



# Research Activities



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Agency for Healthcare Research and Quality

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## AHRQ and its partners launch new tools to help combat childhood obesity

In response to the growing epidemic of childhood obesity in this country, the Agency for Healthcare Research and Quality has developed two DVDs to teach children and their parents about smart eating and physical activity and to educate clinicians about the best ways to prevent and treat obesity in children.

AHRQ partnered with FitTV, the newest network from Discovery Networks, U.S., to produce a fun and interactive DVD for children and their parents called "Max's Magical Delivery: Fit for Kids." This is a 30-minute tool designed for families and children ages 5 to 9 to provide them with fun ways to incorporate physical activity and healthy foods into their daily lives. The DVD features healthy tips on ways parents can take small steps to make changes in the way their families eat and exercise every day, as well entertaining and informative segments with an energetic cast of child actors.

AHRQ is partnering with the American Academy of Pediatrics, the American

Academy of Family Physicians, and other groups to distribute copies of the DVD to clinicians and encourage them to have their patients order additional copies.

A second DVD, "Childhood Obesity: Combating the Epidemic," has also been produced in partnership with Discovery Health Channel for pediatricians, family physicians, and other health care providers to help them learn new methods for assessing and treating childhood overweight and obesity. It features a panel discussion with Donald Shifrin, M.D., a member of the obesity task force at the American Academy of Pediatrics; Rick Kellerman, M.D., a member of the board of directors of the American Academy of Family Physicians; and Francine Kaufman, M.D., who heads the Division of Endocrinology and Metabolism at Childrens' Hospital in Los Angeles. This 55-minute program provides helpful clinical tools—such as body mass index measurement in children—in addition to tips

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## Childhood obesity

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for initiating and sustaining behavior change in children. This DVD also includes the children's version, *Max's Magical Delivery*.

The program began airing on the Discovery Health Channel on Sunday, September 26 (9:00 a.m.

EDT) and will air every week through November 28. Free continuing education credits are available for children's health care providers, including nurse practitioners, through both the DVD version and the program on Discovery Health. Visit [www.discoveryhealthcme.com](http://www.discoveryhealthcme.com) for more information.

For a preview of both DVDs, go to [www.ahrq.gov/child/dvdobesity.htm](http://www.ahrq.gov/child/dvdobesity.htm). Copies of the DVDs are available from AHRQ (AHRQ Publication No. 04-0088-DVD,\* children and parents, and 04-0089-DVD,\* clinicians). See the back cover of *Research Activities* for ordering information. ■

## Women's/Children's Health

### Quality-of-life benefits of short-term hormone therapy may outweigh the risks for some menopausal women

**H**ormone replacement therapy (HRT) is the most effective treatment for menopausal symptoms, and its use is associated with a decrease in the risk of osteoporosis and colorectal cancer, according to findings from the Women's Health Initiative (WHI). The WHI trial also showed that combined estrogen and progestin HRT increases the risk of coronary heart disease (CHD), stroke, pulmonary embolism (PE), and breast cancer. Nevertheless, when quality of life is taken into account, the benefit of short-term (up to 2 years) HRT may outweigh the risks for some women, according to a recent study supported by the Agency for Healthcare Research and Quality (HS13329).

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AHRQ  
Office of Communications and Knowledge  
Transfer  
540 Gaither Road  
Rockville, MD 20850  
(301) 427-1360  
Mary L. Grady, Managing Editor  
Gail Makulowich, Contributing Editor  
Joel Boches, Design and Production  
Karen Migdail, Media Inquiries

Whether short-term HRT is considered beneficial depends primarily on a woman's treatment goals, the severity of her estrogen-responsive symptoms, and her cardiovascular disease (CVD) risk, says Brown Medical School researcher, Nananda F. Col, M.D., M.P.P., M.P.H. Dr. Col and her colleagues explored the trade-off between short-term symptomatic relief and risks of chronic disease to determine which women might benefit from short-term HRT. They developed a model to simulate the impact of combination estrogen and progestin HRT for 2 years among a healthy group of 50-year-old white menopausal women with intact uteri. The model simulated the impact of short-term HRT (vs. no HRT) on estrogen deficiency symptoms (assuming an 80 percent improvement in symptoms), life expectancy, quality-adjusted life expectancy (QALE), and clinical end points affected by HRT, such as stroke and breast cancer, based on WHI data.

