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Race and sex may influence recommendations for cardiac catheterization

A patient's race and sex may influence physicians' recommendations for cardiac catheterization, concludes a study supported by the Agency for Health Care Policy and Research (HS07315). In the study, the investigators found that blacks and women with chest pain had relative odds of referral for cardiac catheterization that were 60 percent of the odds for whites and men. This disparity in testing was greatest for black women, who had relative odds that were 40 percent of those for white men.

Cardiac catheterization is the gold standard test for diagnosing coronary artery disease. During the procedure, dye is injected into the patient's heart through a tube inserted into a major artery, usually in the groin. The path of the dye is then viewed through an x-ray image to show blood flow through the heart and locate arteries with blockages.

Previous studies have been unable to assess whether physicians contribute to differences in access to care for blacks and women. This carefully controlled study used computer multimedia technology to address this question directly. Patient actors—two black men, two black

women, two white men, and two white women—described their chest pain using the same scripts reporting identical clinical symptoms. They wore identical gowns, used similar hand gestures, and had the same insurance and professions. Researchers asked 720 primary care doctors at annual meetings of professional societies to interview a patient, review the patient's medical data, assess his or her diagnosis, and recommend further diagnostic tests. Doctors were told that they were participating in a study of clinical decisionmaking.

The study analysis was based on a research model assessing recommendations for cardiac catheterization incorporating six experimental factors and physicians' assessments of the probability of coronary disease for the patient they interviewed. In further analyses, the investigators determined that the results were unchanged when information on physicians' perceptions of patient personalities and physician characteristics were included in the model. Biases found in this study may reflect subconscious perceptions of physicians about

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Recommendations for cardiac care

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patients based on race and sex, concludes Kevin A. Schulman, M.D.,

of Georgetown University Medical Center, the study's principal investigator.

More details are in "The effect of race and sex on physicians' recommendations for cardiac

catheterization," by Dr. Schulman, Jesse A. Berlin, Sc.D., William Harless, Ph.D., and others, in the February 25, 1999 *New England Journal of Medicine* 340, pp. 618-626. ■

Women's Health

Practice patterns for hysterectomy changed during the early 1990s

Although the United States has the highest hysterectomy rate in the world, with over half a million procedures performed annually in the early 1990s, hysterectomy rates have declined steadily since the 1980s. There also have been changes in the surgical technique, including the reintroduction of supracervical hysterectomy, which leaves the cervix in place.

According to a study by E. Scott Sills, M.D., of the Center for Reproductive Health, Nashville, TN, and other colleagues, including Claudia A. Steiner, M.D., of the Agency for Health Care Policy and Research, the national rate of total abdominal hysterectomies (TAHs) decreased from 25.7 per 10,000 women in 1991 to 20.5 in 1994. At the same time, the national rate of supracervical hysterectomies (SCHs) increased from 0.16 in 1991 to 0.41 in 1994. Although the rate of SCH

has more than doubled, it is clear that the TAH technique continues to be dominant.

During the early 1990s, the merit of SCH was touted in the research literature and popular media. However, its superiority over TAH remains largely theoretical, and universal consensus is lacking. There is no indication that SCH is likely to overtake TAH as the preferred hysterectomy method for many years, note the researchers.

The average length of hospital stay and average hospital charges for both procedures tended to steadily decrease from 1991 to 1994. Total hospital charges for TAH in 1991 were \$2.37 billion, which decreased to \$2.27 billion by 1994. In contrast, total hospital charges for SCH essentially doubled from \$23.6 million to \$47.4 million during the same period, largely explained by the increased use of the procedure. In any case, the much lower use of SCH renders nominal its impact on national health care expenditures.

Standard criteria for performing both procedures are lacking. The question remains whether the small drift toward SCH was due to differences in the types of patients undergoing each procedure, changes in surgeon preference, or some other reason. More research is needed to explain these preliminary findings about changing hysterectomy patterns.

The findings are based on inpatient TAH and SCH discharges in the United States from 1991 to 1994 taken from the Health Care Cost and Utilization Project (HCUP) National Inpatient Sample. HCUP is an all payer, publically available administrative data base, consisting of 6.5 million observations from approximately 950 hospitals. The data base, which includes charge data, allows national and regional estimates and can be used to study rare disease and infrequent procedures such as SCH.

More details are in "Abdominal hysterectomy practice patterns in the United States," by Dr. Sills, Jyot Saini, M.D., Dr. Steiner, and others, in the *International Journal of Gynecology and Obstetrics* 63, pp. 277-283, 1998. Reprints (AHCPR Publication No. 99-R053) are available from AHCPR. ** ■

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Outcomes/Effectiveness Research

Improvements are needed in treatment of depression in primary care and among minorities in specialty care

About 40 percent of depressed adults receive mental health care in primary care settings, where depressive disorders are as prevalent (5 to 9 percent) as many major chronic conditions such as diabetes. Yet primary care providers often are unaware of a patient's depression and consequently do not provide effective treatments. It has been suggested that mental health specialty services are not sufficiently responsive to the needs of minority patients and that professionals should be trained to provide more culturally sensitive programs.

The Partners in Care project is designed to partner mental health specialists with primary care physicians to improve primary care treatment of depression. This is a Patient Outcomes Research Team (PORT) project, which is supported by the Agency for Health Care Policy and Research (HS08349) and led by Kenneth B. Wells, M.D., M.P.H., of the University of California, Los Angeles. Two recent studies supported by the PORT are summarized here. The first study evaluates the cost-effectiveness of improving primary care for depression. The second study examines cultural issues in the treatment of ethnic minorities with mental health problems.

Wells, K.B. (1999). "The design of Partners in Care: Evaluating the cost-effectiveness of improving care for depression in primary care." *Social Psychiatry and Psychiatric Epidemiology* 34, pp. 20-29.

