Research Activities

No. 246, February 2001

Highlights

Departments

Regular Features

Patients who choose doctors of the opposite sex generally are more satisfied with their care

Patients who chose doctors of the opposite sex in a large group-model health maintenance organization (HMO) in California generally were more satisfied with their physicians than patients who selected doctors of the same sex. In fact, women who chose female physicians were the least satisfied with their physician (74 percent), while male patients who chose female physicians were the most satisfied (85 percent). About 79 percent of female patients of male doctors and male patients of male doctors were satisfied.

This male-female phenomenon was not seen among patients who were assigned to their physicians, according to a study supported by the Agency for Healthcare Research and Quality (HS08269). The researchers analyzed patient-primary care doctor dyads by sex in a random sample of HMO members aged 35 to 85 years.

Patients who choose their own doctors may have higher expectations for certain physician qualities, which affects their care satisfaction. In fact, Joe V. Selby, M.D., M.P.H., of the Kaiser Permanente Medical Care Program of Northern California, and his colleagues found that female patients placed a higher value than male patients on a physician's communication skills and personal manner. Female patients also appeared to value technical skills more highly than male patients in this sample.

The female doctors selected by women in this study may not have achieved certain care ideals, such as better communication on social, lifestyle, prevention, and emotional concerns. On the other hand, the productivity demands of physicians in HMOs may make it difficult for female physicians to spend more time with their patients despite patient expectations. For example, female doctors in this study, as in many settings, were more likely to work part-time (60 to 90 percent time). Accounting for this part-time status, their workload was larger than that of their male

Attention researchers:
See page 24 for two new RFAs on patient safety.

continued on page 2

Patient satisfaction

continued from page 1

counterparts (i.e., they had larger effective panels of primary care patients, 1,552 vs. 1,388 for male doctors), which may have compounded problems related to heightened patient expectations. However, this does not explain why male patients of these same female doctors were so satisfied, note the researchers.

For more details, see "Effect of physician and patient gender concordance on patient satisfaction and preventive care practices," by Julie Schmittdiel, M.A., Kevin Grumbach, M.D., Dr. Selby, and Charles P. Quesenberry, Jr., Ph.D., in the November 2000 *Journal of General Internal Medicine* 15, pp. 761-769. ■

Clinical Decisionmaking

People who suffer frequent attacks of one type of heart arrhythmia can benefit substantially from nondrug therapy

Individuals who suffer frequent, severe attacks of a certain form of heart arrhythmia—supraventricular tachycardia—can benefit from a treatment that improves their quality of life and is more cost effective than long-term drug therapy, concludes a study supported by the Agency for Healthcare Research and Quality (HS08362). Supraventricular tachycardia is caused by a misdirection of an electrical signal in the heart. It usually is not life-threatening, but it can cause an individual to feel light-headed or even faint. If the episodes are particularly severe or occur often, they can interfere with a person's ability to drive safely and may restrict other activities. Sometimes urgent medical care, including intravenous drug treatment in an emergency room, is needed to get the heartbeat back on track.

Radiofrequency ablation provides an option to long-term drug therapy for patients who suffer from monthly episodes of supraventricular tachycardia. Despite its $8,500 price tag, the procedure substantially improves patient quality of life and reduces costs in patients who have frequent attacks. In this procedure, doctors thread a catheter from a blood vessel near the patient's hip up to the heart. Once there, doctors aim radiofrequency waves at the region of the heart's electrical conduction system responsible for the problem. Heat from the waves destroys the tissue and prevents the signal from going astray. This treatment cures the vast majority of patients, notes Mark Hlatky, M.D., of Stanford University, who is principal investigator of the AHRQ-supported Cardiac Arrhythmia Patient Outcomes Research Team (PORT).

The team found that radiofrequency ablation improved life expectancy by 3 quality-adjusted life-years and reduced lifetime medical expenditures by $27,900 compared with long-term drug therapy. When compared with episodic drug treatment, the procedure saves more than $81,000. This study was part of an ongoing multicenter study of cardiac treatment options. The researchers used a computer-based model to compare the cost and effectiveness of radiofrequency ablation with two other treatments: long-term daily drug therapy and drugs that were given only during an arrhythmia episode.

More details are in "Cost-effectiveness of radiofrequency ablation for supraventricular tachycardia," by Carol H.F. Cheng, B.S., Gillian D. Sanders, Ph.D., Dr. Hlatky, and others, in the December 5, 2000 *Annals of Internal Medicine* 133, pp. 864-876. ■

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Lowering elevated homocystine levels could result in substantial clinical benefits at a reasonable cost

Elevated total plasma levels of the amino acid homocystine (tHcy) of 11 µml/L or greater are a potential risk factor for atherosclerosis and coronary heart disease (CHD). In fact, among the U.S. population, elevated tHcy levels may account for up to 10 percent of CHD deaths in men and 6 percent in women. Elevated tHcy levels are most often caused by mild nutritional deficiencies and can be lowered with folic acid in doses as low as 400 mg, which is the Food and Drug Administration's recommended daily allowance.

Brahmajee K. Nallamothu, M.D., M.P.H., and other researchers from the University of Michigan recommend screening 40-year-old men and 50-year-old women with a single tHcy assay, followed by use of folic acid and vitamin B12 supplements for those with elevated tHcy levels. Their study, which was supported by the Agency for Healthcare Research and Quality (National Research Service Award training grant T32 HS00053), found this approach to be more cost effective than universal supplementation.

The researchers constructed a decision model to estimate the clinical benefits and economic costs of two homocystine-lowering strategies: treat all—no screening, daily supplementation with 400 mg folic acid and 500 mg vitamin B12; or screen and then treat with daily supplements only those with elevated tHcy levels. The model was based on simulated groups of 40-year-old men and 50-year-old women in the general population and assumed that lowering elevated tHcy levels would reduce excess CHD risk by 40 percent.

Although the treat-all strategy was slightly more effective overall, the screen and treat strategy resulted in much lower costs per life-year saved ($13,600 in men and $27,500 in women) when compared with no intervention. These costs are comparable to traditional CHD prevention strategies. Incremental cost-effectiveness ratios for the treat-all strategy compared with the screen and treat strategy were more than $500,000 per life-year saved in both groups. Cost-effectiveness ratios for the screen and treat strategy remained less than $50,000 per life-year saved, even when the effect of homocystine lowering was assumed to reduce the risk of CHD-related death by only 11 percent in men and 23 percent in women.

More details are in "Potential clinical and economic effects of homocystine lowering," by Dr. Nallamothu, A. Mark Fendrick, M.D., Melvyn Rubenfire, M.D., and others, in the December 11, 2000 *Archives of Internal Medicine* 160, pp. 3406-3412. ■

Many questions remain regarding the optimal screening strategy for hereditary hemochromatosis

Hereditary hemochromatosis (HHC) is a common disorder that affects from 3 to 8 of every 1,000 people. HHC patients have enhanced gastrointestinal absorption of iron and may accumulate excessive iron stores, which causes organ dysfunction. Two mutations in the HFE gene—C282Y and H63D—have been described in HHC patients. However, a new study shows that asymptomatic patients with moderate iron overload have a different genotypic profile than that seen in patients with advanced iron overload. In the study, fewer asymptomatic patients had homozygous C282Y than clinically affected (symptomatic) patients. The study was supported in part by the Agency for

continued on page 4

Also in this issue:

Hereditary hemochromatosis

continued from page 3

Healthcare Research and Quality (HS07616).

Screening for HHC by means of transferrin saturation (TS) levels has been advocated and will identify many patients who are asymptomatic. However, the significance of identifying patients with modest degrees of iron loading who may not be homozygous for C282Y must be addressed if routine TS screening is to be implemented, according to the researchers.

Ronald L. Sham, M.D., of Rochester General Hospital, and his colleagues determined HFE genotypes among 123 asymptomatic HHC patients referred to their clinic. They correlated the patients' genotypic profiles with the degree of iron overload and evaluated the relationship between mobilized iron (mob Fe), age, serum ferritin (SF), and quantitative hepatic iron (QHI) in this population. They also used quantitative phlebotomy to determine mob Fe and genotyping for C282Y and H63D mutations.

Of the entire group, 60 percent were homozygous for C282Y, and 13 percent were compound heterozygotes (C282Y/H63D). Asymptomatic patients who had a lower iron burden frequently had genotypes other than homozygous C282Y, a different genotypic profile than those with advanced iron overload. As routine screening for HHC using TS testing becomes more commonplace, clinicians will need a comprehensive understanding of the laboratory phenotypes and genotypes that can be seen in identified patients, conclude the authors.

More details are in "Asymptomatic hemochromatosis subjects: Genotypic and phenotypic profiles," by Dr. Sham, Richard F. Raubertas, Ph.D., Caroline Braggins, M.B.A., and others, in the December 1, 2000 *Blood* 96(12), pp. 3707-3711. ■

Outpatient management of new TIA or minor stroke could be improved

About 750,000 Americans have strokes each year, and many die or are disabled as a result. Patients who have suffered a recent transient ischemic attack (TIA or mini stroke) are at highest risk of stroke soon after the TIA. Thus, even in those not admitted to a hospital, a rapid and complete diagnostic evaluation is warranted.

Yet in a recent study, one-third (32 percent) of patients with a first TIA or stroke initially evaluated in the office by their primary care physician (PCP) were not hospitalized and had no further diagnostic evaluations over the next 30 days. The study was carried out by the Stroke Prevention Patient Outcomes Research Team (PORT) and supported by the Agency for Healthcare Research and Quality (PORT contract 290-91-0028). In fact, diagnostic studies necessary for rational therapeutic decisions, for example, brain imaging and vascular imaging, frequently were not performed.

Some PCPs also appeared to underuse anticoagulants to prevent stroke in patients who had atrial fibrillation and additional cardioembolic risk factors, notes PORT principal investigator David B. Matchar, M.D., of Duke University. The researchers retrospectively audited medical records from 27 primary care practices of 95 patients with a first-ever TIA and 81 patients with a first stroke.

Only 6 percent of these patients were admitted to a hospital for further diagnostic testing and management on the day of their initial office evaluation (2 percent of TIA patients and 10 percent of stroke patients). An additional 3 percent of patients were admitted to a hospital during the subsequent 30 days. PCPs ordered a brain computerized tomography scan or magnetic resonance imaging on the day of the initial visit in only 30 percent of patients (23 percent TIA, 37 percent stroke), regardless of whether the patient was referred to a specialist. They obtained carotid ultrasound studies in 28 percent, electrocardiograms in 19 percent, and echocardiograms in 16 percent of patients. Fewer than half of patients with a prior history of atrial fibrillation were anticoagulated. Larry B. Goldstein, M.D., the study's lead author, cautions

continued on page 5

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Outpatient managment of new TIA

continued from page 4

that the patients in this study represent a biased sample of stroke patients, many of whom were evaluated primarily in hospital settings, and the data used for the study were limited to those documented in the patients' records.