Women with mild menopausal symptoms gained 4.3 months QALE from HRT if they were at low CVD risk and 3.3 months if they were at high CVD risk. Those with severe symptoms gained 8.3 or 6.9 months, respectively. In contrast, asymptomatic women who used HRT experienced net losses in QALE of 25 days to 2.9 months, depending on CVD risk. Individual risk levels of osteoporosis, breast cancer, and colorectal cancer had little effect on these analyses, reflecting their low prevalence among the women examined, the small relative risk of HRT on these outcomes, and the short duration of HRT.

Details are in "Short-term menopausal hormone therapy for symptom relief," by Dr. Col, Griffin Weber, M.D., Ph.D., Anne Stiggenboud, Ph.D., and others, in the August 2004 *Archives of Internal Medicine* 164, pp. 1634-1640. ■

## After more than 20 years, quality of life is similar for women who had a hysterectomy or went through natural menopause

The first study to examine the long-term impact of hysterectomy on quality of life found no difference in quality of life between women who had a hysterectomy (with or without ovarian removal) an average of 27 years previously and women who had a natural menopause 25 years earlier. On the other hand, estrogen use was associated with lower quality of life in these women (average age of 73 years), who were unlikely to be using estrogen to treat hot flashes.

Women who were current estrogen users had lower health-related quality of life (HRQOL) scores and higher symptom scores than those who were former users or had never used estrogen, even after adjustment for age, type of menopause, and behavioral and lifestyle factors. This finding may reflect an adverse effect of hormone use on HRQOL in older postmenopausal women, suggests University of California, San Diego researcher, Donna Kritz-Silverstein, Ph.D.

In the study, which was supported in part by the Agency for Healthcare Research and Quality (HS06726), the researchers

obtained information on menopausal history, including hysterectomy status, and history of estrogen use from a sample of 801 women aged 50-96 years during clinic visits between 1992 and 1996. A week after the visit, the women were contacted by phone and the quality of well-being (QWB) scale was administered.

Twenty-five percent of the women reported hysterectomy with both ovaries removed an average of 28 years earlier, and 11 percent had hysterectomy with ovarian conservation an average of 26.5 years earlier. Overall, 44 percent of the women reported current estrogen use, and 24 percent reported past use. Age-adjusted comparisons indicated that women with natural menopause had slightly higher QWB scores and lower symptom subscale scores than women in either of the hysterectomy groups. However, after additional adjustment for estrogen use and other potentially confounding factors, there was no significant difference in total QWB score or on any subscale score by hysterectomy status.

See "Hysterectomy status, estrogen use and quality of life in

older women: The Rancho Bernardo study," by Dr. Kritz-Silverstein, Denise G. Von Muhlen, M.D., Ph.D., Theodore G. Ganiats, M.D., and Elizabeth Barrett-Connor, M.D., in *Quality of Life Research* 13, pp. 55-62, 2004. ■

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## Prolonged *Candida* infections in children with central venous catheters can lead to bloodstream and internal organ infections

Infections caused by *Candida*, a yeast-like fungus, are the fourth most common cause of hospital-induced bloodstream infections in the United States. This is a serious problem, since the infection can then spread to critical organs, perhaps leading to organ failure and death. Hospitalized children with central venous

catheters in place who have a *Candida* infection lasting more than 3 days or who have suppressed immune systems are three times as likely as other children to develop bloodstream infection with *Candida* that affects internal organs, according to a study supported in part by the Agency for

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## **Candida infections**

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Healthcare Research and Quality (HS10399).

