



# Research Activities

No. 238, June 2000

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## Early angiography should be used for suspected heart attack victims even when ECGs appear normal

Patients who are suspected of having a heart attack (acute myocardial infarction, AMI) on arrival at the hospital and have electrocardiogram (ECG) abnormalities typical of heart attack, such as ST segment elevation, usually undergo diagnostic coronary angiography (x-ray imaging of the heart after infusion of a contrast dye via a catheter) and coronary angioplasty or coronary artery bypass surgery. A new study concludes that suspected heart attack patients with seemingly normal ECGs, who have similar long-term rates of reinfarction and death as AMI patients with ECG abnormalities, should also undergo these procedures.

The study was supported in part by the Agency for Healthcare Research and Quality (HS08362) with Grant S. Scull, M.D., of the University of Washington, as lead author. Dr. Scull and colleagues compared treatments, hospital course, and outcomes in 308 AMI patients without ST segment elevation on ECGs who were treated at hospitals where the initial treatment strategy favored early angiography and

appropriate intervention (angioplasty or bypass surgery) versus 1,327 similar patients who were treated at hospitals that favored a more conservative initial approach using medications only.

Hospitals favoring an early invasive strategy performed coronary angiography within 6 hours of admission on 25 percent or more of patients with chest pain and nondiagnostic ECG changes. About 60 percent of patients treated at these hospitals had early angiography versus 8 percent of patients treated at hospitals favoring conservative treatment, and 45 vs. 6 percent had early angioplasty performed. Patients treated in hospitals favoring the early invasive strategy had a lower 30-day (5.5 vs. 9.5 percent) and 4-year mortality rate (20 vs. 37 percent). In fact, patients who actually underwent angiography within 6 hours of admission had a remarkably low mortality rate (1 vs. 7 percent died in the hospital and 10 vs. 33 percent had died 4 years later). This suggests that early myocardial salvage may play an important role in survival, and that early angiography without

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## Early angiography for suspected heart attack

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prior noninvasive testing is beneficial in select patients.

More details are in “Early angiography versus conservative treatment in patients with non-ST

elevation acute myocardial infarction,” by Dr. Scull, Jenny S. Martin, R.N., W. Douglas Weaver, M.D., F.A.C.C., and Nathan R. Every, M.D., M.P.H., in the March 15, 2000 *Journal of the American College of Cardiology* 35, pp. 895-902. ■

## Heart Disease/Stroke

### A hospital's experience with primary angioplasty affects its survival rate for heart attack patients

Heart attack patients who are treated at hospitals experienced in performing primary angioplasty (the opening of blocked arteries by inflating a balloon catheter) have higher survival rates than patients treated at hospitals that perform few of the procedures. Researchers from the University of Alabama at Birmingham found that patients treated at experienced hospitals—that have performed large numbers of primary angioplasty procedures annually—had a 28 percent lower mortality rate for primary angioplasty than patients treated at less

experienced hospitals. This equals 2 fewer deaths per 100 patients treated. The study was funded in part by the Agency for Healthcare Research and Quality (HS08843).

The researchers also studied heart attack patients who received thrombolytic drugs (medications that break up clots to restore blood flow in arteries). In contrast to the findings for primary angioplasty, there was no statistically significant difference in the relationship between hospital experience and patient survival rates.

One potential explanation for the inverse relation between the volume of primary angioplasty procedures and in-hospital mortality may be that physicians improved their skills through practice, according to the researchers. Also, high-volume hospitals have systems in place that help them apply the procedures to heart attack patients faster, perhaps contributing to an increase in survival rates. In contrast, resources and the expertise required for the proper administration of thrombolytic drugs are less technical compared with those required for the proper performance of primary angioplasty. In conclusion, the researchers note that all centers that treat heart attack patients should develop clear-cut reperfusion protocols in order to minimize indecision in choosing between alternative treatments.

See “The volume of primary angioplasty procedures and survival after acute myocardial infarction,” by John G. Canto, M.D., M.S.P.H., Nathan R. Every, M.D., M.P.H., David J. Magid, M.D., M.P.H., and others in the May 25, 2000, *New England Journal of Medicine*, 342, pp. 1573-1580.

**Editor's note:** See page 3 for a second article arising from the same AHRQ grant (HS08843); Dr. Canto is first author of this article as well. ■

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## Improvements are needed in the management of warfarin therapy for patients with atrial fibrillation

**A**trial fibrillation (AF), rapid irregular heartbeat, can increase the risk for stroke five-fold. Use of the anticoagulant warfarin can reduce the incidence of stroke among AF patients by 64 to 87 percent. However, therapy with this potent medication is not always optimally managed in primary care settings, according to a study by the Stroke Prevention Patient Outcomes Research Team, which is supported by the Agency for Healthcare Research and Quality (Contract 290-91-0028). David Matchar, M.D., of Duke University, and colleagues examined anticoagulation management of AF patients (up to 9 months from their initial visit) in 8 primary care practices in North Carolina and 13 Rochester, NY, practices.

The researchers found that only 35 percent of AF patients who were candidates for warfarin received it. Of those who were treated with warfarin, 50 percent of the time their international normalized ratios (INRs), an indicator of blood clotting time, were not in the

therapeutic range (2 to 3). Levels below this range indicate that the blood is not sufficiently thinned to prevent clot formation and stroke; levels above the target range thin the blood too much and increase risk of hemorrhage. The researchers also found that patients' likelihood of being prescribed warfarin was only weakly related to stroke risk and not at all related to documented contraindications to their taking the medicine.

Anticoagulation management is not easy. Laboratory test results (INRs) may not be available until after the patient has left the clinic, thus complicating dosage adjustment; inadequate recordkeeping systems can result in the physician being unaware of laboratory results; and poor communication practices can lead to dosage changes being communicated to the patient late or not at all. However, the two Rochester practices with access to an anticoagulation service (ACS, which has one person responsible for dosing changes, scheduling, patient education, etc.) had better

warfarin management than the other practices (44 percent vs. 33 percent of eligible patients on warfarin, and 55 percent of INRs in the target range vs. 34 to 44 percent). The researchers conclude that use of an ACS may improve warfarin management of patients with AF receiving outpatient treatment in primary care settings.

See "Quality of anticoagulation management among patients with atrial fibrillation," by Gregory P. Samsa, Ph.D., Dr. Matchar, Larry B. Goldstein, M.D., and others, in the April 10, 2000 *Archives of Internal Medicine* 160, pp. 967-973. ■

## Payer status appears to have a strong influence on hospital management of patients with heart attack

**U**se of acute reperfusion therapies, invasive procedures, and hospital length of stay vary among hospitalized heart attack patients, depending on their insurance. These are the findings of a recent study that was supported in part by the Agency for Healthcare Research and Quality (HS08843). The study found that utilization was greatest for patients

who were covered by Medicare or commercial insurers, intermediate for the uninsured and those covered under managed care, and least for Medicaid patients.

Despite differences in use of hospital resources, there was no significant difference in hospital-adjusted mortality rates among the commercially insured, Medicare patients 65 and older, and HMO

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More accurate diagnosis of PID, see page 4

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## Effects of payer status

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patients. However, it's not clear whether the less aggressive use of medical resources contributed to the higher mortality rates among the uninsured and Medicaid patients, notes the study's lead author John G. Canto, M.D., M.S.P.H., of the University of Alabama Medical Center at Birmingham.

The researchers examined the influence of payer status on use of hospital resources by the more than 332,000 AMI patients who were enrolled in the National Registry of Myocardial Infarction 2 study from 1994 to 1996. Medicare and Medicaid recipients tended to be

sicker and to have higher rates of diabetes, hypertension, prior AMI and congestive heart failure, and more severe heart failure. These two groups also tended to be poorer and to include a higher proportion of women than privately insured groups.

After adjusting for these important factors, Medicare recipients were as likely as commercially insured patients to receive acute reperfusion treatments, coronary angiography, or subsequent coronary revascularization (angioplasty or bypass surgery). On the other hand, Medicaid patients, HMO patients, and the uninsured were the least likely to undergo coronary angiography, and Medicaid

recipients and the uninsured were the least likely to receive subsequent coronary revascularization compared with the commercial group, after controlling for baseline differences. Hospital stays were longest for Medicare and Medicaid groups, which were more likely to include older women with more chronic diseases and in-hospital complications requiring prolonged care.

More details are in "Payer status and the utilization of hospital resources in acute myocardial infarction," by Dr. Canto, William J. Rogers, M.D., William J. French, M.D., and others, in the March 27, 2000 *Archives of Internal Medicine* 160, pp. 817- 823. ■

## Health Care Delivery

### Researchers examine ways to more accurately diagnose pelvic inflammatory disease

**P**elvic inflammatory disease (PID) affects almost 11 percent of U.S. women during their reproductive years and can lead to infertility, chronic pelvic pain, ectopic pregnancy, and recurrent infections. Unfortunately, the clinical diagnosis of PID is inaccurate, with current tests unable to discriminate PID from other genital-tract causes of pelvic pain. However, a new study shows that the presence of lower genital-tract inflammation (the presence of white blood cells or pus in vaginal discharge) is a highly sensitive test for endometritis (upper genital-tract infection or PID) in patients with pelvic pain and tenderness. The authors conclude that assessment of the lower genital tract for evidence of infection or inflammation is an inexpensive, quick, and sensitive way to diagnose PID.