See "New transient ischemic attack and stroke: Outpatient management by primary care physicians," by Dr. Goldstein, John Bian, M.S., Gregory P. Samsa, Ph.D., and others, in the October 23, 2000 *Archives of Internal Medicine* 160, pp. 2941-2946. ■

Certain clinical criteria can identify elderly trauma victims who don't need an x-ray to rule out cervical spine injury

Elderly patients who suffer even mild trauma, usually from a fall, have a greater risk of cervical spine injuries than younger trauma victims, probably because of age-related problems such as osteopenia (reduced spinal bone mass). Often, it is difficult to tell which trauma patients need x-rays to rule out cervical spine injuries. However, a new study outlines specific clinical factors that identify elderly patients at low risk of having cervical spine injury who do not need x-rays. This approach correctly identified all of the very old (older than 80 years) cervical spine injury victims as well as those who did not have such injuries.

Essentially, the researchers found that x-rays were not needed for elderly blunt trauma victims who did not have any of the following: posterior midline cervical spine tenderness, focal neurological deficit, abnormal level of alertness, evidence of intoxication, or clinically apparent distracting painful injury. This approach was confirmed as useful for identifying younger cervical spine injury patients in the recently completed National Emergency X-radiography Utilization Study (NEXUS), according to William R. Mower, M.D., Ph.D. In the current study, which was supported by the Agency for Healthcare Research and Quality (HS08239), Dr. Mower and his colleagues at the University of California, Los Angeles' Emergency Medicine Center analyzed use of this decision rule to identify and rule out cervical spine injuries among the 1,070 elderly NEXUS blunt trauma patients seen in the emergency departments of 21 participating U.S. medical centers.

The researchers also compared the elderly patients' injuries with those of younger patients enrolled in the NEXUS study. Nearly 5 percent of very elderly patients sustained cervical spine injuries compared with 2.4 percent of all NEXUS patients. Injuries to the craniocervical junction accounted for 47 percent of the injuries in the elderly but only 29 percent of injuries in younger patients. Older fracture victims were also likely to have more injuries than their younger counterparts (2.54 vs 1.78 injuries/patient).

More details are in "Cervical spine injury in the very elderly," by Bryan Ngo, B.S., Jerome R. Hoffman, M.D., and Dr. Mower, in *Emergency Radiology* 7, pp. 287-291, 2000. ■

Women's Health

Improvements are needed in screening of sexually active young women for chlamydia infection

The most common sexually transmitted disease (STD) in the United States is *Chlamydia trachomatis* infection, affecting about 4 million people at a yearly cost of $2.2 billion. Women with this infection can develop pelvic inflammatory disease, ectopic pregnancy (and related death), infertility, and chronic pelvic pain, and they may increase their risk of contracting the human immunodeficiency virus (HIV) that causes AIDS. Apparently, there is much room to improve chlamydia screening rates for sexually active young women, according to a recent study supported by the Agency for Healthcare Research and Quality (HS09473). The study involved four U.S. health plans.

continued on page 6

Screening for chlamydia infection

continued from page 5

Even in the health plan with the best performance, less than half of sexually active young women received a chlamydia screening test.

In the year 2000, health insurance plans were asked to collect data on their rate of chlamydia screening of sexually active women aged 15 to 25 years, when this screening was added to other evaluative measures of the Health Plan Employer Data and Information Set (HEDIS). HEDIS is a standardized set of measures for evaluating quality of care in managed care health plans. Health plans had a year to improve their screening rates, and people involved in the development of HEDIS had time to fine-tune the measure before public release of results in HEDIS 2001, according to Rita Mangione-Smith, M.D., M.P.H., of the University of California, Los Angeles.

Dr. Mangione-Smith and her colleagues studied screening rates of 19,214 sexually active females (identified by records of pregnancy, treatment of other STDs, etc.) aged 15 to 25 years who were enrolled during 1997 in one of four major U.S. health plans and visited a health care provider during that year. There was considerable variation among the plans, and performance was generally low. Chlamydia screening rates for sexually active females in the plans ranged from 2 percent to 42 percent.

More details are in "Screening for chlamydia in adolescents and young women," by Dr. Mangione-Smith, Elizabeth A. McGlynn, Ph.D., and Liisa Hiatt, M.S., in the November 2000 *Archives of Pediatric and Adolescent Medicine* 154, pp. 1108-1113. ■

Evidence-based Medicine

Researchers discuss evidence on managing mild chronic hypertension during pregnancy

Even mild chronic hypertension during pregnancy triples the risk of perinatal death, doubles the risk for placental abruption, and increases the risk of impaired fetal growth and death, according to a review of scientific evidence on the subject. There is consensus that intensive monitoring and antihypertensive treatment are warranted for pregnant women with severe hypertension (blood pressure of 160/110 mm Hg or higher), but uncertainty exists about management of those who have mild chronic hypertension.

Antihypertensive agents are used in pregnancies complicated by mild chronic hypertension despite unclear tradeoffs between potential benefits and harms. Even the use of aspirin is controversial, says Cynthia, D. Mulrow, M.D., M.Sc., of the San Antonio Evidence-based Practice Center (EPC) at the University of Texas Health Sciences Center. The EPC is supported by the Agency for Healthcare Research and Quality (contract 290-97-0012).

Dr. Mulrow and colleagues reviewed 215 articles on management of mild chronic hypertension during pregnancy. They found that no one agent significantly reduced perinatal mortality. However, there was clear evidence that angiotensin-converting enzyme inhibitors were harmful to second- and third-trimester fetuses and are best avoided. Evidence on the risks for fetal growth impairment with beta-blockers and alpha/beta blockers was conflicting. The best evidence suggested that atenolol given early in pregnancy was associated with fetal growth retardation.

Trials showed that aspirin neither reduced nor increased perinatal and maternal morbidity, but they did not rule out possible small-to-moderate beneficial or adverse effects. No studies provided guidance on the benefits or consequences of various nonpharmacologic therapies or monitoring strategies, such as serial ultrasonography to measure fetal growth, nonstress testing, biophysical profiles, and doppler flow velocity measurements that are designed to detect the complications of chronic hypertension.

See "Management of mild chronic hypertension during pregnancy: A review," by Robert L. Ferrer, M.D., M.P.H., Baha M. Sibai, M.D., Dr. Mulrow, and others in the November 2000 *Obstetrics & Gynecology* 96(5), pp. 849-860.

Editor's note: This journal article is based on an evidence report, *Management of Chronic Hypertension During Pregnancy, Evidence Report/Technology Assessment No. 14*, that was prepared for AHRQ by the San Antonio EPC. A summary of the report (AHRQ Publication No. 00-E010)** and the full report (AHRQ Publication No. 00-E011) are available from AHRQ.* ■

Researchers identify the most effective drugs for converting atrial fibrillation to normal heart rhythm

Atrial fibrillation (AF) is the most common type of heart rhythm abnormality that physicians see. Overall, patients with AF die twice as often as those without AF. Also, AF is considered the cause of stroke in 24 percent of people aged 80 to 89 years. There is little guidance based on scientific evidence to inform doctors about the best medications to convert AF into normal heart rhythm.

A recent study comparing various medications found that ibutilide and dofetilide—which are new class III antiarrhythmic agents currently undergoing extensive trials—and flecainide, another agent commonly used for treating AF, most effectively converted AF to normal heart rhythm when compared with control treatment (placebo, verapamil, diltiazem, or digoxin). However, data are not available on the long-term use of these medications in everyday clinical practice, cautions Marlene R. Miller, M.D., M.Sc., formerly of Johns Hopkins University and now with the Agency for Healthcare Research and Quality.

Dr. Miller and her colleagues at the AHRQ-supported Evidence-based Practice Center (EPC) at Johns Hopkins University (contract 290-97-0006) performed a meta-analysis of 36 studies of non-postoperative AF conversion to or maintenance of normal cardiac sinus rhythm in adults. Compared with control treatment, the likelihood or odds ratio (OR) for conversion was greatest for ibutilide/dofetilide (OR 29.1) and flecainide (OR 24.7). Less strong but conclusive evidence existed for propafenone (OR 4.6). Quinidine (OR 2.9) had moderate evidence of conversion efficacy. Disopyramide (OR 7.0) and amiodarone (OR 5.7) had evidence suggestive of efficacy. Sotalol (OR 0.4) had evidence suggestive of negative efficacy.

For maintenance of normal sinus rhythm, strong evidence of efficacy existed for quinidine (OR 4.1), disopyramide (OR 3.4), flecainide (OR 3.1), propafenone (OR 3.7), and sotalol (OR 7.1). Unfortunately, direct comparisons of medications and adverse event data were limited. The authors call for more research that directly compares these medications with each other and with electrical cardioversion and that better quantifies adverse event rates.

See "Efficacy of agents for pharmacologic conversion of atrial fibrillation and subsequent maintenance of sinus rhythm," by Dr. Miller, Robert L. McNamara, M.D., M.H.S., Jodi B. Segal, M.D., M.P.H., and others in the November 2000 *Journal of Family Practice* 49(11), pp. 1033-1046.

Editor's note: This journal article is based on an evidence report prepared for AHRQ by the Johns Hopkins University EPC. A summary of Evidence Report/Technology Assessment No. 12, *Management of New Onset Atrial Fibrillation* (AHRQ Publication No. 00-E006), is now available from AHRQ.** The full report (AHRQ Publication No. 01-E026) is in press and will be available from AHRQ in the near future. ■

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Pain during cataract surgery and postoperative side effects are minor for most patients but vary by type of anesthesia

From the perspective of patients undergoing cataract surgery, several anesthesia strategies are highly effective for reducing the pain of surgery. Which one works best depends on patient perceptions. For example, some patients may prefer intraoperative sedatives, despite their greater risk of postoperative nausea. Although minimizing patient reports of pain and side effects is important, there are tradeoffs between the patient, surgeon, and anesthesiologist to choose the appropriate pain control strategy for an individual patient, explains Oliver D. Schein, M.D., M.P.H., of the Johns Hopkins University School of Medicine.

In a recent study supported by the Agency for Healthcare Research and Quality (HS08331), Dr. Schein and his colleagues compared patient reports of intraoperative pain and postoperative side effects (drowsiness, nausea, and vomiting) for different anesthesia strategies for cataract surgery. They analyzed 19,250 cataract surgeries performed at nine centers in the United States and Canada from 1995 to 1997. The strategies included topical anesthesia or anesthesia with injection, with or without sedatives, opioid analgesia, hypnotics, and diphenhydramine (Benadryl). Topical anesthesia was associated with more pain during cataract surgery than injected anesthesia. Patients receiving injected anesthesia varied in their reporting of pain during surgery and side effects, depending on the types of medications used.