To determine the risk factors for bloodstream infection with *Candida* (candidemia) spreading to internal organs (disseminated candidiasis), the researchers compared characteristics of hospitalized children with candidemia determined from hospital laboratory records from 1998 through 2001, whose infections spread or did not spread to internal organs. Of the 168 children with *Candida* bloodstream infections

identified, 10 children had recurrent bloodstream infections. Of the 153 children included in the analysis of risk factors for disseminated candidiasis, 17 percent had evidence of probable disseminated candidiasis.

More than 3 days of positive blood cultures for *Candida* in children with a central venous catheter in place and immunosuppression both tripled the likelihood of organs becoming infected. Common organs affected included the lung (58 percent), liver (23 percent), kidney (16 percent), brain (12 percent), spleen (8 percent), eye (8 percent), and heart

(8 percent). Nearly one-third (31 percent) of the children had more than one organ affected. The researchers call for future studies to determine the extent of evaluation needed for detecting dissemination among children with candidemia and to explore interventions for its prevention.

See "Risk factors for disseminated candidiasis in children with candidemia," by Theoklis E. Zaoutis, M.D., H. Mollie Greves, M.D., Ebbing Lautenbach, M.D., M.P.H., M.S.C.E., and others, in the July 2004 *Pediatric Infectious Disease Journal* 23(7), pp. 635-641. ■

## **Instruments that measure the health status of children need to account for the impact of race, ethnicity, and income on health**

**A**lthough much has been accomplished in advancing health status measures for children, the next challenge is to include the influence of race, ethnicity, and income on health and health reports. In a study supported in part by the Agency for Healthcare Research and Quality (HS12078 and K08 HS00008), Marielena Lara, M.D., Ph.D., of RAND Health, and her colleagues reviewed commonly used U.S. measures of children's health status and quality of life to assess how they have included low-income and racial/ethnic minority groups. They examined four generic and two condition-specific instruments: the Child Health and Illness Profile-Adolescent Edition, Child Health Questionnaire Parent Form, Functional Status Measure and FSIIR, Pediatric Quality of Life Inventory, Pediatric Asthma Quality of Life Questionnaire, and Children's Health Survey for Asthma.

Most of these measures included some minority groups in the development and testing of the instruments. However, no measure currently has enough information to confirm its comparability across cultures,

economic background, and language. Most measures have included minority groups, usually black or Hispanic children, but there is little information by Hispanic subgroups, which can differ in health risks and profile.

Children's measures have generally been tested in relatively small samples and without separate analyses by subgroups. When done, tests of reliability and validity find few differences between these groups and the general population. Some studies report information on health by racial or ethnic group, but the findings are inconclusive. Economic status is usually measured in some way, but rarely are psychometric findings examined separately by income. When differences in health outcomes are reported by income, lower income children usually have poorer health.

See "Measuring health status and quality of life for U.S. children: Relationship to race, ethnicity, and income status," by Lynn M. Olson, Ph.D., Dr. Lara, and Mary Pat Frintner, M.S.P.H., in the July 2004 *Ambulatory Pediatrics* 4, pp. 377-386. ■

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### Doctors can use conversational techniques during an illness visit to create an opportunity to deliver preventive care

Delivery of preventive care is low. Only 55 percent of patients are up-to-date with age-appropriate screening tests, less than 25 percent are up-to-date with immunizations, and less than 10 percent are receiving counseling about health habits such as smoking and diet. Most patients see doctors for acute or chronic care rather than preventive care. However, doctors can take advantage of these illness visits to deliver preventive care, suggests a study supported by the Agency for Healthcare Research and Quality (HS08776).

Researchers at the University of Medicine and Dentistry of New Jersey analyzed conversational techniques used by 53 primary care clinicians during 1,620 patient encounters at 18 family practices to deliver four preventive services during illness visits. These services included smoking cessation counseling, immunizations, mammography, and cervical cancer screening.

