



Research Activities



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Agency for Healthcare Research and Quality

Highlights

Departments

- 2** Pharmaceutical Research
- 6** Outcomes/ Effectiveness Research
- 10** Women's Health
- 12** Disparities/Minority Health
- 13** Children's Health
- 13** Patient Safety/ Quality
- 19** Behavioral Health
- 20** HIV/AIDS Research
- 22** Health Care Costs and Financing

Regular Features

- 24** Agency News and Notes
- 25** Announcements
- 26** Research Briefs

Study documents the prescribing of potentially harmful drugs to elderly outpatients prescribed multiple drugs

Nearly 3 percent of elderly outpatient visits in which doctors prescribe one or more medications include prescriptions for drugs that are inappropriate for patients with certain conditions, according to a new study. For example, about 4 percent of patients with benign prostatic hypertrophy were prescribed at least one of six drugs that should be avoided in men with that condition, and 6 percent of patients with peptic ulcers were prescribed aspirin, which can cause gastrointestinal bleeding among these patients.

The study also highlighted drug combinations that pose the most serious threats to older patients. Nearly 7 percent of visits with a prescription for warfarin also included prescriptions for other drugs that could have harmful drug interactions. Overall, 0.76 percent of visits involving two or more prescriptions had at least one of six potentially

inappropriate drug-drug combinations. The odds of having an inappropriate drug-drug combination in patients prescribed two or more drugs increased nearly two-fold with each prescribed drug added. The odds of having an inappropriate drug-disease combination in patients who had at least one drug prescribed increased 1.62 times with each prescribed drug added.

These results underscore the importance of proper management and monitoring of polypharmacy in older patients, notes Chunliu Zhan, M.D., Ph.D., of the Agency for Healthcare Research and Quality. These findings were based on analysis of the 1995-2000 National Ambulatory Medical Care Survey and the National Hospital Ambulatory Medical Care Survey, which included 70,203 outpatient visits

continued on page 2

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Inappropriate prescribing

continued from page 1

by patients aged 65 and older. Of these, 44 percent had at least two medications prescribed or represcribed.

More details are in "Suboptimal prescribing in elderly outpatients: Potentially harmful drug-drug and drug-disease combinations," by Dr. Zhan, Rosaly Correa-de-Araujo, M.D., M.Sc., Ph.D., Arlene S. Bierman, M.D., M.S., and others, in

the February 2005 *Journal of the American Geriatrics Society* 53, pp. 262-267. Reprints (AHRQ Publication No. 05-R041) are available from AHRQ.* ■

Pharmaceutical Research

Recent market withdrawal of Vioxx underscores the need to limit new drugs to those who will most benefit from them

The September 2004 market withdrawal of rofecoxib (Vioxx), a selective nonsteroidal antiinflammatory drug (NSAID), signaled concerns about the safety of other cyclooxygenase-2 (COX-2) inhibitors (Bextra and Celebrex) as well. Guidelines recommend prescribing these expensive drugs, typically used for arthritis and back pain, to patients who are at high risk of gastrointestinal (GI) bleeding and other problems from traditional nonselective NSAIDs, such as ibuprofen. However, once COX-2 inhibitors hit the market in 1998, doctors began prescribing them to patients without regard to

their risk of GI problems, according to a study supported in part by the Agency for Healthcare Research and Quality (HS11313).

These findings demonstrate the challenge of limiting new drug therapies to patients for whom they are initially targeted and most beneficial, concludes Randall S. Stafford, M.D., Ph.D., of Stanford University. Dr. Stafford and his colleagues analyzed data from the National Ambulatory Medical Care Survey (1999-2002) and the National Hospital Ambulatory Medical Care Survey (1999-2001) to calculate the proportion of patient visits in which COX-2 inhibitors were prescribed. They stratified patients by their risk of adverse GI problems from traditional NSAIDs based on physician-reported health histories as noted in the surveys.

Of the visits in which either a COX-2 inhibitor or traditional NSAID was prescribed, the frequency of COX-2 inhibitor use increased from 35 percent in 1999 to 55 percent in 2000 to 61 percent in 2001 and 2002. Among the patients with the lowest risk of problems from less costly traditional NSAIDs, the proportion receiving a COX-2 inhibitor nearly tripled from 12 percent in 1999 to 35 percent in 2002. The researchers caution that such nonselective prescribing of new drugs, so-called "therapeutic creep," may undermine their cost-effectiveness in actual practice.

Details are in "National trends in cyclooxygenase-2 inhibitor use since market release," by Carolanne Dai, B.Sc., M.Sc., Dr. Stafford, and G. Caleb Alexander, M.D., M.S., in the January 24, 2005 *Archives of Internal Medicine* 165, pp. 171-177. ■

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Researchers compare medications for stroke prevention in patients with atrial fibrillation

The 2.3 million individuals in the United States with atrial fibrillation (AF, fast and irregular heart beat) have a five-fold increased risk of ischemic stroke. A recent study supported in part by the Agency for Healthcare Research and Quality (HS10133) compared the effectiveness and costs of three stroke prevention therapies for patients with chronic AF: warfarin, ximelagatran, and aspirin.

Warfarin has been shown to reduce the risk of ischemic stroke by 65 percent in AF patients, but it has been associated with drug and food interactions, slow onset of action, the need for regular monitoring, and individual variability in metabolism. Ximelagatran, which was developed to overcome these problems, has been shown to be as effective as warfarin in stroke prevention with less bleeding in patients with chronic AF.

Unlike warfarin, ximelagatran can be taken in a fixed, oral dose and does not require monitoring of prothrombin time. Although it may lower the risk of intracranial hemorrhage, previous studies found that 6 to 7 percent of patients taking ximelagatran developed liver function abnormalities. Patients who

have a major risk for hemorrhage often take aspirin instead of ximelagatran or warfarin.

Cara L. O'Brien, M.D., and Brian F. Gage, M.D., M.Sc., of the Washington University School of Medicine, used a decision model to compare costs and benefits of ximelagatran, warfarin, and aspirin in a hypothetical group of 70-year-old patients with chronic AF. For AF patients at the lowest stroke rate, only aspirin was cost effective. In contrast, for AF patients with additional stroke risk factors and low hemorrhage risk, ximelagatran modestly increased quality-adjusted survival (0.12 quality-adjusted life year, QALY), but at a substantial cost (\$116,000 per QALY) compared with warfarin. For ximelagatran to cost less than \$50,000 per QALY, it would have to cost less than \$1,100 per year or be prescribed to those patients who have either an elevated risk of intracranial hemorrhage (over 1 percent per year on warfarin) or a low quality of life with warfarin therapy.

See "Costs and effectiveness of ximelagatran for stroke prophylaxis in chronic atrial fibrillation," by Drs. O'Brien and Gage, in the February

9, 2005 *Journal of the American Medical Association* 293(6), pp. 699-706. ■

Also in this issue:

Treatment for mental health and substance abuse, see page 4

Messages about appropriate antibiotic use, see page 5

Coronary angioplasty in patients with angina, see page 6

Effects of prehypertension, see page 7

Post-discharge placement of hip surgery patients, see page 8

Choice of dialysis modality, see page 9

Use of elective first-time cesarean, see page 10

Receipt of preventive care services among older women, see page 11

Osteoporosis in black patients who have fragility fractures, see page 12

Adverse events related to airway management in the ICU, see page 13

Effects of smart IV infusion systems in the ICU, see page 14

Hospital readmission for venous thromboembolism, see page 15

Pain among elderly surgical patients, see page 16

Effects of budget shortfalls on nursing home quality, see page 17

Leisure-time exercise among diabetes patients, see page 19

Reducing costs of rehabilitative care, see page 23

AHRQ releases State-specific quality data, See page 24

Study fails to establish cost-effectiveness of using palivizumab to prevent RSV infection in preterm infants

Administering the drug palivizumab—a humanized monoclonal antibody—reduces hospitalizations for serious respiratory syncytial virus (RSV) lower respiratory tract infections, such as bronchiolitis, in at-risk infants. These include preterm infants and infants born with certain underlying conditions that

predispose them to respiratory complications.

Bronchiolitis care costs can be substantial, given the frequent need for supplemental oxygen and time spent in the neonatal intensive care unit. Palivizumab prophylaxis is costly as well at \$1,214 per

continued on page 4

RSV infection

continued from page 3

injection (with an average of four injections given to an infant to prevent RSV-related infections).

In a recent study, researchers compared the direct costs of palivizumab prophylaxis and RSV treatment in infants younger than 1 year who were born at 32 to 35 weeks gestation and received palivizumab (185 infants) with those who did not receive palivizumab (182 infants). The subjects were enrolled in an enhanced primary care case management program within the North Carolina Medicaid program. The researchers found that the

direct costs of providing palivizumab far outweigh the costs of care for RSV-attributed bronchiolitis. The study was supported by the Agency for Healthcare Research and Quality through a cooperative agreement (HS10397) with the University of North Carolina Center for Education and Research on Therapeutics (CERT).

The prophylaxis infants received an average of four injections of palivizumab between October 2002 and March 2003. The average per-person total costs of RSV care (hospitalization and outpatient care) and prophylaxis was \$5,117 for the prophylaxis group and \$371 for the nonprophylaxis group. This

difference was primarily due to the cost of palivizumab. Five hospitalizations occurred in the prophylaxis group and 12 in the nonprophylaxis group. No deaths occurred in either group. Other risk factors for RSV infection, such as day care attendance and exposure to cigarette smoke in the home, did not alter the results.

See "Direct cost analyses of palivizumab treatment in a cohort of at-risk children: Evidence from the North Carolina Medicaid program," by Steven Wegner, M.D., J.D., Julie Jacobson Vann, Ph.D., Gordon Liu, Ph.D., and others, in the December 2004 *Pediatrics* 114(6), pp. 1612-1619. ■

Medication use boosted treatment rates for mental health and substance abuse disorders in 2001 compared with 1996

Spending for prescription medications for the treatment of mental health and substance abuse (MH/SA) disorders rose 20 percent per year between 1996 and 2001, while use of outpatient services for these conditions remained constant during this period. As a result, nearly 5.5 million more Americans received treatment for mental disorders in 2001 than in 1996, according to a study by Samuel H. Zuvekas, of the Center for Financing, Access, and Cost Trends, Agency for Healthcare Research and Quality. Dr. Zuvekas analyzed data from the Medical Expenditure Panel Survey, a large ongoing household survey of noninstitutionalized U.S. civilians.

The percentage of Americans with outpatient visits for MH/SA treatment remained flat during the study

period, while use of MH/SA drugs increased. A drop in the average number of outpatient visits was offset by an increase in the average spending per visit. However, prescription drug spending more than doubled. Of the total increase, 37 percent was accounted for by new users and 63 percent by higher spending per user. Among MH/SA treatment users, 36 percent reported outpatient visits without prescription drug purchases in 1996, but only 25 percent did so in 2001. In contrast, 34 percent of MH/SA treatment users reported only drug purchases in 2001, up from 26 percent in 1996.

About 80 percent of the growth in MH/SA drug spending during 1996-2001 was explained by two

continued on page 5

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Mental health treatments

continued from page 4

medication classes: selective serotonin reuptake inhibitors and other newer antidepressants (52 percent) and atypical antipsychotics (28 percent). Anticonvulsant drugs used to treat bipolar disorder (9 percent), benzodiazepines and anti-anxiety medications (7

percent), and stimulants such as methylphenidate (ritalin) and amphetamines (4 percent) accounted for the rest.

More details are in "Prescription drugs and the changing patterns of treatment for mental disorders, 1996-2001," by Dr. Zuvekas, in the January 2005 *Health Affairs* 24(1), pp. 195-205. Reprints (AHRQ Publication No. 05-R031) are available from AHRQ.* ■

Many Medicaid-insured schizophrenia patients are prescribed multiple long-term antipsychotics

Nearly one-fourth of Medicaid-insured schizophrenia patients have been taking more than one antipsychotic for longer than 2 months, according to findings from a recent study. This growing practice represents a significant discrepancy with treatment guidelines. Most guidelines do not advocate the use of multiple concurrent antipsychotics except for short-term periods (2 months) when transitioning patients to new antipsychotics.

Bradley C. Martin, Ph.D., of the University of Arkansas for Medical Sciences, and his colleagues suggest that the rising trend for polypharmacy combinations may be due to the increased availability of new antipsychotics or changing

prescribing habits. Their study was supported in part by the Agency for Healthcare Research and Quality (HS10815). The researchers used California and Georgia Medicaid claims data to analyze antipsychotic medication use among patients 16 years of age and older who were diagnosed with schizophrenia between 1998 and 2000.

Overall, 40 percent of 31,435 patients used more than one antipsychotic medication, with 23 percent using multiple antipsychotics for longer than 2 months. The overall prevalence of all antipsychotic polypharmacy increased significantly from 32 percent in 1998 to 41 percent in 2000. Clozapine polypharmacy accounted for 11 percent and

atypical plus conventional antipsychotics accounted for 68 percent of all long-term polypharmacy. If Georgia and California Medicaid programs required prior authorization for long-term antipsychotic polypharmacy, they could save up to \$412,397 and \$5,027,312 per year, respectively, suggests Dr. Martin.

See "Prevalence, trends, and factors associated with antipsychotic polypharmacy among Medicaid-eligible schizophrenia patients, 1998-2000," by Rahul Ganguly, Ph.D., Jeffrey A. Kotzan, Ph.D., L. Stephen Miller, Ph.D., and others, in the October 2004 *Journal of Clinical Psychiatry* 65(10), pp. 1377-1388. ■

Messages about appropriate antibiotic use must be responsive to ethnic differences and literacy issues

Overuse of antibiotics, partly driven by patients' pressure on doctors to prescribe them for conditions that don't warrant their use, has led to a growing problem of antibiotic-resistant infections. Public education campaigns about the appropriate use of antibiotics should be targeted to groups based on their educational level, English literacy, and ethnicity, according to a recent study that was supported in part by the Agency for Healthcare Research and Quality (HS13001). The study found population-based differences in knowledge about antibiotics between whites and Hispanics and between Spanish-language Hispanics and English-language Hispanics.

Kitty K. Corbett, Ph.D., M.P.H., of the University of Colorado, Denver, Ralph Gonzales, M.D., M.S.P.H., of the University of California, San Francisco, and their colleagues conducted a telephone survey in English or Spanish (as appropriate) of a random sample of 692 whites and 300 Hispanics in Colorado. They asked respondents about their knowledge of appropriate antibiotic use for colds and bronchitis.

