



Research Activities

No. 233, January 2000

Highlights

Departments

- 2 Heart Disease**
- 5 Clinical Decisionmaking**
- 9 Children's Health**
- 10 Primary Care**
- 11 Health Care Quality**
- 13 Managed Care**
- 15 Medical Informatics**

Regular Features

- 17 AHRQ News and Notes**
- 19 Announcements**
- 23 Research Briefs**

1999 Indexes

- 25 Author Index**
- 27 Subject Index**

Patients prefer to receive care from doctors who see people from several health plans

Patients are more satisfied with their primary care and are more trusting of doctors who are not restricted to treating only members of a single health plan, according to a new study published in the *Archives of Internal Medicine* and funded by the Agency for Healthcare Research and Quality.

The findings are derived from a study of 6,000 Massachusetts State government employees by a team of researchers led by Dana Gelb Safran, Sc.D., Director of the Health Institute of the New England Medical Center in Boston. The State employees, who belonged to different types of health plans, were asked to rank the performance of their physicians according to 10 categories of health care quality, such as access to care, continuity of care, doctors' knowledge of their health, and how well their physicians communicated with them.

Patients of "staff model" HMOs ranked their physicians the lowest in 9 of the 10 categories. Staff model HMOs are health plans that employ salaried physicians to treat their plan members only. The only category in which these plans

didn't score at the bottom was preventive health counseling.

"Group-model" HMOs performed at intermediate levels. These HMOs resemble staff model-HMOs in that they restrict doctors to serving only their patients but differ in how they pay the doctors. Group-model HMOs performed better than staff-model HMOs in all 10 aspects of quality but not as favorably as open-model health plans.

The most favorably rated plans were the open-model ones, which allow patients to see doctors who work in different locations and do not restrict physicians to treating patients in only one insurance plan. Open-model plans include managed indemnity insurance (traditional fee-for-service insurance with controls such as preauthorization for hospital admission), point-of-service plans, and network-model HMOs.

For most aspects of care, patients reported no differences in the quality of care received under the various open-model forms of health insurance. Point-of-service plans contract with networks of physicians on a nonexclusive basis

continued on page 2

Patient choice of physician

continued from page 1

and allow their enrollees to obtain care from non-network doctors if they are willing to pay more out-of-pocket. Network-model HMOs also

contract with networks of physicians on a nonexclusive basis, but they do not cover care provided by doctors who are not in their networks.

Details are in "Organizational and financial characteristics of

health plans: Are they related to primary care performance?" by Dr. Safran, William H. Rogers, Ph.D., Alvin R. Tarlov, M.D., and others, in the January 10, 2000, *Archives of Internal Medicine* 160, pp. 69-76. ■

Heart Disease

Elderly heart attack patients who have multiple health problems may not receive prompt clot-busting treatment

Elderly heart attack patients with multiple health problems, who are most in need of thrombolytic (clot-busting) medication, do not receive it as promptly as other patients, according to a recent study supported in part by the Agency for Healthcare Research and Quality (HS07357). Ideally, heart attack victims should receive thrombolytic therapy within an hour of symptom onset in order to salvage the myocardium.

Previous studies have shown less damaged heart tissue and fewer deaths among those who are given timely thrombolytic therapy. The longer the delay in administering this therapy, the more likely a poor clinical outcome, explains lead author Thomas J. McLaughlin, Sc.D., of Harvard Medical School. Dr. McLaughlin, Stephen B. Soumerai, Sc.D., also of

Harvard, and their colleagues studied 776 patients arriving at 37 Minnesota hospitals who were admitted for diagnosed or suspected heart attack (acute myocardial infarction, AMI) and were treated with a thrombolytic agent.

They found that during 1992 and 1993 and 1995 and 1996, almost 40 percent of AMI patients who received thrombolytics were administered them 60 minutes or more after hospital arrival. As expected, the later time period (1995-1996) was associated with earlier administration of thrombolytic treatment, perhaps indicating a trend toward speedier use of thrombolytic agents. Delays in treatment were more likely for patients age 75 or older (odds ratio, OR 1.57; 1 is equal odds) and those with a greater burden of coexisting medical problems (OR 1.46). Use of emergency transport was strongly associated with receipt of thrombolytic treatment in less than an hour (OR 0.46), as was chest pain (OR 0.40).

The presence of chest pain presumably expedites AMI diagnosis. Also, initial patient assessment, including electrocardiography, can occur during emergency transport, saving assessment time in the emergency department. Further delay in use of thrombolytic agents for older, more impaired patients may be due to the complex clinical decisionmaking concerning these patients. For example, elderly people have a higher risk of bleeding, particularly intracranial hemorrhage, with thrombolytic treatment. Quality improvement efforts should be directed at accelerating the decision process for these vulnerable patients for whom expeditious treatment may be most beneficial, conclude the researchers.

See "Delayed thrombolytic treatment of older patients with acute myocardial infarction," by Dr. McLaughlin, Jerry H. Gurwitz, M.D., Donald J. Willison, Sc.D., and others, in the October 1999 *Journal of the American Geriatrics Society* 47(10), pp. 1222-1228. ■

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

AHRQ
Office of Health Care Information
2101 East Jefferson Street, Suite 501
Rockville, MD 20852
(301) 594-1364

Mary L. Grady, Managing Editor
Gail Makulowich, Contributing Editor
Joel Boches, Design and Production
Karen Migdail, Media Inquiries

Outcomes have improved significantly for patients undergoing coronary angioplasty

The first human coronary angioplasty was performed in 1977, and now an estimated 1 million such procedures are performed worldwide each year. During the procedure, a balloon catheter is inserted into a blocked coronary artery. When inflated, it flattens plaque against the arterial wall and opens up the artery. The good news is that outcomes for patients undergoing coronary angioplasty appear to have improved significantly since the early 1990s, according to a study supported in part by the Agency for Healthcare Research and Quality (HS06813).

Researchers from the Northern New England Cardiovascular Disease Study Group collected data from 1990 to 1997 on 34,752 percutaneous coronary interventions (PCIs) performed at all hospitals in Maine (two), New Hampshire (two), and Vermont (one) supporting these procedures, and one hospital in Massachusetts.

They defined clinical success as at least one coronary artery lesion dilated to less than 50 percent blockage and no adverse outcomes, such as coronary artery bypass graft surgery (CABG; emergency CABG is usually due to failed angioplasty), heart attack, or death.

Success rates improved during the 1990s, even though the patients undergoing angioplasty tended to be older, had more coexisting medical problems (ranging from diabetes to renal failure), and had more complex lesions. After adjustment for patient case mix, clinical success improved from a low of 88 percent in earlier years to a peak of 92 percent in recent years. The rate of emergency CABG surgery after PCI fell in recent years from a peak of 2.3 percent to 1.3 percent. Mortality rates also decreased slightly from 1.2 percent to 1.1 percent. Over the past 20 years, the increasing experience of surgeons and hospitals, the advent of newer

technologies (including coronary stents), and a variety of adjuvant drug therapies have led to more successful procedures and decreased the complications associated with PCIs.

For more information, see "Changing outcomes in percutaneous coronary interventions," by Paul D. McGrath, M.D., M.Sc., David J. Malenka, M.D., David E. Wennberg, M.D., M.P.H., and others, in the September 1999 *Journal of the American College of Cardiology* 34(3), pp. 674-680. ■

Home-based monitoring program reduces hospitalizations and costs for elderly patients with heart failure

Heart failure is affecting a growing number of Americans; 1 of every 10 elderly people is affected, and it affects 1 in 100 in the general population. What's more, 45 percent of elderly heart failure patients who are hospitalized are hospitalized again within 6 months. However, a home-based, low-intensity monitoring program can reduce hospitalizations and cost of care for elderly heart failure patients treated by community physicians,

according to a pilot study supported by the Agency for Healthcare Research and Quality (National Research Service Award training grant T32 HS00028).

Led by Paul A. Heidenreich, M.D., M.S., of the Veteran Affairs Medical Center, Palo Alto, CA, researchers enrolled 68 elderly patients with heart failure in a community-based monitoring program. The multidisciplinary program used nurses to counsel

continued on page 4

Also in this issue:

Length of stay after CABG surgery, see page 4

Therapy for patients with poor glycemic control, see page 5

Doctor/patient communication about medications, see page 5

Timing of total knee replacement surgery, see page 6

Impact of back pain on functioning, see page 7

Receipt of flu shots by healthy adults, see page 8

Availability of national data on children's health, see page 9

Treating depression in primary care, see page 10

Quality of care in nursing homes, see page 11

Hospital spending on quality improvement, see page 12

Access to second medical opinions, see page 13

Impact of strategic hospital alliances, see page 14

Monitoring of heart failure patients

continued from page 3

and educate patients about the signs and symptoms of heart failure, and community doctors provided care. Each day, the at-home patients entered their weight, vital signs, and symptoms in a computer program, and they notified the doctor of any abnormalities. The program also included telephone followup and medication reminders with pagers. The researchers compared the

medical claims of these patients to those of a control group of 86 patients with similar medical claims the previous year who were not involved in the monitoring program.

Compared with 1995, 1996 medical claims decreased in the monitored group from \$8,500 to \$7,500, but claims for patients in the control group more than doubled, from \$9,200 to \$18,800. There were similar differences for hospitalizations and total hospital days. The researchers estimated the cost of the monitoring program to

be less than \$200 per patient per month. Given this estimate, the cost per monitored patient per year in 1996 was \$9,800, a cost substantially below the mean cost of care for control patients during the same period (\$18,800).

More details are in "Effect of a home monitoring system on hospitalization and resource use for patients with heart failure," by Dr. Heidenreich, Christine M. Ruggerio, R.N., M.S.N., and Barry M. Massie, M.D., in the *American Heart Journal* 138(4), pp. 633-640, 1999. ■

Nonclinical factors affect length of hospital stay after coronary artery bypass surgery

Coronary artery bypass graft (CABG) surgery is one of the most common and costly procedures performed in the United States and as such is a major target for cost-containment efforts. Hospitals vary substantially in how long they keep patients in the hospital following CABG surgery. Hospital providers contend that these variations are caused by differences in the clinical mix of patients treated, with hospitals that have longer postoperative length of stay (PLO) saying their patients are sicker. However, a recent study suggests that such clinical factors play only a minor role in explaining variations in hospital PLO for CABG.

In fact, there may be room for increased efficiency and potential cost savings in the care of patients undergoing bypass surgery at certain hospitals, according to the study, which was conducted by the Ischemic Heart Disease Patient Outcomes Research Team (PORT) and supported in part by the Agency for Healthcare Research and Quality (HS06503). Allison B. Rosen, M.P.H., of Duke University Medical Center, and her colleagues analyzed detailed clinical data on

3,605 Medicare patients undergoing CABG surgery in 28 Alabama and Iowa hospitals to identify significant clinical predictors of PLO.

Certain clinical factors predicted longer PLO, such as older age, serious multiple medical conditions, pulmonary disease, and history of congestive heart failure or diabetes. Yet adjustment for case mix of patients treated at each hospital explained only a small amount (4 to 9 percent) of the overall variation in length of stay. Postoperative complications explained an additional 10 percent and death an additional 8 percent of the patient variations in PLO. However, even with these, more than 75 percent of the patient variation in PLO remained unexplained, and hospital variations remained significant (median PLO varied by 4 days and mean PLO by 10 days).

More details are in "Effect of clinical factors on length of stay after coronary artery bypass surgery: Results of the Cooperative Cardiovascular Project," by Dr. Rosen, J. O'Neal Humphries, M.D., Lawrence H. Muhlbaier, Ph.D., and others, in the July 1999 *American Heart Journal* 138, pp. 69-77. ■

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

Clinical Decisionmaking

Therapy can be intensified for the majority of patients with inadequate glycemic control

Many diabetes-related complications can be delayed or prevented with intensive therapy in patients with either type 1 (insulin-dependent) or type 2 (adult-onset) diabetes. Doctors in a specialty diabetes care clinic usually identify patients with poor glycemic control (excessively high blood sugar levels) and intensify therapy for most of them in order to bring down their blood sugar levels. When they decide not to intensify therapy, they usually have a good reason for their decision in only half of these cases, showed a study supported in part by the Agency for Healthcare Research and Quality (HS09722).

The researchers analyzed whether doctors at a hospital diabetes clinic—which treated mostly black patients with adult-onset diabetes and a high rate of diabetes-related complications—followed the diabetes management protocol. It called for providers to advance therapy in patients with fasting plasma glucose levels

greater than 7.8 mmol/l or random plasma glucose levels greater than 10 mmol/l. During a 3-month period, the doctors were asked to complete a questionnaire at the end of each patient visit about how well the patient's diabetes was controlled and whether therapy was advanced. The physicians also were asked to justify why they did not advance therapy in poorly controlled patients.