In the majority of cases, doctors did not deliver preventive care during illness visits. In 17 percent of illness visits, clinicians delivered at least one preventive service. Analysis of these cases led to

identification of two routine strategies used by clinicians to initiate a discussion about prevention during illness visits. Some doctors used the close of the medical encounter to make arrangements for followup preventive care or give reminders about immunizations or screening tests (used for 0.23 to 6.38 percent of eligible patients).

Others took several steps during the conversation to switch from talk about the patient's presenting problem and to offer advice about relevant health habits (used for 1.33 to 7.63 percent of eligible patients). Individuals treated by clinicians who used these techniques to deliver preventive care during illness visits were more likely to receive smoking cessation counseling and be up to date on cervical cancer screening than patients seen by clinicians who did not use them.

See "Opportunistic approaches for delivering preventive care in illness visits," by Deborah Cohen, Ph.D., Barbara DiCicco-Bloom, Ph.D., R.N., Pamela Ohman Strickland, Ph.D., and others, in *Preventive Medicine* 38, pp. 565-573, 2004. ■

## Outcomes/Effectiveness Research

### Higher volume in trauma centers does not necessarily correlate with improved survival of trauma victims

The American College of Surgeons defines a minimum volume of trauma victims a hospital must treat in order to qualify as a level 1 or level 2 trauma center. However, higher trauma center volumes do not necessarily improve survival, according to a study supported by the Agency for Healthcare Research and Quality (K08 HS11295).

The researchers found no significant association between trauma center volume and mortality for major blunt and

penetrating trauma, after adjusting for severity of injury. The volume criteria established by the American College of Surgeons for level 1 trauma centers may need to be reexamined, and the use of other process and system characteristics as the basis for trauma center designation should be considered, suggests Laurent G. Glance, M.D., of the University of Rochester Medical Center.

Dr. Glance and colleagues analyzed the volume-outcome relation for adults listed in the National Trauma Databank with a

severe injury (injury severity score or ISS of 15 or more), who sustained either blunt trauma (6,274 patients) or penetrating trauma (1,097 patients). The researchers examined in-hospital survival of each group as a function of trauma center volume. After excluding patients from one outlier center, there was no association between trauma volume and outcome for blunt trauma.

A separate analysis of patients with penetrating trauma also did not show a significant volume-

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## Trauma centers

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mortality association. Overall, 17.8 percent of patients died at trauma centers that treated less than 140 blunt trauma victims with ISS scores of 15 or more during 1999 compared with 16.6 percent in hospitals that treated 140-261

patients, 19.6 percent in hospitals that treated 262-462 patients, and 17.1 percent in hospitals that treated more than 462 patients that year; corresponding percentages of patients who died of penetrating trauma were 42.9 percent, 45 percent, 37.8 percent, and 38 percent.

See “The relation between trauma center outcome and volume in the National Trauma Databank,” by Dr. Glance, Turner M. Osler, M.D., F.A.C.S., Andrew Dick, Ph.D., and Dana Mukamel, Ph.D., in the March 2004 *Journal of Trauma Injury, Infection, and Critical Care* 56, pp. 682-690. ■

## Short-term symptoms of urinary or other dysfunction after brachytherapy for prostate cancer may indicate long-term outcomes

Concerns about treatment-related damage to urinary, bowel, and sexual function influence many men's choice of surgery or radiation treatment for early prostate cancer. However, many of these problems can't be evaluated until years after treatment.

Evidence shows that functional changes continue for 2 or more years after radiation and may not be clearly evident for 5 or more years. The manifestation of urinary incontinence after brachytherapy (radioactive seed implants), for example, appears to be particularly delayed. Radiation dose plausibly mediates both early and late treatment-related urinary toxicity. Short-term symptoms following brachytherapy may signal long-term outcomes, according to a study supported by the Agency for Healthcare Research and Quality (HS08208) and led by principal investigator James A. Talcott, M.D., S.M., of Harvard Medical School.