This study examines the cost-effectiveness of improving the quality of treatments for depression in 27,000 patients seen in primary care managed care practices for

depression. The researchers randomized 46 primary care clinics from 6 managed care organizations to either basic quality improvement (QI) plus enhanced medication management; QI plus enhanced psychotherapy; and usual care. QI interventions included patient and provider education, nurse-assisted patient assessment, and resources to support appropriate medication management or access to cognitive behavioral therapy.

For QI an expert team received 2 days of training in assessing and treating depression, educating primary care clinicians, and conducting quality assurance meetings. Practice nurses were trained to educate patients using a brochure and videotape and to assess patients' depressive symptoms, functioning, and other factors. Physicians received a manual on detecting, assessing, and treating depression, which was based in part on the depression guideline published by AHCPR in 1993.

Studies showing the effectiveness of treatment models using a mental health specialist/primary care partnership to support effective antidepressant medication management or to provide brief cognitive therapy on referral strongly influenced the Partners in Care (PIC) QI approach. The goal of PIC was to study treatment effectiveness and this type of partnership on typical patients under usual care conditions, rather than the ideal conditions usually present in clinical trials. Dr. Wells concludes that studying depression treatment

effects and QI in nonacademic settings is feasible but requires relaxation of experimental design features, such as blinding of patient or doctor to type of treatment.

Takeuchi, D.T., Uehara, E., and Maramba, G. (1999). "Cultural diversity and mental health treatment." In: *The Sociology of Mental Health*, A. Horwitz and T. Scheid, editors. New York: Oxford; pp. 550-565.

In this book chapter, the authors examine cultural issues in the treatment of ethnic minorities who have mental health problems. They

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note that ethnic minorities use less mental health services than whites, and that when minorities do use mental health services, they are less likely to drop out if their provider shares their language and ethnicity. The authors describe a number of culturally appropriate mental health programs. They note, however, that three recent trends in mental health

services conflict with the goal of developing multicultural mental health service systems: endorsing etiologies of mental illness that stress biological over social and cultural causes; seeing culture as fixed, historical, and autonomous; and overlooking the substantial heterogeneity in socioeconomic status and stress-related life experiences within specific ethnic groups.

For instance, ethnic differences both within and between ethnic groups in these stressors—ranging from poverty, war-related physical and emotional trauma, and social role discontinuities—are substantial and warrant more careful attention by those who plan mental health services. Categories such as “Latino Americans” and “Native Americans” may conceal more than they reveal, note the authors. ■

Some perinatal care practices can optimize or worsen the condition of very premature newborns

Perinatal care and delivery room management by hospital personnel can substantially improve or worsen the immediate condition of premature newborns, says a study supported by the Agency for Health Care Policy and Research (HS07015). In a comparison of six neonatal intensive care units (NICUs), the researchers found that worse neonatal outcomes at two NICUs were associated with lower use of beneficial antenatal corticosteroid treatment and poorer stabilization and resuscitation after delivery.

Douglas K. Richardson, M.D., M.B.A., of Harvard Medical School, and his colleagues abstracted medical record data on 1,476 babies born at a gestational age of less than 32 weeks at six perinatal centers. They measured newborn illness severity with the Score for Neonatal Acute Physiology (SNAP; higher scores indicate greater severity of illness) and constructed models to predict SNAP scores as a function of perinatal risk factors.

Advancing gestational age had a powerful impact on neonatal stability, with a drop of more than 1 SNAP point for each additional week of gestation. Presence of a life-threatening congenital anomaly added 4 SNAP points. Antenatal corticosteroids (which improve respiration and cardiovascular systems and improve

neonatal stability) lowered SNAP an average of 2.1 points. Low 1- and 5-minute Apgar scores were associated with higher SNAP (2.4 and 2.2 points, respectively) at 12 hours of age. Hypothermia on arrival to the NICU added 2.3 points to the SNAP score.

On the other hand, higher SNAP scores at two perinatal centers could not be explained by such neonatal characteristics. Instead, they were associated with lower use of antenatal corticosteroids, low Apgar scores (which usually reflects delivery room resuscitation and mode of delivery), and neonatal hypothermia at NICU admission (reflecting poorer stabilization following delivery). Babies of similar gestational age at one site were nearly three times more apt to have a low Apgar score and had two to nine times more delivery room deaths than babies at other sites. The higher rate of poor 5-minute Apgar scores at this site suggested a pattern of suboptimal resuscitation or greater antecedent fetal sedation or compromise.

See “Perinatal risk and severity of illness in newborns at 6 neonatal intensive care units,” by Dr. Richardson, Bhavesh L. Shah, M.D., Ivan D. Frantz III, M.D., and others, in the April 1999 *American Journal of Public Health* 89(4), pp. 511-516. ■

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Patients with recurrent stroke have poorer outcomes and higher care costs than those with a first stroke

Typically, patients who suffer a second or third stroke have poorer outcomes and greater costs than those who suffer a first stroke. Fewer of these patients survive, and those who do are more disabled. These are the findings of a study by the Stroke Prevention Patient Outcomes Research Team (PORT), which is supported by the Agency for Health Care Policy and Research (PORT contract 290-91-0028) and led by David B. Matchar, M.D., of Duke University.

The researchers found that 57 percent of first stroke survivors were alive 24 months after the stroke compared with only 48 percent of those who suffered a recurrent stroke. Costs were similar for the initial hospital stay and in the first

1 to 3 months after stroke. However, for months 4 to 24 after stroke, total costs were higher among those with recurrent stroke by about \$375 per patient per month.

The difference was greatest for younger patients and least for patients aged 80 years and older. Most of the difference in total monthly cost was attributable to nursing home use (averaging about \$150 per patient per month) and acute hospitalization (averaging about \$120 per patient per month). Decision and cost-effectiveness models should use different estimates of survival and cost outcomes depending on whether the patient has a first or recurrent stroke, according to Dr. Matchar.