Local anesthesia by injection with sedatives and diphenhydramine resulted in the lowest reporting of any intraoperative pain (1.3 percent). Postoperative drowsiness (9.6 percent), and nausea, vomiting, or both (1.5 percent) was comparable to topical anesthesia alone. Among those receiving topical anesthesia, the use of sedatives and opioids reduced reports of any pain during surgery by 56 percent but more than doubled the rates of nausea and vomiting (odds ratio, 2.27) compared with patients who received topical anesthesia alone, after adjusting for age, sex, race, risk class, health status, and duration of surgery.

See "Injectable versus topical anesthesia for cataract surgery: Patient perceptions of pain and side effects," by Joanne Katz, Sc.D., Marc A. Feldman, M.D., M.H.S., Eric B. Bass, M.D., M.P.H., and others, in the November 2000 *Ophthalmology* 107(11), pp. 2054-2060. ■

Researchers present recent findings from the pneumonia PORT on hospital length of stay, symptoms, and outcomes

Over 1 million individuals are hospitalized for pneumonia each year in the United States. In 1994 alone, hospital costs for treating pneumonia were more than $9 billion. However, hospitals vary widely in how long they keep pneumonia patients in the hospital, and they are under pressure to reduce hospital stays for this condition.

The Pneumonia Patient Outcomes Research Team (PORT), led by Wishwa N. Kapoor, M.D., M.P.H., of the University of Pittsburgh, and supported by the Agency for Healthcare Research and Quality (HS06468), recently published two studies. The first study looks at the relationship between length of hospital stay and costs of care for patients with community-acquired pneumonia. In the second study, the researchers compare symptoms and outcomes for patients who have bacteremic and nonbacteremic pneumonia. The two studies are summarized here.

Fine, M.J., Pratt, H.M., Obrosky, D.S., and others. (2000). "Relation between length of hospital stay and costs of care for patients with community-acquired pneumonia." ***American Journal of Medicine*** **109, pp. 378-385.**

The findings from this study suggest that hospitals probably could reduce pneumonia hospital stays by 1 day without adversely affecting patient health. This reduced stay would result in a mean savings of $680 per patient, with the majority of the savings ($495) attributable to room costs, according to the researchers. They

continued on page 9

Pneumonia PORT findings

continued from page 8

estimated the daily medical care costs of 982 adults hospitalized with community-acquired pneumonia at a community hospital and two university teaching hospitals.

The median length of hospital stay was 7 days for all patients and ranged from 6 days at hospital C to 8 days at hospital A. The pattern of daily costs was similar for all three study hospitals, and only one hospital (B) had substantially higher daily costs (for room, pharmacy and IV solutions, and lab tests and procedures) than the other two.

The median total cost of hospitalization for all inpatients was $5,942, with a median daily cost of $836. Average daily non-room costs were 282 percent greater on the first hospital day, 59 percent greater on the second day, and 19 percent greater on the third day than the average daily cost throughout the stay. Non-room costs were 14 percent to 72 percent lower on the last 3 days of hospitalization. The researchers projected a mean savings of $680 (ranging from $534 at hospital A to $822 at hospital B) associated with a 1-day reduction in length of stay, with the majority of savings ($495) attributable to room costs.

Brandenburg, J.A., Marrie, T.J., Coley, C.M., and others. (2000). "Clinical presentation, processes, and outcomes of care for patients with pneumococcal pneumonia." ***Journal of General Internal Medicine*** **15, pp. 638-646.**

Pneumococcal pneumonia is involved in only a small proportion of community-acquired pneumonia (CAP) cases. Half of these patients are at low risk of death. However, many patients with bacteremic pneumococcal pneumonia are still recovering from symptoms a month later compared with shorter symptom resolution for patients who have nonbacteremic pneumonia.

The researchers studied the clinical findings and processes and outcomes of care for inpatients and outpatients with CAP at five medical institutions at three geographic sites. They found that only 7 percent of inpatients and 3 percent of outpatients with CAP had bacteremic pneumococcal pneumonia. These patients typically suffered from cough, labored breathing, and chest pain, and 16 to 22 percent of the patients had blood-stained sputum. There also were many nonrespiratory symptoms. Patients with bacteremic pneumococcal pneumonia were less likely than those with nonbacteremic pneumococcal pneumonia to have sputum production and muscle pains (60 vs. 82 percent and 33 vs. 57 percent, respectively), more likely to have elevated blood urea nitrogen and serum creatinine levels, and more likely to receive penicillin therapy.

Half (49 percent) of the bacteremic patients were in the low-risk category for dying within 30 days (groups I to III), similar to the nonbacteremic patients. None of the 32 bacteremic patients in risk groups I to III died, but 30 percent of patients in high-risk group V died. Bacteremic and nonbacteremic groups had similar intensive care unit admissions and pneumonia-related mortality. However, 46 percent of patients in the bacteremic group had respiratory failure compared with 32 to 37 percent of patients in the nonbacteremic groups.

The complication rate for bacteremic patients was significantly higher than for nonbacteremic patients only for anemia and renal insufficiency. The symptoms of bacteremic pneumococcal pneumonia were slower to resolve than symptoms of nonbacteremic pneumococcal pneumonia, with 63 percent of patients complaining of fatigue at 30 days. Half of the patients still had symptoms of cough, labored breathing, and sputum production, and 13 percent still had chest pain. ■

Researchers examine progress and look to the future after a decade of outcomes and effectiveness research

A full decade of outcomes and effectiveness research (OER) has built a solid foundation for future quality improvement efforts in health care by identifying problems, generating hypotheses, and developing new methodologies. Yet OER has had limited direct impact on health care policies, practices, and outcomes, according to this recent study. Daniel Stryer, M.D., Heddy Hubbard, R.N., M.P.H., and Carolyn Clancy, M.D., of the Agency for Healthcare Research and Quality, and Sean Tunis, M.D., M.Sc., now at the Health Care Financing Administration, Baltimore, MD, surveyed all principal investigators (PIs) of OER projects funded by AHRQ between 1989 and 1997 to identify their most salient research findings.

continued on page 10

Effectiveness research

continued from page 9

Many investigators identified studies that were descriptive, providing important information about who is affected by a disease, how patients are managed, and what the consequences of management are. Many studies were hypothesis generating, leading to refinement of specific clinical questions and subsequent studies. Methodological studies laid the foundation necessary for subsequent work. These included techniques to adjust for patient differences in disease severity, meta-analysis, measurement of patient-oriented outcomes (such as improved vision after cataract surgery versus a physical measurement of visual acuity), and development of models that relate the process of care to those outcomes.

Of the 91 investigators who reported on 115 studies, 24 percent had findings classified as descriptive epidemiology, 17 percent compared the effectiveness of one medical procedure with another, and 12 percent conducted economic assessments. The second, third, and fourth largest categories focused on clinical, economic, quality of life, and other outcomes associated with clinical interventions. Most studies were retrospective analyses of administrative data such as hospital medical records and insurance claims. From the standpoint of AHRQ investigators, OER has affected some policies and practices. In the next decade, OER needs to provide more definitive answers to "what works" and accelerate the process by which research findings affect policy, practice, and outcomes, conclude the researchers.

See "The outcomes of outcomes and effectiveness research: Impacts and lessons from the first decade," by Drs. Stryer and Tunis, Ms. Hubbard, and Dr. Clancy, in the December 2000 *Health Services Research* 35(5), pp. 971-987. Reprints (AHRQ Publication No. 01-R027) are available from AHRQ.** ■

Access to Care

Health insurance and access to primary care affect hospitalization of children outside their area of residence

Children who live in areas with a higher availability of primary care physicians (PCPs) and hospital-based outpatient services are less likely to go to hospitals outside their local area for ambulatory-care-sensitive (ACS) conditions such as asthma and diabetes. Hospitalizations for ACS conditions often can be prevented with good primary care, explain Jayasree Basu, Ph.D., and Bernard Friedman, Ph.D., of the Agency for Healthcare Research and Quality. Their study found that if there was one more PCP per 1,000 population in a county, children in that county were one-fifth as likely to use out-of-area hospitals for ACS conditions as children in a county where this increase did not occur.

A 10 percent increase in hospital outpatient capacity per capita and PCP physician supply per 1,000 population reduced the probabilities of out-of-area hospitalization by 5 and 3 percent, respectively. Also, a 10 percent increase in inpatient capacity in the patient's county reduced out-of-area hospital admissions by 3.5 percent.

Insurance also influenced out-of-county hospital admissions. Compared with privately insured children, Medicaid, health maintenance organization (HMO), and self-pay children had lower odds of using out-of-area hospitals. However, for Medicaid and HMO children, an increase in PCP supply reduced the probability of using out-of-area hospitals (odds ratio, OR 0.305 and 0.006, respectively). At an average level of 0.53 PCPs per 1,000 population, both HMO enrollees and Medicaid patients were likely to use local hospitals. For self-pay and privately insured patients, local primary care had no significant impact on the odds of going out of the county.

Greater severity of illness, proximity to a metropolitan area, and a higher county median income increased the likelihood of going outside one's county. These findings are based on an analysis of hospital discharge data for New York children admitted to hospitals in New York, Pennsylvania, New Jersey, and Connecticut in 1994. The researchers used logistic regression to predict travel out of the local area for ACS admissions based on factors of medical resources and patient characteristics.

More details are in "Preventable illness and out-of-area travel of children in New York counties," by Drs. Basu and Friedman in the January 2001 *Health Economics* 10, pp. 67-78. Reprints (AHRQ Publication No. 01-R033) are available from AHRQ.** ■

Access to health care in the mid-1990s varied according to the patient's income level

From the early to the mid-1990s, access to care for young urban adults of middle or higher income improved by 7 percent but declined by 2 percent for lower income individuals, according to a study supported in part by the Agency for Healthcare Research and Quality (HS09569 and HS09446). Blacks also experienced more problems with access than whites, but these differences were largely explained by differences in income. If these trends continue, the already strong disparities in health care access and use may increase between low- and high-income groups in the United States, warns Catarina I. Kiefe, Ph.D., M.D., of the University of Alabama at Birmingham.

Dr. Kiefe and colleagues used data from the Coronary Artery Risk Development in Young Adults (CARDIA) study to assess changes in health care access and use for blacks and whites (who were 25 to 37 years of age) in four areas of the United States during 1992-1993 and again during 1995-1996 (when the subjects were 28-40 years of age). During the first period, 30 percent of the group experienced at least one access barrier, with a decline to 27 percent during 1995-1996. Access improved 7 percent for high-income people but deteriorated 2 percent for lower income individuals. Improved access to care for some groups was probably due to increasing income as young adults aged rather than to the drastic moves toward managed care that occurred across the United States in the 1990s, explain the researchers.