There were few false negatives. Thus, one should suspect other causes of pelvic pain in women who have pelvic pain and tenderness but no white blood cells or mucopus in the vaginal discharge, concludes Jeffrey F. Peipert, M.D., M.P.H., of Women and Infants Hospital in Rhode Island. Dr. Peipert and his colleagues analyzed the first 157 patients enrolled in the PID Evaluation and Clinical Health (PEACH) study, the largest randomized, multicenter study of therapy for PID ever conducted in North America. The PEACH study is led by Roberta Ness, M.D., M.P.H.,

and supported by the Agency for Healthcare Research and Quality (HS08358).

The 58 women in group one were less than 38 years of age, had a history of pelvic discomfort for 30 days or less, and had pelvic organ tenderness on physical examination. The 99 women in group two had additional evidence of lower-genital tract inflammation (mucopus or white blood cells in the vaginal discharge) or an untreated positive test for *N. gonorrhoeae* or *C. trachomatis* infections. The rate of endometritis in group one was 46.5 percent but jumped to 49.5 percent in group two after the presence of white blood cells or mucopus in the vaginal discharge was added to the inclusion criteria. Microbiologic evidence of either gonorrhea or trachomatis increased from 22.4 percent in group one to 38.3 percent in group two. The presence of vaginal white blood cells or mucopus had a high sensitivity (88.9 percent) but a low specificity (19.4 percent) for diagnosis of endometritis.

More details are in "Association of lower genital tract inflammation with objective evidence of endometritis," by Drs. Peipert and Ness, David E. Soper, M.D., and Debra Bass, M.S., in *Infectious Diseases in Obstetrics and Gynecology* 8, pp. 83-87, 2000. ■

## Studies focus on diagnostic testing and treatment for prostate cancer

Prostate cancer is the most commonly diagnosed non-skin cancer in men and the second leading cause of cancer death, with nearly 180,000 new cases and 37,000 deaths in 1999. Unfortunately, much controversy still surrounds the screening, diagnosis, and treatment of prostate cancer.

A recent study supported by the Agency for Healthcare Research and Quality (HS06992) finds that an American Cancer Society guideline supporting the annual screening of men aged 50 and older for prostate-specific antigen (PSA, a marker of prostate cancer) may have fueled an increase in this testing from 1992 to 1994 in one State. A second AHRQ-supported study (Evidence-based Practice Center contract 290-97-0015) demonstrates that survival chances for men with advanced prostate cancer are about the same whether they have their testes removed or receive one of the common medications for this cancer. The two studies are summarized here.

**Moran, W.P., Cohen, S.J., Preisser, J.S., and others. (2000, March). "Factors influencing use of the prostate-specific antigen screening test in primary care." *American Journal of Managed Care* 6(3), pp. 315-324.**

Physicians who believe in aggressive screening for prostate cancer support routine PSA screening (a simple blood test) of all men beginning at age 50 years,

screening of high-risk patients at younger ages, and surgery for diagnosed disease. Proponents of conservative strategies oppose all prostate cancer screening and espouse "watchful waiting" with treatment of symptoms for diagnosed cases. Controversy continues without definitive evidence.

In late 1992, the American Cancer Society (ACS) approved a clinical practice guideline recommending that all men aged 50 and older have annual PSA screening for prostate cancer. These researchers found that more than 400 primary care physicians in Colorado increased the odds of PSA testing of men aged 50 years and older by more than three-fold between 1992 and 1994. Their PSA screening increased from 24 percent of men in this age group in 1992 to 35 percent in 1993 and 40 percent in 1994.

Of the surveyed physicians, 89 percent rated the ACS as moderately or highly influential on their cancer screening practices. Fewer than one-third of the surveyed physicians reported being moderately or strongly influenced by the U.S. Preventive Services Task Force, which has recommended against the use of PSA and other prostate cancer screening interventions.

Thus, the authors attribute at least part of the increase in PSA testing by these Colorado physicians to release of the ACS clinical practice

guideline. Physicians' use of the digital rectal exam (DRE) to screen for prostate cancer did not significantly change over the 3-year study period (39 percent in 1992 to 36 percent in 1994).

**Seidenfeld, J., Samson, D.J., Hasselblad, V., and others. (2000, April). "Single-androgen suppression in men with advanced prostate cancer: A systematic review and meta-analysis." *Annals of Internal Medicine* 132(7), pp. 566-577.**

The chief goal of therapy for advanced prostate cancer is to eliminate the male hormone androgen, which speeds progression of the disease and its symptoms. Several methods are used to decrease androgen levels for these men, ranging from removal of both testes (orchiectomy) to androgen-blocking agents such as luteinizing hormone-releasing hormone (LHRH) agonists and nonsteroidal antiandrogens. A meta-analysis of 24 randomized, controlled trials involving more than 6,600 men concludes that the available monotherapies for metastatic prostate cancer are largely interchangeable, including testes removal and medications.

Analysis revealed that survival after therapy with an LHRH agonist was equivalent to survival following orchiectomy or treatment with diethylstilbestrol (DES), the

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**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.

## Prostate cancer

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earliest methods for treating advanced prostate cancer. Ten trials involving 1,908 patients reported overall survival at 2 years, 5 years, or median survival, with no significant difference among orchiectomy, LHRH agonists, and DES (an intermediate dose). No trials showed a difference in effectiveness among the LHRH agonists, such as leuprolide, goserelin, and busarelin, even though these medications differ substantially in cost. Although DES

may be a good alternative to LHRH agonists and is much less expensive, it is currently unavailable commercially in the United States because it is known to be cardiotoxic at high doses.

Men treated with nonsteroidal antiandrogens (for example, flutamide, nilutamide, and bicalutamide) and steroidal antiandrogens seemed to have lower survival rates, and no trials favored nonsteroidal antiandrogen monotherapy. Treatment withdrawals, the most reliable indicator of adverse effects,

occurred less with LHRH agonists (0-4 percent) than with nonsteroidal anti-androgens (4-10 percent). Although patients prefer to avoid orchiectomy, there was insufficient evidence to conclude whether the procedure actually decreased quality of life compared with other monotherapies.

This research was conducted by the Blue Cross and Blue Shield Association Technology Evaluation Center in Chicago, IL, an AHRQ-supported Evidence-based Practice Center. ■

## Researchers find that complex gastrointestinal procedures are not just for specialists anymore

**M**arket forces and maturing technology have prompted increasing numbers of generalist physicians to perform complex gastrointestinal (GI) procedures that once were done only by gastroenterologists, a trend that is expected to continue. In fact, a new study shows that 41 percent of sigmoidoscopies (insertion of a lighted optical instrument to examine the mucous membrane lining of the colon) were performed by generalists in 1993. However, gastroenterologists were more apt than generalists to perform more complex GI procedures and procedures on sicker patients who had more serious indications for the procedures (for example, cancer as opposed to screening).

Forty percent of U.S. health care service areas are without a gastroenterologist. Thus, one benefit of more generalist physicians performing GI procedures is improved access, especially by patients in rural areas, to such procedures, notes Gregg S. Meyer, M.D., M.Sc., of the Agency for Healthcare Research and Quality. Dr. Meyer is Director of AHRQ's Center for Quality Measurement and Improvement.

With support from the Robert Wood Johnson Foundation (Generalist Physician Faculty Scholar Award to Dr. Meyer), the researchers analyzed a random 5 percent sample of Medicare beneficiaries (1,369,179) listed in the 1993 Medicare National Claims History File. They identified claims for various types of gastrointestinal endoscopies (insertion of a

lighted rigid or flexible tube to visualize the esophagus, stomach, or colon), as well as the specialty of the physician who performed the procedure.

Overall, 35 percent of rigid sigmoidoscopies, 43 percent of flexible sigmoidoscopies, 8 percent of colonoscopies, and 9 percent of esophagogastroduodenoscopies (EGDs) were performed by generalists. But for all four procedures, specialists were four times more likely (odds ratio, OR 4 to 4.4) than generalists to have performed a procedure for biopsy, excision of polyps (polypectomy), or treatment as for diagnostic purposes alone. Patients who received EGDs or sigmoidoscopies from specialists were sicker (more apt to be hospitalized or die within the year) than patients who received these procedures from generalists. Generalists were more likely than specialists to provide all four procedures to patients residing in rural areas and in areas other than the Northeast. The study did not examine differences in outcomes of patients treated by generalists and specialists.