The researchers used administrative claims files from a random 20 percent sample of nearly 50,000 Medicare patients admitted to U.S. hospitals with a primary diagnosis of cerebral infarction during 1991. Data from hospitalizations during the previous 4 years were used to classify patients as having either first or recurrent stroke. Patients' survival and direct medical costs were followed for 24 months after stroke.

See "Epidemiology of recurrent cerebral infarction: A Medicare claims-based comparison of first and recurrent strokes on 2-year survival and cost," by Gregory P. Samsa, Ph.D., John Bian, M.S., Joseph Lipscomb, Ph.D., and Dr. Matchar, in *Stroke* 30, pp. 338-349, 1999. ■

International variations in cataract surgery practices may be due in part to slower diffusion of new technology in Europe

Cataract surgery is widely accepted as an effective way to improve the vision of patients with cataracts. However, cataract surgery practices and related complications vary widely in North America and Europe, according to a recent study which was supported in part by the Agency for Health Care Policy and Research (HS07085). The researchers examined cataract surgery practices and related complications at sites in four countries known for high-quality health care systems: Canada, Spain, Denmark, and the United States.

The study revealed that the transition to the latest cataract surgical technique, phacoemulsification, was most comprehensive in the United States

and Canada and only recently initiated in Spain. The transition from general to local anesthesia, considered to be less costly and less risky, was also less complete in Spain. Phacoemulsification was performed in two-thirds of the cataract extractions in the United States and Manitoba, Canada, in one-third in Denmark, and in 3 percent in Barcelona, Spain. More than 96 percent of extractions in North America and Denmark were performed with the patient under local anesthesia, whereas general anesthesia was used for 38 percent of extractions in Barcelona.

These variations in clinical practice may represent a general trend of slower diffusion of new medical technology in Europe

compared with North America, note the researchers. In conducting the International Cataract Surgery Outcomes Study, they collected preoperative, perioperative, and postoperative clinical data on 1,344 patients undergoing their first eye cataract surgery. Patients were recruited from ophthalmic clinics in the four countries.

For details, see "Intraoperative clinical practice and risk of early complications after cataract extraction in the United States, Canada, Denmark, and Spain," by Jens Christian Norregaard, M.D., Ph.D., Peter Bernth-Petersen, M.D., Ph.D., Lorne Bellan, M.D., and others, in the January 1999 *Ophthalmology* 106, pp. 42-48. ■

Quality of Care

Hospital readmissions do not necessarily reflect poor quality of care

When a patient is readmitted to the hospital, it's not necessarily poor quality of care during the first visit that prompts the return, suggests a study supported by the Agency for Health Care Policy and Research (HS06331). It found that some patients hospitalized with congestive heart failure (CHF) or pneumonia experienced poor quality of hospital care. But the relation of quality to the likelihood of readmission was not particularly strong, after accounting for differences in severity of illness. Neither related adverse readmissions (RARs) nor other readmissions appear to be useful tools for identifying patients who experience inferior care or for comparing quality among hospitals, notes Joel S. Weissman, Ph.D., of Massachusetts General Hospital and the Institute for Health Policy.

Dr. Weissman and his colleagues conducted a case control study of 1,758 Medicare patients hospitalized in four States—New York, Pennsylvania, Massachusetts, and Illinois—during 1991 or 1992 with pneumonia or CHF. They used hospital records on readmission

diagnoses and intervening time periods to identify readmissions that indicated potentially less than optimal care during initial hospitalization (i.e., RARs). Quality of care was measured using a modification of a tool originally developed by the RAND Corporation to evaluate the effects of the Prospective Payment System.

Low quality of care for CHF occurred among patients with RARs only slightly more frequently than among other patients (17.1 percent, 16.6 percent, and 14.5 percent for RARs, other readmissions, and nonreadmissions, respectively). The percentages for pneumonia (14.9 percent, 12.8 percent, and 13.7 percent) were similar. Also, in simulations, RARs did not discriminate well between average and low quality hospitals. Hospitals with average RAR rates had higher mean quality than hospitals with high RAR rates only 54 percent of the time.

See "Hospital readmissions and quality of care," by Dr. Weissman, John Z. Ayanian, M.D., M.P.P., Scott Chasan-Taber, Ph.D., and others, in the May 1999 *Medical Care* 37(5), pp. 490-501. ■

Many costly lab tests performed in the hospital are unnecessary

A substantial proportion of laboratory tests that are ordered in hospitals are unnecessary. Not only is excessive test ordering costly, but it also results in more false-positive results, which may lead to further unnecessary treatment and increased costs. Two recent studies supported by the Agency for Health Care Policy and Research (HS08297) and led by David W. Bates, M.D., M.Sc., of Brigham and Women's Hospital, examined inappropriate hospital testing. The first study uncovered a high proportion of inappropriate digoxin level monitoring tests. The second study found that computerized reminders for physicians entering a test order helped reduce redundant laboratory tests.

Casas, E., Tanasijevic, M.J., Ma'luf, N., and others. (1999, February). "Evaluating the appropriateness of digoxin level monitoring." *Archives of Internal Medicine* 159, pp. 363-368.

Laboratory measurement of serum digoxin levels in patients with atrial fibrillation (a type of irregular heart beat) or heart failure can be useful in high-risk patients receiving digoxin therapy for a variety of reasons, including evaluating patient compliance with the therapeutic regimen and verifying toxicity of the therapy. However, in this study, unjustified once-a-day digoxin monitoring tests among hospital patients was common. Overall, 84 percent of inpatient digoxin level tests had no appropriate indication. Of these, 76 percent were serial tests

drawn less than 10 days apart, 9.5 percent were done on patients not receiving digoxin, 8.5 percent were done after initiation of digoxin therapy before a pharmacological steady state had been achieved, 3 percent were done after adjustment of digoxin dosage before steady state had been reached, and 3 percent were done to follow levels in the toxic range that were measured before the level could be expected to decrease to the therapeutic range. Furthermore, 48 percent of the digoxin levels measured in outpatients had no appropriate indication. Of the inappropriate tests, 76 percent were due to early routine monitoring, 13 percent were performed on high-risk patients,

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Unnecessary lab tests

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2 percent were performed on patients with worsening congestive heart failure or atrial fibrillation, 2 percent were performed after changing the digoxin regimen but before steady state had been reached, and 8 percent were due to other causes.

