



Research Activities



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New vaccine reduces strains of bacteria most likely to cause severe infections

A new study of 16 Massachusetts communities found that 8 percent of children under age 7 carry antibiotic-resistant *Streptococcus pneumoniae*, a bacterium commonly found in healthy children but which presents a low risk of illness to them. While this rate is much higher than it would have been a decade ago, a new vaccine is reducing the presence of strains of the bacterium that can cause significant infection, according to the study which was supported in part by the Agency for Healthcare Research and Quality (HS10391).

Overall, researchers found that 190 (26 percent) of the children tested were carrying a strain of *S. pneumoniae*, and further testing of 166 of the samples indicated that many were resistant to a range of commonly used antibiotics. Since *S. pneumoniae* is a major cause of meningitis, bloodstream infections, and pneumonia, as well as ear and sinus infections every year in children under age 5, the risk

to communities is that when serious, but rare infections do develop, antibiotic-resistant strains make the illnesses harder to treat.

Specifically, 33 percent of the tested samples were at least somewhat resistant to penicillin, 31 percent to trimethoprim/sulfamethoxazole, 22 percent to erythromycin, and 3 percent to clindamycin. In addition, 22 percent were resistant to at least three antibiotics. Children in group child care were four times more likely than other children to carry the antibiotic-resistant bacterium. Those who had recently used antibiotics and those who had a current respiratory infection were also more likely to carry resistant strains. Resistance among *S. pneumoniae* serotypes has been rising over the past decade throughout the United States, but infections with this bacterium are still effectively treated with available antibiotics.

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Vaccine for severe infections

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This study is the first of its kind performed after introduction of a new vaccine to protect children from the seven most invasive strains of *S. pneumoniae*. These seven strains cause more than 80 percent of the serious infections. The rate of children who carried an antibiotic-resistant strain was the same in children who had received the vaccine and those who had not. However, immunized children were less likely to carry one of the seven more invasive strains, and thus they were at lower risk of contracting a serious illness.

The authors, led by Jonathan Finkelstein, M.D., M.P.H., and his colleagues at the Department of Ambulatory Care and Prevention, a

unique research and teaching collaboration between Harvard Pilgrim Health Care and Harvard Medical School, caution that the study, conducted only 9 months after the vaccine was introduced, may not reflect the ultimate benefit of the vaccine as more children in the population are immunized.

Dr. Finkelstein and his colleagues analyzed background information from parents and nasal swab samples from 742 children in 16 geographically diverse communities in Massachusetts between March and May 2001. The children tested were visiting their pediatricians for a variety of reasons, including colds, ear infections and routine well care.

Beginning in 2000, the American Academy of Pediatrics recommended that all children 23 months and younger be immunized

routinely with a new vaccine against the seven strains of *S. pneumoniae* that cause most of the serious infections from this bacterium. Dr. Finkelstein and his colleagues conclude that continued monitoring of antibiotic resistance is warranted both in the strains of bacteria covered by the vaccine and in those not covered.

For more information, see "Antibiotic-resistant *Streptococcus pneumoniae* in the heptavalent pneumococcal conjugate vaccine era: Predictors of carriage in a multicomunity sample," by Dr. Finkelstein, Susan S. Huang, M.D., M.P.H., James Daniel, M.P.H., and others, in the October 2003 *Pediatrics* 112(4), pp. 862-869. ■

Patient Safety/Quality of Care

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Injuries in hospitals pose a significant threat to patients and substantially increase health care costs

Medical injuries during hospitalization resulted in longer hospital stays, higher costs, and a higher number of deaths in 2000, according to a new study from the Agency for Healthcare Research and Quality. The study used AHRQ's Patient Safety Indicators and data from the Healthcare Cost and Utilization Project's National Inpatient Sample to identify medical injuries in 7.45 million hospital discharges from 994 acute care hospitals across 28 States in 2000.

Researchers led by Chunliu Zhan, M.D., Ph.D., of AHRQ's Center for Quality Improvement and Patient Safety, found that the impact of medical injuries varies substantially. Postoperative bloodstream infections had the most serious consequences, resulting in hospital stays that were nearly 11 days longer than normal, added costs

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Injuries in hospitals

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of \$57,727, and an increased risk of death after surgery of 21.9 percent. Based on these data, researchers estimate that 3,000 Americans die each year from postoperative bloodstream infections. The next most serious event was postoperative reopening of a surgical incision, with 9.4 excess days, \$40,323 in added costs, and a 9.6 percent increase in the risk of death. This equates to an estimated 405 deaths each year from reopening of surgical incisions. Birth and obstetric trauma, in contrast, resulted in little or no excess length of stay, cost, or increase in the risk of death.

This study provides, for the first time, specific estimates for excess length of stay, charges, and the risk

of death for 18 of 20 AHRQ Patient Safety Indicators. In commenting on the study, AHRQ Director Carolyn M. Clancy, M.D., pointed out that the study has provided us with the first direct evidence that medical injuries pose a real threat to the American public and increase the costs of health care. Hospitals can take information from this study and use it to enhance the efforts they are already undertaking to reduce medical errors and improve patient safety.

Details are in "Excess length of stay, charges, and mortality attributable to medical injuries during hospitalization," by Dr. Zhan and Marlene Miller, M.D., M.Sc., in the October 8, 2003 *Journal of the American Medical Association* 290, pp. 1868-1874. Reprints (AHRQ Publication No. 04-R001) are available from AHRQ** ■

Publishing hospital mortality rates does not necessarily affect market share of poor performing hospitals

A recent initiative to publish the mortality rates of Ohio hospitals did not reduce the market share of hospitals with worse than expected mortality rates (given the procedure and patient risk factors) or improve patient outcomes. The Cleveland Health Quality Choice (CHQC) program identified several hospitals as having significantly higher than expected mortality rates, longer than expected length of hospital stay, and worse patient satisfaction. Yet, none of these hospitals lost contracts because of their poor performance.

As shown in other studies, for value based purchasing to work, purchasers need to resist community pressures to ensure there will be no "losers." Changes in market share may need to be seen as a real possibility before intensive efforts to improve hospital performance begin in earnest, concludes David W. Baker, M.D., M.P.H., of Feinberg School of Medicine, Northwestern University.

In the study supported by the Agency for Healthcare Research and Quality (HS09969), Dr. Baker and his colleagues examined market share and mortality rates for six medical conditions (adjusted for patient mortality risk factors) from 1991 to 1997 for all 30 non-Federal hospitals in Northeast Ohio. The conditions included heart attack, heart failure, gastrointestinal hemorrhage, obstructive pulmonary disease, pneumonia, and stroke. The five hospitals with the highest mortality rates tended to lose market share, but the loss was not significant (mean change of -0.6 percent).

With one exception, risk-adjusted mortality declined only slightly at hospitals classified as "below average" (-0.8 percent) or "worst" (outliers, -0.4 percent). The failure of the CHQC program to affect patient outcomes or market share of poor performing hospitals may have resulted from consumer disinterest or difficulty in interpreting complex CHQC

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Hospital mortality rates

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reports. Or it could have been due to unwillingness of businesses to create incentives targeted to hospitals' performance and hospitals' inability to develop effective quality improvement programs. On the other hand, even

when consumers understand which hospitals have higher mortality rates, conditions like stroke or heart attack represent emergencies that prompt them to go to the nearest hospital, mortality rates notwithstanding.

See "The effect of publicly reporting hospital performance on

market share and risk-adjusted mortality at high-mortality hospitals," by Dr. Baker, Doug Einstadter, M.D., M.P.H., Charles Thomas, M.S., and others, in the June 2003 *Medical Care* 41(6), pp. 729-740. ■

Clinical Decisionmaking

Increasing the excision margins around melanoma to recommended widths could substantially reduce mortality rates

According to the American Academy of Dermatology, more doctors are using inappropriately narrow excision margins in localized invasive melanoma. This practice may account for one-fourth of all melanoma-related deaths, according to a new study. Increasing the percentage of optimal excision margins (for example, 1.5 cm for melanoma between 1 and 2 mm depth, wider for deeper melanoma) might substantially reduce mortality, concludes Case Western Reserve University researchers, David A. Barzilai and Mendel E. Singer, Ph.D.

In a study supported in part by the Agency for Healthcare Research and Quality (National Research Service Award training grant T32 HS00059), the researchers used a computer simulated model to follow until death a hypothetical group of 55-year-old people (all of whom were white) newly diagnosed with localized invasive melanoma. They compared outcomes (melanoma-related death and life expectancy) for two scenarios: usual care and intervention with 100 percent optimal excision margins.

Based on real community data for usual care (which showed only 38 percent use of optimal excision margins), the model estimated 8.17 percent melanoma-related mortality following localized melanoma. Modeling intervention with 100 percent of recommended excision margins reduced this rate to 6.15 percent, a 25 percent relative reduction in deaths.

Using recommended excision margins also increased average life expectancy by 0.437 years, which equates to about 11 additional years in the 4 percent of individuals who would not experience a local recurrence due to improved excision margins. Increasing the percentage of optimal excision margins to 80 percent would still yield substantial improvement, with 6.83 percent melanoma-related deaths, saving 0.29 life-years compared with community rates.

See "The potential impact on melanoma mortality of reducing rates of suboptimal excision margins," by David A. Barzilai and Dr. Singer, in the June 2003 *Journal of Investigative Dermatology* 120(6), pp. 1067-1072. ■

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High-risk patients with certain cancers are the best candidates for referral to high-volume cancer surgery hospitals

Initiatives to regionalize cancer surgery—that is, refer cancer patients to hospitals that perform a high volume of cancer surgeries each year—are already underway. However, for patients in isolated rural areas, regionalizing surgery could create unreasonable travel burdens, delays in initial evaluation, and problems with continuity of care after surgery. Loss of surgical caseload at small rural hospitals could threaten their financial viability and their ability to recruit and retain surgeons. To avoid these potential harms, it is important that regionalization efforts target only those patients likely to benefit most, suggests John D. Birkmeyer, M.D., Chief of General Surgery at Dartmouth-Hitchcock Medical Center.

In a study supported in part by the Agency for Healthcare Research and Quality (HS10141),

Dr. Birkmeyer and his colleagues found that older, high-risk individuals suffering from certain types of cancers benefit most from referral to high-volume cancer surgery hospitals. They used information from the Nationwide Inpatient Sample (1995-1997) to examine mortality for eight types of cancer surgery among 195,152 patients: colectomy, gastrectomy, esophagectomy, pancreatic resection, nephrectomy, cystectomy, and lung resection (either pulmonary lobectomy or pneumonectomy). They divided patients into low-, medium-, and high-volume hospital groups to analyze the relationship between hospital volume and in-hospital deaths, after adjusting for patient characteristics.