See "Differences between generalists and specialists in characteristics of patients receiving gastrointestinal procedures," by Dr. Meyer, Eme Y. Cheng, M.B.A., M.P.H., M.S., and Jeffrey Elting, M.D., M.P.H., in the March 2000 *Journal of General Internal Medicine* 15, pp. 188-194. Reprints (AHRQ Publication No. 00-R026) are available from AHRQ.\*\* ■

## Most Mexican Americans prefer conventional medical care for their diabetes rather than alternative and traditional treatments

As many as one in three people in the United States reports using alternative treatments, most often for chronic illnesses such as diabetes. In fact, more than 400 herbal remedies for diabetes have been reported worldwide. Mexican Americans have rates of adult-onset diabetes two to three times those of the general population. They also show a high interest in alternative medicine, with as many as 67 percent of them reportedly using folk remedies. Yet recent interviews with 43 low-income Mexican Americans with adult-onset diabetes revealed that most of them viewed herbs and prayer as complementary to, not competitive with, conventional medical treatment of their disease, and none used curanderos (traditional healers).

For these diabetics, traditional attitudes and beliefs presented no barriers to compliance with

medical care, conclude researchers at the Mexican-American Medical Treatment Effectiveness Research Center at the University of Texas Health Science Center in San Antonio. Their research was supported in part by the Agency for Healthcare Research and Quality (HS07397).

Patient interviews focused on the patients' views about and use of alternative and biomedical treatments for their diabetes. About 84 percent of those interviewed mentioned herbs as a possible alternative treatment for diabetes. The herbs mentioned most often were nopal (prickly pear cactus; cooked leaves are eaten alone or mixed with eggs), 39 percent; aloe vera (added raw to a drink of raw nopal leaves and water), 31 percent; and nispero (loquat or Chinese plum; leaves are brewed into a strong tea), 17 percent. However, most patients had never or only rarely tried herbs and

viewed them as supplemental to not competitive with medical treatments. Less than a third of those interviewed had regularly used herbs in the past. The 9 percent of current users were actively involved in looking for treatments for their disease and had not discontinued biomedical treatments. About 77 percent said that prayer helped reduce stress and bring healing power to medicines. There is some evidence of the clinical efficacy of both nopal and nispero, which have been found to have notable hypoglycemic effects (they lower the levels of blood sugar).

See "Herbs, prayer, and insulin: Use of medical and alternative treatments by a group of Mexican American diabetes patients," by Linda M. Hunt, Ph.D., Nedal Hamdi Arar, Ph.D., and Laurie L. Akana, R.N., C.S., M.S.N., in the March 2000 *Journal of Family Practice* 49(3), pp. 216-223. ■

### Prevention

## Periodic health exams tend to reduce ER visits and preventable hospitalizations

Primary care doctors are under growing pressure to increase productivity. The result is fewer and shorter visits with patients, with acute illness given high priority. Preventive care, such as the periodic health examination (PHE), may be given less attention than it deserves. This is unfortunate, given that a new study shows that people who are given regular PHEs have significantly lower rates of emergency department use and preventable hospitalizations than those who don't receive PHEs.

The PHE consists of a detailed medical history, targeted physical examination, and age- and sex-appropriate counseling and screening tests. It is not a complete physical appraisal, so it should be possible to integrate the PHE into "sick" visits, note Anna E.

Plauth, M.D., M.P.H., of Palo Alto Veterans Hospital, and Steven D. Pearson, M.D., M.Sc., of Harvard Pilgrim Health Care.

In a study supported by the Agency for Healthcare Research and Quality (National Research Service Award fellowship F32 HS00119), they reviewed computerized data from a large staff-model health maintenance organization (HMO) to compare the use of preventive services, use of medical services, and preventable use of services among members who received regular PHEs with an age-matched sample of those who did not. Despite the HMO's stress on the importance of PHEs, including a sophisticated clinical reminder system to provide PHEs, many eligible HMO

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## Periodic health exams

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members did not receive them according to the schedule suggested by the HMO.

In fact, during the 2-year period from 1994 to 1996, nearly one-third of patients in the sample who were older than 40 and one-fourth of those older than 50 did not receive PHEs. Patients without PHEs were markedly less likely to receive standard screening tests (mammography 52 vs. 91 percent; Pap tests 54 vs. 95 percent; blood pressure checks 90 vs. 99 percent; and fecal occult blood testing, 22 vs. 83 percent) or preventive services commonly recommended for their

age group. No-exam patients older than 40 years had twice the rate of preventable ED visits (14 vs. 6 per 1,000 members per year), three times more preventable hospital admissions (12 vs. 4), and more than six times the number of preventable hospital days (95 vs. 14) than age-matched patients in the exam group.

Details are in "Missed opportunities: Prevention and resource utilization among HMO members who do not receive periodic health examinations," by Drs. Plauth and Pearson in the March 2000 *Preventive Medicine in Managed Care* 1(1), pp. 35-42. ■

## Primary Care

### Recognizing and treating depression in primary care can prevent unnecessary hospitalizations and save money

**M**ore than 25 percent of primary care patients have a diagnosable mental health disorder (most often anxiety or depression). In many cases, these mental health conditions are not detected or treated. The costs associated with untreated mental disorders in primary care are considerable. For example, the annual health care cost for untreated patients with depression is nearly twice that for patients who do not have depression. Proper diagnosis of these problems can prevent higher health care costs, such as the costs associated with an avoidable hospitalization, according to a study supported by the Agency for Healthcare Research and Quality (HS09397).

The researchers found that patients of primary care physicians (PCPs) who diagnosed the greatest number of mental health disorders among their patients had 9 percent lower overall health care expenditures. Inpatient

expenditures were 20 percent lower for these patients, compared with patients of PCPs who diagnosed the smallest number of such disorders.

These findings suggest that detection and treatment of mental health disorders in primary care patients could have a substantial impact on reducing hospital costs. The cost benefit of improved diagnosis may be due to less time and resources spent on medical workup of unexplained medical symptoms such as fatigue, headaches, and stomach aches, which often mask undiagnosed depression, as well as more efficient treatment of mental health disorders.

PCPs who diagnose more mental health disorders in their patients may recognize when unexplained medical symptoms are the result of emotional distress or a mental health problem. They also may be less likely to order unnecessary diagnostic tests, refer patients to

specialists, or admit patients to the hospital. For example, these physicians are more apt to recognize the young patient with chest pain and a normal electrocardiogram as having panic disorder with no need to be hospitalized, explains principal investigator Peter Franks, M.D. Dr. Franks and his colleagues at the University of Rochester School of Medicine used the claims database of a large Rochester managed care organization to correlate diagnosis of depression among adults assigned to a PCP (457 family physicians and internists) with avoidable hospitalizations for a variety of conditions during 1995.

See "Do physicians who diagnose more mental health disorders generate lower health care costs?" by Thomas L. Campbell, M.D., Dr. Franks, Kevin Fiscella, M.D., and others, in the April 2000 *Journal of Family Practice* 49(4), pp. 305-310. ■



## More is not necessarily better when it comes to patient education materials

The effort by so many physician practices to gather, sort, index, computerize, and expand their patient education materials may not be worth the time and money. That's because physicians who personally select a small collection of handouts are by far the most likely to use them, concludes a study supported in part by the Agency for Healthcare Research and Quality (HS08776). The study showed that patients don't usually help themselves to educational pamphlets but prefer to receive them directly from the doctor. The physician still plays a key role in patient education, emphasize the University of Nebraska Medical Center researchers who conducted the study.

The researchers observed 18 family medicine practices for 4 to 12 weeks each. A research nurse shadowed 57 doctors during 1,600 patient encounters. In all of these

practices, the doctors distributed most educational handouts. Clinics' use of patient education materials followed two distinct patterns. Some doctors were "stockpilers," who relied on the clinic staff to develop and organize a common library of patient education handouts. Other doctors personally selected and maintained a small "personal stash" of handouts that addressed topics most relevant to their practice. This latter group used their limited selection of educational materials more often than providers with access to a greater variety and number of handouts (25 vs. 5 percent of observed visits in worst and best case scenarios).

Having too many handouts may have made it difficult for doctors to familiarize themselves with the materials or to locate the ones they wanted to use. Some doctors had more than 150 handouts available—which were pooled

contributions of doctors, nurses, office staff, and pharmaceutical representatives—and were intended for communal use by all providers in the clinic. The collections were usually maintained by a staff member, and most physicians were unfamiliar with the handouts. The authors suggest that the most practical way to disseminate patient education materials is for the doctors in each practice to choose and maintain a small number of patient educational materials particularly suited to their educational style, practice profile, and the perceived informational needs of their patients.

See "The organization and distribution of patient education materials in family medicine practices," by Kristine L. McVea, M.D., M.P.H., Meena Venugopal, M.D., Benjamin F. Crabtree, Ph.D., and Virginia Aita, Ph.D., in the April 2000 *Journal of Family Practice* 49(4), pp. 319-326. ■

## Outcomes/Effectiveness Research

### Waiting longer between pregnancies decreases the risk of premature birth

The number of premature infants born in the United States in the past decade increased by 8 percent. These infants suffer from more health problems and higher mortality rates than infants born at term. Previous studies have shown that short intervals between pregnancies are associated with a higher risk of low birthweight, but the effects on prematurity are unknown.