Bates, D.W., Kuperman, G.J., Rittenberg, E., and others. (1999, February). "A randomized trial of a computer-based intervention to reduce utilization of redundant laboratory tests." *American Journal of Medicine* 106, pp. 144-150.

This study found a total of 939 apparently redundant hospital laboratory tests among over 77,000 study tests that were ordered over a 4-month period at one hospital. Physicians of study patients (n = 5,700) who ordered tests on the computer terminal received computerized reminders if a test was redundant (that is, had been performed recently or was pending); physicians of control patients (n = 5,886 patients) received no such reminders. Sixty-nine percent of tests were canceled when a reminder was given. Of the 137 overrides (the doctor ordered the test despite the reminder), 41 percent appeared to be

justified based on review of patient charts. However, the estimated annual savings in laboratory charges resulting from computer reminders was only \$35,000, for several reasons. Most important were that only 44 percent of redundant tests performed had computer orders, only half of the computer orders were screened for redundancy, and almost one-third of the reminders were overridden. Thus, while reminders about orders for apparently redundant laboratory tests were effective when delivered, these other factors limited the overall effect. ■

Health Care Costs and Financing

Losing health insurance coverage or changing plans often means patients will delay seeking needed care

Patients who are treated in a hospital emergency department (ED) are less likely to get recommended followup care if they have recently changed or lost health insurance than similar patients who have retained their same coverage. They also are more apt to delay seeking needed care, get prescriptions filled, and to have a primary care doctor, according to a recent study supported by the Agency for Health Care Policy and Research (National Research Service Award fellowship F32 HS00062). These findings held even after controlling for other important factors influencing access to care such as income, education, and employment status.

Costly delays in seeking care prompted by health plan changes should be considered when

calculating the advantages and disadvantages of selecting employer-sponsored insurance or Medicaid programs that force people to change plans, suggests Helen R. Burstin, M.D., M.P.H., of Brigham and Women's Hospital. Dr. Burstin and colleagues interviewed adult patients who were seen in five urban EDs in Boston in 1993 for problems ranging from abdominal and chest pain to head trauma. In addition, the patients were provided with self-administered questionnaires at the time of the ED visit, after 10 days, and 4 months later.

Results showed that 54 percent of patients who lost and 35 percent of those who changed insurance had no followup care with a regular doctor 4 months after emergency treatment compared with 30 percent of individuals who had no disruption in

insurance. Also, 33 percent of patients who lost and 30 percent of those who changed insurance said they delayed seeking medical care for a problem or check-up in the prior 4 months compared with 18 percent of patients whose health coverage was not disrupted. Among patients who lost insurance coverage, 48 percent found it difficult to get health care when they needed it, and 32 percent had difficulty getting prescriptions filled compared with 13 percent and 9 percent of patients, respectively, who changed their insurance plan.

See "The effect of change of health insurance on access to care," by Dr. Burstin, Katherine Swartz, Ph.D., Anne C. O'Neil, M.P.H., and others, in *Inquiry* 35, pp. 389-397, 1998. ■

High costs of caring for a disabled family member may negatively affect receipt of needed care for other family members

Generally, having a disabled family member is associated with increased health care use and expenditures for family members without disabilities, including both children and adults under age 65. Regardless of the disability severity threshold used to identify the disabled family member, a recent study found that having a disabled family member increased overall family health expenditures and out-of-pocket spending compared with families without any disabled members.

As severity of disability rose, so did costs, so that families with a member with limitations in activities of daily living (for example, feeding oneself, using the toilet) on average spent about three times the amount that families without a disabled member spent for health care. Out-of-pocket medical expenses in this situation were more than 2.5 times greater for a family with a disabled member (11.2 percent vs. 4.1 percent of total income for families without a disabled member).

Among poor families, however, the effects of having a disabled member were more likely to reduce medical care use and expenditures among nondisabled family members. Adults in these families were 16 percent less likely to visit a doctor than adults in high-income families. Public programs need to recognize the potential rationing effect that occurs when income is limited and

one family member uses the bulk of health care resources, note the authors of the study. It is possible that public programs are insuring only the disabled individual, leaving the rest of the family to manage on restrictive private policies or no insurance at all.

Adjusting income-level criteria for public health insurance when a family member is disabled or allowing buy-in opportunities (similar to those in the Medicare program that are now being considered for near-elderly people) are two possible approaches to this problem, suggest AHCPR researchers, Barbara M. Altman, Ph.D., and Philip F. Cooper, Ph.D., and their colleague Peter J. Cunningham, Ph.D., formerly of AHCPR and now with the Center for Studying Health System Change. Their findings are based on analysis of the 1987 household component of the National Medical Expenditure Survey. This survey provided national estimates of household health status, health care use, and expenditures based on a representative sample of the civilian, noninstitutionalized U.S. population.

See "The case of disability in the family: Impact on health care utilization and expenditures for nondisabled members," by Drs. Altman, Cooper, and Cunningham, in the *Milbank Quarterly* 77(1), pp. 39-75, 1999. Reprints (AHCPR Publication No. 99-R055) are available from AHCPR.* ■

Rural Health

Studies document positive aspects of Medicaid coverage for poor families living in rural areas

Medicaid coverage of rural poor families has distinct advantages in certain areas, according to two recent studies supported by the Agency for Health Care Policy and Research (Rural Health Research Center contract 290-93-0038). The first study found that more extensive Medicaid coverage significantly increases the likelihood of more up-to-date immunizations among poor rural children. The second study demonstrates that implementation of Medicaid managed care programs is

feasible, even in remote rural areas. Both studies are summarized here.

