



# Research Activities

No. 266, October 2002

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## Preventive Services Task Force urges routine osteoporosis screening for women 65 and older

The U.S. Preventive Services Task Force has issued its recommendation that women 65 and older be routinely screened for osteoporosis to reduce the risk of fracture and spinal abnormalities often associated with the disease. The Task Force also recommends that routine screening begin at 60 for those women identified as high risk because of their weight or estrogen use.

The Task Force is an independent panel of experts sponsored by the Agency for Healthcare Research and Quality. These recommendations, which appear in the September 17, 2002 issue of the *Annals of Internal Medicine*, mark the first time the Task Force has called for routine osteoporosis screening.

Osteoporosis, a condition that occurs when bone tissue thins or develops small holes, can cause pain, broken bones, and loss of body height. For women who live to be 85, approximately 50 percent will have an osteoporosis-related fracture during their lives, 25 percent of these women will develop an abnormality of the

spine, and 15 percent will fracture their hip.

Age is the greatest risk factor for osteoporosis. The Task Force found that 12 percent to 28 percent of women 65 and older have osteoporosis and that the proportion increases with age. The Task Force concluded that screening and treating women in this age group would prevent the greatest number of fractures. Although the risk of osteoporosis and fracture is lower in women 60 to 64, the Task Force concluded that it was sufficiently high in a subgroup of these women (those under 154 pounds and not using estrogen) to justify selective screening in this age group. Although screening women without risk factors and those under 60 may detect additional cases of osteoporosis, the Task Force concluded that the number of fractures that might be prevented was too small to make a general recommendation for screening those women. The Task Force instead advised clinicians to

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## Osteoporosis screening

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use their judgment in deciding which women to screen.

The Task Force found that dual-energy x-ray absorptiometry (DEXA), a noninvasive test, is the most accurate method for measuring bone density. DEXA of the hip (which can cost between \$125 and \$200 depending on whether it is performed in a physician's office or hospital) is the best predictor of hip fracture, but bone density of the hand, wrist, forearm, and heel (which can cost between \$38 and \$75) also can be measured to detect risk. Medicare Part B covers DEXA screening for women 65 and older once every 2 years if their physicians determine that they are at risk for bone loss.

The U.S. Food and Drug Administration has approved various medications for the treatment of osteoporosis, including calcitonin, bisphosphonates such as alendronate and risedronate, and selective estrogen-receptor modulators such as raloxifene. According to the Task Force, each

of these treatments has potential benefits and harms.

The Task Force, the leading independent panel of private-sector experts in prevention and primary care, conducts rigorous, impartial assessments of all the scientific evidence for a broad range of preventive services. Its recommendations are considered the gold standard for clinical preventive services. The Task Force based its conclusion on a report from a team led by Heidi Nelson, M.D., M.P.H., and Mark Helfand, M.D., M.P.H., from AHRQ's Evidence-based Practice Center at Oregon Health & Science University in Portland.

The Task Force grades the strength of the evidence as "A" (strongly recommends), "B" (recommends), "C" (no recommendation for or against), "D" (recommends against) or "I" (insufficient evidence to recommend for or against screening).

In 1996, the Task Force found insufficient evidence to recommend for or against osteoporosis screening (an "I" recommendation).

Now, after reviewing new clinical trial data that showed various medications can reduce the risk of fracture, the Task Force recommends that clinicians

routinely provide screening for women 65 and older and those 60 to 64 who have risk factors for osteoporosis (a "B" recommendation). The Task Force made no recommendation for or against osteoporosis screening for women without risk factors and those under 60 (a "C" recommendation).

The osteoporosis recommendations and materials for clinicians are available on the AHRQ Web site at <http://www.ahrq.gov/clinic/3rduspstf/osteoporosis/>. Previous Task Force recommendations, summaries of the evidence, easy-to-read fact sheets explaining the recommendations, and related materials are also available from AHRQ. See the back cover of *Research Activities* for ordering information. Clinical information also is available from the National Guideline Clearinghouse™ at <http://www.guideline.gov>

**Editor's note:** For more information, see "Screening for postmenopausal osteoporosis: A review of the Evidence for the U.S. Preventive Services Task Force," by Heidi D. Nelson, M.D., M.P.H., Mark Helfand, M.D., M.P.H., Steven H. Woolf, M.D., M.P.H., and Janet D. Allan, Ph.D., R.N., in the September 17, 2002 *Annals of Internal Medicine* 137(6), pp. 529-541. ■

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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

## Use of the less expensive streptokinase over tPA is difficult to justify for some heart attack patients

Heart attack patients are commonly treated with thrombolytic medications such as tissue plasminogen activator (tPA) and streptokinase to break up and prevent blood clots that could worsen their condition. The more potent tPA costs roughly \$2,000 more per dose than streptokinase in the United States and has not been universally adopted. However, for selected heart attack patients, use of tPA yields substantially better outcomes than streptokinase, and use of the less expensive agent is difficult to justify, concludes a study supported in part by the Agency for Healthcare Research and Quality (National Research Service Award training grant T32 HS00070 and HS08212).

Researchers led by Harry P. Selker, M.D., M.S.P.H., and Joni R. Beshansky, R.N., M.P.H., of Tufts University School of Medicine, developed a mathematical model to select patients likely to benefit from tPA compared with streptokinase based on a computerized electrocardiogram-based instrument, which uses clinical and electrocardiographic variables to

predict outcomes in heart attack patients with and without thrombolytic therapy. They used this model to predict the benefits of tPA therapy in 24,146 patients with occluded coronary arteries and compared these predictions with the actual benefits of tPA, after classifying patients by their risks of death and intracranial hemorrhage.

Their model, confirmed by patient outcomes, predicted that among heart attack patients, 61 percent of the benefit of tPA use in reducing mortality accrued to only 25 percent of patients (who gained a 2 percent mortality benefit). Treating half of all patients could capture 85 percent of the benefit but not when the risk of intracranial hemorrhage was included in the model. Targeting tPA to just the highest benefit half would save more than \$100 million and more than 300 lives. Patients most likely to benefit from tPA were older, more frequently had anterior wall infarcts, had lower systolic blood pressure, and were treated sooner after the onset of symptoms than low-benefit patients.

For more information, see “An independently derived and validated predictive model for selecting patients with myocardial infarction who are likely to benefit from tissue plasminogen activator compared with streptokinase,” by David M. Kent, M.D., M.S., Rodney A. Hayward, M.D., John L. Griffith, Ph.D., and others, in the August 1, 2002 *American Journal of Medicine* 113, pp. 104-11. ■

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## Giving newborns erythromycin in the first 2 weeks of life increases their risk of gastric outlet obstruction

Infants who receive the antibiotic erythromycin between 3 and 13 days of life are at substantially increased risk of developing infantile hypertrophic pyloric stenosis (IHPS), a condition that results in gastric outlet obstruction that requires surgery. Symptoms include projectile vomiting,

dehydration, weight loss, and electrolyte abnormalities, with death occurring rarely. Infants who receive erythromycin after 13 days of life or are given antibiotics other than erythromycin are not at increased risk of IHPS, according to a study supported in part by the

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## Erythromycin use in newborns

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Agency for Healthcare Research and Quality (HS10384).

To examine the link between erythromycin and IHPS, researchers at the Vanderbilt University Center for Education and Research in Therapeutics (CERT) analyzed Tennessee Medicaid files from 1985 to 1997. They studied files of infants discharged with a diagnosis of IHPS and prescription files showing erythromycin or other antibiotic exposure between 3 and 90 days of life. Of the 804 infants who met the criteria for IHPS (2.6

of every 1,000 infants), receipt of erythromycin between 3 and 13 days of life, but not later, was associated with a nearly 8-fold increased risk of pyloric stenosis.

Infants were prescribed erythromycin and other antibiotics for conditions ranging from conjunctivitis and respiratory infections to pneumonia and impetigo. It has been hypothesized that erythromycin interacts with receptors of motilin, a hormone that increases movement of the gastrointestinal tract, inducing strong gastric and pyloric bulb contractions. These, in turn, result in enlargement of the pylorus, the passage at the lower end of the

stomach that opens into the duodenum. The researchers conclude that physicians should carefully weigh the risks and benefits of erythromycin prior to initiating such therapy in young infants, and that, when possible, they should avoid prescribing erythromycin for infants younger than 2 weeks of age.

See "Very early exposure to erythromycin and infantile hypertrophic pyloric stenosis," by William O. Cooper, M.D., M.P.H., Marie R. Griffin, M.D., M.P.H., Patrick Arbogast, Ph.D., and others, in the July 2002 *Archives of Pediatric and Adolescent Medicine* 156, pp. 647-650. ■

## Outcomes/Effectiveness Research

### Late referral to specialty care contributes to poor outcomes among patients with kidney failure

More than 300,000 Americans suffer from end-stage renal disease (ESRD, kidney failure) and must be treated with dialysis (renal replacement therapy) or kidney transplantation to survive. Patients who receive transplants have higher life expectancy, better quality of life, and consume fewer health care resources than those who remain on dialysis.

In two recent studies, investigators supported in part by the Agency for Healthcare Research and Quality (HS09398) examined the impact of late nephrologist referral (90 days or less before beginning dialysis) on the care of these patients. The first

study found that late referral significantly reduced the likelihood of renal transplantation among ESRD patients. The second study revealed that ESRD patients referred to a nephrologist late were far more likely to have a central venous access (which is more prone to complications and infections) than a surgically created vascular access for hemodialysis than those seen by a nephrologist early. Both studies are summarized here.

**Winkelmayer, W.C., Glynn, R.J., Levin, R., and others. (2002, June). "Late nephrologist referral and access to renal**

**transplantation." *Transplantation* 73, pp. 1918-1923.**

Older age, minority race, being female, and lower socioeconomic status all have been associated with reduced access of ESRD patients to renal transplantation. However, this study found that delayed referral of renal patients to a nephrologist significantly reduced the likelihood of renal transplantation, independent of these sociodemographic factors and the patients' coexisting medical conditions. The investigators examined New Jersey Medicaid and Medicare patients with new-onset chronic kidney dialysis, who had been diagnosed with renal

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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.

## Kidney failure

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disease more than 1 year before beginning dialysis. They matched 32 transplant recipients with 197 controls who shared the recipients' age, sex, race, and year of onset of dialysis but had not received a transplant on the index date (number of days from onset of dialysis to transplantation).

The researchers evaluated the impact of late referral, socioeconomic status, and coexisting conditions (comorbidity) in the year before the index date on likelihood of transplantation (either by living-related, living-unrelated, or cadaver donor). Late nephrologist referral was associated with a 78 percent lower rate of renal transplantation. Lower socioeconomic status was associated with 82 percent lower likelihood of transplantation. Finally, the likelihood of receiving a transplant declined by 31 percent for each one unit increase in a commonly used comorbidity index.

Seeing a nephrologist earlier during the course of chronic kidney disease probably speeds up the cumbersome process of being identified as medically suitable for a kidney transplant, having a pretransplantation workup, and ultimately being put on a waiting list to receive a transplant. Late referrals may be due to a cumbersome system, a lagging physician, or a reluctant patient.

The overall prevalence of late referral of patients with chronic kidney disease in the United States has been estimated to be approximately 37 percent. This suggests a public health problem of major importance, which potentially could be avoided by provider and/or patient education and incentives, conclude the researchers.

**Avorn, J., Winkelmayr, W.C., Bohn, R.L., and others. (2002). "Delayed nephrologist referral and inadequate vascular access in patients with advanced chronic kidney failure." *Journal of Clinical Epidemiology* 55, pp. 711-716.**

Early nephrologist referral is essential for optimally preparing ESRD patients for kidney dialysis, according to this study. The nephrologist can intervene to retard progression of renal disease, effectively manage a patient's other medical conditions, adequately treat renal-based anemia and disturbances in metabolism, provide dietary education, and prepare the patient psychologically for dialysis and/or transplant. Early nephrologist referral also can ensure selection of an optimal time to establish a permanent vascular or peritoneal access for dialysis and appropriate initiation of the therapy.

Early referral makes it possible to surgically create a natural vascular access (fistula) that will be mature when hemodialysis begins

and which is preferable to a prosthetic graft, since there is a lower rate of infection, less cost, and a higher patency rate (fistula stays open longer). Tunneled cuffed central venous catheters are an even more unfavorable alternative to prosthetic grafts because of their relatively poor blood flow and higher failure rate from thrombosis and infection.

If a patient is referred late to a nephrologist, there may not be sufficient time to create a natural fistula for kidney dialysis. As a consequence, catheters and/or grafts, which can be formed more immediately, are the likely alternative, explain the researchers.