Higher volume hospitals achieved lower operative mortality rates for seven of the eight

procedures. However, differences between low- and high-volume hospitals were significant for only three operations (esophagectomy, 15 vs. 6.5 percent; pancreatic resection 13.1 vs. 2.5 percent; and pulmonary lobectomy, 10.1 vs. 8.9 percent, respectively). Though not statistically significant, mortality differences greater than 1 percent were observed for gastrectomy, cystectomy, and pneumonectomy. Volume-related differences for colectomy and nephrectomy were small.

See “Hospital volume and operative mortality in cancer surgery: A national study,” by Emily V. A. Finlayson, M.D., Philip P. Goodney, M.D., and Dr. Birkmeyer, in the July 2003 *Archives of Surgery* 128, pp. 721-725. ■

Corticosteroid treatment, environmental controls, and other actions can reduce risk of relapse after an acute asthma episode

Each year, between 5 and 10 percent of asthmatics will suffer an episode severe enough to warrant a visit to the emergency department (ED). Despite significant advances made in the management of asthma, many asthmatics maintain a poor quality of life (allergen exposure and inadequate use of medication) and are prone to relapse from their asthma for weeks after treatment for an acute asthma attack.

In a recent review of asthma studies, Yvonne M. Coyle, M.D., of the University of Texas Southwestern Medical Center at Dallas, identified several risk

factors that can be modified to prevent acute asthma relapse among high-risk individuals. A 3- to 10-day course of systemic corticosteroids helps reduce the risk of acute asthma relapse after ED treatment. However, many asthmatics relapse in spite of treatment with corticosteroids and other antiinflammatory agents. These individuals may require intensive asthma treatment in an inpatient setting or perhaps in an ED treatment unit, followup to assess the need for counseling regarding behavioral issues that may affect their asthma (for example, anxiety), smoking cessation

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

Relapse after acute asthma

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therapy for those living with asthmatic children, or asthma self-management education.

Behavioral counseling would target those who appear to be overly anxious or complacent about their asthma care. Asthma education may include instruction on how to maintain complex medication regimens, institute environmental control strategies such as the avoidance of indoor allergens (for example, smoke, dust, mold, and animal dander), detect and self-treat asthma exacerbations (for example, using symptom

identification and a peak flow meter), and communicate effectively with health care providers. Referral to an asthma specialist to evaluate the need for immunotherapy for indoor allergens may also be needed for some asthmatics. Finally, there is convincing evidence that an asthma care followup visit with a doctor within a month after acute asthma care prevents relapse.

See “Predictors of acute asthma relapse: Strategies for its prevention,” by Dr. Coyle, in the *Journal of Asthma* 40(3), pp. 217-224, 2003. ■

Managed care patients with glaucoma are receiving recommended care, but care could be improved in a few areas

Chronic (open-angle) glaucoma, caused by an increase in intraocular pressure (IOP), may produce no symptoms except for gradual loss of peripheral vision over a period of years. For the most part, managed care patients with primary open-angle glaucoma (POAG) are receiving care that is consistent with recommendations of the American Academy of Ophthalmology’s Preferred Practice Pattern. However, care is falling short in several key areas. For example, IOP still is not controlled in a significant number of patient visits, according to a study supported by a cooperative agreement between the Agency for Healthcare Research and Quality (HS09942) and the American Association of Health Plans Foundation.

Researchers obtained data from administrative, survey, and eye care records on 395 working-age patients with POAG who were enrolled in six managed care plans across the United States between 1997 and 1999. They assessed processes of care at the initial and followup visits, control of IOP, intervals between visits and visual field tests, and adjustments in therapy. Results revealed that most recommended care processes—visual acuity, IOP, and slitlamp examinations; optic disc and nerve fiber layer evaluation; and fundus evaluation—were performed during 88 to 99 percent of initial evaluations. However, only 53 percent of patients received an optic nerve head photograph or drawing, and only 1 percent had a target IOP level documented.

Recommended care processes were performed at 80 to 97 percent of followup visits. Using loose criteria for IOP control (21 mm Hg or less), IOP was controlled in 66 percent of followup visits for patients with mild glaucoma and 52 percent of visits for patients with moderate to severe glaucoma. Adjustments in therapy were more likely with worse control of IOP, although adjustments occurred in only half of visits where the IOP was 33 mm Hg or higher.

More details are in “Patterns of care for open-angle glaucoma in managed care,” by Allen M. Fremont, M.D., Ph.D., Paul P. Lee, M.D., J.D., Carol M. Mangione, M.D., M.S.P.H., and others, in the June 2003 *Archives of Ophthalmology* 121, pp. 777-783. ■

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Women's Health

Age, fertility status, and other factors influence satisfaction with progestin treatment for abnormal uterine bleeding

Doctors have been unable to reach a consensus on the type of medical management indicated for various types of abnormal uterine bleeding or when surgery should be considered for the problem. Progestins are considered one of the primary treatments for abnormal uterine bleeding. However, a woman's satisfaction with progestin treatment depends on her age, fertility status, attitudes about uterine conservation, and intensity of desire to resolve the bleeding, finds a study supported by the Agency for Healthcare Research and Quality (HS09478).

Doctors should consider not only the type and severity of uterine bleeding and associated symptoms, but also whether this therapy is in line with a woman's treatment expectations, future reproductive plans, and beliefs about her cycle, suggests lead author, Holly E. Richter, Ph.D., M.D., of the University of Alabama at Birmingham. Dr. Richter and her colleagues studied 413 premenopausal women 30 years of age or older who had abnormal uterine bleeding, with or without fibroids, who were treated for 3 to 5 months with oral medroxyprogesterone acetate (MPA) at 10 to 20 mg per day for 10 to 14 days per month. They assessed the women's satisfaction with and willingness to continue

MPA and examined sociodemographic, clinical, and other factors that might predict satisfaction.

Over half (57 percent) of the women who completed the survey said they were satisfied with MPA for control of bleeding. These women were more likely than dissatisfied women to report improvement in bleeding (100 vs. 29 percent), less likely to report bothersome side effects (4 vs. 31 percent), and more likely to express a strong preference for medical treatment over a hysterectomy (70 vs. 26 percent). Women aged 35 or older were nearly three times as likely to be satisfied with MPA as women aged 30 to 35. Those who wanted to conserve their uterus were 36 percent more likely to be satisfied with the treatment, while those who viewed cessation of bleeding as important and who had undergone tubal sterilization were less likely to be satisfied.

More details are in "Medroxyprogesterone acetate treatment of abnormal uterine bleeding: Factors predicting satisfaction," by Dr. Richter, Lee A. Learman, M.D., Ph.D., Feng Lin, M.S., and others, in the July 2003 *American Journal of Obstetrics & Gynecology* 189, pp. 37-42. ■

A higher rate of cesarean delivery does not necessarily correspond with better perinatal outcomes

The rate of cesarean deliveries in the United States declined from 1989 to 1996, but it increased after 1996 and reached a new high of 24 percent in 2001. A higher cesarean delivery rate is not necessarily associated with better perinatal outcomes. In fact, this rate could be lowered without an increase in infant mortality, concludes a study supported in part by the Agency for Healthcare Research and Quality (HS10795).

According to the researchers who conducted the study, obstetricians who performed a low, medium, and high rate of cesarean

deliveries had comparable perinatal mortality rates. Also, higher cesarean delivery rates for low or very low birthweight infants did not improve their survival. The rate of uterine rupture was 44 percent lower in patients attended by physicians who performed a lower rate of c-sections compared with medium-rate physicians, partly because fewer women in the low-rate group had a prior cesarean delivery. However, infants delivered by low-rate doctors had a 53 percent greater risk of intracranial injury compared with those delivered by medium- or high-

rate physicians. More women labored before cesarean delivery in the low-rate group, and low-rate physicians probably allowed more prolonged labor.

These results are consistent with the conclusions of some studies which found that long labor contributes to the risk of intracranial injury, says Tong Li, Ph.D., of the University of Medicine and Dentistry of New Jersey. Dr. Li and colleagues linked vital birth certificate data to corresponding hospital discharge records on 171,295 singleton births

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Cesarean deliveries

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in New Jersey in 1996 and 1997. They divided obstetricians into three groups based on their cesarean delivery rates during the study period: low (less than 18

percent of deliveries), medium (18-27 percent), and high (more than 27 percent). They compared group rates of perinatal mortality, birth injury, and uterine rupture, after adjusting for differences in patient risks.

See “Physician cesarean delivery rates and risk-adjusted perinatal outcomes,” by Dr. Li, George G. Rhoads, M.D., M.P.H., John Smulian, M.D., M.P.H., and others in the June 2003 *Obstetrics & Gynecology* 101(6), pp. 1204-1212. ■

Use of tocolytic therapy to stop uterine contractions can prolong pregnancy and prevent preterm birth

Treatment of preterm labor with bed rest, hydration, medication, and combinations of these interventions may be used to prevent preterm birth, the leading cause of infant death and serious problems. Tocolytic drugs are typically used to stop uterine contractions during an episode of preterm labor (first-line therapy) or to maintain uterine quiescence after an acute episode (maintenance therapy).

Management of uterine contractions with first-line tocolytic therapy can prolong gestation. However, maintenance tocolytic therapy has little or no value, according to a study funded by the Agency for Healthcare Research and Quality (contract 290-97-0011). Kathleen N. Lohr, Ph.D., and colleagues at the Research Triangle Institute/University of North Carolina at Chapel Hill Evidence-based Practice Center evaluated 256 studies of women with preterm labor between 1966 and 1999.

The researchers performed a meta-analysis on 16 studies of first-line tocolytic therapy and 8 studies of maintenance therapy to evaluate evidence on the benefits and harms of five classes of tocolytic therapy for treating uterine contractions related to preterm labor: beta-mimetics, calcium channel blockers, magnesium, nonsteroidal antiinflammatory agents, and ethanol. The studies of first-line tocolytics (with fair

strength of evidence) revealed a mixed outcome pattern with small improvement in pregnancy prolongation and birth at term relative to placebo. Data were insufficient to show a direct beneficial effect on neonatal problems or deaths.

Maintenance tocolytics (poor strength of evidence) showed no improvements in birth or infant outcomes relative to placebo.

All tocolytics were rated as low-risk for short-term neonatal harms. However, beta-mimetics appear to be no better than other drugs and pose significant potential harms to mothers (for example, serious cardiac problems, metabolic abnormalities, and jitteriness). Ethanol was less beneficial than other drugs and remains an inappropriate therapy.

More details are in “Tocolytic treatment for the management of preterm labor: A review of the evidence,” by Nancy D. Berkman, Ph.D., John M. Thorp, Jr., M.D., Dr. Lohr, and others, in the *American Journal of Obstetrics & Gynecology* 188(6), pp. 1648-1659, 2003.