Overall knowledge was low among those surveyed. In all comparisons, English-language Hispanics tended to reflect the response patterns of whites. About half (53 percent) of white respondents gave correct answers

continued on page 6

Antibiotic use

continued from page 5

to questions about antibiotic use for colds compared with 43 percent of English-language Hispanics and 11 percent of Spanish-language Hispanics. In contrast, more Spanish-language Hispanics (37 percent) responded correctly to questions about use of antibiotics for bronchitis than English-language Hispanics (26 percent) and whites (22 percent). Also, 32 percent of Spanish-language Hispanics compared with 17 percent of English-language Hispanics and 15

percent of whites said they would be dissatisfied if they were not given an antibiotic for bronchitis. Antibiotics are accessible over the counter in Mexico and, for many newly arrived Hispanics of Mexican heritage, may be regarded as commonplace.

See "Appropriate antibiotic use: Variation in knowledge and awareness by Hispanic ethnicity and language," by Drs. Corbett and Gonzales, Bonnie A. Leeman-Castillo, M.S., and others in *Preventive Medicine* 40, pp. 162-169, 2005. ■

Outcomes/Effectiveness Research

Patients who have preprocedural angina appear to derive the most benefit from coronary angioplasty

Patients suffering from angina (crushing chest pain) appear to derive the greatest improvement in quality of life from nonemergency percutaneous coronary intervention (PCI), while asymptomatic patients achieve substantially less benefit. Doctors need to carefully consider whether the benefits of PCI outweigh the risks of the procedure for asymptomatic patients, concludes John A. Spertus, M.D., M.P.H., of the University of Missouri-Kansas City.

In a study that was supported in part by the Agency for Healthcare Research and Quality (HS11282), Dr. Spertus and his colleagues examined the association between baseline patient characteristics and post-PCI quality of life of 1,518 patients who underwent

nonemergency PCI at one medical center. Overall, PCI conferred substantial benefit to patients who underwent the procedure. The mean Seattle Angina Questionnaire (SAQ) Physical Limitation, Angina Frequency, and Quality-of-Life scores increased by 18, 24, and 30 points, respectively. However, the benefit for individual patients varied considerably.

For example, only 17 percent and 19 percent of patients without angina experienced moderate and large improvement in their quality of life compared with 13 and 72 percent, respectively, of those with angina. These results underscore the critical role of angina at the time of PCI as a predictor of procedural benefit from the patients' perspectives. Fewer than 36 percent of patients without

angina had significant clinical improvement in their quality of life compared with more than 85 percent of those who suffered from at least some angina. Finally, patients with mild, moderate, and severe baseline physical limitations improved 13.8, 20.0, and 13.5 points more than those with minimal physical limitations. These findings persisted even after correcting for baseline differences in demographic, clinical, disease severity, and health status variables.

See "Predictors of quality-of-life benefit after percutaneous coronary intervention," by Dr. Spertus, Adam C. Salisbury, Philip G. Jones, M.S., and others, in the December 21, 2004 *Circulation* 110, pp. 3789-3794. ■

SPECT imaging with Tc-99m sestamibi can improve ED triage of diabetes patients with suspected cardiac ischemia

Emergency department (ED) triage decisions can be improved for diabetes patients who arrive at the ED with chest pain or other symptoms that suggest acute cardiac ischemia (ACI, reduced blood flow to the heart) with use of single photon emission computed tomography (SPECT) imaging with technetium 99m (Tc-99m) sestamibi. That's the conclusion of a study supported in part by the Agency for Healthcare Research and Quality (HS091110).

In the main multicenter trial of ED evaluation strategies, 2,475 patients with symptoms suggestive of ACI and normal or nondiagnostic electrocardiograms were randomized to receive either the usual ED evaluation strategy (1,260 patients) or the usual strategy supplemented by results from SPECT Tc-99m imaging (1,215 patients). Harry P. Selker, M.D., M.S.P.H., of Tufts-New England Medical Center, and his colleagues compared imaging results, final diagnoses, effect on triage, and prognostic value of the SPECT imaging for diabetes and nondiabetes patients.

Patients with diabetes had higher rates of hospitalization (66 vs. 50 percent) and ACI (21 vs. 12

percent) than patients without diabetes. Among diabetes patients without ACI, the admission rate was 63 percent in the usual strategy group versus 54 percent in the imaging strategy group. Thus, SPECT imaging reduced unnecessary hospitalizations for this group and for patients without diabetes. At the same time, the appropriate hospitalization of patients with ACI was not affected. Moreover, among diabetes patients, an abnormal or equivocal SPECT imaging result was associated with a higher cardiovascular event rate (for example, stroke or heart attack) at 30 days compared with a normal imaging result.

More details are in "Acute resting myocardial perfusion imaging in patients with diabetes mellitus: Results from the Emergency Room Assessment of Sestamibi for Evaluation of Chest Pain (ERASE Chest Pain) trial," by Athanasios Kapetanopoulos, M.D., Gary V. Heller, M.D., Ph.D., Dr. Selker, and others, in the September 2004 *Journal of Nuclear Cardiology* 11, pp. 570-577. ■

Prehypertension accounts for a substantial number of hospitalizations, nursing home admissions, and premature deaths

Together, prehypertension and residual hypertension account for 4.7 percent of hospital admissions, 9.7 percent of nursing home admissions, and 13.7 percent of deaths per 10,000 adults aged 25 to 74 years.

Prehypertension is a systolic blood pressure (SBP) of 120 to 139 mm Hg, a range previously considered normal. Hypertension begins at a SBP of 140 mm Hg; and residual hypertension is a SBP of 140 mm Hg or more even with treatment. About two-thirds of individuals aged 45 to 64 years and 80 percent of those aged 65 to 74

years have prehypertension or residual hypertension, either of which increases their risk of heart attack, heart failure, stroke, and kidney disease.

Prehypertension alone accounts for 3.4 percent of hospitalizations, 6.5 percent of nursing home stays, and 9.1 percent of deaths, according to a study supported in part by the Agency for Healthcare Research and Quality (HS07002 and HS11477).

Louise B. Russell, Ph.D., of Rutgers University, and her colleagues used a simulation model based on data from the first

National Health and Nutrition Examination Survey (NHANES I) Epidemiologic Followup Study to estimate the effects of prehypertension and residual hypertension on a representative sample of U.S. adults aged 25 to 74 years from NHANES III.

Except for women aged 25 to 44 years, more than a third of each age group in NHANES III had prehypertension. The number of problems attributable to prehypertension were greatest for

continued on page 8

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Prehypertension

continued from page 7

men aged 45 to 64 years and men and women aged 65 to 74 years.

For more information, see “Effects of prehypertension on admissions and deaths: A simulation,” by Dr. Russell, Elmira Valiyeva, Ph.D., and Jeffrey L. Carson, M.D., in the October 25,

2004 *Archives of Internal Medicine* 164, pp. 2119-2124.

Editor’s note: In another AHRQ-supported study on a related topic, researchers also analyzed data from NHANES III and found that prehypertensive individuals had a higher prevalence of elevated C-reactive protein (a marker of inflammation that independently

predicts increased cardiovascular risk) than normotensive people. For more details, see King, D.E., Egan, B.M., Mainous III, A.G., and Geesey, M.E. (2004, October). “Elevation of C-reactive protein in people with prehypertension.” (AHRQ grant HS10871). *Journal of Clinical Hypertension* 6(10), pp. 562-568. ■

Postoperative functioning, age, obesity, and social support influence where patients go after total hip replacement

Individuals who undergo total hip replacement (THR), most often for advanced hip osteoarthritis, usually gain substantial pain relief and improved functioning. Following THR, patients who are older, obese, living alone, or unable to walk at discharge are more likely to be discharged to an inpatient rehabilitation facility than directly to home, according to a study supported in part by the Agency for Healthcare Research and Quality (HS09775). These factors must be considered in efforts to optimize and streamline discharge planning for THR patients, note the researchers.

To identify factors associated with discharge to an inpatient rehabilitation facility versus discharge directly to home after elective THR, the researchers analyzed data from a medical record review and survey of Medicare patients aged 65 to 94 who underwent elective primary or revision THR in 1995. Over half (58 percent) of the 1,276 patients were discharged from the

acute care hospital to a rehabilitation facility. Of these, 32 percent lived alone, 38 percent had an annual income of less than \$20,000, and 78 percent were unable to walk independently in the hospital before discharge.

Patients admitted to a rehabilitation facility were older (a mean of 74 years) than those discharged to home (72 years), and they had a shorter hospital stay (4.9 vs. 5.8 days). After adjusting for other factors, those who were unable to walk independently before discharge were much more likely to be discharged to a rehabilitation facility. Those who were older, living alone, or obese were 36 percent, 23 percent, and 29 percent more likely to be discharged to a rehabilitation facility, respectively.

More details are in “Determinants of discharge destination following elective total hip replacement,” by Paola de Pablo, M.D., Elena Losina, Ph.D., Charlotte B. Phillips, R.N., M.P.H., and others, in the December 15, 2004 *Arthritis & Rheumatism* 51(6), pp. 1009-1017. ■

Pulmonary arterial hypertension markedly worsens a person’s quality of life, but medication may help

Pulmonary arterial hypertension (PAH) is a rare blood vessel disorder in which pressure in the pulmonary artery (the blood vessel that leads from the heart to the lungs) rises above normal levels. In PAH, the pulmonary artery has narrowed, making the heart work harder to pump blood into the lungs (where it is oxygenated) and into the body. The result is a devastating disease that primarily strikes women in the prime of their life (20-40 years of age).

A recent study of patients with PAH found significantly impaired quality of life—so much so, that on average, patients were willing to accept a 29 percent risk of death in order to be cured of PAH. Shirin Shafazand, M.D., M.S., F.C.C.P., of the Stanford University School of Medicine, and fellow researchers studied health-related quality of life (HRQOL) in 53 patients who had PAH for nearly 2 years and were being treated at a university hospital-based pulmonary hypertension (PH) clinic. Overall,

83 percent were women, and 53 percent received epoprostenol (a medication that opens up the pulmonary artery to reduce hypertension). The epoprostenol and non-epoprostenol groups were similar in age, marital status, education, and ethnicity.

The researchers administered a Nottingham Health Profile (NHP), Congestive Heart Failure Questionnaire (CHQ), and Hospital Anxiety and Depression Scale to

continued on page 9

Pulmonary arterial hypertension

continued from page 8

the participants. Participants reported moderate to severe impairment in all NHP domains, including energy, emotional reaction, pain, physical mobility, sleep, and social isolation. They also showed moderate impairment in all CHQ domains, including shortness of breath, fatigue,

emotional function, and mastery. Also, 20.5 percent and 7.5 percent reported moderate or severe levels of anxiety and depression, respectively. Despite severe PH at presentation, longer duration of illness, and adverse effects associated with therapy, those receiving epoprostenol described more energy, less fatigue, less emotional distress, less anxiety or depression, and greater control over their disease than the non-drug

group. This research was supported in part by the Agency for Healthcare Research and Quality (F33 HS11767).

See "Health-related quality of life in patients with pulmonary arterial hypertension," by Dr. Shafazand, Mary K. Goldstein, M.D., M.Sc., Ramona L. Doyle, M.D., F.C.C.P., and others, in the November 2004 *Chest* 126 (5), pp. 1452-1459. ■

Dialysis patients are more likely to accept a higher dose of dialysis than to switch dialysis mode to increase survival

Because of the limited number of donor kidneys, most patients with end-stage renal disease must undergo dialysis. Hemodialysis (HD) must be done at a hemodialysis site three times a week, whereas peritoneal dialysis (PD) can be done daily at home. Dialysis patients have strong preferences for their current mode of dialysis. For instance, they are more likely to accept a higher dose of dialysis than to switch modality to increase survival, according to a study supported in part by the Agency for Healthcare Research and Quality (HS08365).

For the study, researchers interviewed 109 patients on HD, 57 patients on continuous ambulatory PD (CAPD), and 22 patients on continuous cycling peritoneal dialysis (CCPD) from Maryland and Massachusetts. They asked patients about their preference for dialysis modality based on a time trade-off technique scaled between 0 (death) and 1 (perfect health). HD, CAPD, and CCPD patients had similar preference values for current health (mean, 0.69, 0.74,

and 0.70, respectively), and lower preference values for alternative modalities (for example, mean of 0.55 assigned to CAPD by HD patients).

More than 75 percent of patients would choose a high dose over a lower dose of dialysis if it increased length of survival by 20 percent. However, more than 30 percent would not switch modality, even if it increased survival by 100 percent. The only patient characteristic associated with difference in preference values was depression. The researchers conclude that physicians should talk with patients about the modality and dose they prefer because preferences cannot be predicted by patient characteristics.

See "How strong are patients' preferences in choices between dialysis modalities and doses?" by Eric B. Bass, M.D., Stacey Wills, Ph.D., Nancy E. Fink, M.P.H., and others, in the October 2004 *American Journal of Kidney Diseases* 44(4), pp. 695-705. ■

Whooping cough can produce symptoms that are severe and prolonged

Despite childhood immunization levels that are at an all-time high, the numbers of reported cases, hospitalizations, and deaths due to whooping cough have been steadily increasing. Whooping cough (pertussis) is a respiratory illness that leads to coughing severe

enough to bruise ribs and, in extreme cases, to seizures or convulsions.

Since the 1980s, the reported incidence of whooping cough has been on the rise among adolescents and adults as the immunity conferred by childhood vaccines has worn off. As a result, whooping

cough is responsible for substantial illness and increased costs among adolescents and adults, according to a study that was supported in part by the Agency for Healthcare Research and Quality (T32 HS00063).

continued on page 10

Whooping cough

continued from page 9

From 1998 through 2000, medical costs for whooping cough for 1,679 adolescents and 936 adults were a mean of \$242 and \$326, respectively. A total of 83 percent of adolescents missed a mean of 5.5 days from school, and 61 percent of adults missed a mean of nearly 10 days of work because of pertussis. Also, 38 percent of adolescents and 61 percent of adults were still coughing when

they were interviewed an average of 106 days and 94 days, respectively, after cough onset.

The societal costs and morbidity of pertussis in these groups need to be weighed against a booster vaccine's cost, efficacy, and frequency of adverse events, concludes Harvard medical school researcher Grace M. Lee, M.D., M.P.H. Dr. Lee and her colleagues identified pertussis victims through the Massachusetts enhanced pertussis surveillance system. They

used State data to evaluate medical costs in these patients from 1998 through 2000, and interviewed the patients to determine nonmedical costs.

More details are in "Societal costs and morbidity of pertussis in adolescents and adults," by Dr. Lee, Susan Lett, M.D., Stephanie Schauer, Ph.D., and others, in the December 1, 2004 *Clinical Infectious Diseases* 39, pp. 1572-1580. ■

Women's Health

Most obstetricians are reluctant to grant women a first-time cesarean delivery without medical indications

A growing number of women are asking their obstetricians to deliver their baby by cesarean section instead of vaginally, even though there is no medical reason to do so. Some women want the convenience of scheduling the delivery, while others are tired of being pregnant and want to get it over with.

