



Research Activities

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Studies show racial disparities in receipt of flu shots, cardiovascular surgery, and care preferences

Racial disparities in receipt of health care services have been documented consistently in the United States. One issue is whether lower receipt of some procedures by ethnic minorities is due to their having less adequate insurance than whites. Another issue is whether this lower health care use is a sign of lower quality of care for minorities, that is, are minorities not receiving clinically appropriate procedures or is there overuse of procedures or inappropriate care among whites. A third issue is the extent to which minority attitudes and preferences for care affect racial disparities in receipt of health care services.

Three studies supported by the Agency for Healthcare Research and Quality address these issues and are described here. The first study (HS09473) shows that elderly blacks insured by Medicare are far less likely than Medicare-insured elderly whites to receive a flu shot, regardless of whether they are insured by a managed care or fee-for-service (FFS) plan. The second study (HS07098) reveals that coronary angioplasty is overused (clinically inappropriate)

more often by white men than any other group. A third commentary (HS09775) suggests that asking patients about their preferences for care alternatives may reinforce the racial disparities in care that health care policymakers have pledged to remedy.

Schneider, E.C., Cleary, P.D., Zaslavsky, A.M., and Epstein, A.M. (2001, September). "Racial disparity in influenza vaccination: Does managed care narrow the gap between African Americans and whites?" *Journal of the American Medical Association* 286(12), pp. 1455-1460.

Elderly blacks insured by Medicare are far less likely than Medicare-insured elderly whites to receive flu shots, regardless of whether they are insured by managed care or FFS plans, according to this study. Researchers analyzed responses of 13,674 Medicare-insured, elderly people to the 1996 Medicare Current Beneficiary Survey. They found that 68 percent of whites versus 46 percent of blacks

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received flu shots. In general, those in Medicare managed care programs were more likely than those in FFS plans to receive flu shots (71 vs. 65 percent). However, the racial disparities in vaccination rates between whites and blacks were nearly the same, regardless of whether individuals were in FFS or managed care plans.

Racial disparities did not change when the researchers controlled for other factors, including patients' attitudes toward medical care, their sex, education, or other illnesses. The most common reasons offered for not receiving a flu shot were stated by the same proportion of blacks and whites and those in either managed care or FFS programs. Reasons cited were: they did not know the flu shot was needed (21 percent), thought the shot could cause flu (18 percent), thought it could have adverse effects (15 percent), did not think it would prevent flu (15 percent), and

did not think about it or missed it (13 percent).

Schneider, E.C., Leape, L.L., Weissman, J.L., and others. (2001, September). "Racial differences in cardiac revascularization rates: Does 'overuse' explain higher rates among white patients?" *Annals of Internal Medicine* 135, pp. 328-337.

Individuals suffering shortness of breath, chest pains, or other symptoms of coronary artery disease (CAD) often undergo revascularization procedures such as coronary artery bypass graft (CABG) surgery or percutaneous transluminal coronary angioplasty (PTCA). This study of a large and diverse sample of elderly, Medicare-insured people found that inappropriate use (or overuse) of PTCA was greater among elderly white men than among other groups. However, this difference did not fully account for racial disparities in overall receipt of

revascularization procedures. In fact, after eliminating all inappropriate procedures, there was still a substantial gap in use rates for both CABG surgery and PTCA between blacks and whites, according to the researchers. They analyzed Medicare claims and medical records of 3,960 Medicare enrollees who underwent coronary angiography to diagnose heart problems at 173

hospitals in five States in 1991 and 1992. Of this sample, 1,692 patients underwent 1,711 revascularization procedures within 90 days of angiography. The researchers rated these procedures as appropriate, uncertain, or inappropriate according to criteria determined by an expert panel. Following angiography, rates of PTCA (23 vs. 19 percent) and CABG surgery (29 vs. 17 percent) were significantly higher among white patients than black patients. PTCA and CABG surgery were inappropriately used for 14 percent and 10 percent of patients, respectively.

White patients were more likely than black patients to receive inappropriate PTCA (15 vs. 9 percent). Differences by race were significant among men (20 vs. 8 percent) but not among women. Rates of inappropriate CABG surgery did not differ by race (10 percent in both groups). However, the variation in inappropriate procedures across the five States studied was larger than variation by race or sex (from 4 to 24 percent for PTCA and 0 to 14 percent for CABG surgery). The region in which a patient undergoes angiography may be the most significant determinant of the probability of receiving inappropriate revascularization, conclude the researchers.

Katz, J.N. (2001, September). "Patient preferences and health disparities." *Journal of the American Medical Association* 286(12), pp. 1506-1509.

Most doctors agree that patients should be involved in decisions regarding their care, especially since individuals vary in how they see the risks and benefits of a treatment. However, patient preferences may explain some of

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Racial disparities

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the racial, ethnic, and sexual disparities in use of health care resources that policymakers have pledged to remedy, according to the author of this commentary. Minorities and women seem to be more willing to accept lower functional capacity than white men and to be more risk-averse. For example, men with osteoarthritis choose to undergo joint replacement as soon as they can no longer perform vigorous outdoor activities,

whereas women are inclined to forego surgery until they are much more incapacitated (limited to walking from room to room).

Also, blacks with cerebrovascular disease are more averse to the risks of surgery than whites and are more likely than whites to refuse CABG surgery when it is offered as an option. One possible explanation for these differences could be the lingering effects of racial and sex discrimination. Women, blacks, and other groups may receive lifetime messages that subtly discourage or

even prevent them from getting the care they need. Perceived higher risks among women and minorities may reflect actual poorer outcomes of care in underserved communities. Thus, patient “preference” for less intensive treatment may in fact represent resignation for the perceived status quo—that interventions are unavailable, unaffordable, ineffective, or unduly risky—even if those perceptions are not accurate.

Pharmaceutical Research

Drug benefit caps reduce use of essential drugs among older people who have multiple chronic illnesses

About 6 million elderly Americans receive medical care in Medicare health maintenance organizations (HMOs). Most of these HMOs (68 percent) have drug benefit limits, for example, \$200 per quarter. Many Medicaid programs serving the lowest income older people also have implemented monthly drug coverage limits. Older people who are least likely to be taking essential medications because of a reimbursement cap are those with multiple chronic illnesses that require drug therapy, especially those with a mental health component, according to a study supported in part by the Agency for Healthcare Research and Quality (HS05947).

Stephen B. Soumerai, Sc.D., of Harvard Medical School, and his colleagues examined changes in the standard monthly dose of essential medications after initiation of a New Hampshire

Medicaid reimbursement cap of three medications per month among 343 chronically ill Medicaid enrollees (half of whom were aged 75 or older; all were 60 years or older). They regularly used essential medications for heart disease, asthma/chronic obstructive pulmonary disease, diabetes, seizures, or coagulation disorders, and they received an average of three or more prescriptions per month during the year prior to the cap.

Following the drug prescription cap, mean standard doses of essential medications fell 34 percent. Bigger reductions in use of essential medications were associated with a greater number of precap medications, greater number of coexisting illnesses, longer hospitalizations, and greater use of outpatient services. The three illnesses associated with the largest relative reduction in

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Drug benefit caps

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essential drug use were psychoses/bipolar disorders, anxiety/sleep problems, and chronic pain. Arbitrary drug benefit limits clearly reduce use of needed medications by the frailest community-dwelling older people

with multiple physical and mental illnesses which, in turn, can lead to increased hospitalizations or nursing home entry, concludes Dr. Soumerai.

See "Utilization of essential medications by vulnerable older people after a drug benefit cap: Importance of mental disorders,

chronic pain, and practice setting," by Eric E. Fortess, Sc.D., M.P.H., Dr. Soumerai, Thomas J. McLaughlin, Sc.D., and Dennis Ross-Degnan, Sc.D., in the June 2001 *Journal of the American Geriatrics Society* 49(6), pp. 793-797.

Women's Health

Low education and income are related to poor health, chronic illness, and depression among Medicare-insured older women

Poorer and less educated elderly women enrolled in Medicare + Choice plans reported poorer health, experienced more chronic illness, and felt depressed or sad more of the time in the past year than their more affluent and educated counterparts, according to an analysis of data from the Medicare Health Outcomes Survey. The survey provided the opportunity to examine the health and functional status of 91,314 elderly community-dwelling women enrolled in Medicare managed care programs in 1999. Race/ethnicity also influenced elderly women's health status, according to Arlene S. Bierman, M.D., M.S., of the Agency for Healthcare Research and Quality.

Women with annual household incomes of less than \$10,000 were more than twice as likely to report fair or poor health compared with women whose incomes were more than \$50,000 (40 vs. 15 percent). Nearly half of those with an 8th grade education or less said they were in fair or poor health. They were nearly three times more likely to report fair or poor health than college graduates (47 vs. 16 percent). Women with some high school education were more likely to report fair or poor health than high school graduates (38 vs. 26 percent). About one-fifth (21 percent) of women with annual incomes of less than \$10,000

reported depressed mood compared with 8 percent of women who had incomes of more than \$50,000.

Over half of black, Hispanic/Spanish, and American Indian/Alaska Native elderly women had household incomes less than \$20,000, and over half of these women had less than a high school education. More than one-third of Hispanic/Spanish women had an 8th grade education or less. Black women were most likely to report fair or poor health (46 percent) followed by Hispanic/Spanish women (42 percent), and American Indian/Alaska Native women (36 percent). White and Asian/Pacific Islander women were least likely to report fair or poor health (27 and 28 percent, respectively). One in every seven women overall—but one in five black, Hispanic/Spanish, and American Indian/Alaska Native women—reported they were depressed or sad in the past year.

More details are in "Health disparities among older women enrolled in Medicare managed care," by Dr. Bierman, Samuel C. Haffer, Ph.D., and Yi-Ting Hwang, Ph.D., in the summer 2001 *Health Care Financing Review* 22(4), pp. 187-198. Reprints (AHRQ Publication No. 02-R006) are available from AHRQ.**

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Disabled women who have difficulty walking are less likely than other women to receive Pap smears and mammograms

Nearly one in five women living in the community has at least one potentially disabling condition, the most common being problems with lower extremity mobility (12 percent). Disabled women with conditions ranging from blindness and deafness to upper extremity mobility and mental health problems have rates of screening and preventive services comparable to nondisabled women with similar health insurance and sources of care. However, women with lower extremity mobility difficulties are significantly less likely than other women to receive screening and preventive services.