Editor’s note: Copies of Evidence Report/Technology Assessment No. 18, *Management of Preterm Labor* (AHRQ Publication No. 01-E020, summary** and 01-E021, full report*) are available from AHRQ. See the back cover of *Research Activities* for ordering information. ■

Research shows that a doctor’s advice to breastfeed, early return to work, and other factors influence continued breastfeeding

The American Academy of Pediatrics recommends exclusive breastfeeding of infants for the first 6 months, continuing to 1 year or beyond. Despite this recommendation and the acknowledged benefits of breastfeeding, only about 29

percent of U.S. women are still breastfeeding their infants at 6 months, and black women are less likely to breastfeed than white women.

Two recent studies supported in part by the Agency for Healthcare Research and Quality examined

factors influencing breastfeeding. The first study, jointly funded with the National Institute of Child Health and Human Development, demonstrates that women are more likely to continue breastfeeding

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Breastfeeding

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their infants at 4 months if their clinicians encourage them to do so and if they don't return to work or school. The second study (HS09782) concludes that lower rates of breastfeeding advice from health care professionals do not account for lower rates of breastfeeding among black women. Both studies are discussed here.

Taveras, E.M., Capra, A.M., Braveman, P.A., and others. (2003, July). "Clinician support and psychosocial risk factors associated with breastfeeding discontinuation. *Pediatrics* 112(1), pp. 108-115.

Clinician encouragement of breastfeeding, recognition and treatment of postpartum depression, and policies to enhance scheduling flexibility and privacy for breastfeeding mothers at work or school may increase the numbers of women who continue to breastfeed their infants, conclude these researchers. They prospectively studied mothers and infants enrolled in an HMO who were at low risk for health problems. The mothers and infants participated in a randomized controlled trial of postpartum home visits. They interviewed the mothers in person at 1 to 2 days postpartum and by telephone at 2 and 12 weeks postpartum to examine the association of sociodemographic and other factors with breastfeeding.

Of the 1,163 mother-newborn pairs in the group, 87 percent initiated breastfeeding, 75 percent were breastfeeding at the 2-week interview, but only 55 percent were breastfeeding at the 12 week interview. Women who lacked confidence in their ability to breastfeed at the initial interview were nearly three times as likely to

discontinue breastfeeding at 2 weeks as more confident women. Early breastfeeding problems, Asian race/ethnicity, and lower education were also associated with discontinuation of breastfeeding at 2 weeks.

Nearly half (47 percent) of mothers had returned to work or school by the 12-week interview. These women were much more likely than other women to discontinue breastfeeding at 12 weeks postpartum, as were women who experienced problems breastfeeding or pumping their breast milk at work or school. The majority of problems reported among women who returned to work were restricted schedules and breaks (51 percent) and insufficient privacy (20 percent). Among women who returned to school, the absence of on-site child care (23 percent) was a problem. Women with postpartum depression at 2 weeks were also more likely to discontinue breastfeeding at 12 weeks. Mothers were 40 percent less likely to discontinue breastfeeding at 12 weeks postpartum if they were encouraged by their clinician to breastfeed.

Beal, A.C., Kuhlthau, K., and Perrin, J.M. (2003, July). "Breastfeeding advice given to African American and white women by physicians and WIC counselors." *Public Health Reports* 118, pp. 368-376.

The Special Supplemental Nutrition Program for Women, Infants, and Children (WIC) is an important supplemental nutrition program for low-income pregnant and nursing women and their children. Prenatal breastfeeding advice from WIC nutrition counselors and from nurses and doctors has been shown to increase breastfeeding rates. Although black women are less likely than white

women to receive breastfeeding advice and more likely to receive advice on bottle feeding from WIC counselors, they are as likely as white women to receive breastfeeding advice from medical providers, according to this study. Thus, lower rates of breastfeeding advice do not fully account for lower rates of breastfeeding among black women.

Cultural factors, which could not be assessed in this study, likely account for much of the remaining difference, conclude the researchers. They used data from the 1988 National Maternal and Infant Health Survey, which identifies factors related to poor pregnancy outcomes. It is the only national survey collecting data on breastfeeding behaviors and prenatal breastfeeding advice. The researchers compared self-reported rates of medical provider and WIC advice to breastfeed among 3,966 white women and 4,791 black women with a live birth in 1988. Several factors known to be associated with less adequate health care and lower breastfeeding rates (lack of insurance, lower income, young maternal age, and less education) were more common among the black women.

Black women were much less likely than white women to report breastfeeding their infants (24 vs. 59 percent). After controlling for other sociodemographic factors, black women were as likely as white women to receive breastfeeding advice from doctors, midwives, and nurses. However, being black was the only factor associated with less breastfeeding advice and a greater likelihood of advice on bottle feeding from WIC nutrition counselors. Since these data were collected, WIC has begun several new initiatives to promote breastfeeding, note the researchers. ■

Benefits of adding radiation therapy to tamoxifen after breast conserving surgery diminish with increasing age

A recent study shows that a 50-year-old postmenopausal woman with localized breast cancer who receives radiation therapy (RT) along with tamoxifen following breast conserving surgery is 54 percent less likely to die from breast cancer than if she receives tamoxifen alone. An 80-year-old woman reduces her risk by 42 percent. The absolute benefits of tamoxifen plus RT also vary with respect to the outcome studied, that is, recurrence-free survival time, time with an intact breast, and overall survival time. Therefore, doctors should consider the relative benefits of adding RT to tamoxifen and individual patient preferences when helping women select among treatment options, suggests Rinaa S. Punglia, M.D., M.P.H., of Brigham and Women's Hospital and Harvard University. The study was supported in part by the Agency for Healthcare Research and Quality (National Research Service Award training grant T32 HS00020).

The researchers used a model to compare outcomes for hypothetical groups of postmenopausal women with estrogen receptor-positive tumors (2 cm or less in size) with uninvolved axillary lymph nodes who were treated with tamoxifen plus RT versus tamoxifen alone after breast-conserving surgery. The model used data from randomized trials and retrospective studies to

simulate patients' clinical course and estimate various outcomes.

Based on the model, recurrence-free survival was greater in the RT plus tamoxifen group, but the absolute difference between the groups decreased with increasing age at diagnosis. For example, expected recurrence-free survival was 30.38 years for women aged 50 at diagnosis who were treated with RT plus tamoxifen. This decreased to 27.03 years without RT (net benefit 3.35 years). However, for women who were aged 80 at diagnosis, expected recurrence-free survival increased by only .61 year with the addition of RT. Both groups of women (age 50 and age 80) who received tamoxifen plus RT were less likely to die from breast cancer than if they received tamoxifen alone (2.43 vs. 5.29 percent, and 1.17 vs. 2.02 percent, respectively), but the difference was greater for the younger women.

See "Radiation therapy plus tamoxifen versus tamoxifen alone after breast-conserving surgery in postmenopausal women with stage 1 breast cancer: A decision analysis," by Dr. Punglia, Karen M. Kuntz, Jason H. Lee, and Abram Recht, in the June 15, 2003 *Journal of Clinical Oncology* 21(12), pp. 2260-2267.



Personalized form letters may improve breast and cervical cancer screening among low-income and minority women

Low-income and minority women are less likely to have cancer detected at an early stage and are more likely to die from cancer than other women. Sending a personalized form letter with general cancer information to these women increases their likelihood of being screened for cervical and breast cancer, according to a new study supported by the Agency for Healthcare Research and Quality (HS08581).

Maria L. Jibaja-Weiss, Ed.D., of the Baylor College of Medicine,

and her colleagues randomly assigned 1,574 urban low-income and minority women (black, Hispanic, and white) receiving care at county health clinics to receive one of two types of letters. The first group received a personalized form letter containing general cancer information about the risk factors for breast and cervical cancer. It encouraged women to get a Pap smear and mammogram to screen for these diseases.

The second group received a personalized tailored letter, which

cited a woman's individual risks for these cancers based on her medical records, such as her smoking habit or family history of cancer. Both letters were written at a sixth-grade reading level in both English and Spanish. The researchers examined the impact of letter receipt on breast and cervical cancer screening 1 year after receipt of the letter.

Nearly half (44 percent) of women who received the form

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Breast and cervical cancer screening

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letter received cervical screening services compared with 24 percent in the tailored letter group and 40 percent of the control group (who received no letter). Similarly, only 13 percent of the tailored letter group received screening mammography compared with 31 percent of the form letter group

and 21 percent in the control group. Personalized tailored letters may decrease the likelihood of cancer screening among medically underserved low-income and minority women, conclude the researchers. They suggest that perhaps the women saw these letters as too alarming, which made them anxious about getting screened for fear of what might be discovered. On the other hand, the

risk information communicated in the letter may have been too limited.

More details are in "Tailored messages for breast and cervical cancer screening of low-income and minority women using medical records data," by Dr. Jibaja-Weiss, Robert J. Volk, Paul Kingery, and others, in *Patient Education and Counseling* 50, pp. 123-132, 2003. ■

Children's Health

Within broad limits, chronic middle-ear disease up to age 3 probably does not impair language and other development by age 4

When a child suffers chronic middle-ear inflammation with middle-ear effusion (MEE, fluid buildup) during the first 3 years of his or her life, the doctor may recommend surgical drainage of the fluid and placement of a tympanostomy tube within the affected ear. The primary goals are to relieve the attendant hearing loss and to keep the middle-ear cavity ventilated in an effort to prevent further inflammation and/or infection. Another goal is to prevent possible delays in later development that might result from prolonged spells of hearing loss during presumably formative early childhood periods.

However, in a recent study involving otherwise healthy children (that is, without potentially handicapping conditions) who had persistent MEE during the first 3 years of life, prompt insertion of tympanostomy tubes did not affect the children's language or other developmental outcomes at 4 years of age. The researchers concluded that MEE within the duration limits they studied probably does not affect developmental outcomes. The study was supported by the Agency for Healthcare Research and Quality and the National Institute of Child Health and Human Development.

Lead author, Jack L. Paradise, M.D., of the University of Pittsburgh School of Medicine, and his colleagues enrolled 6,350 healthy infants from diverse settings. They regularly evaluated the children for the

presence of MEE throughout their first 3 years of life and treated them according to recommended care guidelines for middle ear infection. For this study, the researchers randomly assigned 429 children who had persistent MEE to undergo tympanostomy tube insertion either promptly or after a defined extended period if MEE remained present. They also selected a separate, representative comparison sample of 241 children who ranged from having no MEE to having MEE that fell just short of meeting criteria for the clinical trial.