A recent study found that most obstetricians are reluctant to agree to these requests, but male physicians are more likely than female physicians to respond favorably, especially for patients in a higher socioeconomic bracket. The study was supported by the Agency for Healthcare Research and Quality (HS11338).

Jeanne-Marie Guise, M.D., M.P.H., and colleagues at the Oregon Evidence-based Practice Center analyzed survey responses of 140 obstetrician-gynecologists in the Portland, OR, area in 2000. Physicians were asked to respond to 17 clinical scenarios involving a patient at term with a single pregnancy requesting a first-time cesarean delivery in spite of her obstetrician's recommendation for vaginal delivery. Of those surveyed, 68 to 98 percent agreed to cesarean delivery in cases with a clear medical

indication—for example, a woman in early labor with placenta previa (the placenta is close to the opening of the cervix, which can cause severe bleeding during delivery).

Without a clear medical indication, for example, a woman in early labor who feared becoming incontinent after vaginal delivery, most of the physicians would not perform a cesarean delivery. In cases where medical indications were unclear, such as a woman in early labor with a history of prior 4th degree laceration, responses were divided.

Male physicians were significantly more likely than female physicians to agree to perform a cesarean delivery for a woman reporting concern for future urinary incontinence (29 vs. 9 percent) or history of prior stillbirth (24 vs. 4.5 percent). However, when cesarean delivery was medically indicated, there was no difference in agreement between female and male physicians.

More details are in "Physicians' responses to patient-requested cesarean delivery," by Chiara Ghetti, M.D., Benjamin K. Chan, M.S., and Dr. Guise, in the December 2004 *BIRTH* 31(4), pp. 280-284. ■

Informal caregiver characteristics influence the hospitalization and discharge of elderly women

Physicians drive the decision to hospitalize older individuals. Yet, informal caregivers also influence hospital use among the elderly, according to a study by researchers at the Johns Hopkins Bloomberg School of Public Health.

For the study, which was supported in part by the Agency for Healthcare Research and Quality (T32 HS00029), Jennifer L. Wolff, Ph.D., and Judith D. Kasper, Ph.D., analyzed data from a sample of 420 disabled elderly women receiving informal care from friends or relatives. The subjects and their caregivers had participated in the Women's Health and Aging Study and its accompanying Caregiving Survey. The objective was to examine caregiver attributes with

respect to the women's hospitalization experiences.

Care recipients were more likely to be hospitalized but less likely to be delayed in discharge from the hospital if caregivers felt competent in their role. Nearly half (49 percent) of care recipients were never hospitalized over 3 years. Those who were hospitalized tended to be older, were in worse self-reported health, had more task limitations, and had a cardiopulmonary condition or diabetes. Care recipients with primary caregivers who were more involved in their medical care were 53 percent more likely to be hospitalized after controlling for sociodemographic and health factors.

Concerned family and friends who are familiar with medical providers or more confident in their abilities may be more apt to contact providers in the face of new or worsening symptoms which, in turn, may lead to hospitalization. The average length of stay among hospitalized women was 6.2 days. Thirty percent of the women remained in the hospital more than 2 days beyond the average stay for their diagnosis, which was considered a delay in discharge.

Details are in "Informal caregiver characteristics and subsequent hospitalization outcomes among recipients of care," by Drs. Wolff and Kasper, in the August 2004 *Aging Clinical and Experimental Research* 16(4), pp. 307-313. ■

Sociodemographic factors affect receipt of preventive care services among women aged 65 and older

Despite Medicare coverage of preventive care services, wealth, age, education, and race continue to be important factors in the receipt of preventive services by older women, according to a recent study that was supported in part by the Agency for Healthcare Research and Quality (HS09630). Women aged 65 and older who were enrolled in one of two Medicare+Choice HMOs and lived in wealthier households were 11 to 17 percent more likely than women in the lowest wealth category to receive a mammogram and colorectal cancer (CRC) screening. They also received a greater average number of preventive services.

Women who had a college or higher education were more likely to receive CRC screening, and they received a greater average number of preventive services than women without a high school education. Finally, compared with white women, black women were more likely to receive CRC screening and less likely to receive influenza vaccinations.

Having primary care providers (PCPs) serving as gatekeepers may increase the use of preventive services, notes lead investigator Leo S. Morales, M.D., Ph.D., of RAND Health and the University of

California, Los Angeles. Women enrolled in the Northeastern plan that required PCPs to function as gatekeepers had higher rates of mammography, CRC screening, and influenza vaccinations, and they received a greater number of preventive services compared with women enrolled in the Midwest plan that did not use gatekeepers.

The gatekeeper role may foster regular patient-provider relationships that, in turn, may promote use of preventive services, especially by low-income people. Medicare+Choice plans should consider strategies to further reduce racial and wealth disparities in use of preventive services, according to Dr. Escarce and his colleagues. Their findings were based on analysis of administrative and survey data for 2,698 women enrolled in the two Medicare+Choice plans.

More details are in "Sociodemographic differences in use of preventive services by women enrolled in Medicare+Choice plans," by Dr. Morales, Jeannette Rogowski, Ph.D., Vicki A. Freedman, Ph.D., and others, in the October 2004 *Preventive Medicine* 39(4), pp. 738-745. ■

Disparities/Minority Health

Racial/ethnic disparities found in management of patients with high blood pressure

Blood pressure control is poorest among racial/ethnic minorities and diabetes patients. Yet, Hispanics are less likely than blacks and whites to have their antihypertensive therapy intensified to improve blood pressure control, according to a study supported in part by the Agency for Healthcare Research and Quality (HS11046). Blood pressure was controlled most often among whites (39 percent), followed by blacks (35 percent) and Hispanics (33 percent). Blacks (82 percent) and whites (81 percent) were more likely than Hispanics (71 percent) to have therapy intensified (increasing the dose or adding another medication) for better control.

After adjustment for baseline blood pressure, intensifying therapy

was associated with 55 percent higher odds of subsequent blood pressure control (odds ratio, OR 1.55), regardless of patient race/ethnicity. This suggests that equally aggressive management of hypertension might overcome any biological mechanisms that may contribute to racial differences in blood pressure outcomes, explains LeRoi Hicks, M.D., M.P.H., of Brigham and Women's Hospital and Harvard Medical School.

The researchers also found that patients with diabetes were 55 percent less likely (OR 0.45) than those without diabetes to have their blood pressure controlled to the recommended level. Diuretics were the most commonly prescribed medication (45 percent) followed by beta-blockers (44 percent), angiotensin-converting enzyme

(ACE) inhibitors (39 percent), calcium channel blockers (27 percent), and angiotensin-receptor blockers (9 percent). These findings are based on a review of medical records of 9,601 patients with 15,768 hypertension-related outpatient visits to 12 general medicine clinics in 2001 and 2002. The goal of the study was to determine whether hypertension management guidelines were followed during the visits.

See "Determinants of JNC VI guideline adherence, intensity of drug therapy, and blood pressure control by race and ethnicity," by Dr. Hicks, David G. Fairchild, Mark S. Horng, and others in the October 2004 *Hypertension* 44, pp. 429-434. ■

Osteoporosis often goes undiagnosed and untreated in black patients with fragility fractures

Fragility fractures, the result of low-impact falls that would ordinarily not fracture healthy bones, are the hallmark of osteoporosis (decreased bone mass). They affect all U.S. racial and ethnic groups, but blacks suffer more complications and deaths from these fractures than whites. This may be because the diagnosis of osteoporosis is often missed as the underlying cause of fragility fractures among black patients, according to a recent study.

The study found that for 91 percent of black patients with low-impact fragility fractures, osteoporosis was not recognized, diagnosed, or treated before or after hospitalization. This increases the

risk of future fractures and the likelihood of disability or even nursing home entry, caution the researchers. Their work was supported in part by the Agency for Healthcare Research and Quality (HS11673).

For the study, the researchers reviewed the medical records of middle-aged men and women with fragility fractures who had been seen at Howard University Hospital—a teaching hospital that treats predominantly black patients—from 1992 through 2002. Of the 58,841 patients who were admitted during the study period, 2.1 percent had fractures. Of these, 65 percent had fractures secondary to low-impact falls, but only 9

percent were diagnosed with osteoporosis.

Of those diagnosed with osteoporosis, only five (19 percent) were discharged on antiosteoporotic medications, and only one was discharged with a bisphosphonate therapy for bone loss. None of the patients had bone density scans to diagnose osteoporosis, which is recommended for patients with fragility fractures.

See "Osteoporotic fragility fractures in African Americans: Under-recognized and undertreated," by Neelofar M. Alam, M.D., Juanita A. Archer, M.D., and Euni Lee, Pharm.D.,

continued on page 13

Osteoporosis

continued from page 12

Ph.D., in the December 2004 *Journal of the National Medical Association* 96(12), pp. 1640-1645.

Editor's note: Another study on a related topic found that rates of

adherence to local osteoporosis guidelines for patients at risk of fragility fractures vary by patient, physician, and practice site characteristics. For more details, see Solomon, D.H., Brookhart, A., Gandhi, T.K., and others. (2004,

December). "Adherence with osteoporosis practice guidelines: A multilevel analysis of patient, physician, and practice setting characteristics." (AHRQ grant HS11046). *American Journal of Medicine* 117, pp. 919-924. ■

Children's Health

More frequent placements of foster children increase their reliance on emergency departments for outpatient care

The nearly 550,000 children living in foster care are much more likely than children not in foster care to have mental health and chronic medical problems. However, addressing their health care needs can be problematic, since children in foster care are often moved between homes, disrupting links with primary care providers. As a result, Medicaid-insured foster children rely more on emergency departments (EDs) for outpatient care than their Medicaid-eligible peers not in foster care.

These findings suggest poor availability of nonemergency outpatient care settings for children entering foster care, according to researchers from the University of Pennsylvania School of Medicine and Children's Hospital of Philadelphia. In a study supported in part by the Agency for Healthcare Research and Quality (K08 HS00002), they used Medicaid claims data linked to foster care administrative data for 1993 to 1996 to examine the rate of visits to an ED or other outpatient setting by foster children in a large urban area. They compared the children's health care use with a Medicaid-eligible group of children not in foster care during FY 1995.

Of those in foster care, 38 percent experienced two or more placement changes. Foster children of all ages showed increasing reliance on the ED for outpatient care services as the number of placements increased. For instance, the rate of ED visits among adolescents with more than four placements was twice that of adolescents not in foster care. Also, 75 percent of ED visits for foster children occurred within 3 weeks of a placement change. There was much less use of nonemergency outpatient care for all foster children, but particularly for toddlers and infants, compared with their Medicaid-eligible non-foster peers. These findings underscore the need for better health care management for foster children, particularly in the period after placement changes.

More details are in "Placement changes and emergency department visits in the first year of foster care," by David M. Rubin, M.D., M.S.C.E., Evaline A. Alessandrini, M.D., M.S.C.E., Chris Feudtner, M.D., Ph.D., and others, in the September 2004 *Pediatrics* 114(3), online at www.pediatrics.org. ■

Patient Safety/Quality

ICU patients are at risk for unintended and preventable adverse events involving airway management

About 25,000 potentially life-threatening errors occur daily in hospital intensive care units (ICUs). About 10 percent of these adverse events involve unintended and preventable incidents related to airway

management, according to findings from a recent study. The study was supported in part by the Agency for Healthcare Research and Quality (HS11902) and carried out by researchers at Johns Hopkins

University Schools of Medicine and Public Health.

The researchers point out that ICU managers should ensure appropriate ICU staffing to limit

continued on page 14

Airway management

continued from page 13

the impact of airway problems when they occur. They also suggest that prevention efforts should focus on critically ill infants and patients with complex medical conditions who are more vulnerable to errors in airway management.

The researchers analyzed patient factors (e.g., medical condition, communication, age, etc.) and system factors (e.g., ICU staffing, training, equipment, physical environment, etc.) associated with airway and nonairway events reported to a voluntary, anonymous, Web-based ICU Safety Reporting System (ICUSRS). They examined incidents reported by staff in 16

adult and 2 pediatric ICUs across the United States during a 12-month period ending June 30, 2003.

Overall, there were 78 airway and 763 nonairway events reported. More than half of airway events were considered preventable, and one patient death was attributed to an airway event. Physical injury, increased length of hospital stay, and family dissatisfaction occurred in at least 20 percent of airway events.

Most airway events reported in the ICUSRS during its first year were related to the patient's anatomical airway or endotracheal tube. Virtually all airway reports involved the ICU, with the event occurring within 2 hours of ICU

admission in 13 percent of reports and during ongoing care in 86 percent of reports. Factors contributing to airway events included patient age less than 1 year and complexity of medical condition. Factors limiting the impact of airway events included adequate ICU staffing and use of skilled assistants.

For more information, see "A system factors analysis of airway events from the Intensive Care Unit Safety Reporting System (ICUSRS)," by Dale M. Needham, M.D., F.R.C.P.C., David A. Thompson, D.N.Sc., M.S., Christine G. Holzmueller, B.L.A., and others, in the November 2004 *Critical Care Medicine* 32(11), pp. 2227-2233. ■

Smart intravenous infusion systems have the potential to reduce serious medication errors in ICUs

Critically ill patients often receive potent intravenous drugs with narrow safety margins that require careful titration (monitoring and dose adjustments). So-called "smart" intravenous (IV) infusion systems can detect many drug errors, and they have the potential to reduce the rate of serious medication errors in these patients. However, hospital staff must be educated in their use, according to Jeffrey M. Rothschild, M.D., M.P.H., of Harvard Medical School and Brigham and Women's Hospital.

In a recent study, Dr. Rothschild found that a smart pump system used in the hospital's cardiac surgical intensive care units (ICUs) and step-down monitored units did detect many drug errors. However, there was no difference in the number of serious medication errors that occurred during the periods when the system was used and when it was not.

This may have been because the system made it easy for nurses to bypass the drug library, which specified doses, routes and rates of administration, and other important information. Also, nurses frequently overrode system-generated drug alerts. The system has since been improved to expand the library from 40 to 100 drugs, make the library the default setting (it can't be bypassed), and change the system so the infusion

pumps can better handle boluses (single dose of a drug infused over a short time).

In an effort to perform better while providing care to many acutely ill patients, nurses may be taking shortcuts that violate safe IV infusion practice, notes Dr. Rothschild. In his study, which was supported by the Agency for Healthcare Research and Quality (HS11534), pumps were reconfigured to provide point-of-care, real-time decision support feedback for the second and fourth 8-week intervention periods. The feedback feature was inactivated during the first and third 8-week control periods.

For a total of 744 admissions, there were 219 medication errors, including 25 preventable adverse drug events (ADEs) and 155 non-intercepted potential ADEs. The most common types of error were incorrect dosing of titratable drugs and incorrect IV drug rates.

See "Developing the evidence for IV safety—preliminary report from a smart pump study," by Dr. Rothschild, in the December 2004 issue of *Healthleaders*, pp. 15-20.