The health care use pattern they observed in 1995-1996 showed more visits to the emergency department (an indicator of poor access to a regular source of care), more hospitalizations, and lower rates of overall outpatient and dental visits for blacks compared with whites, the unemployed compared with the employed, and low-income groups compared with high-income groups. These findings show continued inequities in the system, which result in resource-intensive, probably preventable, acute care (emergency department) visits, a trend the researchers believe is worrisome.

Details are in "Changes in U.S. health care access in the 90s: Race and income differences from the CARDIA study," by Dr. Kiefe, O. Dale Williams, Ph.D., Norman W. Weissman, Ph.D., and others, in the Autumn 2000 *Ethnicity & Disease* 10, pp. 418-431. ■

Health Care Costs and Financing

Direct patient access to specialists does not lead to more specialty visits in plans with modest cost-sharing arrangements

The potential overuse of specialists has been a major cost-cutting target of managed care organizations. Traditional health maintenance organizations (HMOs) permit access to specialists only with authorization from a primary care provider (PCP)/gatekeeper and/or plan administrators. However, growing numbers of patients are enrolling in preferred provider organizations and point-of-service (POS) HMOs, which allow patients direct access to specialists. According to a recent study, individuals who have direct access to specialists in POS HMOs do not make more visits to specialists than individuals enrolled in gatekeeper HMOs. The study was supported by the Agency for Healthcare Research and Quality (HS09414).

Researchers led by Jose J. Escarce, M.D., Ph.D., of the RAND Health Program, estimated the number of PCP and specialist visits for 16,192 working-age members of a gatekeeper HMO and 36,819 working-age members of a POS HMO. Gatekeeper HMO members had 35 percent more PCP visits and 33 percent more total visits than people in the POS HMO. However, POS HMO members had no more specialist visits than members in the gatekeeper HMO. What's more, only one-sixth of specialist visits for POS HMO members were obtained through patient self-referral.

The rules governing the gatekeeper HMO may actually induce additional visits to both

continued on page 12

Access to specialists

continued from page 11

PCPs and specialists. For example, patients in the gatekeeper HMO had to see their PCPs before they could receive most services, and patients who see their PCPs more often have more opportunities to receive referrals to specialists. Also, monitoring PCPs and maintaining authorization procedures are costly, and these costs may offset any cost savings from reductions in specialty care, note the researchers.

See "Visits to primary care physicians and to specialists under gatekeeper and point-of-service arrangements," by Geoffrey F. Joyce, Ph.D., Kanika Kapur, Ph.D., Krista A. Van Vorst, M.S., and Dr. Escarce, in the November 2000 *American Journal of Managed Care* 6, pp. 1189-1196. ■

Mental health visits are cut by one-fourth when providers are payed a fixed rate per patient

Mental health providers who are payed a fixed rate per patient, regardless of the patient's diagnosis, by a specialty mental health managed care organization cut back on the number of times they see each of their patients by 20 to 25 percent. Mental health professionals are even more likely to respond to these financial arrangements by cutting back mental health services when such arrangements constitute a large share of their total revenue, according to Meredith B. Rosenthal, Ph.D., of the Harvard School of Public Health. Dr. Rosenthal's research was supported by the Agency for Healthcare Research and Quality (HS09660).

For the study, Dr. Rosenthal examined data from the Managed Behavioral Health Organization on claims, medical encounters, and eligibility before 1995, when the case-rate system was phased in, and in 1996. She examined the difference in outpatient visits per patient episode for providers paid a lump sum per case (case-rate system) with the visits per patient for providers paid on a fee-for-service FFS basis (control group). Early adopters of the case-rate system (October 1995) showed a steady decline in visits relative to the FFS providers throughout the fall of 1995, which leveled out in March of 1996. The late adopters started their decline about 2 months after the early adopters and took until February 1996 to equalize their visit rates to the early adopters.

Overall, there was a 20 to 25 percent decline in outpatient mental health visits due to the reimbursement change to the case-rate system relative to the FFS payment. Group practices and those with more intense utilization review programs reduced visits significantly more than other providers. In contrast, larger provider organizations and those with more fee-for-service revenue reduced visits significantly less than other providers. More studies are needed to determine if this reduction in visits may be evidence of cost-shifting (use of prescription drugs and primary care visits to substitute for outpatient therapy) rather than cost reduction.

See "Risk sharing and the supply of mental health services," by Dr. Rosenthal, in the *Journal of Health Economics* 19, pp. 1047-1065, 2000. ■

Hospitals in health systems with unified ownership or in centralized networks do better financially than others

By 1995, 71 percent of U.S. hospitals belonged to health networks or systems. There has been considerable debate on the financial advantages of unified ownership typical of health systems relative to the looser contractual or alliance-based strategies of health networks. A recent study, supported by the Agency for Healthcare Research and Quality (HS09524), sheds some light on the issue. It shows that hospitals in health systems with unified ownership generally had lower costs, higher profitability, and a more modern infrastructure than contractually based health network hospitals. Also, hospitals belonging to highly centralized networks, which organize the delivery of hospital services, physician arrangements, and insurance products for affiliated hospitals, did better financially than those belonging to more decentralized networks.

The researchers based their analysis on American Hospital

continued on page 13

Hospital ownership

continued from page 12

Association data and classification of 1994 and 1995 health networks and systems. They drew on organization and economic theory to develop and test the influence of these organizational relationships on hospitals' financial performance. Results showed that health network hospitals had significantly higher costs ($52.7 million) relative to health system hospitals ($51.8 million).

Additionally, health network hospitals had lower profits relative to health system hospitals (4.1 vs. 5.11 percent total margin and 4.2 vs. 5.6 percent return on assets). Both types of hospitals were fairly efficient at generating revenues from fixed assets, but health system hospitals had relatively newer bases of assets (average facility age of 7.3 vs. 7.8 years).

Centralized health network hospitals had the lowest costs ($38.2 million) when compared with decentralized network hospitals ($52.2 million) and independent network hospitals ($69.6 million). Hospitals in centralized health networks were the most profitable (6.34 percent total margin and 6.62 percent return on assets), and hospitals in independent hospital networks were the least profitable (3.93 percent total margin and 2.17 percent return on assets).

More details are in "The financial performance of hospitals belonging to health networks and systems," by Gloria J. Bazzoli, Ph.D., Benjamin Chan, Ph.D., Stephen M. Shortell, Ph.D., and Thomas D'Aunno, Ph.D., in the fall 2000 *Inquiry* 37, p. 234-252. ■

Minority Health

Minority patients have access to poorer quality doctors for coronary bypass surgery than white patients

Many studies have shown that minority patients are less likely to undergo coronary artery bypass graft (CABG) surgery than white patients. Even when they do gain access to CABG surgery, minority patients are more likely to have a lower quality surgeon than white patients who undergo the surgery. The disparity in the surgeon's quality was even greater for minorities enrolled in health maintenance organizations (HMOs) compared with those in fee-for-service (FFS) plans, concludes a study supported by the Agency for Healthcare Research and Quality (HS09803). The researchers defined surgeon quality based on the risk-adjusted mortality rate (RAMR) of a surgeon's patients, that is, the mortality rate of patients after adjustment for patient risk factors for death.

Dana B. Mukamel, Ph.D., of the University of Rochester Medical Center, and colleagues used regression analysis of 11,296 CABG surgeries in New York State in 1996 to identify significant associations between a patient's race, HMO enrollment, and quality of the surgeon performing the surgery. Results revealed that minorities in HMOs were 12 percent more likely and those in FFS plans were 5 percent more likely than whites to be operated on by surgeons with higher RAMR patients.

It might be that disadvantaged minorities are more likely to face barriers to accessing published RAMR report cards of New York cardiac surgeons, which are available on the World Wide Web and publicized in the media. Also, higher quality surgeons seem to have higher prices and may also locate themselves in more affluent markets, which would be less accessible to lower-income and minority individuals, hypothesize the researchers. Studies that identify why minority patients get poorer quality cardiac surgeons than white patients may help develop policy interventions to improve access to quality care for racial minorities, conclude the study authors.

See "Racial differences in access to high-quality cardiac surgeons," by Dr. Mukamel, Ananthram S. Murthy, B.A., and David L. Weimer, Ph.D., in the November 2000 *American Journal of Public Health* 90(11), pp. 1774-1777.■

Hispanics undergo fewer inpatient procedures than non-Hispanic whites hospitalized for the same conditions

Hispanics are less likely than non-Hispanic whites hospitalized for the same conditions to receive major therapeutic procedures for over one-third of medical conditions studied, according to researchers at the Agency for Healthcare Research and Quality. These treatment differences remained after controlling for differences in patient age, sex, disease severity, insurance plan type, income, and other factors, note Roxanne M. Andrews, Ph.D., and Anne Elixhauser, Ph.D. They examined these ethnic treatment discrepancies using data on hospitalizations from California, Florida, and New York, States that contain half of the U.S. Hispanic population.

Specific treatment patterns emerged. Hispanics were less likely to receive major therapeutic procedures for 38 percent of 63 medical conditions studied. These ranged from coronary artery disease, cancer (breast, colon, cervical, and lung), traumatic conditions ranging from ankle injury to shoulder fracture, gastrointestinal conditions such as hiatal hernia or peptic ulcers, and conditions ranging from epilepsy to cirrhosis of the liver. For only 6 percent of conditions, such as diabetes, pancreatitis, and kidney failure, Hispanics were significantly more likely to receive major procedures than non-Hispanic whites.

This type of ethnic disparity across a broad range of procedures also has been found in studies examining the treatment of blacks compared with whites and raises concerns about appropriateness of care and access to needed health services. The authors call for additional research to study why differences in treatment along racial/ethnic lines occur for some conditions but not for others. Their findings are based on analysis of hospital discharge abstract data on major therapeutic procedures performed for patients aged 17 years and older from the 1993 Healthcare Cost and Utilization Project (HCUP-3) State Inpatient Databases (SID) for California, Florida, and New York.

See "Use of major therapeutic procedures: Are Hispanics treated differently than non-Hispanic whites?" by Drs. Andrews and Elixhauser, in the autumn 2000 *Ethnicity & Disease* 10, pp. 384-394. Reprints (AHRQ Publication No. 01-R016) are available from AHRQ.** ■

Blacks are no more likely than whites to indicate a preference for family care over institutional long-term care

Some have contended that elderly blacks are underrepresented in nursing homes because they prefer care from family members and extended kin over institutional care. However, a recent study supported by the Agency for Healthcare Research and Quality (HS08779) does not support this presumption. It shows that more elderly blacks than whites made long-term care plans (60 vs. 40 percent) in the event they became unable to live in their homes, and they included institutional as well as family care in their plans. Elderly individuals with more education were significantly more likely to have made long-term care plans than those with less education.

Receiving help at home, living alone, Medicaid coverage, and income adequacy had little effect on whether older adults had made long-term care plans. Making such plans also was not influenced by the need for long-term care as indicated by a person's difficulty in performing daily tasks, chronic health problems, and mental health status. Once these other factors were considered, blacks were no more likely than whites to include care from family members as a long-term care option.