The researchers assessed the cognitive, language, speech, and psychosocial development of children in all groups at age 4 using formal tests, conversational samples, and parent questionnaires. Among the randomized children, there were no significant differences in mean scores favoring the early-treatment group over the late-treatment group in all areas. In the representative comparison sample, correlations between the duration of MEE and developmental outcomes were generally weak and, in most instances, nonsignificant.

See "Otitis media and tympanostomy tube insertion during the first three years of life: Developmental outcomes at the age of four years," by Dr. Paradise, Christine A. Dollaghan, Ph.D., Thomas F. Campbell, Ph.D., and others, in the August 2003 *Pediatrics* 112(2), pp. 265-277. ■

Researchers focus on early discharge of newborns, low birthweight consequences, and parental misconceptions about colds

Researchers supported by the Agency for Healthcare Research and Quality recently examined several children's health issues. The first AHRQ-supported study (National Research Service Award training grant T32 HS00086) found that infants born to low-income mothers are twice as likely as other newborns to be discharged early from the hospital and to not receive timely followup care. The second AHRQ-supported study (HS08385) revealed that, by the time extremely low birthweight (ELBW) babies reach adolescence, they do not perceive that they have more behavioral problems than other adolescents. According to the third AHRQ-supported study (National Research Service Award training grant T32 HS00063) parental misconceptions about the appropriate treatment of colds are predictive of increased use of health services, including inappropriate use of antibiotics.

Galbraith, A.A., Egerter, S.A., Marchi, K.S., and others. (2003, February). "Newborn early discharge revisited: Are California newborns receiving recommended postnatal services?" *Pediatrics* 111(2), pp. 364-371.

Despite an apparent decline in short stays following delivery, this study found that half of 2,828 medically low-risk newborns were discharged early (1-night stay or less after vaginal delivery and 3-night stay or less after cesarean delivery). Newborns from low-income families were more than twice as likely to be discharged early. Among newborns discharged early, 68 percent did not receive

followup care within the recommended timeframe (no home or office visit within 2 days of early discharge). Untimely care was nearly twice as likely for infants of women who were low-income, insured by Medicaid, and non-English speaking.

The most socioeconomically vulnerable newborns are receiving fewer postnatal services, conclude the researchers. Their findings were based on a retrospective study of 2,828 medically low-risk infants, using the results of a 1999 California postpartum survey.

Saigal, S., Pinelli, J., Hoult, L., and others. (2003, May). "Psychopathology and social competencies of adolescents who were extremely low birth weight." *Pediatrics* 111(5), pp. 969-975.

These authors previously demonstrated that infants who were extremely low birthweight (ELBW) were particularly vulnerable to problems related to inattention and hyperactivity at school as reported by parents and teachers. In this study, ELBW adolescents aged 12 to 16 years did not perceive themselves to have significantly greater behavioral problems than control teens in the following six areas: conduct disorder, oppositional defiant disorder, attention-deficit/hyperactivity disorder (ADHD), overanxious, separation anxiety, and depression.

However, parents of ELBW teens reported significantly higher scores for depression and ADHD for their ELBW teens than parents of control teens. Overall, the findings of this study are reassuring. Although there are still a few mild residual behavioral problems and some concerns with

adaptive functioning as reported by parents, the ELBW adolescents seem to view themselves positively and are engaging in fewer risk-seeking behaviors. The results were based on responses to the six behavioral subscales of the Ontario Child Health Study-Revised questionnaire by 141 ELBW teens and 122 control teens and their parents.

Lee, G.M., Friedman, J.F., Ross-Degnan, D., and others. (2003, February). "Misconceptions about colds and predictors of health service utilization." *Pediatrics* 111(2), pp. 231-236.

Most upper respiratory infections, including colds, are caused by viruses which, unlike bacteria, do not respond to antibiotics. Yet in this survey, 93 percent of parents understood that viruses cause colds, but 66 percent of them also believed that colds are caused by bacteria. Over half of parents (53 percent) believed that antibiotics are needed to treat colds. Twenty-three percent said they would visit the emergency department (ED), and 60 percent said they would visit the doctor's office if their child had a cold.

Parental misconceptions about appropriate treatment may contribute to unnecessary health care use. Belief that antibiotics should be used to treat colds increased by four times the likelihood of an ED or office visit for a cold. These findings are based on a survey of parents who were randomly selected from five Massachusetts pediatric practices and had a child who attended child care with at least 5 other children for 10 or more hours a week. ■

School-based health centers can help poor children manage their asthma, but they need to follow care guidelines

A growing number of school-based health centers (SBHCs) are providing primary care, including asthma management, to low-income, inner-city children. Many of these children have no other regular source of primary care and end up in the emergency department (ED) with uncontrolled asthma.

A new study of SBHCs in four elementary schools in New York City shows that school care providers do not closely adhere to asthma care guidelines from the National Heart, Lung, and Blood Institute (NHLBI). Creative strategies are needed to care for children with asthma in school settings where parents usually are not present, but where children can be seen for regular followup, suggests Mayris P. Webber, Dr.P.H., of Montefiore Medical Center.

With support from the Agency for Healthcare Research and Quality (HS10136), Dr. Webber and her colleagues analyzed SBHC chart data for 415 children with asthma attending the four schools. NHLBI guidelines recommend that clinicians assess asthma symptoms and peak flow use, monitor medication use, provide asthma education, and monitor exposure to environmental triggers of asthma.

In this study, SBHC staff at the four schools had documented asthma symptoms, peak flow use, followup visits, and referrals to asthma specialists in the charts of 60 percent, 51 percent, 22 percent, and 3 percent of patients, respectively. They documented asthma severity in only one-third of charts; of these, 70 percent of children had appropriate medications prescribed.

Asthma education and an asthma plan were documented in 18 percent and 10 percent of charts, respectively. Environmental asthma triggers and tobacco exposures were documented in 71 percent and 49 percent of charts, respectively. Children older than 8 years were more likely to have chart documentation of peak flow use for asthma management, asthma education, followup visits, and written asthma plans. Younger children were more likely to miss more days of school. Overall, one-third of parents said their child had been to the ED for asthma in the past year.

More details are in "Do school-based health centers provide adequate asthma care?" by Tosan Oruwariye, M.D., M.P.H., M.Sc., Dr. Webber, and Phillip Ozuah, M.D., Ph.D., in the May 2003 *Journal of School Health* 73(5), pp. 186-190. ■

Primary Care Research

Despite improvements in access to medications and psychotherapy, many depressed primary care patients are not treated

The majority of depressed patients seen in primary care believe that depression requires professional treatment, and they prefer psychotherapy over medication. Yet, after a quality improvement (QI) program that eased access to medication and psychotherapy among managed care patients, only a third of them received any medication or counseling for their depression, according to a Partners in Care (PIC) Patient Outcomes Research Team (PORT) study supported by the Agency for Healthcare Research and Quality (HS08349).

The researchers randomly assigned 46 managed care clinics to usual depression care (UC), QI-Therapy, or QI-Meds. Both the QI psychotherapy and medication programs promoted education about depression and its treatment for both patients and providers. They also permitted choice of medication, psychotherapy, or both, via education and joint decisionmaking between the patient, nurse specialist, and primary care provider. QI-Therapy facilitated access to cognitive behavioral therapy by providing training to the usual practice

therapist and reducing patient copayments for use of these therapists. QI-Meds provided nurses for followup on medication management.

QI-Therapy and QI-Meds patients reported more treatment overall (therapy or medication) than UC patients at 6 months, and this effect persisted in the QI-Meds clinics until 12 months. QI-Therapy patients reported more therapy than UC or QI-Meds patients at 6 months, demonstrating the utility of this approach to

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Depression

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increasing rates of care. However, despite reduced barriers to psychotherapy (reduced copayment, on-site or near-site therapy, and setting up the first appointment when possible) and high rates of referral to psychotherapy within the QI-Therapy clinics (81 percent),

only 30 percent of patients actually attended a psychotherapy session within the QI intervention. Outreach by psychotherapists and coordination between psychotherapists and primary care providers are needed to further improve access to specialty care for depressed patients.

More details are in "Impact of a primary care quality improvement intervention on use of psychotherapy for depression," by Lisa H. Jaycox, Ph.D., Jeanne Miranda, Ph.D., Lisa S. Meredith, Ph.D., and others, in the June 2003 *Mental Health Services Research* 5(2), pp. 109-120. ■

Group visits to primary care doctors by disadvantaged diabetes patients result in better diabetes care than individual visits

Managed care organizations have begun using group visits to doctors by patients with the same disease as one way to improve efficiency and control health care costs. This approach improved the diabetes care of uninsured and inadequately insured diabetes patients, according to a pilot study supported in part by the Agency for Healthcare Research and Quality (HS10871). Since group visits last longer than the typical primary care visit, they offer the provider more time to address diabetes-specific issues. Also, seeing the doctor on a monthly basis gives patients more opportunities to ask questions.

Researchers from the Medical University of South Carolina randomly assigned 120 uninsured or inadequately insured patients with uncontrolled type 2 diabetes to receive their care in group visits (59 patients) or usual care (individual visits, 61 patients) for 6 months. After 6 months, they examined the patients' medical charts to evaluate how many of the 10 standards of care recommended by the American Diabetes Association (ADA) were followed: up-to-date HbA1c (blood-sugar) levels and lipid profiles, urinalysis to test for microalbumin, appropriate use of

angiotensin-converting enzyme (ACE) inhibitors or angiotensin receptor blockers, use of lipid-lowering agents where indicated, daily aspirin use, annual foot examinations (to detect circulation problems and prevent wound infections), annual referral for retinal examinations (to detect diabetic retinopathy), and pneumonia and influenza immunizations.

Three-quarters (76 percent) of patients who received care in group visits were up to date on at least nine of these ten items, compared with 23 percent of control patients. Also, 86 percent of patients in group visits had at least eight of the ten indicators, compared with 47 percent of control patients. There were no significant differences seen in diabetes or lipid control, but this was probably due to the small sample size and short duration of the pilot study, note the researchers.

See "Evaluating concordance to American Diabetes Association standards of care for type 2 diabetes through group visits in an uninsured or inadequately insured patient population," by Dawn E. Clancy, M.D., Dennis W. Cope, M.D., Kathryn Marley Magruder, M.P.H., Ph.D., and others, in the July 2003 *Diabetes Care* 26(7), pp. 2032-2036. ■

Patient and practice socioeconomic status are independently associated with care among privately insured patients

It has been well documented that patients of low socioeconomic status (SES) receive less optimal health care services than higher SES patients. These effects are less well documented in privately insured patients. However, a new study shows these effects in

privately insured patients, and also that physicians in low SES practices (serving predominantly low-SES patients) provide fewer screening services but more diagnostic testing than those in higher SES practices.