Editor's note: For more information on this topic, see "A controlled trial of smart infusion pumps to improve medication safety in critically ill patients," by Dr. Rothschild, Carol A. Keohane, B.S.N., R.N.,

continued on page 15

Smart IV infusion systems

continued from page 14

E. Francis Cook, Sc.D., and others in the March 2005 *Critical Care Medicine* 33(3), pp. 533-540.

For information on other ICU safety issues, see the following two AHRQ-supported studies. The first study found that adherence to infection control guidelines can greatly minimize catheter-related bloodstream infections in the ICU. For details, see Berenholtz, S.M., Pronovost, P.J., Lipsett, P.A., and

others. (2004, October). "Eliminating catheter related bloodstream infections in the intensive care unit." (AHRQ grant HS11902). *Critical Care Medicine* 32(10), pp. 2014-2020. In the second study, researchers describe efforts being made by multiple stakeholders to improve quality and safety in ICUs. For more details, see Pronovost, P.J., and Holzmueller, C.G. (2004, September). "Partnering for quality." (AHRQ grant HS11902). *Journal of Critical Care* 19(3), pp. 121-129. ■

Hospital readmission for venous thromboembolism among postoperative patients may signal quality of care problems

Patients who are hospitalized for surgery are particularly susceptible to venous thromboembolism (VTE, a blocked blood vessel due to a blood clot, usually in the leg), due to the trauma of surgery and immobility afterwards. The Agency for Healthcare Research and Quality includes VTE as one of a group of 20 patient safety indicators (PSIs), which are indicators of complications of care or quality of care problems.

In the case of VTE, this might mean that the staff did not mobilize the patient early or provide compression to the legs to prevent blood pooling and clotting after surgery. VTE may occur postoperatively during the index surgical admission or after the patient has been discharged.

AHRQ defined its PSI for VTE as surgical cases with a secondary diagnosis of VTE. Short-term readmissions were excluded because many State administrative databases are unable to track readmissions. AHRQ PSIs were

designed to allow comparison of rates across multiple States, meaning the data may be incomplete or inaccurate if short-term readmissions were to be included. For example, a recent AHRQ-supported study (HS11880) found an additional 1,059 cases of VTE when surgical patients with a short-term readmission for VTE were identified.

Short-term readmissions for VTE represent potentially important cases to capture when monitoring adverse events that may be connected to medical errors, note Wendy E. Weller, Ph.D., and colleagues, of the University at Albany School of Public Health. They used New York hospital inpatient data to identify patients meeting the AHRQ VTE PSI definition (surgical cases with a secondary diagnosis of pulmonary embolism or DVT) and those readmitted with a VTE principal diagnosis within 30 days of a prior hospitalization for surgery. A total of 4,906 cases in New York met the AHRQ definition in 2001.

However, an additional 1,059 cases of VTE were found when surgical patients readmitted to the hospital within 30 days were considered.

These findings underscore the need to develop data systems that can track patients across multiple admissions for the purpose of identifying complications that result in short-term readmissions, note the researchers. They call for future research to explore the possibility of assessing other AHRQ PSIs, such as infections due to medical care, using linked data sets.

More details are in "Readmissions for venous thromboembolism: Expanding the definition of patient safety indicators," by Dr. Weller, Brian K. Gallagher, M.D., Liyi Cen, M.S., and Edward L. Hannan, Ph.D., in the September 2004 *Joint Commission Journal on Quality and Safety* 30(9), pp. 497-504. ■

Patients of thoracic surgeons are less likely to die after lung cancer surgery than those of general surgeons, but volume counts

A recent study supported by the Agency for Healthcare Research and Quality (HS10141) found that Medicare patients of cardiothoracic surgeons and noncardiac thoracic surgeons (who perform only lung surgery) were 2 percent less likely to die within 30 days of surgery for lung cancer than similar patients of general surgeons. However, this difference was reduced somewhat among high-volume surgeons and in high-volume hospitals, with all high-volume surgeons having excellent outcomes, notes John D. Birkmeyer, M.D., of the University of Michigan.

Dr. Birkmeyer and his colleagues analyzed 1998-1999 Medicare data on patients undergoing lung resection (lobectomy, removal of one or more lung lobes, and pneumonectomy, removal of an entire lung) for lung cancer. They compared operative mortality for patients of general

surgeons, cardiothoracic surgeons, and noncardiac thoracic surgeons, after adjusting for patient, surgeon, and hospital characteristics.

Overall, 25,545 Medicare patients underwent lung resection. Adjusted operative mortality rates were about 2 percent higher for generalist surgeons (7.6 percent) compared with cardiothoracic surgeons (5.6 percent) and noncardiac thoracic surgeons (5.8 percent). Just taking into account high-volume surgeons (who performed more than 20 lung resections per year), mortality rates were lower for noncardiac thoracic surgeons (5.1 percent) and cardiothoracic surgeons (5.2 percent) than general surgeons (6.1 percent). In an analysis restricted to high-volume hospitals (more than 45 lung resections per year), mortality rates were again lower for noncardiac thoracic surgeons (5 percent) and cardiothoracic

surgeons (5.3 percent) than general surgeons (6.1 percent).

See "Surgeon specialty and operative mortality with lung resection," by Philip P. Goodney, M.D., F.L. Lucas, M.D., Therese A. Stukel, Ph.D., and Dr. Birkmeyer, in the January 2005 *Annals of Surgery* 241(1), pp. 179-184.

Editor's note: Another AHRQ-supported study on a related topic found that patients undergoing surgery for different types of cancer at National Cancer Institute-designated cancer centers had lower surgical mortality rates than those treated at comparably high-volume hospitals, but long-term survival rates were similar. For more details, see Birkmeyer, N.J., Goodney, P.P., Stukel, T.A., and others. (2005, February). "Do cancer centers designated by the National Cancer Institute have better surgical outcomes?" (AHRQ grant HS11288). *Cancer* 103, pp. 435-441. ■

Pain management is often inadequate for elderly patients hospitalized for surgery

Nearly 9 million elderly patients are hospitalized for surgery each year, and they often do not receive adequate management of their pain. Assessment and reassessment of acute pain are not done in a manner consistent with current practice recommendations, according to a study supported by the Agency for Healthcare Research and Quality (HS10482). The study found that only 37 percent of 709 elderly patients undergoing surgery (98 percent for repair of hip fracture) at 12 hospitals had the recommended pain assessment every 4 hours during the first 24 hours following admission. This is the time period when pain following hip fracture is likely to be high.

Only 5.5 percent of patients received every 4-hour pain assessment for the entire 72 hours studied, with 26 percent of patients receiving every 8-hour pain assessment. The use of patient-controlled analgesia (PCA) did not increase every 4-hour assessment

during the first 24 hours the PCA was running. In the first 24 hours following admission and for the entire 72-hour period, only 22 percent and 15 percent, respectively, of patients administered non-PCA analgesics had their pain reassessed within 60 minutes.

Meperidine was the most frequently administered opioid (31 percent); PCA was used infrequently (27 percent); and over 50 percent of the patients received at least one intramuscular injection, a route not recommended for older adults. Around-the-clock administration of analgesics was used infrequently (22.3 percent), and patients with dementia received significantly less parenteral morphine equivalent of opioids than those without dementia.

The study was led by Marita G. Titler, Ph.D., R.N., F.A.A.N., and Keela Herr, Ph.D., R.N., of the University of Iowa. Drs. Titler and Herr and their colleagues based their findings on an analysis of

continued on page 17

Pain management

continued from page 16

medical records of the 709 patients at the 12 hospitals studied and nurse questionnaire responses.

See “Evidence-based assessment of acute pain in older adults: Current nursing practices and perceived barriers,” by Drs. Herr and Titler, Margo L. Schilling, M.D., and others, in the September 2004 *Clinical Journal of Pain* 20(5), pp. 331-340. For more information on this topic, please see the earlier article by these authors: “Acute pain treatment for older

adults hospitalized with hip fracture: Current nursing practices and perceived barriers, in the November 2003 *Applied Nursing Research* 16(4), pp. 211-227.

Editor’s note: Another AHRQ-supported study on a related topic examined ways to improve pain management in nursing homes. For more details see Jones, K.R., Fink, R., Vojir, C., and others. (2004). “Translation research in long-term care: Improving pain management in nursing homes.” (AHRQ grant HS11093). *Worldviews on Evidence-Based Nursing* Third Quarter Supplement, pp. S13-S20. ■

Algorithms can enhance communication between pharmacists and physicians about medications prescribed for elderly patients

Up to 13 percent of medications prescribed for residents of 30 North Carolina nursing homes were potentially inappropriate, that is, could lead to serious health problems, found a study supported in part by the Agency for Healthcare Research and Quality (T32 HS00011). However, an algorithm suggesting safer alternatives to inappropriate medications was well received by consultant pharmacists at the nursing homes studied.

Jennifer B. Christian, Pharm.D., M.P.H., of Brown University’s Center for Gerontology and Health Care Research, and her colleagues estimated the prevalence of potentially inappropriate medications used in the nursing homes. The researchers then developed 14 treatment algorithms—each based on

extensive research review and discussions with pharmacists—which suggest appropriate alternatives to inappropriate medications. Pharmacists in the long-term care pharmacy serving the nursing homes were required to respond to online inappropriate medication alerts by recommending directly to the prescribing physician a safer alternative medication based on the treatment algorithms.

Online alerts ranged from long-acting benzodiazepines, which can cause severe health problems in the elderly, to antihistamines and muscle relaxants, which can cause less severe problems. Alerts also included drug-diagnosis combinations, that is, alerts for drugs that can cause problems for individuals diagnosed with certain conditions. Examples include tricyclic antidepressants prescribed for individuals with cardiac

arrhythmia or corticosteroids prescribed for people with diabetes.

For each potentially inappropriate medication, the algorithm provided information regarding when the medication might be used appropriately in the elderly population and the rationale for why and under what circumstances the medication is deemed as potentially inappropriate. Suggestions for possible treatment alternatives were also provided.

See “Alternatives for potentially inappropriate medications in the elderly population: Treatment algorithms for use in the Fleetwood Phase III study,” by Dr. Christian, Anne vanHaaren, Pharm.D., Kathleen A. Cameron, R.Ph., M.P.H., and Kate L. Lapane, Ph.D., in the November 2004 *Consultant Pharmacist* 19(11), pp. 1011-1028. ■

Nursing home quality of care may suffer if budget shortfalls force States to freeze or reduce Medicaid rates

Medicaid is the dominant payer for U.S. nursing home services, accounting for roughly half of all nursing home spending. When surveyed in 2003, Medicaid directors in 19 States indicated their States were planning cuts in Medicaid spending for long-term care. If budget shortfalls force State legislatures to freeze or reduce Medicaid rates, quality of nursing home care may suffer, according to findings

from a study supported in part by the Agency for Healthcare Research and Quality (HS11702). The study found that higher Medicaid payment was associated with a lower incidence of pressure ulcers (bed sores) and physical restraints, which are problems associated with poor quality of care.

continued on page 18

Nursing home quality

continued from page 17

Researchers led by David C. Grabowski, Ph.D., of Harvard University, examined the relationship between Medicaid payment and three nursing home quality measures—pain, high-risk pressure ulcers, and use of physical restraints—for a cross-section of certified U.S. nursing homes. After adjusting for market and selected nursing home factors, nursing homes in the highest Medicaid payment quartile had significantly lower prevalence than those in the lowest payment quartile of physical restraints (8 vs. 12 percent) and high-risk pressure ulcers (14.8 vs. 16.1), but they had significantly higher rates of pain (13.4 vs. 11.1).

Higher resident pain rates among facilities with more resources may be due to the facilities using these resources to improve documentation of pain, an often neglected domain of quality, note the researchers.

See “Medicaid payment and risk-adjusted nursing home quality measures,” by Dr. Grabowski, Joseph J. Angelelli, Ph.D., and Vincent Mor, Ph.D., in the September 2004 *Health Affairs* 23(5), pp. 243-252.

Editor’s Note: For more information from this study, see the companion paper published previously by Drs. Grabowski and Agnelli: “The relationship of Medicaid payment rates, bed constraint policies, and risk-

adjusted pressure ulcers,” in the August 2004 issue of *Health Services Research* 39(4, Part I), pp. 793-812.

Another AHRQ-supported study on a related topic found that individuals eligible for both Medicaid and Medicare (dual eligibles) have lower hospital discharge rates and shorter stays than dual eligibles in traditional Medicare programs. For more details, see Sloss, E.M., Dhanani, N., O’Leary, J.F., and others. (2004, December). “Inpatient utilization by dual Medicare-Medicaid eligibles in Medicare risk HMOs and fee for service, California, 1991-1996.” (AHRQ grant HS10256). *Managed Care Interface*, pp. 30-34, 41. ■

Researchers describe ways to improve health care experiences for people who are blind or have low vision

Nearly 10 million U.S. residents are blind or have low vision. Focus groups with visually-impaired individuals reveal that they routinely confront communication, physical access, and information barriers to care, as well as a lack of basic respect. These patients are bothered that some physicians think they cannot participate fully in their own care. They often find it difficult to interact with physicians and office staff, and they sometimes have trouble getting to and around physicians’ offices.

Visually impaired individuals typically receive information in inaccessible formats, for example, not in Braille, large print, or audiotape. Using common courtesy and individualized communication techniques, physicians and office staff could improve the health care

experiences of blind and low-vision patients, concludes Cornell University researcher Bonnie O’Day and her colleague Lisa I. Iezzoni, M.D., M.Sc., from the Harvard Medical School. Dr. O’Day and her colleagues used focus group interviews to elicit information and advice from people with vision loss about how to improve their health care experience. The 2-hour audiotaped focus groups involved 19 men and women from diverse backgrounds; 10 had no vision, and 9 had some vision.

Focus group participants recommended that doctors talk to them instead of their sighted companion and focus on their medical complaint rather than their blindness. They also suggested that office staff be trained to respect patients’ preferences for navigating

offices and assist them with paperwork in private locations instead of in waiting rooms where their privacy may be compromised. Other suggestions included installing Braille and raised-print signage on office doors, having information about public transportation routes available in the office, and telephoning patients about future appointments. The study was supported by the Agency for Healthcare Research and Quality (HS10223).

See “Improving health care experiences of persons who are blind or have low vision: Suggestions from focus groups,” by Bonnie L. O’Day, Ph.D., Mary Killeen, M.A., and Dr. Iezzoni, in the September 2004 *American Journal of Medical Quality* 19(5), pp. 193-200. ■

Behavioral Health

More patients at risk for cardiovascular disease should receive counseling about diet and exercise during outpatient visits

A growing number of Americans have conditions such as high cholesterol, high blood pressure, diabetes, and obesity that increase their risk for heart attack and stroke. Despite national recommendations to counsel such patients about diet and exercise to reduce their risk, counseling remains suboptimal, according to a recent study by researchers at Stanford University. The study was supported by the Agency for Healthcare Research and Quality (HS11313).

