions and cuts in SCHIP would affect the eligibility and coverage of the Nation's children.

They calculated that if eligibility thresholds for SCHIP were increased to include children whose families live within 300 percent of the poverty level (\$54,510 for a family of three), an additional 1.2 million uninsured children would become

entitled to coverage. Rolling eligibility back to cover just those children in families below 200 percent of the Federal poverty level (\$34,340 for a family of three) would cause 700,000 children to lose public coverage.

Despite improvements in coverage over the last decade, they report that 9.1 million (11.7 percent) children remain uninsured in 2004-2005 even though 5.5 million of the uninsured are eligible for public coverage (3.8 million for Medicaid and 1.2 million for SCHIP). Eligible but uninsured children are among the nation's disadvantaged with 36.1 percent living in families with incomes below poverty and another 41.4 percent in families with incomes between 100-200 percent of poverty. They are disproportionately minority and are more likely than average to live with only a single (or no) parent.

Regardless of whether SCHIP expands or contracts, the researchers highlight the importance of reaching out to those children who are currently eligible but not enrolled. They point to a growing literature suggesting that one way to improve take-up among children would be to make more extensive use of schools, school lunch programs, the food stamps program and, other public programs to help identify and, if necessary, automatically enroll children in Medicaid and SCHIP.

See "Children's eligibility and coverage: Recent trends and a look ahead," by Drs. Hudson and Selden in the August 16, 2007 *Health Affairs*, pp. w618-w629. Reprints (AHRQ Publication No. 07-R078) are available from AHRQ.* ■

Many underinsured U.S. children are not getting needed vaccines due to the current vaccine financing system

Newly recommended vaccines for children and adolescents have nearly doubled in the past 5 years. This boosted the cost to fully vaccinate a child in the public sector from \$155 in 1995 to \$1,170 in 2007. Childhood vaccines in the United States are financed by a patchwork of public and private sources. This vaccine financing system has resulted in many underinsured U.S. children unable to receive

publicly purchased vaccines in either private practices or public health clinics, according to a new study.

In the past, private doctors have referred underinsured children to public health clinics for vaccination. However, a growing number of States are no longer able to provide expensive vaccines to children at these clinics. Additional

continued on page 4

Also in this issue:

Teamwork breakdowns and medical errors, see page 6

Improving the hospital discharge process and preventing adverse events, see page 9

Reducing inappropriate drug prescribing in the elderly, see page 12

Food insecurity and increased rate of diabetes, see page 14

Depression among young adults, see page 18

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.

Childhood vaccines

continued from page 3

strategies are needed to ensure financial coverage for all vaccines, particularly new vaccines, among this vulnerable population. For example, insurers and employers could be required or given incentives to enhance immunization benefits, suggests Grace M. Lee, M.D., M.P.H., of Harvard Medical School.

Dr. Lee and colleagues conducted a national survey of State immunization program managers in 2006. Only 34 percent

of States had a health insurance mandate that required insurers to cover currently recommended vaccines for children and adolescents. Also, many States were not able to provide State-purchased vaccines for underinsured children in the private sector, public sector, or both. As a result, underinsured children were not eligible to receive meningitis and pneumonia vaccines in the private sector in 70 percent and 50 percent of States, respectively, or in the public sector in 40 percent and 17 percent of States, respectively.

Disparities among States were worse for the most expensive and newest vaccines, including pneumonia, meningitis, and hepatitis A. The study was supported in part by the Agency for Healthcare Research and Quality (HS13908).

See “Gaps in vaccine financing for underinsured children in the United States,” by Dr. Lee, Jeanne M. Santoli, M.D., Claire Hannan, M.P.H., and others, in the August 8, 2007 *Journal of the American Medical Association* 298(6), pp. 638-643. ■

Family-centered, high quality primary care is linked to fewer nonurgent emergency department visits by children

From 37 to 60 percent of children’s visits to the emergency department (ED) each year are for nonurgent conditions. This causes ED crowding as well as fragmented care for children. A new study underscores one way to reduce nonurgent ED visits – high-quality, family-centered primary care. In family-centered care, the clinician explains things so that patients understand them. The clinician also shows respect for the family, spends enough time, and listens carefully. In the study, parent-reported family-centered care was associated with 42 percent fewer nonurgent ED visits for publicly insured children and 49 percent fewer visits for children age 2 years and younger.

Greater realized access (child’s ability to receive necessary care and referrals), as reported by parents, was associated with 44 percent fewer nonurgent ED visits for children 3 to 11 years of age and 56 percent fewer visits for children 12 and older. It was also associated with 37 and 35 percent, respectively, fewer nonurgent ED visits for publicly and privately insured

children. There was no significant association between timeliness of care and nonurgent ED use.

These findings suggest that parent reports of primary care health care quality can complement other information on health care quality, concludes David C. Brousseau, M.D., M.S., of the Medical College of Wisconsin. He and coinvestigators analyzed data from the 2000-2001 and 2001-2002 Medical Expenditure Panel Survey. They examined parental reports on the quality of primary care with respect to family-centeredness, timeliness, and realized access. Of the 8,823 children included, 70 percent of parents rated family-centeredness, 88 percent rated realized access, and 56 percent rated timeliness as high quality. The study was supported in part by the Agency for Healthcare Research and Quality (HS15482).

See “Quality of primary care and subsequent pediatric emergency department utilization,” by Dr. Brousseau, Raymond G. Hoffmann, Ph.D., Ann B. Nattinger, M.D., M.P.H., and others, in the June 2007 *Pediatrics* 119(6), pp. 1131-1138. ■

Parents and children are mostly passive during pediatric visits

Most parents and children at pediatricians’ offices accept the doctors’ treatment recommendations without discussion, even though studies have shown that patient participation results in better outcomes. Elizabeth D. Cox, M.D., Ph.D., and colleagues at the

University of Wisconsin reviewed videotapes of 101 visits to 15 physicians for pediatric complaints, mostly upper respiratory symptoms.

Doctors on average spent 2.9 minutes offering 4.1 treatment plans during each visit. For most encounters (89 percent) the doctor

proposed treatments, and 65 percent of parents and children accepted the doctor’s recommendation with no discussion of their preferences. Parents proposed treatments in 9 percent of the encounters, and

continued on page 5

Pediatric visits

continued from page 4

children took part in discussions 2 percent of the time.

Parents and children were less inclined to stay silent during longer visits, which usually entailed more treatment plans and more discussion. Researchers also found that discussion of treatment options occurred most often when the

doctor and patient were female and the doctor had been practicing for several years.

These results show the need to develop ways to improve parent and child participation in health care decisions. Having the patient, parents, and doctors take part in making decisions is preferable to silence, especially when treatments pose some risk. The researchers suggest that more work needs to be

done in developing participation skills during childhood. This study was funded in part by the Agency for Healthcare Research and Quality (HS13183).

See "Evaluating deliberation in pediatric primary care," by Dr. Cox, Maureen A. Smith, M.D., Ph.D., M.P.H., and Roger L. Brown, Ph.D., in the September 24, 2007 *Pediatrics* 120, pp. e68-e77. ■

Treatments for pediatric Crohn's disease cases vary widely in North America

Clinicians vary in their care for children with Crohn's disease (CD) because of sparse standard clinical practice guidelines and the wealth of available treatments, a new study finds. These care variations can result in differences in health care costs, quality, and outcomes.

Michael D. Kappelman, M.D., of Harvard Medical School, led a team of researchers who reviewed treatments given to 311 children newly diagnosed with CD at 10 gastroenterology centers in the United States and Canada from January 2002 to August 2005. They looked at which drugs children were given to manage their CD, a chronic inflammatory bowel disease. CD is thought to be caused by the immune system attacking the lining of the gastrointestinal system. It can cause abdominal pain, diarrhea, gastrointestinal bleeding, and impaired growth, and sometimes may lead to life-threatening complications.

Physicians used several types of drugs to reduce children's symptoms. Immunomodulators, which adjust the body's immune response, were used in anywhere from 29 to 97 percent (with a median of 56

percent) of patients. These drugs offer the most benefit but also the most risk, which may explain the variation, researchers suggest. Also used were steroids (32 to 88 percent), antibiotics (11 to 69 percent), anti-inflammatories (18 to 92 percent), and an antibody that reduces inflammation called infliximab (3 to 21 percent). Treatment variation was less with infliximab, most likely because clinical trials have defined when it should be used.

These differing approaches suggest a need for more clinical trials to create a consensus on how to treat children with CD. Standard practice guidelines based on clinical evidence will improve the safety and quality of the care these chronically ill children receive. This study was funded in part by the Agency for Healthcare Research and Quality (T32 HS00063).

See "Intercenter variation in initial management of children with Crohn's disease," by Dr. Kappelman, Athos Bousvaros, M.D., Jeffrey Hyams, M.D., and others in the July 2007 *Inflammatory Bowel Disease* 13(7), pp. 890-895. ■

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

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

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

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

Patient Safety and Quality

Full disclosure of medical errors to patients is becoming more and more transparent

The medical profession is transforming how to communicate and discuss incidents of medical errors with patients. Within a decade, it is possible that full disclosure of errors to patients will be the norm rather than the exception, according to University of Washington researcher Thomas H. Gallagher, M.D., and colleagues in a recent commentary. Until recently, health care professionals have had little guidance on how or when to disclose medical errors.

Professional societies merely noted that disclosure was an ethical obligation. However, in 2001 the Joint Commission on Accreditation of Healthcare Organizations issued the first nationwide disclosure standard that requires that patients be informed about medical errors. By 2005, 69 percent of health care organizations had established disclosure policies, which ranged

from simple statements to detailed disclosure procedures.

In 2006, the National Quality Forum (NQF) endorsed a new safe-practice guideline on the disclosure of serious unanticipated outcomes to patients, which encourages hospitals to integrate their risk-management, patient-safety, and quality improvement programs. The guideline also calls for appropriate staff training in disclosure conversations as well as coaching health care workers just before a disclosure.