Mayer, M.L., Clark, S.J., Konrad, T.R., and others. (1999, February). "The role of State policies and programs in buffering the effects of poverty on children's immunization receipt." *American Journal of Public Health* 89(2), pp. 164-170.

Although State policies can enhance delivery of immunizations to poor children, heavy reliance on public-sector immunization does not

ensure timely receipt of vaccines. Public- and private-sector collaboration is necessary to protect children from vaccine-preventable diseases, concludes this study. The investigators assessed how many children in a national sample of 8,100 2-year-old children were up-to-date on their immunizations, based on the 1988 National Maternal and Infant Health Survey and its 1991 Longitudinal Follow-Up.

Overall, 33 percent of poor children and 44 percent of other

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Medicaid coverage

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children had up-to-date immunizations. Poor children with public rather than private sources of routine pediatric care were more apt to have their full immunization series. Yet children living in States where most immunizations were delivered in the public sector were less likely to be up to date. The increased demand for public provision of immunizations, coupled with decreased financial resources for community health centers, may underlie this negative relationship, suggest the researchers.

Their analysis also showed that more extensive Medicaid coverage of the poor was associated with a greater likelihood of having up-to-date immunizations among poor children. However, the effects of expanded Medicaid coverage were limited. For about 60 percent of the poor covered by Medicaid, additional Medicaid expansions did not increase the probability of being up to date.

Felt-Lisk, S., Silberman, P., Hoag, S., and Slifkin, R. (1999, March). "Medicaid managed care in rural areas: A ten-State follow-up study." *Health Affairs* 18(2), pp. 238-245.

At least 703,000 Medicaid beneficiaries in rural areas now participate in capitated managed care, and even more participate in primary care case management (PCCM) programs. States most often cite potential cost savings and hopes of improving access to care as the major reasons for implementing rural managed care programs. These researchers did a case study of 10 States that have already implemented Medicaid managed care programs to discern the feasibility of these programs and their impact on access to care. In 1997, they conducted telephone interviews with 130 key informants in the 10 States, including State agency representatives, rural providers, representatives of managed care organizations, and consumer advocates.

Overall, they found that implementing PCCM and capitated programs was feasible, even in remote rural areas. This was because States took greater time and effort for implementation in rural areas and ensured that program details were workable in these communities. Enough time must be allowed to accomplish certain tasks prior to implementation: building the provider network, building support for the program through interface with local representatives, and (if applicable) designing geographic program boundaries that take into account local service-use patterns, note the researchers.

They point out that building provider networks in rural areas requires more time and effort than it does in urban areas because of rural providers' inexperience with managed care and the greater difficulty in communicating with disperse, often remote, independent provider offices. ■

Long-Term Care

Nursing homes are beginning to use psychotropic drugs more often for clinical reasons than for restraint of residents

There has long been a concern about the use of psychotropic (mind-altering) drugs to restrain nursing home residents simply for discipline or convenience rather than for appropriate clinical symptoms. With the passage of the 1987 Nursing Home Reform Act (NHRA), nursing homes are no longer allowed to use these medications except for justifiable clinical reasons. The Federal law seems to have had some impact, according to a recent study.

The study found that although the use of antipsychotic drugs increased

a bit from 1990 to 1993 (14 percent to 17 percent), clinical factors were slightly more significant in 1993 in use of both antipsychotics and antianxiety/hypnotic drugs. This suggests that the use of psychotropic drugs is more clinically motivated than in the past, concludes Nicholas G. Castle, of AtlantiCare Health System, author of the study.

In 1990, nursing home residents who were more physically impaired, older, or had a prior stroke were significantly less likely to receive antipsychotic drugs. Those who were more cognitively impaired or

suffered from dementia, depression, or a history of psychiatric problems were significantly more apt to receive antipsychotic drugs. In 1993, a largely similar pattern of effects was observed, with the addition of anxiety disorders as increasing the likelihood of receiving antipsychotic drugs. In 1993, nursing home residents with a history of psychiatric problems were three times more apt to be given antipsychotics than other residents. Those with an anxiety disorder were

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four times more apt to receive antianxiety/hypnotic drugs than other residents in 1993.

Nursing home facility factors also were less important in influencing psychotropic drug use in 1993

compared with 1990. The author cautions, however, that the changes in psychotropic drug use may not have been specifically related to the NHRA but may instead have been due to increased knowledge about the appropriate indications for psychotropic drug use.

More details are in "Changes in resident and facility risk factors for psychotropic drug use in nursing homes since the Nursing Home Reform Act," by Dr. Castle, in the March 1999 *Journal of Applied Gerontology* 18(1), pp. 77-98. ■

Asthma patients prefer treatment in the emergency department asthma observation unit to being hospitalized

Patients who arrive at the emergency department (ED) suffering from an acute asthma episode are more satisfied with their care if they remain for 12 hours in the ED-based asthma observation unit (AOU) than if they are admitted to the hospital from the ED, finds a new study. The researchers, supported by the Agency for Health Care Policy and Research (HS07103), studied asthma patients, who arrived at the ED over a 30-month period and who met criteria for hospital admission after 3 hours of standard ED asthma therapy (163 patients). They randomized 81 patients to receive AOU care and 82 patients to routine hospital admission.

The patients in the AOU group scored higher after diagnosis and treatment than those in the inpatient group on all seven care satisfaction measures. Their satisfaction was significantly greater for four measures: received service wanted, would recommend the service to others, were satisfied with the service, and were satisfied overall with their care. AOU patients also

reported fewer total problems with care and fewer problems with communication, emotional support, physical comfort, and special needs than patients in the hospitalized group.

It seems that ED-based diagnostic and treatment units can provide acute asthma patients with care that is equal to but apparently more satisfying than traditional hospital care, concludes Robert J. Rydman, Ph.D., Cook County Hospital and the University of Illinois at Chicago. Their companion study also revealed that AOU patients had superior quality of life 7 days after discharge, equivalent rates of relapse necessitating emergency or primary care 8 weeks later, and lower costs by remaining in the ED for their acute episodes.