The study found that throughout the 1990s, clinicians provided diet counseling in less than 45 percent of office visits and physical activity counseling in 30 percent or fewer visits by adults with conditions that increase their risk of cardiovascular disease. Patients with fewer cardiovascular risk factors, those who were 75 years of age or older, and those seen by generalists were even less likely to be counseled about diet and exercise to reduce their risks. These rates suggest a practice pattern that under-appreciates the importance of lifestyle change in prevention, note the researchers. For the study, they analyzed data from the National Ambulatory Medical

Care Survey and the National Hospital Ambulatory Medical Care Survey on counseling practices in private physician offices and hospital outpatient departments during the period 1992-2000.

Visits that included counseling increased significantly from 33 percent in 1996 to 45 percent in 1997. Visits to internists and cardiologists were more likely to include diet counseling than were visits to general and family practitioners. Similarly, physical activity counseling was more likely during visits to cardiologists than during visits to general and family practitioners. Obese patients and those with hyperlipidemia were much more likely than other patients to be counseled about diet and physical activity. Yet, a positive diagnosis of coronary heart disease was not associated with any discernible effect on the likelihood of either type of counseling.

See "Diet and physical activity counseling during ambulatory care visits in the United States," by Jun Ma, M.D., Ph.D., R.D., Guido G. Urizar Jr., Ph.D., Tseday Alehegn, M.A., and Randall S. Stafford, M.D., Ph.D., in the October 2004 *Preventive Medicine* 39, pp. 815-822.



Leisure-time exercise, which helps control diabetes, is low among all diabetes patients, particularly black women

Regular physical activity can improve blood sugar levels, reduce cardiovascular risk factors, boost weight loss, and improve well-being among people with diabetes. However, a new study finds that the level of leisure-time physical activity (LTPA) is low among white, Hispanic, and black diabetes patients, and it is particularly low among black women. The researchers examined the frequency, duration, and intensity of 23 leisure-time exercises, sports, or physically active hobbies based on responses to the 1998 National Health Interview Survey. Activities ranged from walking, gardening/yard

work, and weight lifting to aerobics, bicycling, tennis, and golf.

Overall, only 25 percent of people with diabetes engaged in moderate/vigorous LTPA daily. This varied from 16 percent for blacks to 23 percent for Hispanics and 27 percent for whites. After controlling for activity limitations, coexisting illnesses, and other factors, blacks were 39 percent less likely to engage in LTPA than whites; Hispanics did not differ significantly from whites.

White, Hispanic, and black men with diabetes were similarly likely to engage in LTPA. In contrast, black women were only half as

likely to engage in LTPA as white and Hispanic women. These findings indicate a pressing need to better understand cultural values about physical activity, especially for black women, note Leonard E. Egede, M.D., M.S., and Mary E. Poston, M.D., of the Medical University of South Carolina. Their study was supported by the Agency for Healthcare Research and Quality (HS11418).

More details are in "Racial/ethnic differences in leisure-time physical activity levels among individuals with diabetes," by Drs. Egede and Poston, in the October 2004 *Diabetes Care* 27(10), pp. 2493-2494. ■

Several popular diets confer similar benefits, with best results from strict adherence

A new study challenges the idea that one type of diet is best for everybody, and that very low carbohydrate diets are better than standard diets. The study found that several popular diets resulted in similar weight loss and reduction of several cardiac risk factors over a 1-year period, and that dietary adherence, not type of diet, was the key to success.

The diets studied were Weight Watchers, which recommends restriction of portion sizes and calories; the Atkins diet, which minimizes carbohydrate intake without fat restriction; the Zone diet, which modulates the balance of macronutrients (proteins, carbohydrates, and fats) and glycemic load (carbohydrate-induced blood sugar level); and the Ornish diet, which restricts fat.

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

(T32 HS00060), researchers led by Michael L. Dansinger, M.D., of Tufts-New England Medical Center, randomized 160 adults aged 22 to 72 years to the four popular diet groups. The adults were overweight or obese and had several risk factors for cardiac problems: high blood pressure, high cholesterol, and fasting hyperglycemia (high blood-sugar levels). The researchers assessed subjects' weight loss and change in these and other cardiac risk factors at baseline and at 2, 6, and 12 months.

Participants were more likely to drop out of the study with more extreme diets (Atkins and Ornish) than the moderate diets (Zone and Weight Watchers). Among those who completed the study, mean weight loss at 1 year was 2.1 kg (4.6 lbs) for Atkins, 3.2 kg (7 lbs) for Zone, 3.0 kg (6.6 lbs) for Weight Watchers, and 3.3 kg (7.3 lbs) for Ornish.

Each diet significantly reduced the low-density lipoprotein/high-density lipoprotein (HDL) cholesterol ratio by about 10 percent but had no significant effect on blood pressure or glucose levels at 1 year. For each diet, decreasing levels of total/HDL cholesterol, C-reactive protein, and insulin were significantly associated with weight loss, with no significant difference between diets. The amount of weight lost was associated with self-reported dietary adherence level but not with diet type.

See "Comparison of the Atkins, Ornish, Weight Watchers, and Zone diets for weight loss and heart disease reduction," by Dr. Dansinger, Joi Augustin Gleason, M.S., R.D., John L. Griffith, Ph.D., and others, in the January 5, 2005 *Journal of the American Medical Association* 293(1), pp. 43-53. ■

HIV/AIDS Research

Study finds no evidence that antiretroviral therapy causes serious liver disease in HIV patients coinfecting with hepatitis C

About 15 to 30 percent of HIV-infected individuals in the United States are coinfecting with hepatitis C virus (HCV), which causes liver disease. Advanced antiretroviral therapy (ART) has been linked to significant liver enzyme elevations, (indicative of liver toxicity) in 5 to 10 percent of HIV-infected people taking ART. Nevertheless, despite widespread use of ART and documented instances of ART-related hepatitis, a recent study found no evidence that ART caused serious liver disease among HIV patients coinfecting with HCV. The study was supported in part by the Agency for Healthcare Research and Quality (HS07809).

Researchers at the Johns Hopkins Schools of Public Health and Medicine estimated the burden of liver disease among HIV/HCV-coinfecting individuals

receiving ART and evaluated whether liver disease was associated with factors they could identify, such as ART-related liver enzyme elevations (LEEs). The study group comprised 210 HIV/HCV coinfecting patients undergoing care in the Johns Hopkins University HIV clinic. Sixty-four percent of those studied had received ART within 2 years of liver disease assessment, 33 percent had no fibrosis (scarring of the liver), and 26 percent had bridging fibrosis (more extensive scarring) or cirrhosis (severe scarring that impairs liver function).

ART was not associated with fibrosis. However, there was significantly less liver inflammation among patients who had received ART longer and more effectively (greater suppression of HIV RNA). Twelve

continued on page 21

Antiretroviral therapy

continued from page 20

percent of individuals had previous ART-associated LEEs, but liver fibrosis was not more severe if the LEE resolved. On the other hand, liver fibrosis was more severe in those who had persistent LEEs. The study findings suggest that ART-associated LEE does

not increase the risk of advanced fibrosis, and that the increased risk of LEE among HCV-coinfected patients should not make physicians reluctant to prescribe ART.

See “The effect of antiretroviral therapy on liver disease among adults with HIV and hepatitis C coinfection,” by Shruti H. Mehta, M.P.H., David L. Thomas, M.D., Michael Torbenson, M.D., and others, in the January 2005 *Hepatology* 41, pp. 123-131. ■

HIV-infected patients with severe depression or bipolar disorder often do not adhere to their medication regimens

Inconsistent use of highly active antiretroviral therapy (HAART) regimens among people with HIV increases HIV drug resistance and treatment failure. It also increases the risk of producing drug-resistant strains of the virus that can be transmitted into the general population by risky behavior. Thus, doctors need to know which patients are less likely to stick with the HAART regimen.

A recent study supported in part by the Agency for Healthcare Research and Quality (HS11825) found that patients with severe affective disorder (recurrent major depressive disorder or bipolar disorder)—but not those with schizophrenia—are significantly less persistent in their use of HAART than those without serious mental illness. Patients with schizophrenia are as persistent in adhering to their medication

regimen as those without serious mental illness.

Stephen Crystal, Ph.D., and colleagues at Rutgers University compared rates of use of HAART (protease inhibitors, PIs, and non-nucleoside reverse transcriptase inhibitors, NNRTIs) among New Jersey Medicaid beneficiaries with AIDS and with and without serious mental illness between 1996 (when these treatments were introduced) and 1998. Doctors did not appear reluctant to prescribe HAART to patients with serious mental illness. In this sample, patients with schizophrenia (68 percent) and those with severe affective disorder (76 percent) were more likely to have begun HAART than those without serious mental illness (64 percent).

After controlling for demographics, risk group, opportunistic infection, and viral status, PI/NNRTI use was 27

percent less likely for those with severe affective disorders than for those with no serious mental illness. This should not rule out initiation of HAART, notes Dr. Crystal, since numerous opportunities for aggressive treatment of depression have been identified, and treatment of comorbid depression has been found to improve medication adherence with other disorders. Furthermore, HAART regimens themselves can reduce depression. Finally, the findings provide optimism regarding medication adherence among often hard-to-treat schizophrenics.

See “Use of newer antiretroviral treatments among HIV-infected Medicaid beneficiaries with serious mental illness,” by James T. Walkup, Ph.D., Usha Sambamoorthi, Ph.D., and Dr. Crystal, in the September 2004 *Journal of Clinical Psychiatry* 65(9), pp. 1180-1189. ■

Improvement in HIV care within the VA health system has been substantial, but some disparities persist

The quality of care that HIV-infected veterans receive through the Veterans Affairs (VA) health system is similar to national benchmarks. However, important gaps and disparities in the quality of HIV care for veterans persist, concludes a study supported in part by the Agency for Healthcare Research and Quality (HS08578).

Researchers compared the quality of care received by 3,840 HIV-infected veterans receiving medical care in 2001 and 2002 at 16 VA facilities with care received by 1,874 participants in the HIV Cost and Services Utilization Study (HCSUS). HCSUS comprises a national probability sample of HIV-positive adults who received care in the United States from 1996 to 1998.

continued on page 22

HIV care in the VA health system

continued from page 21

The researchers examined outcomes that are considered to be indicators of the quality of HIV care: receipt of highly active antiretroviral therapy (HAART); prophylaxis for *Pneumocystis carinii* pneumonia (PCP) and *Mycobacterium avium* complex (MAC), both of which are opportunistic infections that can be contracted when the immune system is weakened; and screening for syphilis, toxoplasmosis, hepatitis A, B, and C infection, and dyslipidemia (HAART can elevate “bad cholesterol” and other lipids).

Similar to national benchmarks, 78 percent of eligible veterans received HAART, 65 percent received prophylaxis for PCP, and 99 percent received prophylaxis for MAC. Many eligible veterans were screened for toxoplasmosis (44 percent), syphilis (74

percent), hepatitis A (55 percent), hepatitis B (67 percent), and hepatitis C (75 percent), and dyslipidemia (67 percent). However, veterans with a history of intravenous drug use (IDU) were 39 percent less likely to receive HAART than men who had sex with men (MSM), but they were more likely than MSM to receive screening for syphilis, a condition that tends to occur more frequently in people with active drug use. Finally, veterans with fewer than three medical visits had 92 percent lower odds of receiving HAART and 78 percent lower odds of PCP prophylaxis.

More details are in “Quality of HIV care within the Veterans Affairs health system: A comparison using outcomes from the HIV Cost and Services Utilization Study,” by Philip T. Korthuis, M.D., M.P.H., Henry D. Anaya, Ph.D., Samuel A. Bozzette, M.D., Ph.D., and others, in the December 2004 *Journal of Clinical Outcomes Management* 11(12), pp. 765-774. ■

Health Care Costs and Financing

Training in CPR and defibrillation should be reserved for those most likely to encounter out-of-hospital cardiac arrest victims

Most of the 360,000 out-of-hospital cardiac arrests that occur in the United States each year strike elderly men and women in their homes. Certain individuals, such as casino security guards or flight attendants, are more likely than others to encounter victims of out-of-hospital cardiac arrest, and training them in cardiopulmonary resuscitation (CPR) and defibrillation makes sense. However, training unselected individuals who are unlikely to encounter out-of-hospital cardiac arrest victims is not cost effective, concludes a study supported by the Agency for Healthcare Research and Quality (AHRQ T32 HS00028).

Peter W. Groeneveld, M.D., M.S., of the University of Pennsylvania, and Douglas K. Owens, M.D., M.S., of Stanford University, compared the costs and health benefits of three alternative resuscitation training strategies for adults without

professional first-responder duties who were at average risk of encountering cases of out-of-hospital cardiac arrest. The three strategies were: CPR/defibrillation training alone, training combined with a home defibrillator purchase, and no training. CPR/defibrillation training cost \$202,400 per quality-adjusted life-year (QALY) gained. Training plus defibrillator purchase cost \$2,489,700 per QALY. In contrast, training cost less than \$75,000 per QALY if trainees lived with individuals who had cardiac disease or were older than 75 years (6 percent of U.S. households) or if total training costs were less than \$10 per person.

The researchers conclude that training unselected individuals in CPR/defibrillation is costly compared with other public health initiatives. Conversely, training men and women selected by occupation, low training costs, or having high-

risk household companions is substantially more efficient.

More details are in “Cost-effectiveness of training unselected laypersons in cardiopulmonary resuscitation and defibrillation,” by Drs. Groeneveld and Owens, in the January 2005 *American Journal of Medicine* 118, pp. 58-67.

Editor’s note: Another AHRQ-supported study on a related topic found that rates of cardioverter-defibrillator implants became more equal among whites and blacks during the 1990s, although persistent disparity remained at the decade’s end. For more details, see Groeneveld, P.W., Heidenreich, P.A., and Garber, A.M. (2005). “Trends in implantable cardioverter-defibrillator racial disparity.” (AHRQ grant T32 HS00028). *Journal of the American College of Cardiology* 45(1), pp. 72-78. ■

Being organized as a group/staff HMO generally has a stronger impact on care access and quality than capitation

The group/staff HMO model, in which HMO members see health care providers who are salaried HMO staff, has more impact on care access and quality than provider capitation, in which providers receive a fixed payment from a health plan for each enrollee assigned to them. Samuel H. Zuvekas, Ph.D., and Steven C. Hill, Ph.D., senior economists in the Center for Financing, Access, and Cost Trends at the Agency for Healthcare Research and Quality, found that group/staff HMOs appear to substantially increase office hours but decrease coordination of care.