They analyzed data from all health care encounters for New Jersey Medicare and Medicaid patients with ESRD between 1991 and 1996. These patients had been diagnosed with renal disease at least 1 year prior to onset of hemodialysis. Of the 2,398 hemodialysis patients identified, 35 percent had a late first nephrologist consultation. After controlling for demographic characteristics, socioeconomic status, and underlying renal disease, patients referred to a nephrologist earlier were 38 percent more likely to have undergone predialysis vascular access surgery. Similarly, patients who were referred late were 42 percent more likely to require temporary central venous access for dialysis. ■

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## Researchers examine delays in hip fracture repair surgery and patient outcomes

Over 350,000 people suffer a hip fracture each year, and costs associated with hospitalization alone are estimated at nearly \$6 billion a year. Although hip fracture patients typically are women 80 years of age and older, about one-fourth of hospital discharges for hip fractures are men.

Two new studies supported in part by the Agency for Healthcare Research and Quality (HS09459) examined hip fracture repair among people aged 50 and older. The first study found that these patients commonly wait more than 24 hours from the time they are hospitalized to surgical hip repair. The second study identified eight patient subgroups with distinct clinical features that help predict likely 6-month outcomes following hip repair surgery. Both studies are described here.

**Orosz, G.M., Hannan, E.L., Magaziner, J., and others. (2002). "Hip fracture in the older patient: Reasons for delay in hospitalization and timing of surgical repair." *Journal of the American Geriatrics Society* 50, pp. 1336-1340.**

Some studies suggest that early surgical repair decreases mortality after hip fracture, while others indicate that delay in surgery is not detrimental. Timing of surgery may also affect the rate of postoperative complications, functional recovery and independence, and length of hospital stay. For this study, the researchers quantified the delay that occurred in initiating surgical repair in hip fracture patients aged 50 and older admitted to four New York City hospitals in 1997 and 1998. The investigators recorded time of the hip fracture, time of

arrival to the emergency room, and time of surgery.

Over two-thirds of patients underwent hip repair surgery more than 24 hours after arriving at the hospital. Some of this delay time was patient-related and some occurred because of system factors that may be avoidable. Of the 571 study patients, 17 percent arrived at the hospital more than 24 hours after the hip fracture. After hospital arrival, 3 percent of patients did not have surgery, 29 percent had surgery within 24 hours, and 68 percent had surgery more than 24 hours after arrival. For those patients who underwent surgery after 24 hours, 29 percent had surgery 25 to 36 hours after hospital arrival, 18 percent had surgery 37 to 48 hours after arrival, and 22 percent had surgery more than 48 hours after arrival.

Over half (52 percent) of the patients had their surgery delayed more than 24 hours due to waits for routine medical clearance, and 29 percent were delayed due to the unavailability of the operating suite or surgeon. Stabilization of associated medical problems (for example, hematological, cardiopulmonary, or infectious conditions) resulted in the longest delays.

There currently are no standards for preoperative evaluation of hip fracture patients, and testing ordered for routine clearance varies widely. Differences between hospitals in the time of surgery suggests that improvements in practice are possible, but addressing these systems factors is complex, conclude the researchers.

**Eastwood, E.A., Magaziner, J., Wang, J., and others. (2002). "Patients with hip fracture: Subgroups and their outcomes."**

***Journal of the American Geriatrics Society* 50, pp. 1240-1249.**

Patient outcomes after hip fracture repair surgery vary depending on which of eight clinical subgroups a patient belongs to prior to surgery, conclude these authors. They used medical record data and patient/proxy interviews to prospectively study 571 older adults with hip fracture (most of whom were women, average age 82) in 1997 and 1998 at the time of hospitalization and 6 months later. They used cluster analysis to describe patients' baseline functioning prior to surgery and develop a patient classification tree with associated patient outcomes 6 months after hip fracture.

The researchers identified eight patient subgroups (clusters) that had distinct baseline features and variable outcomes at 6 months. For example, the first cluster—mostly middle-aged patients who were almost completely functionally independent—had the highest percentage of men and few coexisting medical problems. At 6 months postfracture, these patients were somewhat lower functioning than prefracture, but they continued to be the most independent of all the patients.

The fourth cluster of nearly independent very old (average age of 87 years) individuals was closest to a general profile of hip fracture patients. At baseline, this group had mild impairment in locomotion and near independence in the other functional areas. Nearly half (46 percent) had evidence of some dementia. At 6 months, the mortality rate was still low (8 percent), but they had not returned to prefracture functioning. The

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## Hip fracture surgery

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eighth cluster, the oldest old (aged 95 to 101), generally lived at home, had dementia, and had significant functional deficits at baseline. They regained impaired locomotion status at 6 months but went from

independent to dependent bladder and bowel control.

For each functional subscale (locomotion, self-care, sphincter control, transfers, and total functional independence), functioning 6 months after hospitalization was highly dependent on baseline function. Knowing what outcomes to

anticipate can help in planning the types of assistance a patient will need after hospitalization, as well as discharge location. In this study, 47 percent of patients were discharged to rehabilitation in nursing homes, 22 percent to acute medical rehabilitation facilities, 15 percent to home, and 14 percent to nursing home placement. ■

## Only half of the deaths following a bout of pneumonia are due to the pneumonia

**F**or patients with community-acquired pneumonia, only half of all deaths are attributable to their acute illness, and more than 75 percent of these deaths occur within the first 30 days after the patient is seen, according to a study by the Pneumonia Patient Outcomes Research Team (PORT). The researchers found that deaths unrelated to pneumonia occurred later than pneumonia-related deaths and differed in the underlying and immediate causes of death, as well as the clinical predictors of death. Knowing these differences is important for evaluating the quality of pneumonia care, which is reflected in pneumonia-related deaths, explains PORT co-principal investigator Michael J. Fine, M.D., M.S.C., of the University of Pittsburgh.

With support from the Agency for Healthcare Research and Quality (HS06468 and National Research Service Award fellowship F32 HS00135), Pneumonia PORT principal investigator Wishwa N. Kapoor, M.D., M.P.H., Eric M. Mortensen, M.D., M.Sc., of the University of Pittsburgh, and their colleagues used a five-member review panel to analyze all deaths (two panel members each time) of 944 outpatients and 1,343 inpatients within 90 days of

pneumonia diagnosis. A total of 208 patients (9 percent) died within 90 days. Death was pneumonia-related in 53 percent of the deaths.

Pneumonia-related deaths were nearly eight times as likely to occur within 30 days of pneumonia diagnosis compared with deaths unrelated to pneumonia; only 15 percent of all pneumonia-related deaths occurred after 45 days. Other factors independently associated with pneumonia-related death were hypothermia, altered mental status, elevated serum urea nitrogen level, chronic liver disease, leukopenia (reduced white blood cell count), and hypoxemia (low blood oxygen level). In contrast, factors independently associated with deaths unrelated to pneumonia were dementia, suppression of the immune system, active cancer, systolic hypotension, male sex, and multilobar pulmonary infiltrates. Older age and evidence of aspiration independently predicted both types of deaths.

See "Causes of death for patients with community-acquired pneumonia," by Dr. Mortensen, Christopher M. Coley, M.D., Daniel E. Singer, M.D., and others, in the May 13, 2002 *Archives of Internal Medicine* 162, pp. 1059-1064. ■

## Researchers examine the effects of androgen deprivation therapy on survival and quality of life of men with prostate cancer

**A**ndrogen deprivation therapy has long been prescribed for men with symptoms of metastatic prostate cancer, with current clinical practice leaning toward use of the therapy earlier in the disease.

A study by the Patient Outcomes Research Team for Prostatic Diseases, supported by the Agency for Healthcare Research and Quality (HS08397), concluded that radical prostatectomy patients who still have elevated prostate-specific

antigen (PSA) levels after surgery (suggestive of cancer) and their doctors must weigh the reduced quality of life against the uncertain benefits of postoperative androgen deprivation therapy.

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## Prostate cancer

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A second study by the Blue Cross-Blue Shield Association Technology Evaluation Center, an Evidence-based Practice Center supported by the Agency for Healthcare Research and Quality (contract 290-97-0015), found that combined androgen blockade (blocking testicular and adrenal androgens) did not significantly extend the lives of men with advanced prostate cancer over monotherapy (blocking testicular androgen only). Both studies are described here.

**Fowler, F.J., Collins, M.M., Corkery, E.W., and others. (2002, July). "The impact of androgen deprivation on quality of life after radical prostatectomy for prostate carcinoma." *Cancer* 95, pp. 287-295.**

These researchers used a 5 percent national sample of Medicare providers to identify men who had undergone radical prostatectomy between 1991 and 1992 and Medicare claims data from the date of discharge until the end of 1996 to identify those who received androgen deprivation therapy after the surgery. In 1999, they mailed a survey to men who had undergone only the surgery and those who had both the surgery and the androgen deprivation therapy. The survey addressed a range of prostate cancer-related and treatment-related issues, including health-related quality of life (HRQOL).

Men who received androgen deprivation therapy after surgery had significantly lower scores on all seven HRQOL measures: impact of cancer and treatment on their daily life, concern about body image, mental health, general health, activity, worries about cancer and dying, and energy.

Also, only 2 percent of men who received the therapy reported the

ability to have sexual intercourse in the past month, and 69 percent reported no days of feeling sexual drive compared with 12 percent and 29 percent, respectively, of nonandrogen-deprived men. The researchers caution that lower HRQOL scores for the androgen-deprived group may have been due to the recurrence of the prostate cancer itself rather than the effects of androgen deprivation. Moreover, androgen deprivation therapy has been shown to provide a survival benefit to men with lymph node metastases at the time of surgery.

Recent data show a median time to metastasis of 8 years following PSA elevation after radical prostatectomy and another 5 years to death once metastases were documented. In this study, androgen deprivation was used solely for a rising PSA after prostatectomy. The potential advantages of monitoring PSA after prostatectomy include the early detection of patients with advanced disease, who then may benefit from treatment with radiation therapy or early androgen deprivation therapy (before painful bone metastases develop). However, given the negative impact on quality of life and the advanced age of men receiving the therapy (in this study, 65 percent of men were aged 75 or older), patients and doctors must carefully weigh the price patients pay with reduced quality of life against the uncertain benefits of androgen deprivation, conclude the researchers.

**Samson, D.J., Seidenfeld, J., Schmitt, B., and others. (2002, July). "Systematic review and meta-analysis of monotherapy compared with combined androgen blockade for patients with advanced prostate carcinoma." *Cancer* 95, pp. 361-376.**

Combined androgen blockade (blocking testicular and adrenal

androgens) does not significantly extend the lives of men with advanced prostate cancer over monotherapy (blocking testicular androgens), concludes this meta-analysis of 27 studies of nearly 8,000 men. Monotherapy is the surgical removal of the testes or use of a luteinizing hormone-releasing hormone (LHRH) agonist to prevent testicular production of testosterone. Combination therapy uses surgical removal of the testes or an LHRH agonist plus a nonsteroidal or steroidal antiandrogen to block the action of adrenal androgens. Additional trials are unlikely to alter the balance of the evidence, conclude the researchers.

They searched the literature from 1996 through August 1998 to identify randomized trials comparing the two approaches. Twenty-one trials compared survival after monotherapy with survival after combined androgen blockade. The meta-analysis found no significant difference in men's survival at 2 years, even for men with minimally advanced disease. There was a significant difference in survival at 5 years that favored combined androgen blockade (10 trials, with a 13 percent less hazard of dying in 5 years).

However, adverse effects led more men to withdraw from the more costly combined therapy than the monotherapy. In addition, the one trial that compared the quality of life of men who underwent both types of treatment showed worse quality of life among men who received the combined therapy. The researchers conclude that the usefulness of combined androgen blockade must balance the modest increase in expected survival at 5 years against the increased risk of adverse effects and diminished quality of life compared with monotherapy.

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## Prostate cancer

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**Editor's note:** Copies of AHRQ Evidence Report/Technology Assessment No. 4, *Relative*

*Effectiveness and Cost-Effectiveness of Methods of Androgen Suppression in the Treatment of Advanced Prostatic Cancer* (AHRQ Publication No. 99-

E012) and a summary of the report (AHRQ Publication No. 99-E011) are available from AHRQ.\* See the back cover of *Research Activities* for ordering information. ■

## Subsidized multiphasic mobile cancer screening units may not be a cost-effective way to reduce cancer morbidity and mortality

**S**ubsidized mobile multiphasic (multi-cancer) cancer screening facilities may have the potential to reduce cancer morbidity and mortality. However, to realize this potential, they need to target hard-to-reach unscreened and underscreened groups in the age and risk groups where cancer is most likely to develop. They also need to maintain a high volume, coordinate with local primary care services to ensure continuity of care and not duplicate existing resources, and build on a strong infrastructure for providing diagnostic and treatment services, regardless of the patient's ability to pay.