To examine whether magnetic resonance imaging-guided brachytherapy (MB) results in fewer problems than standard ultrasound-guided brachytherapy (SB), the researchers assessed changes in urinary, bowel, and sexual symptoms among 63 men who received MB and 22 who received SB, using their responses to a questionnaire administered before treatment and 3 months after treatment. Prior to treatment, most men had few urinary incontinence or bowel problems.

The men who received MB, a technique intended to decrease urinary toxicity by reducing urethral irradiation, had a slight increase in urinary obstruction/irritation symptoms and sexual function distress, but not sexual dysfunction. The men who received SB reported a smaller increase in bowel symptoms and bowel distress than MB patients. After 3 months, symptoms of incontinence and related distress increased only slightly and did not differ between the two groups. However, bowel symptoms increased more in the MB group, with an accompanying greater increase in bowel distress. Whether these short-term changes predict long-term outcome differences in the two treatments will require much longer followup. However, these results suggest that measuring early symptoms following brachytherapy may indicate whether an altered brachytherapy treatment technique has intended favorable consequences, potentially accelerating technology assessment.

See “Assessing a prostate cancer brachytherapy technique using early patient-reported symptoms: A potential early indicator for technology assessment?” by Pearl H. Seo, M.D., Anthony V. D'Amico, M.D., Ph.D., Jack A. Clark, Ph.D., and others, in the June 2004 *Clinical Prostate Cancer* 3(1), pp. 38-42. ■

**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.

## Doubling of PSA blood levels after prostate cancer treatment is linked with an increased risk of death from prostate cancer

An increase in levels of prostate specific antigen (PSA) in the blood following treatment for localized prostate cancer with surgery or radiation often indicates the presence of residual cancer and the eventual development of metastatic cancer. A new study quantifies the risk of dying of prostate cancer with levels of increased PSA following treatment for localized prostate cancer.

The researchers calculated that men treated for localized prostate cancer (either surgery or radiation) whose PSA levels double more frequently than every year are at increased risk of dying of prostate cancer within 10 years of diagnosis. By plotting PSA values over time on a log-linear scale, patients and their doctors should be able to predict the likelihood of recurrent

prostate cancer, suggests Peter C. Albertsen, M.D., of the University of Connecticut Health Center.

In a study supported in part by the Agency for Healthcare Research and Quality (HS09578), Dr. Albertsen and his colleagues examined the association between posttreatment PSA levels and the risk of dying from prostate cancer in a group of 1,136 men diagnosed with localized prostate cancer between 1990 and 1992. The men had been treated with surgery or radiation with or without androgen withdrawal therapy. PSA recurrence followed a log-linear pattern over time. Patients who died of prostate cancer within 10 years of diagnosis had a median PSA doubling time of 0.8 years (indicating an aggressive cancer), while those who had not died either had no posttreatment increase in serum PSA (40 percent

of men studied) or had a PSA doubling time longer than 1 year (44 percent). PSA doubling times were independent of treatment type.

This study confirms that PSA doubling times are correlated with diagnostic tumor stage and grade, but they do not appear to be correlated with patient age at diagnosis. Prostate cancers in older men appear to progress at the same rate as in younger men.

See “Validation of increasing prostate specific antigen as a predictor of prostate cancer death after treatment of localized prostate cancer with surgery or radiation,” by Dr. Albertsen, James A. Hanley, Ph.D., David F. Penson, M.D., and Judith Fine, in the June 2004 *Journal of Urology* 171, pp. 2221-2225. ■

## Researchers examine use of emergency care and depression-related disability among adults with diabetes

Diabetes has been diagnosed in 12.1 million people in the United States, and it results in nearly 82,000 lower extremity amputations each year. Diabetes is the six leading cause of death and a significant cause of disability, and it accounts for about \$132 billion in U.S. health care expenditures.

Two new studies supported by the Agency for Healthcare Research and Quality (K08 HS11418), led by Leonard E. Egede, M.D., M.S., of the Medical University of South Carolina, found that adults with diabetes don't use the emergency department (ED) significantly more often than those without diabetes, and that people with

diabetes who are also depressed miss more work due to their conditions than those with either condition alone. Both studies, which are summarized here, involved analysis of data from the 1999 National Health Interview Survey, a nationally representative household survey of U.S. adults aged 18 or older.