Providers classified control as good in 508 patient visits. For patients with poor control (636 visits), therapy was advanced for 77 percent of the patients but not for the remaining 23 percent. The most common reason for not advancing therapy among patients with poor control was the provider's perception that glycemic control was improving (34 percent of cases). In most cases, the physician's perception was accurate, however control may not have improved any further. Other reasons were noncompliance with medications (16 percent), dietary

noncompliance (10 percent), and acute intervening illness (8 percent). Patient refusal to have therapy (7 percent) and recurrent hypoglycemia (3 percent) were uncommon reasons for not advancing therapy. No reason was given for not advancing therapy for 18 percent of patients. Had therapy been advanced in patients with improving control, those with diet noncompliance, and when no reason was given, then overall intensification of therapy would have occurred in close to 90 percent of inadequately controlled patients.

For more information, see "Diabetes in urban African-Americans: Identification of barriers to provider adherence to management protocols," by Imad M. El-Kebbi, M.D., David C. Ziemer, M.D., Daniel L. Gallina, M.D., and others in the October 1999 *Diabetes Care* 22(10), pp. 1617-1620. ■

Doctors and patients need to ask each other more questions about medications

Doctors tend to ask patients questions about their medications that don't elicit comments from the patient, according to a study supported by the Agency for Healthcare Research and Quality (HS08431). The study also revealed that nearly half of patients taking one or more medications for chronic disease did not ask their doctors any questions about these medications.

Previous research has shown that patients are reluctant to ask questions about medications during visits because they fear their physicians' reactions. This study found that physicians perceive question-

asking in a positive light. Patients who asked medication-related questions were rated by their physicians as more interested and assertive—but not more irritated or angry—than patients who did not ask questions.

In this study, only 1 percent of medication questions asked by doctors were open-ended. Nearly half of patients were not asked any questions by their doctor about how their medications were helping, and two-thirds were not questioned about side effects or barriers to taking medications. Also, physicians rarely

continued on page 6

Questions about medications

continued from page 5

asked about contraindications, allergies, or interactions with other drugs the patient was taking. Physicians are more likely to detect and prevent problems with continued medications and improve patient compliance if they ask patients how the medications are working and whether they have any side effects, suggests Betsy Sleath, Ph.D., of the University of North Carolina at Chapel Hill School of Pharmacy.

Dr. Sleath and her colleagues analyzed 467 audiotapes and transcripts of outpatient visits and postvisit interviews with chronic disease patients and their primary care doctors. All patients took at least one prescribed medication and were using an average of nearly four continued medications. The tapes revealed that physicians and patients spent an average

of 4 minutes (20 percent of each medical visit) discussing medications. Doctors asked patients an average of 9.3 questions about medications during each visit. They asked significantly more questions of minority patients, lower income patients, and patients using more continued medications.

For the patients who asked questions about medications (just over 50 percent of those taking at least one drug), the average number of drug-related questions was 2.4. Starting a new medication doubled a patient's likelihood of asking a question.

For details, see "Asking questions about medication: Analysis of physician-patient interactions and physician perceptions," by Dr. Sleath, Debra Roter, Dr.P.H., Betty Chewning, Ph.D., and Bonnie Svarstad, Ph.D., in *Medical Care* 37(11), pp. 1169-1173, 1999. ■

Patients and doctors need to weigh the risks and benefits of simultaneous versus staged bilateral knee replacement

Arthritis of the knee is common, particularly among the elderly. Total knee replacement (TKR) surgery is frequently used to alleviate pain and improve function in patients with severe knee arthritis. For patients with problems in both knees, there are advantages to having both knees replaced in a single procedure (simultaneous bilateral TKR), according to a study by the Total Knee Replacement Patient Outcomes Research Team (PORT), which was supported by the Agency for Healthcare Research and Quality (HS06432).

The researchers found that patients who underwent simultaneous bilateral TKR had about 20 percent lower risk of reoperation than those who underwent staged bilateral TKR

(both knees replaced in two staged procedures). Nevertheless, the reoperation rates were low for both groups, less than 1 percent at 2 years.

Cumulative mortality rates were about 0.5 percent higher for the simultaneous versus staged surgery group at 1 month (0.99 percent versus 0.38 percent) and 6 months (1.93 percent versus 1.39 percent). This difference was reduced by half at 1 year, and the rates were nearly the same by 2 years. Other studies have shown that the simultaneous approach has a lower complication rate (for example, postoperative wound infection or hemorrhage), lower total cost, and shorter hospital stay compared with staged bilateral TKR.

The researchers point out that patients and their doctors need to balance the risks and benefits of

simultaneous bilateral TKR versus staged bilateral TKR when making the knee replacement decision. The PORT was led by Deborah A. Freund, Ph.D., M.P.H., formerly of Indiana University and now with Syracuse University. The researchers retrospectively analyzed 1985 to 1990 Medicare data on 11,771 Medicare enrollees who underwent bilateral simultaneous or staged TKR between 1985 and 1988.

More details are in "Revision rates following staged and simultaneous bilateral knee replacement," by Barry P. Katz, Ph.D., Ziao-Hua Zhou, Ph.D., Sujuan Gao, Ph.D., and others in the September 1999 *Journal of Clinical Outcomes Management* 6(8), pp. 30-34. ■

Back pain study examines pain intensity and functioning

Most episodes of low back pain (LBP) improve within 6 weeks or less of onset. Only 5 to 10 percent of patients with LBP have persistent symptoms, and only 2 percent have radiating leg pain; however, these patients account for 85 percent of medical care costs and disability compensation for LBP.

A recent study led by Richard Deyo, M.D., of the University of Washington and supported in part by the Agency for Healthcare Research and Quality (HS08194) suggests that assessing both the intensity of a person's LBP and the extent of radiating leg pain may indicate the actual impact of LBP on that person's ability to function, low back disability, and use of diagnostic imaging.

In this study, the researchers analyzed data from 563 outpatients with chronic low back pain in the Veterans Health Study who were

stratified according to low, moderate, and high intensity, as well as LBP alone (group 1), LBP and less radiating leg pain (group 2), and LBP and extensive leg pain (group 3). They found that regardless of radiating leg pain, there was a steady decline in all four functional status scale scores from low (less than 40) to high (60 or greater) LBP intensity. Group 3 had the lowest mean physical and role functioning scores.

Regardless of radiating leg pain, there was a steady increase in the number of disability days, days of reduced activity, and days of work loss from group 1 to group 3. Finally, regardless of radiating leg pain, the proportion of patients having had a spine computerized tomography (CT) scan or spine magnetic resonance imagery (MRI) generally increased from low to high LBP intensity.

Moreover, in all three localized LBP intensity groups, group 3 patients with extensive radiating leg pain included a higher proportion of patients who had a spinal CT scan or MRI than group 2 or group 1 patients. The researchers conclude that localized LBP intensity and radiating leg pain may measure two different aspects of low back problems and may be complementary tools for assessing outcomes of patients with LBP.

See "Assessment of functional status, low back disability, and use of diagnostic imaging in patients with low back pain and radiating leg pain," by Xinhua S. Ren, Alfredo J. Selim, Graeme Fincke, and others, in the November 1999 *Journal of Clinical Epidemiology* 52(11), pp. 1063-1071. ■

Subscribe to AHRQ's LISTSERV®

The Agency for Healthcare Quality and Research has a general LISTSERV® for people who are interested in electronic receipt of press releases and other announcements about AHRQ's activities. We encourage you to sign on. All you need is a computer and an e-mail address.

Here's how to subscribe:

1. Send an e-mail message to: listserv@list.ahrq.gov.
2. In the subject line type: Subscribe.
3. In the body of the message type: sub public_list-L your full name.
4. You will receive a message confirming that your subscription.

If you have questions, please send an e-mail message to Howard Holland in AHRQ's public affairs office, hholland@ahrq.gov.

Risk-aversion may lead internists to spend more than family physicians to confirm medical diagnoses

Family physicians tend to spend less than internists on patient care, perhaps because the internists tend to be more risk-averse. This higher level of discomfort with risk-taking may lead internists to order more tests, refer patients more often to consultants, and generally spend more to confirm diagnoses or treatments than family physicians. A recent study supported by the Agency for Healthcare Research and Quality (HS09397) found that after adjusting for differences in patient case mix, a one-standard-deviation increase in a doctor's risk-aversion score was associated with a 3 percent increase in expenditures. None of the other physician demographic, practice, or psychological characteristics were significantly associated with expenditures.

These findings suggest that interspecialty differences in costs may be related to the greater risk-aversion of internists, concludes Peter Franks, M.D., of the University of Rochester. Lead author Kevin Fiscella, M.D., M.P.H., Dr. Franks, and their colleagues surveyed 61 family physicians and 112 internists

within a large local New York managed care organization about their demographic, practice, and psychological characteristics. The researchers then used claims data to identify patient case mix and physician costs per enrollee.

Attitude toward risk-taking was the only psychological factor that differed among the two specialties. Family physicians reported less anxiety generated by uncertainty and were less risk-averse than internists. For example, internists were more likely than family physicians to agree that the uncertainty of patient care often troubled them and that they usually felt anxious when they were not sure of a diagnosis. They were more apt to disagree that in their personal life they enjoyed taking risks.

See "Risk aversion and costs: A comparison of family physicians and general internists," by Drs. Fiscella, and Franks, Jack Zwanziger, Ph.D., and others, in the January 2000 *Journal of Family Practice* 49, pp. 12-16. ■

Side effects and effectiveness determine whether healthy adults will get a flu shot

Influenza outbreaks that appear each winter cause U.S. workers to lose about 15 million working days a year. Immunizing healthy adults has been associated with 43 percent fewer days of sick leave due to upper respiratory illness (URI), 44 percent fewer visits to doctors' offices, and an estimated cost savings of \$46.85 per person vaccinated.

To keep more workers on the job, many employers offer employees free influenza vaccines each fall. Two studies by Rutgers University researchers suggest which employees are likely to take them up on their offer. They found that healthy adult workers were more likely to be immunized against influenza if they had received a flu shot the previous year, believed it would be effective in preventing the flu, and expected it to have minimal side effects.

Having suffered from a bad bout of the flu the previous year had no effect on a person's decision about getting a flu shot in the current year.

Employers might boost flu vaccine use rates by publicizing that the vaccine is effective, only rarely has minor side effects, and "everyone is doing it." Employers also need to make getting the flu shot convenient, note Gretchen B. Chapman, Ph.D., and Elliot J. Coups, B.A. Their research, which was supported by the Agency for Healthcare Research and Quality (HS09519), included interviews with 79 university employees and questionnaires completed by 435 corporate employees.

The researchers found that only 22 percent of those who said that the flu shot was not very effective accepted the vaccine in the first study, compared with 61 percent of

those who said it was moderately or very effective. The analogous percentages for the second study were 5 percent and 64 percent. Also in the first study, 8 percent of those who said that a reaction to the shot was moderately or very likely accepted the vaccine compared with 61 percent of those who said a reaction was not at all or only slightly likely. In the second study, these percentages were 20 percent and 57 percent. Also in study 2, 85 percent of those who had gotten a flu shot the previous year had a shot in the current year compared with 17 percent of those who had not had a shot the previous year.

See "Predictors of influenza vaccine acceptance among healthy adults," by Dr. Chapman and Mr. Coups, in *Preventive Medicine* 29, pp. 249-262, 1999. ■

Chlamydia screening of young women has health benefits and is cost effective

Chlamydia, a treatable sexually transmitted disease, affects more than 5 percent of sexually active female adolescents. Routine chlamydia screening of sexually active women 15 to 25 years of age has both health and cost benefits, concludes a recent review of the topic by researchers at the University of California, Los Angeles, and RAND.

Chlamydia is a bacterial infection that causes extensive inflammation and scarring of the genital tract. It increases women's risk for developing pelvic inflammatory disease (PID), tubal factor infertility, chronic pelvic pain, ectopic pregnancy, death from ectopic pregnancy, and HIV infection. Pregnant women who remain untreated are at greater risk for infant problems and deaths. The Centers for Disease Control and Prevention (CDC) advocates screening for chlamydia, which in 60 to 70 percent of women is asymptomatic.

This review, which was supported by the Agency for Healthcare Research and Quality (HS09473), revealed that screening 100 percent of sexually active women aged 18 to 24 would prevent an estimated 140,113 cases of PID each year and result in a savings of \$45 for every woman screened. Among women participating in the CDC's chlamydia screening

program in one region, the annual rate of chlamydia test positivity declined 65 percent from 9.3 percent to 3.3 percent. Apparently, high cure rates (97 percent) with the antibiotic doxycycline can be achieved at a very low cost (\$2 in the public sector and \$8 in the private sector).

These findings, along with the development of a valid and feasible quality measure, justify the adoption of chlamydia screening of young women as recommended by the National Committee for Quality Assurance for inclusion in the Health Plan Employer Data and Information Set (HEDIS), note the authors of the review. HEDIS is the most widely used system for assessing managed care performance. The authors conclude that inclusion of this screening in the HEDIS measures will increase public awareness of the problem and may provide an incentive for managed care plans to substantially increase chlamydia screening rates.