These effects are not confined to the poorest patients of these practices but span the entire socioeconomic spectrum of patients. Use of patient zip codes is a relatively easy way to identify

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Socioeconomic status

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patients and practices at risk for these effects, suggests Peter Franks, M.D., formerly of Highland Hospital of Rochester, and currently with the University of California, Davis.

With support from the Agency for Healthcare Research and Quality (HS09963), Dr. Franks and his colleagues analyzed the claims data of 568 primary care physicians and their 437,743 adult managed care organization (MCO) privately insured patients in the Rochester, NY, area. They examined use of

screening exams, physician visits, specialist referrals, hospitalizations, and office visit and testing costs by patient zip-code-based SES and physician practice SES (mean SES of patients in the practice).

Lower SES patients had lower compliance with Pap smears, mammograms, and diabetic eye exams, and they were less likely to have a referral or make any office visit. However, they were more likely to be hospitalized, and they had higher diagnostic testing expenditures. Lower physician practice SES was associated with lower compliance with Pap smears, mammograms, and

glycohemoglobin tests (blood test for diabetes) and lower office visit expenditures but higher diagnostic testing and total expenditures. Patient SES effects were stronger for mammography, whereas physician practice SES effects were stronger for diagnostic testing costs.

Details are in "Effects of patient and physician practice socioeconomic status on the health care of privately insured managed care patients," by Dr. Franks, Kevin Fiscella, M.D., M.P.H., Laurel Beckett, Ph.D., and others, in *Medical Care* 41(7), pp. 842-852, 2003. ■

Use of time in outpatient residency training does not reflect the actual community practice of family physicians

How medical residents use their time during outpatient residency training does not reflect community practice, concludes a new study. It found that experienced family doctors provided more technical care and less preventive and psychosocially oriented care than residents. This may reflect differences in patient mix, practice setting, physician experience, and the time and financial pressures of community practice, explains Edward J. Callahan, Ph.D., of the University of California, Davis.

In a study supported in part by the Agency for Healthcare Research and Quality (HS08029 and HS06167), Dr. Callahan and his colleagues compared the use of time during 244 new adult outpatient visits to 92 family practice residents at a university clinic in California and 277 similar visits to 96 experienced family physicians in Ohio.

The researchers coded observed physician behaviors into 20 different categories that reflected different physician styles of interaction with patients. Physically examining the patient and taking their medical history

formed the core of the visit for both groups. However, after controlling for differences in patient mix, residents had longer visits (mean of 33 vs. 13 minutes) and a less technical focus.

Residents spent a greater percent of the visit on efforts to promote health behavior change (27 vs. 22 percent) and patient activation—that is, listening to patients' questions or their view of their condition (15 vs. 12 percent), preventive services, (8 vs. 4 percent), discussion of substance abuse (6 vs. 4 percent), and counseling (2 vs. 1 percent). These differences may reflect the current emphasis of residency training on prevention and health promotion, as well as the divergent pressures of the community practice setting to focus on billable behaviors.

More details are in "Does time use in outpatient residency training reflect community practice?" by Dr. Callahan, Kurt C. Stange, M.D., Ph.D., Klea D. Bertakis, M.D., M.P.H., and others in the June 2003 *Family Medicine* 35(6), pp. 423-427. ■

Minority Health

Better diagnosis, management, and monitoring of hypertension is needed for older American Indians and Alaskan Natives

The number of older American Indians (AIs) and Alaska Natives (ANs) is expected to nearly double between 2000 and 2020, with nearly half of those aged 60 and older living in off-reservation urban areas. Yet few studies have examined the health and quality of health care of older AI/ANs in urban, nonreservation areas. The first and largest study of hypertension among older AI/ANs living in urban areas underscores the need for better diagnosis, management, and monitoring of hypertension and its complications (for example, kidney disease). In the study, which was supported in part by the Agency for Healthcare Research and Quality (HS10854), Dorothy A. Rhoades, M.D., M.P.H., and Dedra Buchwald, M.D., of the University of Colorado Health Sciences Center, studied the

medical records of 524 AI/ANs aged 50 and older who were seen at an urban health clinic in the Pacific Northwest between 1994 and 1995.

The researchers examined the frequency of diagnosed hypertension, undiagnosed hypertension, and coexisting conditions, as well as hypertension treatment, control, and quality of care. Over one-third (38 percent) of AI/ANs seen at the clinic had diagnosed hypertension. However, because 23 percent of those without a diagnosis of hypertension had two or more elevated blood pressure measurements during clinic visits, the prevalence of total possible hypertension may have been as high as 52 percent.

Eighty-one percent of diagnosed patients were treated with medication. Although treatment rates were high, blood pressure

control was suboptimal. Blood pressure was well controlled in only 37 percent of patients, with men being less well controlled than women. Results showed moderate to high performance rates for screening tests for hypertension-related complications, especially among patients with more diagnosed health problems. Serum cholesterol, creatinine, and retinal screening were performed more often than urinalyses or electrocardiograms. Lifestyle modification counseling was uncommon.

See "Hypertension in older urban Native-American primary care patients," by Drs. Rhoades and Buchwald, in the June 2003 *Journal of the American Geriatric Society* 51, pp. 774-781. ■

Providing culturally sensitive care may lead to more effective health care delivery for racial/ethnic minorities

Culturally insensitive health care systems and providers are thought to be one source of poorer quality of care among racial and ethnic minorities. These patients often feel discriminated against, misunderstood, and uncomfortable in doctors' offices. Training physicians in skills related to cultural competence may improve health care delivery to these patients, suggests Carolyn M. Tucker, Ph.D., of the University of Florida.

A study led by Dr. Tucker and supported in part by the Agency for Healthcare Research and Quality (HS13151) discusses what cultural competence means from the standpoint of mostly low-income whites, Latinos, and blacks. Based on 20 focus group interviews with 135 of these patients (52 blacks, 38 whites, and 45 Latinos), all groups agreed on four indicators of culturally sensitive health care by their primary care physician.

The four indicators were: physician people skills (empathy, acceptance, respectfulness, concern, good listening, friendliness, and patience); individualized treatment (personal knowledge of the patient and his or her situation, especially financial concerns); effective communication (thorough explanation of procedures in easily understood language); and technical competence (thorough physical examinations, knowledge, and confidence).

For Latinos, sharing a common language with their doctor influenced levels of trust and comfort. Latinos were also more vocal than either blacks or whites about culturally insensitive doctors and their front desk clinic staff, possibly as a result of language barriers.

White patients emphasized the importance of a collaborative relationship with the doctor, whereas blacks and Latinos focused more on wanting

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Culturally sensitive care

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individualized care and attention. Latino and black patients also said they felt more comfortable in primary care offices that included respectful office staff, as well as culturally sensitive art, pictures, music, and reading materials, including those that addressed health problems specific to them.

See "Cultural sensitivity in physician-patient relationships: Perspectives of an ethnically diverse sample of low-income primary care patients," by Dr. Tucker, Keith C. Herman, Ph.D., Tyler R. Pedersen, Ph.D., and others, in the July 2003 *Medical Care* 41(7), pp. 859-870. ■

South Asian women living in the United States should be targeted to receive Pap smears for cervical cancer screening

Cervical cancer is the second most common cancer among Indian women. Yet, despite the high socioeconomic status of Indian and other South Asian women living in the United States (from Pakistan, India, Bangladesh, and Sri Lanka), a recent survey revealed that one-fourth of them had not received a Pap smear to detect cervical cancer in the past 3 years. This research was supported in part by the Agency for Healthcare Research and Quality (HS10597).

Researchers from the University of Chicago, RAND, and the University of California, Los Angeles, mailed a survey to a random sample of 1,913 South Asian women nationwide over a 3-month period. The survey asked about receipt of Pap smears, sociodemographic characteristics, and measures of acculturation (for example, language spoken at home and time lived in the United States).

Of the 42 percent of South Asian women who responded, 45 percent had a household income of more than \$80,000, and 42 percent had a master's degree. Three-quarters of the women (73 percent) said they had received a Pap smear in the last 3 years. The

probability of Pap smear receipt was 92 percent for a 38-year-old married female who had spent at least 25 percent of her life in the United States, had a usual source of care, and had a bachelor's degree.

The probability decreased to 71 percent if the woman was unmarried, 80 percent if she had less than a bachelor's degree or did not have a usual source of care, and 79 percent if she had lived less than 25 percent of her life in the United States. Locales with large South Asian populations should be targeted for cervical cancer screening, for example, with community health fairs and awareness campaigns via ethnic newspapers and television programs. The message should be aimed particularly at unmarried South Asian women of lower socioeconomic status who have spent little time in the United States, suggest the researchers.

More details are in "Utilization of Papanicolaou smears by South Asian women living in the United States," by Saima Chaudhry, M.D., M.S.H.S., Arlene Fink, Ph.D., Lillian Gelberg, M.D., M.S.P.H., and Robert Brook, M.D., Sc.D., in the May 2003 *Journal of General Internal Medicine* 18, pp. 377-384. ■

Long-Term Care

Costs of care for pneumonia in nursing home residents vary widely and could be reduced

Pneumonia is a leading cause of hospitalization and death among nursing home residents, and the usual hospital cost for treating an episode of pneumonia exceeds \$7,000. However, many nursing home

residents are treated for pneumonia in the nursing home, where the average cost for treating an episode is \$458, according to a study supported in part by the Agency for Healthcare Research and Quality (HS08551).

Residents whose pneumonia is treated in the nursing home benefit by avoiding the stress of relocation, complications, and increased functional dependence associated with hospitalization. However, their

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Pneumonia

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care requires more time from staff, who may already be fully occupied, and certain treatments are only available in the hospital, explains David R. Mehr, M.D., M.S., of the University of Missouri-Columbia.

As part of a larger study of lower respiratory infection in nursing home residents, Dr. Mehr and his colleagues examined the costs of pneumonia care for 502 people with pneumonia who were residents of 36 Missouri nursing homes and were not hospitalized. The study included residents evaluated in the ER and returned to

the nursing home without being admitted to the hospital. X-rays accounted for almost half of the average cost of \$458 for treating an episode of pneumonia in the nursing home, most likely because of the higher cost of mobile x-rays. Provider evaluations and medications each accounted for about 20 percent of the costs.

Medication costs varied the most, ranging from \$.04 to over \$700 for residents who received any medication. Episode costs were higher for residents seen in a hospital ER, residents with decubitus ulcers, black residents, and residents in larger facilities. Sending only the sickest residents

to the ER for evaluation and avoiding use of the most expensive antibiotics are two of the most likely ways to reduce costs, suggest the researchers. However, they caution that the effects of cost reductions on outcomes are unknown, and cost reduction should not be at the expense of appropriate care.