The 29 large health care purchasing coalitions in the Leapfrog Group use the NQF guideline as a standard in their pay-for-performance program, which publishes facility compliance on the Internet. Finally, there are the legal ramifications of admitting responsibility for medical error. A flurry of laws concerning disclosure have been proposed or

enacted at the State and Federal levels. There is considerable speculation and debate about the impact of disclosure on litigation. Although disclosure may quell some patients' interest in litigating, it will ignite interest in others. Eventually, most organizations will probably provide disclosure training for their health care workers and more intensive training for frontline clinicians, conclude the researchers. Their study was supported in part by the Agency for Healthcare Research and Quality (HS14012).

More details are in "Disclosing harmful medical errors to patients," by Dr. Gallagher, David Studdert, L.L.B., Sc.D., M.P.H., and Wendy Levinson, M.D., in the June 28, 2007 *New England Journal of Medicine* 356(26), pp. 2713-2719. ■

Many errors by medical residents are caused by teamwork breakdowns and lack of supervision

Physicians-in-training are highly vulnerable to making medical errors that stem from teamwork breakdowns, especially a lack of supervision by experienced staff, according to a new study. Teamwork breakdowns involving medical residents, fellows, and interns (first-year residents) also caused a significant number of errors to occur during patient handoffs.

Researchers at the Michael E. DeBakey Veterans Affairs Medical Center, the Baylor College of Medicine, the University of Texas Medical School at Houston, and the Harvard School of Public Health analyzed data from a random sample of 889 closed malpractice claims that had been reviewed by specialist physicians between 2002 and 2004. The reviewers had determined whether injuries had occurred, and, if so, whether they were due to errors

involving medical trainees. The study focused on four clinical categories: obstetrics, surgical, missed and delayed diagnoses, and medications. Collectively, these four categories cover approximately 80 percent of all U.S. medical malpractice claims.

Of the closed medical claims involving both error and injury, more than one-fourth (27 percent), or 240 cases, involved trainees whose role in the error was considered to be at least moderately important, the study found. Medical residents were involved in 87 percent of those cases; interns and fellows each were participants in 13 percent. Adverse outcomes were serious: one-third resulted in significant physical injury, one-fifth in major physical injury, and one-third

continued on page 7

Medical errors

continued from page 6

resulted in death. Nearly a third of the cases took place in the outpatient setting.

Researchers also examined the role of trainee errors attributable to cognitive factors, such as judgment and technical knowledge shortcomings, and to teamwork factors, including supervision and patient handoffs. Cognitive factors contributed to the majority of trainee errors, according to the study. Nearly three-fourths (72 percent) involved errors in judgment, more than half (58 percent) were caused by a lack of technical knowledge, and more than half (57 percent) were due to failure of vigilance or memory. Teamwork factors, notably lack of supervision and handoff problems, were also a significant issue, accounting for 70 percent of the cases involving trainee errors. A lack of supervision accounted for more than half (54 percent) of the trainee errors, and handoff problems accounted for nearly one-fifth (19 percent). Because multiple factors contributed to trainee errors, the percentages do not add up to 100 percent.

Attending physicians' failure to oversee the work of trainees was identified as a factor in 82 percent of the 129 cases where a lack of supervision contributed to a medical error, the study found. Supervision failures by both the senior resident and attending physician also played a contributing role.

Errors stemming from handoff problems were due to a variety of communication breakdowns, researchers found. In 34 percent of the cases where a handoff error occurred, an incomplete or inaccurate transfer of information took place between two trainees. However, handoffs problems occurred almost as frequently between trainees and attending physicians, with a transfer of information that resulted in an error taking place in 32 percent of cases. The study was funded in part by the Agency for Healthcare Research and Quality (HS11886).

See "Medical errors involving trainees: A study of closed malpractice claims from 5 insurers," by Hardeep Singh, M.D., M.P.H., Eric J. Thomas, M.D., M.P.H., Laura A. Petersen, M.D., M.P.H., and David M. Studdert, L.L.B., Sc.D., M.P.H., in the October 22, 2007 *Archives of Internal Medicine* 167(19), pp. 2030–2036. ■

Hospital CEOs need more research relevant to the challenges they face in the healthcare system

Hospital executives face myriad challenges in providing quality, cost-effective care; however, health services research has not been positioned to provide hospital leaders with evidence to guide their decisions. The challenges the executives face span topics such as managing staffing shortages and productivity; implementing evidence-based medicine and information technology systems; using quality measures and data systems; balancing costs and benefits of medical technology; developing effective leaders; maintaining an effective organizational culture; instituting team-based care; and the changing demographics of patients.

Researchers at the University of Michigan and the Agency for Healthcare Research and Quality (AHRQ) found not just gaps but an abyss between these topics and what has actually been addressed by researchers. The study consisted of interviews with eight hospital and three health system leaders to understand the realities confronting today's hospitals and the capacity of current research to help them meet these needs. Hospital executives interviewed pointed out, for example, that research has not provided evidence on safe staffing level and optimal skill mix. CEOs of rural hospitals have difficulty locating benchmarks appropriate to their type of facilities. Also, little is known about the impact of different information technology

systems on hospital operation and performance.

The authors of this study recommend reshaping research approaches to become more relevant to hospital CEOs with a new focus on those process-related factors that hospital and system executives consider crucial, such as effective communications, strong leadership, and building trust. They also point out that hospital and system executives are seeking evidence of factors that influence cost and quality simultaneously – rather than the studies related to a single outcome that research is producing now. If researchers want executives to consider health care study findings in their decision making, researchers will need to

continued on page 8

Hospital challenges

continued from page 7

include these executives' inputs and evidence priorities when shaping the research agenda.

See "Increasing the relevance of research to health care managers: Hospital CEO imperatives for improving quality and lowering costs," by Jeffrey A. Alexander, Ph.D., Larry R. Hearld, M.B.A., H. Joanna Jiang, Ph.D., and Irene

Fraser, Ph.D., in the April-June 2007 *Health Care Management Review* 32(2), pp. 150-159. Reprints (AHRQ Publication No. 07-R077) are available from AHRQ.* ■

Pilot study suggests that after-hours telephone medical consultations may pose risks to patient safety

After-hours telephone medical consultations, which account for 25 percent of patient encounters, may pose risks to patient safety. Errors are common and adverse events are possible, suggests a new pilot study. University of Kentucky investigators interviewed 64 patients who called into the after-hours answering service of 1 family medicine practice over a 10-week period. Second- or third-year residents on backup call were paged to answer the phone calls. Two registered nurses and a physician analyzed the patient narratives to identify threats to patient safety.

Overall, 14 after-hours calls (22 percent) involved a medical error (including the doctor not returning the call in 6 cases). Four instances (6 percent) resulted in temporary physical harm. Two separate after-hours calls (3 percent) involved four medical errors with potentially serious consequences to patient safety. These included a tenfold overdose of acetaminophen and a tenfold overdose of antihistamine for a 3-month-old child with viral symptoms but no fever, and an inappropriate prescription for an antihistamine. The fourth error was

taking an incomplete history in a complicated patient, who could have been sicker than realized.

Fourteen calls (22 percent) involved events that could have threatened patient safety. Thirteen percent of these cases were "saved" by the patients themselves, not medical practitioners. For example, they sought care elsewhere when the doctor did not call back, either via over-the-counter medication, pediatrician, or emergency room. On the other hand, almost half the errors were made by patients choosing not to seek care as directed.

Only 5 percent of charts of patients who called had telephone notes on them at the time of the chart review, making patient follow-up more difficult. After-hours medicine may be conducted when doctors are distracted or sleepy. It also doesn't provide the doctor with visual cues about the severity of patient illness, explain the researchers. Their study was supported by the Agency for Healthcare Research and Quality (HS11845).

See "Patient safety in after-hours telephone medicine," by Shersten Killip, M.D., M.P.H., Carol L. Ireson, R.N., Ph.D., Margaret M. Love, Ph.D., and others in the June 2007 *Family Medicine* 39(6), pp. 404-409. ■

Acute Care/Hospitalization

Women leaving the hospital against medical advice after delivering a baby should be targeted for more services

Based on a study of three States, one-tenth of 1 percent of women who have just delivered a baby leave the hospital against medical advice. This potentially jeopardizes their health and that of their newborn child. These women typically suffer from psychosocial or medical problems, and should be targeted

for additional maternal and/or child services, suggests a new study. Clinicians should provide emotional support, identify the reasons for early discharge, ensure continuity of post-hospital care, and/or refer them for mental health, social work, substance abuse, or visiting nurse services, suggests Kevin Fiscella, of the University of

Rochester School of Medicine and Dentistry.

Researchers used hospital discharge data for women following a live birth in California, Florida, and New York from 1998-2000 to examine risk factors associated with discharge against

continued on page 9

Hospital discharge data

continued from page 8

medical advice. Post-partum discharge against medical advice averaged 0.10 percent. Rates were lowest among women following uncomplicated cesarean and vaginal births (0.07 percent), followed by complicated vaginal birth (0.21 percent), and complicated cesarean birth (0.29 percent).

Women who were more likely to leave the hospital against medical

advice were black; had lower income, public health insurance, no health insurance, or greater medical problems (particularly drug abuse or psychotic illness); lived in medium or large metropolitan areas; and were discharged from a hospital in California or New York (compared with Florida). Pressing priorities in the lives of socially disadvantaged patients, such as child care or financial issues, may motivate them to leave earlier than recommended.

Also, uninsured patients may not be able to afford hospitalization. The study was supported by the Agency for Healthcare Research and Quality (HS10910).

See “Post partum discharge against medical advice: Who leaves and does it matter?” by Dr. Fiscella, Sean Meldrum, M.S., and Peter Franks, M.D., in the September 2007 *Maternal and Child Health Journal* 11, pp. 431-436. ■

Studies suggest ways to improve the hospital discharge process to reduce postdischarge adverse events and rehospitalizations

After patients are discharged from U.S. hospitals, 13 percent require rehospitalization and one in five patients suffers an adverse event. Many of these problems are due to inadequate postdischarge follow-up of patients' unresolved medical problems. More patients with unresolved problems would receive outpatient workups if their primary care doctors received the hospital doctors' discharge summary recommendations, concludes a study supported by the Agency for Healthcare Research and Quality (HS14020). A second AHRQ-supported study (HS14289 and HS15905) describes 11 factors that could be modified during the hospital discharge process to reduce posthospital adverse events and rehospitalizations. Both studies are briefly discussed here.