Drs. Zuvekas and Hill suggest that insurers pay attention to harder to measure quality of care dimensions, such as coordination of care, when designing reimbursement systems. They explain that, relative to other HMOs that capitate, group/staff HMOs may have a greater ability to align incentives, and they also may have more direct control over care.

The effect also may be due to the limited way in which most plans have implemented capitation, with only physician services in the capitation payment and no rewards for quality. Capitation by itself may increase consumers' access to the usual sources of care and improve primary preventive care, but it also may reduce coordination of care. However, more research is needed, caution the researchers. They analyzed data from the Household Component and the Medical Provider Component of the nationally representative Medical Expenditure Panel Survey for 1996 and 1997. They estimated the impact of capitation on care access, quality, and service use for nonelderly, privately insured HMO enrollees' usual source of care.

See "Does capitation matter? Impacts on access, use, and quality," by Drs. Zuvekas and Hill, in the Fall 2004 *Inquiry* 41, pp. 316-335. Reprints (AHRQ Publication No. 05-R046) are available from AHRQ.*



Costs of rehabilitative care can be reduced to reimbursement levels with little effect on patient function

Deborah G. Dobrez, Ph.D., of the University of Illinois at Chicago, and her colleagues retrospectively estimated the difference between costs and expected reimbursements under the prospective payment system (PPS) for rehabilitation care for stroke patients on their first admission to an urban rehabilitation hospital between 1994 and 1998. The researchers found that PPS reimbursements would have been \$10,825 (37 percent) lower than costs.

Among other cost-reduction strategies (for example, use of clinical pathways), a reduction in

mean length of stay of at least 9.6 days would have been required to reduce costs to the level of PPS reimbursement. Patients' cognitive function at discharge would have been reduced by only 1.1 points. Use of group therapy in place of some individual therapy could bring costs close to PPS reimbursement and improve cognitive function at discharge by 0.5 points.

Thus, facilities do have options that reduce costs, some with little effect on function at discharge, according to Dr. Dobrez and her colleagues. Their work was supported in part by the Agency for

Healthcare Research and Quality (HS10375).

See "The effect of prospective payment on rehabilitative care," by Dr. Dobrez, Anthony T. Lo Sasso, Ph.D., and Allen W. Heinemann, Ph.D., in the December 2004 *Archives of Physical Medicine and Rehabilitation* 85, pp. 1909-1914. ■

Agency News and Notes

AHRQ director issues quality challenge at national summit and announces State-specific quality data

The Agency for Healthcare Research and Quality brought together nearly 250 health professionals, policymakers, health systems decisionmakers, and others on April 4, for a national summit on improving health care for all Americans. The meeting was designed to showcase successful national, regional, and local efforts to improve health care quality and reduce racial and ethnic disparities. At the meeting, AHRQ director Carolyn M. Clancy, M.D., urged leading health care experts to work together to accept a

new quality challenge: applying what we know about best practices and what works toward achieving a “quality” future for U.S. health care.

During the summit, Dr. Clancy announced the release of State-level health care quality data compilations based on the congressionally mandated 2004 National Healthcare Quality Report, which was developed and released by AHRQ earlier this year. The data are designed to help State health officials more easily identify areas where they are doing well and areas where quality improvement is

needed. See the next issue of *Research Activities* (May 2005) for more information on these State-level data compilations.

The full text and video of Dr. Clancy’s speech at the national summit, “Improving Health Care for All Americans: Celebrating Success, Measuring Progress, Moving Forward,” and a summary of the meeting are now available on the AHRQ Web site. Go to www.ahrq.gov and select “Quality” and then “Quality Information and Improvement” for more information about the summit and to access Dr. Clancy’s remarks. ■

AHRQ launches new Web site to provide a single national source for patient safety findings and resources

The Agency for Healthcare Research and Quality has launched a new Web site that will serve as a national “one-stop” portal of resources for improving patient safety and preventing medical errors. The site, AHRQ’s Patient Safety Network, or PSNet, can be found at <http://psnet.ahrq.gov>.

PSNet represents the first comprehensive effort to help health care providers, administrators, and consumers learn about all aspects of patient safety. The site provides a wide variety of information on patient safety resources, tools, conferences, and more.

PSNet users can customize the site around their unique interests and needs by creating a “My PSNet” page. For example, a pharmacist interested in how bar coding can help prevent medication errors will be able to set up the site

to automatically collect the latest articles, news, and conferences on this topic. Similarly, anesthesiologists and other physicians, nurses, hospital administrators, and others can customize and search the site to best meet their needs.

In addition, subscribers can access weekly PSNet updates on patient safety findings, literature, tools, and conferences, as well as a carefully annotated collection of sentinel patient safety journal articles in a “Classics” section. The site was developed by the same team of researchers at the University of California, San Francisco, that developed AHRQ’s popular WebM&M online patient safety journal, which will now be accessible on PSNet.

Robert Wachter, M.D., Associate Chairman of UCSF’s Department of Medicine and Chief of the

Medical Service at UCSF Medical Center, leads the project team that developed the site. Dr. Wachter notes that until about 5 years ago, there was remarkably little evidence to inform decisions about patient safety, despite the incredibly high stakes. Now, with the advent of PSNet and other AHRQ-supported patient safety initiatives, the challenge has shifted from making decisions with an insufficient amount of information to managing a growing but unorganized treasure trove of data and tools.

PSNet is the latest patient safety improvement initiative by AHRQ, which leads the Federal effort to improve patient safety and reduce medical errors. For further information on PSNet, please visit the site at <http://psnet.ahrq.gov>. ■

Announcements

AHRQ announces new vice-chair and members of the U.S. Preventive Services Task Force

Carolyn M. Clancy, M.D., director of the Agency for Healthcare Research and Quality, has announced the appointment of five new members and a new vice-chair of the U.S. Preventive Services Task Force. The Task Force, which is sponsored by AHRQ, is the leading independent panel of private-sector experts in prevention and primary care. The Task Force conducts rigorous, impartial assessments of the scientific evidence for a broad range of preventive services.

Diana Petitti, M.D., M.P.H., a member of the Task Force for the past year, became vice-chair in January, replacing former vice-chair Janet Allan, Ph.D., R.N. Bruce Nedrow (Ned) Calonge, M.D., M.P.H., is the current Task Force chair. The five new members are Thomas DeWitt, M.D., Kenneth Kizer, M.D., M.P.H., Michael LeFevre, M.D., M.S.P.H., Lucy Marion, Ph.D., R.N., and George Sawaya, M.D.

Dr. Petitti, an expert in preventive medicine, is senior scientific advisor for health policy and medicine for Kaiser Permanente of Southern California in Pasadena.

Dr. DeWitt is the Carl Wehl professor of pediatrics and director of the Division of General and Community Pediatrics, and associate chair for primary care in the Department of Pediatrics at Children's Hospital Medical Center in Cincinnati.

Dr. Kizer is president and CEO of the National Quality Forum in Washington, DC. He currently is chairman of the Board of Directors of Medsphere

Systems Corporation in Aliso Viejo, CA, and he is the director of Trinity Health of Novi, MI.

Dr. LeFevre is a professor in the Department of Family and Community Medicine at the University of Missouri School of Medicine and is the medical director of family medicine for Missouri University Health Care.

Dr. Marion is a professor and the dean of the Medical College of Georgia School of Nursing.

Dr. Sawaya is an associate professor in the Department of Obstetrics, Gynecology, and Reproductive Sciences and the Department of Epidemiology and Biostatistics at the University of California, San Francisco.

The Task Force has made recommendations on a wide range of preventive services, including screening for prostate cancer, obesity, cervical cancer, and most recently, abdominal aortic aneurysms. Other Task Force recommendations include counseling for a healthy diet, the use of aspirin to prevent heart disease, and vitamins to prevent cancer and heart disease. Task Force recommendations are considered the gold standard for clinical preventive services. Upcoming recommendations are expected on hormone therapy for the prevention of chronic conditions in postmenopausal women and screening for HIV, among other topics.

More information about the Task Force can be found on the AHRQ Web site. Go to www.ahrq.gov and select "Preventive Services." ■

AHRQ announces recent recipients of dissertation research support

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

Recently, AHRQ awarded 12 dissertation grants to individuals from universities across the Nation. Each dissertation grant recipient benefits from the leadership and guidance of an experienced advisor.

AHRQ offers congratulations to the new grantees and sincere thanks to the advisors and mentors.

The following listing identifies the dissertation grant recipient and his or her institution, the AHRQ project number and title, and the advisor.

Jeanne Black, University of California, Los Angeles
AHRQ grant HS15557, Latino-white differences in self-reported health status
Advisor: Ninez A. Ponce, M.P.P., Ph.D.

continued on page 26

Dissertation research

continued from page 25

Caroline Carlin, Virginia Commonwealth University
AHRQ grant HS15527, Optimal pricing of employer-based health plans
Advisor: Bryan Dowd, Ph.D.

Laura Cramer, Yale University
AHRQ grant HS15536, Provider influence on quality of colorectal cancer care
Advisor: Elizabeth H. Bradley, Ph.D.

Amy Dailey, Yale University
AHRQ grant HS15686, Neighborhood, discrimination, and screening mammography
Advisor: Beth Jones, Ph.D., M.P.H.

Julie Darnell, University of Chicago
AHRQ grant HS15555, Factors predicting the prevalence of free clinics
Advisor: Michael R. Sosin, Ph.D.

Shannon Flood, University of Minnesota
AHRQ grant HS15528, Categorizing nursing homes based on quality performance
Advisor: Robert L. Kane, M.D.

Kathryn Flynn, University of Wisconsin
AHRQ grant HS15544, Health care decisionmaking in older adults
Advisor: Maureen Smith, M.D.

Matthew Plow, University of Minnesota
AHRQ grant HS15554, Comparing physiotherapy to a wellness intervention in multiple sclerosis
Advisor: Virgil Mathiowetz, Ph.D.

Danielle Rose, University of California, Los Angeles
AHRQ grant HS15530, Testing for discrimination in health care
Advisor: Thomas Rice, Ph.D.

James Rosenquist, University of Pennsylvania
AHRQ grant HS15561, Improving public health policy for adolescents
Advisor: Mark V. Pauly, Ph.D.

Janice Sabin, University of Washington
AHRQ grant HS15676, Provider implicit racial bias and medical decisionmaking
Advisor: David T. Takeuchi, Ph.D.

Steven Shechter, University of Pittsburgh
AHRQ grant HS15533, Optimizing when to start and switch HIV therapy
Advisor: Mark Roberts, M.D., M.P.P. ■

Research Briefs

Abdolrasulnia, M., Collins, B.C., Casebeer, L., and others. (2004, September). "Using email reminders to engage physicians in an Internet-based CME intervention." (AHRQ grant HS11124). *BMC Medical Education* 4(17), online at www.biomedcentral.com.

E-mail course reminders may enhance recruitment of physicians to interventions designed to reinforce guideline adoption, concludes this study. Over a 45-week period, 445 recruited physicians received up to 33 e-mail contacts announcing and reminding them of an online continuing medical education (CME) activity to reinforce chlamydia screening. Of these physicians, 47 percent logged on and completed at least

one module. The first 10 e-mails were the most effective in engaging community-based physicians to complete the intervention.

Ariza, A.J., Binns, H.J., and Christoffel, K.K. (2004, September). "Evaluating computer capabilities in a primary care practice-based research network." (AHRQ grant HS11248). *Annals of Family Medicine* 2(5), pp. 418-420.

This 2001 survey of the computer capabilities of 40 practices in the Pediatric Practice Research Group (PPRG) found wide variability in the computer hardware and software used. All practices in the group used IBM-compatible systems. Of these, 45 percent used stand-

alone desktops, 40 percent had networked desktops, and about 15 percent used laptops and minicomputers. They used a variety of software packages, with most practices having software for patient care documentation (82 percent), patient accounting (90 percent), business support (60 percent), and management reports and analysis (97 percent). The main obstacles to expanding use of computers in patient care were insufficient staff training (63 percent) and privacy concerns (82 percent).

Atkins, D., Siegel, J., and Slutsky, J. (2005, January). "Making policy when the evidence is in

continued on page 27

Research briefs

continued from page 26

dispute.” *Health Affairs* 24(1), pp. 102-113.

Developing good health policy involves consideration of much more than clinical evidence, according to these AHRQ staff members. They summarize common factors underlying recent health care policy debates and outline a series of questions that can help disentangle questions of evidence from those of values. The questions focus on identifying the most important outcomes, evaluating the quality of evidence, and assessing the trade-offs involved. The authors then use four recent policy debates—prostate-specific antigen screening, high-dose chemotherapy for breast cancer, antibiotic therapy for otitis media, and newborn hearing screening—to illustrate how this approach can help clarify areas of agreement and disagreement of the opposing sides. Reprints (AHRQ Publication No. 05-R033) are available from AHRQ.*

Baine, W.B., and Kazakova, S.V. (2005). “An analysis of administrative data found that proximate clinical event ratios provided a systematic approach to identifying possible iatrogenic risk factors or complications.” *Journal of Clinical Epidemiology* 58, pp. 162-170.

These investigators developed and tested a method to generate hypotheses about iatrogenic risk factors and complications from administrative data on 30,998 elderly patients hospitalized for the first time for depression. They calculated proximate clinical events—for example, principal diagnoses and procedures in hospitalizations within 90 days of the index depression admission—and the ratio of how many events happened before and after the

index admission to identify possible risk factors associated with depression and complications associated with its management. For example, admission for a broken hip was more than 60 percent more common after a depression admission than in the preceding 3 months, most likely due to dizziness (and related falls) associated with use of antidepressants. Reprints (AHRQ Publication No. 05-R028) are available from AHRQ.*

Barker, F.G., and Amin-Hanjani, S. (2004, September). “Changing neurosurgical workload in the United States, 1988-2001: Craniotomy other than trauma in adults.” (AHRQ grant HS11637). *Neurosurgery* 55(3), pp. 506-518.

The neurosurgical caseload for craniotomy other than trauma in adults increased 50 percent between 1988 and 2001, from 70,800 to 105,300 admissions. These surgeries include most open and closed intracranial operations, such as those for intracranial aneurysms, intracerebral hematomas, cerebrospinal fluid shunts, and cranial tumors. Based on an analysis of Nationwide Inpatient Sample (NIS) data, elective admissions increased and in-hospital mortality rates decreased. Length of hospital stay decreased during the first half of the study period and then stabilized. Defining the reasons for these changes in neurosurgical workload will require further research.

Battles, J.B., Wilkinson, S.L., and Lee, S.J. (2004). “Using standardized patients in an objective structured clinical examination as a patient safety tool.” *Quality and Safety in Health Care* 13 (Suppl.1), pp. i46-i50.