At this time, it is not clear whether the large investment required to sustain such mobile units will translate into a reasonable cost per year of life saved, according to a recent study supported in part by the Agency for Healthcare Research and Quality (HS08395). Ultimate decisions about resource allocation will depend on regional health care needs and priorities, says lead author, Ann S. O'Malley, M.D., M.P.H., of Georgetown University Medical Center.

Dr. O'Malley and her colleagues reviewed research studies on mobile cancer screening units and

interviewed directors of mobile units, van staff, health care providers, and program administrators working in conjunction with mobile vans in Washington DC, and Tampa, FL. They examined the positive and negative aspects of mobile vans providing mammography services and feelings about the feasibility of adding other cancer screening services to the vans, such as prostate, cervical, and colorectal cancer screening. They also calculated the costs of each screening type and yearly van operating costs.

Most of those interviewed agreed that advance promotion and scheduling was necessary to ensure a reasonable volume of screened patients. A substantial ongoing subsidy would be needed to maintain van operations, even when the target population included a large portion of insured individuals. In addition, space limitations would make it difficult to conduct multiple screening activities in the same van.

More details are in "Feasibility of mobile cancer screening and prevention," by Dr. O'Malley, William Lawrence, M.D., M.Sc., Wenchi Liang, Ph.D., and others in the *Journal of Health Care for the Poor and Underserved* 13(3), pp. 298-319. ■

## Evidence-Based Medicine

### Researchers examine the evidence on behavioral interventions to modify dietary fat and intake of fruits and vegetables

**E**ating a diet high in fats and low in fruits and vegetables is linked to an increased risk for cardiovascular disease and cancer, as well as other chronic diseases. A review of the evidence published since 1975 regarding behavioral interventions to reduce fat and increase fruit and vegetable intake revealed that more than three-

fourths of the studies on behavioral interventions (17 of the 22 reporting results of fruit and vegetable intake) reported significant increases in fruit and vegetable intake, with an average increase of 0.6 servings of fruits and vegetables per day. In addition, there were consistent decreases in intake of saturated fat and total fat

(7.3 percent reduction in the percentage of calories from fat).

The study was conducted by researchers at the Research Triangle Institute-University of North Carolina at Chapel Hill Evidence-based Practice Center (EPC), which is supported by the Agency for

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## Dietary interventions

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Healthcare Research and Quality (contract 290-97-0011). The EPC is directed by Kathleen N. Lohr, Ph.D.

Most of the behavioral interventions reviewed seemed more successful at improving the dietary behavior of people at risk of developing or already diagnosed with chronic diseases than that of generally healthy individuals. Among the specific strategies employed, goal setting and small group sessions appeared to be the most promising behavioral interventions to modify dietary behavior. Other behavioral change strategies included use of the family (for example, family homework assignments or involving spouses in cooking classes), social support, interactive activities involving food (for example, taste testing and cooking

classes), and dietary guidelines tailored specifically to cultural or ethnic preferences.

Despite the lack of similarity across studies in outcome measures, study design, analysis strategy, and intervention technique, the large proportion of studies showing favorable outcomes in varied situations is promising, conclude the researchers.

See “The efficacy of behavioral interventions to modify dietary fat and fruit and vegetable intake: A review of the evidence,” by Alice S. Ammerman, Dr.P.H., R.D., Christine H. Lindquist, Ph.D., Dr. Lohr, and James Hersey, Ph.D., in *Preventive Medicine* 35, pp. 25-41, 2002.

**Editor’s note:** Copies of AHRQ Evidence Report No. 25, *The Efficacy of Interventions to Modify Dietary Behavior Related to Cancer Risk, Volume 1. Evidence*

*Report and Appendixes* (AHRQ Publication No. 01-E029) and *Volume 2. Evidence Tables* (AHRQ Publication No. 01-E029), as well as a summary of the report (AHRQ Publication No. 01-E028) are available from AHRQ.\* See the back cover of *Research Activities* for ordering information.

Inconsistencies in the design and reporting of research studies were a major impediment in synthesizing the evidence on dietary interventions and hampered the researchers’ ability to draw broad conclusions about the most effective interventions. A new fact sheet produced by AHRQ and the National Cancer Institute offers recommendations for researchers regarding the design and reporting of studies that assess interventions to promote dietary change. Go to [http://www.dccps.cancer.gov/hprb/dccpsdietchange\\_fs9.pdf](http://www.dccps.cancer.gov/hprb/dccpsdietchange_fs9.pdf) to access the fact sheet. ■

## Health Care Delivery

### Anticoagulation services are feasible in a managed care setting but show little clinical effect

Well-monitored anticoagulation with warfarin potentially could prevent more than half of the strokes related to atrial fibrillation (rapid, irregular heart beat) with a relatively low risk of major bleeding complications. Although the therapy is widely recommended, many patients with atrial fibrillation either do not receive warfarin or are not maintained within an optimal coagulation range. For most patients, the international normalized ratio (INR) suggests a prothrombin time of 2-3 minutes, which can be difficult to achieve consistently in the setting of a busy community practice.

In a recent study, supported in part by the Agency for Healthcare Research and Quality (contract 290-91-0028), investigators examined the impact on patients with atrial fibrillation of the availability of an anticoagulation service developed in a managed care organization (MCO). David Matchar, M.D., of Duke University, and members of the Stroke Prevention

Patient Outcomes Research Team (PORT) compared the outcomes of MCO patients 65 years and older who either had access to an anticoagulation service or received usual care.

Six large managed care sites in the United States participated in the trial, and five of these were able to establish and maintain an anticoagulation service that met the functional specifications for the study. Control practices within each managed care site continued their usual provider-based care.

The primary outcome measure was time in target range—that is, the number of days for which the INR was between 2 and 3. Secondary outcomes measures were thromboembolic events and major bleeding. Data were collected by chart for audit for the 9 months prior to the onset of the anticoagulation service and, following service initiation that varied from 6 to 14

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## Anticoagulation services

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months, for a period of 9 months after the service had attained maximum enrollment.

The results indicate that a properly administered anticoagulation service can successfully manage the anticoagulation of most patients with atrial fibrillation. However, the services at the five sites in the study did not significantly improve anticoagulation relative to usual care at these sites. Percentage of time in the INR target range was similar for the 144 patients in the intervention group (baseline 48 percent; followup 56 percent) and the 118 patients in the control clusters (baseline 49 percent; followup 52 percent).

The researchers conclude that the effect of the anticoagulation service was limited by the use of the service, the degree to which referring physicians supported strict adherence to recommended target ranges for the INR, and the ability of the anticoagulation service to identify and respond promptly to out-of-range values.

See “Improving the quality of anticoagulation of patients with atrial fibrillation in managed care organizations: Results of Managing the Anticoagulation Services Trial,” by Dr. Matchar, Gregory P. Samsa, Ph.D., Stuart J. Cohen, Ed.D., and others in the July 2002 *American Journal of Medicine* 113, pp. 42-51. ■

## Three factors should be considered when deciding about the use of genetic testing

**M**ore than 800 genetic tests, many using DNA-based technology, are currently available or in development. Although most available tests are for rare diseases, tests to identify inherited risk for common diseases such as breast and colorectal cancer, Alzheimer’s disease, and coronary heart disease have been developed. Decisions about using these genetic tests should be based on three factors, concludes a group of experts who participated in the Human Genetic Epidemiology Workshop recently convened by the Centers for Disease Control and Prevention.

David Atkins, M.D., of the Agency for Healthcare Research and Quality, and other experts identified these factors as the test’s analytic validity (accuracy with which a particular genetic characteristic, for example, a DNA sequence variant, can be identified in a given laboratory test); clinical validity (accuracy with which a test

predicts a particular clinical outcome, such as breast or ovarian cancer); and clinical utility (likelihood that it will lead to an improved health outcome).

Assessments of these genetic test qualities will enable policymakers, clinicians, and the public to identify quickly what is known and not known about these genetic test qualities. In this way, uncertainties can be taken into account along with ethical, legal, and social implications when they consider using certain genetic tests. For example, newborn screening for phenylketonuria, a rare genetic condition in which failure to metabolize dietary phenylalanine leads to severe retardation, has high clinical validity and utility. It is reliable and accurate, and there is an effective dietary treatment to prevent mental retardation for those who test positive.

In contrast, the DNA-based test for factor V Leiden, a variant of the gene that codes for a protein

involved in clot formation, has limited predictive value and unclear implications for clinical management. Carriers of the gene have a two- to eight-fold increased risk of venous thromboembolism. However, the proposed interventions for patients with factor V Leiden (anticoagulant prophylaxis, avoidance of oral contraceptives) pose potential risks as well as benefits, and none has been systematically studied in such patients.

More details are in “Genetic test evaluation: Information needs of clinicians, policy makers, and the public,” by Wylie Burke, M.D., Dr. Atkins, Marta Gwinn, M.D., and others, in the August 15, 2002 *American Journal of Epidemiology* 156(4), pp. 311-318. Reprints (AHRQ Publication No. 02-R089) are available from AHRQ.\*\* ■

## More infants with hypoplastic left heart syndrome were offered surgery over comfort care during the 1990s

Over 90 percent of infants suffering from hypoplastic left heart syndrome (HLHS, underdeveloped left heart), one of the most severe congenital heart defects, die within the first year of life. Between 1988 and 1997, the parents of these infants were more likely to be offered surgery than comfort care for their children. Over that time period, the proportion of infants with HLHS treated with the Norwood procedure (a type of cardiopulmonary bypass surgery) increased from 8 to 34 percent.

If this trend persists, by the year 2004 over 50 percent of infants with HLHS will be treated with the Norwood procedure. The proportion of infants who received heart transplants increased from 1 to 5 percent from 1988 to 1992 and remained at about 5 percent during the period 1993-1997, probably due to the limited availability of appropriate donors. Far fewer transplant than surgery infants died in the hospital (26 vs. 46 percent).

Race/ethnicity, sex, type of medical insurance, and home income did not correlate with treatment choices. Rather, a hospital's experience with the Norwood procedure or heart transplant, organ availability, and parent and physician attitudes toward comfort care influenced treatment, according to a study supported in part by the Agency for Healthcare Research and Quality (National Research Service Award training

grant T32 HS00028). Led by Ruey-Kang R. Chang, M.D., M.P.H., of the Harbor-UCLA Medical Center, investigators analyzed treatments and outcomes of infants 1 month old or younger diagnosed with HLHS using 1988-1997 hospital discharge data from over 900 hospitals in 22 States from the nationally representative National Inpatient Sample (a component of AHRQ's Healthcare Cost and Utilization Project).

Overall, 41 percent of 1,986 infants with HLHS died during the study period, with 812 dying in the hospital. The in-hospital mortality rate decreased from 54 percent in 1988 to 38 percent in 1997. Although mortality for the Norwood procedure in many centers remains high, some large, more experienced centers are able to achieve a 5-year survival of 70 percent. The proportion of patients who died in the hospital without surgery decreased over time, while the percentage discharged from the hospital without surgery and receiving only comfort care (between 15 and 25 percent) or transferred to another hospital (about 20 to 30 percent) remained relatively unchanged.

See "Clinical management of infants with hypoplastic left heart syndrome in the United States, 1988-1997," by Dr. Chang, Alex Y. Chen, M.D., and Thomas S. Klitzner, M.D., Ph.D., in the August 2002 *Pediatrics* 110(2), pp. 292-298. ■

## Using an electronic medical record for diagnostic and treatment feedback does not lead to better primary care for depression

Use of an electronic medical record (EMR) system to inform primary care physicians (PCPs) of a patient's depression diagnosis and provide them with treatment recommendations does not improve depression care or patient outcomes 6 months later, according to a recent study supported by the Agency for Healthcare Research and Quality (HS09421). These findings are similar to others which suggest that EMR systems are more effective at triggering one-time events—such as ordering a mammogram or flu vaccine—than for ongoing management of a

chronic medical condition, explains Bruce L. Rollman, M.D., M.P.H., of the University of Pittsburgh School of Medicine.

Dr. Rollman and colleagues randomly assigned PCPs at an academically affiliated primary care practice to active care, passive care, or usual care for 200 patients who screened positive for major depression. PCPs were notified of a patient's depression diagnosis via an interactive e-mail alert (flag) generated through the EMR system and an electronic letter signed by study investigators. The patient then was scheduled for a followup office

visit with the PCP to discuss the depression diagnosis.

The EMR system then exposed PCPs in the active care group to patient-specific, guideline-based advice for treating depression over the ensuing 6-month period in keeping with the patient's clinical status as recorded by the PCP in his or her clinical notes. Clinicians in the usual care group received no additional patient-specific treatment advice or reminders of care over the course of followup. PCPs in the passive care group were reminded of each patient's depression

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## Care for depression

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diagnosis on the paper encounter form generated for each patient visit, which encouraged them to treat the depressive episode but offered no details on how to do so.