Moore, C., McGinn, T., and Halm, E. (2007, June). “Tying up loose ends: Discharging patients with unresolved medical issues.” *Archives of Internal Medicine* 167, pp. 1305-1311.

Patients are frequently discharged from the hospital with unresolved medical problems requiring outpatient workups. Yet

this study found that more than half (54 percent) of all discharge summaries failed to document the recommended outpatient workups that were clearly documented in the patients' hospital charts. Also, more than one-third (36 percent) of workups recommended by hospital doctors in the discharge summaries were not completed by primary care doctors.

Increasing time from discharge to the initial postdischarge visit to the primary care physician decreased by 23 percent the likelihood that a recommended workup was completed. On the other hand, availability of a discharge summary documenting the recommended workup more than doubled the likelihood of workup completion by the primary care doctor. Clearly, it is important to improve the quality and dissemination of discharge information to primary care physicians, note the researchers.

They examined the hospital and outpatient records of 693 patients discharged from a large teaching hospital in 2002 and 2003. Of the 693 patients discharged, 28 percent had outpatient workups recommended by their hospital physicians. The types of workups

were diagnostic procedures such as echocardiograms and computed tomographic scans (48 percent), subspecialty referrals (35 percent), and laboratory tests such as monitoring blood viscosity for patients on the anticoagulant warfarin (17 percent).

Greenwald, J.L., Denham, C.R., and Jack, B.W. (2007, June). “The hospital discharge: A review of a high risk care transition with highlights of a reengineered discharge process.” *Journal of Patient Safety* 3(2), pp. 97-106.

These authors cite 11 factors that could be modified during the hospital discharge process to reduce postdischarge adverse events and rehospitalizations. They reviewed the research literature and studied the hospital discharge process at their hospital. They then used these data to identify specific failures of the hospital discharge system that could inform their design of a reengineered discharge process. They reviewed the new process with hospital administrators, physicians, residents, nurses, and ancillary staff, and revised it based on their feedback.

continued on page 10

Hospital discharge processes

continued from page 9

They recommended modifying the following 11 discharge factors to reduce postdischarge adverse events and hospitalizations:

- Educate the patient about their diagnoses throughout their hospital stay.
- Make appointments for clinician follow-up and postdischarge testing. Coordinate appointments with and discuss their importance with the patient.
- Discuss with the patient any tests or studies completed in the hospital and discuss who will be responsible for following up the results.
- Organize postdischarge services. Be sure the patient understands the importance of these services, make an appointment that the patient can keep, and discuss the details of how to receive each service.
- Confirm the medication plan and review it with the patient, including medication side effects.
- Reconcile the discharge plan with national guidelines and critical pathways.
- Review the appropriate steps on what to do if a problem arises, for example, how to contact the primary care doctor or what to do in an emergency.
- Expedite transmission of the discharge summary to the physicians, visiting nurses, and others accepting responsibility for the patients' care after discharge.
- Assess the degree of patients' understanding by asking them to explain the details of their discharge summary plan.
- Give the patient a written discharge plan at the time of discharge.
- Provide telephone reinforcement of the discharge plan and problem solving 2 to 3 days after discharge. ■

Interns taught teamwork during neonatal resuscitation training may be better able to resuscitate newborns

When babies are born, and their source of oxygen switches from the umbilical cord to their lungs, they sometimes need help establishing their breathing. The Neonatal Resuscitation Program (NRP) trains caregivers how to resuscitate newborns in the delivery room to establish their airway, breathing, and circulation. The NRP could improve the outcomes of thousands of newborns each year. Yet 30 percent of NRP steps are not performed or are performed incorrectly, and pediatric residents often fail to correctly insert breathing tubes in infants. Breakdowns in teamwork appear to contribute to these problems. When interns received a 2.5 hour segment on teamwork and human error as part of the 1-day NRP course, they demonstrated more team behaviors during simulated neonatal resuscitations than interns in the regular NRP course.

Eric Thomas, M.D., M.P.H., of the University of Texas, and colleagues randomized 40 interns to receive NRP with team training or standard NRP, and then video recorded their performance of simulated resuscitations. The team training group demonstrated

three times as many team behaviors than the control group (3.34 vs. 1.03 team behaviors per minute). Team interns were more likely to ask each other about information related to the resuscitation (0.35 vs. 0.09 episodes per minute), share information about the infant's heart rate, color, tone, etc. during noncritical moments (1.06 vs. 0.13), and assert opinions about the resuscitation process during critical times (1.80 vs. 0.64).

All team-trained interns were totally focused on the simulated resuscitation, and 88 percent prioritized and distributed team tasks (workload management) compared with 53 percent and 20 percent, respectively, of interns in the control group. There was no group difference in the frequency of evaluation of plans (detailed discussion of the status of the baby and plans to improve it). The study was supported by the Agency for Healthcare Research and Quality (HS11544).

See "Teaching teamwork during the neonatal resuscitation program: A randomized trial," by Dr. Thomas, B. Taggart, S. Crandell, and others in the July 2007 *Journal of Perinatology* 27, pp. 409-414. ■

Elderly/Long-Term Care

Many seniors will pay double the monthly copay for angiotensin receptor blockers under the Medicare Part D drug plan compared with their previous plans

Under the Medicare Part D prescription drug benefit, individual prescription drug plans (PDPs) must include at least two drugs in each medication class defined by their drug formularies. The inclusion of angiotensin receptor blockers (ARBs) on the formularies of Medicare Part D PDPs is critical to the health of seniors who cannot tolerate angiotensin-converting enzyme (ACE) inhibitors, which are in the same drug category. These medications are used to treat hypertension and congestive heart failure and to prevent end-stage renal disease. There are no generic ARBs at this time, and brand-name ARBs currently cost four to five times more than generic ACE inhibitors. Seniors without prior drug coverage may save some money on ARBs under Part D after taking into account the Medicare Part D premium they must pay. However, many seniors who previously paid with private insurance will pay twice as much in average monthly copays for ARBs under Part D, concludes a new study.

Also, few plans offer any gap coverage for brand-name drugs, so an estimated 46 to 51 percent of seniors will end up paying the full cost of ARBs once they reach the “donut hole,” if they do not have gap coverage. The “donut hole” is the second phase of Part D coverage, when seniors must pay 100 percent of drug costs out of their own pocket. It follows the first phase, when beneficiaries pay a deductible and about 25 percent of drug costs, and is before the third phase, when they pay about 5 percent of drug costs. Researchers analyzed formulary information contained on the March 2006 PDP Formulary and Pharmacy network, on the 7 approved ARBs for all 1,446 PDPs in the country. They also analyzed data from the 2002 and 2003 Medical Expenditure Panel Surveys to estimate the number of seniors using ARBs and their associated copays.

ARBs were included on the drug formularies of all 1,446 plans. In 2003, 70 percent of seniors who filled a prescription for an ARB used either valsartan or losartan. The average monthly copay for the

most commonly used ARB, valsartan, was \$28 under Part D, \$14 before Part D for individuals who had prescription drug coverage, and \$53 before Part D for individuals without prior coverage. Thus, seniors who paid for their medications completely out-of-pocket (self-pay) before Part D may pay a lower average amount for their ARB if they join a PDP. However, individuals who had supplemental drug coverage and paid between \$11.76 and \$15.58 for their 30-day supplies of ARBs would pay substantially more under Part D. The study was supported in part by the Agency for Healthcare Research and Quality (HS10771 and HS10856).

More details are in “Angiotensin receptor blockers on the formularies of Medicare drug plans,” by Walid F. Gellad, M.D., Haiden A. Huskamp, Ph.D., Kathryn A. Phillips, Ph.D., and Jennifer S. Haas, M.D., M.S.P.H., in the August 2007 *Journal of General Internal Medicine* 22, pp. 1172–1175. ■

Prescribing antidepressants for elderly persons should not be affected by concern about drug-related pneumonia risk

A recent study found that elderly patients were three times as likely to be hospitalized for aspiration pneumonia in the 3 months following a hospitalization for depression compared with 3 months prior to hospitalization. This led to concern that elderly use of antidepressants might increase their risk of aspiration pneumonia (pneumonia caused by inhalation of food, vomit, or liquid). A new study

reveals that hospitalization for pneumonia and aspiration pneumonia was 1.6 and 1.45 times, respectively, as common among elderly antidepressant users. However, after adjustment for other factors such as chronic neurologic and pulmonary conditions (previously implicated as risk factors for pneumonia), use of other prescribed drugs, other hospitalizations, and other factors, antidepressants (both the more

continued on page 12

Aspiration pneumonia

continued from page 11

sedating tricyclics and the newer selective serotonin reuptake inhibitors) did not seem to increase hospitalization for pneumonia.

Also, patients prescribed antidepressants suffered from pneumonia during the expected wintertime peak in late January typical of elderly persons not taking antidepressants (controls). Thus, decisions to prescribe antidepressants in elderly persons should not be affected by concern about pneumonia risk, conclude Sean Hennessy Pharm.D., Ph.D., Center for Clinical Epidemiology and Biostatistics, Developing Evidence to Inform Decisions about Effectiveness (DEcIDE) Center, and Center for Education and Research on Therapeutics, University of Pennsylvania School of Medicine, Philadelphia, and William B. Baine, M.D.,

of the Agency for Healthcare Research and Quality. Drs. Hennessy and Baine and colleagues analyzed 12,044 cases of hospitalizations for pneumonia and 48,175 controls from a database of medical records from about 2,000 general practitioners in the United Kingdom from 1987 to 2002. They also identified 159 cases of hospitalization for aspiration pneumonia and 636 controls. The study was supported in part by the Agency for Healthcare Research and Quality (Contract No. 290-005-004).