See "Patient satisfaction with an emergency department asthma observation unit," by Dr. Rydman, Rebecca R. Roberts, M.D., Gary L. Albrecht, Ph.D., and others, in the March 1999 *Academic Emergency Medicine* 6(3), pp. 178-183. ■

Use of hospitalists instead of primary care physicians to care for hospitalized patients has both pros and cons

The use of hospitalists—physicians who spend at least 25 percent of their professional time serving as physicians-of-record in place of primary care physicians—is expanding rapidly. The February 16, 1999, supplement to the *Annals of Internal Medicine*, entitled "The Hospitalist Movement in the United States," explored many aspects of the new model for inpatient care. The supplement's 10 papers were drawn from the proceedings of a December

1997 conference sponsored by the Agency for Health Care Policy and Research (HS09544). Lead editor of the supplement is Robert M. Wachter, M.D., of the University of California, San Francisco, who first coined the term hospitalist in a 1996 article in the *New England Journal of Medicine*. Dr. Wachter's work is supported by AHCPR.

In the introductory article, Dr. Wachter highlights the potential advantages and drawbacks of the hospitalist model. Advantages

include increased availability to hospitalized patients, greater hospital experience and expertise, and an increased commitment to hospital quality improvement compared with primary physicians. Potential disadvantages include the loss of information caused by the outpatient-hospital discontinuity and the dissatisfaction of patients who are "handed-off" to a new physician at the time of hospital admission. Loss of information can be

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Use of hospitalists

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minimized through careful attention to interpersonal communication. Patient dissatisfaction has not proven to be a major problem at institutions such as UCSF, Kaiser Permanente, and Park Nicollet, whose experiences are described in the supplement.

Also included in the supplement is the first national survey of the members of the National Association of Inpatient Physicians (NAIP), a new organization representing the

Nation's hospitalists. The survey demonstrated that 89 percent of hospitalists are internists, with 51 percent being general internists and 38 percent medical subspecialists. Most limit their practice to the inpatient environment, although 37 percent continue a limited outpatient primary or consultative practice. Employment arrangements vary significantly: 35 percent are employed by a medical group, 23 percent by a hospital, and 14 percent by a managed care organization. Although concerns have been raised

about hospitalist burnout, most respondents were satisfied with their work, and 84 percent of the generalists and 73 percent of specialists expected to still be a hospitalist in 3 years.

These articles, as well as others examining the experience of large health systems, the impact of hospitalists on academic medicine and on employers, and whether hospital medicine is a new specialty, are published in the February 16, 1999, supplement to the *Annals of Internal Medicine* 130(4). ■

Minority Health

Some Latino children are more likely to have asthma than others

Asthma is the most common chronic illness affecting Latino children, but Puerto Rican children are affected the most (11.5 percent vs. 5.2 percent of Cuban American children and 2.7 percent of Mexican American children). This is probably due to a combination of unique genetic and sociocultural factors, according to a recent review of the literature. For instance, Puerto Rican children have a smaller airway size, more severe inflammatory reactions, and lower birthweight than Cuban American or Mexican American children.

The inflammatory reaction and resulting airway constriction that are typical of asthma usually are sparked by exposure to indoor allergens or irritants such as cockroaches, pets, mold, and smoke, as well as outdoor ones like pollen and pollution. These exposures, along with respiratory infections, have been implicated in the development and worsening of asthma. Puerto Rican mothers, especially teenage mothers, have a much higher rate of smoking than Cuban American or Mexican American mothers.

Also, Puerto Rican families sometimes treat asthma with folk or home remedies unlike Mexican American families, who are more likely to treat asthma with conventional medicines. Several previous studies have

suggested that family structure and a child's physical and social environment may play a role in the development and severity of asthma. For example, mainland Puerto Ricans (those not living on the island) have the highest proportion of households led by a single mother. What's more, Puerto Ricans and Mexican Americans are less educated and have less family income than Cuban Americans. Finally, the presence and importance of extended family support structures among Mexican Americans and the emphasis placed on higher education by Cuban Americans may enable these groups to better cope with and manage this multifactorial disease, conclude the researchers who conducted the review. Their work was supported in part by the Agency for Health Care Policy and Research (National Research Service Award training grant T32 HS00007).

See "Elevated asthma morbidity in Puerto Rican children: A review of possible risk and prognostic factors," by Marielena Lara, M.D., M.P.H., Hal Morgenstern, Ph.D., Naihua Duan, Ph.D., and Robert H. Brook, M.D., in the February 1999 *Western Journal of Medicine* 170, pp. 75-84. ■

AHCPR News and Notes

AHCPR seeks nominations of topics for evidence reports

The Agency for Health Care Policy and Research is seeking topic nominations for the third round of evidence reports and technology assessments to be conducted by AHCPR's 12 Evidence-based Practice Centers (EPCs). In addition to nominations of topics for assessments and evidence reports on specific health care technologies and medical procedures, including alternative or complementary therapies, AHCPR is, for the first time, inviting nominations of topics for assessments and evidence reports relating to the organization and financing of health care. With scientific studies related to the organization and financing of health care growing, evidence reports and scientific syntheses of this research can provide health system

organizations with a scientific foundation for developing system-wide policies and practices.

The EPCs produce science syntheses—evidence reports and technology assessments—that provide to public and private organizations the foundation for developing and implementing their own practice guidelines, performance measures, and other tools and strategies to improve the quality of health care and make decisions related to the effectiveness or appropriateness of specific health care technologies.

AHCPR has published a *Federal Register* notice outlining topic nomination and selection criteria. See the May 4, 1999, issue of the *Federal Register* (volume 64, number 85). Topic nominators are expected to serve as partners to the EPCs as they develop the evidence

reports and technology assessments and to use the reports as the basis for developing and implementing their own practice guidelines and other strategies to enhance the quality of health care.