See "Health and cost-benefits of chlamydia screening in young women," by Rita Mangione-Smith, M.D., M.P.H., June O'Leary, M.D., and Elizabeth A. McGlynn, Ph.D., in the July 1999 *Sexually Transmitted Diseases*, pp. 309-316. ■

Children's Health

Two AHRQ-sponsored datasets—MEPS and HCUP—provide national data on children's health topics

Asthma, injuries, and mental health problems account for more hospitalizations of children over 5 years of age than any other conditions, according to a newly published report. Preschoolers need hospital care mostly for infections, and most hospital care of infants is for birth-related problems. Young people 15 to 17 years of age are hospitalized most often for problems related to pregnancy and childbearing. Uninsured adolescents ages 15 to 17 are most likely to lack a usual source of health care and are least likely to rely on an office-based

medical provider. These are some of the findings in the report, which was prepared by Marie C. McCormick, M.D., Sc.D., of Harvard University, and coauthors Barbara Kass, M.P.H., Anne Elixhauser Ph.D., Joe Thompson, M.D., and Lisa Simpson, M.B., B.Ch., M.P.H., all of the Agency for Healthcare Quality and Research.

The findings are part of a new series of annual reports by AHRQ on access to and use of health care by children and youths in the United States. This first report, which also presents data on health insurance coverage and

use of ambulatory care services, appears in a special supplement to the journal *Pediatrics (Journal of the Ambulatory Pediatric Association)*. The statistics in the report are drawn from AHRQ's Medical Expenditure Panel Survey (MEPS) and Healthcare Cost and Utilization Project (HCUP) Nationwide Inpatient Sample (NIS) databases, two powerful sources of data that thus far have not been widely used by the child health services research community.

continued on page 10

MEPS and HCUP data

continued from page 9

As noted by Dr. Simpson, this report provides researchers, practitioners, policymakers, and child health advocates with a baseline for assessing changes in access to and use of health care services by young people from birth to 18 years of age. To date, the literature has been dominated by information on the elderly

mostly because of the power of the Medicare datasets. Child health researchers have had a much more restricted range of data, much of it dated. This first report and other reports that will follow provide enlightenment and encouragement to researchers to explore these new datasets to address important issues in health care for children, concludes Dr. Simpson.

For more information, see “Annual report on access to and utilization of health care for children and youth in the United States—1999,” which appears in a supplement to the January 2000 issue of *Pediatrics* 105, pp. 219-230. Reprints (AHRQ Publication No. 00-R014) are available from AHRQ.** ■

Primary Care

Helping patients recover from depression should be a high priority in primary care practices

Primary care patients with depression have worse mental health, are less able to function socially, and view their quality of life as worse than patients with most common chronic medical conditions such as arthritis or diabetes, finds a study supported by the Agency for Healthcare Research and Quality (HS08349). Yet diagnosis and treatment for depression in managed care primary care settings remain moderate at best. Primary care physicians (PCPs) should place more emphasis on helping patients recover from depression, recommend study authors Kenneth B. Wells, M.D., M.P.H., and Cathy D. Sherbourne, Ph.D., of RAND Corporation.

Drs. Wells and Sherbourne used various questionnaires to determine how 17,558 outpatients of 181

PCPs in 7 managed care organizations assessed their current health and quality of life, as well as their mental health and emotional and social role functioning. They then compared these assessments for depressed patients with those of patients who had chronic medical conditions ranging from back problems and arthritis to hypertension. Mental health-related quality of life (HRQOL) was poorer for those with depression, and physical functioning was poorer for those with a medical condition. Patients with both types of conditions valued their overall current state of health the lowest. On global mental health, emotional role functioning, and social functioning scales, depressed patients had significantly worse HRQOL than did patients who had a chronic medical condition.

Patients with each of several affective syndromes (lifetime bipolar disorder, 12-month double depression, major depression, or dysthymia) had significantly worse physical functioning and global mental health and valued the quality of their life lower than did patients without an affective syndrome. Patients with either 12-month double depression (major depression and dysthymia) or lifetime bipolar disorder had the poorest quality of life and were the least satisfied with their current health.

See “Functioning and utility for current health of patients with depression or chronic medical conditions in managed, primary care practices,” by Drs. Wells and Sherbourne, in the October 1999 *Archives of General Psychiatry* 56, pp. 897-904. ■

Primary care physicians should counsel parents of young children about drowning prevention

Cost-consciousness has shrunk patient visit time, forcing doctors to choose which injury prevention topics to address during typical immunization or well-child visits. Even though drowning is the second most common cause of accidental death among U.S. children 5 years of age and younger, primary care providers (PCPs) don't put drowning prevention high on the list of injury prevention topics to be discussed with parents.

A recent study shows that only one-third of PCPs in Los Angeles County counseled parents about drowning prevention. About two-thirds of PCPs did not know that injury deaths due to drowning were more common than those due to

ingesting poisons and firearm injuries in young children. This is particularly striking since Los Angeles County has a high incidence of drowning injuries (3.7/100,000).

If families with young children are to receive drowning prevention education, their PCPs must get the message about the high number of drowning deaths among children, note Shari Barkin, M.D., M.S.H.S., and Lillian Gelberg, M.D., M.S.P.H., of the University of California, Los Angeles. In a study supported by the Agency for Healthcare Research and Quality (National Research Service Award training grant T32 HS00046), they analyzed 325 responses from a random sample of Los Angeles County pediatricians, family

physicians, and pediatric nurse practitioners who serve families with young children.

Female providers were nearly twice as likely to counsel parents about drowning prevention as male providers. However, clinician specialty, age, years out of training, proportion of well-child examinations in a typical week, having children, practice setting, and personal knowledge of drowning-injury deaths made no significant difference in drowning prevention counseling.

See "Sink or swim: Clinicians don't often counsel on drowning prevention," by Drs. Barkin and Gelberg, in the November 1999 *Pediatrics* 104(5), pp. 1217-1219. ■

Health Care Quality

Nursing homes vary widely in meeting Federal quality-of-care standards

Many Americans remain concerned about the quality of care in nursing homes. A recent study shows that these concerns may be justified. It found that quality-of-care problems persisted in the Nation's nursing homes from 1991 to 1997. Problems included poor food sanitation, failure to conduct comprehensive patient assessments and to develop care plans, poor accident prevention efforts, and failure to prevent pressure sores.

The study was based on trend data collected by State surveyors during annual licensing and certification surveys of federally certified nursing home facilities in the United States. State surveying agencies are contracted by the Health Care Financing Administration (HCFA) to conduct periodic surveys to ensure that nursing homes meet Federal care standards outlined in the 1987 Nursing Home Reform Act. Survey data are included in HCFA's On-Line Survey, Certification, and Reporting System (OSCAR).

The study was jointly supported by the Agency for Healthcare Research and Quality (HS07574) and HCFA, and conducted by Charlene Harrington, Ph.D., of the University of California, San Francisco. The data revealed that during the 1991-1997 period, nursing home residents became more dependent and sicker. Of the total facilities studied, 17 percent were given deficiencies by State surveyors for failure to conduct appropriate resident assessments, 17 percent for failure to prepare comprehensive resident care plans as required, and nearly 16 percent for failure to keep the environment free of accident hazards. In 1997, 16 percent of facilities received deficiencies for failure to ensure that residents would not develop pressure sores, 14 percent failed to meet the general quality-of-care requirement; and nearly 11 percent were cited for unnecessary and inappropriate use of medications.

continued on page 12

Nursing home standards

continued from page 11

However, it was puzzling that the average number of deficiencies reported by State surveyors for facility quality-of-care violations declined by 44 percent between 1991 and 1997 (from 8.8 to 4.9 deficiencies per facility). There was also a 100 percent increase in the number of facilities with no deficiencies, and there were wide variations in patterns of deficiencies issued

across States. The reasons for these discrepancies could not be explained by analysis of the study data and remain unclear. Dr. Harrington theorizes that either quality of care is improving in nursing homes, or the survey process is inconsistent.

More details are in "Regulation and enforcement of Federal nursing home standards, 1991-1997," by Dr. Harrington, in the December 1999 *Medical Care Research and Review* 56(4), pp. 471-494. ■

Substantial variations found in spending by U.S. hospitals on quality improvement activities

American hospitals vary greatly in the amount of money they spend on improving the quality of care they provide, with some placing a lot more emphasis on quality improvement efforts than others. Given the high cost of such efforts, we can expect hospital managers to insist on evidence that quality improvement expenditures produce tangible benefits, notes Stephen S. Shortell, Ph.D., of the University of California, Berkeley.

In a study supported by the Agency for Healthcare Research and Quality (HS08523), lead author David Dranove, Ph.D., Dr. Shortell, and their colleagues calculated expenditures for continuous quality improvement (CQI) programs at 16 large nonprofit hospitals in the United States. This was part of a larger study in which these

researchers correlated CQI expenditures with outcomes of patients with total hip replacement or coronary artery bypass graft (CABG) surgery.

The researchers found that expenses for CQI—including education programs, data collection, personnel, CQI meetings, outside consultants, and allocated overhead costs—ranged from roughly \$300,000 to over \$4.5 million annually. On average, hospitals spent \$56 on quality improvement activities for each patient admitted for CABG surgery or total hip replacement. About three-fourths of this amount was for direct costs, and one-fourth was for meeting costs. Neither total costs nor meeting costs are correlated with condition-specific costs.

The eight hospitals with mature CQI programs had higher expenditures than hospitals that did not have a CQI program or had only minimal CQI training (\$67 versus \$47 per admission). The sample was too small to demonstrate meaningful differences in patient outcomes associated with quality improvement expenditures. Research with a larger sample could explore the relationship between expenditures on CQI initiatives and their benefits. This study provided benchmark estimates of those benefits.

See "The cost of efforts to improve quality," by Dr. Dranove, Katherine S.E. Reynolds, R.N., Robin R. Gillies, Ph.D., and others, in the October 1999 *Medical Care* 37(10), pp. 1084-1087. ■

Informed consumers can play a vital role in improving health care quality

Today's consumers can consult a growing body of information on health plan quality and report cards to choose a health plan. However, it's not clear to what extent consumers take advantage of this information in making health plan choices. What's

more, a focus on health plan choice in isolation from other important aspects of consumers' involvement with health care decisions puts all stakeholders at risk of losing critical information needed to improve health care quality.

Consumers must be engaged as vital participants and stakeholders in health care delivery and not just as passive recipients of information or intermittent evaluators. The challenge is to use the full power of

continued on page 13

Informed consumers

continued from page 12

informed consumers to drive health care improvements, says Carolyn M. Clancy, M.D., of the Agency for Healthcare Research and Quality, in a recent editorial.

In her editorial, Dr. Clancy comments on a study by Booske, Sainfort, and Hundt (in the same journal, pp. 839-854) that examined reasons for the health plan choices of 200 randomly selected Wisconsin State employees close to the annual "open season" period. Health plan cost and extent of coverage tended to dominate consumers' health plan choices. However, when individuals

were asked to add another attribute, most chose quality. After reviewing information including consumer satisfaction ratings and other indicators, the number of people citing quality as an important feature increased by almost 40 percent. Using a predetermined list of criteria, these workers assigned the highest weights to quality of care, closely followed by extent of coverage, which is consistent with prior studies.

These findings support a "glass half full" view of consumers' use of information about quality to inform their choices of health plans, concludes Dr. Clancy. Optimists can argue that increased exposure to and understanding of

health plan assessments based on clinical quality measures and consumers' ratings of plans are likely to play a more important role in consumers' choices in the future. On the other hand, skeptics can argue that this was a highly educated group with prior "open season" experience and use of personal computers, and thus their choices may not mirror those of the general population.

More details are in "Consumer preferences: Path to improvement?" by Dr. Clancy in the October 1999 *Health Services Research* 34(4), pp. 807-811. Reprints (AHRQ Publication No. 00-R002) are available from AHRQ.** ■

Managed Care

Access to second medical opinions is determined in part by sociocultural factors and type of insurance

Second medical opinions (SMOs) are at the center of the tug of war between consumers' demands for medical choice and health plans' need to control costs, especially in managed care systems. In prepaid or capitated systems, SMOs do not generate revenue, so providers try to maintain control over when and how they are used. Six States have passed laws requiring health plans to provide or authorize SMOs to preserve consumer choice, improve the flow of information, and improve health outcomes. Cultural norms and sociocultural factors may partially determine who benefits from SMO legislation, according to a review of the topic supported in part by the Agency for Healthcare Research and Quality (HS09997).