Efforts should be made to extend these screening services to disabled women, who often live normal life spans, recommends Lisa I. Iezzoni, M.D., M.Sc., of Harvard Medical

School. With support from the Agency for Healthcare Research and Quality (HS10223), Dr. Iezzoni and her colleagues used data from the 1994-1995 National Health Interview Survey, with Disability, Family Resources, and Healthy People 2000 supplements, to examine use of screening and preventive services among adult women with disabilities living in the community.

After adjusting for sociodemographic and access characteristics, women with major, lower extremity difficulties were much less likely than other women to receive Pap smears, mammograms, and clinician inquiries about smoking. Inaccessible examination tables present particular problems for these disabled women, and doctors sometimes don't examine them

fully because of concerns about positioning them on the table. Motorized tables that can be lowered for easy transfers from chairs or wheelchairs could make it easier for doctors to provide Pap smears to these women, but access to mammography may be more difficult to arrange for women in wheelchairs. Other barriers to improved screening for these women may be inadequate knowledge or biased attitudes of clinicians regarding their sexuality, as well as time pressures in busy practices.

More details are in "Use of screening and preventive services among women with disabilities," by Dr. Iezzoni, Ellen P. McCarthy, Ph.D., Roger B. Davis, Sc.D., and others, in the July 2001 *American Journal of Medical Quality* 16(4), pp. 135-144.

PEACH study examines the causes of upper genital tract infection in women with pelvic inflammatory disease

Women develop pelvic inflammatory disease (PID) when bacteria from the lower genital tract infects and inflames upper genital tract structures including the endometrium, tubes, ovaries, and peritoneum. Women with PID have higher rates of infertility, ectopic pregnancy, and chronic pelvic pain. Researchers involved in the PID Evaluation and Clinical Health (PEACH) study interviewed and took endometrial samples from women 14 to 37 years of age who were seeking treatment for PID at 13 clinical sites in various U.S. regions from 1996 to 1999. About 60 percent of the women were 24

years of age or younger, and nearly 63 percent were black.

Two PEACH studies, supported by the Agency for Healthcare Research and Quality (HS08358) and led by Roberta B. Ness, M.D., M.P.H., of the University of Pittsburgh, are summarized here. They examined the link between hormonal and barrier contraception as well as douching on development of upper genital tract gonorrhea or chlamydia. Both are sexually transmitted bacterial infections. The first study found that inconsistent use of condoms was related to a two to three times greater risk of upper genital tract infection (UGTI), but no

contraceptive method reduced UGTI among women with PID. The second study linked frequent and recent douching to upper genital tract inflammation (endometritis) and UGTI.

Ness, R.B., Soper, D.E., Holley, R.L., and others. (2001, July). "Hormonal and barrier contraception and risk of upper genital tract disease in the PID evaluation and clinical health (PEACH) study." *American Journal of Obstetrics and Gynecology* 185, pp. 121-127.

The researchers compared contraceptive use within the prior 4

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weeks among women enrolled in the PEACH study who had baseline upper genital tract gonorrhea or chlamydia (UGTI), women with endometritis without UGTI, and women with neither condition. They asked the women about use of oral contraceptives, birth control implants or shots, intrauterine device use, and barrier methods including the diaphragm, condoms, spermicides, cervical cap, or female condom. Condoms constituted 92 percent of all barrier methods used by the women. The researchers found that inconsistent condom use during the month prior to study enrollment increased a woman's risk of UGTI by two to three times over no condom use.

Condom use in 5 or fewer of 10 sexual encounters elevated the risk of UGTI 2.3-fold; use in 6 to 9 of 10 sexual encounters elevated UGTI risk 2.1-fold. No contraception compared with any contraception also was associated with nearly double the risk of UGTI. Medroxyprogesterone was

associated with 2.2 times higher risk for endometritis without UGTI. However, neither use of oral contraceptives, use of medroxyprogesterone, consistent use of condoms, nor use of other barrier methods significantly reduced UGTI. These results were not affected by adjustment for age, race, education, new partner, smoking, or cocaine use.

Ness, R.B., Soper, D.E., Holley, R.L., and others. (2001, April). "Douching and endometritis: Results from the PID evaluation and clinical health (PEACH) study." *Sexually Transmitted Diseases* 28(4), pp. 240-245.

Vaginal douching is a common practice among American women, particularly black women. An association between douching and PID has been suspected for decades. This study adds evidence to that suspicion. It demonstrated that frequent and recent douching was associated with endometritis and UGTI among a group of predominantly black young women with PID. The researchers

interviewed 654 women with signs and symptoms of PID and obtained cultures from the upper genital tract. They compared use of douching among women with endometritis and/or UGTI with women who had neither condition.

Women with endometritis or UGTI were more likely to have douched more than once a month or within 6 days of study enrollment than women who never douched. In fact, douching more than once a month and douching within 6 days of study enrollment versus no douching were associated with a 60 percent and 80 percent increased risk, respectively, of endometritis and UGTI. These associations remained after adjustment for other factors. Most of the women douched for cleansing, and no particular product was associated with excess risk. Douching may alter the number and type of microorganisms inhabiting the vagina and may initiate endometritis by boosting the ascension of vaginal bacteria into the upper genital tract.

Clinical Decisionmaking

Measurement of muscle proteins may help ER doctors triage acute coronary syndrome patients who have normal ECGs

Patients with acute coronary syndromes (ACS) are at risk of heart attack, other major cardiac complications, and death. ACS patients who arrive at the emergency department (ED) with chest pain often have normal electrocardiograms (ECGs) with no evidence of ST-segment elevation or new, pathologic Q-waves, which complicates triage decisions. ED physicians end up admitting some of these patients to the hospital for unnecessary intensive monitoring or inappropriately sending home some who are actually at high risk of heart attack or death. Measurement of troponin, a complex of muscle proteins that inhibit contraction, may help identify

which ACS patients with normal ECGs should be hospitalized and which can be sent home, according to a recent study supported by the Agency for Healthcare Research and Quality (contract 290-97-0013).

Researchers at the University of California, San Francisco-Stanford Evidence-based Practice Center conducted an in-depth review of the evidence, including clinical trials and cohort studies of consecutive patients with suspected ACS without ST-elevation published between 1966 and 1999. Overall, 7 clinical trials and 19 cohort studies reported data for 5,360 patients with a troponin T test and 6,603 with a

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Measuring muscle proteins

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troponin I test. In ACS patients with normal ECGs (non-ST elevation) who had an abnormal troponin test, the short-term odds of death were increased three- to eight-fold.

Cohort studies (which usually have more heterogeneous patients than highly selected patients of clinical trials) demonstrated an even greater difference in mortality between patients with a positive versus negative troponin I (8.4 vs. 0.7 percent) than clinical trials (4.8 vs. 2.1 percent). The prognostic value of a positive troponin T test also was slightly greater for cohort studies (11.6 vs. 1.7 percent) than for clinical trials (3.8 vs. 1.3 percent).

See "The prognostic value of troponin in patients with non-ST elevation acute coronary syndromes: A meta-analysis," by Paul A. Heidenreich, M.D., M.S., F.A.C.C., Thomas Alloggiamento, M.D., Kathryn Melsop, M.S., and others in the August 2001 *Journal of the American College of Cardiology* 38(2), pp. 478-485.

Editor's note: This study is drawn from Evidence Report/Technology Assessment No. 31, *Prediction of Risk for Patients with Unstable Angina*. Copies of the full report (AHRQ Publication No. 01-E001)* and a report summary (AHRQ Publication No. 00-E030)** are available from AHRQ. See the back cover of *Research Activities* for ordering information.

Physicians vary in their adherence to guidelines for managing high cholesterol among patients with atherosclerosis

Reducing levels of low-density lipoprotein cholesterol (LDL-C), so-called "bad cholesterol," lowers the risk of recurrent cardiac problems among people who already have cholesterol-clogged arteries (atherosclerosis). Indeed, use of statin drugs to lower LDL-C levels by 20 to 30 percent can reduce mortality and heart problems by 25 to 40 percent.

Unfortunately, many primary care doctors do not follow secondary prevention guidelines for managing high cholesterol among patients with atherosclerosis. They are least likely to follow these guidelines for women, blacks, patients without a cardiologist, and those with cerebrovascular and

peripheral vascular disease, according to the results of a study supported by the Agency for Healthcare Research and Quality (HS07107).

Researchers from Brigham and Women's Hospital and Partners Healthcare System in Boston used electronic medical records from 19 primary care clinics to measure rates of compliance with the National Cholesterol Education Program (NCEP) cholesterol guidelines for secondary prevention. Less than one-third (31 percent) of the 2,019 patients who qualified for secondary prevention were being managed in compliance with NCEP recommendations. More than one-third (38 percent) had not had their LDL-C level

measured within the last 3 years, and another 40 percent had a recent LDL-C that was above the recommended target of 100 mg/dL. In this latter group, 46 percent were not on a statin, including 188 patients with an LDL-C greater than 130 mg/dL, the point when statin therapy is recommended.

Overall, 40 to 60 percent of physician noncompliance could be attributed to failure to diagnose or monitor cholesterol levels, 25 to 40 percent was related to failure to optimize therapy, and 5 to 15 percent involved failure to initiate statin therapy. Furthermore, females, blacks, patients younger than 50 or older than 79 years, patients without coronary artery

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Managing high cholesterol

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disease, and those without a cardiologist were about 30 percent less likely than the average patient

to be in compliance with NCEP guidelines.

More details are in "Using an electronic medical record to identify opportunities to improve compliance with cholesterol guidelines," by Saverio M.

Maviglia, M.D., M.Sc., Jonathan M. Teich, M.D., Ph.D., Julie Fiskio, M.S., and David W. Bates, M.D., M.Sc., in the August 2001 *Journal of General Internal Medicine* 16, pp. 531-537.

Epoetin may reduce the need for transfusion in cancer patients undergoing chemotherapy or radiation

Erythropoietin is a hormone produced primarily in the kidney, which has been shown to increase red blood cell counts and hemoglobin concentrations in many patients with anemia caused by cancer therapy (chemotherapy or radiation). Two forms of recombinant human erythropoietin, known generically as "epoetin alfa" and "epoetin beta" were developed in the 1980s and used initially to treat anemia associated with end-stage renal disease.