More details are in "The cost of treating pneumonia in the nursing home setting," by Robin L. Kruse, Ph.D., Keith E. Boles, Ph.D., Dr. Mehr, and others, in the March/April 2003 *Journal of the American Medical Directors Association* 4, pp. 81-89. ■

Nursing home facility characteristics and quality-of-care factors may contribute to unnecessary hospitalization of residents

Several studies have used ambulatory-care-sensitive hospitalizations (ACSHs)—hospitalizations for medical conditions thought to be largely avoidable and/or manageable through timely access to appropriate primary care—to evaluate potential access-to-care problems.

This preliminary study is the first one to examine the impact of nursing home factors on ACSHs. It found that nursing home facility factors and quality-of-care indicators contribute significantly to the risk of ACSH among nursing home residents. This raises concerns that some nursing home residents may be hospitalized unnecessarily and/or may not be receiving health care services promptly enough to prevent worsening of problems leading to hospitalization, concludes Mary W. Carter, Ph.D., of West Virginia University School of Medicine's Center on Aging.

In her study, which was supported in part by the Agency for Healthcare Research and Quality (HS07585), Dr. Carter analyzed 3 years of quarterly Medicaid reimbursement data from more than 500 nursing homes. She linked these data to 4 years of Medicare Provider Analysis and Review hospital

claims data, nursing facility attribute data, and Area Resource File data to investigate the relative contribution of patient-, facility-, and market-level risk factors to ACSH among nursing home residents.

ACSHs seemed particularly sensitive to those facility-level factors linked to quality-of-care practices in the nursing home. Residents of facilities that were operated by a management company, had a greater proportion of patient days reimbursed by Medicare, and spent a greater proportion of total nursing expenses for practical nurses and less on registered nurses had a greater risk of ACSH. For example, for every percentage point increase in the facility's percentage of total nursing expenses paid for RNs, the risk of ACSH decreased by 28 percent, holding other factors constant. These findings suggest a fairly strong relationship between facility staffing ratios, ambulatory care practices, and resident outcomes.

See "Factors associated with ambulatory care-sensitive hospitalizations among nursing home residents," by Dr. Carter, in the May 2003 *Journal of Aging and Health* 15(2), pp. 295-331. ■

Health Care Costs and Financing

Patients with depressed mood and persistent anxiety use more medical care and have higher costs than other patients

A recent study of a large HMO shows that patients with persistent anxiety and depressed mood use more general medical care and have higher health care costs than those without such problems. Patients with depressed mood, persistent anxiety, and significant impairment in work, family, or social functioning have roughly twice the medical care costs of patients without these problems. These findings highlight the possible economic benefits of screening primary care patients for selected psychiatric symptoms, suggests William D. Spector, Ph.D., of the Agency for Healthcare Research and Quality.

Dr. Spector and his colleagues from Kaiser Permanente of Northern California and the University of California, San Francisco, examined the 1-year medical care costs of 10,377 adults

enrolled in a California HMO. The HMO enrollees were initially interviewed by telephone about psychiatric symptoms and associated impairment in social, family, or work function. About one-fourth (24 percent) of the respondents reported having one or more of five psychiatric symptoms (depressed mood, brief anxiety, persistent anxiety, panic attacks, and trouble controlling violent behavior).

After controlling for age, sex, race, medical conditions, and smoking, the mean costs of general medical care were \$1,948 for respondents who reported none of the psychiatric symptoms or impaired function, \$3,006 for respondents with all five symptoms but no impaired function, and \$3,906 for those with all five symptoms and pervasive functional impairment. Persistent anxiety and

depressed mood had the greatest impact on general medical costs, increasing mean costs by almost 50 percent. Impaired function was associated with increased likelihood of hospital admission and emergency room use. Those impaired in work, family, and social functioning had a 50 percent increase in emergency care use and a 62 percent increase in hospital use over people who had no functional impairments.

See "Psychiatric symptoms, impaired function, and medical care costs in an HMO setting," by Enid M. Hunkeler, M.A., Dr. Spector, Bruce Fireman, M.S., and others, in the May-June 2003 *General Hospital Psychiatry* 25, pp. 178-184. Reprints (AHRQ Publication No. 03-R050) are available from AHRQ.** ■

An enhanced MEPS enables national studies of health care coverage, access, costs, and health status of U.S. households

Since 1996, the Agency for Healthcare Research and Quality's Medical Expenditure Panel Survey (MEPS), a nationally representative survey of U.S. households, has been conducted annually to permit estimates of health care use, expenditures, insurance coverage, and sources of payment for the U.S. civilian noninstitutionalized population. MEPS provides a strong foundation for estimating the impact of health care policy changes on different economic groups and special populations, such as the poor, elderly, veterans,

the uninsured, and racial/ethnic groups.

The breadth and depth of MEPS data enable public- and private-sector analysts to develop economic models designed to produce national and regional estimates of the impact of changes in financing, coverage, and reimbursement policy, as well as estimates of who benefits and who bears the cost of such policy changes. To facilitate the use of MEPS data, while maintaining the confidentiality promised to MEPS participants, AHRQ has developed a Data Center in Rockville, MD, where researchers with approved

projects can be allowed access to data files that are not available for public dissemination. The MEPS Web site at www.meps.ahrq.gov has information on data availability, the Data Center, and abstracts of important research using MEPS data.

The following eight articles on MEPS, authored by AHRQ staff, are featured in a special supplement to the journal *Medical Care* 41(7), with a foreword by Steven B. Cohen, Ph.D., Director of AHRQ's Center for Financing, Access, and Cost Trends, AHRQ

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MEPS studies

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Director, Carolyn M. Clancy, M.D., and John Z. Ayanian, M.D., of Brigham and Women's Hospital and Harvard Medical School. They highlight new design enhancements to the MEPS and recent national studies of coverage, access, cost, and health status. Reprints of the foreword (AHRQ Publication No. 03-R052)** and most of the following articles (see summaries for publication numbers) are available from AHRQ. See the back cover of *Research Activities* for ordering information.

Cohen, S.B. "Design strategies and innovations in the medical expenditure panel survey," pp. 5-12. This paper provides an overview of the MEPS design and recent innovations to survey content and scale. It also provides a summary of the framework used for introducing new MEPS design components, such as over-sampling of individuals predicted to have high health care costs and the collection of additional data on health status. (AHRQ Publication No. 03-R053)**

Selden, T.M., and Banthin, J.S. "Health care expenditure burdens among elderly adults: 1987 and 1996," pp. 13-23. These authors used data from the 1987 National Medical Expenditure Survey (NMES) and the 1996 MEPS to estimate how frequently elderly adults live in families whose health expenditures exceed 20 to 40 percent of their after-tax disposable income to inform the ongoing debate on Medicare benefits. Results revealed high health care expenditure burdens among elderly adults and the varying protective influence of insurance coverage on these expenditures. (AHRQ Publication No. 03-R054)**

Kirby, J.B., Machlin, S.R., and Cohen, J.W. "Has the increase in HMO enrollment within the Medicaid population changed the pattern of health service use and expenditures?" pp. 24-34. These investigators analyzed data from the 1987 NMES and 1997 MEPS to describe changes in health services use and expenditures among Medicaid recipients in 1987 and 1997 and to estimate the extent to which the increase in HMO enrollment has influenced these changes. Results revealed that 1997 Medicaid HMO enrollees had significantly fewer hospital visits than 1987 Medicaid enrollees and spent significantly less on health services than 1997 non-HMO enrollees. (AHRQ Publication No. 03-R055)**

Cooper, P.F., and Vistnes, J. "Workers' decisions to take-up offered health insurance coverage: Assessing the importance of out-of-pocket premium costs," pp. 35-43. This study used data from the 1997 to 1999 MEPS-Insurance Component to examine the relationship between workers' decisions to take-up offers of health insurance and annual out-of-pocket contributions, total premiums, and employer and workforce characteristics. They conclude that reducing employee contributions will increase take-up rates. However, even when employees pay nothing for their coverage, some employees elect not to enroll. (AHRQ Publication No. 03-R060)**

Moeller, J.F., Cohen, S.B., Mathiowetz, N.A., and Wun, L.M. "Regression-based sampling for persons with high health expenditures: Evaluating accuracy and yield with the 1997 MEPS," pp. 44-52. Using the 1987 NMES, the investigators developed

a probabilistic model to select households from the 1996 National Health Interview Survey likely to contain individuals incurring high levels of medical expenditures in the 1997 MEPS. The objective was to identify the characteristics of the individuals most likely to incur high levels of medical expenditures in a subsequent year and use that information for sampling purposes. In this paper, the authors evaluate the success of this predictive model for purposes of targeting individuals most likely to incur high health expenditures. (AHRQ Publication No. 03-R059)**

Monheit, A.C. "Persistence in health expenditures in the short run: Prevalence and consequences," pp. 53-64. After analyzing health care expenditure data from the 1996 and 1997 MEPS, this investigator found that a sizable representation of the population with high expenditures (for example, those with cancer, mental disorders, and diabetes) incur persistently high health expenditures. Of the top 5 percent of spenders in 1996, 30 percent maintained this ranking in 1997, and 45 percent were in the top 10 percent of 1997 spenders. **Editor's note:** Dr. Monheit, formerly of AHRQ, is now with the University of Medicine and Dentistry of New Jersey. Reprints of this article are not available from AHRQ.

Larson, S.L., and Fleishman, J.A. "Rural-urban differences in usual source of care and ambulatory service use," pp. 65-74. Using data from the 1996 MEPS and from the Area Resource File, which includes the nine-category Urban Influence Codes for each county, these researchers examined the relationship between place of residence and access to and use of outpatient health

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MEPS studies

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services. Results suggest that using rural and urban definitions that go beyond the traditional dichotomy of metropolitan areas and non-metropolitan areas (for example, large suburbs) may help researchers and policymakers identify types of places where there is a disparity in health care access and subsequent use of health care services. (AHRQ Publication No. 03-R057)**

Fleishman, J.A., and Lawrence, W.F. "Demographic variation in SF-12 scores: True differences or differential item functioning?" pp. 75-86. In this study, the authors examine the extent to which differential item functioning (DIF, situations in which the psychometric properties of items are not invariant across different groups) contributes to observed subgroup differences in physical and mental health status among a

national sample of 11,626 adults who completed a self-administered questionnaire in the 2000 MEPS. Results showed that adjusting for DIF reduced but did not eliminate age and education differences in physical and mental health. For mental health, however, adjusting for DIF resulted in black-white differences becoming not statistically significant. (AHRQ Publication No. 03-R056)** ■

Agency News and Notes

AHRQ and HRSA are working together to monitor the Nation's health care safety net

America's health care safety net consists of a wide variety of providers delivering care to low-income and other vulnerable populations, including the uninsured and those covered by Medicaid. Many of these providers have either a legal mandate or an explicit policy to provide services regardless of a patient's ability to pay. Major safety net providers include public hospitals and community health centers, as well as teaching and community hospitals, private physicians, and other providers who deliver a substantial amount of care to these patients.