See “Observed association between antidepressant use and pneumonia risk was confounded by comorbidity measures,” by Sean Hennessy, Pharm.D., Ph.D., Warren B. Bilker, Ph.D., Charles E. Leonard, and others, in the September 2007 *Journal of Clinical Epidemiology* 60, pp. 911-918. Reprints (AHRQ publication no. 08-R011) are available from AHRQ.* ■

A pharmacy alert system plus physician-pharmacist collaboration can reduce inappropriate drug prescribing among elderly outpatients

A computerized pharmacy alert system plus collaboration between pharmacists and physicians can reduce inappropriate medication prescribing among elderly outpatients, concludes a new study. The computerized alert system linked drug prescription and age information to alert pharmacists when a patient aged 65 and older was newly prescribed 1 of 11 medications that are potentially inappropriate for older people. Potentially dangerous medications include flurazepam, amitriptyline, ketorolac, and meperidine. The targeted medications can cause problems such as excessively low blood pressure, daytime sedation, high blood sugar levels, and serious gastrointestinal problems.

A research team randomized all 59,680 health plan members aged

65 years and older to the intervention or usual care group. Pharmacists received alerts on all intervention patients, who were newly prescribed a targeted medication. When they received an alert, pharmacists were required to answer specific questions in the pharmacy system before being able to print a label to dispense the prescription. In some cases, the intervention guided them to safer alternative medications, depending on the indication for the drug. Pharmacists could also consult with the physician, who might recommend dispensing the drug as written or modified, dispensing an alternative medication, or stopping the medication altogether.

Over the 1-year study period, 1.8 percent of the intervention group were newly dispensed at least one targeted medication compared with

2.2 percent of those in the usual care group. This slight reduction in dispensed potentially dangerous drugs among the intervention group was primarily due to fewer dispensings of diazepam and amitriptyline. The modest difference in dispensing of potentially dangerous drugs between groups highlights the challenges of modifying prescriber behavior. The study was supported by the Agency for Healthcare Research and Quality (HS14249).

See “Randomized trial to improve prescribing safety in ambulatory elderly patients,” by Marsha A. Raebel, Pharm.D., Jeanya Charles, Pharm.D., Jennifer Dugan, Pharm.D., and others, in the July 2007 *Journal of the American Geriatric Society* 55, pp. 977-985. ■

Chronic Disease

Use of simple clinical information systems can improve outcomes of patients with diabetes

Use of simple clinical information systems to identify and track patient information can improve the outcomes of primary care patients with diabetes, concludes a new study. These relatively inexpensive systems were particularly useful for improving the outcomes of higher risk diabetic patients with hypertension or heart conditions, notes John Orzano, M.D., M.P.H., of the University of Medicine and Dentistry of New Jersey-Robert Wood Johnson Medical School.

Dr. Orzano and colleagues surveyed clinicians from 50 primary care practices about their use of clinical information systems for patient identification and tracking. The team also reviewed

the medical records of patients with diabetes in the practices to determine achievement of clinical targets. These included control of blood-sugar levels (HbA1c of 8 or less), LDL cholesterol (100 or less), and blood pressure of (130/85 or less).

Use of identification and tracking systems increased by 23 to 32 percent the odds of achieving diabetes care targets. Use of tracking systems increased by 52 percent the odds of hypertension control among patients with diabetes and hypertension, and use of identification systems increased it by 28 percent. Use of electronic health records (EHRs) was not associated with attainment of any clinical targets. These findings

should caution clinicians about the risk of rushing into EHR implementation as an automatic fix for quality-of-care issues. EHR alone is not sufficient for achieving desirable clinical outcomes. Organizational factors also affect successful information use. The study was supported in part by the Agency for Healthcare Research and Quality (HS14018).

See "Improving outcomes for high-risk diabetics using information systems," by Dr. Orzano, Pamela Ohman Strickland, Ph.D., Alfred T. Tallia, M.D., M.P.H., and others, in the May-June 2007 *Journal of the American Board of Family Medicine* 20, pp. 245-251. ■

Primary care practices face competing demands, not clinical inertia, in providing quality care to patients with diabetes

Primary care physicians often juggle the demands of several health conditions when treating patients with diabetes. They typically opt to treat the most pressing problem first, which may mean delaying a needed adjustment in diabetes medications until a subsequent appointment.

Researchers have used the term "clinical inertia" to describe the situation in which primary care physicians recognize a problem but fail to act upon it. University of Texas researcher Michael L. Parchman, M.D., M.P.H., concludes that conflicting demands, not inertia, are the real reason for the delay in treating increased blood sugar levels in patients with diabetes.

In a study of 211 patients in 20 primary care clinics, Dr. Parchman and colleagues found that when multiple health issues were addressed during an appointment, such as elevated blood sugar levels, the most pressing health issue took precedence. As a result, the physician was unlikely to adjust the patient's diabetes medication. However, the physician was likely to request that the patient return soon for a followup visit

to address the blood sugar levels. Conversely, physicians were inclined to adjust medications for patients with elevated blood sugar levels who discussed only a few health complaints during an appointment.

These results indicate that physicians and patients prioritize demands and deal with the most serious first. The researchers suggest that studies using a model based on clinical inertia principles (favored by diabetes specialists) will likely produce misleading results and ineffective solutions. Primary care encounters are filled with multiple activities and require a balancing act of priorities and goal settings for the physician and the patient. This study was funded in part by the Agency for Healthcare Research and Quality (HS13008).

See "Competing demands or clinical inertia: The case of elevated glycosylated hemoglobin," by Dr. Parchman, Jacqueline A. Pugh, M.D., Raquel L. Romero, M.D., and Krista W. Bowers, M.D., in the May/June 2007 *Annals of Family Medicine* 5(3), pp. 196-201. ■

Severe food insecurity among low-income adults is linked to an increased rate of diabetes

About 12 percent of the U.S. population experiences food insecurity (i.e., difficulty getting enough food to eat). Food insecurity occurs in homes that suffer a lack of financial resources and has been linked to weight gain and obesity among women. A new study goes a step further to link food insecurity to diabetes risk, independent of obesity. Researchers found that adults who were severely insecure about food availability were twice as likely to have diabetes as those who had food security. This finding held, even after adjusting for body mass index, level of physical activity, history of diabetes, and sociodemographic factors (such as age, income, and race). There was a definite link between food insecurity and obesity among women, but not men; however, increased obesity rates accounted

for only 20 percent of the increased odds of diabetes among these women.

Families in low-income households trying to plan meals often look for cheaper food alternatives, such as refined grains, added sugars, and added fats. These alternatives tend to be calorically dense, but nonnutritious. These poor food choices may play a role in the relationship between food insecurity and diabetes, suggest the researchers.

They analyzed 1991 and 2002 data on 4,423 adults from the National Health and Nutrition Examination Survey, a nationally representative survey of U.S. households. Women in the severe food insecurity category had a mean daily caloric intake of 1,876 kcal/day and carbohydrate intake of 242 g/day compared to 1,822 kcal/day and 237 g/day,

respectively, in the mild food insecurity group, and 1,780 kcal/day and 233 g/day, respectively, in the food secure group. There was no similar trend in men. Stress and irregular eating patterns may also mediate the relationship between food insecurity and diabetes. The study was supported in part by the Agency for Healthcare Research and Quality (HS11415).

See "Food insecurity is associated with diabetes mellitus: Results from the National Health Examination and Nutrition Examination Survey (NHANES) 1999-2002," by Hilary K. Seligman, M.D., M.A.S., Andrew B. Bindman, M.D., Eric Vittinghoff, Ph.D., and others, in the April 2007 *Journal of General Internal Medicine* 22, pp. 1018-1023. ■

Adults with food allergies tend to have more severe asthma

Food allergies tend to worsen the severity of asthma among children. A new study suggests that allergy to food, especially fish, might also be linked to worse outcomes in adults with asthma. Mount Sinai School of Medicine researchers interviewed 203 adults with persistent asthma being cared for at an inner-city clinic. The food-allergic group had more asthma-related hospitalizations, emergency department (ED) visits, and use of oral steroids than those without food allergies.

Overall, 15 percent of patients reported convincing symptoms of allergy to one food and 7 percent had allergies to more than one food. Symptoms typically ranged from development of hives, welts, difficulty breathing, and throat itching or closing within an hour of ingesting the offending food. The most prevalent food allergy was shellfish (13 percent of patients), followed by fish (3 percent), peanuts (3 percent), tree nuts (3 percent) seeds (1 percent), milk (1 percent), and eggs (1 percent). Food allergies were not correlated with sensitization to aeroallergens, such as tree pollen or dust.

Several theories link food allergies with asthma. People with asthma who suffer from food allergy may have increased airway hyperreactivity and thus may be more likely to suffer worse asthma. Food allergy may serve as a marker for a skewed host immune response, with a tendency to react with a pro-inflammatory allergic reaction. Finally, repeated accidental ingestion of the offending foods or chronic inhalation of aerosolized food particles may result in continued immune system activation and resulting inflammation that worsens asthma. Given the low 4 percent prevalence of food allergy among U.S. adults and among those in this study, these findings should be confirmed in larger studies, suggest the researchers. Their work was supported in part by the Agency for Healthcare Research and Quality (HS13312).

More details are in "Food allergy as a risk factor for asthma morbidity in adults," by Stephen H. Berns, M.D., Ethan A. Halm, M.D., M.P.H., Hugh A. Sampson, M.D., and others, in the June 2007 *Journal of Asthma* 44, pp. 377-381. ■

Primary Care Research

Colorectal cancer screening can be improved at primary care practices

Primary care practices don't screen eligible patients for colorectal cancer (CRC) as often as they do for breast and cervical cancer, though clinical practice guidelines have recommended CRC screening for more than 10 years. Several strategies have been proposed to effect changes in CRC screening rates in primary care practices. These include adopting a team approach to delivering care, utilizing health information technology, and eliciting patient preferences for specific CRC screening method.

David Lanier, M.D., from the Agency for Healthcare Research and Quality, and colleagues discussed strategies to improve screening rates for CRC in primary care settings during a conference in April 2005 that was cosponsored by AHRQ and

the National Cancer Institute. The group suggested that other members of the practice team, not just the doctor, could help boost CRC screening rates by determining screening eligibility and educating patients. Practices could also utilize electronic health records or other health information technology to identify and track patients who should be screened. Once patients were identified, they could be educated about the benefits of each available screening test and allowed to participate in deciding on the preferred test.

Currently, insurers do not pay practices for the time their staff spends educating patients, nor do they pay for telephone or e-mail reminders sent to patients eligible for screening. Conference attendees proposed that insurers begin

reimbursing for these approaches to encourage their use in reaching patients who may need CRC screening. The strategies recommended at the conference require additional research to ensure their effectiveness in improving CRC screening. Once validated, each strategy could be used to improve primary care practices' screening services across the board.