For instance, if people in Medicare and Medicaid managed care plans want but are unable to

obtain SMOs—as was indicated in this study—then legislation might have a positive effect, according to study authors Todd H. Wagner, Ph.D., of the Veterans Affairs Health System in Menlo Park, CA, and Lisa Smith Wagner, Ph.D., of the University of San Francisco. They used nationally representative 1994 data from the Commonwealth Fund Survey of Minority Health (which oversampled minorities) to assess the prevalence of second opinions and the factors associated with getting them. They found that about one of every five people who visited a health professional in the past year had also sought a second opinion. Use of SMOs varied by sociocultural factors, insurance type, health need, and perceptions of the health care system.

For example, white non-Hispanic patients sought the most SMOs (20 percent) and Hispanic patients sought the least (14 percent).

Respondents who felt they would have received better care if they were of a different race were more likely to get an SMO. Also, patients who thought they were treated badly were 1.6 times more apt to get a second opinion than those who didn't feel this way. HMO enrollees with private insurance were three times as likely to get an SMO as HMO enrollees with public insurance (Medicaid or Medicare managed care). Among those with public health insurance, the odds of getting an SMO were 2.3 times greater for patients who were not in an HMO than for HMO enrollees, perhaps indicating barriers to care for HMO enrollees.

See "Who gets second opinions?" by Drs. Wagner and Wagner, in the September 1999 *Health Affairs* 18(5), pp. 137-145. ■

Income for most physicians has declined substantially since the advent of HMOs

The growth of health maintenance organizations (HMOs) has clearly reduced physicians' income, concludes a study supported in part by the Agency for Healthcare Research and Quality (HS09196). It found that as early as 1990, prior to the more aggressive market behavior of HMOs in recent years, a doubling of HMO market penetration into an area reduced physicians' annual earnings by 7 to 11 percent and hourly earnings by 6 to 9 percent. This was presumably accomplished through a combination of fewer visits and lower payment rates for patients covered by HMOs, note Georgetown University researchers, Jack Hadley, Ph.D., and Jean M. Mitchell, Ph.D.

The researchers used data from a 1991 nationally representative

sample of 4,577 physicians younger than 45 years to develop a model to estimate physicians' annual and hourly income. They used the Group Health Association of America's study of HMO market penetration in 1991 and the 1991 Area Resource File to construct HMO market penetration (percentage of the population in each market area with HMO coverage) in the 704 market areas of the surveyed physicians.

Results revealed that HMOs had a greater impact on the income of physician employees than self-employed physicians. For example, the average income from medical practice in 1990 was \$137,500, with self-employed physicians averaging much higher earnings (\$172,000) than employed physicians. On average, physicians

who were self-employed earned about \$44,000 more per year and \$13.33 more per hour than physicians who were employees. As expected, specialists earned significantly higher incomes than primary care physicians, ranging from \$72,870 to \$99,480 more per year. Differences in hourly earnings generally followed the same pattern. Between 1990 and 1997, overall enrollment in HMOs is estimated to have more than doubled, increasing from 33.6 to 72.3 million people. It remains to be seen what further impact HMO market penetration will have on physicians' incomes.

See "HMO penetration and physicians' earnings," by Drs. Hadley and Mitchell, in the November 1999 *Medical Care* 37(11), pp. 1116-1127. ■

Strategic hospital alliances have yet to add financial value to individual member hospitals

Throughout the 1990s, hospitals began to form local strategic hospital alliances (SHAs) to defend against increasingly powerful hospital rivals and to improve their market positions relative to aggressive and consolidating managed care organizations. These alliances have been structured to be controlled by single or multiple hospital owners, and some have been dominated by for-profit versus other types of ownership. However, regardless of the type of SHA structure or ownership, SHAs have not created added financial value for hospital collectives, at least at this stage of their development, concludes a study supported by the Agency for Healthcare Research and Quality (HS09217) and conducted by researchers at Virginia Commonwealth University.

SHAs with single ownerships, which should find it easier to coordinate and negotiate, were no more effective at enhancing hospital revenues or reducing costs than SHAs with multiple owners. Also, and unexpectedly, for-profit ownership of SHAs was not

significantly related to any financial performance measures. It is possible that as SHAs mature and integration progresses, the more tightly structured SHAs will show better financial performance, according to the authors of the study. They analyzed financial performance across SHAs in all metropolitan statistical areas in 1995.

The researchers found that several factors may have mitigated the influence of SHA type on financial performance. There was little evidence that SHAs during the mid-1990s had coordinated and centralized their operations. In some markets, hospital members within SHAs competed against each other or resisted efforts to function as a unified local system. Recent SHA growth has taken place within more loosely coupled operational entities, such as partnerships and network arrangements, which are devoid of the structures or interorganizational power that would lead to improved financial performance. HMO price

continued on page 15

Strategic hospital alliances

continued from page 14

pressures did not help to reduce operating costs among SHAs. Finally, the collective presence of SHAs in the market may not have been sufficient to enable them to negotiate favorable rates from HMOs, note the authors.

Details are in "Strategic hospital alliances: Do the type and market structure of strategic hospital alliances matter?" by Michael J. McCue, D.B.A., Jan P. Clement, Ph.D., and Roice D. Luke, Ph.D., in *Medical Care* 37(10), pp. 1013-1022, 1999. ■

Nation's move toward managed care challenges academic health centers to sustain research and training

Some researchers are concerned that the research functions of academic health centers could be endangered as a result of the financial and other pressures on academic health centers. A number of centers are struggling to find ways to maintain or expand the structures and funding required for their research programs while also developing competitive service delivery systems and sustaining their other missions, such as education and care of the poor. In order to determine the status of health services research programs at academic health centers, University of Wisconsin researchers David A. Kindig, M.D., Ph.D., and Nancy Cross Dunham, Ph.D., and Director of the Agency for Healthcare Research and Quality, John M. Eisenberg, M.D., analyzed interviews conducted in late 1998

with researchers at 10 health services research centers of different types and from different areas around the country.

The interviews revealed that most but not all such centers have received some form of core support from their parent institutions. Annual core financial support varied ten-fold, from \$50,000 to \$500,000 per year, but for the most part tended to represent a relatively small proportion of the research centers' total budget. Nearly all those interviewed were concerned about the difficulties that health services research centers face in trying to encourage the career development of young investigators through the provision of seed money to support the building of solid and sustainable research agendas.

Center directors noted that training grants from AHRQ and

other agencies were helpful for training health services researchers but often were not adequate, with centers relying on supplementation from the parent institutions. A number of people interviewed indicated that their health services research centers had developed or were developing research relationships with local health systems and/or insurers, Medicaid health maintenance organizations, State health departments, and community organizations.

See "Needs and challenges for health services research at academic health centers," by Drs. Kindig, Dunham, and Eisenberg, in the November 1999 *Academic Medicine* 74(11), pp. 1193-1201. Reprints (AHRQ Publication No. 00-R007) are available from AHRQ.** ■

Medical Informatics

Conference focuses on transforming health care through informatics

The sudden growth of medical informatics is having an impact on all segments of America's health care system. A glimpse of what is to come was provided at the American Medical Informatics '99 Annual

Symposium, which was held November 6-10 in Washington, DC.

This year's theme was "Transforming Health Care Through Informatics: Cornerstones for a New Information Management Paradigm." Topics ranged from methods for

representing drug terminology, terminology issues in user access to Web-based medical information, and computerized interviews for childhood psychiatric diagnosis, to use of pen computers by patients to record their symptoms, and use of

continued on page 16

Medical informatics

continued from page 15

the Web to reduce postoperative pain at home.

Eight of the studies presented at the conference, which were published along with several hundred other papers in the 1999 *Journal of the American Medical Informatics Association* symposium supplement, were supported in whole or in part by the Agency for Healthcare Research and Quality. They are:

- Bourie, P.Q., Phipps, M.A., McKay, M., and others, "Risk alerts in an on-line nursing assessment," p. 1030 (AHRQ grant HS08749). Patient data combined with clinician-defined rules can generate an automated alert designed to inform nurses about potentially serious clinical situations. This paper describes a computer-based alert specifically designed to improve nursing care and outcomes.
- Chute, C.G., Elkin, P.L., Sherertz, D.D., and others, "Desiderata for a clinical terminology server," p. 42 (AHRQ grant HS08751). Consistently entered information, which is comparable across care providers and care settings, is increasingly being emphasized. This paper describes experience with a clinical terminology server that focuses on consistent entry of clinical observations, findings, and events.
- East, T.D., Heermann, L.K., Bradshaw, R.L., and others, "Efficacy of computerized decision support for mechanical ventilation: Results of a prospective multi-center randomized trial," p. 251 (AHRQ grant HS06594). These researchers examined the efficacy of a computerized decision support system to manage the care of 200 adult respiratory distress patients at different centers. The results indicated that this approach to ventilator management can be effectively transferred to many clinical settings and significantly improve patient health.
- Elkin, P.L., Bailey, K.R., Ogren, P.V., and others, "Randomized double-blind controlled trial of automated term dissection," p. 62 (AHRQ grant HS08751). This paper describes a mechanism for automated term dissection using the semantic types available from within the Unified Medical Language System. The system uses a specific search engine to retrieve a list of suggested terms, which are then analyzed to find the best ones to construct understandable compositional expression.
- Goldsmith, D.M., and Safran, C., "Using the Web to reduce postoperative pain following ambulatory surgery," p. 780 (AHRQ grant HS08749). This paper describes the use of a Web site to provide educational information to 195 at-home patients following outpatient surgery. Patients who had access to the pain management information on the ambulatory surgery Web site reported significantly less postoperative pain at home.
- Hsu, C., and Goldberg, H.S., "Knowledge-mediated retrieval of laboratory observations," p. 809 (AHRQ grant HS08749). These researchers developed an ontology for laboratory observations and made the ontology accessible in a distributed environment through a knowledge mediator offering several services.
- Lobach, D.F., Spell, R.U., Hales, J.W., and others, "A Web link management tool for optimizing utilization of distributed knowledge in health care applications," p. 839 (AHRQ grant HS09436). Thousands of Web sites now post health-related information. While search engines exist for finding sites, few tools are available for managing Web-based health care information. This paper describes development and use of a Web-link manager to identify relevant Web sites, evaluate the quality of the information they contain, and manage the accumulation of these resources over time.
- Reilly, C.A., "Examining the symptom experience of hospitalized patients using a pen-based computer," p. 364 (AHRQ grant HS08950). This investigator had 72 patients use a pen-based computer to write down their symptoms. Patients found it useful, and study findings support the inclusion of such self-reported symptom data in electronic health records and national health care databases. ■

AHRQ News and Notes

AHRQ names Helen Burstin director of primary care research

John M. Eisenberg, M.D., Director of the Agency for Healthcare Research and Quality, recently announced the appointment of Helen Burstin, M.D., M.P.H., as the new Director of AHRQ's Center for Primary Care Research (CPCR). She comes to this position from the Brigham and Women's Hospital, where she served as Director of Quality Measurement and had an active primary care practice.

Dr. Burstin is a graduate of the State University of New York Health Science Center at Syracuse and the Harvard School of Public Health. After a primary care residency in internal medicine at Boston City Hospital, she was an Agency-funded postdoctoral fellow at Harvard Medical School. Her research has focused on such primary care topics as communication, access, quality, screening, and patient satisfaction.

Dr. Burstin has served as regional co-chair of the Society for General Internal Medicine and currently is President of the Board of Directors of the American Medical Student Foundation; formerly she was AMSA's national president. For 10 years she has been a staff physician at a hospital-based practice as well as at a neighborhood health center in Boston. In addition, she has been Medical Director of the Partners in Health Program in Honduras.

As Director of CPCR, Dr. Burstin will lead AHRQ's efforts to stimulate high-quality research in the primary care setting, including evaluations of the quality, cost, and effectiveness of primary care services, rural health care services and systems, and primary care for special populations. ■

AHRQ releases reports on attention-deficit/hyperactivity disorder

The Agency for Healthcare Research and Quality has released two new research reports—*Diagnosis of Attention-Deficit/Hyperactivity Disorder* produced by AHRQ contractor, Technical Resources International, Inc. (TRI), Rockville, MD, and *Treatment of Attention-Deficit/Hyperactivity Disorder* produced by McMaster University, Ontario, Canada. McMaster University is 1 of 12 AHRQ Evidence-based Practice Centers (EPCs).

The diagnosis report addresses ADHD prevalence in the general population and in pediatric clinic settings. It also examines the accuracy of both ADHD-specific and general behavioral rating scales as tools to identify children with ADHD, and it reviews evidence on the value of other medical screening tests in children with

possible ADHD. The treatment report discusses direct comparisons of pharmacologic treatments and compares pharmacologic and nonpharmacologic interventions.

Taken together, the two reports represent comprehensive, systematic reviews of the existing scientific evidence on ADHD, emphasizing the implications for clinical practice and the opportunities for future research to fill knowledge gaps.

For the diagnosis report, the American Academy of Pediatrics was a partner with AHRQ and TRI. For the treatment report, the McMaster EPC also worked with the American Academy of Pediatrics.