A recent review of the available scientific evidence found that subcutaneous injections of epoetin reduce the odds of transfusion of red blood cells to manage the anemia of patients undergoing cancer treatment. However, better quality studies reported smaller effects. There was insufficient evidence to determine whether initiating epoetin treatment earlier would spare more patients from transfusion or result in better quality of life than waiting until hemoglobin concentrations decline to nearly 10g/dL (mild anemia).

These are the conclusions detailed in a report from the Blue Cross and Blue Shield Association

Technology Evaluation Center, which is an Evidence-based Practice Center supported by the Agency for Healthcare Research and Quality (contract 290-97-0015). The meta-analysis of 12 studies, led by Jerome Seidenfeld, Ph.D., of the Blue Cross and Blue Shield Association, showed that epoetin decreased the percentage of cancer patients transfused by 9 to 45 percent in adults with mean baseline hemoglobin of 10 g/dL or less (seven studies); by 7 to 47 percent in those with hemoglobin between 10 and 12 g/dL (seven studies), and by 7 to 39 percent in those with hemoglobin 12 g/dL or more (five studies).

Overall, epoetin-treated patients had 55 percent less odds of transfusion (odds ratio, OR 0.45) in higher quality studies and 86 percent less odds (OR 0.14) in lower quality studies. The number of patients who needed to be treated to prevent one transfusion was 4.4 for all studies, 5.2 for higher quality studies, and 2.6 for lower quality studies. These findings suggest that epoetin can be used to treat mild anemia associated with cancer therapy. However given the cost of epoetin

treatment, estimated at \$3,700 to \$6,600 per chemotherapy cycle, the researchers call for double-blind, randomized controlled trials of adequate power to better gauge the clinical value of epoetin on transfusion risk in cancer patients with anemia.

More details are in "Epoetin treatment for anemia of cancer therapy: A systematic review and meta-analysis of controlled clinical trials," by Dr. Seidenfeld, Margaret Piper, Ph.D., M.P.H., Carole Flamm, M.D., M.P.H., and others, in the August 15, 2001 *Journal of the National Cancer Institute* 93(16), pp. 1204-1214.

Editor's note: Copies of the evidence report from which this journal article is drawn are available from AHRQ. Request *Use of Epoetin for Anemia in Oncology* (AHRQ Publication No. 01-E009), Evidence Report Technology Assessment No. 30; a summary of the report (AHRQ Publication No. 01-E008) is also available.* See the back cover of *Research Activities* for ordering information.

Outcomes/Effectiveness Research

Men who have heart disease are at increased risk of BPH, but intense physical exercise may reduce the risk

Benign prostatic hyperplasia (BPH), which involves frequent or difficult urination and an enlarged or swollen prostate, affects one-third of men 60 to 70 years of age. Among healthy aging men, elevated levels of free prostate-specific antigen (PSA) and diagnosed heart disease increase the likelihood of BPH, while physical exercise and current cigarette smoking appear to reduce the risk, concludes a study supported in part by the Agency for Healthcare Research and Quality (HS08397).

The Prostatic Diseases Patient Outcomes Research Team (PORT), led by Michael J. Barry, M.D., of Harvard Medical School, examined risk factors for BPH based on the Massachusetts Male Aging Study. From 1987 to 1989, 1,709 men aged 40 to 70 provided baseline risk factor data and were followed for a mean of 9 years; 1,019 men without prostate cancer provided followup data.

Nearly one-fifth (19 percent) of men had been diagnosed with BPH or had undergone surgery for the condition at followup, increasing from 8 percent of men aged 38-49 years to 34 percent of men aged 60-70 years. After adjustment for age, men in the top

quartile for free PSA levels had five-fold increased odds of developing BPH, and men with heart disease or use of beta-blocker medications doubled or nearly doubled their odds for BPH. This link between coronary heart disease and BPH is a novel finding, suggesting a potential vascular etiology for development of BPH.

On the other hand, current cigarette smoking of a pack a day and high levels of physical activity (those in the highest quartile of activity) decreased their odds of BPH by half. Total or fat calorie intake, sexual activity level, alcohol intake, body mass index, waist-hip ratio, diastolic blood pressure, a history of diabetes, hypertension, vasectomy, or serum levels of androgens or estrogens did not affect development of BPH.

See "Risk factors for clinical benign prostatic hyperplasia in a community-based population of healthy aging men," by James B. Meigs, M.D., M.P.H., Beth Mohr, M.S., Dr. Barry, and others, in the September 2001 *Journal of Clinical Epidemiology* 54, pp. 935-944.

Epidemiology

Variations in asthma prevalence rates depend at least in part on diagnostic practices among different population groups

Childhood asthma has become more prevalent and severe in the past two decades, with the greatest disease burden affecting low-income groups. However, it is unclear to what extent observed variations in asthma prevalence between population groups are due to differences in actual prevalence or differences in the likelihood of being diagnosed with asthma. A new study shows different rates of asthma diagnosis among American

Indian and Alaska Native children from different Northwest regions despite similar rates of asthma symptoms and respiratory-related medical visits.

This finding suggests that future efforts to describe asthma prevalence should consider the potential influence of diagnostic practices, concludes Peter J. Gergen, M.D., M.P.H., of the Center for Primary Care Research, Agency for Healthcare Research and Quality. Researchers from the

University of Washington and Children's Hospital in Seattle and Yukon-Kuskokwim Delta Regional Hospital in Bethel, AK, administered an asthma screening survey to 147 middle school American Indian and Alaska Native students in metropolitan Washington and to 365 similar students in nonmetropolitan Alaska. They compared the children's self-reported rates of

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Asthma prevalence

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asthma symptoms, asthma diagnoses, and health care use.

Both groups reported similar rates of asthma symptoms (for example, wheezing, coughing, or shortness of breath) and medical visits for asthma-like symptoms in the previous year. However, more than twice as many Washington students reported that a doctor had

diagnosed their asthma as students in Alaska. Among children who had made one or more visits to the doctor for respiratory problems in the past year, those in metropolitan Washington were nearly five times as likely as those in nonmetropolitan Alaska to report ever having had a diagnosis of asthma. The researchers conclude that factors such as locale, ethnicity, and socioeconomic status may have a stronger effect on

physician diagnosis of asthma than prevalence of asthma symptoms.

See "Differences in asthma prevalence between samples of American Indian and Alaska Native children," by James W. Stout, M.D., M.P.H., Lisa C. White, M.P.H., Gregory J. Redding, M.D., and others, in *Public Health Reports* 116, pp. 51-57, 2001. Reprints (AHRQ Publication No. 02-R005) are available from AHRQ.**

Quality of Care

Changes in physician behavior are necessary to improve quality of pediatric care

Changing physician behavior to improve quality of pediatric care is the topic of a recent article by Lisa Simpson, M.B., B.Ch., M.P.H., Deputy Director of the Agency for Healthcare Research and Quality, and her colleagues Howard Bauchner, M.D., Child and Adolescent Health Scholar-in-Residence at AHRQ, and John Chessare, M.D., of Boston University School of Medicine. They point out that beyond societal norms, three factors influence physician decisionmaking: physician experience and knowledge, patient characteristics and values (including parent expectations), and external clinical evidence. Depending on the circumstances, one factor may be more influential than another.

Their review of numerous studies on the topic revealed several factors that tend to change physician behavior. Continuing medical education that includes interactive interventions is more effective than passive distribution of information. Practice guideline implementation within an organization can be effective. Clinical paths improve inpatient care. Reminders, both patient and physician, improve quality of preventive health services. Educational outreach is effective, but it is time consuming and

expensive. Audit and feedback about physician practices alone are modestly effective.

Financial incentives can change physician behavior under certain circumstances. However, research gaps remain, since few studies considered the context of care delivery in terms of resources available to the practice or the population served.

The researchers conclude that it is critical to continue to measure physician performance in order to change behavior. Changing physician behavior must involve more than one approach. Change often occurs within organizations, and organizational barriers to change must be understood. Approaches to behavioral change should reflect the specific issue and be based on a model of physician decisionmaking. Medical informatics holds great promise, but it has an unclear role in the outpatient setting. Traditional continuing medical education should be changed to include more interactive interventions, conclude the authors.

See "Changing physician behavior," by Drs. Bauchner, Simpson, and Chessare, in the *Archives of Disease in Childhood* 84, pp. 459-462, 2001. Reprints (AHRQ Publication No. 01-R067) are available from AHRQ.**

Researchers examine the impact of the health care workplace on quality of care and patient safety

Health care workers are the backbone of the health care system. Yet excessively long workdays, nursing shortages, staff restructuring, financial constraints, and other workplace problems have been linked to low worker morale, poor quality of care, medical errors, and patient deaths. To identify gaps in knowledge about the influence of working conditions on the quality of care provided, the Quality Interagency Coordination Task Force (QuIC) convened two conferences, one in October 1999, and the other in October 2000, which focused on best practices for enhancing patient safety.

The QuIC is an interagency initiative that brings together all Federal agencies with health care responsibilities. The conferences were sponsored by the Agency for Healthcare Research and Quality, the National Institute for Occupational Safety and Health, the Occupational Safety and Health Administration (OSHA), and the Veterans Health Administration.

Five articles adapted from key conference papers appeared in the September 2001 issue of the *Joint Commission Journal on Quality Improvement* 27(9) and are summarized here. Nancy Foster, AHRQ Coordinator for Quality Initiatives, Howard Holland of AHRQ's Office of Healthcare Information, and Eileen Hogan of AHRQ's Center for Quality Improvement and Patient Safety, served as guest editors of the issue. Single copies of the journal may be requested from the AHRQ Clearinghouse (AHRQ Publication No. OM-01-0017), but the supply is limited.*

Eisenberg, J.M., Bowman, C.C., and Foster, N.E. (2001, September). "Does a healthy

health care workplace produce higher quality care?" *Joint Commission Journal on Quality Improvement* 27(9), pp. 444-457.

In an overview to the journal, AHRQ Director John M. Eisenberg, M.D., and colleagues note that there has been too little research to evaluate the impact of improvements in the health care workplace on quality of care. They assert that the tradition of evidence-based decisionmaking needs to be applied to health care management, as it has been applied in medicine and nursing, in order to show how staffing, environment, organization, and culture can affect the quality of patient care.