Topic nominations are accepted on an ongoing basis, but to be considered for this round, nominations should be submitted by July 6, 1999, to Douglas B. Kamerow, M.D., M.P.H., Director, Center for Practice and Technology Assessment, AHCPR, 6010 Executive Boulevard, Suite 300, Rockville, MD 20852.

For additional information about AHCPR's Evidence-based Practice Program and to see summaries of the reports issued to date, visit our Web site at: <http://www.ahcpr.gov> and click on "Clinical Information." ■

AHCPR recognizes contributions of peer reviewers

Each year hundreds of reviewers contribute their expertise to assist in the peer review of research grant applications. We at the Agency for Health Care Policy and Research

would like to acknowledge, with special thanks, those who served as reviewers in 1998.

We invite anyone who is interested in serving as a peer reviewer to forward a current

curriculum vitae to Diane Manuel, AHCPR, Office of Research Review, Education, and Policy, 2101 E. Jefferson Street, Rockville, MD 20852, or you may fax your CV to Diane Manuel at 301-594-2329.

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Announcements

AHCPR announces availability of audiotapes from User Liaison Program workshops

The Agency for Health Care Policy and Research's User Liaison Program (ULP) coordinates and hosts workshops for State and local health officials. These workshops are designed to provide policymakers and other officials at the State and local levels with timely information on emerging and critical health care topics.

Audiotapes from a number of recent ULP workshops are listed below and are available free of charge from AHCPR.* See the back cover of *Research Activities* for ordering information. The tapes are listed in reverse chronological order (most recent first) according to workshop date. Please be sure to use the AV number when ordering.

Integrated State Health Information Systems, November 1998, Mobile, AL (AHCPR 99-AV03)

Understanding the Alphabet Soup of Managed Care Integrated Delivery Systems, October 1998, Philadelphia, PA (AHCPR 99-AV02)

Ensuring Quality Health Care: The Challenges of Measuring Performance and Consumer Satisfaction, May 1998, Vail, CO (AHCPR 99-AV01)

CHIP: Implementing Effective Programs and Understanding Their Impacts, September 1998, Portland, OR (AHCPR 98-AV10)

Local Health Departments in a Managed Care Environment, July 1998, Albuquerque, NM (AHCPR 98-AV09)

Structuring Health Insurance Markets, May 1998, Lake Buena Vista, FL (AHCPR 98-AV08)

Strengthening the Rural Health Infrastructure, November 1997, Asheville, NC (AHCPR 98-AV07)

Managed Care and Persons with Disabilities and Chronic Illnesses, November 1997, Chandler, AZ (AHCPR 98-AV06)

Long-Term Care, October 1997, Washington, DC (AHCPR 98-AV05)

Workers' Compensation and Managed Care: Challenges and Opportunities, July 1997, Chicago, IL (AHCPR 98-AV04)

Promoting Public Health in an Era of Change, July 1997, Denver, CO (AHCPR 98-AV03)

Providing Services to Children with Special Health Care Needs, September 1997, San Diego, CA (AHCPR 98-AV02)

What Do We Do About the Uninsured? September 1997, Charlottesville, VA (AHCPR 98-AV01)

Integrated State Health Information Systems, July 1997, San Diego, CA (AHCPR 97-AV06)

Ensuring Quality Health Care: The Challenges of Measuring Performance and Consumer Satisfaction, June 1997, North Charleston, SC (AHCPR 97-AV05)

Integrated Delivery Systems in Managed Care: March 1997, Boston, MA (AHCPR 97-AV02) ■

New projects funded

The following research and conference grants were funded recently by the Agency for Health Care Policy and Research. Readers are reminded that findings usually are not available until a project is nearing completion.

Research Projects

Effects of clinic payment and structure on costs

Project director: John K. Kralewski, Ph.D.
Organization: University of Minnesota
Minneapolis, MN
Project number: AHCPR grant HS10055
Project period: 4/1/99 to 9/30/00
First year funding: \$164,847

Outcomes of legislated increases in maternity stays

Project director: Steven Soumerai, Sc.D.
Organization: Harvard Pilgrim Health Care
Brookline, MA
Project number: HS10060
Project period: 5/1/99 to 4/0/01
First year funding: \$226,526

Public attitudes towards death and organ procurement

Project director: Laura A. Siminoff, Ph.D.
Organization: Case Western Reserve
University
Cleveland, OH
Project number: AHCPR grant HS10047
Project period: 4/1/99 to 9/30/01
First year funding: \$171,576

Selective computed head tomography in blunt trauma

Project director: William R. Mower, M.D.
Organization: University of California
Los Angeles, CA
Project number: AHCPR grant HS09699
Project period: 4/30/99 to 3/31/01
First year funding: \$732,503

Conference Grants

Health services research nursing conference

Project director: Kristine M. Gebbie, Dr.P.H.
Organization: Columbia University
New York, NY
Project number: AHCPR grant HS09852
Project period: 5/1/99 to 4/30/00
Funding: \$20,000

Models of integrated long-term care: Rural applications

Project director: Joyce E. Beaulieu, Ph.D.
Organization: University of Kentucky
Lexington, KY
Project number: AHCPR grant HS09850
Project period: 5/1/99 to 4/30/00
Funding: \$25,000

Multicultural health information institute conference

Project director: Carmen R. Nevarez, M.D.
Organization: Public Health Institute
Berkeley, CA
Project number: HS10071
Project period: 4/24/99 to 9/30/99
Funding: \$25,000

National Research Service Award

Obesity, weight loss, and access to preventive care

Fellow: Christina C. Wee, M.D.
Organization: Beth Israel Hospital
Boston, MA
Project number: NRSA fellowship
F32 HS00137;
Russell S. Phillips, sponsor
Project period: 1-year fellowship
Funding: \$41,680 ■

Research Briefs

Davidson, P.L., Cunningham, W.E., Nakazono, T.T., and Anderson, R.M. (1999, March). "Evaluating the effect of usual source of dental care on access to dental services: Comparisons among diverse populations." (AHCPR grant HS07084). *Medical Care Research and Review* 56(1), pp. 74-93.