A recent study by researchers at the Medical Effectiveness Research Center for Diverse Populations at the University of California, San Francisco, shows that women with interpregnancy intervals from 18 to 59 months have the lowest risk of delivering premature infants. The study was supported in part by the Agency for Healthcare Research and Quality (HS07373).

Women whose interpregnancy interval (interval between the

end of one pregnancy and conception of the next one) is between 18 and 59 months have the lowest risk of giving birth to very premature (23-32 weeks' gestation) and moderately premature (33-37 weeks' gestation) infants, concludes this study. The researchers analyzed 289,842 single infants born in the first 9 months of 1991 to Mexican-American and non-Hispanic white

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## Intervals between pregnancies

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women who lived in the same U.S. county. Nearly 37 percent of the women had interpregnancy intervals less than 18 months, 45.5 percent had intervals of 18 to 59 months, and 17.6 percent had intervals over 59 months.

After adjusting for demographic, obstetric, and health-service factors affecting prematurity, the researchers found that women with less than 18 months between pregnancies were 14 to 47 percent more likely to have very premature and moderately premature infants than women with 18 to 59 months between pregnancies. Women with

intervals over 59 months were 12 to 45 percent more apt to have very premature and moderately premature infants than women with intervals of 18 to 59 months. Interpregnancy intervals less than 18 months were more strongly associated with very premature infants than with moderately premature infants. Women who had less than 6 months between pregnancies had the highest risk of delivering premature infants.

Women with short intervals between pregnancies may have more nutritional deficiencies than women with longer intervals because of the shorter time to replenish their bodies between pregnancies. This group of women

also may have more behavioral risk factors, such as tobacco or alcohol use, than women with longer intervals. Finally, women with short intervals are thought to experience more psychological or emotional stress than women with longer intervals. The authors call for studies to analyze the behavioral, nutritional, and psychological factors associated with interpregnancy intervals and prematurity.

Details are in "Interpregnancy interval and the risk of premature infants," by Elena Fuentes-Afflick, M.D., M.P.H., and Nancy A. Hessol, M.S.P.H., in the March 2000 *Obstetrics & Gynecology* 95(3), pp. 383-390. ■

## Quality of Care

### Quality of care measures need to account for socioeconomic and racial/ethnic disparities in health care

**C**urrent assessments of quality of care do not recognize disparities in health care quality related to socioeconomic status (SES) and race/ethnicity. In fact, considerable variation in care delivery within a health care plan can be masked because existing quality measures do not capture critical disparities, according to the authors of a recent commentary. For instance, under current National Committee for Quality Assurance (NCQA) reporting requirements, childhood immunizations or low birthweight rates from HMOs with affluent members may be compared with those from plans with predominantly working poor members, even though lower SES typically lowers performance ratings.

Similarly, a hospital can achieve acclaim for the success of its cardiac surgery program, yet escape notice for providing reduced access to effective treatments for minorities. These disparities signal an area potentially ripe for quality improvement, note Carolyn M. Clancy, M.D., of the Agency for Healthcare Research and Quality, Peter Franks, M.D., of the University of Rochester School of Medicine and Dentistry, and their colleagues. Their work was supported by the Agency for Healthcare Research and Quality. (HS09963).

The authors outline five proposals for integrating health care disparities into mainstream quality assurance. They propose collecting relevant and reliable data to address disparities and stratifying performance measures within existing quality measures by SES and race/ethnicity. For example, they recommend that managed care organizations not simply report overall rates of Pap smear screening among eligible women but also report separate rates by SES and race/ethnicity.

The NCQA and the Joint Commission on the Accreditation of Healthcare Organizations (JCAHO) can play vital roles by requiring the inclusion of SES and/or race/ethnicity in performance reports. The authors also propose linking reimbursement to the SES and racial/ethnic composition of the enrolled population. They suggest, for instance, that the Health Care Financing Administration expand reimbursement rates to include not only adjustment for case mix, but also SES and race/ethnicity to compensate plans for enrolling patients with greater morbidity not fully captured by case-mix adjustment. However, this

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## Quality of care measures

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strategy does not substitute for providing quality reports that are stratified by SES and/or race/ethnicity.

For more information, see “Inequality in quality: Addressing socioeconomic, racial, and ethnic

disparities in health care,” by Kevin Fiscella, M.D., M.P.H., Dr. Franks, Marthe R. Gold, M.D., M.P.H., and Dr. Clancy, in the May 17, 2000 *Journal of the American Medical Association* 283, pp. 2579-2584. Reprints (AHRQ Publication No. 00-R030) are available from AHRQ.\*\* ■

## Long-Term Care

### Experts recommend minimum nurse staffing standards for U.S. nursing homes

Several Federal and State studies have found that a number of nursing homes have seriously jeopardized the health and safety of their residents to the point of causing serious injury or death in some cases. These problems have been attributed in large part to inadequate nurse staffing. To address the issue of staffing and quality of care in nursing facilities, the Agency for Healthcare Research and Quality supported (HS09814) a 1-day conference of experts who met at New York University in April 1998.

The experts concluded that many nursing homes are indeed operating with inadequate nursing staff levels that need to be substantially improved. The expert panel recommended that there be one full-time registered nurse (RN) director of nursing in every nursing home and a full-time assistant director of nursing for facilities with 100 beds or more (proportionately adjusted for smaller facilities) to provide leadership and administration for complex nursing services. In addition, at least one RN nursing supervisor should be on duty on each shift 24 hours a day, 7 days a week, in each nursing home due to the complex care requirements of residents.

For 100-bed or larger facilities, the panel recommended a minimum of three RNs—representing 10 minutes per resident day—and a 24-hour RN

nursing supervisor (15 minutes per resident day) for a total of 25 administrative nursing minutes per resident day. Facilities of this size also should have a full-time RN director of in-service education to supervise an ongoing staff training program. In addition to the licensed RNs, licensed vocational nurses/licensed practical nurses (LVNs/LPNs) are needed to provide direct care of residents (assessments, treatments and medications, hands-on care, and supervision of nursing assistants).

The experts called for minimum ratios of one licensed nurse to every 15 residents during the day shift, 1.20 in the evenings, and 1.30 at night. They also called for a ratio of one direct caregiver (RNs, LVNs/LPNs, and nursing assistants) to five residents on the day shift, 1.10 for evenings, and 1.15 for nights. The panel recommended a shift away from the current use of nursing assistants as the primary direct caregivers. At least 14 minutes of the total 2.93 hours of direct resident care per day should be given by RNs or LPN/LVNs, according to the experts.

See “Experts recommend minimum nurse staffing standards for nursing facilities in the United States,” by Charlene Harrington, Ph.D., R.N., Christine Kovner, Ph.D., R.N., Mathy Mezey, Ph.D., R.N., and others, in *The Gerontologist* 40(1), pp. 5-16. ■

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## Transfers between nursing homes are fairly common, but barriers to transfer exist for some patients

The choice of a nursing home for a loved one may not be forever, according to a new study. In fact, nursing home residents often transfer to another nursing home at some point, primarily to receive different services or better care. However, barriers to transfer can prevent patients from moving, even when their health and family situations have changed.

Often, the choice of a nursing home is constrained by financial circumstances or the need to place the individual immediately. Also, even if the initial choice of nursing home is optimal, this may change as the individual's circumstances require more, fewer, or different specialized services. Given the growing specialization of nursing homes, it is becoming increasingly likely that some facilities are better able than others to provide particular services for certain residents.

However, having a less generous payment source (like Medicaid), having health limitations, and not having a spouse (who can advocate for transfers) may pose barriers to

residents who want to transfer to another nursing home, according to a recent study of all Maine and New York nursing home residents. The study was supported by the Agency for Healthcare Research and Quality (HS10118).

Richard A. Hirth, Ph.D., and his University of Michigan colleagues examined both the rate of home-to-home transfers and resident characteristics associated with the likelihood of transfer to gain insight into the constraints faced by residents and their families as they search for suitable care. The researchers analyzed a computerized database of nursing home assessments for residents in Maine and New York during 1994 through 1996 and the On-Line Survey Certification and Reporting System (OSCAR) files on nursing facility information for 1994-1996. They identified transfers by locating individuals with assessments in multiple facilities.

After omitting (censoring) data on patients who died or were discharged to the community without a rapid return to nursing home care, Maine's transfer rates

were consistently higher than New York's; only 61 percent of Maine's nursing home residents did not transfer within 5 years of admission versus 82 percent in New York. Transfers were most likely to occur during the first 6 months after admission in both States. Transfer rates declined during the first 3 years after admission and remained stable thereafter.

Correlates of transfers were similar across States. For instance, residents who transferred were more likely to be male, married, younger, and have better cognitive and physical health. They also were more apt to have Medicare or private payment sources (versus Medicaid) and to have pressure ulcers (which may have led them to pursue better care elsewhere).