The presumed preference of elderly blacks for family rather than institutional care may result from observations of existing care patterns that stem from barriers to institutional care faced by blacks. Perhaps community-based and long-term care personnel need to change the way that they perceive care options among black elders to include options other than family and home care, concludes Jim Mitchell, Ph.D., of East Carolina University. The researchers analyzed data from in-home interviews with 604 blacks and whites aged 65 and older in North Carolina to explore whether differences by race in long-term care plans were due to greater preferences for family care by blacks than whites.

More details are in "Difference by race in long-term care plans," by Dr. Mitchell, Holly F. Mathews, Ph.D., and Kimberly A. Hack, M.A., in the December 2000 *Journal of Applied Gerontology* 19(4), pp. 424-440. ■

Once parents accept that their child's cancer is terminal, palliative care can begin to make the child more comfortable

Parents whose children have died of cancer have reported in previous studies that their children suffered significantly during their last month of life. One obstacle to increasing comfort for these dying children is the reluctance by parents and doctors to accept that the child's cancer is incurable.

Since 75 percent of children who get cancer are cured, pediatric oncologists have less experience talking to parents about terminal prognoses and may find it difficult to do so. Doctors usually accept that a child is terminally ill about 6 months before the child's death, compared with 3 months for the parents, according to a study supported by the Agency for Healthcare Research and Quality (National Research Service Award training grant T32 HS00063).

Earlier recognition of this prognosis by both doctors and parents was associated with more comfort treatment and greater integration of palliative care, explains lead author, Joanne Wolfe, M.D., M.P.H., of the Dana-Farber Cancer Institute. Dr. Wolfe and her colleagues surveyed 42 pediatric oncologists and 198 parents of children who died of cancer at one medical center between 1990 and 1997. Medical records identified the timing of parental understanding of the child's prognosis with that of the doctor's. Parents first recognized that the child had no realistic chance for cure about 3 months prior to the child's death compared with 6 months for the doctor (a mean of 106 vs. 206 days).

The group characterized by earlier recognition of this prognosis by both parents and physicians had earlier discussions of hospice care (odds ratio, OR 1.03; 1 is equal odds), better parental ratings of the quality of home care (OR 3.31), earlier institution of a do-not-resuscitate order (OR 1.03), less use of cancer-directed therapy during the last month of life (OR 2.8), and higher likelihood that the goal of cancer-directed therapy identified by both doctor and parent was to lessen suffering (OR 5.17 for physicians and OR 6.56 for parents). Use of a psychologist or social worker to facilitate earlier recognition by parents that their child's illness would probably be fatal could improve the child's quality of life at the end of life, suggest the researchers.

More details are in "Understanding of prognosis among parents of children who died of cancer," by Dr. Wolfe, Neil Klar, Ph.D., Holcombe E. Grier, M.D., and others, in the November 15, 2000 *Journal of the American Medical Association* 284(19), pp. 2469-2475. ■

Preventive oral care in primary pediatric care can help reduce disparities in children's oral health

The U.S. Surgeon General has called for a national oral health plan to eliminate disparities in oral health for all Americans. The first part of that plan should focus on children, according to James J. Crall, D.D.S., Sc.D., of the University of Connecticut Health Center. Dr. Crall is a former dental scholar-in-residence at the Agency for Healthcare Research and Quality.

In a recent commentary, Dr. Crall and his colleagues note that by mid-childhood, more than 50 percent of children have detectable tooth decay (dental caries), and by late adolescence about 80 percent have acquired this preventable infectious disease. They point out that childhood oral disease has significant medical and financial consequences that may not be appreciated because of the separation of medicine and dentistry. The infectious nature of dental caries, their early onset, and the potential of early interventions require an emphasis on preventive oral care in primary pediatric care to complement existing dental services. However, many pediatricians lack critical knowledge to promote oral health.

Low-income and minority children and those with special health care needs are at greatest risk of inadequate access to dental care and poor oral health. For example, only one in five children covered by

continued on page 16

Children's oral health

continued from page 15

Medicaid receives the preventive oral care for which he or she is eligible. Children from low-income and minority families have poorer oral health outcomes, fewer dental visits, and fewer protective sealants than other children. Water fluoridation is the most effective measure in preventing dental caries, but only 62 percent of the Nation's water supply is fluoridated. Lack of fluoridation may disproportionately affect poor and minority children.

The researchers recommend financial incentives for prioritizing Medicaid Early and Periodic Screening, Diagnostic, and Treatment dental services; managed care accountability; and integration of medical and dental professional training, clinical care, and research. Their work is supported by AHRQ's User Liaison and Research Translation Program under a small business purchase order (R40281601D).

See "Disparities in children's oral health and access to dental care," by Wendy E. Mouradian, M.D., M.S., Elizabeth Wehr, J.D., and Dr. Crall, in the November 22, 2000 *Journal of the American Medical Association* 284(20), pp. 2625-2631. ■

Health Care for the Elderly

Hospitalizations of the elderly for bloodstream infections rose sharply in the early to mid-1990s

Elderly people are at particular risk of developing septicemia (bloodstream infection) and dying from it. Unfortunately, during the 1990s, there was a substantial, unexplained increase in the rate of elderly men and women in this country who were hospitalized for septicemia, according to William B. Baine, M.D., of the Agency for Healthcare Research and Quality. Dr. Baine and his colleagues William Yu, M.A., and James P. Summe, M.S., used Medicare claims data for hospital discharges from 1991 through 1998 to study nearly 76,000 hospitalizations for septicemia or bacteremia in patients aged 65 or older.

From 1991 through 1997, annual discharges for "unspecified septicemia" increased 108 percent, and discharges for pneumococcal septicemia increased 310 percent. These increases exceeded the growth of the elderly Medicare population. Of particular concern was the marked upsurge in hospitalizations for pneumococcal septicemia, for which specific vaccine prophylaxis is available and reimbursed by Medicare. Also disturbing in most diagnoses was an apparent excess morbidity associated with male sex and black race. With the exceptions of pneumococcal septicemia and septicemia due to *E. coli* (often associated with female urinary tract infections), men had higher hospitalization rates than women of the same race, with significant differences for most diagnoses.

With the exception of pneumococcal septicemia, elderly blacks had significantly higher age-adjusted hospitalization rates than elderly whites. In fact, septicemia hospitalization rates were usually highest for black men and lowest for white women within each age group. The case-fatality rate in hospitals ranged from 4.2 percent for bacteremia and 6.9 percent for *E. coli* septicemia to 22.2 percent for septicemia due to unspecified gram-negative organisms and 26.8 percent for unspecified septicemia.

For more information, see "The epidemiology of hospitalization of elderly Americans for septicemia or bacteremia in 1991-1998: Application of Medicare claims data," by Dr. Baine, Mr. Yu, and Mr. Summe, in the February 2001 *Annals of Epidemiology* 11, pp. 118-126. Reprints (AHRQ Publication No. 01-R061) are available from AHRQ.** ■

People with HIV vary in their physical and role functioning

Even with recent improvements in antiretroviral therapy, people infected with the human immunodeficiency virus (HIV) that causes AIDS vary widely in their ability to function physically and socially. Those who suffer from intense symptoms, pain, or fatigue are most likely to be limited in their functioning. However, the wide range of functioning in HIV-infected people underscores the need for individualized care plans, according to a study by Stephen Crystal, Ph.D., of Rutgers University, John A. Fleishman, Ph.D., of the Agency for Healthcare Research and Quality, and their colleagues. The researchers assessed the physical and role limitations experienced by 2,836 HIV-infected people enrolled in the HIV Cost and Services Utilization Survey (HCSUS), a nationally representative survey of people receiving care for HIV in the United States.

A majority (51 percent) of people experienced difficulty at least some of the time in carrying out their roles, such as working at a job, doing household chores, or going to school. More people were limited in this type of role than for any specific physical tasks except for vigorous activities (64 percent). For physical tasks, individuals were most limited in their ability to perform energy-demanding activities such as climbing stairs (43 percent) or walking more than a block (26 percent) than in self-care tasks such as bathing and dressing (14 percent).

Individuals who were older, less educated, had more advanced disease, or had a higher symptom burden tended to be more limited. For example, men and women with asymptomatic disease reported few limitations involving mostly vigorous and energy-demanding activities. However, more than 80 percent of those with AIDS were limited in vigorous activities, and a majority were limited in climbing stairs and walking more than 1 mile; 21 percent had difficulty bathing or dressing themselves. Seventy-two percent of those with AIDS were limited at least some of the time in work, school, or housework. Symptoms most significantly associated with increased limitations included nausea, cough, and diarrhea. Treatment with protease inhibitors was associated with somewhat less physical limitation but no difference in role limitation.

See "Physical and role functioning among persons with HIV: Results from a nationally representative survey," by Drs. Crystal and Fleishman, Ron D. Hays, Ph.D., and others in the December 2000 *Medical Care* 38(12), pp. 1210-1223. Reprints (AHRQ Publication No. 01-R018) are available from AHRQ.** ■

Some doctors think their office computers are as important to their practice as a stethoscope

Doctors with computers in their offices can have immediate access to a patient's medical history, current problems, and medications. They also can access the latest information on drug interactions and approaches to certain medical conditions, and they are able to plot a patient's blood pressure or cholesterol profile on a regular basis. What's more, they can automatically receive automated reminders that a patient is due for another kidney function test or mammogram.

Rather than take away time from patients, computers allow doctors to interact with their patients in a more comprehensive way, notes Helen Burstin, M.D., in a recent commentary. Dr. Burstin is Director of the Center for Primary Care Research at the Agency for Healthcare Research and Quality.

Before coming to AHRQ in January 2000, Dr. Burstin worked in a highly computerized environment of an academic health center, and then she worked in a minimally funded inner-city clinic that lacked computers. She concluded from these two experiences that use of computers helped her to be a better doctor. When she had access to a computer, she was able to chart and show to patients their medical

continued on page 18

Use of computers in medicine

continued from page 17

progress or decline. And, when patients also had computers and Internet access, she could receive and send them e-mail messages about laboratory findings, medication refills, and tests needed.

Dr. Burstin found that the computer in many ways brought her closer to her patients. Often, patients viewed their lab tests, HIV virus counts, and cholesterol reports on the computer screen with her. Some non-English-speaking patients found ways to e-mail her questions or requests, either through a public library terminal or through friends with computers. As a doctor at the computerized medical center, she did not have to pour through pages of medical charts to find a patient's current medications, allergies, or findings from recent tests. In contrast, at the inner-city clinic, she had to consult out-of-date medication references and was not able to quickly access the latest research to confirm her own diagnoses or treatment decisions. Dr. Burstin cites the importance of finding ways to bridge the digital divide between these two worlds—medical care with and without computers—as a giant step forward toward improved health care quality.