Active-care PCPs received one or more patient-specific advisory messages on the paper encounter form that were based on AHRQ's depression practice guideline and modified for electronic

dissemination via the EMR system. The message content varied depending on the PCP's earlier actions as entered into the EMR system and usually prompted the PCP to mouse-click for more advice. Patients' mean depression scores decreased from the initial visit to 3- and 6-month followup regardless of their PCP's group. Also, there were no differences in measures of recovery at 6 months or in depression process of care

measures (for example, prescribing of antidepressants or referral to mental health specialists) among the three PCP groups.

See "A randomized trial using computerized decision support to improve treatment of major depression in primary care," by Dr. Rollman, Barbara H. Hanusa, Ph.D., Henry J. Lowe, M.D., and others, in the July 2002 *Journal of General Internal Medicine* 17, pp. 493-503. ■

## Safety net clinics for homeless women struggle to provide comprehensive care despite scarce resources

Over two-thirds of major sites treating homeless women in Los Angeles County are community or neighborhood clinics. These clinics treat 30 or more homeless women each month, the majority of whom are Hispanic. These safety net clinics struggle to provide comprehensive care amidst staff burnout, little specialized training for staff in caring for homeless women, and scarce resources. Less than one-quarter (22 percent) of these clinics have physicians who are women, less than 62 percent have medical staff who are proficient in Spanish, and less than two-thirds of the clinics have at least one clinician specially trained to provide care to people who are homeless.

Many of the sites, even the major providers, do not have the ability to provide comprehensive care, according to a study supported by the Agency for Healthcare Research and Quality (HS08323). The researchers found that only 31 percent of the clinics offered treatment for substance abuse, and only 56 percent could provide mental health services, despite the very high prevalence of these problems among homeless women. Also, less than one-fourth of the

sites provided support services of great value to homeless women, such as emergency shelter, food and clothing, showers, or child care during medical exams. However, these sites enhanced access to care with evening and weekend hours, walk-in visits, proximity to public transportation, and by not requiring appointments.

Lillian Gelberg, M.D., M.S.P.H., of the University of California, Los Angeles School of Medicine, and her colleagues call for more resources to be invested in these poorly funded community clinics which, despite staff burnout, serve as a safety net for homeless women. They surveyed administrators and clinicians at 112 clinic sites that were actual or potential providers of primary health care to 95 percent of the homeless women in Los Angeles County; 73 completed surveys were received.

See "Providers of primary care to homeless women in Los Angeles County," by Jeff Luck, M.B.A., Ph.D., Ron Andersen, Ph.D., Suzanne Wenzel, Ph.D., and others, in the April 2002 *Journal of Ambulatory Care Management*, pp. 53-67. ■

## Tone of voice may affect the likelihood that a surgeon will be sued for malpractice

When things go wrong, a surgeon's tone of voice may influence a patient's decision to sue the surgeon, according to a study supported in part by the Agency for Healthcare Research and Quality (HS07289). After controlling for content of conversations, the researchers

found that surgeons whose tone of voice signaled less concern/anxiety and more dominance during routine visits with surgical patients were more likely to have been sued than those whose tone was less dominant and more concerned. Researchers audiotaped 114 conversations during routine

medical visits between 57 orthopedic and general surgeons and their patients.

Raters who were blind to surgeons' malpractice claims history evaluated 10-second voice clips with content and 10-second

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## Communication style

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voice clips with just voice tone. The sound bites were taped during the first and last minute of each surgeon's interactions with two different patients. Based on the content-filtered audiotapes, surgeons who were judged to be more dominant and less concerned or anxious in tone were more likely to have been sued than surgeons who were judged to be less dominant and more concerned and anxious.

These findings suggest that how the surgeon conveys a message may be as important as what the surgeon says. Expressions of dominance may communicate a lack of empathy and understanding for the patient, while concern or anxiety in the voice is usually associated with empathy. Dominance coupled with a lack of anxiety in the voice may imply surgeon indifference and lead a patient to launch a malpractice suit when poor outcomes occur, explain the researchers. They suggest that listening to brief audio

clips might be a useful way to provide feedback and give surgeons a sense of how they sound during interactions, which may improve care satisfaction and reduce lawsuits.

More details are in "Surgeons' tone of voice: A clue to malpractice history," by Nalini Ambady, Ph.D., Debi LaPlante, M.A., Thai Nguyen, B.A., and others, in the July 2002 *Surgery* 132, pp. 5-9. ■

## Elderly Health/Long-Term Care

### Over half of elderly patients with unstable angina have atypical symptoms

Chest pain, caused by lack of oxygen to the heart, is considered the cardinal clinical sign of unstable angina pectoris. Yet over half (52 percent) of elderly Medicare patients hospitalized with unstable angina had no chest pain in a recent study. Instead, they suffered from nausea, labored breathing, arm pain, and other atypical signs of unstable angina and were treated less aggressively than patients with usual symptoms.

Fortunately, there was no difference in the number of deaths between patients with unstable angina who had typical or atypical symptoms. Nevertheless, national educational initiatives should probably redefine the classic presentation of unstable angina to include atypical presentations to ensure appropriate quality of care, according to a recent study that was supported by the Agency for Healthcare Research and Quality (HS08843).

John G. Canto, M.D., M.S.P.H., and Catarina I. Kiefe, M.D., Ph.D., of the University of Alabama at Birmingham, and their colleagues examined the medical records of 4,167 randomly selected Medicare patients hospitalized with unstable angina at 22 Alabama hospitals between 1992 and 1999. They defined a typical unstable angina presentation as chest

pain located substernally in the left or right chest or chest pain characterized as squeezing, tightness, aching, crushing, arm discomfort, dullness, fullness, heaviness, pressure, or pain aggravated by exercise or relieved with rest or nitroglycerin.

Among patients with confirmed unstable angina, 52 percent had atypical presentations. The most frequent atypical symptoms were shortness of breath (69 percent), nausea (38 percent), profuse sweating (25 percent), fainting (11 percent), or pain in the arms (12 percent), upper middle abdomen (8 percent), shoulder (7 percent), or neck (6 percent). Patients with atypical symptoms received aspirin, heparin, and beta-blocker therapy less aggressively, but this did not result in increased mortality. Patients more likely to have atypical symptoms were older, female, suffering from dementia, had no history of heart attack or high cholesterol, and had no family history of heart disease.

See "Atypical presentations among Medicare beneficiaries with unstable angina pectoris," by Dr. Canto, M.D., Contessa Fincher, Ph.D., M.P.H., Dr. Kiefe, and others, in the August 1, 2002 *American Journal of Cardiology* 90, pp. 248-253. ■

## Better doctor-patient communication could enhance the quality of care for older women with breast cancer

Both breast-conserving surgery (BCS) with radiation therapy (RT) and mastectomy have equal survival rates for early-stage breast cancer. Despite the increasing use of BCS over the past decade, older women with breast cancer receive BCS less often than younger women, and sometimes RT is omitted after BCS. Yet older women who are told about treatment options by their surgeons are much more likely to get BCS with radiation than other types of treatment. They also are more likely to have a sense of treatment choice and be more satisfied with care, according to a study supported by the Agency for Healthcare Research and Quality (HS08395).

First author, Wenchi Liang, M.D., of Georgetown University Medical Center, and colleagues analyzed data from 613 surgeons and their patients who had been diagnosed with localized breast

cancer. Patients were aged 67 and older, and most were white, middle class women who participated in a nationwide study on breast cancer treatment options. Patients were asked about who initiated communication and the number of treatment options discussed in order to examine the relationship between communication and outcomes.

Women who reported that their surgeons mentioned more treatment options were twice as likely as other women to report being given a treatment choice, and they were 33 percent more likely to get BCS with RT than other types of treatment. Surgeons who were trained in surgical oncology or who treated a high volume of breast cancer patients (75 percent or more of their practice) were nearly twice as likely as other surgeons to have their patients indicate that they initiate communication with patients.

A high degree of physician-initiated communication, in turn, was associated with patients' perception of having a treatment choice and satisfaction with breast cancer care in the 3 to 6 months after surgery. The researchers conclude that breast cancer care for older women can be improved by implementing a physician communication style that includes a caring attitude and providing patients with comprehensive information.

See "Communication between physicians and older women with localized breast cancer: Implications for treatment and patient satisfaction," by Dr. Liang, Caroline B. Burnett, R.N., Sc.D., Julia H. Rowland, Ph.D., and others, in the February 15, 2002 *Journal of Clinical Oncology* 20(4), pp. 1008-1016. ■

## Cognitive impairment and depression are associated with functional decline in elderly people

One in five noninstitutionalized people aged 70 years or older in the United States needs help with one or more activities of daily living (ADLs), such as bathing, using the toilet, dressing, eating, walking, or transferring from a bed to a chair. A new study reveals that functionally independent elderly people, who are either cognitively impaired or depressed, are at substantially increased risk of becoming dependent and needing help with ADLs compared with elderly people who don't have these problems. However, only cognitive impairment is a risk factor for further functional decline among elderly men and women who are already dependent for help in ADLs.

Cognitive impairment and depressive symptoms may lead to an erosion of the physical skills needed to maintain functional independence. They also may lessen resistance to acute stressors such as hospitalization that often accelerate functional decline

in older people, explains Kenneth E. Covinsky, M.D., M.P.H. In a study that was supported in part by the Agency for Healthcare Research and Quality (K02 HS00006), Dr. Covinsky and colleagues at the University of California, San Francisco, interviewed 5,697 elderly people (mean age 77 years) in 1993 and 1995.

The researchers measured participants' baseline functional dependence, cognitive ability, and number of depressive symptoms. They then compared the risk of functional decline among those with depressive symptoms, cognitive impairment, or both with the risk of decline among elderly people with neither problem.

Among those who were independent in all ADLs at baseline, the relative risk of 2-year functional decline doubled for those with cognitive impairment and/or depressive symptoms. For those who were dependent

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## Cognitive impairment

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in one or more ADLs at baseline, the risk of 2-year functional decline doubled for those with cognitive impairment, rose significantly for those with both problems, but declined by nearly half for those with depressive symptoms alone. Depression, unlike

cognitive impairment, tends to improve over time, especially with effective treatment, notes Dr. Covinsky.

More details are in “Cognitive impairment, depressive symptoms, and functional decline in older people,” by Kala M. Mehta, D.Sc., Kristine Yaffe, M.D., and Dr. Covinsky, in the June 2002 *Journal of the American Geriatrics Society* 50, pp. 1045-1050. ■

## Nurses may need to update their skills in assessing the medical status of nursing home residents

A nurse's quick assessment of an acute change in the condition of a nursing home resident, for example, development of breathing problems or a fever, can make the difference between a mild illness and a serious decline in health, or between a quick recovery with simple treatment and hospitalization and prolonged recovery. Although patient assessment and documentation are basic nursing practices, they are not always performed by nurses called on to assess the status of nursing home residents, according to a study supported in part by the Agency for Healthcare Research and Quality (HS08551).

If a resident develops an acute change in his or her condition—for example, difficulty breathing or an abrupt change in mental status or

mobility—it is the responsibility of the nurse to perform and document an assessment. This assessment includes, but is not limited to, measurement of vital signs (temperature, pulse, and respiration) and examination of body systems, and it is supposed to be documented as a retrievable record of nursing care.

Missouri researchers evaluated the prevalence of vital sign assessments of 4,959 residents who developed symptoms of acute illness in 36 urban and rural nursing homes over a period of 38 months. They also evaluated the prevalence of body system assessments performed by nurses in a convenience sample of 289 residents at 12 nursing homes that participated in the larger study. Overall, 31 percent of residents did

not have any vital sign assessments performed at the time of an acute change in condition, and only 36 percent had a complete set of vital signs taken (excluding blood pressure). About half (52 percent) of residents identified by the nursing home staff as acutely ill received some type of nursing physical assessment. Nurses documented 88 percent of lung assessments and 94 percent of body system assessments.

See “Nursing assessment of ill nursing home residents,” by Cathy R. Barry, R.N., M.S.N., Kathy Brown, R.N., B.S.N., Debbie Esker, R.N., G.N.P., and others, in the May 2002 *Journal of Gerontological Nursing* 28(5), pp. 4-7. ■

## Minority Health

### Latino consortium identifies urgent research priorities to improve the health and care of Latino children

Latinos recently became the largest racial/ethnic minority group of U.S. children, accounting for one of every six children in the United States. They are at high risk for behavioral and developmental disorders. These include anxiety and depression, school dropout (29 percent),

exposure to environmental hazards (Latino communities are often located in highly contaminated areas such as hazardous waste sites), obesity (they are the most overweight U.S. children), diabetes mellitus, asthma, lack of health insurance (27 percent), nonfinancial barriers to health

care access (for example, transportation and language problems), and impaired quality of care.