Summaries of the two reports—*Technical Review No. 3, Diagnosis of Attention-Deficit/Hyperactivity Disorder* (AHRQ Publication No. 99-0050) and *Evidence*

Report/Technology Assessment No. 11, Treatment of Attention-Deficit/Hyperactivity Disorder (AHRQ Publication No. 99-EO18)—are available from AHRQ.**

The summaries also are available online at AHRQ's Web site. Go to www.ahrq.gov and click on "Clinical Information."

Copies of the full report on diagnosis of ADHD (AHRQ Publication No. 99-0050) also are available from AHRQ.* Full-text copies of the treatment report (AHRQ Publication No. 99-EO18) will be available in the near future.*

Editor's Note: The National Institute of Mental Health published findings from its ADHD clinical trial in the December, 1999 issue of the *Archives of General Psychiatry* 56, pp. 1073-1086 and 1088-1096. ■

Highlights from AHRQ's Health Care Research Scholars Program

This is another installment in our continuing series focusing on the recent achievements of current and former scholars who received support for their research education from the Agency for Healthcare Research and Quality (formerly the Agency for Health Care Policy and Research, AHCPR) through our National Research Service Award (NRSA) institutional training grants program.

We are very proud of the accomplishments and recognition received by these current and former students, as well as the accomplishments of their training programs and advisors. We look forward to sharing their news with you from time to time.

These features will provide a window into the future of health services research and the individuals who have already begun to lead the way toward meeting the new challenges we will face in the years ahead. If you are a current or former scholar whose research education was supported by AHRQ or its predecessor agencies (the Agency for Health Care Policy and Research, AHCPR, and 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 the appropriate information by e-mail to 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.

This month we are focusing on current affiliations and recent notable achievements of former fellows, as well as faculty and institutional accomplishments.

Spotlight on Former Fellows

University of Pennsylvania

- Joseph Kerstein, Ph.D., (1986) – Associate Professor of Accountancy at Baruch College, City University of New York; co-authored a book, *Accounting for Effective Decisionmaking: A Manager's Guide to Financial and Internal Reporting*.
- James Highland, Ph.D., M.H.S.A., (1986) – founder and CEO of Compass Health Analytics, Inc.
- Robert Connor, Ph.D., M.H.A., (1987-1988) – Associate Professor in the Department of Health Care Management of the University of Minnesota Carlson School of Management
- Jacqueline Zinn, Ph.D., M.B.A., (1987-1990) – Assistant Professor, Department of Risk Insurance and Health Care Management, Fox School of Business and Management, Temple University. Dr. Zinn recently received the Association for Health Services Research (AHSR) Young Outstanding Investigator Award.
- David Bishai, M.D., M.P.H., Ph.D., (1991-1995) – Assistant Professor, Department of Population Dynamics, School of Public Health, Johns Hopkins University.
- Nicholas Christakis, M.D., Ph.D., (1993-1995) – Assistant Professor of Medicine and Sociology at the University of Chicago, Section of General Internal Medicine; Robert Wood Johnson Clinical Scholar.
- Jose Escarce, M.D., Ph.D., (1986-1987) – Senior Natural Scientist at the RAND Corporation, is serving as a member of AHRQ's National Advisory Council.
- Amy Justice, M.D., Ph.D., (1991-1994) – Assistant Professor of Medicine, Veterans Affairs Medical Center, University of Pittsburgh.
- Scott Ramsey, M.D., Ph.D., (1986-1987) – Assistant Professor, Division of General Medicine, University of Washington; Director of Clinical Economics, Center for Cost and Outcomes Research, University of Washington.
- Kimberly Rask, M.D., Ph.D., (1989-1991) – Assistant Professor of Medicine, Department of Medicine and Assistant Professor, Department of Health Policy and Management, Emory University.
- David Brailer, M.D., Ph.D., (1988-1989) – Chairman and CEO of Care Management Sciences, Adjunct Senior Fellow of the Leonard Davis Institute, Clinical Associate Professor, Department of Medicine, University of Pennsylvania; Executive Director, Wharton Forum on Clinical Care Management.
- Christopher Feudtner, M.A., M.D., Ph.D. (1993-1995) – Clinical Scholar and Acting Professor of Pediatrics, University of Washington.
- Jeffrey Silber, M.D., Ph.D., (1988-1989) – Assistant Professor, Department of Pediatrics, Division of Oncology, University of Pennsylvania School of Medicine.

continued on page 19

Research scholars program

continued from page 18

- Stephen Walston, Ph.D., (1993-1997) – Assistant Professor, Sloan Program for Health Services Administration, Cornell University; former recipient of an AHCPR dissertation grant.

Faculty Accomplishments at Brown University

- Constantine Gatsonis, Ph.D., was awarded a grant naming Brown's Center for Statistical Sciences as a Statistical Coordinating Center for the American College of Radiology Imaging Network, which is part of a research system funded by the National Cancer Institute.
- Joan Teno, M.D., was recently awarded a \$2.4 million grant from the Robert Wood Johnson Foundation to assess progress at the national,

State, and local levels in improving end-of-life care for dying patients and their families.

- Mary Fennell, Ph.D., was recently awarded an AHCPR grant entitled "Facility effects on racial differences in nursing home quality."
- Susan Allen, Ph.D., was recently awarded a grant from the Robert Wood Johnson Foundation for developing a Medicaid managed care chartbook.

Institutional Accomplishments

- Oregon Health Sciences University (OHSU) will be one of the five components in the National Institute on Drug Abuse's substance abuse treatment research network. Postdoctoral students at OHSU will become very involved in studying substance abuse treatment effectiveness over time.



Announcements

AHRQ seeks proposals in response to three new RFAs

The Agency for Healthcare Research and Quality (formerly the Agency for Health Care Policy and Research, AHCPR) has issued two new Requests for Applications (RFAs) for cooperative agreements, as described here. A third RFA is for demonstration projects. Applications may be submitted by domestic or foreign public or private organizations, including universities, clinics, units of State and local governments, and eligible agencies of the Federal Government. Under recently enacted reauthorization legislation, AHRQ is now authorized to enter into cooperative agreements with for-profit organizations, as well as with public and nonprofit entities. Thus, for-profit entities are encouraged to respond to the first two RFAs; only public and private nonprofit entities are eligible to apply in response to the third RFA (demonstration projects).

Readers are reminded that grant application kits are no longer

available from AHRQ's contractor, Equals Three Communications. Please contact the AHRQ Clearinghouse (see the back cover of *Research Activities* for contact information) to request kits, announcements, and other supporting information.* In addition, the RFAs and other grant information may be obtained from AHRQ's Web site. Go to www.ahrq.gov and click on "Funding Opportunities."

Systems-Related Best Practices to Improve Patient Safety. AHRQ is seeking proposals for research that will test the effectiveness of the transfer and application of "best practices" to improve patient safety through improvements in health care systems that will reduce preventable medical errors that are frequent and cause serious harm. As noted by AHRQ Director John M. Eisenberg, M.D., this RFA builds on the landmark research on errors funded by the Agency in the early 1990s. AHRQ will award up to \$2 million in fiscal year

2000 to support four to six projects under this RFA (RFA-HS-00-007).

A recent report released by the Institute of Medicine (IOM) noted that an estimated 44,000 to 98,000 people die each year as a result of medical errors. Based on that estimate, the IOM noted that deaths from medical errors could be the 8th leading cause of death in this country, and it called for additional research to develop system-wide strategies for reducing errors and improving patient safety.

Projects funded under the RFA should use rigorous research methods to test the transfer and application of best practices that reduce medical errors and determine tangible and measurable improvements in patient safety that result from the use of the practices in a variety of settings. To speed the translation of these best practices into safer patient care in as many health care settings as

continued on page 20

New RFAs

continued from page 19

possible, applicants are encouraged to form partnerships or consortia that provide a wide range of multidisciplinary, technical expertise. These partnerships can include academic, public, and private health care organizations that offer a laboratory in which to evaluate error reduction and improved patient safety strategies.

Letters of intent are requested by March 10, 2000, and applications are due no later than April 27, 2000. For more information and application instructions, consult the RFA and request a grant application kit, as noted above.

This RFA, "Systems-Related Best Practices to Improve Patient Safety" (RFA-HS-00-007), was published in the December 16, 1999 *NIH Guide to Grants and Contracts*.

Translating Research into Practice: Round II. AHRQ is seeking applications to conduct cooperative agreement demonstration projects that focus on evaluating different strategies for translating research into practice through partnerships. AHRQ will award up to \$7 million in total costs in fiscal year 2000 to support the first year of approximately 12 to 18 projects under this RFA. This request builds on two earlier RFAs—Translating Research into Practice (TRIP) and Assessment of Quality Improvement Strategies in Health Care—which were published in January 1999, and projects resulting from these RFAs were recently funded by the Agency.

Partnerships between researchers and health care systems or organizations are a central component of this RFA. The objective is to accelerate and magnify the impact of the research on clinical practice and patient

outcomes in health care settings. Of particular interest are health systems and organizations that use the strengths of information systems to implement strategies for quality improvement. The proposals should describe applied research with the objective of developing sustainable and reproducible strategies to translate evidence into practice.

Organizations that have already expressed an interest in entering into partnerships with researchers to evaluate efforts to translate research findings funded under this RFA include the Alliance Continuing Care Network, American Speech-Language Hearing Association, Clinical Directors' Network, Florida Association of Homes for the Aging, Ramah Navajo School Board, U.S. Quality Algorithms, and High Plains Research Network. A more complete list is included in the RFA. Investigators who receive funding under this RFA also are encouraged to take the initiative to develop and build on existing relationships they have with other organizations and systems.

Letters of intent to apply under this RFA are requested by March 10, 2000, and applications must be received by

April 27, 2000. For more information and application instructions, consult the RFA and request a grant application kit, as noted above.

This RFA, "Translating Research into Practice" (RFA-HS-00-008), was published in the December 16, 1999 *NIH Guide to Grants and Contracts*.

Making Quality Count for Consumers and Patients. AHRQ and the National Cancer Institute (NCI) are seeking applications for demonstration projects that facilitate consumer and patient use of information on quality in health

care. These projects should develop and test methods and models for developing information on quality for consumer and patient use in health care decisions and evaluate the impact of strategies to provide information about quality to consumers and patients. AHRQ and NCI are especially interested in projects that focus on vulnerable populations as defined by the President's Advisory Commission on Consumer Protection and Quality in the Health Care Industry.

This RFA draws on the outcomes of the December 1998 conference, "Making Quality Count: Helping Consumers Make Better Health Care Choices." The conference was coordinated by AHRQ, the Health Care Financing Administration, and the Office of Personnel Management, as part of the activities of the Quality Interagency Coordination Task Force (QuIC). The goal of the QuIC is to ensure that all Federal agencies involved in purchasing, regulating, providing, or studying health care are working in a coordinated way toward the common goal of improving quality of care.

AHRQ expects to award up to \$1.0 million and NCI expects to award up to \$0.5 million in fiscal year 2000 to support the first year total costs for approximately three to four projects under this RFA. Letters of intent are requested by February 11, 2000, and applications are due by March 24, 2000. For more information and application instructions, consult the RFA and request a grant application kit, as noted above.

This RFA, "Making Quality Count for Consumers and Patients" (HS-00-002), was published in the January 5, 2000 issue of the *NIH Guide to Grants and Contracts*. ■

AHRQ announces new resource on prenatal care effectiveness

The Agency for Healthcare Research and Quality has announced the availability of a new resource, *Prenatal Care Effectiveness and Implementation*, for maternal and child health professionals, policymakers, and health care managers. The book, edited by Marie C. McCormick of Harvard School of Public Health, Boston, MA, and Joanna E. Siegel, Arlington Health Foundation, Arlington, VA, discusses the practice and potential of prenatal care services for improving the long-term health of women and children. The book was developed with support from an AHRQ grant (HS09528).

The contributors evaluate the effectiveness of prenatal care interventions and outline a framework for prenatal care that extends beyond the perspective of the short-term outcomes of newborns. The publication is the result of an AHRQ-sponsored conference on prenatal care and examines both traditional medical interventions and social support and behavioral interventions.

The paperback book is published by Cambridge University Press, and can be ordered through its Web site at www.cup.org. ■

Job Announcement – Program Planning and Development Officer

The Agency for Healthcare Research and Quality, a component of the U.S. Public Health Service, is recruiting for the position of Program Planning and Development Officer (GS-301-15; starting salary \$84,638). This senior staff position is located at AHRQ's main building, 2101 East Jefferson Street, Rockville, MD, within the Immediate Office of the Director. Responsibilities include (but are not limited to) integration of user input into Agency programs and plans, development of the annual strategic and operations plans for the Agency and its components, development of annual budget submissions, and Agency-wide program development activities. To obtain a copy of the announcement, which provides a complete description of responsibilities as well as qualification requirements and application procedures, call 301-594-2408 or go to AHRQ's Web site at www.ahrq.gov and click on "job announcements" (see announcement AHRQ-00-02). Applications must be postmarked by February 29, 2000. AHRQ is an Equal Opportunity Employer. ■

New MEPS products now available

The Agency for Healthcare Research and Quality has released 1996 data on expenditures for prescription medications. The data are from the Medical Expenditure Panel Survey (MEPS) household component. Each prescription record includes the medication's National Drug Code, generic or brand name, strength, and quantity; total expenditures and payments by source for the drug; and information on the household-reported medical conditions for which it was prescribed.