For more information, see "Nursing home-to-nursing home transfers: Prevalence, time pattern, and resident correlates," by Dr. Hirth, Jane C. Banaszak-Holl, Ph.D., and John F. McCarthy, M.P.H., in the June 2000 *Medical Care* 38, pp. 660-669. ■

## Managed Care

### Direct access to specialists may not raise managed care plans' costs

Allowing managed care patients direct access to medical specialists may not necessarily increase physician costs for health plans, according to a recent study. The study of physician use by enrollees of an open-panel, point-of-service health maintenance organization (HMO) and enrollees of a closed-panel

gatekeeper HMO found no evidence of higher expenditures for specialists or for physician services overall in the point-of-service (POS) plan. Furthermore, only 3 percent of the POS plan enrollees used the services of specialists without first obtaining a referral from their primary care doctor. In fact, self-referred

patients accounted for less than one-tenth of the money spent by the POS plan for medical specialist services.

The study was supported by the Agency for Healthcare Research and Quality (HS09414) and led by José J. Escarce, M.D., Ph.D., of the RAND Health Program. Dr.

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## Direct access to specialists

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Escarce and colleagues examined physician claims between 1994 and 1995 for the visits of approximately 50,000 privately insured, working-age members enrolled in the two HMOs operated by the same Midwestern managed care organization. Physician visit copayments ranged from \$0 to \$15, depending on the contract the plan members' employers had with the managed care organization.

Members of the gatekeeper HMO had to obtain both their routine health care and referrals to medical specialists through a primary care physician they selected from among 1,152 generalists in a physician network shared by both plans. The POS plan's members also had to select a

primary care physician from the network and were encouraged to use that doctor for their routine care and for obtaining referrals. But the POS plan also provided generous coverage for self-referrals to the 1,692 medical specialists in the shared physician network. All the physicians in the network were independent contractors.

When the researchers examined claims for patients with no copayment requirement for either primary care physician visits or PCP-referred visits to specialists, they found that the overall cost of physician services was 4 percent higher in the gatekeeper HMO than in the POS plan. But when copayments were \$10, overall physician expenditures varied from being roughly equal for both plans to being 7 percent higher in the gatekeeper HMO, depending on the

amount of the copayments the self-referred POS-plan patients had to make when visiting specialists.

According to Dr. Escarce, the study provides an initial look at how point-of-service HMOs—which are increasing throughout the United States—affect patient demand for primary and specialty medical care. The study was funded as part of an AHRQ program to examine the impact of managed care plans' specialist referral policies on patient health, access to services, and costs.

For more information, see “Expenditures for physician services under alternative models of managed care,” by Kanika Kapur, Geoffrey Joyce, Krista A. Van Vorst, and Dr. Escarce in the June 2000 *Medical Care Research and Review*, 57, pp. 161-181. ■

## Managed care organizations make only limited use of New York State data on cardiac surgery mortality rates

Despite all the publicity about quality-of-care report cards for cardiac surgeons in New York State, managed care organizations (MCOs) appear to make only limited use of them when they decide to contract with cardiac surgeons, according to a survey of MCOs supported by the Agency for Healthcare Research and Quality (HS09803). Regardless of an expressed preference for high quality providers by the majority of MCOs—60 percent of those responding ranked the quality of surgeons as most important in their contracting considerations—analyses of actual contracting practices offered mixed results.

Sixty-four percent of New York MCOs indicated knowledge of the New York State Cardiac Surgery Reports, but only 20 percent said the reports were a major factor in their contracting decisions. Furthermore, analyses of the actual contracting patterns revealed that MCOs did not systematically select surgeons based on their reported mortality scores, nor did they systematically avoid surgeons designated as low-quality outliers. MCOs were, however, more likely to contract with high-volume

surgeons and surgeons designated in the report cards as high-quality outliers. It may be that, despite their survey responses, MCOs are currently more influenced by costs than by quality in their network choices, or that they use information other than the New York State-reported mortality data to evaluate quality, suggests Dana B. Mukamel, Ph.D.

Dr. Mukamel and colleagues at the University of Rochester encourage policy initiatives to increase the effective use of quality-of-care report cards. Their findings were based on telephone interviews with the majority of MCOs licensed in New York State and analysis of their contracting data. They also studied the New York State Cardiac Surgery Reports for risk-adjusted mortality rate (RAMR), quality designation, and procedure volume for all cardiac surgeons.

For more information, see “Do quality report cards play a role in HMOs' contracting practices? Evidence from New York State,” by Dr. Mukamel, Alvin I. Mushlin, M.D., Sc.M., David Weimer, Ph.D., and others, in the April 2000 *Health Services Research* 35, pp. 319-332. ■

## Hospitals often form alliances with physicians when the number of HMOs in an area increases

A new study casts doubt on the commonly held view that managed care penetration (proportion of the population enrolled in health maintenance organizations, HMOs) drives strategic alliances between hospitals and their physicians. The study concludes that the number of HMOs in an area is a more important determinant of physician-hospital integration than HMO penetration.

One explanation is that a greater number of HMOs in an area fosters increased competition and prompts the HMOs to develop contracting relationships. By forming such relationships, the HMOs can differentiate among themselves and provide members with access to the hospitals they want to use. On the other hand, hospital-physician alliances may simply be the result of supply and demand. The greater the number of HMOs in a market, the greater the number of firms that a hospital can contract with

and thus the greater the likelihood of obtaining a managed care contract.

To increase their chances of receiving such contracts, hospitals and their physician partners develop alliances to gain patients and market share. For instance, these researchers found that alliances were most likely to appear in markets in the upper two quartiles of HMO numbers (when the HMO count in a market exceeds four).

Alliances were least prevalent in markets with high HMO penetration but fewer HMOs. In such cases, individual HMOs may enjoy such power and control over provider reimbursement arrangements that alliances offer no negotiating advantage to area hospitals and physicians. Providers also may perceive that any efforts to develop integrated systems will be perceived by the dominant HMOs as potential competition,

and thus they are dissuaded from forming alliances.

These findings are based on a study of all short-term general hospitals in urban U.S. markets (316 metropolitan statistical areas) from 1993 to 1995. With support from the Agency for Healthcare Research and Quality (HS09237), Lawton R. Burns, Ph.D., M.B.A., and colleagues pooled data from the InterStudy HMO Census and the annual survey conducted by the American Hospital Association from 1993 through 1995 to examine the effects of HMO penetration and HMO numbers in a market on the formation of hospital-physician alliances.

See "Impact of HMO market structure on physician-hospital strategic alliances," by Dr. Burns, Gloria J. Bazzoli, Ph.D., Linda Dynan, Ph.D., and Douglas R. Wholey, Ph.D., in the April 2000 *Health Services Research* 35(1), pp. 101-132. ■

## Responses to current health care system changes are largely reactive and as fragmented as the changes themselves

Health care delivery is undergoing a profound restructuring as more Americans enroll in managed care organizations. Access to care—who gets which services and who decides—is a particularly complicated issue, especially because of the growing number of uninsured. Reactions to these changes in the health care system are as fragmented as the changes themselves, according to Carolyn M. Clancy, M.D., Director of the Agency for Healthcare Research and Quality's Center for Outcomes and Effectiveness Research. In a recent commentary, Dr. Clancy and her colleague Marion Danis, M.D., M.P.H., of the Department of Clinical Bioethics at the National Institutes of Health, note that 15 years of unsuccessful efforts to contain costs along with increased numbers of uninsured individuals culminated in a major effort to reform the entire U.S. health care system in 1993

and 1994. What emerged from that failure was a default consensus favoring market-based solutions.

Health care reform now refers to private sector innovations in health care delivery, with substantial discretion for priority setting delegated to negotiations between payers, providers, and health plans. This comes at a time when historic reliance on employer-based coverage is strained by shrinking rather than expanded coverage of workers. The authors note four challenges currently confronting our health care system. These are changing demographics to a more elderly population with chronic diseases; advances in technology (from organ transplantation and genetic diagnosis to breakthrough pharmaceuticals) that compete for limited resources; economic instability in world markets that make predictions about available resources for health care tenuous; and ethical

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## Health care system changes

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dilemmas such as privacy of personal health information and equitable resource allocation for vulnerable groups.

Responses to these challenges have been largely reactive, according to the authors. They recommend that the health services and ethics research communities study these issues to help Americans

make informed choices about health care priorities in the next century.

More details are in "Setting priorities American style," by Drs. Clancy and Danis, in Coulter, A., and Ham, C. (editors), *The Global Challenge of Health Care Rationing*. Philadelphia: Open University Press, February 7, 2000, pp. 52-59. Reprints (AHRQ Publication No. 00-R020) are available from AHRQ.\*\*



## Exportation of managed care to third-world countries may be detrimental rather than advantageous to their health

With managed care saturation in the United States and limited prospects in Europe, managed care organizations (MCOs) have turned their eyes toward third-world countries, especially those in Latin America. At the same time, third-world countries are under strong pressure by lending institutions such as the World Bank to accept managed care as one way to privatize their health and social security systems. However, a recent commentary by Howard Waitzkin, M.D., Ph.D., and Celia Iriart, Ph.D., of the University of New Mexico, suggests that this exportation of managed care may be detrimental to the health of people who live in third-world countries.