These investigators used a behavioral model of health service use to test the effect of a usual source of dental care (USDC) on use of dental services by people in Baltimore, San Antonio, and regions served by the Indian Health Service (IHS). USDC was the strongest and most consistent predictor of a recent dental visit. Adults having a USDC in San Antonio were 10 times as likely and adults in Baltimore with a USDC were 16 times as likely to have made a visit to the dentist in the past year as people without a USDC. American Indians with a USDC were two times more likely to report a dental visit as those without a USDC, even though there were major problems with access to dental care in the IHS system. Oral pain or discomfort increased the probability of visiting a dentist for adults in every location. Race/ethnicity, lower education (9 to 11 years), and total tooth loss reduced the likelihood of a dental visit in at least two research locations. Predisposing oral health beliefs also influenced dental visits. Adults who believed in the importance of oral health, were not afraid of oral pain, and were not too busy to visit a dentist, were significantly more likely to have visited a dentist in the past year. Household income and dental insurance benefits were not significant predictors of a dental visit.

Hripcsak, G., Kuperman, G.J., Friedman, C., and Heitjan, D.F. (1999, March). "A reliability study

for evaluating information extraction from radiology reports." (AHCPR grant HS08927). *Journal of the American Medical Informatics Association* 6(2), pp. 143-150.

Evaluators often compare the output of a knowledge-based system to a set of correct answers, known as the reference standard. In this study, the researchers use the ability of physicians to draw conclusions from radiology reports to estimate the number of expert raters needed to generate a reliable reference standard. Twenty-four physician raters from two sites and two specialties judged whether clinical conditions were present based on reading chest radiograph reports. In these evaluations, physician raters were able to judge very reliably the presence of clinical conditions based on text reports. One to two raters were needed to achieve a reliability of 0.70, and six raters, on average, were required to achieve a reliability of 0.95. The researchers conclude that six raters would be needed to create a reference standard sufficient to assess an information system on a case-by-case basis.

Iezzoni, L.I., Mackiernan, Y.D., Cahalane, M.J., and others. (1999, April). "Screening inpatient quality using post-discharge events." (AHCPR grant HS08248). *Medical Care* 37(4), pp. 384-398.

Increasingly shorter hospital stays hamper efforts to detect and definitively treat complications of hospital care. Patients leave before some complications are identified. These researchers have developed a computerized method to screen for hospital complications using diagnosis and procedure codes from Medicare claims to define 50 complication screens. The method, the Complications Screening Program for Outpatient Data (CSP-

O) algorithm, examined outpatient, physician office, home health agency, and hospice claims within 90 days following discharge of 739,248 Medicare patients from 515 hospitals nationwide in 1994. The 33 general screens (for all adult, acute, medical or surgical hospitalizations) flagged 13.6 percent of all cases. However, only 1.8 percent of procedural cases were flagged by the 17 procedural screens. The researchers conclude that while several CSP-O findings have construct validity, limitations of claims data raise concerns.

Murray, M.D., Loos, B., Tu, W., and others. (1999, February). "Work patterns of ambulatory care pharmacists with access to electronic guideline-based treatment suggestions." (AHCPR grant HS07763). *American Journal of Health-System Pharmacology* 56, pp. 225-232.

Improvements in prescription processing, increased access to patient-specific clinical data, and integration of prescription data and patient-specific clinical data have changed the work of pharmacists. Yet in many health care settings, it has been difficult for pharmacists to shift roles from dispensers of medications to counselors of patients and providers of advice and information to physicians. However, this study shows that an electronic display of guideline-based, patient-specific treatment suggestions at the time of drug dispensing had a significant positive impact on pharmacist work patterns. A total of 28 pharmacists at a hospital-based outpatient pharmacy were randomly assigned either to receive or not receive electronic treatment suggestions. From 9 to 19 months later, pharmacists who received the

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Research briefs

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suggestions spent significantly more of their time discussing information and advising, informing, and solving problems as pharmacists in the control group. They spent significantly less of their time checking and filling prescriptions.

Schadow, G., McDonald, C.J., Suico, J.G., and others. (1999, March). "Units of measure in clinical information systems." (AHCPR grant HS08750). *Journal of the American Medical Informatics Association* 6(2), pp. 151-162.

Health care workers typically leave out units of measure in medical chart notes (for example, an infant's weight may be entered as 5 rather than 5 pounds or 5 kilograms), and these units often are not standardized in computer systems. Within a single care institution, where most measurements tend to be

reported consistently in the same units, users correctly infer the units when they are omitted. Nonetheless, such omissions could lead to mistakes when patients move between care facilities. These authors surveyed existing standard codes for units of measures, such as ISO 2955, ANSI X3.50, and Health Level 7s ISO+. Because these standards specify only the character representation of units, the authors developed a semantic model for units based on dimensional analysis. Through this model, conversion between units and calculations with dimensioned quantities become as simple as calculating with numbers.

Schmid, C.H. (1999). "Exploring heterogeneity in randomized trials via meta-analysis." (AHCPR grant HS08532). *Drug Information Journal* 33, pp. 211-224.

Heterogeneity of treatment effects need not be viewed as an argument against meta-analysis of clinical

trials. When it does not arise because of inadequate design or incomplete publication of results, treatment heterogeneity should be seen as an opportunity to learn about variations in treatment effectiveness, suggest these researchers. Rather than computing a single summary estimate of a series of trials, it may be more informative to explore the effects that different study characteristics may have on treatment efficacy. The authors note that regression analysis offers a tool for these analyses. They outline and apply hierarchical Bayesian models for this purpose and present two examples of meta-regression using summary data. They conclude that investigators should search for the causes of heterogeneity related to patient characteristics and treatment protocols to determine when treatment is most beneficial. ■



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