The Latino Consortium of the American Academy of Pediatrics Center for Child Health Research, consisting of 13 expert panelists,

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## Care of Latino children

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recently identified urgent priorities in Latino child health. Their work was supported in part by the Agency for Healthcare Research and Quality (K02 HS11305).

Glenn Flores, M.D., of the Medical College of Wisconsin, and other consortium experts recommend that Latino children be better represented in medical research; that study data be analyzed by pertinent Latino subgroups (for example, Mexicans, Puerto Ricans, and Cubans), which have different rates of health problems such as low birthweight

and asthma; and that studies focus on identifying the social and economic determinants of Latino child health and use of health services. They also suggest training health care professionals more extensively in cultural competency; increasing the number of Latino health care professionals; and eliminating disparities in access to care, mental health, immunization coverage, oral and environmental health, and quality of care.

Research instruments, such as questionnaires and behavioral assessments, are rarely designed for Latino children and usually are not culturally or linguistically appropriate. The consortium

recommends that child health research instruments at least be validated in Spanish-speaking families, poor and low-literacy populations, and all relevant Latino subgroups. Finally, they call for outreach and enrollment efforts and ways to eliminate barriers to care for Latinos.

See "The health of Latino children: Urgent priorities, unanswered questions, and a research agenda," by Dr. Flores, M.D., Elena Fuentes-Afflick, M.D., M.P.H., Oxiris Barbot, M.D., and others, in the July 3, 2002 *Journal of the American Medical Association* 288(1), pp. 82-90. ■

## HIV/AIDS Research

### One-fifth of deaths among women infected with HIV are due to causes other than AIDS

Advanced antiretroviral therapy has prolonged the lives of both men and women infected with the human immunodeficiency virus (HIV). In fact, 20 percent of deaths among HIV-infected women are due to causes other than AIDS, according to the Women's Interagency HIV Study (WIHS), which is jointly funded by the Agency for Healthcare Research and Quality, the National Institutes of Health, and the Centers for Disease Control and Prevention.

Factors independently associated with non-AIDS-related deaths included depression, history of injection drug use with hepatitis C infection, cigarette smoking, and age. Doctors need to pay attention to treatable conditions such as hepatitis C, depression, and drug and tobacco use to further decrease deaths among HIV-infected women, according to lead author Mardge H. Cohen, M.D., of Cook County Hospital, and her colleagues.

The researchers classified the cause of death of women with, or at risk of, HIV infection enrolled in the WIHS from 1994 to 1995, as AIDS- or non-AIDS related death based on data from death certificates and CD4 cell count (an indicator of immune system function). Among the 414 HIV-infected women who

died by April 2000, 294 deaths were AIDS-related, 91 were non-AIDS-related, and 29 deaths were from indeterminate causes. The non-AIDS causes of death included liver failure (21); drug overdose (18); non-AIDS malignancies (13); cardiac disease (11); murder, suicide, or accident (11); and gastrointestinal causes (10).

All-cause and AIDS-related mortality rates for HIV-infected women decreased markedly from October 1995 through April 1997, the period of introduction of combination antiretroviral therapy, and has continued to decrease. All-cause deaths declined an average of 26 percent per year, and AIDS-related mortality declined by an average of 39 percent per year among HIV-infected women. In contrast, non-AIDS-related deaths among an extremely vulnerable group of women remained stable (10 percent average annual decrease).

See "Causes of death among women with human immunodeficiency virus infection in the era of combination antiretroviral therapy," by Dr. Cohen, Audrey L. French, M.D., Lorie Benning, M.S., and others, in the August 1, 2002 *American Journal of Medicine* 113, pp. 91-98. ■

### Managed care's reliance on supply-side control of services does not necessarily eliminate least valued treatment

Managed care's efforts to control the use of health care services has led to widespread dissatisfaction and calls for major reform and consumer protection. Consumers and health care providers most dislike rules about which services may be reimbursed in what circumstances (preauthorization) and financial incentives to providers to choose less costly treatments or simply no treatment. In a recent commentary, Meredith B. Rosenthal, Ph.D., of the Harvard School of Public Health, and Joseph P. Newhouse, Ph.D., of Harvard University, note the lack of evidence that such supply-side rationing mechanisms do, in fact, eliminate more low value than high value treatment.

Managed care organizations apparently assume that consumers and providers attach the same value to specific services or, if not, that provider values should trump consumer values because providers have superior knowledge. The increasing use of coinsurance in managed care and the introduction of tiered copayments (for example, lower copayments for generic versus brand name medications) represent a return to greater demand-side rationing. This brings consumer willingness-to-pay more into the equation. In this case, consumers can decide for themselves whether goods or services are worth the additional cost.

Outside of low-income and vulnerable populations, cost sharing

has a role to play, not only as an alternative to supply-side incentives to achieve lower spending, but also as a mechanism for eliciting willingness-to-pay, explain the authors. Their work is supported in part by the Agency for Healthcare Research and Quality (HS10803). They call for research on the nature of provider and consumer rationing decisions to inform incentives that will lead to an efficient allocation of health care services.

See "Managed care and efficient rationing," by Drs. Rosenthal and Newhouse, in the Summer 2002 *Journal of Health Care Finance* 28(4), pp. 1-10. ■

### Some State Medicaid managed care programs have policies that could restrict access to needed medications

Over half (56 percent) of the nearly 19 million people insured by State Medicaid programs were in managed care plans during 2000. Some States allow Medicaid managed care organizations (MCOs) to implement drug prescription policies that could reduce access among certain groups to needed medications, according to a survey that was supported by the Agency for Healthcare Research and Quality (HS09819).

Robert J. Buchanan, Ph.D., of the Texas A&M University System Health Science Center, surveyed the contact person for the Medicaid Drug Rebate Program in each State and the District of Columbia beginning in January 2000. Data collection and verification was completed in July 2001.

The survey uncovered policies that could reduce medication access, such as drug use limits, copayments, restrictive formularies, and restrictions on off-label use. Many Medicaid programs allowed MCOs to limit the number of medications that Medicaid recipients received during 2000. However, in almost all States that allowed MCOs to limit use of medications, these MCOs had to allow exceptions for medical necessity. Many

Medicaid programs also allowed MCOs to require copayments for medications from Medicaid recipients during 2000.

Many States did not require MCOs to allow off-label use of prescriptions, with only a few making exceptions to allow off-label use for Medicaid recipients infected with the human immunodeficiency virus (HIV). Since almost half of the drugs used to treat HIV disease are prescribed for off-label indications, this policy may restrict HIV patients' access to needed medications. A number of States did report that off-label use was allowed at the discretion of the MCO. States were about evenly divided between Medicaid programs allowing MCOs to implement open or restrictive drug formularies during 2000. Nearly all Medicaid programs that allowed MCOs to implement restrictive drug formularies required them to cover all HIV-related medications.

See "Medicaid managed care and coverage of prescription medications," by Dr. Buchanan, in the August 2002 *American Journal of Public Health* 92(8), pp. 1238-1243. ■

## Managed care organizations should consider patients' socioeconomic status when profiling a physician's performance

When managed care organizations (MCOs) profile physician performance, they do not take into account the socioeconomic status (SES) of a physician's patients. This approach may penalize physicians caring for poorer patients while inflating the performance ratings of those caring for more affluent patients, since lower SES patients typically have more health problems and less frequently comply with preventive care and treatments.

These are the findings of a recent study supported by the Agency for Healthcare Research and Quality (HS09963). The study was conducted by Peter Franks, M.D., of the University of California School of Medicine, Davis, and Kevin Fiscella, M.D., M.P.H., of the University of Rochester School of Medicine.

The researchers examined the effects of SES (based on ZIP code) of 600,618 patients enrolled in a large New York MCO on 568 physician profiles for preventive care, disease management, and diagnostic testing costs. They specifically correlated the mean practice SES with female patients' likelihood of having a Pap smear or mammogram; for patients with diabetes, having a glycosylated hemoglobin test for blood-sugar level and diabetic eye exam; and diagnostic testing costs. Without adjustment for patient SES, physicians caring for lower SES patients had profiles reflecting lower prevention compliance and higher diagnostic testing costs.

Patient SES, as measured by ZIP code, significantly affected physician profiles for preventive care and diabetes management (except for glycosylated

hemoglobin). For eye checks in patients with diabetes, mammograms, and Pap tests respectively, 5, 16, and 21 percent of physicians who were outliers (in the top or bottom 5 percent of use of these medical resources), were no longer outliers after adjustment for patient SES. For all performance measures, the changes in ranking were highly correlated with the mean practice SES. Monitoring patient SES using patient ZIP codes could be a way to target resources to improve outcomes for higher risk patients, conclude the researchers.

See "Effect of patient socioeconomic status on physician profiles for prevention, disease management, and diagnostic testing costs," by Drs. Franks and Fiscella, in *Medical Care* 40(8), pp. 717-724, 2002. ■

## Increasing the cultural competence of health care organizations can make business sense

The growing ethnic and cultural diversity of the U.S. population underscores the need to make sure that health care providers and organizations are culturally competent in order to reduce ethnic/racial disparities in health care. Health care organizations, however, are not likely to become culturally competent spontaneously, according to a review of the issue by Cindy Brach, M.P.P., and Irene Fraser, Ph.D., of the Center for Organization and Delivery Studies, Agency for Healthcare Research and Quality.

According to the authors, health care organizations are likely to adopt cultural competence techniques when it makes business sense for them to do so. The authors identify the major financial incentives that constitute the business case for health care organizations to increase their cultural competence and the limitations inherent in these incentives.

The first incentive for health care organizations to become culturally competent is to increase their appeal to minority consumers, thereby enlarging their market

share. Minority groups accounted for 70 percent of the total U.S. population growth between 1988 and 1998. By advertising their cultural competence, health care organizations could attract the business of minority group members. However, it is not clear that health care organizations as a whole have decided it is to their financial advantage to seek out minority markets.

A second financial incentive for cultural competence could be to secure more private business by improving the organization's performance on quality measures of interest to private purchasers. However, few tools are available to purchasers to measure cultural competence, and these tend to be weak. Furthermore, evidence suggests that employers are not systematically bringing about improvement in quality in general.

Third, Medicare, Medicaid, and other public purchasers are placing increased emphasis on cultural competence and quality. But without precise measures and definitions and more attention to monitoring and

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## Cultural competence

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enforcement, these mandates are unlikely to have a major impact.

Finally, culturally competent health care that results in prevention, earlier detection, and more appropriate treatment can be cost effective but only if financial incentives are properly aligned. Financial arrangements should be developed between plans and providers that would allow plans to reap the rewards of investments in cultural competence and give providers incentives to use cultural competence techniques.

Although health care organizations have some financial incentives to consider introducing culturally competent interventions, they are often weak, unclear,

and mixed with counter-incentives. These limitations need to be overcome if culturally competent techniques are to become widely adopted, conclude the authors. In addition, more evidence is needed that particular cultural competence techniques and the organizational structures necessary to implement them will have the desired medical and financial impact.

For more information, see "Reducing disparities through culturally competent health care: An analysis of the business case," by Ms. Brach and Dr. Fraser, in *Quality Management in Health Care* 10(4), pp. 15-28, 2002. Reprints (AHRQ Publication No. 02-R081) are available from AHRQ.\*\* ■

## Enrollment in Medicare+Choice plans has increased considerably in recent years but remains quite low in rural areas

Since 1997, Medicare beneficiaries have been able to enroll in Medicare+Choice (M+C), which allows them to choose a health maintenance organization (HMO), preferred provider organization (PPO), or other options besides the traditional fee-for-service Medicare, which does not offer prescription drug coverage. Although enrollment in M+C by Medicare beneficiaries has increased considerably in recent years, it remains quite low in rural areas, according to a study supported by the Agency for Healthcare Research and Quality (HS10183) and led by Keith J. Mueller, Ph.D., of the University of Nebraska Medical Center. Dr. Mueller and his colleagues calculated M+C enrollment in rural counties from September 1997 to September 2001, and M+C plan entry and exit through January 2002.

From September 1997 to September 2001, total rural M+C enrollment dropped from 173,359 beneficiaries (1.9 percent) to 150,648 (1.6 percent), a considerable decrease from the 2.1 percent enrolled in October 2000. Urban M+C enrollment grew from 4,836,100 (16.5 percent) in September 1997 to 5,410,409 (17.7 percent) in September 2001. M+C enrollment in all rural counties has fallen since 1999, a trend that reflects, in part, the exit of M+C plans that occurred in 1999 and 2000.

Of the 179 M+C plans in existence in 2001, 110 plans had rural enrollees; 72 plans had 100 or more rural enrollees; and only 40 plans had 1,000 or more rural enrollees. Also, by September 2001, rural M+C enrollment exceeded 1,000 beneficiaries in only 22 States, and 10 States had no rural M+C enrollees. M+C plan

exits disproportionately affected rural beneficiaries, with many who lost their plan having no access to other M+C plans. Although only 3.7 percent of M+C enrollees lived in rural areas, 14 percent of rural enrollees were affected by exits in 1999, 12 percent in 2000, and 7 percent in 2001. Only 3.5 percent of M+C enrollees in rural areas were affected by plan exit in 2002.