Standardized patients (SPs) are individuals who have been trained to portray a medical case in a consistent manner. They are now the gold standard for measuring the competence and clinical practice of physicians and other health professionals. SPs are commonly used in performance assessment as part of an objective structured clinical examination (OSCE). These authors describe how the use of SPs in an OSCE could be a patient safety tool based on cases related to postdonation information in the blood collection process. This information accounts for the majority of errors reported to the U.S. Food and Drug Administration. Reprints (AHRQ Publication No. 05-R027) are available from AHRQ.*

Bonomi, A.E., Holt, V.L., Thompson, R.S., and Martin, D.P. (2005). “Ascertainment of intimate partner violence in women seeking legal protection.” (AHRQ grant HS10909). *American Journal of Preventive Medicine* 28(1), pp. 52-58.

Three brief questions can reasonably identify women who have experienced severe intimate partner violence (IPV) and are seeking legal protection, according to this study. A total of 448 urban women reporting IPV to police or the court system completed surveys at 8 weeks (baseline) and 5 and 10 months after the incident to assess IPV. The investigators compared three questions about physical and psychological abuse to the Conflict Tactics Scale, version 2, in this group of women. The physical abuse question at baseline detected 93 percent of abused women, and the two psychological abuse questions detected 94 percent. These questions should be tested in real-world settings as a tool for

continued on page 28

Research briefs

continued from page 27

initiating conversations with women about abuse.

Boon, H.S., Cherkin, D.C., Erro, J., and others. (2004, October). "Practice patterns of naturopathic physicians: Results from a random survey of licensed practitioners in two U.S. states." (AHRQ grant HS08194). *Complementary and Alternative Medicine* 4(14).

This study compared the practice patterns of naturopathic physicians in Washington State and Connecticut. The researchers interviewed 170 practitioners, of whom 99 recorded data on 1,817 patient visits. Almost 75 percent of naturopathic visits were for chronic complaints, most frequently fatigue, headache, and back symptoms. Complete blood counts, serum chemistries, lipids panels, and stool analyses were ordered for 4 to 10 percent of visits. All other diagnostic tests were ordered less often. The most commonly prescribed naturopathic therapeutics were botanical medicines, vitamins, minerals, homeopathy, and allergy treatments. The mean visit length was about 40 minutes.

Coster, W.J., Haley, S.M., Ludlow, L.H., and others. (2004, December). "Development of an applied cognition scale to measure rehabilitation outcomes." (AHRQ grant HS14386). *Archives of Physical Medicine and Rehabilitation* 85, pp. 2030-2035.

These investigators prospectively studied 477 patients receiving rehabilitation services for neurologic, orthopedic, or complex medical conditions at four post-acute care rehabilitation settings to develop an applied cognition scale to measure rehabilitation outcomes.

They administered applied cognition items from the new Activity Measure for Post-Acute Care, the Medical Outcomes Study 8-item Short Form Health Survey, and an additional setting-specific measure for inpatient rehabilitation. The majority of items (46/59) could be located along a single continuum. The results support the possibility of constructing a meaningful outcome measure to address cognitive functioning.

Dutta, A.P., Daftary, M.N., Oke, F., and others. (2005, January). "Geriatric education in U.S. schools of pharmacy: A snapshot." (AHRQ grant HS11673). *Consultant Pharmacist* 20(1), pp. 45-52.

Geriatric education in pharmacy schools has not increased proportionally with the expected increase in the geriatric population in the United States, according to this 2003 survey of schools of pharmacy in the United States. All 42 of the responding schools had some form of geriatric education incorporated into their curriculum. However, the depth and breadth of the geriatric curriculum did not seem to be much different from results obtained by a 1985-1986 survey. The authors advise schools of pharmacy to make geriatric education a priority.

Flaherty, E.G., Jones, R., Sege, R., and The Child Abuse Recognition Experience Study Research Group. (2004). "Telling their stories: Primary care practitioners' experience evaluating and reporting injuries caused by child abuse." (AHRQ grant HS10746). *Child Abuse & Neglect* 28, pp. 939-945.

Two themes emerged from a focus group discussion on experience with child abuse injuries among six Chicago area primary care physicians: the

importance of a physician's own past experience in identifying and reporting suspected child abuse and the responsibility physicians experience as they try to assess possible abuse within the time constraints of an office visit. The physicians mentioned the following obstacles to decisionmaking about suspected child abuse: lack of knowledge about child abuse, their previous experience with child protective services, and the additional time required to evaluate and report suspected abuse. They felt rapid availability of expert consultation would improve comfort with their decisions.

Fletcher, K.E., Davis, S.Q., Underwood, W., and others. (2004). "Systematic review: Effects of resident work hours on patient safety." (AHRQ grant HS11540). *Annals of Internal Medicine* 141, pp. 851-857.

The Accreditation Council for Graduate Medical Education mandated new work hour rules for all residency programs in July 2003. However, evidence on patient safety is insufficient to inform the process of reducing resident work hours, according to this study. The investigators systematically reviewed studies that assessed interventions (for example, float systems or other cross-coverage systems or unspecified schedule changes) designed to counteract the effects of extended work hours, fatigue, and sleep deprivation on an outcome related to patient safety. They found that introducing such interventions had an unclear effect on selected patient safety indicators. Some indicators changed, while others improved or worsened.

Fried, M.P., Satava, R., Weghorst, S., and others. (2004). "Identifying and reducing errors

continued on page 29

Research briefs

continued from page 28

with surgical simulation.” (AHRQ grant HS11866). *Quality and Safety in Health Care* 13(Suppl.1), pp. i19-i26.

These investigators describe a study in which they are assessing whether the integration of a comprehensive endoscopic sinus surgery simulator (ES3) training program into the residency curriculum will have long-term effects on surgical performance and patient outcomes. Using various otolaryngology residencies, subjects are exposed to mentored training on the ES3 as well as to minimally invasive trainers such as the MIST-VR. Technical errors are identified and quantified intraoperatively and on the simulator. Through a Web-based database, individual performance can be compared against a national standard. The information gained can help usher in the next generation of surgical simulators to improve patient safety.

Goodman, H.S., Manski, M.C., Williams, J.N., and others. (2005, February). “An analysis of preventive dental visits by provider type, 1996.” *Journal of the American Dental Association* 136, pp. 221-228.

Sociodemographic factors are associated with having a preventive dental visit with a dentist or dental hygienist. These factors also influence the per-person number of preventive visits by type of dental practitioner, according to this study. For example, survey respondents were more likely to receive preventive care from a dental hygienist than a dentist if they were white, aged 18 or older, and female; had dental insurance, a higher income, and more education; and resided in small metropolitan areas. These elements should be considered when

planning for future dental work force needs, suggest the authors. Their findings were based on analysis of data from the 1996 Medical Expenditure Panel Survey. Reprints (AHRQ Publication No. 05-R030) are available from AHRQ.*

Green, L.A., Fryer, G.E., Froom, P., and others. (2004, October). “Opportunities, challenges, and lessons of international research in practice-based research networks: The case of an international study of acute otitis media.” (AHRQ grant HS07035). *Annals of Family Medicine* 2(5), pp. 429-433.

The opportunity to study naturally occurring variation in treatment prompted collaboration among primary care research networks in the United Kingdom, the Netherlands, and North America to study treatment of acute otitis media. These authors describe the project and practical lessons learned from it. For example, international research, particularly in practice-based research networks, requires additional effort, administrative skill, and patience and will take longer than expected. Strong, trusting relationships among coinvestigators can be the basis of overcoming much adversity and can be cultivated through conference calls, meetings, and social engagements.

Grossberg, R., Zhang, Y., and Gross, R. (2004). “A time-to-prescription-refill measure of antiretroviral adherence predicted changes in viral load in HIV.” (AHRQ grant HS10399). *Journal of Clinical Epidemiology* 57, pp. 1107-1110.

A time-to-prescription-refill measure is a valid measure of antiretroviral therapy adherence and should be

incorporated into clinical practice and adherence research, according to these researchers. They observed time from a prescription to refill for 110 HIV-infected individuals on a stable, highly active antiretroviral regimen for at least 3 months at one medical center. The viral load decreased by 0.12 log c/mL for each 10 percent increase in pharmacy-based time-to-refill defined adherence as compared with 0.05 log c/mL for the self-reported adherence measure. Also, those classified as having good adherence using the pharmacy-based measure had greater viral load reductions than those who had poor adherence (2.4 log c/mL vs. 1.5 log c/mL).

Karsh, B.T. (2004). “Beyond usability: Designing effective technology implementation systems to promote patient safety.” (AHRQ grant HS13610). *Quality and Safety in Health Care* 13, pp. 388-394.

Many technologies that should reduce medical errors have been abandoned because of problems with their design, their impact on workflow, or general dissatisfaction by end users. This author reviews the theoretical knowledge on what leads to successful technology implementation and how this can be translated into specifically designed processes for successful technology change. The author reviews the literature on diffusion of innovations, technology acceptance, organizational justice, participative decisionmaking, and organizational change, as well as strategies for promoting successful implementation.

Kim, M., Zaslavsky, A.M., and Cleary, P.D. (2005, January). “Adjusting pediatric Consumer Assessment of Health Plans Study (CAHPS) scores to ensure

continued on page 30

Research briefs

continued from page 29

fair comparison of health plan performances.” (AHRQ grant HS09205 and contract 290-01-0003). *Medical Care* 43(1), pp. 44-52.

Patient characteristics (casemix) are not under the control of health plans, but they affect plan ratings in surveys such as the Consumer Assessment of Health Plans Study (CAHPS). Plan scores on the pediatric CAHPS survey should be adjusted for plan differences in casemix, specifically, child health status, parent age, and parent education, concludes this study. The investigators analyzed responses to the pediatric CAHPS 2.0 surveys from 50,583 Medicaid beneficiaries and 43,579 privately insured individuals. They found that parent age and education and child health status and race were important casemix adjustment variables for pediatric CAHPS surveys.

Kuo, W.H., Wilson, T.E., Weber, K.M., and others. (2004). “Initiation of regular marijuana use among a cohort of women infected with or at risk for HIV in the Women’s Interagency HIV Study (WIHS).” (Cosponsored by AHRQ, NIH, and CDC). *AIDS Patient Care and STDs* 18(12), pp. 702-713.

Among HIV-infected women, the incidence of weekly marijuana use is associated with only one marker of HIV disease stage (wasting syndrome). Also, use of highly active antiretroviral therapy (HAART) is associated with a lower initiation rate of weekly marijuana use, according to this study. The researchers calculated the incidence rate for initiating weekly marijuana use and correlates of use among 2,059 HIV-positive and 569 HIV-negative women recruited from six sites in

1994 and 1995 (baseline) and followed through 2000. Within 5.5 years of the baseline visit, 15 percent began weekly marijuana use. While undetectable viral load was associated with lower incidence of weekly marijuana use and wasting syndrome with a higher incidence, CD4 cell count was not associated with the incidence rate of weekly marijuana use.

Larson, E., Bratts, T., Zwanziger, J., and Stone, P. (2004). “A survey of IRB process in 68 U.S. hospitals.” (AHRQ grant HS13114). *Journal of Nursing Scholarship* 36(3), pp. 260-264.

Current institutional review board (IRB) review processes are cumbersome and nonstandardized, and review time varies widely, according to the results of this survey of IRB processes at 68 U.S. hospitals participating in a multicenter study. About 34 percent of the hospitals required that the principal investigator listed on the application be from within the institution, 27 percent required evidence of human subjects research training, and 10 percent required a conflict of interest statement. Time from submission of the IRB application to approval averaged 45.4 days, with a range from 1 to 303 days.

Linkin, D.R., Fishman, N.O., Patel, J.B., and others. (2004, September). “Risk factors for extended-spectrum beta-lactamase-producing *Enterobacteriaceae* in a neonatal intensive care unit.” (AHRQ grant HS10399). *Infection Control and Hospital Epidemiology* 25(9), pp. 781-783.

There have been many reports of extended-spectrum beta-lactamase (ESBL)-producing *Enterobacteriaceae* in neonatal intensive care units

(NICUs). Low gestational age and exposure to third-generation cephalosporins are risk factors for colonization or infection with (ESBL)-producing *Enterobacteriaceae* during an outbreak in a NICU, concludes this study. The researchers performed a case-control study among neonates in a NICU in 1998, who had *Escherichia coli*, *Klebsiella pneumoniae*, or *Klebsiella oxytoca* isolates to determine risk factors for the isolates demonstrating ESBL-mediated resistance. They also searched the literature for studies that evaluated clinical risk factors for colonization or infection with ESBL-producing organisms in a NICU population.

Mendeloff, J., Ko, K., Roberts, M.K., and others. (2004, December). “Procuring organ donors as a health investment: How much should we be willing to spend?” (AHRQ grant HS09694). *Transplantation* 78(12), pp. 1704-1710.

These authors examined the benefits and costs that accrue when a cadaveric organ donor is procured. Costs were estimated on a quality-adjusted life year (QALY) basis. They calculated the average number of kidney, heart, and liver transplants that a typical cadaveric donor generates. Using the published literature, they estimated for each organ type the average number of QALYs that transplants add and the average medical costs they generate. The researchers multiplied per organ benefits and costs by the number of organs from the typical donor. They found that the typical donor generates about 13 QALYs at an added medical cost of about \$214,000, or approximately \$16,000 per QALY. Most analysts agree that a figure of \$100,000 per QALY is reasonable. At that value, the benefit obtained

continued on page 31

Research briefs

continued from page 30

from one added donor would be \$1.3 million, while the medical costs would be \$214,000.

Nemoto, E.M., Yonas, H., Kuwabara, H., and others. (2004). "Identification of hemodynamic compromise by cerebrovascular reserve and oxygen extraction fraction in occlusive vascular disease." (AHRQ grant HS09021). *Journal of Cerebral Blood Flow & Metabolism* 24, pp. 1081-1089.

Both cardiovascular reserve (CVR) and oxygen extraction fraction (OEF) have been proven capable of identifying a subgroup of patients at increased stroke risk. However, the results of this study suggest that OEF alone may not be adequate to identify the true spectrum of patients at increased stroke risk. The researchers studied 12 symptomatic patients with carotid occlusion by xenon-computed tomography after intravenous acetazolamide administration for CVR, followed within 24 hours by positron emission tomography for OEF. CVR and OEF showed a significant negative linear relationship in stage II hemodynamic compromise. However, 37.5 percent of the hemispheres showed compromised CVR but normal OEF and were associated with subcortical white matter infarction.

Newgard, C.D., Lewis, R.J., and Kraus, J.F. (2005, January). "Steering wheel deformity and serious thoracic or abdominal injury among drivers and passengers involved in motor vehicle crashes." (AHRQ grant F32 HS00148). *Annals of Emergency Medicine* 45(1), pp. 43-50.