This data release is another installment in a series of MEPS public use files and is the first release of data on expenditures for

medical care incurred in 1996 by the U.S. civilian noninstitutionalized population. This file can be merged with previously released files to determine information on demographic characteristics, condition details, or health insurance. Users also will be able to merge this file with future public use files on total health expenditures and other types of medical care information.

MEPS is an ongoing, national survey of the health care experience of the U.S. population. It is the third in a series of nationally representative surveys of medical care use and expenditures sponsored by AHRQ. MEPS

comprises four component surveys (the household component, the medical provider component, the insurance component, and the nursing home component). The insurance component collects employment-related health insurance information, such as premiums and types of plans offered. Respondent characteristics—such as size of business, employee characteristics, and type of industry—also are collected. The insurance component sample comprises a household sample component (linked to the MEPS household survey) and a list sample. The list sample is an independently selected

continued on page 22

MEPS products

continued from page 21

random sample of governments and private-sector establishments. MEPS public use files can be accessed through the MEPS Web site at <http://www.meps.ahrq.gov>.

In addition to the public use file described above, several new MEPS reports and an article reprint are now available from AHRQ,* as follows.

The Uninsured in America—1997. MEPS Highlights No. 10 (AHRQ Publication No. 99-0031).

This Highlights presents estimates of the uninsured population of the United States in 1997. It is based on the more detailed publication, *Health Insurance Status of the Civilian Noninstitutionalized Population, 1997* (AHRQ Publication No. 99-0030). Major findings include the following. In the first half of 1997, 16.8 percent of all Americans were uninsured. Among Americans under 65, more than a third of Hispanics (35 percent) and 23 percent of blacks were uninsured during the first half of 1997, compared with only 15 percent of whites. Even though Hispanics represented only 12 percent of the

nonelderly U.S. population, they accounted for 22 percent of the entire uninsured population. Young adults ages 19-24 were more at risk of being uninsured than any other age group. More than a third (35 percent) of young adults were uninsured. During the first half of 1997, among people under age 65, those who were separated from their spouse were more likely to be uninsured (34 percent) than people of any other marital status.*

Construction of Weights for the 1996 Medical Expenditure Panel Survey Insurance Component List Sample. MEPS Methodology Report No. 7, by J.P. Sommers (AHRQ Publication No. 00-0005).

The purpose of the list sample is to make national and State estimates of employer insurance characteristics, the costs associated with employer insurance, and the numbers of employees enrolled. This report describes the overall response rates for the list sample and the process used to correct the weights for survey response. The weights are corrected in order to adequately represent all nonrespondents and all important subgroups, especially subgroups that may have had different

response rates from the average for the survey.*

Nonresponse adjustment strategy in the household component of the 1996 Medical Expenditure Panel Survey (AHCPR Publication No. 00-R006), by S.B. Cohen and S.R. Machlin. Journal of Economic and Social Measurement 25, pp. 15-33, 1999.

In large national sample surveys, adjustments for nonresponders are typically incorporated in the survey weights that are used to generate population estimates. These adjustments are designed to reduce the bias in survey estimates that may arise from differential response rates among the sample subgroups. This paper describes the nonresponse adjustment strategy in the household component of MEPS. The authors identified and contrasted the characteristics of the households that did not respond to the first round of data collection for the 1996 MEPS with those who did participate in the survey. The results informed the adjustments implemented to correct for survey nonresponse. Article reprints (AHRQ Publication No. 00-R006) are available from AHRQ.* ■

AHRQ funds new projects

The Agency for Healthcare Research and Quality recently funded four new conference grants as noted below.

Cancer-reaching medically underserved populations

Project director: Charles L. Bennett, M.D., Ph.D.
Organization: Northwestern University Medical School
Chicago, IL
Project number: AHRQ grant HS10080
Project period: 11/12/99 to 11/11/00
Funding: \$31,000

Linking health services research with health policy

Project Director: Mary K. Wakefield, M.D.
Organization: George Mason University
Fairfax, VA
Project number: AHRQ grant HS10087
Project period: 1/1/00 to 12/31/00
Funding: \$32,500

National congress on childhood emergencies 2000

Project director: Jane Ball, Dr.P.H.
Organization: Children's Research Institute
Washington, DC
Project number: AHRQ grant HS10084
Project period: 1/1/00 to 12/31/00
Funding: \$25,000

continued on page 23

AHRQ funds new projects

continued from page 22

Nursing home quality indicators dissemination conference

Project director: Carol R. Hegeman, M.S.
Organization: Foundation for Long-Term Care
Albany, NY
Project number: AHRQ grant HS10085
Project period: 1/1/00 to 12/31/00
Funding: \$25,000

Osteopathic collaborative clinical trials initiative

Project director: Leonard H. Finkelstein, D.O.
Organization: American Association of Colleges of Osteopathic
Chevy Chase, MD
Project number: AHRQ grant HS10081
Project period: 12/01/99 to 11/30/00
Funding: \$4,800

Seventh conference regenstrief

Project director: Kurt K. Kroenke, M.D.
Organization: Regenstrief Institute
Indianapolis, IN
Project number: AHRQ grant HS10082
Project period: 11/9/99 to 11/08/00
Funding: \$50,000 ■

Research Briefs

Behets, F.M., Andriamiadana, J., Randrianasolo, D., and others. (1999, October). "Chancroid, primary syphilis, genital herpes, and lymphogranuloma venereum in Antananarivo, Madagascar." (AHRQ National Research Service Award training grant T32 HS00052). *Journal of Infectious Diseases* 180, pp. 1382-1385.

Although HIV infection remains relatively rare in Madagascar, the prevalence of treatable sexually transmitted diseases is high. This study of genital ulcers in patients attending clinics in Madagascar found that 33 percent of patients had chancroid, 29 percent had syphilitic ulcers, 10 percent had genital herpes, and 8 percent had lymphogranuloma venereum. Less schooling was associated with increased prevalence of syphilitic ulcers.

Konrad, T.R., Williams, E.S., Linzer, M., and others. (1999). "Measuring physician job satisfaction in a changing workplace and a challenging

environment." (AHRQ National Research Service Award training grant T32 HS00032). *Medical Care* 37(11), pp. 1174-1182.

Dramatic changes in the health care market have altered doctors' jobs, limiting autonomy and reducing morale. A better understanding of what physicians consider important to job satisfaction may help to ameliorate conditions linked to medical disaffection, possibly improving health care. These researchers used previous research, physician focus groups, secondary analysis of survey data, interviews with physician informants, and a multispecialty physician expert panel to uncover factors that influence physician job satisfaction. They found that autonomy, relationships with colleagues, relationships with patients, relationships with staff, pay, resources, and status all influenced physicians' job satisfaction. They also uncovered several other factors affecting job satisfaction: intrinsic satisfaction, free

time away from work, administrative support, and community involvement.

Lenert, L.A., and Treadwell, J.R. (1999, October). "Effects of preferences of violations of procedural invariance." (AHRQ grant HS08349). *Medical Decision Making* 19, pp. 473-481.

In studies of patient health preferences, utilities for hypothetical health states cannot always be successfully measured. One marker for lack of success is violation of "procedural invariance," that is, when the ranking of two health states varies across assessment procedures, such as the standard gamble (SG) and visual analog scale (VAS). The researchers performed secondary analysis of three completed studies that used the same two health assessment procedures to identify differences between those who violated procedural invariance (ranked their health differently on

continued on page 24

Research briefs

continued from page 23

the SG and VAS) and those who did not. They found that violators in general had less ability to discriminate among states and less reliable measurements on the SG and VAS. The authors conclude that violation of procedural invariance of preferences across scaling methods may signal failure of the measurement process.

Matchar, D.B., and Samsa, G.P. (1999, October). "The role of evidence reports in evidence-based medicine: A mechanism for linking scientific evidence and practice improvement." (AHRQ contract no. 290-92-0028). *Journal on Quality Improvement* 25(10), pp. 522-528.

The inconsistency between current practices and evidence-based benchmarks is puzzling given the excellent set of tools available to the practitioner of evidence-based medicine (EBM), note these authors. They ask how evidence reports can be better linked with practice improvement activities. The potential role of evidence reports is quite broad, and in order to be most effective, they should be considered as part of a comprehensive strategy for practice improvement and be designed with their customers in mind. These customers include insurers, managed care organizations, and government and other organizations that determine health-related priorities. While information synthesis should be global, implementation must be local. Use of information from evidence reports ultimately requires suggesting specific practice improvement strategies defined in terms of a set of functional

specifications and a toolbox of implementation options.

Myers, E.R., and Steege, J.F. (1999). "Risk adjustment for complications of hysterectomy: Limitations of routinely collected administrative data." (AHRQ grant HS09760). *American Journal of Obstetrics and Gynecology* 181(3), pp. 567-575.

Surgical complications of hysterectomy are more common than medical complications. However, risk adjustment methods that use routinely collected administrative data are better at predicting medical complications. Ambiguities in coding, misclassification, and uncoded factors such as disease severity limit the utility of administrative data for risk adjustment for hysterectomy complications, concludes this study. The researchers used hospital discharge data on 107,648 women undergoing hysterectomy in North Carolina from 1988 through 1994 to develop a model to predict medical and surgical complications. Models that incorporated coded comorbidity (coexisting medical conditions) were better predictors of medical than surgical complications.

Tilley, B.C., Pillemer, S.R., Heyse, S.P., and others. (1999). "Global statistical tests for comparing multiple outcomes in rheumatoid arthritis trials." (AHRQ grant HS07386). *Arthritis and Rheumatism* 42(9), pp. 1879-1888.

No single outcome is considered the gold standard for patients with rheumatoid arthritis (RA) enrolled in clinical trials. Part of the difficulty may be that patients have different preferences. Some people with RA may find pain more unbearable than physical incapacity, while others

may feel the opposite. These researchers evaluated global statistical tests (GSTs) of treatment effectiveness for RA trials measuring multiple outcomes. They calculated GSTs using outcome measures from the American College of Rheumatology (ACR) core variables available in three RA trials. The researchers found that erythrocyte sedimentation rate had the lowest correlation with other outcomes in the three trials. Within a trial, joint swelling and joint tenderness or patient and physician assessment had the highest correlations, depending on the trial. Results were consistent with those using the ACR criteria, but the GST was more powerful. The authors conclude that GSTs are a useful tool for comparing treatment effects across multiple clinically meaningful outcome measures.

Tu, W., and Zhou, Z-H. (1999). "A Wald test comparing medical costs based on log-normal distributions with zero valued costs." (AHRQ grants HS08559 and HS09543). *Statistics in Medicine* 18, pp. 2749-2761.

When analyzing medical cost data, it is often difficult to compare the mean costs of different treatment or patient groups because the cost data may be skewed due to the relatively high costs incurred by a few patients. One solution to the problem is to introduce a parametric structure based on log-normal distributions with zero values and then construct a likelihood ratio test. These authors propose a Wald test with simple computation and then a Monte Carlo simulation to compare type 1 error rates and powers of the proposed Wald test with those of the likelihood ratio test. The researchers found that although the

continued on page 25

Research briefs

continued from page 24

likelihood ratio test slightly outperformed the Wald test, the performance of the Wald test was also satisfactory, especially when the sample sizes were reasonably large.

Williams, E.S., Konrad, T.R., Linzer, M., and others. (1999). "Refining the measurement of physician job satisfaction: Results from the Physician Worklife Survey." (AHRQ

National Research Service Award training grant T32 HS00032). *Medical Care* 37(11), pp. 1140-1154.

These researchers developed and validated a multidimensional physician job satisfaction measure and separate global satisfaction measures. They designed a 38-item, 10-facet self-administered questionnaire, the Physician Worklife Survey (PWS), and administered it in a pilot study to a national random sample of U.S. primary care physicians. They used

another national sample of physicians in a subsequent validation study. Reliabilities of the 10 facets ranged from .65 to .77. Three scales measuring global job, career, and specialty satisfaction also were constructed with reliabilities from .84 to .88. Results supported face, content, convergent, and discriminant validity of the measures. They conclude that although physician job satisfaction is a complex phenomenon, it can be measured using the PWS. ■

Research Activities - 1999 Author Index

The following is an alphabetical listing of the first authors of journal articles, book chapters, and reports summarized in *Research Activities* during 1999. Month and page number(s) are given.