More details are in "An update on Medicare+Choice: Rural Medicare beneficiaries enrolled in Medicare+Choice plans through September 2001," by Timothy D. McBride, Ph.D., Courtney Andrews, Alexei Makarkin, and Dr. Mueller, in the August 2002 *Rural Policy Brief* 7(4), pp. 1-8. ■

## Health insurance premiums rose more than 30 percent between 1996 and 2000

The average annual health insurance premium in 2000 was \$2,655 for single coverage and \$6,772 for family coverage in private-sector establishments, an increase of 33.3 percent and 36.7 percent respectively since 1996, according to new data from the Agency for Healthcare Research and Quality (AHRQ). Establishments are either businesses in a single location or individual worksites of a larger corporation.

The data, from the Insurance Component of AHRQ's Medical Expenditure Panel Survey (MEPS) provide detailed trend information on health insurance costs and characteristics between 1996 and 2000, as well as State-by-State breakdowns. The tables include estimates of health insurance premiums, contributions, enrollment, self-insurance rates, and other information.

Details include:

- Since 1997, the first year that data on retirees were measured, there has been a significant decline in the number of employers who offer health insurance to their retirees of any age. Offerings to retirees under age 65 dropped from 21.6 percent in 1997 to only 12 percent in 2000. Offerings to retirees 65 and older dropped from 19.5 percent to 10.7 percent over the same period.

- The proportion of private-sector establishments that offered health insurance rose from 52.9 percent to 59.3 percent between 1996 and 2000. In 2000, almost 90 percent of all employees worked for establishments that offered this coverage, compared with 86.5 percent in 1996.
- Although their employers generally offered health insurance coverage, the portion of private-sector employees actually eligible for coverage fell from 81.3 percent in 1996 to 78.9 percent in 2000. Some employees may not have been eligible because health insurance was offered only to management or was based on length of service or full-time status. Among those eligible workers, enrollment in plans dropped from 85.5 percent to 81.2 percent over the 5 years.

The 2000 MEPS IC tables are available on the MEPS Web site, [http://www.meps.ahrq.gov/Data\\_Pub/IC\\_Tables.htm](http://www.meps.ahrq.gov/Data_Pub/IC_Tables.htm). In addition, a new chartbook with an analysis of trends, *Changes in Job-Related Health Insurance, 1996-1999*, MEPS Chartbook No. 10, also is available at [http://www.meps.ahrq.gov/papers/cb10\\_02-0030/cb10.htm](http://www.meps.ahrq.gov/papers/cb10_02-0030/cb10.htm). Print copies of the report (AHRQ Publication No. 02-0030) are available from AHRQ.\* See the back cover of *Research Activities* for ordering information. ■

## AHRQ data show rising hospital charges, falling hospital stays

The average hospital charge for treating a patient admitted for a heart attack increased by roughly one-third from 1993 to 2000, according to trend data from the Agency for Healthcare Research and Quality on all hospital patients in the United States, including those with private insurance, Medicare, Medicaid, or no health insurance.

HCUPnet, the agency's interactive, online hospital statistics tool, shows that the total average charge for treating a heart attack patient rose from \$20,578 in 1993 to \$28,663 in 2000, while during the same period the average

number of days a patient spent in the hospital fell by 26 percent, from 7.4 days to 5.5 days. The total average charge is what hospitals charge for services—such as nursing care, laboratory analyses, diagnostic tests, medications, use of operating rooms, and patient rooms, but not physicians' fees. Hospital charges are generally higher than the amounts that facilities are reimbursed by public and commercial insurers.

New technologies and rising medication costs explain much of the increase in average hospital charges, while economic pressures have contributed to shortening the

average patient stay for most conditions.

Average total charges for many other high-cost conditions also increased between 1993 and 2000, according to the latest trend data available from AHRQ, while the time patients spent in the hospital decreased. Other conditions for which charges have increased and patient stays have decreased are:

- Blood poisoning (septicemia) – from \$17,909 to \$24,365. The average hospital stay declined from 10.0 days to 8.2 days.

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## Rising hospital charges

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- Heart rhythm disturbances (cardiac dysrhythmias) – from \$10,152 to \$14,213. Average hospital stays declined from 4.7 days to 3.6 days.
- Stroke (acute cerebral vascular disease) – from \$15,365 to \$19,956. Average hospital stays fell from 9.5 days to 6.7 days.
- Diabetes – from \$11,021 to \$14,779. Average hospital stays declined from 7.4 days to 5.6 days.
- Pneumonia – from \$12,860 to \$15,104. Average hospital stays decreased from 7.8 days to 6 days.
- Congestive heart failure – from \$11,995 to \$15,293. Average hospital stays declined from 7.4 days to 5.6 days.
- Nonspecific chest pain – from \$5,135 to \$7,543. Average hospital stays fell from 2.5 days to 1.8 days.
- Chronic obstructive lung diseases – from \$11,263 to \$12,491. Average hospital stays declined from 7.2 days to 5.3 days.

These statistics are available from HCUPnet, <http://www.ahrq.gov/data/hcup/hcupnet.htm>. Select “Start HCUPnet” and then select the “Trend” tab to search for various diagnoses. The 1993 average total charges have been adjusted to 2000 dollars, using the Consumer Price Index. ■

## Agency News and Notes

### JCAHO and NQF announce recipients of first annual John M. Eisenberg Patient Safety Awards

On September 9, 2002, the National Quality Forum (NQF) and the Joint Commission on Accreditation of Healthcare Organizations (JCAHO) announced the first recipients of the annual John M. Eisenberg Patient Safety Awards.

These initial awards were presented October 1, at the National Quality Forum’s Third Annual Meeting in Washington, DC. The awards were established by the NQF and JCAHO to recognize the late Dr. Eisenberg’s lifelong work on behalf of improving the quality and safety of health care.

For the 2002 year, winners were selected in each of the award categories, as follows:

- **Individual Lifetime Achievement.** Julianne Morath, R.N., M.S., Children’s Hospitals and Clinics, Minneapolis, MN. For her tireless and successful work at Children’s Hospitals to introduce a culture of patient safety that promotes the sharing of information about errors to improve safety in the care of patients.
- **System Innovation (co-winners).** Concord Hospital, Concord, NH. For developing and implementing a structured communications protocol, adapted from human factors science, which broke down hierarchical role boundaries and improved the care of cardiac surgery patients. Veterans Health Administration National Center

for Patient Safety, Ann Arbor, MI. For innovation and leadership in developing and implementing a systems approach to error reduction within the VHA’s 163 health care facilities.

- **Advocacy.** Veterans Affairs Medical Center, Lexington, KY. For national leadership in openly and voluntarily disclosing health care errors to harmed individuals and/or their families.
- **Research.** David W. Bates, M.D., M.Sc., Brigham and Women’s Hospital, Boston, MA. For cutting-edge research in using information technology to measure and improve patient safety, particularly in the area of medication safety.

The new patient safety awards program—announced earlier this year by NQF and JCAHO—honors John M. Eisenberg, M.D., M.B.A., who was director of the Agency for Healthcare Research and Quality at the time of his death, March 10, 2002. Dr. Eisenberg was one of the founders and leaders of the National Quality Forum and sat on its Board of Directors. In his roles both as AHRQ director and chair of the Federal Government’s Quality Interagency Coordination Task Force, he was a passionate advocate for patient safety and personally led AHRQ’s new grant program to support patient safety research.

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## Patient safety awards

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The categories and award criteria established for this first round of Eisenberg Awards were:

- **Individual Lifetime Achievement.** Individuals who have demonstrated exceptional leadership and scholarship in patient safety over their careers.
- **Advocacy.** Projects or initiatives involving safety-related interventions on behalf of patients. These efforts may be in areas such as legislation, media reporting, or patient advocacy, among others.
- **System Innovation.** Projects or initiatives involving successful system changes or

interventions that make the environment of care safer. These efforts may involve technology, protocols/ procedures, education, or organizational culture, among others.

- **Research.** Projects that involve the scholarly exploration of patient safety-related issues. These efforts may involve systems theory, technology, or data analyses among others.

Awards may be given in each category in any year. However, an award need not be given in each category every year. Eighty-eight nominations were received for the 2002 inaugural awards. ■

## Research on outcomes of EMS for children is an integral part of Federal agencies' child health services research agenda

The Agency for Healthcare Research and Quality is one of eight Federal agencies interested in funding outcomes research on emergency medical services (EMS) for children. In a recent essay, AHRQ Acting Director Carolyn M. Clancy, M.D., and her colleagues Denise Dougherty, Ph.D., and Elinor Walker, provide an overview of accomplishments and challenges from the field of outcomes research, suggest important opportunities for applying existing methods to EMS for children, and identify potential research areas for current and future investigators. The article is based on a plenary talk delivered by Dr. Clancy at the AHRQ-sponsored conference, "Improving Emergency Medical Services for Children Through Outcomes Research: An Interdisciplinary Approach."

Based on previous data sources and new analyses of data from AHRQ's Medical Expenditure Panel Survey (MEPS) and Healthcare Cost and Utilization Project (HCUP), the authors conclude that children seek a full range of EMS for conditions that

are not trivial, and it is critical that we strengthen our efforts to learn what works when children have a need for EMS. Previous research on EMS outcomes for children, some of which was supported by AHRQ and the Health Resources and Services Administration (HRSA), has examined aspects of both prehospital care—such as the effects on children's outcomes of using lights and sirens or various types of cardiopulmonary resuscitation and ventilation during emergency transport—and hospital-based care in the emergency department—including the impact of pediatric versus adult trauma care on outcomes and ways to improve the quality and efficiency of care in the emergency department.

Despite these important projects, research on EMS outcomes for children has been limited. Efforts to date have not covered the priorities for research on children's EMS that have been identified previously by expert committees.

Cross-cutting areas identified as priorities related to pediatric EMS outcomes research range from development and validation of

injury and illness scoring scales and injury prevention strategies and outcomes to evaluation of the costs and effects of out-of-hospital EMS services for children. The authors would add to this list development of a conceptual framework that addresses the unique methodological issues inherent in pediatric EMS outcomes research; examination of outcomes such as discomfort, pain, symptom relief, function, and satisfaction; and incorporation of the perspective of families or other primary caregivers and payers.

See "The importance of outcomes research in pediatric emergency medicine," by Drs. Clancy and Dougherty and Ms. Walker, in the July 2002 *Ambulatory Pediatrics* 2(4), pp. 293-300. Reprints (AHRQ Publication No. 02-R087) are available from AHRQ.\*\*

**Editor's note:** For more information on AHRQ's children's health research agenda and funding opportunities, visit the Agency's Web site at [www.ahrq.gov](http://www.ahrq.gov) and click on "Child Health." ■

### AHRQ unveils new Web-based instrument to help hospitals assess domestic violence programs

The Agency for Healthcare Research and Quality has announced the availability of a new evaluation instrument that hospitals can use to assess the quality and effectiveness of their domestic violence screening and intervention programs. The instrument and instructions can be downloaded from the Agency's Web site at [www.ahrq.gov/research/domesticviol/](http://www.ahrq.gov/research/domesticviol/).

Hospitals can use this instrument to assess how well their hospital-based programs provide the following: training for health care professionals in recognizing domestic violence, patient screening to determine the risk of domestic violence and future injury, and intervention, including medical treatment, victim advocacy services, followup. The tool asks 38 questions and provides guidance to hospitals in assessing the performance of their programs.

Estimates are that 2 percent to 4 percent of all women seen in hospital emergency departments have acute trauma associated with domestic violence, and another 10 percent to 12 percent of women have a recent history of domestic violence. Although most injuries sustained by domestic violence victims are classified as superficial, an estimated 73,000 hospitalizations and 1,500 deaths among women are attributed to domestic violence each year.

Jeffrey H. Coben, M.D., who served as the Agency's Domestic Violence Senior Scholar-in-Residence from 2000-2001, developed the instrument. Dr. Coben is now an Associate Professor of Emergency Medicine at Drexel University College of Medicine and Director of

the Center for Violence and Injury Control Allegheny-Singer Research Institute, Allegheny General Hospital, Pittsburgh, PA. His work at the Agency was cosponsored by the Family Violence Prevention Fund, the Nation's premier organization working to prevent domestic violence.

The instrument incorporates the consensus and expertise of 18 nationally known experts on domestic violence, and it has been extensively field tested. Hospital programs are evaluated against nine measures: hospital policies and procedures, hospital physical environment, hospital cultural environment, training of providers, screening and safety assessment, documentation, intervention services, evaluation activities, and collaboration. The instrument has not been tested for use in other settings, such as private physicians' offices or outpatient clinics.