See "Improving colorectal cancer screening in primary care practice: Innovative strategies and future directions," by Carrie N. Klabunde, Ph.D., Dr. Lanier, Erica S. Breslau, Ph.D., and others in the August 2007 *Journal of General Internal Medicine* (22), pp. 1195-1205. Reprints (AHRQ publication no. 08-R010) are available from AHRQ.* ■

Doctors should advise Latino families about the safety, low cost, and dental health benefits of drinking tap water

More than half of the U.S. population drinks bottled water, with Latino women the group most likely to do so. Many Latino families avoid drinking tap water because they fear it causes illness, according to a new study. Of particular concern was the finding that 40 percent of children who never drank tap water were not receiving fluoride supplements. Costly bottled and filtered water usually do not contain fluoride, which protects against dental cavities. This is particularly important for Latino and black children, who have higher rates of untreated dental caries than white children (43 and 36 vs. 26 percent), note the University of Utah researchers.

They recommend that doctors advise Latino families about the safety, low cost, and dental health benefits of drinking tap water. The researchers surveyed 216 parents of children cared for in an urban public health center in Utah. Thirty percent of parents said that they never drank tap water and 41 percent said they never gave it to their children. Latino parents were 74 percent less likely

than non-Latino parents to drink tap water and 68 percent less likely to give tap water to their children.

Bottled or filtered water was most likely to be consumed by immigrant Latino families and families least able to afford it. For example, nearly two-thirds of the lowest-income families (less than \$15,000 per year) always gave bottled or filtered water to their children. Latinos were nearly six times more likely than other parents to believe that tap water would make them sick; however, U.S. regulations for the safety of tap water are more stringent than those for bottled water, note the researchers. Their study was supported in part by the Agency for Healthcare Research and Quality (HS11826).

More details are in "Bottled, filtered, and tap water use in Latino and non-Latino children," by Wendy L. Hobson, M.D., M.S.P.H., Miguel L. Knochel, M.D., Carrie L. Byington, M.D., and others in the May 2007 *Archives of Pediatric and Adolescent Medicine* 161, pp. 457-461. ■

Outcomes/Effectiveness Research

Both invasive and noninvasive strategies can reduce the cardiac risks of noncardiac surgery

Strategies to reduce the cardiac risks of noncardiac surgery during hospitalization are important, given that 50,000 patients a year have a heart attack related to noncardiac surgery. Invasive strategies, such as prophylactic coronary artery bypass graft surgery and angioplasty, and noninvasive strategies, such as use of beta-blockers, alpha-antagonists, and statins, may reduce preoperative cardiac risk for patients undergoing noncardiac surgery. However, they are not without their controversies, concludes a review of strategies by Steven L. Cohn, M.D., F.A.C.P. of the State University of New York, and Andrew D. Auerbach, M.D., M.P.H., of the University of California, San Francisco.

The researchers make several recommendations to classify the preoperative cardiac risk of patients undergoing noncardiac surgery. First, evaluate patients for new or unstable cardiopulmonary symptoms that would prompt evaluation in the absence of potential surgery. In some cases,

delay in surgery may be appropriate. In other cases, surgery can be done, but with close attention to postoperative monitoring or use of cardioprotective agents.

If there are no new symptoms, clinicians can proceed to use a clinical risk stratification rule. Low-risk patients can proceed to surgery with no need for beta-blockers or additional noninvasive stress testing. Moderate-risk patients may have to have their functional status and current level of angina symptoms or limb pain and weakness (claudication) assessed. Moderate-risk patients with a history of angina or claudication and poor functional status should be considered for noninvasive stress testing. Those with good functional status do not require additional testing and should receive beta-blockers around the time of surgery.

High-risk patients (three or more revised cardiac risk index criteria) should probably have noninvasive stress testing prior to surgery and should be targeted for beta-blocker

therapy. A positive stress test should be interpreted with caution before pursuing revascularization. Normal noninvasive tests should be reassuring, even for patients with a high-risk clinical profile. The study was supported by the Agency for Healthcare Research and Quality (HS11416).

More details are in "Preoperative cardiac risk stratification 2007: Evolving evidence, evolving strategies," by Drs. Cohn and Auerbach, in the May 2007 *Journal of Hospital Medicine* 2(3), pp. 174-180.

Editor's note: A related AHRQ-supported study (HS10888) found that four acute heart failure clinical prediction rules varied in their ability to predict short-term death or serious outcomes among patients hospitalized for heart failure. More details are in: Auble, T.E., Hsieh, M., McCausland, J.B., and Yealy, D.M. "Comparison of four clinical prediction rules for estimating risk in heart failure." (2007, August). *Annals of Emergency Medicine* 50, pp. 127-135. ■

Patients with HIV who share treatment decisions with their doctor have better outcomes

Patients with HIV benefit from discussions with their doctor regarding the varied types of highly active antiretroviral therapy (HAART) used to treat the disease. Patients who prefer to share treatment decisions with their HIV provider have better outcomes than those who want their HIV provider to make all or most of the decisions and those who want to make decisions alone, according to a new study.

A team of Johns Hopkins University researchers, led by Mary C. Beach, M.D., M.P.H., interviewed a group of predominantly young black male patients at

an urban HIV clinic. Interviews revealed that 23 percent preferred a more passive role, with their doctor making all or most of the decisions, 63 percent preferred to share decisions with their doctor, and 13 percent preferred to make all final decisions alone. Compared to the other two groups, passive patients were 43 percent less likely to adhere to HAART. Those who made decisions alone were 48 percent less likely to receive HAART or to have undetectable HIV RNA in their blood compared to the other two groups.

continued on page 17

Treatment decisions

continued from page 16

However, after adjusting for patient characteristics and how patients judged the quality of communication with their doctor, the only result that remained significant was 42 percent less likelihood of adherence to HAART among the passive patients. Adherence to HAART (no missed medication doses in the past 3 days) diminished the risk of developing HIV resistance to HAART and disease progression (indicated by levels of HIV RNA detectable in the blood). More than 80 percent of patients reported good communication with their primary HIV providers, but the passive and

independent patients reported worse communication than those who shared decisions. Practicing clinicians should encourage shared decisionmaking by not only activating patients who are disengaged, but also building trust and rapport with patients who are highly independent, suggest the researchers. Their study was supported in part by the Agency for Healthcare Agency and Quality (HS13903).

See “Is patients’ preferred involvement in health decisions related to outcomes for patients with HIV?” by Dr. Beach, Patrick S. Duggan, A.B., and Richard D. Moore, M.D., M.H.S., in the August 2007 *Journal of General Internal Medicine* 22, pp. 1119-1124. ■

Emergency Medicine

Studies explore the challenges and complexities faced by paramedics performing out-of-hospital endotracheal intubation

Paramedics often perform out-of-hospital endotracheal intubation (ETI), insertion of a breathing tube, on critically ill patients who can’t breathe on their own. Although paramedics have been performing out-of-hospital ETI for the past 25 years, recent studies have questioned the safety and effectiveness of paramedic ETI. A new study reveals paramedic and physician perceptions regarding the challenges and pitfalls of out-of-hospital ETI. A second study describes some of the cognitive complexities of out-of-hospital ETI. Both studies were supported by the Agency for Healthcare Research and Quality (HS13628). They are described here.

Thomas, J.B., Abo, B.N., and Wang, H.E. (2007, June). “Paramedic perceptions of challenges in out-of-hospital endotracheal intubation.” *Prehospital Emergency Care* 11, pp. 219-223.

This study analyzed focus group discussions among 14 paramedics and 6 emergency medical service

(EMS) physicians about their perceptions of the challenges in performing out-of-hospital paramedic ETI. While both groups recognized problems with the practice, they all felt strongly that paramedics should continue to perform the procedure. Doctors and paramedics disagreed about the ability of paramedics to perform neuromuscular blockade-assisted intubation. This practice uses medication to blunt the gag reflex of a conscious or struggling victim, which makes it difficult to insert the breathing tube.

Both paramedics and EMS physicians attributed paramedic ETI performance to a myriad of factors. These included EMS education (including skills acquisition and maintenance); organizational structure, culture, and oversight (for example, the role of the medical director); and paramedic retention and professionalism. Efforts to improve paramedic performance of out-of-hospital ETI must include strategies to address multiple aspects of EMS operations and culture, conclude the researchers.

Wang, H.E. and Katz, S. (2007, April). “Cognitive control and prehospital endotracheal intubation.” *Prehospital Emergency Care* 11, pp. 234-239.

The authors of this paper used Rasmussen’s Skills-Rules-Knowledge (SRK) framework, a model typically used to describe performance in high-risk work areas like power plants, to highlight the cognitive complexities of prehospital ETI. They point out that paramedic textbooks often present ETI as a discrete task. Yet, it actually encompasses multiple decisions and actions, and occurs under the constraints of an uncontrolled field environment (for example, inside a crushed car). It also involves higher level knowledge and skills. The paramedic has to assess the need for ETI and identify potential ETI difficulty (for example, due to patient obesity, short neck, or small mouth). There are no guidelines for how the findings should alter the approach. Thus, paramedics have to

continued on page 18

Endotracheal intubation

continued from page 17

draw on their knowledge to identify airway barriers and take appropriate actions.

Based on the SRK model, skills-based processing in prehospital care is the delivery of cardiopulmonary resuscitation (CPR) chest compressions. Most rescuers receive extensive training in CPR and usually do not need to consciously think about each step of it. An example of rules-based processing (performing a series of

tasks in reaction to a recognized situation or scenario) in prehospital care is the decision to initiate CPR. For example, the paramedic might decide to perform CPR if the patient has no pulse. However, this decision may be difficult if the rescuer cannot confirm the absence of a pulse.