**Egede, L.E. (2004, July). “Patterns and correlates of emergency department use by individuals with diabetes.” *Diabetes Care* 27(7), pp. 1748-1750.**

This study found that adults with diabetes used the ED more in 1 year than adults without diabetes: one visit (16 vs. 12 percent), two to

three visits (8 vs. 4 percent), and four or more visits (3 vs. 1 percent). However, after controlling for factors known to affect ED use—such as age, having a regular source of care, and health status—the odds of ED use were not significantly different between people with and without diabetes (odds ratio, OR 0.92; 1 is equal odds), suggesting that prevalence estimates alone can be misleading.

Among individuals with diabetes, there were differences in factors associated with single and multiple visits to the ED. For example, diabetes patients who perceived worsening health or had three or more coexisting chronic

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## Diabetes studies

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conditions in addition to diabetes were nearly twice as likely to use the ED one time (ORs 1.66 and 1.56, respectively), and those aged 18-34 years were more than twice as likely to do so (OR 2.35). Correlates of multiple ED use included age 18-34 years (OR 8.69), unemployment (OR 2.33), having a usual source of care (OR 8.45), perceived worsening of health (OR 2.77), having three or more chronic coexisting conditions (OR 3.04), and having diabetes-related complications (OR 2.11).

**Egede, L.E. (2004, July). "Effects of depression on work loss and disability bed days in individuals**

**with diabetes." *Diabetes Care* 27(7), pp. 1751-1753.**

From 10 to 30 percent of adults who have diabetes also suffer from depression. Coexisting depression in adult diabetes patients is associated with more days spent in bed for a half day or longer (disability bed days), especially among the unemployed, as well as increased odds of missing work for a week or longer, according to this study. Compared with individuals who did not have diabetes or depression, those with both conditions were 3.25 times as likely to miss a week or more of work. Individuals who had depression alone were 3.08 times as likely to miss a week or more of work, and those with diabetes alone were 1.5 times as likely to miss work.

Similar results were seen for odds of extended disability bed days. People with diabetes were 1.63 times as likely to spend a half day or more in bed for a week or longer, depressed patients were 4 times as likely to do so, and those with both conditions were 5.61 times as likely to spend a week or longer in bed as other individuals.

The results of this study build on findings of an earlier study by this investigator which showed that coexisting depression boosted the likelihood of functional disability in diabetes patients. In combination, these studies demonstrate that coexisting depression among people with diabetes is associated with increased disability burden and lost productivity. ■

## Parents are willing to travel to distant hospitals to achieve a better outcome following pediatric cardiac surgery

In a recent study, researchers examined the decisionmaking strategy that a parent might use to assess the trade-off between the chance for a better surgical outcome and the need to travel further to a regional referral hospital. Using a hypothetical scenario, they found that parents are willing to travel 2 hours further to specialized cardiac regional hospitals to reduce their child's risk of dying from cardiac surgery by 1 percent.

In a previous study by the same researchers, Ruey-Kang R. Chang, M.D., M.P.H., of the University of California-Los Angeles, and colleagues found that when all pediatric cardiac surgeries in California were theoretically regionalized to five hospitals that performed a high volume of such surgeries, the overall mortality rate could be reduced from 5.3 to 4.1 percent. However, this regionalization scheme increased the average travel time of children who were transferred by about 2 hours. In the new study, the researchers found that nearly two-thirds (63.1 percent) of parents were willing to travel for an extra 2 hours to a referral hospital to reduce the risk of mortality from 4 to 3 percent.

When the regional referral hospital was set at a 2-hour driving distance and a 3 percent mortality rate was equal for the regional and local hospitals, 82.5 percent of parents chose to have their child's surgery at the

local hospital. However, the percentage of parents who chose to have their children remain at the local hospital dropped dramatically to 36.9 percent when the mortality rate for the local hospital increased to 4 percent and to 19.4 percent when the mortality rate rose to 6 percent.