Hospitals can use the instrument to:

- Develop useful benchmarks or objectives for program achievement.
- Assess an individual site's performance repeatedly over time to determine progress in program implementation.
- Compare and contrast different programs across different sites.
- Determine which program features are most important in creating positive long-term outcomes for domestic violence victims, such as improved health and safety. ■

### Calling all AHRQ researchers! "Help Us to Help You"

We would like to do a better job of promoting and marketing your research. Over the past several years, AHRQ has succeeded in improving communications with grantees and contractors. However, at the present time we only have advance notification of an estimated 37 percent of journal articles stemming from AHRQ-funded research. Obviously, there is much more that can be done.

We are asking for your help to improve this effort by notifying us once your article has been accepted for publication. When you are notified by a journal that your article will be published, please send a copy of the manuscript, along with the journal name, anticipated publication date, and contact information, to your AHRQ project officer or to Salina Prasad of AHRQ's Office of Health Care Information at [sprasad@ahrq.gov](mailto:sprasad@ahrq.gov); 301-594-6385.

Your manuscript will be reviewed for potential AHRQ marketing efforts. Please be assured that AHRQ always honors journal embargo, and we do not release any details about your publication outside of the agency prior to publication. ■



## New AHRQ evidence reports focus on using IT to respond to bioterrorism, managing cancer symptoms, and six other topics

A new report sponsored by the Agency for Healthcare Research and Quality indicates that adding clinical practice guidelines and more current data on bioterrorism-related illnesses to existing databases of health information systems is one of several ways to help prepare clinicians for a possible bioterrorism event. Produced by the AHRQ Evidence-based Practice Center (EPC) at the University of California at San Francisco—Stanford University, the new report also indicates that linking decision support systems for diagnosing, treating, and preventing bioterrorism-related illnesses to other hospital information systems would substantially reduce the data entry burden.

The report is part of AHRQ's \$5 million bioterrorism research portfolio announced in October 2000. The portfolio includes research projects that examine the clinical training and ability of front-line medical staff—including primary care providers, emergency departments, and hospitals—to detect and respond to a bioterrorism threat. Other projects assess and improve linkages between the health system, local and State public health departments, and emergency preparedness units.

Copies of the report, *Bioterrorism Preparedness and Response: Use of Information Technologies and Decision Support Systems*, AHRQ Evidence Report/Technology Assessment No. 59 (AHRQ Publication No. 02-E028) are available from AHRQ.\* A summary of the report (AHRQ Publication No. 02-E027) is also available.\*\*

AHRQ has also issued a new evidence report and summary,

*Management of Cancer Symptoms: Pain, Depression, and Fatigue*, that was developed by the Agency's Evidence-based Practice Center at the New England Medical Center. This report was used as background for the National Institutes of Health's State-of-the-Science Conference on the topic that was held July 15-17 in Bethesda, MD.

The report indicates that there still is a surprisingly limited amount of scientific evidence about treating symptoms of cancer compared with treating cancer itself. Although there are treatments that work, the evidence suggests that pain often is undertreated, despite the availability of effective interventions; cancer-related depression and fatigue are less clearly defined but are extremely common and affect patients' quality of life; and that sometimes, treatments for one symptom exacerbate other symptoms.

Copies of Evidence Report/Technology Assessment No. 61, *Management of Cancer Symptoms: Pain, Depression, and Fatigue* (AHRQ Publication No. 02-E-032)\* and a summary of the report (AHRQ Publication No. 02-E031)\*\* are available from AHRQ.

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

Six other evidence reports that were issued recently by AHRQ are listed below. Copies are available

from the AHRQ Clearinghouse and online at the Agency's Web site. They provide organizations with comprehensive, science-based information on common, costly medical conditions and new health care technologies. The following list identifies the topic and EPC that prepared each report. See the back cover of *Research Activities* for ordering information.

*Impact of Cancer-Related Decision Aids*, Report No. 46. McMaster University (contract 290-97-0017). Report (AHRQ Publication No. 02-E004)\* and Summary (AHRQ Publication No. 02-E003).\*\*

*Effectiveness and Cost-Effectiveness of Echocardiography and Carotid Imaging in the Management of Stroke*, Report No. 49. Oregon Health & Science University (contract 290-97-0018). Report (AHRQ Publication No. 02-E022)\* and Summary (AHRQ Publication No. 02-E021).\*\*

*Management of Allergic and Nonallergic Rhinitis*, Report No. 54. New England Medical Center (contract 290-97-0019). Report (AHRQ Publication No. 02-E024)\* and Summary (AHRQ Publication No. 02-E023).\*\*

*Diagnosis, Natural History, and Late Effects of Otitis Media with Effusion*, Report No. 55. Southern California/RAND Evidence-based Practice Center (contract 290-97-0001). Report (in press) and Summary \*(AHRQ Publication No. 02-E025).\*\*

*Management of Chronic Hepatitis C*, Report No. 60. Johns Hopkins University (contract 290-97-0006). Report (AHRQ Publication No. 02-E030)\* and

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## New evidence reports

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Summary (AHRQ Publication No. 02-E029).\*\*

*S-Adenosyl-L-Methionine for Treatment of Depression, Osteoarthritis, and Liver Disease*, Report No. 64. Southern California/RAND Evidence-based

Practice Center (contract 290-97-0001). Report (in press) and Summary (AHRQ Publication No. 02-E033).\*\* ■

## Grant final reports now available from NTIS

The following grant final reports are now available for purchase from the National Technical Information Service. Each listing identifies the project's principal investigator (PI), his or her affiliation, grant number, and project period and provides a brief description of the project. See the back cover of *Research Activities* for ordering information.\*\*\*

**Editor's note:** In addition to these final reports, you can access information about these projects from several other sources. Most of these researchers have published interim findings in the professional literature, and many have been summarized in *Research Activities* during the course of the project.

To find information presented in back issues (1995-2002) of *Research Activities*, go the AHRQ Web site at [www.ahrq.gov](http://www.ahrq.gov) and click on "Research Activities: Online Newsletter" and then "Search *Research Activities*." To search for information, enter either the grant/contract number or principal investigator's name in the query line. A reference librarian can help you find related journal articles through the National Library of Medicine's Pub Med.

***Chiropractic versus Medical Care Low-Back Pain.* Hal Morgenstern, Ph.D., University of California, Los Angeles. AHRQ grant HS07755, project period 5/1/95-10/13/01.**

Despite the public-health importance of low-back pain, little is known about the relative

effectiveness of treatment strategies in managed care. The primary objectives of this study were to compare the effectiveness of medical and chiropractic care for low-back pain in managed care and to assess the effectiveness of physical therapy and modalities among patients receiving medical or chiropractic care.

Randomization of 681 low-back-pain patients presenting to a large managed-care facility produced four treatment groups: medical care with and without physical therapy and chiropractic care with and without physical modalities. Followup assessments were obtained by mail questionnaires at 2 and 6 weeks, 6, 12, and 18 months, and a telephone interview was conducted at 4 weeks. The primary outcome variables were intensity of low back pain and related disability. Among subjects not assigned to receive physical therapy/modalities, there was slightly more improvement in the chiropractic group than in the medical group. Among subjects assigned to medical care, there was more improvement and remission in the physical-therapy group. Among subjects assigned to chiropractic care, there was little or no association between physical modalities and low-back-pain outcome. Average costs were highest in the medical care with physical therapy group and lowest in the medical care only group. However, chiropractic patients were more satisfied than medical patients. (Abstract, executive

summary, and final report, NTIS accession no. PB2002-104717; 78 pp, \$29.50 paper, \$12.00 microfiche)\*\*\*

***Health Values in Patients with Chronic Hepatitis C Infection.* Kenneth E. Sherman, Ph.D., University of Cincinnati, Cincinnati, OH. AHRQ grant HS10366, project period 9/30/99-3/31/01.**

Patients with hepatitis C (HCV) generally report reduction in health-related quality of life (QOL), and these QOL measures have been used to estimate health utilities in economic modeling. These researchers hypothesized that patient-derived health utilities would differ from those determined by physician/expert panels or by extrapolation of QOL measures, and that these utilities could serve as the basis for QOL adjustment in future economic modeling studies. They recruited 124 patients with chronic HCV infection representing a cross-section of disease severity and administered a disease specific SF-36, Beck Depression Inventory (BDI) and Health Utilities assessment using Health Rating Scale (RS), Time Tradeoff (TTO), and Standard Gamble (SG). Correlation between measures and factor analysis was performed. Modified SF-36 scores were lower than population normative values, particularly in the Physical Composite Score (PCS) scale. The PCS was closely correlated with

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RS but not with TTO or SG. Both TTO and SG failed to show significant variability in relation to disease activity as determined by serum alanine aminotransferase level, histologic stage, or presence of decompensated liver disease. BDI was significantly inversely correlated with TTO and SG. Although QOL is decreased in patients with chronic HCV infection, as reflected by the disease specific SF-36 and the RS, patient-derived health utilities are not strongly associated with QOL measures. Utility measures obtained from HCV patients differ significantly from previous surrogate measures of health values. The utilities derived in this study can be used for economic cost-effectiveness analysis of treatment interventions in patients with chronic HCV. (Abstract, executive summary, and final report, NTIS accession no. PB2002-170325; 14 pp, \$23.00 paper, \$12.00 microfiche)\*\*\*

**HMO Research Network National Conference. Dennis D. Tolsma, M.P.H., Kaiser Permanente-Georgia Region, Atlanta. AHRQ grant HS10096, project period 4/4/00-4/3/01.**

The Sixth Annual HMO Research Network conference was held April 4-5, 2000, in Atlanta, GA. The conference was hosted by Kaiser Permanente – Georgia Region and the USQA Center for Research™ and cop-sponsored by the AHRQ and the Centers for Disease Control and Prevention. There were four plenary sessions designed to bring out key issues in managed care research, six concurrent sessions focused on research methodology and research administration, and two interactive poster sessions. (Abstract and

conference proceedings, NTIS accession no. PB2002-107326; 12 pp, \$23.00 paper, \$12.00 microfiche)\*\*\*

**Implementing Family Programs in Psychiatric Settings. Linda E. Rose, Ph.D., Johns Hopkins University, Baltimore, MD. AHRQ grant HS10378, project period 9/30/99-9/29/01.**

This research focused on interventions provided to families of psychiatric patients. Eleven focus groups were conducted with health care providers, families, patients, and mental health advocates. Participants discussed barriers to care, available treatment programs, and suggestions for future programs. All group sessions were recorded, transcribed, and analyzed using a qualitative approach. Major findings were: health professionals reported a lack of system support and practice-based constraints, including time; lack of coordination of services; need for both education and support for families; lack of collaborative relationships with families; families' lack of motivation/difficulty accepting care; and families "caught in the middle" between patient and therapist. Suggestions for effective intervention were to acknowledge family concerns, help families deal with grief and fear, individualize care to each family, and refer family members to community supports. Families wanted help in dealing with crises, handling threats of patient violence, and getting into the health care system. (Abstract, executive summary, and final report, NTIS accession no. PB2002-107327; 40 pp, \$25.50 paper, \$12.00 microfiche)\*\*\*

**International Conference on Objective Measurement. Kendon J. Conrad, Ph.D., University of Illinois at Chicago. AHRQ grant**

**HS10941, project period 1/15/01-1/14/02.**

This project provided support for the International Conference on Objective Measurement (ICOM): Focus on Health Care, which was held October 19-20, 2001, in Chicago. It was cosponsored by the Department of Veterans Affairs Health Services Research and Development Services, the National Cancer Institute, and the Institute for Objective Measurement. There were more than 100 presentations by psychometricians and health care clinicians, principally using item response theory (IRT) with a focus on health care. ICOM brought together some of the top theoreticians in Rasch/IRT with a large group of health care researchers and clinicians from around the world. A proposed supplement to the journal *Medical Care* that comprises 14 manuscripts from the meeting is currently in review. (Abstract, executive summary, and final report, NTIS accession no. PB2002-107328; \$46 pp, \$25.50 paper, \$12.00 microfiche)\*\*\*

**Physician Cesarean Rate and Risk-Adjusted Birth Outcomes. Tong Li, Ph.D., University of Medicine and Dentistry of New Jersey School of Public Health, Piscataway. AHRQ grant HS10795, project period 6/15/00-6/14/01.**

The cesarean-section rate in the United States has been considered high by many experts, and efforts have been made to lower the rate. However, the safety of a lower rate for the general population has not been investigated. A population-based, retrospective cohort study was conducted to examine this issue based on 171,295 singleton births in New Jersey hospitals

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between January 1, 1996 and December 31, 1997. Linked live birth/fetal death certificate data and hospital discharge data were used for the analysis. Physicians were divided into three groups based on their cesarean rate during the study period: low (18 percent or less), medium (18 to 27 percent), and high (more than 27 percent). Perinatal mortality, rate of birth injury, and uterine rupture were compared among the physician groups. Differences in patient risks were adjusted using multivariate models. Low- and high-rate physicians were not different from medium-rate physicians in terms of perinatal mortality. Higher rate physicians did not have better perinatal outcomes for low and very low birthweight infants. Rate of intracranial hemorrhage was higher in the low-rate group compared with the medium-rate group. Rate of uterine rupture was lower for the low-rate group compared with the medium-rate group. Medium- and high-rate groups were similar in the occurrence of birth injury and uterine rupture. These data suggest that a lower rate of cesarean section can be achieved without increasing perinatal mortality, and that the rate of uterine rupture is reduced. However, a low cesarean rate may be associated with increased risk of intracranial hemorrhage. (Abstract, executive summary, and dissertation, NTIS accession no.