Ackerman DL, Jul, 17
Adams AS, Sep, 19
Aiken LM, Mar, 20; Nov, 9
Albertsen PC, Jan, 9
Alexander JA, Jun, 16
Allison J, Apr, 19; Nov, 21
Altman, BM, May, 8
Anderson JP, Jan, 26
Anderson MA, Jul, 19
Ayanian JZ, Apr, 12; Dec, 2
Azen SP, Jul, 20
Bader J, Dec, 20
Baldwin L-M, Jan, 8; Nov, 10
Barnett S, Mar, 20; Jul, 10; Nov, 21
Baroni MA, Jul, 16
Barr DA, Jul, 17
Barron WM, Nov, 2
Barry MJ, Dec, 4
Bass EB, Oct, 6
Bates DW, May, 7
Bauchner H, Jan, 19
Baum HB, Jul, 9
Bazzoli GJ, Apr, 19
Bennett CL, Jan, 9
Berkey CS, Jan, 26

Berman S, Dec, 6
Bernard AM, Sep, 8
Bertakis KD, Apr, 10; Oct, 11
Bierman AS, Apr, 2; Jun, 10
Blumenthal D, Jul, 4
Bradley EH, Jan, 19; Jul, 20
Braveman P, Oct, 10
Brooks A-M, Nov, 3
Brooks JM, Jul, 8; Jul, 16
Brown JA, Jun, 6
Broyles RW, Jun, 17
Burstin HR, May, 7
Bush NE, Oct, 20
Callahan CM, Jan, 26
Carey TS, Jan, 5
Carman KL, Jun, 6
Casas F, May, 6
Castle NG, May, 9
Cegala DJ, Jul, 14
Chan L, Oct, 10
Chapman GB, Oct, 20
Chassin MR, Jan, 20
Choo PW, Dec, 20
Christakis NA, Jan, 27
Christiansen CL, Jan, 27
Clark DO, Apr, 19
Collins MM, Jan, 9
Connelly MT, Nov, 3
Conrad DA, Nov, 5
Coulter I, Jan, 21
Coyle YM, Jul, 21
Crofton C, Jun, 6
Cromwell DM, Jan, 16

Crystal S, Apr, 20
Davidson PL, May, 16
De Jonge KE, Jun, 12
Desch CE, Dec, 9
Devers K, Dec, 13
Deyo RA, Jan, 27; Mar, 21
Dowd B, Dec, 7
Dranove D, Jan, 13
Eisen SV, Oct, 21
Eisenberg JM, Dec, 11
Escarce JJ, Sep, 1
Every NR, Jan, 3
Fasciano NJ, Oct, 12
Feinglass J, Sep, 7
Felt-Lisk S, May, 9
Fine MJ, Jun, 8
Finkelstein BS, Apr, 5; Sep, 3
Fiscella K, Jun, 13
Fogarty LA, Apr, 3
Forrest CB, Oct, 7,8
Fowler FJ, Jun, 6
Frank E, Apr, 4
Franks P, Jun, 8
Fraser I, Jul, 9; Nov, 5
Freed GL, Oct, 3
Freidman B, Oct, 13
Freiman M, Apr, 18
Freund D, Sep, 7
Fuentes-Afflick E, Mar, 8
Gallagher PM, Jun, 6
Ganz ML, Mar, 20
Gawande AA, Jan, 17; Nov, 1

continued on page 26

1999 author index

continued from page 25

Gillman MW, Sep, 5
 Goldenberg RL, Apr, 6
 Goldie SJ, Apr, 7; Sep, 19
 Goldman L, Dec, 4
 Gould MK, Sep, 4
 Grazier KL, Jul, 9
 Greenfield S, Jun, 3
 Gregory KD, Oct, 4
 Grumbach K, Jul, 7; Sep, 9
 Hadley J, Jun, 15
 Hanlon JT, Apr, 14
 Harrington C, Jun, 7
 Harris L, Jul, 18
 Harris LE, Apr, 9
 Harris-Kojetin LD, Jun, 6
 Hartley D, Oct, 21
 Hays RD, Jun, 6
 Heckerling PS, Apr, 20
 Hedberg A-M, Oct, 5
 Heidenreich PA, Oct, 2
 Hellinger FJ, Jan, 15
 Hernandez JB, Jul, 15
 Hillman AL, Jan, 11; Oct, 8
 Hoffman JR, Jan, 27
 Homer CJ, Nov, 4
 Horgas AL, Jan, 28
 Hripcsak G, May, 16
 Hsia DC, Jan, 11
 Hurley R, Dec, 13
 Huskamp HA, Nov, 8
 Iezzoni LI, May, 16
 Intrator O, Jun, 7
 Jones CB, Dec, 11
 Joyce GF, Jun, 2
 Justice AC, Jun, 26
 Kahn DJ, Jan, 7
 Kapur VK, Mar, 4
 Kasper AS, Jul, 15
 Keating NL, Jun, 10
 Kell SH, Apr, 20
 Keller RB, Sep, 6
 Khoury AJ, Mar, 21
 Kiefe CI, Jan, 20
 Klein JD, Jun, 12
 Knott A, Jul, 17
 Krauss NA, Apr, 18
 Kuppermann M, Apr, 4
 Laine C, Nov, 8
 Landrum MB, Jul, 2
 Lara M, May, 11
 Larme AC, Jan, 4
 Larson MS, Dec, 3
 Lau J, Mar, 13
 Lave JR, Oct, 5
 Lebloch DS, Mar, 20
 Lee TH, Dec, 5
 Lehman AF, Dec, 8

Leibson CL, Oct, 7
 Lenert LA, Sep, 19
 Levine C, Jul, 16
 Levinson W, Jul, 5
 Leviton LC, Mar, 6
 Lohr KN, Nov, 21
 Lorig KR, Apr, 1
 Lowery NE, Jan, 9
 Lucas GM, Oct, 13
 Maciejewski ML, Jul, 16
 Magnan S, Jan, 13
 Malone RE, Jan, 15
 Mamlin LA, Apr, 9
 Mandelblatt JS, Sep, 2; Nov, 21
 Manski RJ, Jul, 21
 Marcantonio ER, Mar, 4
 Mayer ML, May, 8; Dec, 20
 McCormick D, Oct, 4
 McDonald CJ, Jan, 28
 McDonnell SM, Mar, 3
 McGee J, Jun, 6
 McIntosh WA, Jan, 14
 Meenan RT, Nov, 22
 Mendelson DN, Jan, 28
 Meredith LS, Jul, 6
 Molloy D, Jul, 18
 Monheit AC, Sep, 19
 Moore RD, Oct, 13
 Morrissey MA, Jun, 16
 Moscovice I, Jul, 10
 Mueller KJ, Jun, 18
 Mulrow CD, Mar, 12
 Murray MD, Jan 28; May, 16
 Murray PK, Jul, 9
 Ness RB, Apr, 5
 Nichols GA, Jul, 15
 Nicholson A, Jul, 1
 Norregaard JC, Nov, 6; May, 5
 Norton EC, Mar, 6
 O'Connor GT, Jan, 2
 O'Dell MW, Jan, 29
 Ofili EO, Sep, 6
 Ozminkowski RJ, Jan, 29
 Paradise JL, Mar, 22
 Parkerton PH, Jul, 9
 Patton MQ, Dec, 13
 Payne SM, Jan, 29
 Pearson SD, Jul, 14
 Peckova M, Apr, 15
 Pena CA, Sep, 10; Nov, 4
 Peterson ED, Jan, 1
 Petty GW, Mar, 5
 Phatak PD, Mar, 3
 Picken HA, Jan, 29
 Plauth AE, Mar, 1
 Porell F, Mar, 22
 Poses RM, Jan, 12
 Ragin C, Dec, 13
 Randolph AG, Mar, 22

Raube K, Mar, 22
 Ray NF, Jun, 13
 Reid RA, Mar, 21
 Reis IM, Apr, 13
 Ren XS, Mar, 22
 Reschovsky JD, Jan, 18
 Resnik S, Oct, 19
 Richardson DK, Jan, 7, 8; May, 4
 Robison VA, Jan, 10
 Romano PS, Jun, 4
 Rosenberg MA, Apr, 20
 Rosenthal MB, Jul, 19; Dec, 8
 Rouse DJ, Mar, 7
 Rubenstein LV, Dec, 9
 Rundall T, Dec, 12
 Rust GS, Nov, 6
 Rydman RJ, May, 10
 Sachs B, Jul, 19
 Safran DG, Mar, 23
 Saigal S, Sep, 4
 Samsa GP, Jan, 3; May, 5
 Sanders GD, Jun, 26
 Scanlon DP, Jul, 9
 Schadow G, May, 17
 Scharfstein JA, Dec, 10
 Schmader KE, Apr, 14
 Schmid CH, May, 17
 Schmittdiel J, Dec, 6
 Schnaier JA, Jun, 6
 Schneiderman L, Jul, 14
 Schone BS, Sep, 11
 Schulberg HC, Apr, 8
 Schulman KA, May, 1
 Schwartz CE, Apr, 21
 Schwartz JA, Oct, 21
 Schwartz LM, Jul, 3
 Selby JV, Sep, 9
 Selden TM, Apr, 11
 Shapiro MF, Jun, 2
 Shaul JA, Jun, 6
 Sherbourne CD, Jun, 11; Jul, 6
 Shojania KG, Jan, 11
 Shortell SM, Jul, 14; Dec, 12
 Silber JH, Jun, 26
 Sills ES, May, 2
 Siminoff LA, Jun, 5
 Simon SR, Jan, 11
 Simpson L, Jul, 9
 Smucker DR, Jan, 5
 Sofaer S, Dec, 12
 Soumerai SB, Oct, 1
 Spector WD, Jan, 17
 Stafford RS, Mar, 2
 Sterling TR, Mar, 23
 Stocker K, Jun, 15
 Sugar CA, Jan, 30
 Sundararajan V, Jan, 5

continued on page 27

1999 author index

continued from page 26

Sukes D, Jan, 14
Swartz W, Jul, 18
Takeuchi DT, May, 3
Taylor VM, Jan, 12
Teno JJ, Jul, 18
Testa MA, Apr, 7
Thomas CP, Jan, 10
Tilley B, Mar, 19
Treadwell JR, Oct, 21
Tsevat J, Nov, 9
Tu FF, Mar, 7

Volp KG, Sep, 10
Wachter RM, May, 10
Walkup J, Oct, 14
Wallace CJ, Jul, 15
Weidmer B, Jun, 6
Weinick RM, Apr, 10
Weissman JS, Apr, 8; May, 6
Weitzman EA, Dec, 13
Wells KB, Mar, 23; May, 3
Wennberg DE, Jul, 3
Wheeler JR, Jun, 14
Winston FK, Jan, 30
Wolinsky FD, Jan, 30

Wong HS, Jul, 9
Wright JG, Dec, 5
Wyrich KW, Sep, 20; Dec, 20
Yin RK, Dec, 13
Yip WC, Apr, 11
Yusen RD, Jul, 4
Zabinski D, Apr, 12
Zhou X-H, Jun, 26; Sep, 20
Zimmerman RK, Jan, 9; Oct, 9
Zupancic JA, Jan, 7
Zuvekas SH, Apr, 18; Nov, 7 ■

Research Activities - 1999 Subject Index

The following is an alphabetical listing of research topics featured in *Research Activities* in 1999. Month of publication and page number(s) are given.