- The Nation's health care safety net was recently described by the Institute of Medicine (IOM) as "intact but endangered." In particular, the IOM cited:
- The precarious financial situation of many institutions that provide care to Medicaid, uninsured, and other vulnerable patients.
- The changing financial, economic, and social environment in which these institutions operate.
- The highly localized, "patchwork" structure of the safety net.

In response, the Agency for Healthcare Research and Quality and the Health Resources and Services Administration are leading a joint safety net monitoring initiative. The goal is to help local policymakers, planners, and analysts monitor the status of their local safety nets and the populations they serve. AHRQ and HRSA have developed two new data books that provide a broad range of measures for use in safety net monitoring. The 118 measures include:

- Demand for safety net services.
- Financial support for safety net services.
- Safety net structure and health system context.
- Community context.
- Outcomes and safety net performance.

The data books include information at the county and metropolitan levels, focusing on 30 States and the District of Columbia and covering 75 percent of the U.S. population. The books use data from a wide variety of sources to describe the status of the safety net in 90 metropolitan areas and all 1,818 counties within the States examined. Book 1 focuses on metropolitan areas, and book 2 provides county-level data.

The data books, a fact sheet, electronic data sets and documentation, and frequently asked questions are available on the Web at www.ahrq.gov/data/safetynet. The Web site also includes the Safety Net Profile Tool, a user-friendly, online tool that allows users to create their own custom reports using data from the two books. With this tool, users can generate reports that compare multiple measures for one or more geographic areas.

In addition, AHRQ and HRSA are developing a tool kit to help policy analysts and planners at the State and local levels assess the status of their safety nets. The tool kit will consist of nine commissioned papers authored by experts in the field, and will be available later this year.

For more information about the safety net monitoring initiative, please visit the AHRQ Web site at www.ahrq.gov/data/safetynet or contact Robin Weinick, Ph.D., in AHRQ's Center for Delivery, Organization, and Markets, via e-mail to safenet@ahrq.gov. ■

AHRQ helps set action agenda for improving rural health care

A recent conference supported by the Office of Rural Health Policy (ORHP) and the Agency for Healthcare Research and Quality focused on ways to improve the quality of rural health care. A group of experts, including Carole D. Dillard, M.A., of AHRQ, identified issues, barriers, and opportunities related to bringing rural health care into the mainstream of the national quality “revolution,” which, for the most part, has bypassed the 20 percent of Americans who live in rural areas with limited resources. The experts developed an action agenda to improve rural care

quality in five areas: performance improvement, innovation dissemination, external levers, workforce, and measurement.

Recommendations for action stressed rural participation in the national quality process, Internet use by rural providers, workforce development, and finding ways to increase access to resources of all types. Specific recommendations included fostering development of rural consortia by funding agencies; relevant quality measures for the rural environment; technical assistance capacity to enable small organizations to develop quality/performance improvement

programs; appropriate financial incentives; leadership capacity via simulation training and credentialing; and database development.

For more information, see “A framework and action agenda for quality improvement in rural health care,” by Forrest W. Calico, M.D., M.P.H., Ms. Dillard, Ira Moscovice, Ph.D., and Mary K. Wakefield, Ph.D., R.N., in the Summer 2003 *Journal of Rural Health* 19(3), pp. 226-232. Reprints (AHRQ Publication No. 03-R047) are available from AHRQ.** ■

Announcements

AHRQ issues call for abstracts on patient safety research

The Agency for Healthcare Research and Quality and the Department of Defense are cosponsoring a collection of papers to be published in fall 2004. The collection, which will be titled *Advances in Patient Safety: From Research to Implementation*, will feature papers (up to 4,500 words each) that highlight the research findings, methodological perspectives, implementation issues, and tools and products stemming from recent federally funded patient safety research.

AHRQ and DOD have issued a call for abstracts to be considered for this project. The deadline for abstract submission is December 16, 2003. The call for abstracts can be obtained from Suzanne Streagle, Patient Safety Research Coordinating Center (suzannestreagle@westat.com). Please e-mail questions about content to Kerm Henriksen, AHRQ, at khenriks@ahrq.gov. ■

HHS and VA launch patient safety training program

The Department of Health and Human Services (HHS) and the Department of Veterans Affairs (VA) together announced a new partnership to improve patient safety nationwide. HHS' Agency for Healthcare Research and Quality and the VA's National Center for Patient Safety (NCPS) are collaborating on the Patient Safety Improvement Corps, a training program for State health officials and their selected hospital partners.

During the first annual program, 50 participants will complete coursework in three 1-week sessions at

AHRQ's offices in Rockville, MD. Participants will analyze adverse medical events and close calls—sometimes known as “near misses”—to identify the root causes of these events and correct and prevent them. The overarching goal of the Patient Safety Improvement Corps, which is funded by AHRQ at approximately \$7 million over 4 years, is to prevent harm to patients.

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Patient safety training

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AHRQ is partnering with NCPS to offer this training based on NCPS's extensive experience and success in operating large patient safety programs. Both HHS and VA look forward to building upon the experience of NCPS to foster an internationally renowned program. Following is a list of States and their hospital partners in the first group to participate in the program.

Alaska	Alaska Longevity Program Yukon-Kuskokwim Health Corporation, Bethel, AK
Connecticut	Connecticut Department of Health Connecticut Hospital Association Wallingford and Meriden, CT
Maryland	Department of Health and Mental Hygiene, Office of Health Care Quality Shady Grove Adventist Hospital Rockville, MD
Massachusetts	Massachusetts Department of Public Health Northeast Health System Ipswich, MA Spaulding Rehabilitation Hospital Medford, MA
Minnesota	Minnesota Department of Health Minnesota Hospital Association St. Paul, MN
Missouri	Missouri Department of Health and Senior Services, Division of Health Standards and Licensure University of Missouri Health Care Columbia, MO
New York	State of New York Department of Health, Bureau of Hospital and Primary Care Services Health Research, Inc. Schenectady, NY Rochester General Hospital Rochester, NY Hudson Valley Hospital Center Cortlandt Manor, NY
North Carolina	North Carolina Division of Facility Services, University of North Carolina Hospitals, Chapel Hill, NC

North Carolina	Department of Health and Human Services, Apex, NC North Carolina Division of Facility Services, Licensure & Certification Section, Durham, NC North Carolina Teachers' and State Employees' Comprehensive Major Medical Plan, Raleigh, NC
Oregon	Oregon Department of Human Services, Office of the State Public Health Officer, Oregon Health & Science University, Portland, OR Providence Health System Portland, OR Oregon Health Care Association Wilsonville, OR
Pennsylvania	Commonwealth of Pennsylvania Department of Health Jefferson Health System Philadelphia, PA
Rhode Island	Rhode Island Department of Attorney General, Kent County Memorial Hospital, Warwick, RI Rhode Island Hospital, Providence, RI Rhode Island Quality Partners Providence, RI
Texas	Texas Department of Health, Health Facility Licensing and Compliance Division, Rural and Community Health Institute, Bryan, TX
Utah	Utah Department of Health University of Utah Hospitals and Clinics, Department of Pharmacy Services, Salt Lake City, UT St. Mark's Hospital, West Jordan, UT
Virginia	Center for Quality Health Care Services and Consumer Protection Virginia Department of Health University of Virginia Medical Center Charlottesville, VA
Wisconsin	MetaStar, Inc., representing the State of Wisconsin, Department of Health and Family Services Bureau of Quality Assurance University of Wisconsin Hospital and Clinics, Madison, WI ■

AHRQ announces expanded resource to help adults stay healthy

The Agency for Healthcare Research and Quality has published a revised and expanded booklet for health care consumers, the *Pocket Guide to Good Health for Adults*. This guide updates the Put Prevention Into Practice program's Personal Health Guide and is based on the most current research-based recommendations from the U.S. Preventive Services Task Force.

The *Pocket Guide*, which is available in English and Spanish, includes tips and recommendations on good health habits, screening tests, and immunizations. It provides easy-to-use charts to help people track personal health information, and it includes questions to ask health care

providers, as well as resources and contacts for additional information.

The U.S. Preventive Services Task Force, sponsored by AHRQ, is the leading independent panel of experts in prevention and primary care. The Task Force conducts rigorous, impartial assessments of all of the scientific evidence for a broad range of preventive services, and its recommendations are considered the gold standard for clinical prevention.

The Put Prevention Into Practice (PPIP) program is designed to increase the appropriate use of clinical preventive services. PPIP tools enable physicians and other health care providers to determine which services their patients should receive and how best to deliver them. These tools also make it

easier for patients to understand and keep track of their preventive care. A complete listing of Task Force recommendations and PPIP resources can be found online. Go to www.ahrq.gov/clinic and click on "preventive services."

The new *Pocket Guide to Good Health for Adults* is available on the AHRQ Web site in English and Spanish. Print copies of this publication (AHRQ Publication Nos. APPIP 03-0001, English; APPIP 03-0010, Spanish) and related materials are available from the AHRQ Publications Clearinghouse. See the back cover of *Research Activities* for ordering information. Clinical information also is available from the National Guideline Clearinghouse at www.guideline.gov. ■

New MEPS chartbook now available from AHRQ

The Agency for Healthcare Research and Quality has published a new chartbook that shows health care spending for the civilian noninstitutionalized (community) population in 1999. It presents data from the Medical Expenditure Panel Survey (MEPS). Various sections of the report deal with national expenses by amount, type of service, and source of payment. Information is provided on elderly and non-elderly people living in the community, two groups that have quite different expenses; average expenses for subgroups according to age, insurance, income, and race/ethnicity; and the extent to which selected populations rely on different sources to pay for their health care.

According to the chartbook, overall health care expenses for the U.S. community population totaled \$596 billion in 1999. Eighty-four percent of the community population had expenses, with a mean

expense for these people of \$2,557. Half of the community population (including the 16 percent who had no health care expenses) had expenses of \$450 or less. Five percent of the community population accounted for slightly more than half of the population's total health expenses. Conversely, the bottom 50 percent accounted for only 3 percent of expenses.

Copies of the new publication, *Health Care Expenses in the Community Population, 1999*, MEPS Chartbook. No. 11 (AHRQ Publication No. 03-0038) are available from AHRQ.* See the back cover of *Research Activities* for ordering information.