Rule-based processing may fail in unfamiliar situations. In these cases, paramedics may need to draw on and integrate a broader range of knowledge to formulate appropriate decisions or actions. For example, an ambulance crew may encounter a person in cardiac

arrest, a situation in which rule-based thinking would advise the crew to begin CPR. However, a bystander mentioning that the victim was last seen an hour ago would prompt some paramedics to terminate resuscitative efforts, while others might proceed. The researchers suggest that the education of paramedics in prehospital ETI should include an understanding of the airway management process, emphasis on ETI process integration, and methods to simplify airway management. ■

Mental/Emotional Health

Despite their robust physical health and general optimism, a host of issues trouble young adults with depression

Young adulthood is a paradox of robust physical health and relative optimism on the one hand, and a high risk for depression, behavioral disorders, and social vulnerability, on the other hand. Indeed, one in four young adults will suffer a depressive episode between the ages of 18 and 25, a time of identity formation and role transitions. A depressive episode during the stage of “emerging adulthood” can get in the way of reaching developmental milestones such as getting a job or paying one’s own rent. It can also cause substantial social problems, suggests a new study by University of Chicago researchers.

Interviews with 15 young adults with depression provide some insight into the troubling issues they face. Depressed mood, identity concerns, problems with relationships, and problematic transactions with the health care system prevented them from reaching developmental milestones. Many felt they had wasted time during their depression, while their peers advanced in their lives. Inability to accomplish these transitional tasks further worsened concerns about their identity as well as their depressed mood.

For many, depression interrupted development of a sense of identity. Some were embarrassed by needing medications, fearful of taking them, and felt that depression was more complicated than could be managed with drugs alone. Many were concerned about the costs of insurance, lack of effective treatments, and the stigma of mental illness. They also worried about meeting parents’ expectations; inability to be understood; and social withdrawal and isolation. Some noted the importance of supportive, economically secure parents in facilitating their recovery, and some still felt optimism about their future when they got over their depression. The study was supported in part by the Agency for Healthcare Research and Quality (HS15699).

See “A qualitative exploration of depression in emerging adulthood: Disorder, development, and social context,” by Sachiko A. Kuwabara, M.A., Benjamin W. Van Voorhees, M.D., M.P.H., Jackie K. Gollan, Ph.D., and G. Caleb Alexander, M.D., M.S., in the July/August 2007 *General Hospital Psychiatry* 29, pp. 317-324. ■

Agency News and Notes

New AHRQ tools help pharmacies better serve patients with limited health literacy

The Agency for Healthcare Research and Quality (AHRQ) has developed two new tools to help pharmacies provide better quality services to people with limited health literacy. The tools are titled, *Is Our Pharmacy Meeting Patients' Needs? A Pharmacy Health Literacy Assessment Tool User's Guide* and *Strategies to Improve Communication between Pharmacy Staff and Patients: A Training Program for Pharmacy Staff*.

Studies have found that people with limited health literacy are 12 to 18 times more likely to be unable to identify their own medications and distinguish them from one another than people who are more health literate. They also have difficulty understanding simple instructions, such as taking a medication every 6 hours or how their medications work. People with limited health literacy also are less likely to understand potential side effects and more likely to misinterpret drug warning labels.

The pharmacy assessment tool can help raise pharmacy staff awareness of health literacy issues,

detect barriers that may prevent individuals with limited literacy skills from using and understanding health information provided by a pharmacy, and may help identify opportunities for improving services. This tool includes a pharmacy assessment tour to be completed by trained, objective auditors; a survey to be completed by pharmacy staff; and a guide for focus groups with pharmacy patients. The three parts are complementary and are designed to form a comprehensive assessment.

The training program for pharmacy staff includes the use of explanatory slides and small group breakout discussions. Participants role play using handouts before concluding with a question-and-answer session.

More than a third of adult Americans have levels of health literacy that are below what is required to understand typical medication information, according to the National Assessment of Adult Literacy. This problem is more acute for certain groups, including the elderly, minorities, immigrants, and the poor. AHRQ's 2006

National Healthcare Disparities Report (www.ahrq.gov/qual/nhdr06/nhdr06.htm) found that these same groups tend to have poorer health care, suggesting that limited health literacy may be at least partially responsible for the disparities.

The tools resulted from a study that was cofunded by AHRQ and the Robert Wood Johnson Foundation and were developed under contract by Emory University. *Is Our Pharmacy Meeting Patients' Needs? A Pharmacy Health Literacy Assessment Tool User's Guide* (AHRQ Publication No. 07-0051) can be found online at www.ahrq.gov/qual/pharmlit/. *Strategies to Improve Communication between Pharmacy Staff and Patients: A Training Program for Pharmacy Staff* (AHRQ Publication No. 07(08)-0051-1-EF) is available online at www.ahrq.gov/qual/pharmtli/pharmtrain.htm. Print copies are also available from AHRQ.*

For more information about AHRQ's health literacy activities, go to www.ahrq.gov/browse/hlitix.htm. ■

AHRQ report recommends use of existing call centers to expand communications in public health emergencies

The Agency for Healthcare Research and Quality (AHRQ) has released *Adapting Community Call Centers for Crisis Support: A Model for Home-based Care and Monitoring*, a new report that recommends expanding the capabilities of poison control centers, nurse advice lines, drug information centers, and health agency hotlines to assist persons at home or in public shelters in the event of public health emergencies such as biological attacks or pandemic influenza. The report and its four appendices include

strategies for using these types of community call centers in the event of aerosol anthrax attacks or the outbreak of pandemic influenza, plague, or food contamination.

The report was developed under contract by Denver Health, a member of the AHRQ-funded Accelerating Change and Transformation in Organizations and Networks (ACTION) project. Guidance was provided by a national advisory panel of experts in emergency

continued on page 20

Call centers

continued from page 19

call center services, public health and epidemiology, emergency preparedness planning, health informatics, and other fields.

The strategies and tools are designed to help community call centers respond to callers concerned about their health risks; collect disease surveillance data; assist with sorting calls according to urgency and decision support for health concerns; assist with monitoring or contacting persons quarantined at home; help callers identify dispensed drugs, provide instructions on how to take them, and explain potential adverse reactions; and train health call center staff to identify callers who may benefit from referral to mental health care providers.

The appendices include a national planning scenario matrix that summarizes the 15 national planning scenarios developed by the U.S. Department of

Homeland Security; an instructional document describing components of the HELP program, which is the operational platform of Denver Health's public health hotline; interactive response guidance for monitoring home-quarantined persons, identifying drugs and other needs; and information that call centers can use as part of a home management strategy for people with influenza.

Adapting Community Call Centers for Crisis Support: A Model for Home-based Care and Monitoring (AHRQ Publication No. 07-0048) can be found online at www.ahrq.gov/prep/callcenters/. A printed copy is also available from AHRQ.*

AHRQ has funded more than 60 emergency preparedness-related studies, workshops, and conferences to help hospitals and health care systems prepare for public health emergencies. More information about these projects can be found online at www.ahrq.gov/prep/. ■

Announcements

AHRQ releases a new DVD about designing hospitals for safety and quality

The Agency for Healthcare Research and Quality (AHRQ) has released a new DVD that provides evidence to help hospital officials and architects design safer, high quality hospitals. This new two-part DVD illustrates the value of evidence-based hospital design – a phrase used to describe how the physical design of health care environments affects patients and staff. The first part entitled, *Transforming Hospitals: Designing for Safety and Quality*, gives a brief 13-minute overview and provides current examples of how evidence-based hospital

design increases patient safety, satisfaction, and quality of care that results in higher staff satisfaction, recruitment, and retention. The second part, *Transforming Hospitals: Three Case Studies*, is 36 minutes in length and features the experiences of three hospitals that incorporated principles of evidence-based hospital design into new construction and renovation projects. These facilities include Griffin Hospital, Derby, Connecticut; Holy Cross Hospital, Silver Spring, Maryland; and Woodwinds Health Campus, Woodbury, Minnesota. With an

estimated \$250 billion construction boom in the hospital industry over the next 10 years, the DVD is expected to be of significant interest to hospital executives and architects planning or implementing construction and renovation projects. For more information on *Transforming Hospitals: Designing for Safety and Quality* or AHRQ's research in evidence-based hospital design, visit the AHRQ Web site: www.ahrq.gov/qual/transform.htm. Copies of the DVD (AHRQ publication no. 07-0076-DVD) are available from AHRQ.* ■

Research Briefs

Bertakis, K.D. and Azari, R. (2007, November). "Patient gender and physician practice style." (AHRQ grant HS06167). *Journal of Women's Health* 16(6), pp. 859-868.

This study found that the content of women's visits to primary care doctors differs from that of men's visits. Researchers randomized 315 women and 194 men, who were new patients, to care by 105 primary care doctors. They collected data during a previsit interview on sociodemographic characteristics, health status, and lifestyle behaviors. They videotaped the entire medical visit for analysis of physician practice behaviors.

There was no significant gender difference in visit length or work intensity; however, women's visits involved more discussions about the result of therapeutic interventions, more preventive services, less physical examination, and fewer discussions about tobacco, alcohol, and other substance abuse. Since visit lengths were similar, spending more time on pelvic and breast exams may have precluded the physician from being able to perform more physical exams on women. The findings support other work showing that tobacco and alcohol abuse in women are under-diagnosed and undermanaged.

Cook, K.F., Taylor, P.W., Dodd, B.G., and others. (2007). "Evidence-based practice for equating health status items: Sample size and IRT model." (AHRQ grant HS11040). *Journal of Applied Measurement* 8(2), pp. 175-189.

Developing new health outcome measures requires the testing of

candidate items. To reduce the response burden, the pool of items is generally divided among two or more study samples. Since response scores to the items on the two or more forms are not equivalent, they require equating or adjusting to a common mathematical metric. The authors of this paper tested the effects of sample size, test size, and the selection of item response theory (IRT) model in equating three forms of a health status measure. They found that the quality of equatings was greatly affected by sample size, much more so than the IRT model used or the test size. Their most noteworthy finding was the degree of variability in results when sample size was small. After systematically varying sample sizes (between 100 and 2,000 of an entire sample of 3,358 respondents to the Health of Seniors Survey), they concluded that a sample size of less than 300 was unacceptable; 300 to 500, fair; 750 to 1500, good; and 1500 and above, very good.

Darmody, J., Pawlak, R., Hook, M., and others. (2007, July). "Substitution of hospital staff in concurrent utilization review." (AHRQ grant HS10667). *Journal of Nursing Care Quality* 22(3), pp. 239-246.