Steering wheel deformity is a factor in serious thoracic and abdominal injury in drivers and front seat passengers, concludes this study. The investigators analyzed data on serious thoracic or abdominal injury among 42,860 individuals 16 years of age and older who were involved in motor vehicle crashes while seated in the driver or front passenger seat. Overall, 1.3 percent had serious thoracic injuries, and 0.4 percent suffered serious abdominal injuries. Increasing steering wheel deformity was associated with a 28 percent increase in serious thoracic injury in drivers for each 5-cm increase in deformity and a 45 percent increase in serious abdominal injury in front seat passengers but not in drivers.

Orlando, M., Tucker, J.S., Sherbourne, C.D., and Burnam, M.A. (2005, January). "A cross-lagged model of psychiatric problems and health-related quality of life among a national sample of HIV-positive adults." (AHRQ grant HS08578). *Medical Care* 43(1), pp. 21-27.

This is the first study to demonstrate a reciprocal relationship between psychiatric symptoms and physical aspects of quality of life among HIV-positive adults. The researchers studied four components of health-related quality of life (HRQOL): general health, lack of pain, physical functioning, and role functioning and psychiatric symptoms of depressive and anxiety disorders among 2,431 HIV-positive adults at baseline and about 8 months later. Patients with more initial depressive symptoms showed increased pain and declining general health perceptions over the 8-month period. Those who initially had higher general health perceptions, no pain, and good physical functioning

exhibited significantly decreased symptoms of either depressive or anxiety disorder or both.

Rosen, J., Mulsant, B.H., Bruce, M.L. and others. (2004, October). "Actors' portrayals of depression to test interrater reliability in clinical trials." (AHRQ grant HS11976). *American Journal of Psychiatry* 161(10), pp. 1909-1911.

Training and testing materials for raters participating in multicenter clinical trials on depression could be developed by using trained actors to portray depressive psychopathology without the risk of disseminating the clinical information of actual patients, concludes this study. For the study, actors portrayed depressed patients using scripts derived from depression rating scale assessments obtained at three points during treatment. Four experienced raters viewed videotapes of two patients and two actors and guessed who the actors were. The raters could not distinguish actors and patients better than chance.

Rutitzky, L.I., Hernandez, H.J., Yim, Y.S., and others. (2005). "Enhanced egg-induced immunopathology correlates with high IFN- γ in murine schistosomiasis: Identification of two epistatic genetic intervals." (AHRQ grant T32 HS00060). *Journal of Immunology* 174, pp. 435-440.

Schistosomiasis is a serious parasitic disease responsible for over 200 million human infections and 200,000 deaths each year. This study of murine schistosomiasis revealed at least three genetic regions influencing the levels of granulomatous inflammation (liver fibrosis was not specifically analyzed) and SEA-elicited IFN- γ response. The researchers

continued on page 32

Research briefs

continued from page 31

performed a multipoint parametric linkage analysis on a cohort of mice to examine whether the observed differences in the type of immune response or extent of liver immunopathology were linked to any particular genomic intervals. The findings clearly indicate, as is the case in humans, that the control of murine immunopathology is polygenic.

Schleinitz, M.D., Olkin, I., and Heidenreich, P.A. (2004, December). "Cilostazol, clopidogrel or ticlopidine to prevent sub-acute stent thrombosis: A meta-analysis of randomized trials." (AHRQ grant T32 HS00011). *American Heart Journal* 148(6), pp. 990-997.

These researchers conducted a meta-analysis of all trials that compared two or more oral anti-thrombotic agents—clopidogrel plus aspirin, ticlopidine plus aspirin, and cilostazol and aspirin—in patients undergoing coronary stent placement to determine which treatment optimally prevents adverse cardiac events in the 30 days following stent placement. They found that neither clopidogrel plus aspirin nor cilostazol plus aspirin could be statistically distinguished from ticlopidine plus aspirin for the prevention of adverse cardiac events in the 30 days after stenting. They conclude that a randomized trial including cilostazol is warranted.

Sedman, A., Harris, M., Schulz, K., and others. (2005, January). "Relevance of the Agency for Healthcare Research and Quality patient safety indicators for children's hospitals." *Pediatrics* 115(1), pp. 135-145.

For this study, researchers applied patient safety indicators

(PSIs) developed by the Agency for Healthcare Research and Quality to children's hospitals to determine which PSIs would be appropriate for use in that setting. They concluded that PSIs can be relevant as quality screening tools for children's hospitals. Some—such as foreign body left in during a procedure, infection attributable to medical care, and decubitus ulcer—seem to be appropriate for pediatric care and may be directly amenable to system changes. Two of the indicators—namely, failure to rescue and death in low-mortality diagnostic groups—are inaccurate for the pediatric population and should not be used to estimate quality of care or preventable deaths in children's hospitals. Reprints (AHRQ Publication No. 05-R034) are available from AHRQ.*

Shwartz, M., Pekoz, E.A., Ash, A.S., and others. (2005, January). "Do variations in disease prevalence limit the usefulness of population-based hospitalization rates for studying variations in hospital admissions?" (AHRQ grant HS09832). *Medical Care* 43(1), pp. 4-11.

Differences in disease prevalence can limit the usefulness of population-based hospitalization rates for studying variations in hospital admissions, concludes this study. The authors examined 1997 Medicare data on both inpatient admissions and outpatient visits of elderly patients in each of 71 small areas in Massachusetts for 15 medical conditions. They used Bayesian analysis to estimate area-specific population-based hospitalization rates, disease-based hospitalization rates (DHRs), and disease prevalence. For 11 of the 15 conditions, 5 or more of the 14 areas that were ranked in the top and bottom deciles by

population-based hospitalization rates were more likely than not to be at least 2 deciles less extreme when ranked by DHRs.

Solomon, L.S., Hays, R.D., Zaslavsky, A.M., and others. (2005, January). "Psychometric properties of a group-level Consumer Assessment of Health Plans Study (CAHPS) instrument." (AHRQ grant HS09205). *Medical Care* 43(1), pp. 53-60.

The Consumer Assessment of Health Plans Study (CAHPS) survey for use with medical groups (G-CAHPS) provides an assessment of selected aspects of care that are important to consumers and could be a useful complement to the plan-level CAHPS survey, according to this study. The researchers tested a draft G-CAHPS in 75 interviews with adults in three areas and pretests in four groups of adults in two cities. They then surveyed random samples of patients from medical groups and practice sites in California, Knoxville, St. Louis, and Denver. Data supported the reliability and validity of three multi-item measures to differentiate access, office staff service, and patient-clinician communication among medical groups. Measures related to specialty care and preventive counseling did not differentiate among medical groups.

Srivastava, R., Norlin, C., James, B.C., and others. (2005, January). "Community and hospital-based physicians' attitudes regarding pediatric hospitalist systems." (AHRQ grant HS11826). *Pediatrics* 115(1), pp. 34-38.

According to this study, attitudes about hospitalist systems differ between physician groups and are influenced by practice

continued on page 33

Research briefs

continued from page 32

characteristics. A total of 313 physicians with admitting privileges at a tertiary-care, pediatric teaching hospital responded to a 2002 survey about attitudes regarding hospitalists. Community physicians more often characterized inpatient care as an inefficient use of time (45 vs. 25 percent), but they were less likely to think that hospitalists would improve the quality of care (49 vs. 68 percent) or increase patient satisfaction (10 vs. 30 percent). Being a community physician and admitting patients at more than one hospital were associated with less favorable attitudes.

Titler, M.G. (2004). "Overview of the U.S. invitational conference 'Advancing quality care through translation research'." (AHRQ grant HS14141). *Worldviews on Evidence-Based Nursing Third Quarter (Suppl.)*, pp. S1-S5.

This article provides an overview of an October 2003 conference, "Advancing Quality Care Through Translation Research." Translation research examines factors that influence adoption of evidence-based practices by individuals and organizations to improve health care. Papers from the conference are included in the journal supplement. They discuss such topics as translation studies in long-term and primary care; TRIP (translating research into practice) interventions tested, methodological issues encountered, and strategies used to resolve these issues; and quality of the evidence and impact on the adoption of a specific evidence-based practice.

Twiggs, J.E., Fifield, J., Jackson, E., and others. (2004). "Treating asthma by the guidelines: Developing a medication

management information system for use in primary care." (AHRQ grant HS11068). *Disease Management* 7(3), pp. 244-260.

The researchers discuss how they developed, implemented, and assessed an automated asthma medication management information system (MMIS) in primary care settings within a pediatric asthma disease management program. MMIS collects detailed asthma medication data on patients; evaluates pharmacotherapy relative to practitioner-reported disease severity, symptom control, and guideline-recommended severity-appropriate medications; and produces a patient-specific "curbside consult" feedback report. MMIS was successful, producing a valid feedback report for 83 percent of visits.

Watson, N.M. (2004). "Advancing quality of urinary incontinence evaluation and treatment in nursing homes through translational research." (AHRQ grant HS11064). *Worldviews on Evidence-Based Nursing Third Quarter (Suppl.)*, pp. S21-S25.

This article describes ongoing research to improve the evaluation and treatment of urinary incontinence (UI) in nursing homes through "A Model for Use of the Urinary Incontinence Guideline in U.S. Nursing Homes." The model proposes nurse practitioners (NPs) as consultants to nursing homes to perform the basic UI evaluation and treatment in order to reduce UI, minimize complications, and increase cost savings attributable to UI reduction. They used a pre- and post-comparison using four control and four experimental NP caseloads followed for 16 weeks post-UI onset. Findings are not yet available.

White, A.A., Wright, S.W., Bianco, R., and others. (2004, October). "Cause-and-effect analysis of risk management files to assess patient care in the emergency department." (AHRQ grant HS11563). *Academic Emergency Medicine* 11(10), pp. 1035-1041.

This paper describes a method to identify common causes of adverse outcomes in an emergency department. The investigators analyzed 74 risk-management files opened by a malpractice insurer between 1995 and 2000 to identify potential causes of adverse outcomes. About 50 percent of cases were related to injuries or abdominal complaints. A contributing cause was found in 92 percent of cases. The most frequent contributing causes included failure to diagnose (45 percent), supervision problems (31 percent), communication problems (30 percent), patient behavior (24 percent), administrative problems (20 percent), and documentation (20 percent).

Whitehall II Study (AHRQ grant HS06516): Bartley, M., Martikainen, P., Shipley, M., and Marmot, M. (2004). "Gender differences in the relationship of partner's social class to behavioral risk factors and social support in the Whitehall II study." *Social Science & Medicine* 59, pp. 1925-1936; Kivimaki, M., Head, J., Ferrie, J.E., and others. (2005, January). "Working while ill as a risk factor for serious coronary events." *American Journal of Public Health* 95(1), pp. 98-102; Kivimaki, M., Ferrie, J.E., Head, J., and others. (2004). "Organizational justice and change in justice as predictors of employee health." *Journal of Epidemiology and Community Health* 58, pp. 931-937; Singh-

continued on page 34

Research briefs

continued from page 33

Manoux, A., Ferrie, J.E., Chandola, T., and Marmot, M. (2004). "Socioeconomic trajectories across the life course and health outcomes in midlife: Evidence for the accumulation hypothesis?" *International Journal of Epidemiology* 33, pp. 1072-1079; and **Stafford, M., Martikainen, P., Lahelma, E., and Marmot, M. (2004).** "Neighbourhoods and self rated health: A comparison of public sector employees in London and Helsinki." *Journal of Epidemiology and Community Health* 58, pp. 772-778.

These five studies examined data from the large, long-term Whitehall II study of British civil servants. The first study analyzed associations between a person's or spouse's (or partner's)

socioeconomic position and a set of risk factors for prevalent chronic diseases. The second study found that employees who took no sick days during a 3-year period were twice as likely to suffer serious coronary events as those who took sick leave. According to the third study, the extent to which people were treated with justice in the workplace seemed to predict their health independently of established stressors at work. The fourth study concluded that the health effects of socioeconomic disadvantage accumulate over the life course. The fifth study revealed that neighborhood socioeconomic context was associated with workers' health in both London and Helsinki.

Wilson, I.B., Landon, B.E., Ding, L., and others. (2005, January). "A national study of the

relationship of care site HIV specialization to early adoption of highly active antiretroviral therapy." (AHRQ grant HS10227). *Medical Care* 43(1), pp. 12-20.

In 1996, use of highly active antiretroviral therapy (HAART) varied widely by site of care. HIV specialization, total patient volume of more than 20,000 visits a year, and educational level of the zip code in which the site was located were associated with higher rates of HAART use. These results persisted after adjustment for physician HIV expertise. The findings are based on analysis of a national probability sample of people receiving care for HIV in 1996 who participated in the HIV Cost and Services Utilization Study. ■

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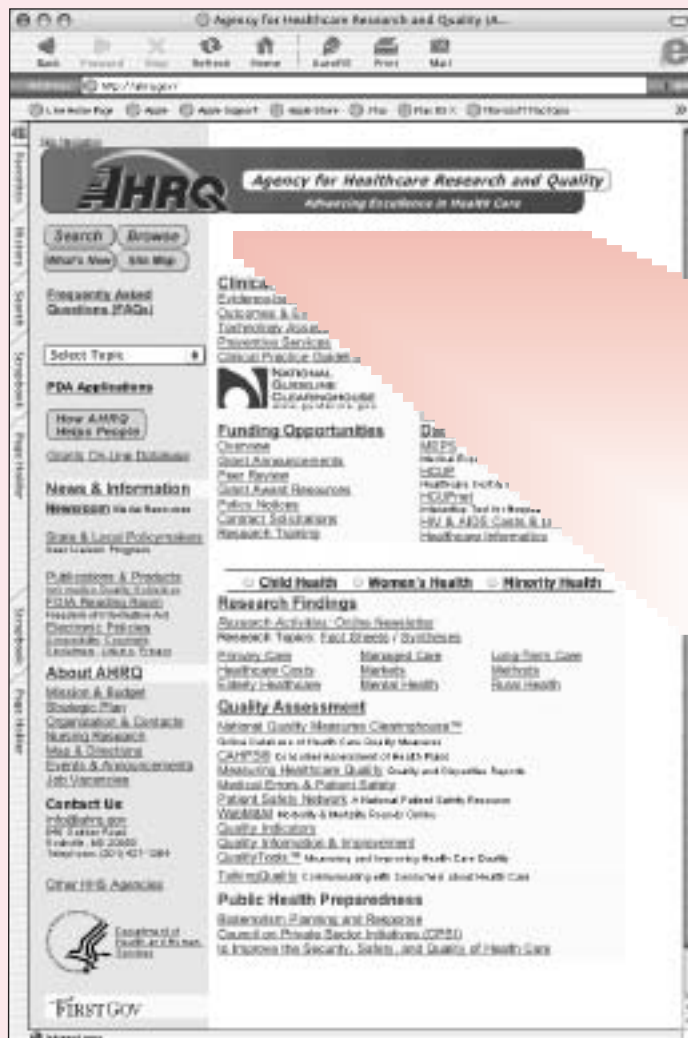
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