PB2002-106701; 128 pp, \$36.00 paper, \$17.00 microfiche)\*\*\*

**State of the Art: Telemedicine/Telehealth Symposium. An International Perspective. Rashid L. Bashshur, Ph.D., University of Michigan, Ann Arbor. AHRQ grant HS10936, project period 1/1/01-12/31/01.**

The University of Michigan Health System and the World Health Organization, along with AHRQ and other sponsors, convened this international symposium on the state of the art in telemedicine/telehealth, which was held August 23-25, 2001, in Ann Arbor. The participants concluded that for telemedicine to achieve its full potential, it will be necessary to: have substantial and long-term investment in research to assess clinical effectiveness and cost/benefit ratios of telemedicine applications; develop, verify, and implement national and international standards and protocols; adapt telemedicine applications to geographical and cultural differences in terms of available information infrastructure and local disease and medical care processes; and promote national and international cooperation in funding, research, implementation, and evaluation. (Abstract, executive summary, and final report, NTIS accession no. PB2002-106700; 208 pp, \$47.00 paper, \$17.00 microfiche)\*\*\*

**Specialty Care in Closed vs. Open Access HMOs. Jose Escarce, M.D., Ph.D., RAND, Santa Monica, CA. AHRQ grant HS09414, project period 7/16/97-9/29/00.**

These researchers used data from a large managed care organization that offers both a closed-panel, gatekeeper HMO and an open-panel, point of service HMO to assess the impact of these managed care models on the demand for primary and specialty care and on medical care expenditures. They found no evidence that use or expenditures for physician services or total medical care expenditures were higher in the point of service plan than in the gatekeeper plan. In fact, the few significant differences that were found in use or expenditures suggested higher use in the gatekeeper plan. They also found evidence that primary care services and specialty services are complements, rather than substitutes, in managed care plans that require enrollees to select primary care physicians. These findings suggest that eliminating the requirement that patients obtain care through a primary care gatekeeper does not necessarily result in higher use or expenditures in managed care plans with modest cost-sharing provisions. (Abstract, executive summary, and final report, NTIS accession no. PB2002-107329; 113 pp, \$33.00 paper, \$17.00 microfiche)\*\*\* ■

**Bost, J.E., Thompson, J.W., Shih, S., et al. (2002). "Differences in health care quality for children and adults under managed care: Justification for separate quality assessments?" (AHRQ grant HS09205). *Ambulatory Pediatrics* 2(3), pp. 224-229.**

These researchers assessed reported results of health care quality for children and adults in managed systems of care to determine whether variations exist between reported quality results for the two groups within the same plan. They used Consumer Assessment of Health Plans Study (CAHPS®) survey results reported from 424 managed care plans to the National Committee for Quality Assurance in 1999. Responses from nearly 220,000 adults and more than 55,000 parents of children 0-12 years of age were available. The researchers restricted their analyses to the 178 plans that reported both adult and child results. They found marked variation between the care provided by specialists and primary care physicians to adults and children within the same plan, including rating of doctor and rating of specialist. However, assessments of activities related directly to health plan activities showed little variation, including rating of health plans and claims processing. The researchers conclude that having health plan quality information about adult care does not serve as a proxy for information on children.

**Darby, C. (2002, July). "Patient/parent assessment of the quality of care." *Ambulatory Pediatrics* 2(4), pp. 345-348.**

Assessing the interpersonal aspects of care has traditionally been referred to as the

measurement of patient satisfaction. However, the varying expectations of patients and the presence of a ceiling effect on the measures often confound the use of patient satisfaction measures for evaluating the quality of care. The research team involved in the Consumer Assessments of Health Plans Study (CAHPS®) recently developed a set of domains that specifically focus on patient interaction with the health care delivery system: communication with providers, courtesy of staff, getting needed care, and getting care quickly. A review of the few existing studies on the assessment of the interpersonal aspects of pediatric health care in emergency departments suggests some ways to improve interpersonal interaction with children and their parents in the ED. These include providing them with a clearer picture of how long they will have to wait, taking a caring approach with children and their parents, and explaining clearly to parents what care they need to provide for their child after discharge. Reprints (AHRQ Publication No. 02-R088) are available from AHRQ.\*\*

**Flores, G. (2002, July). "Mad scientists, compassionate healers, and greedy egotists: The portrayal of physicians in the movies." (AHRQ grant K02 HS11305). *Journal of the National Medical Association* 94(7), pp. 635-658.**

On average, Americans see about six films per year in cinemas and spend an average of 54 hours per year watching home videos. Movies are a potent force in popular culture because they are accessible, aggressively marketed, heavily financed, and hugely

popular. According to this author, half of all films made in the 1990s with physicians as major characters portray physicians negatively, often as egotistical, materialistic, uncaring, or unethical. Such negative portrayals of physicians could create expectations of similar behaviors, attitudes, and values when patients visit their real-life doctors. The author recently reviewed 131 20th century films released on videotape in which physicians were the main characters. He examined data on physician characteristics, diagnoses, medical accuracy, and dialogue. Movie doctors were most commonly surgeons (33 percent), psychiatrists (26 percent), or family practitioners (18 percent). Physicians were portrayed negatively in 44 percent of movies and as compassionate healers in only 56 percent. From the 1920s to the 1950s, film doctors usually were portrayed in a positive light, with compassion and idealism common, except during the 1930s in the heyday of horror films. Movies from the past two decades have explored critical issues surrounding medical ethics and managed care. Over one-fourth of films (27 percent) included medical inaccuracies, such as scientifically unsubstantiated treatments.

**Kneipp, S.M., and Yarandi, H.N. (2002). "Complex sampling designs and statistical issues in secondary analysis." (AHRQ grant HS10727). *Western Journal of Nursing Research* 24(5), pp. 552-566.**

Secondary analysis using large national survey databases has gained recognition as a legitimate way to conduct research within the

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## Research briefs

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nursing scientific community. However, the incorporation of complex sampling designs challenges researchers who wish to apply secondary analysis to large data sets. This article presents sampling design issues inherent in many large national surveys and explains the rationale for applying sample and variance estimation weights when conducting statistical analyses. It also describes the rationale for using statistical software packages capable of analyzing data derived from complex sampling designs. The authors provide examples of differences in statistical outcomes with and without weights. They use two different classes of statistical software packages with data from AHRQ's Medical Expenditure Panel Survey (MEPS) and discuss the implications for the statistical outcome differences.

**Greenberg, W., and Goldberg, L. (2002).** "The determinants of hospital and HMO vertically integrated delivery systems in a competitive health care sector." *International Journal of Health Care Finance and Economics* 51-68.

Increased competition in the U.S. health care system has led to a number of structural changes such as hospital closings, horizontal mergers (for example, multihospital systems and health networks), and vertical integration of hospitals with physicians. These authors use logistic regression and ordinary least squares models to attempt to understand why short-term, non-Federal hospitals created vertically

integrated systems with HMOs in urban and rural markets during the 1993-1997 period, when 1,917 integrated systems were formed and 1,466 dissolved. The results indicate that the relative buying power of hospitals is a significant determinant of why hospitals would create vertically integrated systems with HMOs. At the hospital level, occupancy, number of hospitals in the geographic area, number of HMOs in the geographic area, the physician-to-population ratio, the hospital's for-profit status, whether it is a teaching hospital, and its location in a metropolitan statistical area all have a significant impact on whether a hospital affiliates with an HMO.

**Parzen, M., Lipsitz, S., Ibrahim, J., and Lipshultz, S. (2002).** "A weighted estimating equation for linear regression with missing covariate data." (AHRQ grant HS10871). *Statistics in Medicine* 21, pp. 2421-2436.

Missing covariate data is a common occurrence in linear regression analysis, one of the most popular statistical techniques. A recent approach to analyze covariate data is a weighted estimating equation. With this type of equation, the contribution to the estimating equation from a complete observation is weighted by the inverse probability of being observed. These authors propose a weighted estimating equation in which they wrongly assume that the missing covariates are multivariate normal but still produce consistent estimates as long as the probability of being observed is correctly modeled. In simulations, these weighted estimating equations appear to be much more efficient,

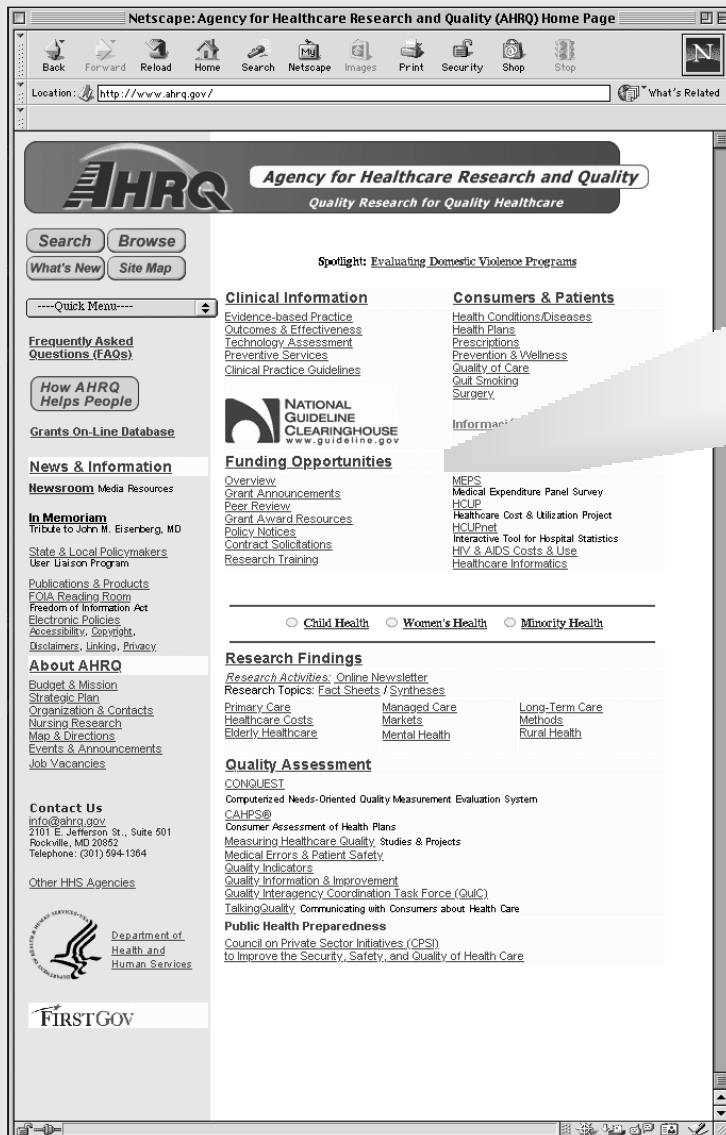
but less computationally intensive, than other weighted estimating equations. They compare the weighted estimating equations they propose to the efficient weighted estimating equations via an example and a simulation study.

**Siderowf, A., Ravina, B., and Glick, H. (2002).** "Preference-based quality-of-life in patients with Parkinson's disease." (AHRQ grant K08 HS11285). *Neurology* 59, pp. 103-108.

Preference-based measures of health-related quality of life are designed to measure the relative value of health by rating a given health state compared with an alternative. This study assessed quality of life using preference-based scales in a group of patients with Parkinson's disease (PD) and compared these scores with measures of clinical severity and traditional quality of life. They rated each patient using the Disability and Distress Index (DDI), the Euroqol System (EQ-5D), and the Health Utilities Index Mark II (HUI). They measured clinical severity using the Unified PD Rating Scale (UPDRS) and PD Questionnaire-39 (PDQ-39) quality-of-life instrument. They compared the results of the preference-based instruments with each other and with clinical measures of disease severity for 97 PD patients. The DDI, EQ-5D and HUI correlated well with measures of disease severity and quality of life. However, they gave strikingly different values. When applied in cost-effectiveness analysis, these discrepancies could result in substantially different cost-effectiveness ratios for PD-related interventions. ■

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