In fact, managed care executives note that a major factor in moving

their programs to Latin America is their access to the social security funds within these countries, which provide a source of new capital and profits. These are very large funds managed by government or publicly regulated agencies, which include health care and retirement benefits for many employed workers in large private or public enterprises. Latin American countries typically have established public sector health care institutions, including public hospitals and clinics, for the unemployed and others without insurance.

The authors cite several examples of the downside of managed care in Latin America. The copayments required under managed care plans have introduced barriers to care and

have increased strain on public hospitals and clinics. For example, in Chile, about 24 percent of patients covered by MCOs receive services annually in public clinics and hospitals because they cannot afford copayments. To apply for free care at public hospitals in Argentina and Brazil, indigent patients now must undergo lengthy means testing; at some hospitals the rejection rate for such applications averages between 30 and 40 percent. Latin American MCOs also have attracted healthier patients, while sicker patients gravitate to the public sector.

More details are in "How the United States exports managed care to third-world countries," by Drs. Waitzkin and Iriart, in the May 2000 *Monthly Review* 52, pp. 21-35. ■

## HIV/AIDS Research

### Length of survival of patients hospitalized for HIV infection vary according to the patient's race

Infection with the human immunodeficiency virus (HIV) that causes AIDS is spreading at a disproportionately faster rate among blacks and Hispanics. These groups are also more apt to be uninsured and have less access to care than other groups. However, the shorter survival of HIV-infected Hispanics compared with HIV-infected blacks and

whites is not explained by less access to general care or by HIV-specific treatment of Hispanics, according to a study supported in part by the Agency for Healthcare Research and Quality (minority supplement to HIV outcomes grant HS06775). The study findings

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## Survival of HIV patients

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were based on a 6-year followup of 200 adults with moderately advanced disease (mean CD4 count of 142), who were hospitalized at seven Los Angeles area hospitals for HIV-related illness during 1992 and 1993.

Researchers at the University of California, Los Angeles, compared the relative risk of 6-year mortality for Hispanic, black, and white patients, after controlling for sociodemographic factors (for example, access to care and insurance) and clinical characteristics (for example, severity of illness and disease stage). Overall, Hispanics had double the risk of dying during the 6 years than whites. Hispanics had median survival times that were more than 8 months shorter than whites (16 vs. 24 months) and less than half that of blacks (16 vs. 35 months).

Neither patient sociodemographic or clinical characteristics, nor general access to care (for instance, insurance or regular care provider) or AIDS-specific treatment (for example, use of antiretroviral medications) prior to hospitalization, eliminated or diminished the effect of Hispanic ethnicity on lower rates of survival. Patient age and sex were not significantly associated with survival. The researchers cite the urgent need to develop interventions to overcome gaps in the health system serving the growing number of Hispanics with HIV disease.

For more details, see "Ethnic and racial differences in long-term survival from hospitalization for HIV infection," by William E. Cunningham, M.D., M.P.H., David M. Mosen, Ph.D., Leo S. Morales, M.D., M.P.H., and others, in the *Journal of Health Care for the Poor and Underserved* 11(2), pp. 163-178, 2000. ■

## Announcements

### AHRQ congratulates new dissertation grant recipients

**C**ongratulations to the recipients of newly awarded grants for dissertation research. These grants, which are funded by the Agency for Healthcare Research and Quality, will provide essential training and research experience to a new cadre of health services researchers. We also acknowledge and thank all the mentors/advisors of these newly funded grantees. As mentors and advisors, you are providing valuable leadership and guidance to the following students/trainees.

Jeannette G. Breugelmans  
Grant HS10786  
Johns Hopkins Asthma and Allergy Center  
Javier F. Nieto, M.D., advisor

Chyi-Kong (Karen) Chang  
Grant HS10843  
University of Illinois at Chicago  
Shu-Pi Chen, Dr.P.H., advisor

Katharine C. Cook  
Grant HS10762  
University of Virginia  
Barbara J. Parker, Ph.D., advisor

William Corser  
Grant HS10792  
University of Wisconsin, Madison  
Vivian Littlefield, Ph.D., advisor

Alison Evans Cuellar  
Grant HS10760  
University of California, Berkeley  
Paul Gertler, Ph.D., advisor

Robert Alan DeGraaff  
Grant HS10800  
University of Pennsylvania  
Lawton R. Burns, Ph.D., advisor

Lucie Lancaster Ferguson  
Grant HS10796  
University of Virginia  
Sharon Utz, Ph.D., advisor

Elizabeth A. Gollub  
Grant HS10787  
Florida International University  
Dian O. Weddle, Ph.D., advisor

Neil Jordan  
Grant HS10791  
University of Minnesota  
A. Marshall McBean, M.D.,  
advisor

Tong Li  
Grant HS10795  
University of Medicine and  
Dentistry of New Jersey  
George G. Rhoads, M.D., advisor

Jong W. Min  
Grant HS10785  
University of California, Los  
Angeles  
Aille Moon, Ph.D., advisor

Maureen Marie O'Brien  
Grant HS 10839  
University of Colorado Health  
Sciences Center  
A. Laurie Shroyer, Ph.D., advisor

Jennifer D. Uhrig  
Grant HS10797  
Pennsylvania State University  
Pamela Farley Short, Ph.D., advisor

Andrea Weiner  
Grant HS10794  
University of Minnesota  
Robert Kane, M.D., advisor ■



## National Advisory Council member receives AUPHA award

**K**aren Davis, Ph.D., a member of the Agency for Healthcare Research and Quality's National Advisory Council and President of the Commonwealth Fund, has been named winner of the 2000 Baxter Allegiance Foundation Prize for Health Services Research. The prize, funded by the Baxter Allegiance Foundation and administered by the Association of University Programs in Health Administration (AUPHA), is the highest research honor in the field of health services research.

Dr. Davis, an economist, was presented with the \$25,000 award at AUPHA's annual meeting held June 22-25, in Los Angeles. She is being honored for her contributions to health services research, particularly

for her role as a leader in national health policy and her scholarly analysis of access to health care among disadvantaged populations.

Before joining the Commonwealth Fund, Dr. Davis served as chair of the Department of Health Policy and Management at the School of Hygiene and Public Health at Johns Hopkins University and held an appointment as professor of economics at the university. Dr. Davis served as Deputy Assistant Secretary for Health Policy in the Department of Health and Human Services in the late 1970s, and she was the first woman to head a U.S. Public Health Service agency. ■

**Attention researchers:** A 3-day methods seminar on "Using Federal and State Databases" will be held October 30-November 1, 2000, in Washington DC. The first day will include an overview of selected Federal and State databases, lessons learned from the field, and information on Federal and State efforts to protect patient privacy. For the following 2 days, participants can choose any two of six day-long tracks on specific Federal and State databases. The seminar is being presented by the Academy for Health Services Research and Health Policy (formerly the Association for Health Services Research) with four Federal cosponsors: the Agency for Healthcare Research and Quality, the Department of Veterans Affairs, the Health Care Financing Administration, and the National Center for Health Statistics. Two AHRQ databases will be covered during the seminar: the Medical Expenditure Panel Survey (MEPS, a survey of health care use, expenditures, and insurance coverage) and the Healthcare Cost and Utilization Project (HCUP, a family of State and nationwide administrative health care databases). Go to [www.ahsr.org/seminars/fall2000.htm](http://www.ahsr.org/seminars/fall2000.htm) for more information or to register for the seminar. ■

## Grant final reports available

**T**he following grant final reports are now available for purchase from the National Technical Information Service (NTIS). Each listing identifies the project's principal investigator (PI), his or her affiliation, grant number, and project period and provides a description of the project. See the back cover of *Research Activities* for ordering information.

***Computer Records, Guidelines, Quality, and Efficient Care.***  
**Clement J. McDonald, M.D.,**  
**Indiana University, Indianapolis.**

### **AHRQ grant HS07719, project period 7/1/94-6/30/99.**

The use of practice guidelines and computer systems may improve care and reduce costs. These researchers conducted an 18-month, randomized controlled trial of computer reminders versus no computer reminders. The reminders implemented national guidelines, utilized data from the patient's electronic medical record, and were incorporated into a computerized order entry system. Of nearly 6,400 patients hospitalized a total of 10,000 times on the general medicine ward and attended

by 200 physicians, 68 percent had at least one computer-generated reminder. Patients whose doctors received computer reminders were significantly more likely to receive orders for pneumococcal vaccination, influenza vaccination, subcutaneous heparin, and aspirin on discharge than were control patients. Additional studies involved a trial of automated standing orders and validation of an in-hospital questionnaire detailing patient symptoms and functional characteristics. (Abstract, executive summary, and

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## Grant final reports

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final report, NTIS accession no. PB2000-105023; 38 pp, \$25.50 paper, \$12.00 microfiche)\*\*\*

***Medicaid Changes: Impact on At-Risk Children.* Laurel K. Leslie, M.D., Children's Hospital Research Center, San Diego, CA. AHRQ grant HS09563, project period 9/30/97-9/29/99.**