Dr. Eisenberg and colleagues summarize the conclusions of conference participants, who suggest that researchers:

1. Synthesize strategies known to increase worker satisfaction and initiate interventions that promote recruitment and retention.
2. Describe and disseminate known best practices that promote workplace health and safety, as well as the safety consequences of certain design features and costs of not providing a safe environment.
3. Generate a standard nomenclature of appropriate variables that would enable comparisons to be made across data sources and provide an ongoing clearinghouse for these data sources.
4. Facilitate research partnerships with professional employee organizations.
5. Test the consequences of esthetic design decisions on workflow efficiencies,

especially in terms of worker and patient safety.

Kovner, C. (2001, September). "The impact of staffing and the organization of work on patient outcomes and health care workers in health care organizations." *Joint Commission Journal on Quality Improvement* 27(9), pp. 458-468.

Christine Kovner, Ph.D., R.N., reviews current studies on the effects of health care staffing and work organization on staff well-being and patient outcomes. Although she and other researchers have demonstrated the possible links between staffing and quality of care, the regulation of staffing levels and staff mix has been controversial. For example, criteria for safe staffing levels have been identified for nursing homes but only in extremely limited cases for hospitals, home care, or other health care settings. In fact, there is little information about the impact of staffing levels and the organization of work on health personnel or on patient outcomes. There is almost no information about staffing and patient outcomes in home health and outpatient care.

In the absence of this information, it is difficult for organizations to define minimum acceptable staffing ratios or their relationship to severity of patient illness and staff mix. Other gaps in knowledge on staffing and organization in care identified at the 1999 conference include: impact of nurse's aides and other personnel who assist nurses on the quality of care; effects of alternative work organization strategies on job longevity; motivations that encourage workers to stay in their jobs and deliver

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high quality care; and the effects of incentives to promote adoption of new methods to deliver quality care.

Sainfort, F., Karsh, B., Booske, B.C., and Smith, M.J. (2001, September). "Applying quality improvement principles to achieve healthy work organizations." *Joint Commission Journal on Quality Improvement* 27(9), pp. 469-483.

These authors contend that studies investigating the link between patient outcomes and quality of care have not given sufficient consideration to worker well-being. In addition, few studies have sought this information from the workers themselves. Research on healthy work organizations (HWOs)—organizations that have both financial success and a healthy workforce—is beginning to show that some of the same work organization factors that affect employee outcomes, such as quality of life and safety, also can affect organizational outcomes, such as profits and performance. These authors suggest that, if properly implemented and institutionalized, total quality management (TQM)/quality improvement (QI), currently used in most other sectors of the economy, can serve as the mechanism to transform a health care organization into an HWO.

TQM/QI approaches typically define best practices, include a strong commitment to patient and employee support, a direct line of communication between staff and the hospital CEO, the development of clear protocols, daily staff meetings, and cross-training. Research has shown that TQM/QI can have various effects on work

design and quality of work life, depending on the specific approach used by the organization and the way it is implemented over time and institutionalized. The authors recommend that future research target particular organizational features that have the most influence over both quality of work life and quality of patient care.

Meyer, G.S., and Massagli, M.P. (2001, September). "The forgotten component of the quality triad: Can we still learn something from the structure?" *Joint Commission Journal on Quality Improvement* 27(9), pp. 484-493.

Taking a broader view of how structural features of health care organizations are defined has opened the door for measuring the effects of working conditions on care quality. However, measures have not been developed to sufficiently operationalize and test this linkage. Rigorous development of sound measures requires a substantial investment. Investigators must first begin to understand the complex interaction of structure and care process features and their associated impact on quality outcomes, according to these authors.

They point out that one large group of purchasers has promoted the application of three safety "leaps" that are, in essence, structural measures: the use of computerized physician order entry, the selective referral of patients to high-volume providers for certain procedures, and the availability of board-certified critical care specialists in intensive care units. Structural measures, like process and outcomes measures, face the same challenges of standardization, reliability, validity, and portability. Field testing of potential measures will be required to examine the

feasibility and added value of these measures in real-world settings.

Foley, M.E., Keepnews, D., and Worthington, K. (2001, September). "Identifying and using tools for reducing risks to patients and health care workers: A nursing perspective." *Joint Commission Journal on Quality Improvement* 27(9), pp. 494-499.

The culture of blame in health care organizations has traditionally held individual health care workers primarily to blame for errors, and workers are often seen as being at fault for their own injuries.

However, there is growing recognition that often both of these problems are due to organizational and other systems factors.

According to these authors, those who ignore staffing-related issues risk missing a crucial element that lies at the center of both safe patient care and worker health and safety. For example, preliminary research has linked decreases in staffing to higher rates of back and needlestick injuries. OSHA literature contains many systems-oriented strategies, such as lifting devices and needle-less devices, to prevent injury and illness among health care workers.

Other system factors affecting worker and patient safety are the way work processes are structured and managed. Virtually every decision made by health care managers—from designing patient units and selecting medical equipment to scheduling work hours—can affect the safety of patients and health care workers. Therefore, managers should make sure there is an administrative link between those responsible for monitoring patient safety and those monitoring health care worker safety and be alert for common trends or system causes.

Prevention

Computerized reminders dramatically improve preventive care for hospitalized patients

Various preventive care measures can save lives, prevent serious complications, and reduce health care costs. However, opportunities for preventive care among hospitalized patients often are missed. The use of computerized reminders can dramatically increase preventive care for such patients, according to a study supported by the Agency for Healthcare Research and Quality (HS07719).

Paul R. Dexter, M.D., and fellow researchers from the Indiana University School of Medicine, found that a computerized reminder system greatly increased rates of pneumonia and influenza vaccinations for elderly and chronically ill patients. It also boosted use of prophylactic heparin (a blood thinner) for patients at risk

for blood clots and prophylactic aspirin for patients at risk for stroke or heart attack.

The researchers used a computerized system to process online information for 6,371 hospitalized patients, generating preventive care reminders as appropriate. They randomized doctors to groups who viewed and did not view the reminders when they used a computerized order-entry system to determine the impact of the reminders on the use of four preventive therapies: pneumonia and influenza vaccinations and heparin and aspirin prophylaxis.

The reminder system identified 54 percent of patients as eligible for preventive measures that had not been ordered by the admitting physician. The reminders increased use of pneumonia and influenza

vaccination from practically zero to approximately 35 and 50 percent, respectively. Doctors who received the reminders had higher ordering rates than doctors who did not get reminders for pneumonia vaccination (36 vs. 0.8 percent), influenza vaccination (51 vs. 1 percent), prophylactic heparin (32 vs. 19 percent), and prophylactic aspirin at discharge (36 vs. 28 percent) for patients eligible for these types of preventive care.

Details are in "A computerized reminder system to increase the use of preventive care for hospitalized patients," by Dr. Dexter, Susan Perkins, Ph.D., J. Marc Overhage, M.D., Ph.D., and others, in the September 27, 2001 *New England Journal of Medicine* 345(13), pp. 965-970.

Rural family practice clinics often provide more preventive services than similar urban and suburban clinics

Lower use of health services in rural areas has been attributed to lower access to care in these areas. People living in rural areas must travel further to care facilities, and rural areas have fewer hospitals and physicians per capita than urban areas. However, once rural patients enter a family practice clinic, they often receive more preventive care services than patients in urban and suburban clinics, according to a study supported by the Agency for Healthcare Research and Quality (HS08776).

For the study, principal investigator Benjamin Crabtree, Ph.D., and his University of Nebraska colleagues interviewed 40 physicians and directly observed 1,230 patient encounters to calculate how many of 25 preventive services eligible patients received at 16 family practice clinics in Nebraska. Clinics varied in type (solo vs. group and independent

vs. system-affiliated) as well as geography, with seven clinics in rural areas, six in suburban locations, and three in urban areas. No significant geographic differences were found for blood pressure monitoring, tobacco counseling, mammography, or Pap smears. However, doctors practicing in rural areas were significantly more likely to provide clinical breast exams, ask about family history of breast cancer, and administer influenza immunizations than physicians in urban areas. Rural physicians also were much more likely to provide cholesterol screening than suburban physicians.

In fact, rural physicians generally delivered the most preventive services and urban physicians the least. Unlike more transient urban and suburban doctors, many rural doctors and clinics had been in

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place longer and perhaps knew their patients and families better. Thus, they could more easily identify who needed a physical exam or who had a family history of cancer and conduct appropriate preventive services. Also, rural patients did not object to waiting longer, as long as they had more time with the doctor, while urban and suburban patients wanted short waits.

Finally, urban and suburban clinics were part of networks that promoted efficiency and perhaps had less time for providing preventive services, which was not a factor for rural clinics.

See "Rural, urban, and suburban comparisons of preventive services in family practice clinics," by Louis G. Pol, Ph.D., Jenine Rouse, M.S., L.M.H.P., Stephen Zyzanski, Ph.D., and others, in the spring 2001 *Journal of Rural Health* 17(2), pp. 114-121.

Evidence is inconclusive on the long-term benefits of newborn hearing screening

The U.S. Preventive Services Task Force (USPSTF) has determined that the available scientific evidence is insufficient to recommend for or against routine screening of newborns for hearing loss. The USPSTF, a panel of independent, private-sector experts in prevention and primary care, reached its conclusion based on an extensive review of the evidence conducted by the Evidence-based Practice Center (EPC) at Oregon Health & Science University. The EPC is supported by the Agency for Healthcare Research and Quality (290-97-0018).

The review examined two key issues: one, the effectiveness and success of existing universal screening programs; and two, the evidence that earlier detection and treatment of hearing problems in children result in better speech and language outcomes. The USPSTF found good evidence that universal screening leads to earlier identification and treatment of infants with hearing loss. However, the evidence was inconclusive about whether earlier treatment as a result of screening leads to long-term improvements in language skills.

The USPSTF process requires good evidence that a service produces significant improvements in important clinical outcomes, and

that these benefits outweigh any harms, before the Task Force recommends a service for routine use. They defined routine screening to include universal screening and screening in high-risk infants. The USPSTF noted that although early identification and intervention might be of value to some parents, these benefits need to be weighed against the frequent false-positive results that arise from universal screening.