On the other hand, about 5 to 10 percent more parents were willing to stay at the local hospital at each mortality rate when the travel time to the referral hospital increased from 2 to 4 hours. The parent's age, sex, insurance status, education, and availability of personal transportation were not associated with their decisions. The study was supported in part by the Agency for Healthcare Research and Quality (HS13217). The findings are based on interviews with 103 parents or adult primary caregivers of children referred to a pediatric cardiology clinic. Those interviewed were presented with hypothetical scenarios in which they or their children had a heart condition requiring elective surgery, which would be performed either at a local or a regional referral hospital.

See "Parental preference regarding hospitals for children undergoing surgery: A trade-off between travel distance and potential outcome improvement," by Dr. Chang, James J. Joyce, M.D., Julia Castillo, M.D., and others, in the July 2004 *Canadian Journal of Cardiology* 20(9), pp. 877-882. ■



## Computerized information systems prompt monitoring tests and medication adjustment that can improve diabetes care and outcomes

Computerized information management systems are becoming a vital component of quality diabetes care. For instance, they can prompt doctors to conduct recommended diabetes care monitoring tests such as eye and foot checks. They can enhance patient self-management of diabetes, for example, via use of pocket-size insulin dosage computers. Use of such systems can improve diabetes-related outcomes, according to a recent systematic review of randomized clinical trials of computer-assisted interventions in diabetes care. The review was supported in part by the Agency for Healthcare Research and Quality (HS10472).

E. Andrew Balas, M.D., Ph.D., of St. Louis University, and his colleagues grouped 40 eligible studies into three categories: computerized prompting of

diabetes care, use of home glucose records in computer-assisted insulin dose adjustment, and computer-assisted diabetes patient education. They found that computerized systems significantly improved patients' glycated hemoglobin (measure of overall blood sugar control over the past 2 to 3 months) and blood glucose levels (measured at the time of the test) in seven and six trials, respectively. Computerized prompting substantially improved physician compliance with diabetes care guidelines in six of eight studies. Overall compliance with recommended diabetes care procedures, for example, eye and foot examinations and blood-sugar measurements, was 71 to 227 percent higher among doctors prompted by computer systems to perform the procedures compared

with doctors who did not receive the prompts.

Three of four pocket-sized insulin dosage computers reduced hypoglycemic events (abnormally low blood sugar levels that can lead to convulsions or coma) and insulin doses. Meta-analysis of studies using home glucose records in insulin dose adjustment (patients collected and transmitted the data electronically) documented a mean decrease in glycated hemoglobin of 1.4 mmol/L and a decrease in blood glucose of .33 mmol/L. Several computerized educational programs improved diet and metabolic indicators of diabetes control.

See "Computerized knowledge management in diabetes care," by Dr. Balas, Santosh Krishna, Ph.D., Rainer A. Kretschmer, M.D., and others, in the June 2004 *Medical Care* 42(6), pp. 610-621. ■

### *Pharmaceutical Research*

## Potentially inappropriate drugs are commonly prescribed for elderly outpatients

In 1999, one in five (21 percent) of elderly individuals filled a prescription for a drug that in general should be avoided in patients aged 65 and older. In addition, nearly half (44 percent) of these prescriptions were for drugs that carry a substantial risk of adverse effects in elderly patients, according to a study supported by the Agency for Healthcare Research and Quality through the Centers for Education and Research on Therapeutics (HS10385) program. The researchers used an outpatient prescription claims database to identify prescriptions filled for commercially insured patients aged 65 and older in 1999.

More than 15 percent of the patients filled prescriptions for two drugs of concern, and 4 percent

filled prescriptions for three or more drugs of concern within the same year. Nearly 28 percent of the patients filled a prescription for a psychotropic drug (16 percent filled at least one prescription for the antidepressant, amitriptyline), and 5 percent filled a prescription for a neuromuscular agent (of these, 14 percent filled a prescription for cyclobenzaprine). Both of these drug classes are considered problematic for use in elderly patients.