See "Traversing the digital divide: On doctoring with and without computers," by Dr. Burstin, in the November 2000 *Health Affairs* 19(6), pp. 245-249. Reprints (AHRQ Publication No. 01-R023) are available from AHRQ.** ■

Agency News and Notes

AHRQ releases five new evidence reports

Five new evidence report summaries were released recently by the Agency for Healthcare Research and Quality. They represent the results of systematic reviews of the evidence on diagnosis and management of dental caries, management of cancer pain, management of newly diagnosed epilepsy patients, management of uterine fibroids, and the use of telemedicine for the Medicare population. The reports were prepared by Evidence-based Practice Centers (EPCs) supported by the Agency for Healthcare Research and Quality. They provide organizations with comprehensive, science-based information on common, costly medical conditions and new health care technologies.

There are 12 AHRQ-supported EPCs; they systematically review the relevant scientific literature on topics assigned to them by AHRQ and conduct additional analyses when appropriate prior to developing their reports and assessments. The goal is to inform health plans, providers, purchasers, and the health care system as a whole by providing essential information to improve health care quality.

Evidence report summaries are now available from AHRQ, both online and in print copies from the AHRQ Clearinghouse. Copies of the full evidence reports will be available in the near future.

Diagnosis and Management of Dental Caries. Dental caries, or cavities, affect more than 90 percent of adults in the United States. Due to changes in the epidemiology of this chronic infectious disease, about 25 percent of children aged 5 to 17 suffer about 75 percent of the disease burden in this population. Today, there are interventions to arrest or reverse the demineralization process that characterizes the development of a carious lesion, and there are several strategies for identifying individuals who are likely to experience an elevated incidence of dental caries.

The Research Triangle Institute/University of North Carolina at Chapel Hill EPC (contract 290-97-0011) developed this evidence report for AHRQ. It focuses on the methods used in caries diagnosis, the efficacy of nonsurgical strategies to arrest or reverse the progress of carious lesions before tooth tissue is lost, and the efficacy of preventive methods among individuals at risk for an elevated incidence of carious lesions.

The review revealed few assessments of the performance of any diagnostic methods for primary or anterior teeth and no assessments of performance on root surfaces. There was insufficient evidence to make definitive statements about performance of most diagnostic methods. The EPC found only five studies addressing management of noncavitated

continued on page 19

New evidence reports

continued from page 18

carious lesions, and thus, the evidence was rated as incomplete. With regard to the management of caries-active individuals, the EPC researchers evaluated nine management methods: fluoride varnishes, topical solutions, and rinses; chlorhexidine varnishes, topicals, and rinses; combined chlorhexidine-fluoride applications and sealants; and other approaches. The evidence was rated as fair for the efficacy of fluoride varnishes; for all other methods, the evidence was deemed incomplete.

A summary (AHRQ Publication No. 01-E055) of the report is now available from AHRQ.** The full report (AHRQ Publication No. 01-E056) from which this summary was drawn is expected to be available from AHRQ in spring 2001.*

Management of Cancer Pain. Although there is a huge body of scientific research on cancer biology, the quality and quantity of research on the management of cancer pain lags far behind, according to researchers at the New England Medical Center EPC (contract 290-97-0019). They conducted a systematic literature review on the topic for AHRQ. The EPC found, overall, that the solid evidence which exists on specific therapies—such as antiinflammatory drugs or opioids—is overshadowed by inadequate guidance on more complex choices now expected of front-line clinicians.

In particular, the EPC found little research on quality of life in relation to pain control, drug interactions during long-term cancer pain treatment, the optimal sequence of adding drugs to improve pain control, how best to combine drug with non-drug therapies, and the impact that ethnicity has on cancer pain and patients' responses to treatment. Also, the researchers found almost no analgesic drug trials in children with cancer pain, and vulnerable populations—minorities, women, children and the elderly—continue to be at increased risk of being underassessed and undertreated for pain.

The EPC found that the number of patients enrolled in methodologically sound studies of cancer pain relief is a tiny fraction of those receiving care, about 1 in 10,000 patients, a much lower percentage than for nearly all other high-impact, costly conditions. In addition, there often are too few patients enrolled in trials of cancer pain treatments to draw firm conclusions about the treatments under study. These new findings echo earlier calls by pioneers in the field to improve the quality and statistical power of clinical trials in cancer pain relief.

A summary (AHRQ Publication No. 01-E033) is available from AHRQ.** The full report (AHRQ Publication No. 01-E034) will be available from AHRQ in the near future.*

Management of Newly Diagnosed Patients with Epilepsy. This evidence report was developed for AHRQ and the Centers for Disease Control and Prevention by the MetaWorks Evidence-based Practice Center (contract 290-97-0016). It indicates that the scientific literature supports the use of a complete history and physical examination—including neuropsychologic assessment and a standard EEG—to diagnose epilepsy, prevent delayed or missed diagnoses, and predict remission outcomes.

The EPC researchers also found that other diagnostic tests, such as CT scan or MRI, are more important in ruling out secondary causes of seizures or to resolve uncertain diagnoses. The researchers also note that the clinical and pharmacologic expertise of the treatment team in selecting and monitoring antiepileptic drugs, periodic blood tests, and cognitive tests in children plays an important role in determining patient outcomes.

This topic was nominated as an EPC evidence report by the Centers for Disease Control and Prevention as part of an effort to develop a framework for providing optimal care to patients with chronic diseases that are limited in prevalence. The EPC reviewed 120 studies taken from 13,128 citations; they conclude that there are limitations in the available evidence, such as no gold standard for diagnosis, poorly defined and inconsistent patient populations, inconsistent terminology, and lack of patient-centered outcomes.

A summary (AHRQ Publication No. 01-E037) of the report is available from AHRQ.** The full report (AHRQ Publication No. 01-E038) will be available from AHRQ in spring 2001.*

Management of Uterine Fibroids. Uterine leiomyomata, or fibroids, are benign tumors of the uterus made up of smooth muscle and the extracellular matrix proteins collagen and elastin. They are very common; as many as three in ten women aged 25 to 45 are affected. Fibroids can cause abnormal uterine bleeding, dysmenorrhea, and noncyclic pelvic pain. They also are associated with infertility and an increased risk of complications of pregnancy, and they can contribute to symptoms related to an enlarging pelvic mass.

Researchers at the Duke University Evidence-based Practice Center (contract 290-97-0014)

continued on page 20

New evidence reports

continued from page 19

reviewed the available evidence on the benefits, risks, and costs of commonly used medical and invasive therapies for uterine fibroids, primarily those treatments currently available in the United States. Their most significant findings have to do with treatment for uterine fibroids in black women. Black women of any age who have uterine myomata—commonly called fibroids—are more likely to have them surgically removed through a myomectomy, a procedure that preserves the uterus, than are white or Hispanic women with fibroids. While the EPCs' research confirmed earlier studies which showed that black women have higher rates of hysterectomy than any other racial group, the researchers found that black women also have higher rates of myomectomy.

The incidence of fibroids is higher in black women than in other racial groups, and black women tend to have larger and more numerous fibroids when first diagnosed, so they are more likely to need treatment than any other racial group. The rate of hysterectomies among black women with fibroids is higher than that for white women (50 percent vs. 30 percent), and the EPC found that black women are more likely than women of other racial groups to undergo surgery, either by myomectomy or hysterectomy, to treat their fibroids. The EPC researchers conclude that the high rate of hysterectomy among black women with fibroids does not appear to be because they are not offered more conservative surgery. The scope of the report did not include an examination of reasons why black women have so many hysterectomies in general.

In their review of the available evidence on uterine fibroids, the EPC found that the majority of published studies did not provide clear answers about optimal treatments. The researchers found tremendous differences in incidence and outcomes among racial groups, and they urge that more research be conducted to provide clear evidence to help women make informed decisions about the best treatment for their situation.

A summary (AHRQ Publication No. 01-E051) of the report is available from AHRQ.** The full report (AHRQ Publication No. 01-E052) will be available from AHRQ in late spring 2001.*

Telemedicine for the Medicare Population. Telemedicine is the use of telecommunications technology for medical diagnostic, monitoring, and therapeutic purposes when distance separates the users. The Oregon Health Sciences University EPC (contract 290-97-0018) developed an evidence report on this topic for AHRQ. The researchers assessed specific telemedicine study areas, with a focus on practices that would substitute for face-to-face medical diagnosis and treatment in the Medicare population.

In the report, the EPC researchers identify health care services that could be provided using telemedicine and describe existing programs in three categories: store-and-forward, self-monitoring/testing, and clinician-interactive services. They also summarize scientific evidence on the efficacy, safety, and cost-effectiveness of these services; identify gaps in the evidence; and make recommendations for evaluating telemedicine services.

The EPC researchers found that the use of telemedicine is limited at this time but growing. Active programs demonstrate that the technology can work, and the growing number of programs indicates that telemedicine can be used beneficially from clinical and economic standpoints. The evidence for the efficacy of telemedicine is less clear. In many of the studies reviewed by the EPC, the study methodology precluded definitive statements. Studies often had small sample sizes, did not focus on clinical settings, and/or involved patient populations that might be less likely than others to benefit from improved health services, such as people with complex chronic diseases.

A summary (AHRQ Publication No. 01-E011) of the report is available from AHRQ.** The full report (AHRQ Publication No. 01-E012) will be available in spring 2001.* ■

AHRQ's CONQUEST database helps medical organizations measure and improve clinical performance

Medical treatment in the United States results in unintended injuries affecting more than 1 million people each year. Patients also receive unnecessary or inappropriate health care services, which reflect overuse, underuse, and misuse. Clearly, it is important for organizations to be able to measure and improve clinical performance. The Agency for Healthcare Research and Quality has developed a clinical database called CONQUEST, described in a recent article by AHRQ researcher Margaret A. Keyes, M.A., which has the potential to simplify and substantially reduce the effort needed to measure and improve clinical performance.

Ms. Keyes points out, for example, that CONQUEST could be used by a managed care organization (MCO) that is treating a growing number of adult diabetic patients covered by a single employer with which it has a long-standing contract. The MCO is interested in the preventive treatments or services that would help defer the more serious complications of this costly disease and in how the MCO is performing relative to recommended services or treatments. Using the conditions portion of the CONQUEST database, the MCO user could search for information on type II diabetes, treatments, and services recommended. After identifying a service of interest, the user could then move to the measures component of CONQUEST and search either measures explicitly related to the condition, those related to a procedure, or measures associated with services used in the prevention, screening, diagnosis, treatment, or management of the condition.

CONQUEST might uncover six measures linked to glycosylated hemoglobin testing, with some measures addressing, for example, the frequency of the test or the time since the last test. Looking further, the user finds which measures were developed for internal quality improvement, making them suitable for the user's application.