For routine newborn hearing screening, the USPSTF issued an "I" recommendation. An "I" recommendation, in which the USPSTF finds insufficient evidence to recommend for or against a particular intervention, means that the evidence that the service is effective is lacking, of poor quality, or conflicting, and the balance of harms and benefits cannot be determined. Specific to newborn hearing screening, the USPSTF found:

- Research indicates that universal newborn hearing screening leads to earlier detection and to earlier treatment of hearing loss. On average, hearing loss is detected and treated 6-9 months earlier.
- Studies that reviewed the association between early intervention and better

language at 2 to 4 years had serious methodological limitations.

- The yield of screening is substantially higher in high-risk populations (children in the neonatal intensive care unit and those with other risk factors for hearing loss) because of the higher prevalence of potential hearing problems.

Newborn hearing screening is the fifth recommendation released by the USPSTF; the first four recommendations concerned screening for chlamydia, high blood cholesterol and other lipid abnormalities, skin cancer, and bacterial vaginosis. Working with the Oregon Health & Science University EPC, the Task Force conducts rigorous, impartial assessments of scientific evidence for a broad range of preventive services. The Task Force grades the strength of evidence from "A" (strongly recommends) to "D" (recommends against).

The newborn hearing screening recommendation can be found on the AHRQ Web site at www.ahrq.gov/clinic/3rduspstf/newhearr.htm. Previous USPSTF recommendations, summaries of the evidence, easy-to-read fact sheets, and other materials are

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available from AHRQ. Send an e-mail to ahrqpubs@ahrq.gov or visit the National Guideline Clearinghouse at <http://www.guideline.gov>.

To help clinicians apply Task Force recommendations in practice and to help patients understand

which clinical preventive services they should expect clinicians to provide, AHRQ sponsors the Put Prevention Into Practice (PPIP) program. Information about the PPIP program and products also may be found on AHRQ's Web site at www.ahrq.gov/clinic/prevenix.htm.

Editor's note: An article summarizing the evidence on universal newborn hearing

screening, authored by Diane C. Thompson, M.S., Heather McPhillips, M.D., M.P.H., Robert L. Davis, M.D., M.P.H., and others, appears in the October 24/31, 2001, *Journal of the American Medical Association* 286(16), pp. 2000-2010.

Researchers discuss preventive care recommendations from the third U.S. Preventive Services Task Force

The U.S. Preventive Services Task Force (USPSTF) is an independent panel, first convened in 1984 by the U.S. Department of Health and Human Services, to develop evidence-based recommendations for clinicians about preventive health care. The Task Force recommends which screening tests, immunizations, preventive medications, and counseling interventions doctors should routinely incorporate into clinical practice.

The third USPSTF was convened in late 1998 by the Agency for Healthcare Research and Quality. Four new screening recommendations from the Task Force are summarized in a recent clinical review by David Atkins, M.D., Coordinator of Clinical Preventive Services for AHRQ's Center for Practice and Technology Assessment. In a second article, Dr. Atkins and his colleagues examine USPSTF prevention care priorities, finding that the most highly recommended services are delivered at a low rate nationally. The articles are summarized here.

Atkins, D. (2001, April). "First new screening recommendations

from the third U.S. Preventive Services Task Force." *British Medical Journal USA* 1, pp. 187-190.

The USPSTF only recommends that clinicians routinely provide preventive services for which the benefits substantially outweigh harms and for which there is good evidence that the service improves important health outcomes (for example, reduces the rate of death or disease). The third USPSTF recently made four new recommendations. First, doctors should screen women over 45 years, men over 35 years, and high-risk young adults for high blood cholesterol and low high density lipoprotein (HDL, so-called good cholesterol) levels. However, in treatment decisions—for example, use of statin drugs that reduce the risk of coronary heart disease—clinicians should consider each patient's overall risk of heart disease.

Second, clinicians should routinely screen sexually active women 25 years of age and younger for chlamydial infection to prevent pelvic inflammatory disease (PID) and its complications, such as tubal pregnancy and infertility.

Chlamydial infection is the most common sexually transmitted bacterial disease in the United States. One trial showed that screening and treating at-risk women could reduce the incidence of PID by more than 50 percent.

The third Task Force recommendation says that screening for and treatment of bacterial vaginosis during pregnancy—a condition that increases the risk of preterm birth and low birthweight babies—is not beneficial in average-risk women but is an option for some women at high risk of preterm delivery. Fourth, although total body skin examination can improve detection of early skin cancer, the Task Force found insufficient evidence to determine whether it will reduce morbidity and mortality from skin cancer. Reprints (AHRQ Publication No. 01-R088) are available from AHRQ.**

Coffield, A.B., Maciosek, M.V., McGinnis, M., and others. (2001). "Priorities among recommended clinical preventive services." *American Journal of Preventive Medicine* 21(1), pp. 1-9.

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The prevention services most highly recommended by the USPSTF are delivered at low rates, according to this study. In fact, the Committee on Clinical Preventive Service Priorities assessed the value of 30 USPSTF-recommended services for average-risk patients as part of periodic health examinations. Priority standing was based on the burden of disease prevented by each service and its cost-effectiveness (cost of the service divided by quality-adjusted life years saved). The Committee ranked each service from 1 to 5 points on each of the 2 dimensions, for total scores ranging from 2 to 10. They then compared the highest ranking services with current delivery rates nationally.

The highest ranked preventive services (scores of 7+) with the lowest delivery rates (50 percent or less nationally) were: providing tobacco cessation counseling to adults, screening older adults for undetected vision impairments, screening adults for colorectal cancer, screening young women for chlamydial infection, screening adults for problem drinking, and vaccinating older adults against pneumonia. Two additional services, offering adolescents an anti-tobacco message or advice to quit and counseling adolescents on alcohol and drug abstinence are poorly delivered and of high potential value even if minimally effective. However, the evidence base supporting them is more limited.

On average, adult patients have about a dozen risk factors requiring about 24 preventive services. Yet,

even the most well-intentioned clinicians and conscientious patients have difficulty including all recommended preventive services in a single visit. The priority ranking of recommended preventive services by these authors should help guide efforts of clinicians, as well as health care administrators and health plans, to set priorities for preventive care services. These priorities also should help State and local public health officials set priorities for high-risk groups, including those with less income and/or less education and those who belong to an ethnic/racial minority group, who are at higher risk for some preventable illnesses such as heart disease and stroke. Reprints (AHRQ Publication No. 01-R087) are available from AHRQ.**

HIV/AIDS Research

Racial/ethnic disparities remain in HIV-related hospitalizations, despite improved treatments

HIV-related admissions to community hospitals in seven States rose between 1993 and 1995, but the rates began a steady decline in late 1995 with the introduction of antiretroviral therapy for HIV infection. This decline occurred across all States, demographic groups, and insurers. However, the magnitude of the decline varied, with the greatest declines in hospitalization among white men and individuals with private insurance and the least decline among black men. The drop in HIV-related hospitalizations paralleled reported disparities in access to newly introduced antiretroviral therapies, which reduce viral load and increase CD4 cell counts.

Agency for Healthcare Research and Quality researchers John A. Fleishman, Ph.D., and Fred J. Hellinger, Ph.D., used hospital discharge data (1993-1997) to identify HIV-related hospital admissions and length of stay (LOS) at community hospitals in seven States: California, Colorado, Kansas, Maryland, New York, New Jersey, and South Carolina. Between early

1995 and late 1997, hospital admissions dropped 51 percent for white men, 37 percent for Hispanic men, and 32 percent for black men. During the same period, admissions dropped 40 percent for white women, 29 percent for Hispanic women, and 21 percent for black women.

Insurance also influenced HIV-hospitalization rates during this time. Admissions of privately insured patients (who were more likely to have access to new therapies) dropped 52 percent, and admissions of Medicaid patients dropped 38 percent; admissions of Medicare and self-pay patients also declined. Hospital LOS declined steadily from nearly 14 days per admission in 1993 to 9.5 days in 1997. Over all States and time periods, mean LOS was lowest for white men (10.01 days) and white women (10.88 days). LOS for Hispanics was 11.80 for men and 11.90 for women, whereas LOS for blacks was 12.72 for men and 12.04

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for women. Mean LOS was higher for Medicaid admissions (12.30) than for private (10.78) or Medicare (10.85) admissions.

More details are in "Trends in HIV-related inpatient admissions from 1993 to 1997: A seven-state study,"

by Drs. Fleishman and Hellinger, in the September 2001 *Journal of Acquired Immune Deficiency Syndromes* 28(1), pp. 73-80. Reprints (AHRQ Publication No. 02-R018) are available from AHRQ.**

HCSUS studies examine mental health, drug abuse, insurance effects, and quality of life among people with HIV

The HIV Cost and Services Utilization Study (HCSUS) surveyed a nationally representative sample of 2,864 adults infected with the human immunodeficiency virus (HIV) that causes AIDS, who were receiving HIV-related medical care in the United States in early 1996. HCSUS was conducted under a cooperative agreement between the Agency for Healthcare Research and Quality (HS08578) and RAND, with additional support from other groups and agencies.

This very large study was led by Martin F. Shapiro, M.D., and Samuel A. Bozzette, M.D., of the RAND Health Program. It was the first study to obtain a nationally representative sample of HIV patients in treatment. These patients were interviewed three times from January 1996 to January 1998. Most of the HCSUS participants had advanced HIV disease (9 out of 10 were symptomatic or had AIDS), half were minorities, and more than 40 percent were heterosexual. Almost two-thirds were not employed, and over 40 percent earned less than \$10,000 a year. Six studies involving HCSUS data were recently published and are described here.

Bing, E.G., Burnam, M.A., Longshore, D., and others. (2001, August). "Psychiatric disorders and drug use among human immunodeficiency virus-infected

adults in the United States." *Archives of General Psychiatry* 58, pp. 721-728.

These researchers used standard questionnaires to screen for psychiatric and drug problems among HCSUS participants and found that nearly half of 2,864 adults receiving care for HIV in the United States in 1996 screened positive for one of four psychiatric disorders, nearly half reported using an illicit drug, and over 12 percent screened positive for drug dependence during the previous year. These treatable problems decrease quality of life, interfere with adherence to antiretroviral treatment, and increase caregiver burden and health care costs.

Over one-third screened positive for major depression and over one-fourth experienced symptoms of dysthymia (prolonged mild depression) during the previous year. Others screened positive for anxiety disorders and panic attacks. Those with private insurance were less likely than patients without insurance to suffer from psychiatric disorders. Sexual orientation was not related to any psychiatric disorder.