Access/barriers to care, Mar, 1, 8, 20; Apr, 18; May, 16; Jun, 1, 15; Oct, 9; Nov, 8

Adolescent health, Apr, 13; Jun, 2, 12, 22; Oct, 3

Alcohol/drug abuse, Jan, 24; Apr, 5; Nov, 8

Advance directives (see end-of-life issues)

AIDS/HIV, Jan, 15, 26, 29; Mar, 11, 20; Apr, 7, 8, 20; Jun, 1, 2; Sep, 19; Oct, 13, 14, 19; Nov, 8, 9; Dec, 10

Amputation, Sep, 7

Appropriateness of care, Jan, 15; Nov, 9

Arthritis/osteoarthritis, Apr, 9

Asthma (see respiratory disease)

Back pain/surgery, Jan, 4, 12, 27; Sep, 6

Blood loss/transfusions, Mar, 4

Bowel problems/surgery, Oct, 5

Brain injury, Oct, 3

Breast cancer (see women's health)

Cancer, general (see also specific cancers), Jan, 11, 24; Nov, 21; Dec, 9

Cataracts, Jan, 6

Chiropractic care/training, Jan, 21

Cholesterol problems, Dec, 4

Chronic illness, Apr, 1, 2

Clinical decision support systems, Jun, 26

Clinical practice guidelines

Asthma, Jan, 29

Clearinghouse, Jan, 23

Dissemination of, Jan, 19

Implementation of, Jan, 29; Jul, 15; Sep, 19; Oct, 3

Pediatric, Jan, 19

Cognitive impairment, Apr, 14

Consumer education/views (see also patient education), Jun, 6, 13; Jul, 20; Sep, 3, 10; Oct, 21

Conjunctivitis, Jun, 13

Deafness, Mar, 20; Nov, 21

Deep venous thrombosis, Jul, 4; Sep, 4

Delirium, Mar, 4

Dental care, Mar, 20; Apr, 13; May, 16; Jul, 21; Dec, 20

Depression (see mental health)

Diabetes, Jan, 4; Mar, 21; Jun, 3; Sep, 8

Dialysis (see renal dialysis/disease)

Diet/nutrition, Oct, 5

Disability (see also rehabilitation), Apr, 21; May, 8; Sep, 6; Oct, 10

Do-not-resuscitate orders (see end-of-life treatment/issues)

Drug errors (see medication)

Dysphagia (see swallowing problems)

Elderly health, Jan, 1, 26, 28; Mar, 6; Apr, 2, 14, 17; Jul, 2, 9, 18, 20; Sep, 7, 11; Oct, 1, 7; Dec, 2, 7

Emergency care, Jan, 15; May, 10

End-of-life treatment/issues, Jan, 18, 27; Apr, 8; Jun, 12, 26; Jul, 14, 18, 20

Evidence-based practice centers, Jan, 24; Mar, 12; Sep, 12

Health behaviors, Mar, 20

Health care costs and financing (see also hospital costs/management), Jan, 15; Apr, 10, 11, 12; May, 5, 6, 7, 8; Jun, 12, 13, 16, 17; Jul, 8, 19, 21; Sep, 9, 13, 14; Nov, 5, 6

Health care marketplace, Jan, 13; Jun, 14, 16, 17, 18; Jul, 8, 16; Nov, 5, 6; Dec, 20

Health care organization/staffing, Apr, 2, 19; May, 11; Jun, 7, 16, 17; Nov, 6, 8, 9

Health care policy, Apr, 10; Jul, 16; Dec, 6

Health care technology, Dec, 11

Health care use (see also hospital use), Apr, 18; May, 8; Jun, 10; Sep, 13; Nov, 22; Dec, 6

Health/functional status, Jan, 30; Apr, 19; Jun, 10, 11; Jul, 20; Sep, 19

continued on page 28

1999 subject index

continued from page 27

Health insurance plans/status

Impact on care, Apr, 18; May, 7, 8;
Jun, 1, 2, 15; Jul, 4; Sep, 1, 10, 14;
Oct, 1; Nov, 7; Dec, 6, 8
Medical savings accounts, Apr, 12;
Jul, 16
Plan choice, Jan, 17; Jun, 6
Treatment coverage, Apr, 10; May,
7; Sep, 10; Nov, 7; Dec, 8

Heart disease

Acute myocardial infarction, Jan,
3; Jul, 2; Sep, 5; Oct, 1
Angina, Jul, 1; Oct, 2
Angiography, Jul, 2
Angioplasty, Jul, 2
Cardiac arrest, Apr, 15; Jun, 26
Cardiac catheterization, May, 1
Coronary artery bypass graft
surgery, Jan, 1, 2; Sep, 1
Defibrillators, Jan, 3
Heart failure, Jan, 2; Apr, 12;
Sep, 6
Prevention, Mar, 2; Dec, 4, 5
Tachycardia, Dec, 3
Hemochromatosis, Mar, 3

Hemophilia, Oct, 19

HIV/AIDS (see AIDS/HIV)

Home Health Care, Jan, 29; Mar, 10;
Jul, 4

Hospitalists, Mar, 11; May, 10

Hospitals

Costs/management, Mar, 11, 16;
Jun, 14, 16, 17, 20; Jul, 17; Sep,
15; Oct, 4; Dec, 9
Length of stay, Apr, 5; Oct, 4;
Nov, 1
Quality of care, Jan, 12; Mar, 11,
16; Apr, 12; May, 6; Jun, 2, 3, 4,
20, 21; Sep, 1; Nov, 1, 9; Dec, 2
Rural, Jan, 14, 16, 17; Jul, 17;
Dec, 9
Use of, Jan, 12; Apr, 20; May, 10;
Jun, 7, 20, 21; Sep, 15, 16

Hypertension, Nov, 2; Dec, 20

Infant/child health

Access to care, Apr, 10; Dec, 6
AIDS/HIV, Mar, 11; Apr, 6;
Jul, 16
Birth management, May, 4
Dental care, Jan, 10
Ear infections (otitis media),
Mar, 22

Health insurance, Apr, 10; Dec, 6
Immunization, Jan, 9; Oct, 9
Injuries, Jan, 30; Oct, 3
Low birthweight, Jan, 8; Mar, 6, 8;
May, 4; Jul, 19; Sep, 4
Neonatal intensive care, Jan, 6;
Mar, 7; May, 4; Nov, 3
Preterm birth, Mar, 6
Respiratory problems, May, 11;
Nov, 3

Intensive care, Jul, 15; Oct, 13

International health

Latin America, Jun, 15

Knee-replacement surgery, Mar, 6;
Apr, 9; Dec, 5

Laboratory tests/reports, May, 7

Long-Term care, Jan, 17, 18; Mar, 22;
Apr, 18; May, 9; Jun, 7, 21; Jul, 9, 18;
Sep, 11, 14; Dec, 7

Low birthweight (see infant/child health)

Lyme disease, Sep, 10; Nov, 4

Managed care (see also health
insurance plans/status), Jan, 12, 13;
Mar, 1; Jun, 15, 16, 18, 22; Jul, 6, 7, 8,
15, 17, 19; Sep, 1, 9, 10, 17; Oct, 8,
12, 13, 21; Dec, 6, 7, 9

Medicaid, Jan, 8, 11, 16; Apr, 10; May,
8; Jun, 1; Sep, 14; Oct, 4, 8; Nov, 8;
Dec, 6, 8, 20

Medical informatics

/telecommunications, Jan, 14, 28;
May, 17

Medical technology (see health care technology)

Medicare, Apr, 11; Jul, 18; Dec, 7, 8

Medication

Antibiotics, Jan, 10; Apr, 6; Nov, 4
Antidepressants, Jul, 17
Antihypertensives, Dec, 20
Antiplatelet/anticoagulant agents,
Mar, 5; Sep, 4
Anti-ulcer drugs, Jan, 16
Cardiac-related drugs, Sep, 5, 6;
Oct, 2
Guidelines, Jan, 10; May, 16
HIV-related therapies, Jan, 15;
Mar, 11; Jun, 1; Oct, 13; Dec, 10
Hormone replacement therapy,
Jun, 10
Psychotropics, Apr, 14; May, 9

Mental health

Affective disorders, Oct, 14
Depression, Jan, 26, 30; Mar, 12,
23; Apr, 8; May, 3; Jun, 22; Jul, 6,
15, 17; Sep, 19; Oct, 7, 14; Dec, 9
General, Nov, 7, 8; Dec, 8
Schizophrenia, Oct, 14; Dec, 8

Migrant health, Jun, 18

Minority health

Blacks, Jun, 1; Jul, 18; Sep, 2, 6;
Dec, 2
Chinese, Jul, 20
Ethnic attitudes/differences,
May, 3
General, Mar, 17, 19
Latinos, Mar, 8; May, 11; Jun, 1;
Sep, 2
Treatment/access differences,
May, 1, 3; Jun, 1
Women, Mar, 8; May, 1; Sep, 2

Multiple sclerosis, Apr, 21

Neck problems, Jan, 12

Neonatal intensive care (see infant/child health)

Nurses/nursing care, Dec, 11

Nursing homes (see long-term care)

Organ system failure/transplants, Jan,
29; Jun, 5

Patient education/counseling, Jul, 14

Patient preference/satisfaction, Apr, 3,
5, 20; May, 10; Jun, 11; Jul, 7; Nov, 4

Pharmacies/pharmacists, Jan, 28; May,
16; Jul, 8, 16; Dec, 20

Physical restraint use, May, 9

Physicians

Factors affecting practice, Apr, 11;
Jun, 15, 16; Jul, 4, 6; Oct, 8; Dec,
5, 8
Relationship to patient/community,
Apr, 3; Jun, 16; Jul, 4, 5; Oct, 11;
Nov, 4
Satisfaction, Jun, 15
Specialists/specialty, Apr, 8;
May, 3; Jul, 5; Sep, 9; Oct, 7;
Dec, 6
Training, Jan, 21; Sep, 8

Pneumonia (see respiratory disease)

Practice variations, Jan, 2; Mar, 2; Apr,
9, 10; Jun, 8; Jul, 3; Sep, 6; Oct, 4;
Dec, 5

continued on page 29

1999 subject index

continued from page 28

Pregnancy/childbirth (see women's health)

Prevention, Jan, 13; Mar, 2, 14; Jun, 12; Oct, 8, 10, 20; Dec, 4

Primary care, Mar, 1, 3, 23; Apr, 8, 9, 10; May, 3; Jun, 8; Jul, 3, 4, 7, 14, 17, 18; Sep, 8, 9; Oct, 7, 11; Nov, 4; Dec, 9

Prostate cancer, Jan, 24; Mar, 8; Jun, 9; Dec, 4

Quality improvement, Jan, 20; Apr, 20; Jun, 19; Jul, 14, 15

Quality of care, Jan, 20; Mar, 21; Apr, 4; May, 6, 16; Jun, 2, 3, 4, 7, 15; Jul, 10, 17, 21; Sep, 1, 9, 17; Nov, 1, 4, 5, 21; Dec, 2

Quality of life, Jan, 26; Apr, 7; Jun, 11; Sep, 4, 20; Oct, 6; Nov, 9; Dec, 3, 20

Radiology, May, 16; Jul, 15

Referral patterns, Mar, 21; Jun, 8; Jul, 7; Oct, 7

Rehabilitation, Jul, 9; Oct, 3

Renal dialysis/disease, Apr, 9; Oct, 6

Research methods/issues, Jan, 26, 28, 30; Mar, 21, 22; Apr, 19, 20, 21; May, 16, 17; Jun, 26; Sep, 17, 20; Nov, 21, 22; Dec, 12, 13, 20

Research training, Dec, 18

Respiratory disease

AIDS-related, Dec, 10

Asthma, Jan, 29; May, 10, 11; Nov, 6

Pneumonia, Apr, 12, 17; Jun, 8; Oct, 4

Rural health/practice, May, 8; Jun, 16, 17; Jul, 10, 17, 19; Oct, 12, 21; Nov, 10; Dec, 9

Satisfaction with care (see patient preference/satisfaction)

Schizophrenia (see mental health)

Second medical opinions (see referral patterns)

Sinusitis, Mar, 13; Jun, 13

Sleep apnea, Mar, 4

Smoking cessation, Jul, 10

Stroke, Jan, 3; Mar, 5; Apr, 17; May, 5

Surgery-related complications/errors, Nov, 1; Dec, 5

Swallowing problems, Apr, 17

Thyroid problems/screening, Mar, 4

Tube feeding (see diet/nutrition)

Tuberculosis, Mar, 23

Urinary tract infections, Jan, 25

Variations in care (see practice variations)

Women's health

AIDS/HIV, Apr, 6, 7; Jun, 1

Breast cancer, Apr, 3; Jul, 15

Cancer screening, Jan, 11, 25;

Apr, 20; Sep, 2; Oct, 20

Centers, Mar, 21

Cervical cancer, Jan, 25; Apr, 7; Sep, 2

General, Jul, 19

Gynecological care, Dec, 6

Heart disease, Jul, 1

Hormone replacement therapy, Jun, 10; Nov, 2

Hysterectomy, May, 2

Pregnancy/childbirth, Mar, 6, 7, 8, 22; Apr, 4, 5, 6; May, 4; Jul, 18;

Sep, 3, 10; Oct, 4; Nov, 2

Treatment/access differences, Apr, 2; May, 1; Jun, 1 ■



**Don't Forget—
Visit AHRQ's Web Site**

.....

AHRQ's Web Site

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

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

Ordering Information

AHRQ makes documents available free of charge through its publications clearinghouse and AHRQ InstantFAX. Other AHRQ documents are available from the National Technical Information Service (NTIS) or the Government Printing Office (GPO). To order AHRQ documents:

(*) Available from the AHRQ Clearinghouse:

Call or write:

AHRQ Publications Clearinghouse
Attn: (publication number)
P.O. Box 8547
Silver Spring, MD 20907
800-358-9295
410-381-3150 (callers outside the
United States only)
888-586-6340 (toll-free TDD service;
hearing impaired only)

() Available from the AHRQ Clearinghouse and from AHRQ InstantFAX:**

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

(*) Available from NTIS:**

To purchase documents from NTIS, call or write:

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

Available from GPO:

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

Note: Please use publication numbers when ordering

U.S. Department of Health and Human Services

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



AHRQ Pub. No. 00-0012
January 2000