Details are in "CONQUEST 2.0: An emerging clinical performance measurement tool," by Ms. Keyes, in the *Journal for Healthcare Quality* 22(3), pp. 29-36, 2000. Reprints (AHRQ Publication No. 01-R025) are available from AHRQ.**

Editor's note: Both CONQUEST and technical assistance for users are available from AHRQ. CONQUEST can be downloaded from the AHRQ Web site at www.ahcpr.gov/qual/conquest.htm and it can be ordered from the AHRQ clearinghouse (diskettes, AHRQ Publication No. 99-DP01 and user's guide, AHRQ Publication No. 99-0011).* For technical assistance with CONQUEST, call 301-594-1824. ■

Spotlight on AHRQ's health care research scholars

We are pleased to announce the recent achievements of current and former scholars who received support for their research education from the Agency for Healthcare Research and Quality through our National Research Service Award (NRSA) institutional training grants program. We are very proud of these accomplishments and will continue to share these highlights in the future. These accomplishments point to the bright future ahead for health services research and the individuals who have already begun to lead the way toward meeting the new challenges that will arise in the years ahead.

If you are a former scholar whose research education was supported by AHRQ or its predecessor agency (the Agency for Health Care Policy and Research, AHCPR, or the National Center for Health Services Research and Health Care Technology Assessment, NCHSR) and you would like to be mentioned in an upcoming issue of *Research Activities*, please send a message with appropriate information to our e-mail box: training@ahrq.gov. In particular, we are eager to hear about how your research findings have been translated into practice or how your research has affected health care in the United States. We look forward to hearing from you.

Scholar trained at Harvard University

Recent publication

Chapman, R.H., (former fellow) Stone, P.W., Sandberg, E.A., and others. "A comprehensive league table of cost-utility ratios and a sub-table of 'panel-worthy'

continued on page 22

AHRQ's health care research scholars

continued from page 21

studies." October-December 2000, *Medical Decision Making* 20:451-467.

Scholars trained at New England Medical Center

Recent presentations

Michael L. Dansinger, M.D., presented "Effectiveness of four dietary treatment strategies for metabolic syndrome: A prospective randomized trial," at the following conferences: AHRQ NRSA 2000 Trainees Research Conference, Los Angeles, CA, June, 2000; 2000 Charleton Poster Competition, Tufts University School of Medicine, Boston, MA, October, 2000; and 8th Annual Research Celebration, Lifespan Rhode Island, Providence RI, September, 2000.

Catherine E. Milch, M.D., presented, "A comparison of two primary care interventions to improve smoking cessation rates," at the following conferences: AHRQ NRSA 2000 Trainees Research Conference, Los Angeles, CA, June, 2000; 2000 Charleton Poster Competition, Tufts University School of Medicine, Boston, MA, October, 2000; and 8th Annual Research Celebration, Lifespan Rhode Island, Providence RI, September, 2000.

Harry Moskowitz, M.D., presented "Characteristics and trends in adolescent assault victims: A comparison between females and males," at the following conferences: AHRQ NRSA 2000 Trainees Research Conference, Los Angeles, CA, June, 2000; 2000 Charleton Poster Competition, Tufts University School of Medicine, Boston, MA, October, 2000; 8th Annual Research Celebration, Lifespan Rhode Island, Providence RI, September, 2000; and Pediatric Academic Societies and American Academy of Pediatrics Joint Meeting, Boston, MA, September 2000.

John M. Ogren, M.D., "CDC-MCO study on the incidence of intussusception after use of the rotavirus vaccine," led the participation of Tufts Associated Health Plans in the national project and will be listed as an author on a forthcoming article planned for publication in 2001.

Panos S. Savvides, M.D., presented "A predictive instrument for the need for dose intensity in chemotherapy for patients with breast cancer: A potential decision aid for the use of myeloid growth factors," at the annual meeting of the American Association for Cancer Research, San Francisco, CA, September, 2000.

Scholars trained at the University of Pennsylvania

Recent appointments

Li-Wei Chao, M.D., M.A., Assistant Professor, Anesthesiology, School of Medicine, University of Pennsylvania, Center for Outcomes Research, the Children's Hospital of Philadelphia.

Bradley J. Herring, Ph.D., Robert Wood Johnson Foundation Health Policy Scholar, Institute for Social and Policy Studies, Yale University.

Raynard S. Kington, M.D., Ph.D., Associate Director for Behavioral and Social Sciences Research, National Institutes of Health.

Allison M. Percy, Ph.D., Postdoctoral Fellow, Veterans Administration, Philadelphia, PA.

Robert DeGraaff, M.B.A., Assistant Professor, Department of Health Management and Informatics, School of Medicine, University of Missouri, Columbia.

Steven Walston, Ph.D., Director, Graduate Programs in Health Administration, Indiana University.

Recent publications

Burns, L.R., Connolly T., and Degraaff, R. (former fellow). "The impact of physicians' perceptions of malpractice and adaptive changes on intention to cease obstetrical practice," *Journal of Rural Health*, 15(2), pp. 134-146, 1999.

Burns, L.R., DeGraaff, R. (former fellow), and Singh, H. Determinants of for-profit acquisition of physician group practices," *Quarterly Review of Economics and Finance*, in press.

Christakis, N. *Death Foretold: Prophecy and Prognosis in Medical Care.* Chicago: University of Chicago Press, 2000.

Danzon, P.M. and Percy, A. (former fellow). "The effect of price regulation on productivity in the pharmaceutical industry." *Studies in Income and Productivity*, A. Heston and R. Lipsey, eds. Chicago: University of Chicago Press, 2000.

Danzon, P.M. and Chao, L. (former fellow). "Cross-national price differences for pharmaceuticals: How large and why?" *Journal of Health Economics*, 19(2), pp. 159-195, 2000.

continued on page 23

AHRQ's health care research scholars

continued from page 22

Danzon, P.M. and Chao, L. (former fellow). *Prices, Competition and Regulation in Pharmaceuticals: A Cross-National Comparison.* London: Office of Health Economics, in press.

Luke, R., Begun, J., and Walston, S. (former fellow). "Strategy making in health care organizations," in *Health Care Management: Organization Design and Behavior,* 4th Edition, S. Shortell and A. Kaluzny, eds. Albany, NY: Delmar Publishers, 2000.

Pauly, M., Percy, A. (former fellow), Herring, B. (former fellow), and Rosenbloom, J. "What would happen if large firms offered MSAs?" May/June 2000 *Health Affairs*, 19(3), pp. 165-172.

Pauly, M.V. and Herring, B.J. (former fellow). "An efficient employer strategy for dealing with adverse selection in multiple plan offerings: An MSA example." July 2000 *Journal of Health Economics*, 19(4), pp. 513-528.

Pauly, M.V. and Herring, B. (former fellow). *Pooling Health Insurance Risks.* Washington: AEI Press, 1999.

Pauly, M.V. and Percy, A.M. (former fellow). "Cost and performance: A comparison of the individual and group health insurance markets." February 2000 *Journal of Health Politics, Policy & Law*, 25(1), pp. 9-26.

Urden, L. and Walston, S. (former fellow). "Outcomes of hospital restructuring and reengineering: How is success or failure being measured?" *Journal of Nursing Administration*, in press.

Walston, S. (former fellow), Burns, L.R., and Kimberly, J.R. (former fellow). "Does reengineering really work? An examination of the content and outcomes of hospital reengineering programs." February 2000 *Health Services Research*, 34(6), pp. 1363-1388.

Walston, S. (former fellow), Kimberly, J.R. (former fellow), and Burns, L.R. "The antecedents and structure of reengineering programs: Impact of institutional and economic forces." *Medical Care Research and Review*, in press.

Walston, S. "Majority of U.S. hospitals continue reengineering." AARP feature, August 2000.

Walston, S. (former fellow), Urden, L., and Sullivan, P. "Hospital reengineering: A changing management innovation. Where did it come from? What is its status? And where is it going?" *Journal of Health and Human Services*, in press.

Scholars trained at the University of Wisconsin

Recent publications and presentations

Ben Craig (with Koc, D.). "Vice President Al Gore's health care agenda and the utilization of medical services: An empirical analysis." October 27, 2000 *Medscape General Medicine.*

Ben Craig, abstract and podium presentation, "Dollars per pound: A cost-effectiveness analysis of obesity treatments," at the 22nd Annual Meeting of the Society for Medical Decision Making in Cincinnati, OH, September 24-27, 2000. Craig, B.M., Tseng, D.S., and Moore, D.M. *Medical Decision Making* 20:493, 2000 [abstract].

Natasha Stout, abstract and poster presentation, "The cost-effectiveness of a newborn screening program for cystic fibrosis," at the Society of Medical Decision Making. Stout, N.K., Nizamuddin, H.M., and Ngorsuraches, S. *Medical Decision Making* 20:483, 2000 [abstract].

Ralph Insinga, abstract and poster presentation, "A cost-effectiveness analysis of newborn screening using tandem mass spectrometry," at the Society of Medical Decision Making. Insinga, R.P., Griffths, J.B., and McRae, D.C. *Medical Decision Making* 20:478, 2000 [abstract]. ■

AHRQ issues two RFAs on patient safety research

The Agency for Healthcare Research and Quality recently announced two new Requests for Applications (RFAs) on patient safety research. One is focused on collecting and using information to reduce medical errors, and the other concerns the use of clinical informatics to promote patient safety. These new RFAs are numbers three and four in a series of six RFAs on patient safety to be issued by AHRQ this fiscal year. The two new RFAs are described here.

Collecting and using information to reduce medical errors. AHRQ is seeking applications from organizations—including universities, health care delivery systems, and State and local government agencies—to fund up to 13 cooperative agreements for demonstration projects that will assess the effectiveness of various methods of collecting and using information to reduce medical errors and their impact. AHRQ expects to award up to $25.0 million annually in fiscal years 2001-2003 to support these cooperative agreements under this RFA.

The projects funded under this RFA will evaluate which data should be collected, how the data should be aggregated and analyzed, how the data should be reported to provide useful information to those trying to reduce patient injuries from medical errors, and how the data can be protected from unintentional disclosure. AHRQ expects award recipients to work with each other to test the effectiveness of various methods of collecting, analyzing, reporting, and using information on patient safety.

The projects are expected to continue for up to 3 years. In addition to evaluating error reporting systems that can collect and analyze data to identify risks to patient safety and develop effective methods of providing that information to clinicians and others, AHRQ seeks to test effective methods of telling patients and family members when an error has occurred that has resulted in harm to the patient. Ambulatory care networks that are involved in patient safety data collection are encouraged to submit applications. AHRQ will set aside approximately $2 million per year to support projects that explicitly study medical errors and patient safety efforts in ambulatory care

Letters of intent for the demonstration projects are due April 2, 2001; applications are due April 27, 2001. Go to the February 2, 2001, *NIH Guide to Grants and Contracts* at http://grants.nih.gov/ grants/guide/rfa-files/RFA-HS-01-003.html for more information on this RFA.