Insurers typically require hospitals to use utilization review to contain costs by reducing unnecessary or inappropriate medical care. Hospital staff other than registered nurses (RNs) can competently perform concurrent utilization review (CUR), which would allow RNs more time for patient care tasks and save the hospital money, according to this study. Participating hospitals must free up staff (usually RNs) to report information based on

requests from the insurance-based reviewers. Researchers analyzed the results of CURs by 37 staff in four job categories at an academic medical center. During the 2-year study, an average of 26,636 CURs were conducted for 39,196 admissions (about 33 percent of patients). The study found no difference in the proportion of reimbursement denials at one hospital, whether the CURs (which took about 16 minutes) were performed by trained case managers (hospital cost of \$9.25 per review), case manager associates (\$4.78), social workers (\$7.71), or RNs (\$7.24). Less than 1 percent of reviews resulted in denial of certification for reimbursement, which is comparable with results of other studies.

Feurer, I.D., Russell, R.T., and Pinson, C.W. (2007, June). "Incorporating quality of life and patient satisfaction measures into a transplant outcomes assessment program: Technical and practical considerations." (AHRQ grant HS13136). *Progress in Transplantation* 17(2), pp. 121-128.

The authors of this paper summarize methods for incorporating the measurement of health-related quality of life (HRQOL) and patient satisfaction into a program assessing organ transplant outcomes. They also introduce basic terminology and psychometric concepts related to evaluating and selecting surveys. The authors describe the evolution and current structure of the HRQOL outcomes assessment program at Vanderbilt Transplant Center, including an overview of the development and use of a

continued on page 22

Research briefs

continued from page 21

transplant setting-specific patient satisfaction inventory. This inventory is a collection of six parallel forms that query patients' satisfaction with the transplantation system at different time points. It includes ten content themes, which range from understanding the risks and benefits of clinical processes to understanding out-of-pocket financial obligations. In developing this inventory as part of a survey, the authors stress the importance of such considerations as the psychometric qualities of published instruments and handling of missing data, the breadth of construct representation, and the inclusion of preference-based utility measures.

Forrest, C.B., Sahadmi, E., Nutting, P.A., and Starfield, B. (2007, July-August). "Specialty referral completion among primary care patients: Results from the ASPN referral study." (AHRQ grant HS09377). *Annals of Family Medicine* 5(4), pp. 361-367.

Patients who have known their primary care doctor awhile, and whose doctor or staff help them schedule their specialty appointment, are more likely to complete referrals to specialists, according to a new study. The researchers observed a group of 776 patients referred to specialists from the offices of 133 doctors in 81 practices and 30 States. The most common reason for referral was to obtain a therapeutic procedure (for example, surgery) or diagnostic test (for example, endoscopy). Physicians reported that 79.2 percent of patients referred had a specialist visit, and 83 percent of patients indicated they had seen the specialist to whom they had been referred.

The most common reasons for not completing the referral were lack of time (37.3 percent) and patient belief that the health problem had resolved (47.5 percent). In 26.5 percent of cases, the patient disagreed with the physician on the need for referral. Medicaid-insured patients were less likely than others to complete the referral, and were more likely to experience a health plan denial. Scheduling the appointment with the specialist at the time the referral was made had a strong positive effect on referral completion.

Gallagher, T.H., Denham, C.R., Leape, L.L., and others. (2007, September). "Disclosing unanticipated outcomes to patients: The art and practice." (AHRQ grants HS14012 and HS16658). *Journal of Patient Safety* 3(3), pp. 158-165.

Ethicists and professional organizations have long recommended the disclosure of unanticipated outcomes to patients. This practice is also increasingly being mandated by hospital accreditation requirements and some State laws. Yet, research shows that there is infrequent disclosure of both unanticipated outcomes and harmful errors in patient care. The authors of this paper argue that disclosure is a part of patient-centered care and a core patient safety activity. They also see disclosure as reflecting the core institutional value of transparency. The authors describe a National Quality Forum (NQF) Safe Practice on disclosure of serious unanticipated events and list steps that organizations can take to implement it. The NQF Safe Practice outlines a process for disclosure and describes an institutional disclosure support system that includes policies, education, coaching, and emotional

support for caregivers. Citing recent research, the authors conclude that the likelihood of negative lawsuit outcomes could well diminish following the adoption of such a disclosure program.

Harrison, M.I., Koppel, R., and Bar-Lev, S. (2007, September). "Unintended consequences of information technologies in health care—an interactive sociotechnical analysis." (AHRQ grant HS11530). *Journal of the American Medical Informatics Association* 14(5), pp. 542-49.

The introduction of new health information technologies (HIT) such as electronic medical records, computerized physician order entry, and decision support systems, has resulted in many unintended and undesired consequences. These consequences can arise from the interplay between new HIT and the provider organization's existing social and technical systems—including their workflows, culture, social interactions, and technologies. Building on earlier models, the authors of this study propose their own Interactive Sociotechnical Analysis (ISTA) model that offers a framework and typology specifying important relationships among new HIT, workflows, clinicians, and organizations. The authors' model reviews five types of interaction, which range from how new HIT can change an existing social system to HIT-social system interactions engendering HIT redesign. These interactions are illustrated by cases in the published literature. By its emphasis on the emergent and recursive interactions among HIT and existing social systems, technologies, and physical environments, ISTA can increase awareness by clinicians and others of unanticipated consequences that

continued on page 23

Research briefs

continued from page 22

only become evident during HIT implementation. Reprints (AHRQ publication no. 08-R008) are available from AHRQ.*

Henriksen, K. and Patterson, M.D. (2007, September). "Simulation in health care: Setting realistic expectations." *Journal of Patient Safety* 3(3), pp. 127-134.

The introduction of new and intricate surgical and medical procedures in the training of new practitioners raises the risks of unintentional harm to patients. Thus, the traditional model of using live patients in the training process needs to be supplemented by the use of simulation for medical training. The primary advantages of simulation in other high-risk industries (safety, creation of optimal conditions for learning, integration of multiple skills, and return on investment) may also apply to health care, note the authors of this paper. Despite the enthusiasm for simulation training, there are some challenges. It is important to identify relevant research questions, determine simulation and training expectations, match fidelity levels to research and training objectives, and develop well-rounded curricula. Individual competence in performing high-risk surgical procedures is very important. However, there is also a need to use simulation for training of enhanced capability and resiliency in dynamic, complex, and unpredictable clinical environments. Reprints (AHRQ publication no. 08-R009) are available from AHRQ.*

Hustey, F.M., Mion, L.S., Connor, J.T., and others. (2007, August). "A brief risk stratification tool to

predict functional decline in older adults discharged from emergency departments." (AHRQ grant HS09725). *Journal of the American Geriatric Society* 55, p. 1269-1274.

A six-item questionnaire can identify older emergency department (ED) patients who are at risk for subsequent functional decline when they are discharged home from the ED, and who would probably benefit from referrals for further evaluation or monitoring. In the Triage Risk Screening Tool (TRST), a nurse asks about six yes/no issues: presence of cognitive impairment; difficulty walking, transferring, or recent fall; living alone with no available caregiver; taking five or more prescription medications; having used the ED in the previous 30 days or been hospitalized in the prior 90 days; and nurse concern (for example, about patient's alcohol use). Older patients with cognitive impairment or two or more risk factors were considered at high risk for functional decline upon hospital discharge.

The researchers examined the functional status of 650 community-dwelling elderly persons, who arrived at the ED of 2 urban hospitals and were discharged home, at baseline and 30 days and 120 days after hospital discharge. TRST scores correlated with baseline impairment in activities of daily living (ADL) such as bathing or dressing, impairments in instrumental activities of daily living (IADLs) such as shopping or doing housework, and self-perceived physical health at all points. A TRST score of two or more was moderately predictive of decline in ADLs or IADLs a month after discharge and ADLs 120 days later, but not perceived physical health.

Kash, B.A., Hawes, C., and Phillips, C.D. (2007). "Comparing staffing levels in the Online Survey Certification and Reporting (OSCAR) system with the Medicaid cost report data: Are differences systematic?" (AHRQ grant HS16229). *The Gerontologist* 47(4), pp. 480-489.

This study evaluated the accuracy of nursing home staffing data reported through the Online Survey Certification and Reporting (OSCAR) system by comparing it with audited Medicaid Cost Report (MCR) data, widely considered a more accurate source. The researchers also sought to determine if there were any systematic differences in reporting. They found that mean staffing levels were 38 percent higher in OSCAR for registered nurses, and 4 percent higher for certified nursing assistants. The factors contributing to the likelihood of overreporting were low Medicare and Medicaid census, high market concentration, and for-profit ownership. Certain types of facilities consistently overreported staffing levels. These reporting errors will affect the validity of consumer information systems, regulating activities, and health services research results. Quality studies using OSCAR data may systematically underestimate the strength of the relationship between staffing and quality in American nursing homes.

Lanfear, D.E., Jones, P.G., Marsh, S., and others. (2007, September). "Connexin37 (GJA4) genotype predicts survival after an acute coronary syndrome." (AHRQ grant HS11282). *American Heart Journal* 154(3), pp. 561-566.

Some genotypes are associated with the risk of heart attack. The authors of this study tested several of these genotypes to determine

continued on page 24

Research briefs

continued from page 25

whether they were also associated with long-term mortality after acute coronary syndrome (ACS). Using a previously defined set of genetic markers in a prospective study of 726 patients with ACS, they discovered a significant association between the GJA4 1019 C>T genotype and 3-year survival after an ACS. Patients with this genotype had a 70 percent increased risk of death over 3 years. This gene-mortality relationship was similar for both men and women. If confirmed in future studies, this genetic variant may become an important tool to risk-stratify patients with ACS. It can also serve to focus future trials of intensified or novel interventions to further improve outcomes in high-risk patients.

Plantinga, L.C., Fink, N.E., Jaar, B.G., and others. (2007). “Relation between level or change of hemoglobin and generic and disease-specific quality of life measures in hemodialysis.” (AHRQ grant HS08365). *Quality of Life Research* 16, pp. 755-765.