Heavy drinking and illicit drug use increased the likelihood of a psychiatric disorder. About half of the HCSUS population reported using an illicit drug during the past year: 12 percent reported only marijuana use, one-fourth used other illegal drugs but were not

dependent, and 12 percent were dependent on at least one illicit drug. Those with more HIV-related symptoms were more likely to be drug dependent, even after accounting for other factors. Homosexuals and sexually abstinent individuals were less likely to be drug dependent than heterosexuals. Reprints (AHRQ Publication No. 02-R009) are available from AHRQ.**

Turner, B.J., Fleishman, J.A., Wenger, N., and others. (2001, September). "Effects of drug abuse and mental disorders on use and type of antiretroviral therapy in HIV-infected persons." *Journal of General Internal Medicine* 16(9), pp. 625-633.

Nearly half of HCSUS participants reported recent severe drug abuse, and 9 percent reported drug dependence. Drug problems clearly affected the likelihood that HIV-positive people would take life-prolonging antiretroviral therapy (ART), according to this study. Drug-dependent men and women and those with HIV exposure related to injection drug use were less likely to receive ART than those without these problems.

The researchers examined self-reported ART use among 2,267 HCSUS participants in 1997. About 90 percent of participants reported use of any ART, and 61 percent reported use of the more advanced,

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currently recommended HAART (highly active ART: three or more drugs, including at least one protease inhibitor or non-nucleoside reverse transcriptase inhibitor). After adjustment for drug abuse, mental disorders had no significant effects on use of ART, perhaps due to the high prevalence of these problems in drug users.

On a positive note, patients who had recently received mental health care were more likely than those who had not to report taking HAART, even after adjusting for other factors.

Among drug users on ART, only mental health treatment was associated with HAART. Thus, drug abuse seemed to be a greater barrier to ART use than mental disorders. Problem drinking was not associated with ART use or type of ART treatment among users. The researchers call for more studies to distinguish provider- from patient-related reasons for the failure of 10 percent of patients to receive ART. Reprints (AHRQ Publication No. 02-R015) are available from AHRQ.**

Burnam, M.A., Bing, E.G., Morton, S.C., and others. (2001, August). "Use of mental health and substance abuse treatment services among adults with HIV in the United States." *Archives of General Psychiatry* 58, pp. 729-736.

According to this study, nearly two-thirds (61 percent) of 231,400 HIV-infected adults receiving medical care for their disease in 1996 also used alcohol, drug, or mental health (ADM) services in a 6-month period. They made more than 3.5 million outpatient visits to specialty mental health or substance abuse providers. Nearly 2 percent of them were hospitalized for these problems, 3 percent received

residential substance abuse treatment, 26 percent saw individual mental health specialists, 15 percent had group mental health treatment, 40 percent discussed emotional problems with their doctors, 30 percent took psychotherapeutic medications, 6 percent received outpatient substance abuse treatment, and 12 percent participated in substance abuse self-help groups.

However, these HIV-positive individuals did not have equal access to care, which varied depending on geographic and socioeconomic factors. Use of individual or family outpatient mental health visits was less likely among blacks and those with lower education or income. Higher probability of use was found among the disabled and those suffering from a greater number or severity of HIV symptoms. Individual outpatient mental health visits also were more common among people living in the Northeast and in large metropolitan areas.

Group therapy was less likely to be reported by those aged 35 to 49, the disabled, and residents of the South. Residential treatment for substance abuse was more common among blacks, the less educated, and the disabled and less common among homosexuals and residents of the Midwest and West. Use of substance abuse self-help groups was more likely, after adjusting for need, among blacks, the less educated, those residing in the Northeast or in a large metropolitan area, and those with higher CD4 cell counts. Insurance type had little impact on likely use of ADM services. Reprints (AHRQ Publication No. 02-R010) are available from AHRQ.**

Chen, J.L., Phillips, K.A., Kanouse, D.E., and others. (2001, July-August). "Fertility desires and intentions of HIV-positive

men and women." *Family Planning Perspectives* 33(4), pp. 144-152, 165.

Advanced antiretroviral therapy has decreased transmission of HIV from infected mothers to their children to about 2 percent and prolonged adult survival, prompting consideration of childbearing and parenthood for HIV-positive men and women. Apparently, HIV dampens but does not come close to eliminating a person's desire and plans to have children. This HCSUS study reveals that more than one in four HIV-positive men and women receiving medical care in the United States in the late 1990s desired children in the future. Of those who wanted children, 6 in 10 men and 7 in 10 women actually expected to have children.

HIV-positive individuals who expected children were generally younger, had fewer children, and reported better physical functioning and overall health than those who did not expect children. Black men were five times more likely and black women three times more likely than others to expect children. Women who knew their partner's HIV status were more likely to expect children than women who did not (perhaps a proxy for a more tenuous or less intimate relationship). However, nearly 20 percent of HIV-positive men who desired children had a partner who did not, perhaps because of the family's dim economic prospects due to illness.

These findings suggest a looming demand for social services for children born to HIV-infected parents. Also, plans of a majority of HIV-positive men and women to have children with a primary partner or spouse whose HIV status was negative or unknown has major implications for the heterosexual transmission of HIV, caution the

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researchers. They recommend family planning counseling for these couples that includes the need to incorporate partner HIV testing, ways to minimize the likelihood of HIV transmission to partners and children, and how to meet the challenges of parenthood while living with HIV.

Wenger, N.S., Kanouse, D.E., Collins, R.L., and others. (2001, June 13). "End-of-life discussions and preferences among persons with HIV." *Journal of the American Medical Association* 285(22), pp. 2880-2887.

Despite the life-prolonging benefits of modern antiretroviral treatment for HIV, the need for advanced planning for end-of-life care remains. Unfortunately, this study shows that half of all people infected with HIV are at risk of making end-of-life decisions without prior discussions with their doctor. Patients who had less denial about the severity of their illness, greater trust in their doctor, and a longer relationship with their doctor were more likely to make advanced care plans, according to the researchers. They surveyed 2,864 adults receiving HIV-related care regarding communication with a doctor about end-of-life issues and completion of advance directives.

Only half of patients discussed some aspect of end-of-life care with their doctor, and 38 percent completed an advance directive. Patients were nearly six times more likely to complete an advance directive after a discussion with their doctor. However, doctors were

less likely to discuss end-of-life care with blacks and Hispanics than whites. Those infected with HIV via injection drug use and less-educated patients communicated the least with their doctors about end-of-life issues.

Women and those with children in the household communicated the most with doctors about end-of-life issues. Patients with more advanced disease, more hospitalizations in the last 6 months, more symptoms, and worse health status also were more likely to have discussed these issues. Patients who knew their doctor for more than 3 years were 1.5 times more likely to have had a discussion. Black and Latino patients had about half the odds of completing an advance directive, but disabled patients did so more often than others. Greater social support, more positive coping skills, and less denial were associated with having an advance directive.

Goldman, D.P., Bhattacharya, J., McCaffrey, D.F., and others. (2001, September). "Effect of insurance on mortality in an HIV-positive population in care." *Journal of the American Statistical Association* 96 (455), pp. 883-893.

Eligibility for public insurance through Medicaid or Medicare usually requires HIV-positive patients to demonstrate a disability, which is almost always associated with advanced disease (and shortened life). These requirements ironically led to the erroneous conclusions of a few studies that insurance increased mortality among people with HIV infection. However, this HCSUS study demonstrates that ignoring the health status of these patients led to

the false conclusion that insurance may not be protective of HIV patients. In fact, the researchers assert that policies to expand insurance coverage to the uninsured HIV-positive population could save many lives.

They correlated patient insurance status and mortality 6 months after HCSUS baseline interviews (2,864 respondents) and followup interviews (2,466 respondents), when advanced highly active antiretroviral therapy (HAART) was widely used by HIV-positive people. They identified the generosity of State-administered Medicaid programs and AIDS Drug Assistance Programs for each patient interviewed, including such factors as stringency of income eligibility and number of prescriptions paid for each month. The effect of insurance in the first model showed increased probability of death by the first followup interview or within the next 6 months.

However, when the researchers controlled for severe illness (often required for people to qualify for insurance), for example, by including health status measures like CD4 cell count, it substantially reduced the negative effect of insurance. When the researchers went further to include patient demographics, State policies, presumed HIV exposure route, years since diagnosis, and lowest ever CD4 count, insurance lowered the probability of 6-month mortality by 71 percent at baseline and 85 percent at followup.

Agency News and Notes

AHRQ releases first annual report on new CAHPS® database

The Agency for Healthcare Research and Quality has released the first annual report of the National CAHPS® Benchmarking Database (NCBD), marking the first time that data about consumer assessments of their medical care have been available in one place for Medicare, Medicaid, and commercial (employer-sponsored) health plans. These data can be used by purchasers, health plans and policymakers in making health plan choices. Some of the key findings discussed in the report are:

- Overall, managed care enrollees rate their health care highly and report positive experiences with their providers and staff.
- Medicaid, Medicare, and commercial enrollees rate their care differently, with Medicare enrollees reporting the most positive experiences.
- Although consumers typically rate their health plans very high, the percentage of consumers who rated their plans very high in the CAHPS® survey varied between 16 and 74 percent.

CAHPS® is a set of survey and reporting tools, developed through research sponsored by AHRQ, that are designed to measure consumers' experiences with health plans and report those experiences back to other consumers and purchasers to help them choose among health plans. CAHPS® data were confidentially submitted to the NCBD by participating sponsors from the commercial, Medicaid, and Medicare sectors who had used the CAHPS® survey tools. Currently, the NCBD consists of 3 years of CAHPS® survey results.

Variations in quality as shown in the NCBD annual report underline the importance of using this type of information for choosing health plans. Purchaser sponsors can use the NCBD data tables in the annual report to evaluate health plan performance by comparing local market or State-wide plan performance with national averages and benchmarks for the plans included in the NCBD. Health plan sponsors can use the NCBD comparative data for internal management review and to identify target areas and opportunities for improving performance. Other sponsors can incorporate NCBD data into public reports in order to educate and inform consumers, policymakers, and other audiences about overall plan performance in the context of a national experience.