This research capitalized on an ongoing randomized clinical trial, the Healthy Families of San Diego (HFSD) trial, investigating the impact of paraprofessional home visitation services on 488 mother-infant pairs in San Diego County who were identified at delivery as being at high risk for possible child abuse and neglect. Families enrolled in the longitudinal trial served as a cohort to examine the impact of mandatory Medicaid managed care enrollment on access to and use of health care services by the 488 mother-infant pairs who were tracked for a 2-year period. Children without insurance had decreased access to and use of care. Medicaid managed care enrollment did not negatively impact on access, use, or continuity of care; it positively affected compliance with well-visits compared with private insurance and lack of insurance. These findings are preliminary, since data collection and analysis efforts will continue under separate funding through the end of the HFSD trial in October 2000. (Abstract, executive summary, and

final report, NTIS accession no. PB2000-105025; 128 pp, \$36.00 paper, \$17.00 microfiche)\*\*\*

***Required Request: Determinants of Family Consent.* Laura A. Siminoff, M.A., Ph.D., Case Western Reserve University, Cleveland, OH. AHRQ grant HS08209, project period 9/1/96-12/31/99.**

To examine the factors affecting decisions regarding the donation of organs, tissues, and corneas, the researchers recruited 420 organ-donor-eligible families from nine acute care general hospitals in two metropolitan areas. This 4-year study collected analogous data from two sources: donor-eligible patients' families and the health care providers and relevant OPO (organ procurement organization) staff directly involved in requesting donation. Cases were identified through prospective review of all deaths at study hospitals. The study found that almost 80 percent of all eligible families were asked to donate organs, but only 46.2 percent actually agreed to donate. Major factors associated with lack of consent were older age of patients, black race, less time spent discussing donor-related issues, less time spent with the organ procurement personnel, and less positive beliefs about organ donation and transplantation prior to hospitalization. The study identifies areas that are potentially amenable to public education and in-hospital interventions. (Abstract, executive summary and final

report, NTIS accession no. PB2000-105180; 40 pp, \$25.50 paper, \$12.00 microfiche)\*\*\*

***Understanding Health Values of HIV-Infected Patients.* Joel Tsevat, M.D., M.P.H., University of Cincinnati Medical Center, Cincinnati, OH. AHRQ grant HS09103, project period 9/1/96-12/31/97.**

Previous studies of health values (utilities) of HIV-infected patients have shown that they often place high value on their current state of health, indicating a strong will to live, but that such values do not correlate well with the patient's actual health status. Using a mix of focus groups (six groups with 34 HIV-infected patients, total) and in-depth individual interviews (51 additional HIV-infected patients), the researchers determined health ratings and health-related values and asked the patients to compare their lives with and prior to HIV infection. Nearly half (49 percent) said that their lives were better than when they were HIV-negative, and 29 percent said their lives were worse. Patients who felt their lives were better were more likely to be past or present users of injected drugs, single, and satisfied with life. A strong will to live was most common among patients with higher health ratings, patients who felt at peace, male patients, and patients with children. (Abstract, executive summary, and final report, NTIS accession no. PB98-142342; 72 pp, \$27.00 paper, \$12.00 microfiche)\*\*\* ■

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## AHRQ awards new research projects

The Agency for Healthcare Research and Quality has funded nine new research projects in five areas: patient decisionmaking, child health, elderly care, women's health, and physician practice style. The funding for these new projects is anticipated to total \$11.4 million over a 2- to 4-year period. The Agency also has funded a number of other research, dissertation, and conference grants. The newly funded projects are:

### *Patient Decisionmaking*

**Measuring interpersonal processes in diverse patients.** Anita Stewart, M.D., principal investigator; University of California, San Francisco. \$798,184; 7/1/00–6/30/03, grant HS10599.

The researchers will examine the interpersonal processes of care—such as communication and shared decisionmaking—that occur between patients and clinicians and assess the effects of these interpersonal processes on the disparities in health and health care that exist across racial and ethnic groups.

**Information interpretation in patient decision support.** Margaret M. Holmes-Rovner, Ph.D., principal investigator; Michigan State University, East Lansing. \$845,625; 8/1/00–7/31/02, grant HS10608.

This study will examine the types of information commonly used by clinicians to communicate with patients about the risks and benefits of treatment, such as patient interviews, graphs and diagrams, and statistical information. The researchers will focus on comprehension and interpretation of health information by people of different races with different levels of education.

**A patient activation approach to improving diabetes care.** Russell E. Glasgow, Ph.D., principal investigator; AMC Cancer Research Center, Denver, CO. \$3,393,759; 4/5/00–3/31/04, grant HS10123.

This randomized controlled trial will address diabetes self-management and improved practice adherence to recommended guidelines for adult patients with type 2 diabetes. It will involve nearly 1,000 patients drawn from 32 diverse primary care practices in Colorado and neighboring States.

### *Child Health*

**Otitis media: Parent education to avoid antibiotic use.** David P. McCormick, M.D., principal investigator; University of Texas Medical Branch, Galveston. \$1,149,167; 3/1/00–2/28/03, grant HS10613.

The goal of this project is to establish the safety, efficacy, cost, and acceptability of withholding antibiotics from children with mild acute otitis media and substituting nonantibiotic, symptomatic treatment, parent education, and careful followup of children with this common condition.

**Regionalization, market forces, and neonatal mortality.** Ciaran S. Phibbs, Ph.D., principal investigator; Palo Alto Veterans Affairs Medical Center, Menlo Park, CA. \$952,262 (AHRQ's contribution totals \$380,905); 4/1/00–3/31/04, grant HD36914.

This study of neonatal intensive care units (NICUs) will use data from California to assess neonatal mortality differences over time, examine the relationship between total NICU volume and the volume of newborns in specific high-risk groups, look at the relationship between type of insurance coverage and neonatal mortality over time, and examine how competition and the increased use of market forces to control costs have affected the diffusion of NICUs into community hospitals. Co-funded by AHRQ and the National Institute of Child Health and Human Development.

### *Elderly Care*

**Benefits of regionalizing surgery for Medicare patients.** John D. Birkmeyer, M.D., principal investigator; Dartmouth College, Hanover, NH. \$831,288; 4/1/00–3/31/03, grant HS10141.

The researchers will use Medicare hospital discharge data for patients who had any of 10 specified high-risk procedures to investigate the effects on mortality of shifting care from low-volume (high-risk) to high-volume (low-risk) hospitals.

**Assisted living and health system use.** Charles D. Phillips, Ph.D., principal investigator; Myers Research Institute, Beachwood, OH. \$427,820; 6/1/00–5/31/02, grant HS10606.

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## New research projects

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This project will examine how the characteristics of assisted living facilities affect the ways in which residents interact with the health and long-term care systems, specifically their use of Medicare-covered health services and transitions to other care settings.

### *Women's Health*

**Evaluation of postnatal and postpartum care programs. Jutta Joesch, Ph.D., principal investigator; Battelle Memorial Institute, Seattle, WA. \$764,683; 3/1/00–11/30/01, grant HS10138.**

The goals of this study are to examine new mothers' use of health services after hospital discharge—including factors that influence their decisions about use—and determine the impact of medical care use patterns on health status and breastfeeding.

### *Physician Practice Style*

**Managed care, financial incentives, and physician practice. Carol Simon, Ph.D., principal investigator; Boston University School of Public Health. \$2,289,135; 3/1/00–2/28/03, grant HS10596.**

The researchers will examine how physician behavior is affected by financial and nonfinancial incentives, practice characteristics and competitive environment, and patient factors, as well as physician awareness of incentives put in place by managed care organizations.

### *Other Research Grants*

#### **Biofeedback and urinary incontinence in older women**

Project director: Elizabeth Dugan, Ph.D.  
Organization: Wake Forest University  
Winston-Salem, NC  
Project number: AHRQ grant HS10663  
Project period: 7/1/00 - 6/30/01  
Funding: \$66,016

#### **Care management by a nurse practitioner/hospitalist team**

Project director: Marie J. Cowan, Ph.D.  
Organization: University of California  
Los Angeles, CA  
Project number: AHRQ grant HS10734  
Project period: 7/1/00 - 6/30/03  
First year funding: \$734,780

#### **Measurement of women's satisfaction with primary care**

Project director: Carol S. Weisman, Ph.D.  
Organization: University of Michigan  
Ann Arbor, MI  
Project number: AHRQ grant HS10237  
Project period: 7/1/00 - 12/3/01  
First year funding: \$551,588

#### **Measuring interpersonal processes in diverse patients**

Project director: Anita Stewart, M.D., Ph.D.  
Organization: University of California  
San Francisco, CA  
Project number: AHRQ grant HS10599  
Project period: 7/1/00 - 6/30/03  
First year funding: \$304,673

#### **UAB CERT on Musculoskeletal Disorders**

Project director: Kenneth G. Saag, M.D.  
Organization: University of Alabama  
Birmingham, AL  
Project number: AHRQ grant HS10389  
Project period: 7/1/00 - 6/30/03  
First year funding: \$265,441