In addition to the chartbook, AHRQ has released new MEPS data files, statistical briefs, and other MEPS materials over the past few months. To find out what's new, visit the MEPS Web site at www.meps.ahrq.gov. ■

Research Briefs

Baine, W.B. (2003). "Systematic screening of secondary diagnoses in Medicare administrative data to identify candidate risk factors for the principal diagnosis." *Annals of Epidemiology* 13, pp. 443-449.

This researcher used the Medicare Provider Analysis and Review Files on hospital stays, which include a patient's principal diagnosis and up to nine secondary diagnoses, to calculate hospital discharge rates for lung cancer, heart attack, and acute renal failure as proxies for incidence rates. He then ranked common secondary diagnoses by the magnitude of their odds difference (overrepresentation in a group with a certain principal diagnosis). He concluded that ranking common secondary diagnoses by the magnitude of their odds difference between groups with disparate discharge rates for a given principal diagnosis may disclose secondary diagnoses that merit evaluation as candidate direct or indirect risk factors. For example, tobacco use and abnormally high blood lipids ranked high in association with the principal diagnosis of heart attack. Reprints (AHRQ Publication No. 03-R051) are available from AHRQ.**

Bazzoli, G.J., Manheim, L.M., and Waters, T.M. (2003, Spring). "U.S. hospital industry restructuring and the hospital safety net." (AHRQ grant HS10040). *Inquiry* 40, pp. 6-24.

During the 1990s, many hospitals became members of health systems and networks. These investigators examined whether safety net hospitals (SNHs), hospitals with a special commitment to serving the uninsured, were included or

excluded from these arrangements and the factors associated with their involvement. They constructed measures for hospital market conditions, management, and mission and examined network and system affiliation patterns between 1994 and 1998. Larger and more technically advanced hospitals joined systems in the 1990s. SNH participation in networks and systems was more common when hospitals faced less market pressure and where only a limited number of unaffiliated hospitals remained. If networks and systems are key parties in negotiating with private payers, SNHs may be going it alone in these negotiations in highly competitive markets.

Bennett, S.J., Oldridge, N.B., Eckert, G.J., and others. (2003, July). "Comparison of quality of life measures in heart failure." (AHRQ grant HS09822). *Nursing Research* 52(4), pp. 207-216.

These researchers compared three instruments for measuring health-related quality of life in (HRQL) in patients with heart failure: the Chronic Heart Failure Questionnaire (CHQ), the Minnesota Living with Heart Failure Questionnaire (LHFQ), and the General Health Survey Short-form-12 (SF-12), in a convenience sample of 211 patients with heart failure (165 patients completed the entire study). Patients completed interviews at baseline and at 4, 8, and 26 weeks after baseline. Overall, patients reported low to moderate HRQL. Reliability of the three instruments was satisfactory. However, the CHQ and LHFQ were more responsive than the SF-12 to clinically important changes over time. The LHFQ and SF-12

were easier and took less time to administer than the CHQ.

Bland, D.R., Dugan, E., Cohen, S.J. (2003, July). "The effects of implementation of the Agency for Healthcare Policy and Research urinary incontinence guidelines in primary care practices." (AHRQ grant HS08716). *Journal of the American Geriatrics Society* 51, pp. 979-984.

This study found that attempts at increasing screening and management of urinary incontinence (UI) by primary care physicians using a guideline developed in the mid-1990s by the Agency for Healthcare Research and Quality were not successful. The authors conclude that these guidelines may not be the best approach to treating UI in the primary care setting. They randomized 20 of 41 primary care practices in North Carolina to an intervention that included a 3-hour continuing medical education course, training in UI management, patient educational materials, and on-site physician and office support. The remaining 21 practices served as usual care controls. They conducted telephone surveys of UI status and quality of life of 1,145 patients before and after the intervention. Rates of UI assessment and management of existing UI were low in both groups.

Clauser, S.B., and Bierman, A.S. (2003, Spring). "Significance of functional status data for payment and quality." *Health Care Financing Review* 24(3), pp. 1-12.

To date, the Medicare Program has used functional status

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information (FSI) in patient assessment tools, performance assessment, payment mechanisms, and most recently in measures of quality of care to inform consumer choice. These researchers explored the rationale for the collection of functional status data to promote innovative models of care. They also examined issues related to data collection for quality improvement, performance measurement, and payment. For example, most Medicare programs including functional assessment have targeted the most seriously disabled patients in need of nursing home care. More research is needed on how to use functional status data and geriatric models of care in integrated systems that target Medicare beneficiaries with less severe functional impairments and those who are at risk for functional decline. There is also much to be learned about functional assessment for children. Reprints (AHRQ Publication No. 03-R049) are available from AHRQ**

Cohen-Mansfield, J., Libin, A., and Lipson, S. (2003). "Differences in presenting advance directives in the chart, in the minimum data set, and through the staff's perceptions." (AHRQ grant HS09833). *Gerontologist* 43(3), pp. 302-308.

Decisions concerning end-of-life care may depend on information contained in advance directives that are documented in residents' charts in the nursing home. These investigators examined how advance directives are summarized in patients' records and how physicians perceive the same advance directives and formal orders. They collected data regarding advance directives of 122 elderly nursing home residents

from three sources: the Minimum Data Set (MDS), the front cover of the resident's chart, and from inside the chart. They found higher rates of agreement between information inside the chart and on the chart cover than between the MDS and the other two sources. The reasons for these discrepancies may lie in the different functions and procedures pertaining to these source documents.

Glueck, D.H., and Muller, K.E. (2003). "Adjusting power for a baseline covariate in linear models." (AHRQ National Research Service Award training grant T32 HS00058). *Statistics in Medicine* 22, pp. 2535-2551.

Medical studies often use a random baseline covariate to increase precision and statistical power. Although of no consequence in data analysis, including any random predictors substantially complicates the theory and computation of power. However, failing to account for randomness of predictors may distort power analysis, and many data analysts fail to fully account for this complication in planning a study, assert these authors. In this study, they provide new exact and approximate methods for power analysis of a range of multivariate models with a Gaussian baseline covariate for both small and large samples. The techniques allow rapid calculation and an interactive, graphical approach to sample size choice, which the authors illustrate by calculating power for a clinical trial of a treatment for increasing bone density.

Jennings, R.M., Thompson, L.A., Townsend, C.L., and others. (2003, July). "The relationship between pediatric residency program size and inpatient illness severity and diversity." (AHRQ National Research Service Award

training grant T32 HS00070). *Archives of Pediatric and Adolescent Medicine* 157, pp. 676-680.

This study challenges the assumption that better learning opportunities for residents in pediatrics are offered at larger, urban hospitals. The researchers found that pediatric inpatient illness severity and diagnostic diversity varied among hospitals with residency programs. However, these differences were poorly related to the size of the residency programs. The five common diagnoses were almost identical at small, medium, and large programs. On average, smaller programs had similar levels of inpatient illness severity for medical discharges compared with larger programs. In contrast, larger programs had a higher proportion of discharges concentrated in their top five diagnoses, particularly, asthma, thereby decreasing diversity. The findings are based on retrospective analysis of hospital discharges among children in a sample of pediatric residency programs within the University HealthSystems Consortium.

Kaissi, A., Kralewski, J., and Dowd, B. (2003, July). "Financial and organizational factors affecting the employment of nurse practitioners and physician assistants in medical group practices." (National Research Service Award training grant T32 HS00036). *Journal of Ambulatory Care Management* 26(3), pp. 209-216.

These researchers used data from a survey of 128 medical group practices in Minnesota to examine the financial and organizational factors that are associated with the employment of

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nurse practitioners (NPs) and physician assistants (PAs) in medical group practices. The findings suggest that the employment of NPs and PAs and their ratios to primary care physicians in practices that employ them are influenced by the organizational characteristics of the group practice but not by the degree of financial risk-sharing for patient care. Large practices, those located in rural areas, not-for-profit practices, and those that scored low on cohesive cultural traits were more likely to employ midlevel practitioners (MLPs). As medical group practices become larger and have more organizational capacity, they can be expected to increase the employment of MLPs and integrate them into their organizations.

Kaplan, R.M. (2003). "The significance of quality of life in health care." (AHRQ grant HS09170). *Quality of Life Research* 12 (Suppl. 1), pp. 3-16.

This author compared a traditional biomedical model with an outcomes model for evaluating health care. The traditional model emphasizes diagnosis and disease-specific outcomes. In contrast, the outcomes model emphasizes life expectancy and health-related quality of life. Although the models are similar, they lead to different conclusions with regard to some interventions. For some conditions, diagnosis and treatment may reduce the impact of a particular disease without extending life expectancy or improving quality of life. Older

individuals with multiple medical problems may not benefit from treatments for a particular disease if competing health problems threaten life or reduce quality of life. In some circumstances, successful diagnosis and treatment may actually reduce life expectancy or overall life quality.

Lo, B., and Froman, M. (2003, June). "Oversight of quality improvement: Focusing on benefits and risks." (AHRQ grant HS10961). *Archives of Internal Medicine* 163, pp. 1481-1486.

Quality improvement (QI) programs may substantially improve patient outcomes while posing little risk to subjects. However, some may pose risks to participants or raise ethical concerns. A monolithic approach to oversight of QI is inappropriate in light of variation in benefits and risks of QI projects and their overlap with research, conclude these authors. They suggest that an explicit protocol for the ethical review of QI would benefit both patients and leaders of QI projects. If a project is considered research rather than QI, review by an institutional review board and informed consent from subjects may be required. When a project poses only minimal risk, stringent oversight beyond what is in place for clinical care is counterproductive. The key ethical issue is not the classification of a project as QI or research, but rather the balance of expected benefits and harms.

Moeller, J.F., Cohen, S.B., Mathiowetz, N.A., and Wun, L-M. (2003). "Regression-based sampling for persons with high health expenditures: Evaluating accuracy and yield with the 1997 MEPS." *Medical Care*, 41(7Suppl), III-44-III-52.

Given the highly skewed nature of the distribution of health care expenditures in the population, it is critical to capture a sufficient number of individuals with high expenditures in the tail of this distribution to measure national health expenditures accurately. The results presented in this paper validate the accuracy of using model-based sampling to identify households likely to contain working-age individuals with high health expenditures. Estimates made from the logistic 1997 National Medical Expenditure Survey (NMES) selection model prior to drawing the Medical Expenditure Panel Survey Panel 2 sample showed an expected yield of 60.6 percent for NMES households selected to be over-sampled. This means that 60.6 percent of NMES households selected for over-sampling by the model were expected to in fact contain at least one person aged 18 to 64 with health expenditures in the top 15 percent of the distribution in 1997. This over-sampling approach increased the actual number of high expenditure individuals in the sample by 20 percent compared to the expected number cases had there been no over-sampling. Reprints (AHRQ Publication No. 03-R059) are available from AHRQ** ■

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