The availability of the NCBD data also is important to AHRQ efforts to provide a national picture of quality health care in the United States. The NCBD is one of the resources that AHRQ will draw upon for the *National Health Care Quality Report*, which will be published for the first time in 2003.

Copies of the *Annual Report of the National CAHPS® Benchmarking Database 2000* (AHRQ Publication No. 01-0005) are available from AHRQ.* See the back cover of *Research Activities* for ordering information.

To find out more about ongoing NCBD activities, visit the NCBD Web page at <http://ncbd.cahps.org>. For more information about CAHPS® or accessing NCBD data, call the CAHPS® Help Line at 1- 800-492-9261 or send an e-mail to cahps1@westat.com.

Announcements

AHRQ awards nearly \$3 million to build and support the research infrastructure

The Agency for Healthcare Research and Quality has awarded nearly \$3 million to fund nine projects to build and strengthen the Nation's research infrastructure. These projects will help strengthen the health services research environments of

institutions that serve racial/ethnic minorities and broaden the geographic distribution of health services research funding.

The grants were funded under two AHRQ research infrastructure-development initiatives announced in FY 2001: the Minority Research

Infrastructure Support Program (M-RISP), and the Building Research Infrastructure and Capacity Program (BRIC). See below for project descriptions.

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Research infrastructure

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M-RISP was established to increase the capacity of institutions that serve racial/ethnic minorities and their faculty to conduct rigorous health services research. By supporting institutional infrastructure and individual investigator research projects, M-RISP can lead to successful applications for funding under regular health services research grant mechanisms. Almost \$1.2 million to support 3-year projects will go to three educational minority-serving institutions located in Hawaii, Tennessee, and Texas.

The BRIC program is intended to enhance the competitiveness for research funding among institutions located in States where the success rate for applications historically has been low. Eligibility under the BRIC Program is limited to 17 designated States, Puerto Rico, and the Virgin Islands. Over \$1.7 million for six 2-year projects will go to institutions in Kentucky, Louisiana, Mississippi, New Jersey, Utah, and a consortium involving Idaho, Montana, Nevada, Utah, and Wyoming.

Minority Research Infrastructure Support Program (M-RISP)

Health Services Research in Underserved Populations, Jean L. Freeman, University of Texas Medical Branch, Galveston. Total projected funding \$1,206,900.

The goal is to increase this institution's ability to conduct health services research with a focus on medically underserved populations. The program will allow the university to increase the number of faculty who conduct health services research, recruit

additional expert faculty, and strengthen its research capabilities.

Hawaii Minority Research Infrastructure Support Program, Edwin C. Cadman, University of Hawaii at Manoa. Total projected funding \$1,004,295.

The objective is to build a program at the University of Hawaii Medical School that will evaluate ethnic health disparities in the State's Asian American and Pacific Islander populations. The program also will provide mentoring and training to inexperienced researchers, facilitate collaboration between Hawaii's health care organizations, and establish a nationally recognized mentoring group to assist in the implementation of research projects.

Collaborative Minority Health Care and Quality Research, Baqar A. Husaini, Tennessee State University, Nashville. Total projected funding \$1,367,583.

The objectives are to increase minority health care research programs at Tennessee State University and Meharry Medical College, establish collaborations with senior health services researchers at other universities, and conduct research to address racial and ethnic health care disparities.

Building Research Infrastructure and Capacity (BRIC)

Rutgers Center for Health Services Research, Stephen Crystal, Rutgers State University of New Jersey, Piscataway. Total projected funding \$757,565.

The objective is to create a multidisciplinary health services research center for the State of New Jersey at Rutgers University.

The center will allow researchers to build the State's expertise in health services research, including recruiting additional health services researchers to faculty positions, providing support for application development, developing a multi-use health database, and providing training, consultation, and technical assistance to State health officials and Rutgers University faculty.

Intermountain Child Health Services Research Consortium, Charles J. Hoff, University of Utah, Salt Lake City. Total projected funding \$577,161.

The goal is to develop an infrastructure for a child health services research program with emphasis on children with special health care needs, including development of a consortium, implementation of a faculty development program in child health services research, and conduct of a study to compare a pediatric hospitalist system and traditional care on outcomes of children with special health care needs.

LSU Health Services Research Program, Frederick P. Cerise, Louisiana State University Health Sciences Center, New Orleans. Total projected funding \$586,880.

This project will establish the Louisiana State University (LSU) Health Services Research Program, which will function as a partnership between the university's medical school and an LSU unit that delivers health care to 1 million State residents, many of whom are uninsured and underinsured. The focus will be on translating research evidence into practice.

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New research grants

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Intermountain BRIC

Consortium, Luis M. Paita, National Association of Health Data Organizations. Total projected funding \$368,909.

This project will improve the infrastructure and capacity of five Building Research Infrastructure and Capacity (BRIC)-eligible States (Idaho, Montana, Nevada, Utah, and Wyoming) and enhance their ability to compete for and be awarded health services research grants. The project will produce, among other resources, standardized analytic tools, a Web-based clearinghouse and communications module, health

quality indicators, and a research agenda.

Kentucky Health Services Research Development, Joyce E. Beaulieu, University of Kentucky Research Foundation. Total projected funding \$623,052.

The goal is to increase faculty research capability and grant-writing ability at the University of Kentucky by establishing the Kentucky HSR Development. One of the participants in this program will be a new practice-based research network, the Kentucky Ambulatory Network (KAN).

Mississippi Building Research Infrastructure and Capacity,

Linda Southward, Mississippi State University. Total projected funding \$595,370.

The objective is to implement a partnership between Mississippi's child care and health care providers, Mississippi State University, and the American Academy of Pediatrics to improve health care and outcomes for underserved, low-income, and minority children in the Mississippi Delta. The researchers will develop a multidisciplinary health services research program for one of the poorest rural areas of the Nation to assess the quality of care available for these populations, identify their current health care needs, and improve quality of care.

Research Briefs

DeLong, E.R., Nelson, C.L., Wong, J.B., and others. (2001). "Tutorial in biostatistics." (AHRQ grants HS08805 and HS06503). *Statistics in Medicine* 20, pp. 2505-2532.

Observational studies are not as rigorously designed as randomized clinical trials, yet they yield important information about treatment effectiveness. They also have the advantage of providing longer term followup than clinical trials. Thus, observational studies are useful for assessing and comparing patients' long-term prognosis under different treatment strategies. For patients with coronary artery disease, many observational comparisons have focused on medical therapy versus interventional procedures such as coronary artery bypass graft surgery. These authors discuss methodological problems in analyzing longitudinal treatment data—ranging from designation of

the therapeutic arms in the presence of early deaths, withdrawals, and treatment cross-overs to site-to-site variability in short-term mortality—and suggest strategies to deal with them, using a coronary artery disease registry as an example.

Gross, P.A., Greenfield, S., Cretin, S., and others. (2001). "Optimal methods for guideline implementation." *Medical Care* 39(8), pp. SII85-92.

Clinical practice guidelines are intended to reduce variations in medical practices as well as actual medical errors. They have not solved these problems, in part because they have not been fully implemented. Clearly, more effort is needed to enhance acceptance of practice guidelines and change the behavior of health care providers. These authors summarize a recent meeting of experts who have studied the problem of guideline

implementation in Europe and the United States. They describe the implementation methods studied to date, review the theories of behavioral change, and make recommendations for better implementation of clinical practice guidelines.

Hessol, N.A., Schneider, M., Greenblatt, R.M., and others. (2001). "Retention of women enrolled in a prospective study of human immunodeficiency virus infection: Impact of race, unstable housing, and use of human immunodeficiency virus therapy." (AHRQ cooperative agreement and other Federal agencies). *American Journal of Epidemiology* 154, p. 563-573.

Women and members of racial/ethnic minority groups are typically underrepresented in clinical trials. The good news is that women who have HIV infection or are at risk for it,

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especially black women, can be successfully recruited and retained in prospective research trials. The researchers describe recruitment and retention of a diverse group of women infected with HIV and at-risk HIV-uninfected women participating in the Women's Interagency HIV Study at six sites across the United States. Over 80 percent of all women were retained during the first 10 study visits, which occurred over a 5-year period. Factors associated with retention were older age, black race, stable housing, HIV-infected serostatus, past experience in studies of HIV/AIDS, and site of enrollment. Only site of enrollment was associated with retention of HIV-uninfected women.

Landrum, M.B., and Becker, M.P. (2001). "A multiple imputation strategy for incomplete longitudinal data." (AHRQ grant HS09183). *Statistics in Medicine* 20, pp. 2741-2760.

Longitudinal studies are commonly used to analyze processes of change. Because data are collected over time, missing data are pervasive in such studies, and it is difficult to ascertain all the variables. These authors propose a new imputation strategy for completing longitudinal data sets. The proposed method makes use of shrinkage estimators for pooling information across geographic entities and model averaging for pooling predictions across different statistical models.

Macinko, J., and Starfield, B. (2001). "The utility of social capital in research and health determinants." (AHRQ National Research Service Award training grant T32 HS00029). *Milbank Quarterly* 79(3), pp. 387-427.

These authors systematically reviewed the research literature to examine the utility of social capital in research on health determinants. Social capital is defined in many ways. For some it refers to the capacity of individuals to command scarce resources by virtue of their membership in networks or broad social structures. For others, it refers to features of social organization—such as trust, norms, and networks—that can improve the efficiency of society by facilitating coordinated actions. There is no consensus on the nature of social capital, its appropriate level of analysis, or the appropriate means of measuring it, let alone how it might be related to inequalities in health outcomes, according to the authors. In this article, they explore different definitions of social capital; review how it has been used and interpreted in the sociological, political science, and economic/community development literature; discuss its appearance and use in the health inequalities literature; and suggest further directions for refining the concept for use in explaining health outcomes.

Meenan, R.T., Hornbrook, M.C., Goodman, M.J., and others. (2001, August). "Identifying 'high-cost' risks in defined populations." (AHRQ grants HS10688, T32 HS000698, and F32 HS00072). *Preventive Medicine in Managed Care* 2(4), pp. 179-191.