One consequence of chronic kidney disease is anemia, as reflected by low hemoglobin and hematocrit levels. Effective treatment of anemia has been shown to improve quality of life (QOL). The authors of this study examined the impact on various aspects of QOL of raising hemoglobin levels to 11 g/dl (the minimum guideline established by the Kidney Disease Outcomes Quality Initiative) among 438 hemodialysis patients with kidney failure. These aspects included such QOL domains as physical, social, and cognitive functioning, and domains related to fatigue levels such as sexual functioning,

work, and recreation. After one year, patients who had achieved 11 g/dl for at least 6 months, had significantly higher QOL for physical functioning, bodily pain, mental health, social functioning, cognitive functioning, as well as diet restriction and dialysis access domains. In addition, even incremental increases of 1 g/dl over initial hemoglobin levels were correlated with higher QOL scores for most domains.

Rumptz, M.H., Tobias, C., Rajabiun, S., and others. (2007). “Factors associated with engaging socially marginalized HIV-positive persons in primary care.” (AHRQ grant HS10858). *AIDS Patient Care and STDs* 21(Suppl.1), pp. S30-S39.

Engagement in medical care is essential, if people living with HIV disease are going to benefit from life-prolonging HIV care and treatment. This study examined factors related to persons with HIV disease who were only somewhat engaged in care or not at all engaged in care. Of the 984 socially marginalized patients initially surveyed, 40 percent were somewhat engaged and 12 percent were not at all engaged in HIV primary care. Twelve months later, according to a followup survey, 58 percent of those not initially engaged in care had become more fully engaged in HIV primary care. The use of HIV primary care had increased as the major barriers to care (drug use, structural barriers, belief barriers, and unmet needs) were discontinued or reduced. These patients were part of a multisite demonstration study in which the barriers to care were addressed by one or more of 10 types of outreach interventions.

Smith, M.J. and Pawar, V. (2007, June). “Medical services and prescription use of asthma and

factors that predict corticosteroid use among African-American children covered by Medicaid.” (AHRQ grant HS015390). *Journal of Asthma* 44, pp. 357-363.

In this study, the researchers examined the records of 300 black children from West Virginia who were insured through Medicaid and diagnosed with asthma, to determine the types of medications children used to treat their asthma. Most of the children received quick-relief medications (90.3 percent), while just more than half (56 percent) had prescriptions for corticosteroids to forestall attacks. In particular, 38 percent had prescriptions for an inhaled corticosteroid (ICS). Only 35 percent of the children in this study made two trips to physicians' offices during the 1-year study period. Children who used an ICS were more likely to visit their primary care physician regularly. In contrast, children who were hospitalized or visited the emergency room because of their asthma were less likely to have used an ICS.

Tobias, C., Cunningham, W.E., Cunningham, C.O., and others. (2007). “Making the connection: The importance of engagement and retention in HIV medical care.” (AHRQ grant HS10858). *AIDS Patient Care and STDs* 21(Suppl.1), pp. S3-S8.

This paper is an introduction to a supplemental journal issue reporting on the results of a 5-year multisite Outreach Initiative to engage and retain patients in HIV care. It focuses on HIV patients not receiving ongoing HIV care and the barriers to care that they face. It also discusses intervention options and the public policy implications of this issue. Barriers to care may be structural, financial, or personal/

continued on page 25

Research briefs

continued from page 24

cultural, according to a framework developed by the Institute of Medicine. Structural barriers include unavailable or inconveniently located services, as well as subsistence needs competing with health care priorities. Financial barriers include lack of insurance, underinsurance, or the cost of services. Personal/cultural barriers include individual attitudes and beliefs as well as racism, sexism, and homophobia. To counteract these different barriers, the researchers used relationship building, service linking, and advocacy as part of the outreach initiative. The journal supplement provides new evidence about outreach and related strategies that promote sustained participation in HIV care by underserved populations.

Tschirch, P. and Kritek, P.B. (2007). "A national telehealth nursing research agenda. Conference report." (AHRQ grant HS11596). *Journal of Telemedicine and Telecare* 13, pp. 157-158.

Until recently, there has not been a concerted effort to create a common framework for defining or evaluating telehealth nursing as a practice area. A conference was held in 2005 to reach consensus on research priorities among those involved in telenursing. Following a series of presentations, the conference participants responded to a series of eight questions. For example, respondents felt that the telehealth interventions showing the greatest potential for demonstrating cost effectiveness were enhanced self-care management, early detection of health deterioration, and symptom management. In addition, they concluded that research priorities

for the future of telenursing should focus on evidence-based practice and public policy implications. Finally, nurses felt that the pursuit of studies with clearly defined populations, standard outcomes, and standard methodologies to support the cost effectiveness of telehealth should be the highest priority for the field of telenursing.

Van der Steen, J.T., Mitchell, S.L., Fritjers, D.H.M., and others. (2007, September). "Prediction of 6-month mortality in nursing home residents with advanced dementia: Validity of a risk score." (AHRQ grant HS08551). *Journal of the American Medical Directors Association* 8, pp. 464-468.

Seventy percent of U.S. patients with dementia die in nursing homes. Families and physicians of these patients can make use of prognostic information to make decisions about palliative care. The authors developed a risk score based on variables from the Minimum Data Set to predict 6-month mortality in 269 Dutch nursing home patients with advanced dementia and 270 Missouri nursing home patients with both advanced dementia and lower respiratory infections. The risk score identified residents at low and moderate risk of 6-month mortality (up to 40 percent) with reasonable accuracy. As mortality rates rose incrementally in each group, the risk score increased. It performed less well for residents with a higher risk of mortality; however, very few residents were estimated to have a mortality risk of well over 50 percent. Well-derived risk scores, while not suitable as a sole guide, can add important information for those making palliative care decisions.

Wakefield, D.S., Halbesleben, J.R.B., Ward, M.M., and others.

(2007, September). "Development of a measure of clinical information systems expectations and experiences." (AHRQ grant HS15196). *Medical Care* 45(9), pp. 884-890.

The authors of this study developed and tested the Information Systems Expectations and Experiences (I-SEE) survey to determine the expectations and experiences of registered nurses concerning the implementation of a new hospital clinical information system. They first administered the survey to nurses in four hospitals when a new clinical information system was implemented (the expectations section of the survey), then later, when the new system had been in place for 6 months (the experience section of the survey). The nurses surveyed worked in different hospital units and used multiple electronic health record system applications. The findings suggest that the I-SEE survey offers a coherent and reliable tool for assessing the perceived impact of new clinical information technology on work process and outcomes. Organizations may use I-SEE to determine which aspects of communication their employees see as most affected by new technology or what technologies support accuracy, timeliness, and effective decision-making to improve care.

Westrick, S.C. and Mount, J.K. (2007). "Evaluating telephone follow-up of a mail survey of community pharmacies." (AHRQ grant HS14512). *Research in Social and Administrative Pharmacy* 3, pp. 160-182.

This study assessed the effectiveness of a telephone follow-up survey of 262 randomly selected pharmacists who did not respond to a mail survey of 1,143 pharmacies. Mail surveys of the general population are usually less

continued on page 26

Research briefs

continued from page 25

expensive than telephone surveys, but also yield fewer responses. The subject was pharmacy participation in immunization activities. With a response rate of 26.7 percent, the mail survey presented a problem of nonresponse bias: respondents were much more likely to have an in-house immunization program than the outsourcing alternative. The telephone survey had a response rate (83.6 percent) over three times greater than the mail survey. Although the mail survey had a cost per sample unit of \$1.20, when the cost per usable response was compared, the mail survey cost more than the phone survey (\$4.37

vs. \$1.99). The authors conclude that a telephone survey is a viable survey mode that holds promise in pharmacy practice research.

Whitney, S.N. and McCullough, L.B. (2007). "Physicians' silent decisions: Because patient autonomy does not always come first." (AHRQ grant HS11289). *The American Journal of Bioethics* 7(7), pp. 33-38.

Although patients today are increasingly participating in medical decisionmaking about their care, there remains a context in which physicians may justifiably make silent decisions about patient care, i.e., they may consider and reject decisions without informing the patient. Silent decisions may

represent the physician's choice to follow a widely recognized guideline, to invoke an accepted exception to the guideline, or to take some other action that is justified by an individual patient's circumstance. Such decisions are frequent, inevitable, and entirely appropriate, according to these authors. For example, the physician, by the exercise of his professional clinical judgment, may determine that a procedure offers no net benefit to the patient and therefore does not mention it to the patient. The authors discuss several examples of silent decisions. In the process, they make an ethical case for a limited set of clinically significant, ethically valid silent decisions. ■

Subscribe now to AHRQ's Patient Safety E-newsletter

The Agency for Healthcare Research and Quality publishes the Patient Safety E-Newsletter to make available important patient safety news and information. Issued monthly, the E-newsletter features concise descriptions of recent findings from AHRQ-supported research and information about new initiatives, upcoming meetings, and other important patient safety activities. Web links will be provided for those who want to followup or get more detailed information. All you need to sign up for this free service is a computer and an e-mail address. To subscribe, follow these simple steps:

1. Send an e-mail message to: listserv@list.ahrq.gov
2. In the subject line type: Subscribe
3. In the body of the message type: sub patientsafetynewsletter and your full name

To receive the e-newsletter in text-only format:

1. Follow steps 1 and 2 above. In the body of the message type:
sub patientsafetynewslettertext and your full name

You will receive an e-mail confirmation of your subscription. For questions, e-mail Salina Prasad in AHRQ's public affairs office at salina.prasad@ahrq.hhs.gov. ■

Don't Forget— Visit AHRQ's Web Site

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



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

E-mail Updates

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

Ordering Information

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

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

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

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

() Available from NTIS:**

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

To purchase documents from NTIS,
call or write:

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

**Note: Please use publication numbers
when ordering**

To subscribe to *Research Activities*:

Send an e-mail to ahrqpubs@ahrq.hhs.gov
with "Subscribe to Research Activities" in the
subject line. Be sure to include your mailing
address in the body of the e-mail.

**Access *Research Activities* online at
www.ahrq.gov/research/resact.htm**

U.S. Department of Health and Human Services

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

Official Business
Penalty for Private Use \$300



AHRQ Pub. No. 08-0009
December 2007

ISSN 1537-0224