Clinical informatics and patient safety research. AHRQ is interested in demonstration research projects that use clinical informatics to promote patient safety ("CLIPS"). AHRQ expects to award up to $3.5 million under this RFA. Through CLIPS, AHRQ will assess the extent to which information technology innovations, when applied in various health care settings, contribute to measurable and sustainable improvements in patient safety and quality of care.

Projects funded under this RFA will support development and testing of technology tools, such as hand-held electronic medication and specimen management systems, training simulators for medical education, computerized bar-coding, patient bracelets, smart cards, automated medication dispensing systems, and computerized physician order entry systems that can be used to reduce the risk of medical errors and improve quality of care.

Specifically, AHRQ will consider research in the following three areas:

1. The role of informatics in improving clinical decisionmaking, reducing errors, and advancing patient safety.
2. Barriers to acceptance and adoption of health information technology for improved patient safety.
3. Use of effective strategies to improve patient safety while maintaining patient confidentiality.

The Agency will give special priority to applications that emphasize outpatient health care settings and priority populations, including women and children; elderly, minority, and low-income populations; and patients with special health care needs.

Letters of intent for CLIPS are due April 6, 2001; applications are due April 23, 2001. See the February 23, 2001 *NIH Guide to Grants and Contracts* at http://grants.nih.gov/grants/guide/rfa-files/RFA-HS-01-006.html for more information on this RFA.

The first RFA in this series was announced on October 26, 2000, and focused on development of Centers of Excellence for Patient Safety Research and Practice. The second RFA, which was released on November 13, announced the Agency's intent to establish up to 10 new Developmental Centers for Evaluation and Research in Patient Safety (DCERPS). Future patient safety RFAs will focus on the effects of working conditions on patient safety and patient safety research dissemination and education. ■

AHRQ announces BRIC, a new peer-reviewed grant program

The Agency for Healthcare Research and Quality has launched the Building Research Infrastructure and Capacity (BRIC) program, a peer-reviewed grant program intended to broaden geographic distribution of health services research funding. This will be done by enhancing the competitiveness for research funding among institutions located in States where there have been few successful applications to AHRQ in the past.

The BRIC program will increase the probability of long-term growth of AHRQ competitive funding to investigators at institutions in States that are eligible for the program. AHRQ expects to award up to $1 million in fiscal year 2001 to support the total first year costs of approximately three to six grants under this Request for Application (RFA).

BRIC-eligible States include the following States, plus the Commonwealths of Puerto Rico and the Virgin Islands: Alaska, Delaware, Hawaii, Idaho, Kansas, Kentucky, Louisiana, Mississippi, Montana, Nevada, New Jersey, North Dakota, Oklahoma, South Dakota, Utah, Vermont, and Wyoming.

Letters of intent are due April 1, 2001; applications are due April 24, 2001. Consult the February 23, 2001, NIH Guide at http://grants.nih.gov/grants/guide/rfa-files/RFA-HS-01-001.html for more information on this program. ■

Plan now to attend this year's annual meeting of health services researchers

The 2001 annual meeting of the Academy for Health Services Research and Health Policy (formerly the Association for Health Services Research, AHSR) will be held June 10-12, at the Atlanta Hyatt Regency. This meeting provides a unique opportunity to learn about cutting-edge research, timely policy issues, and the impact such research and policy may have on actual health care delivery. Key topics being featured at this year's meeting include access/disparities, behavioral health, child health, coverage, international health, long-term care, managed care, management/organization, Medicare, pharmaceuticals/emerging technologies, quality, and health care workforce issues.

In response to requests for more methodology on the program, this year's meeting will feature twice the number of methods workshops as were held at last year's meeting, including six full-day methods seminars. Also, additional time slots have been allocated for panels and paper presentations, allowing researchers more opportunity to showcase their findings. For the first time, the poster program will be divided into three sessions, with fewer posters displayed in each session, to give participants more time to view the presentations.

Visit the Academy Web site at www.academyhealth.org/2001 for a complete agenda and registration information, as well as a listing of affiliate meetings. ■

Workshop on child health services research to be held in Atlanta in June

The Agency for Healthcare Research and Quality is the primary sponsor of the third annual child health services researchers meeting, which will be held June 9, from 10 am to 6 pm, at the Hyatt Regency Hotel in Atlanta, GA. The meeting is intended to bring together junior and senior investigators in child health services research (CHSR) and to attract State and local policymakers interested in accessing new data from CHSR initiatives. The four themes of the meeting are skill building, research and State health policy, quality measurement and improvement, and cost, use, and access.

A new award will be presented at the meeting to recognize an emerging scholar in CHSR who has worked on topics relevant to low income urban children with special needs. Nominations for the award are due April 6.

continued on page 26

Workshop on child health

continued from page 25

The other meeting cosponsors are the American Academy of Pediatrics, the HSC Foundation, the National Association of Children's Hospitals and Related Institutions, and the Office of the Assistant Secretary for Planning and Evaluation, U.S. Department of Health and Human Services. Go to www.academyhealth.org/childhealth/ for more information on the meeting and nomination of scholars, as well as registration materials. ■

AHRQ to cosponsor ISTAHC 2001

The Agency for Healthcare Research and Quality is cosponsoring the 2001 conference of the International Society of Technology Assessment in Healthcare (ISTAHC), which will be held in Philadelphia, June 3-6, 2001. The conference will be hosted by ECRI, an AHRQ Evidence-based Practice Center.

The conference will feature three plenary sessions, a variety of special theme sessions, and several preconference meetings. The preconference meetings will include three technology assessment primers, a session on technology assessment and patient access, and a workshop presented by the Pan American Health Organization/World Health Organization that will feature participants from many Latin American and Caribbean countries. An innovative postconference program will feature an intermediate level interactive technology assessment workshop focused on training for those who practice technology assessment or train others. The postconference workshop is being cosponsored by ECRI and the Leonard Davis Institute for Health Economics at the University of Pennsylvania.

The deadline for early registration is March 31, 2001. Go to www.ISTAHC2001.org for details about the conference, the various sessions, and registration information. ■

Research Briefs

Allison, J.J., Calhoun, J.W., Wall, T.C., and others. (2000). "Optimal reporting of health care process measures: Inferential statistics as help or hindrance?" (AHRQ grant HS08843). ***Managed Care Quarterly*** **8(4), pp. 1-10.**

Measurement of specific aspects of medical care provides the starting point for quality improvement. Often this measurement takes the form of a "practice profile," which compares performance patterns of physicians, physician groups, health care organizations, or even larger aggregations such as geographic regions. The authors of this paper discuss the appropriate application of inferential statistics to practice profiles and other measures of care. They describe the relative merits of measuring three well-recognized domains of medical quality: structure, process, and outcome. Next, they discuss inferential statistics as used in quality improvement. Finally, they describe several common circumstances that arise in the measurement of medical care, focusing on the application of inferential statistics to each situation.

Asmussen, L., Olson, L.M., Grant, E.N., and others. (2000). "Use of the child health questionnaire in a sample of moderate and low-income inner-city children with asthma." (AHRQ grant HS08368). ***American Journal of Respiratory and Critical Care Medicine*** **162, pp. 1215-1221.**

The Child Health Questionnaire (CHQ-PF50) is one of several recent efforts to gauge pediatric, health-related quality of life from the patient's (or parent's) perspective. Although the CHQ has been tested extensively with healthy children, more information is needed about its performance among children with chronic conditions such as asthma. Seventy-four adult caregivers of children with asthma completed the CHQ. Tests of validity found CHQ scales better at distinguishing levels of disease severity as defined by symptoms than medication use or pulmonary function tests. Performance of the CHQ in a

continued on page 27

Research briefs

continued from page 26

sample of low income to moderate income inner-city parents of children with asthma presented mixed results. Some scales were better than others in assessing the health status of children at highest risk for asthma morbidity. Future efforts should focus on comparison of condition-specific and generic instruments.

Calhoun, P.S., Earnst, K.S., and Tucker, D.T. (2000). "Feigning combat-related posttraumatic stress disorder on the personality assessment inventory." (AHRQ National Research Service Award training grant T32 HS00079). *Journal of Personality Assessment* 75(2), pp. 338-350.

To avoid prosecution or gain financial compensation (via personal injury or workman's compensation claims), some individuals exaggerate their symptoms, which can complicate the diagnosis of combat-related posttraumatic stress disorder (PTSD). These researchers examined whether individuals who were instructed about the criteria for PTSD could feign PTSD on the Personality Assessment Inventory (PAI). They also studied whether PAI indexes of symptom exaggeration—the Negative Impression Management (NIM) scale and the Malingering Index—could identify individuals feigning PTSD. The diagnostic rule for PTSD was applied to profile a group of 23 veterans with combat-related PTSD and 23 male college students instructed to feign PTSD. Seventy percent of the student malingerers produced profiles that received diagnostic consideration for PTSD. The vulnerability of all psychological measures to exaggeration or faking underscores the importance of obtaining information from multiple sources in the assessment of PTSD.

Dalton, K., and Norton, E.C. (2000). "Revisiting Rogowski and Newhouse on the indirect costs of teaching: A note on functional form and retransformation in Medicare's payment formulas." (National Research Service Award training grant T32 HS00032). *Journal of Health Economics* 19, pp. 1027-1046.

In 1992 Rogowski and Newhouse identified errors in functional form and retransformation in the econometric model that underlies Medicare's payments to teaching hospitals. These authors re-estimate the original model and expand on the work of Rogowski and Newhouse using data from the following decade. They found that the functional form imposed by the Health Care Financing Administration's original specification of the teaching variable was supported by the data. There was no evidence of a threshold effect when the teaching intensity variable was appropriately specified, and there was no need to incorporate re-transformation factors into the payment formula. The authors attribute their findings to secular changes in the hospital industry and improvements in variable measurement.

Orlando, M., Sherbourne, C.D., and Thissen, D. (2000). "Summed-score linking using item response theory: Application to depression measurement." (AHRQ grant HS08349). *Psychological Assessment* 12(3), pp. 354-359.

Item response theory (IRT) comprises a collection of modeling techniques to analyze items, tests, and people. When the assumptions of the IRT model are met, this collection of techniques offers many advantages over traditional test theory and can be a powerful tool for test construction. In this study, the researchers demonstrate an IRT approach to test linking based on summed scores by calibrating a modified 23-item version of the Center for Epidemiologic Studies Depression Scale (CES-D) to the standard 20-item CES-D. Responses to items on both the original and modified versions were calibrated simultaneously using F. Samejima's graded IRT model. The two scales were linked on the basis of derived summed-score-to-IRT-score translation tables. The established cut score of 16 on the standard CES-D corresponded most closely to a summed score of 20 on the modified version. The authors conclude that the IRT summed-score approach to test linking is a straightforward, valid, and practical method that can be applied in a variety of situations. ■

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