Integrated programs such as case management and disease management are intended to improve chronic care, an important element of which is early identification of patients at risk of serious clinical and financial sequelae. These authors present a conceptual framework and discuss existing techniques for identifying

patients in health maintenance organization (HMO) populations who are at risk for high costs. Using a large multi-HMO database, they compare the ability of three risk-assessment models to distinguish high- and low-cost risks among 1.5 million HMO enrollees. They document that such models have both explanatory and predictive power, but it remains to be seen whether interventions directed by the results of these models will lead to improved health outcomes and lower costs.

Mikulich, Liu, Y.C. Steinfeldt, J., and Schriger, D.L. (2001). "Implementation of clinical guidelines through an electronic medical record: Physician usage, satisfaction, and assessment." (AHRQ grant HS06284). *International Journal of Medical Informatics* 63, pp. 169-178.

These investigators developed and evaluated the Emergency Department Expert Charting System (EDECS) to provide real-time guidance for emergency department (ED) care of low back pain in adults, fever in children, and occupational exposure to blood and body fluids in health care workers by embedding clinical guidelines within an electronic medical record. They used pre- and post-EDECS use questionnaires to survey 142 ED physicians about their behaviors and attitudes and found that 84 percent of doctors used EDECS at least once. Median session time using EDECS decreased from 12 minutes for session 1, to 5.5 minutes for sessions 16 and above. Doctors generally agreed that care with EDECS was better than standard care, particularly with respect to documentation. These findings highlight both the potential of computer-assisted decisionmaking

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and the need for context-specific approaches when trying to implement guidelines, conclude the researchers.

Mullan, J.T., and Harrington, C. (2001, September). "Nursing home deficiencies in the United States." (AHRQ grant HS07574). *Research on Aging* 23(5), pp. 503-531.

Poor quality of care in nursing homes has concerned consumers, professionals, and policymakers for some time. This paper presents a confirmatory factor analysis (CFA) of deficiencies in nursing homes obtained from the On-Line Survey Certification and Reporting system, a national database on nursing home quality maintained by the Centers for Medicare & Medicaid Services (formerly the Health Care Financing Administration). The analysis suggests that there are eight underlying quality of care factors to which State surveyors can respond as they assign deficiencies to nursing homes. The factors are: patient-specific quality of care, including nutrition, personal hygiene, bladder control, and fluid intake, as well as prevention of pressure sores; freedom from abuse such as physical restraints; periodic resident assessment; protection of resident rights; provision of a safe, clean, and comfortable environment; good nutrition; pharmacy quality that sustains few medication errors; and quality administration that includes periodic staff training and performance reviews, proper maintenance of clinical records, and a quality assurance committee.

Patton, L.L., Bonito, A.J., and Shugars, D.A. (2001, August). "A systematic review of the effectiveness of antifungal drugs

for the prevention and treatment of oropharyngeal candidiasis in HIV-positive patients." (AHRQ contract 290-97-0011). *Oral Surgery, Oral Medicine, Oral Pathology* 92, pp. 170-179.

Oral candidiasis is one of the most common, treatable oral mucosal infections seen in people infected with HIV. It can cause frequent and significant discomfort, pain, loss of taste, and aversion to food and may lead to secondary complications such as esophageal candidiasis in some patients. For these reasons, antifungal prophylaxis may be justified in some high-risk patients (CD4 counts less than 200), suggest these researchers. They systematically reviewed clinical trials published between 1966 and 2000 to determine the strength of evidence for the effectiveness of a variety of antifungal drugs to prevent and treat oral candidiasis in HIV-positive patients. The evidence for the prophylactic efficacy of fluconazole was good, although evidence was insufficient to draw conclusions about other antifungals. Evidence for treatment effectiveness was insufficient for amphotericin B but good for nystatin, clotrimazole, fluconazole, ketoconazole, and itraconazole.

Pindzola, R.R., Balzer, J.R., Nemoto, E.M., and others. (2001, August). "Cerebrovascular reserve in patients with carotid occlusive disease assessed by stable xenon-enhanced CT cerebral blood flow and transcranial Doppler." (AHRQ grant HS09021). *Stroke* 32, pp. 1811-1817.

Measurement of cerebrovascular reserve (CVR) by transcranial Doppler ultrasonography (TCD) or quantitative cerebral blood flow (CBF) can identify subgroups of patients at increased risk for stroke. However, TCD is much less

sensitive than xenon-enhanced computerized tomography (Xe/CT) CBF for identifying patients with compromised CVR, concludes this study. This may be due to the inability of TCD to identify patients with compromised reserves when their middle cerebral artery blood flow comes from collateral sources. The lack of correlation between TCD and Xe/CT CBF for identifying patients with compromised CVR should be considered when stroke risk assessments are made by TCD, caution the researchers. They compared CVRs before and after acetazolamide administration in 38 patients with occluded carotid arteries.

Shekelle, P.G., Park, R.E., Kahan, J.P., and others. (2001). "Sensitivity and specificity of the RAND/UCLA Appropriateness method to identify the overuse and underuse of coronary revascularization and hysterectomy." (AHRQ grant HS07185). *Journal of Clinical Epidemiology* 54, pp. 1004-1010.

Escalating medical costs have intensified scrutiny of the appropriateness of many medical and surgical procedures. One frequently used method to assess the appropriateness of medical procedures, known as the RAND/UCLA Appropriateness Method, combines expert opinion with scientific evidence. However, this method has been criticized for poor reproducibility and the potential for misclassification, that is, labeling a procedure as inappropriate when it is not. The researchers performed a parallel three-way replication of the appropriateness panel process for each of two procedures, coronary revascularization (all indications) and hysterectomy (for non-emergency, non-oncologic

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indications). They concluded that past applications of the appropriateness method have overestimated the overuse of hysterectomy, underestimated the overuse of coronary revascularization, and provided true estimates of the underuse of revascularization. Thus, the sensitivity and specificity of the RAND/UCLA appropriateness method vary according to the procedure assessed and appear to estimate the underuse of procedures more accurately than their overuse.

Silber, J.H., Rosenbaum, P.R., Trudeau, M.E., and others. (2001). "Multivariate matching and bias reduction in the surgical outcomes study." (AHRQ grant HS09460). *Medical Care* 39(10), pp. 1-17.

Studies on patient outcomes often need a level of detail that cannot be found in administrative data, thereby requiring abstraction of medical charts. Case-control methods may be used to improve statistical power and reduce abstraction costs, but limitations of exact matching often preclude the use of many covariates. Unlike exact matching, multivariate matching may allow cases to be matched simultaneously on hundreds of covariates. To develop matched case-control pairs in a study of death after surgery in Medicare patients, the researchers used 830 randomly selected patients who died within 60 days from admission and controls who did not die within that time period. Patients were matched on risk of death and other characteristics with up to 173 variables used simultaneously in matching algorithms. Matched controls were far more similar upon admission to patients who died than typical

patients. The authors conclude that multivariate matching methods may aid in conducting studies with Medicare claims records by improving the quality of matches.

Wagner, T.H., Hibbard, J.H., Greenlick, M.R., and Kunkel, L. "Does providing consumer health information affect self-reported medical utilization?"; and Wagner, T.H., and Greenlick, M.R. (2001). "When parents are given greater access to health information, does it affect pediatric utilization?" (AHRQ grant HS09997). *Medical Care* 39(8), pp. 836-847, 848-855.

These researchers conducted a randomized survey of households in Boise, ID, to determine whether providing health information to Boise residents had an effect on their self-reported use of medical services. They mailed questionnaires to the household before and after residents were provided free access to self-care books, telephone advice nurses, and Internet-based health information (via libraries and other places). The first study showed that Boise residents had a higher adjusted odds of entering care (odds ratio 1.27) and 0.1 more doctor visits compared with residents of control cities. However, both effects were small and not significant. A second study analyzed the impact of this health information campaign on parents' use of pediatric care for their children. In this case, the greater access to health information was associated with decreased use of pediatric care, but the significance of the decrease depended on the statistical model used.

Weisman, C.S., Henderson, J.T., Schiffrin, E., and others. (2001, September). "Gender and patient satisfaction in managed care plans: Analysis of the 1999

HEDIS/CAHPS." *Women's Health Issues* 11(4), pp. 401-415.

These researchers investigated differences between men and women in health plan satisfaction and in variables associated with satisfaction, using the Consumer Assessment of Health Plans Study (CAHPS®) adult questionnaire. They analyzed responses representative of nearly 100,000 men and women enrolled in 206 commercial managed care plans nationwide. Mean plan-level differences by sex in satisfaction were small, with no consistent pattern of one sex being more satisfied than the other. Controlling for health plan, member, care use, and selected performance indicators, health plan characteristics accounted for the largest variation in satisfaction. However, not-for-profit plan status and lower turnover of primary care providers were stronger determinants of women's than men's satisfaction. The researchers concluded that analyzing CAHPS® scores by sex may help identify areas for quality improvement in women's care. Reprints (AHRQ Publication No. 02-R007) are available from AHRQ.**

Zimmerman, R.K., Silverman, M., Janosky, J.E., and others. (2001, August). "A comprehensive investigation of barriers to adult immunization." (AHRQ grant HS09874). *Journal of Family Practice* 50(8), pp. 703-715.

These investigators developed a multicomponent approach to identify factors that affect adult immunization rates, which are below desired levels among the elderly. They used the PRECEDE-PROCEED framework that allows users to evaluate health problems and design intervention programs and incorporated the Awareness to Adherence physician

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decisionmaking model and the Triandis consumer decisionmaking model to capture behavioral and educational issues related to health practices. They collected data using focus groups, face-to-face and telephone interviews, self-administered surveys, site visits, participant observation, and medical record review of a broad spectrum of patients from inner-city neighborhood health centers, clinics in Veterans Affairs facilities, rural practices in a network, and urban/suburban practices in a

network. The researchers concluded that this approach can be used to identify barriers to immunization in individual practices and develop tailored intervention plans for those practices.

Zou, K.H., and Normand, S.T. (2001). "On determination of sample size in hierarchical binomial models." (AHRQ grant HS09487). *Statistics in Medicine* 20, pp. 2163-2182.

These researchers summarize the issues involved in determining sample size when interest centers on comparing provider performance, and they describe a

new simulation-based approach to solving the problem. The researchers argue that investigators should adopt an estimation framework (as opposed to hypothesis testing) when interest centers on comparing care quality. To do this, they provide a method to determine the number of patients needed per provider in order to estimate a performance measure to within a specified level of precision, when the number of providers (hospitals, physicians, health plans, etc.) is fixed.

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