### *Dissertation Grants*

#### **Analysis of acquisitions by medical device manufacturers**

Project director: Robert A. De Graaff, B.S.  
Organization: University of Pennsylvania  
Philadelphia, PA  
Project number: AHRQ grant HS10800  
Project period: 7/1/00 - 6/30/01  
Funding: \$24,904

#### **Beneficiary use of quality reports for Medicare plans**

Project director: Jennifer D. Uhrig  
Organization: Pennsylvania State  
University  
University Park, PA  
Project number: AHRQ grant HS10797  
Project period: 4/15/00 - 3/14/01  
Funding: \$32,268

#### **Changing markets and hospitals**

Project director: Alison Evans-Cuellar, M.B.A.  
Organization: University of California  
Berkeley, CA  
Project number: AHRQ grant HS10760

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## New research projects

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Project period: 6/15/00 - 6/14/01  
Funding: \$17,770

### Effect of formal home care services on caregiver burden

Project director: Andrea Weiner, B.A.  
Organization: University of Minnesota  
Minneapolis, MN  
Project number: AHRQ grant HS10794  
Project period: 6/15/00 - 6/14/01  
Funding: \$32,129

### Making care decisions for cognitively impaired parents

Project director: Katharine C. Cook, M.S.  
Organization: University of Virginia  
Charlottesville, VA  
Project number: AHRQ grant HS10762  
Project period: 7/1/00 - 8/31/01  
Funding: \$29,676

### Measuring patient-perceived nursing care quality

Project director: Chyi-Kong Chang, M.S.N.  
Organization: University of Illinois  
Chicago, IL  
Project number: AHRQ grant HS10843  
Project period: 6/15/00 - 6/14/01  
Funding: \$31,612

### Measuring quality of life during treatment for sleep apnea

Project director: Jeannette Breugelmanns, M.S.  
Organization: Johns Hopkins University  
Baltimore, MD  
Project number: AHRQ grant HS10786  
Project period: 6/15/00 - 6/14/01  
Funding: \$32,241

### Patient outcomes related to discharge planning collaboration

Project director: William Corser, M.S.N.  
Organization: University of Wisconsin  
Madison, WI  
Project number: AHRQ grant HS10792  
Project period: 6/15/00 - 6/14/01  
Funding: \$32,400

### Physician cesarean rate and risk-adjusted birth outcomes

Project director: Tong Li, M.S.  
Organization: University of Medicine and  
Dentistry of New Jersey  
Piscataway, NJ  
Project number: AHRQ grant HS10795  
Project period: 6/15/00 - 6/14/01  
Funding: \$30,942

### Processes predictive of CABG complications

Project director: Maureen O'Brien, M.S.  
Organization: University of Colorado  
Denver, CO  
Project number: AHRQ grant HS10839  
Project period: 6/15/00 - 6/14/01  
Funding: \$32,400

### Racism, racial identity, and blood pressure

Project director: Lucie Ferguson, M.P.H.  
Organization: University of Virginia  
Charlottesville, VA  
Project number: AHRQ grant HS10796  
Project period: 6/15/00 - 6/14/01  
Funding: \$32,210

### Conference Grants

#### Continence for women: State of the science conference

Project director: Karen J. Kelly Thomas, Ph.D.  
Organization: Association for Women's  
Health, Obstetric & Neonatal  
Nurses  
Washington, DC  
Project number: AHRQ grant HS10107  
Project period: 6/1/00 - 5/31/01  
Funding: \$19,914

#### Developing a Latino health agenda for 2010

Project director: Hector G. Balcazar, Ph.D.  
Organization: University of North Texas  
Fort Worth, TX  
Project number: AHRQ grant HS10079  
Project period: 5/16/00 - 9/29/00  
Funding: \$19,200

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## New research projects

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### Evidence-based health care workshop

Project director: Phoebe Barton, Ph.D.  
Organization: University of Colorado  
Denver, CO  
Project number: AHRQ grant HS10102  
Project period: 7/1/00 - 6/30/01  
Funding: \$24,885

### Social marketing tools for improving health programs

Project director: Karen Denard Goldman, Ph.D.  
Organization: Lehman College/City  
University of New York  
Bronx, NY  
Project number: AHRQ grant HS10104  
Project period: 6/1/00 - 5/31/01  
Funding: \$35,501 ■

### Methods to improve data on PPO performance

Project director: Lisa Greenberg, M.P.H.  
Organization: American Accreditation  
Healthcare  
Commission/URAC  
Washington, DC  
Project number: AHRQ grant HS10105  
Project period: 7/1/00 - 6/30/01  
Funding: \$50,000

## Research Briefs

**Edelstein, B.L., Manski, R.J., and Moeller, J.F. (2000). "Pediatric dental visits during 1996: An analysis of the Federal Medical Expenditure Panel Survey." *Pediatric Dentistry* 22(1), pp. 17-20.**

National data are available on dental health status and associated disparities by income and race, but data are scant on use of dental services by children. John F. Moeller, Ph.D., of the Agency for Healthcare Research and Quality's Center for Cost and Financing Studies and his colleagues analyzed data from the Agency's 1996 Medical Expenditure Panel Survey (MEPS) to determine the percentage of children who made a dental visit and the number of visits made by children according to age, sex, ethnic/racial background, family income, and parental education. They found that 43 percent of children up to the age of 18 years of age made at least

one visit to the dentist in 1996. Among children who saw a dentist, the average number of visits during 1996 was 2.7. Low income, low education, and minority race were associated with lower odds of visiting the dentist at all and a lower number of visits per child. Children under 6 years of age had less than half the dental visit rate of older children. Article reprints (AHRQ Publication No. 00-R024) are available from AHRQ.\*\*

**Stein, J.A., Andersen, R.M., Koegel, P. and Gelberg, L. (2000). "Predicting health services utilization among homeless adults: A prospective analysis." (AHRQ grant HS06696). *Journal of Health Care for the Poor and Underserved* 11(2), pp. 212-229.**

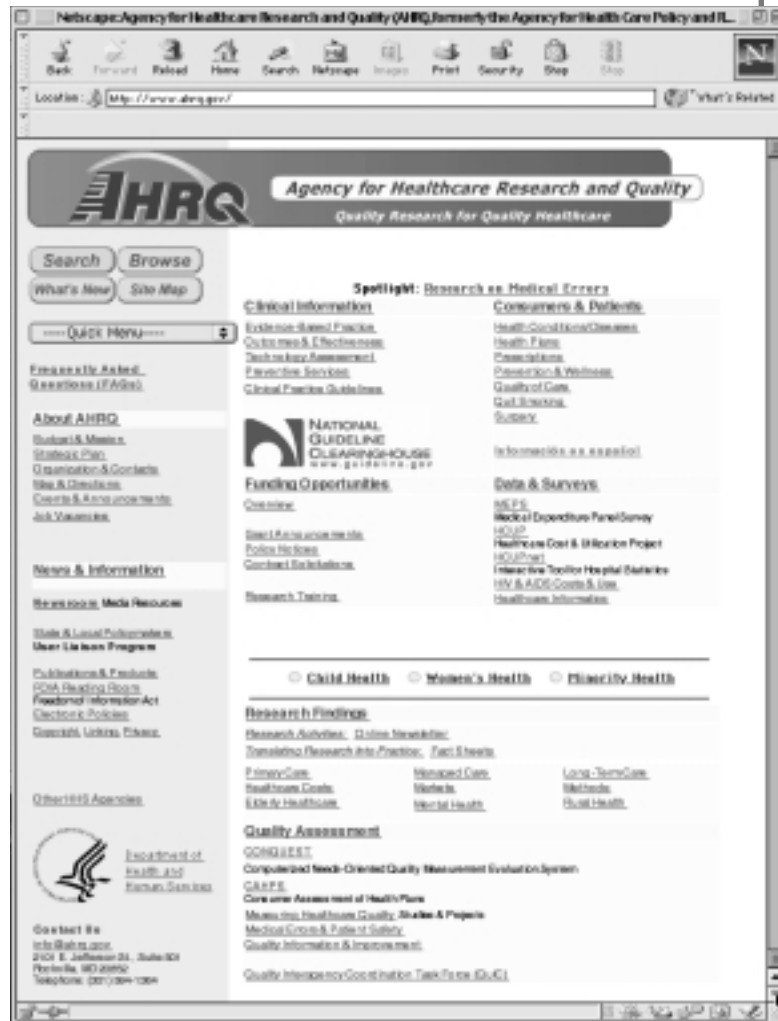
Research on the health of homeless people has often focused on mental illness and substance abuse. However, homeless people experience many other health

problems and encounter major difficulties in accessing care. This study expands a health services utilization model to predict use of health services among a community-based sample of 363 homeless adults. Poor physical health, more barriers to care, drug use, black race, less community support, and less education predicted hospitalization. Poor health, female sex, having a regular source of care, community support, drug use, and fewer alcohol problems predicted an office visit. Outpatient visits for acute conditions provide an opportunity for generally neglected preventive services and health screenings in this group of patients. The researchers recommend development of multiservice, health-related programs for the homeless that include drug and alcohol treatment. ■

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