To improve drug prescribing for the elderly, the researchers suggest that clinical trials should be designed to encourage enrollment of elderly patients, use of pharmaceutical claims databases for identifying patients with claims for drugs of concern, and

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## Inappropriate prescribing

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monitoring problems over time to quantify the hazards associated with use of these drugs in older patients. They also encourage use of systems and technologies that support optimal prescribing behavior, such as

computerized physician order entry with decision support and personal digital assistants.

See "Inappropriate prescribing for elderly Americans in a large outpatient population," by Lesley H. Curtis, Ph.D., Truls Ostbye, M.D., Ph.D., Veronica Sendersky, Pharm.D., and others, in the August 2004 *Archives of Internal Medicine* 154, pp. 1621-1625. ■

## More effective and convenient medications for osteoporosis have increased recognition and treatment of the disease

In 2000, the prevalence of osteoporosis in the United States was estimated to be 10 percent. Most patients with osteoporosis are women (91 to 96 percent) who are 65 years of age or older (70 to 80 percent). More effective and convenient antiosteoporosis medications (AOMs) boosted patient visits to the doctor for osteoporosis four-fold between 1994 (1.3 million visits) and 2003 (6.3 million visits). In addition, the proportion of visits in which AOMs were prescribed increased 15 percent from 1988 (82 percent) to 2003 (97 percent), according to a study supported by the Agency for Healthcare Research and Quality (HS13405).

The largest annual increases (76 percent and 46 percent, respectively) in osteoporosis visits occurred in 1996 and 1998. This coincided with market approval of the first oral daily bisphosphonate, alendronate (Fosamax) in September 1995 and the selective estrogen receptor modulator, raloxifene (Evista), in December 1997 to treat osteoporosis. In 1988 bisphosphonates were prescribed in 1 percent of osteoporosis visits, but by 2003, they were prescribed

during 73 percent of visits. This suggests that doctors rapidly adopted use of the new medications to treat osteoporosis, notes Randall S. Stafford, M.D., Ph.D., of Stanford University. Prior to 1994, estrogen and calcium were the leading choices for osteoporosis therapy, with lesser roles for calcitonins and bisphosphonates.

In conclusion, Dr. Stafford notes that treatment of osteoporosis has improved in recent years in association with the availability of new medications. This finding suggests that new drug therapy has contributed to increased disease recognition and treatment. The study findings are based on an analysis of national prescribing patterns by office-based U.S. physicians from the IMS HEALTH National Disease and Therapeutic Index.

See "National trends in osteoporosis visits and osteoporosis treatment, 1988-2003," by Dr. Stafford, Rebecca L. Drieling, B.A., and Adam L. Hersh, M.D., Ph.D., in the July 26, 2004 *Archives of Internal Medicine* 164, pp. 1525-1530. ■

## Health Care Delivery

### Use of mechanical ventilation in adult noncardiac surgery patients increased in Ontario during the 1990s

In Ontario, Canada, during the 1990s, there was a small but important increase in the number of noncardiac surgery adult patients on mechanical ventilation, according to a recent study. The study, which was supported in part by the Agency for Healthcare Research and Quality (HS11902), also found an increase in the

mortality rate among these patients over the same period. For the study, Peter J. Pronovost, M.D., Ph.D., of Johns Hopkins University, and his colleagues from the University of Toronto and the Institute for Clinical Evaluative Sciences in Toronto, analyzed administrative data on 150,755 patients who received mechanical ventilation at

hospitals in Ontario, Canada, between 1992 and 2000.

The researchers examined incidence of mechanical ventilation, 30-day patient mortality rate, and number of mechanical ventilation days and inpatient days. During this period,

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## Mechanical ventilator

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the age- and sex-adjusted incidence of mechanical ventilation increased 9 percent and 2 percent, respectively, to 217 per 100,000 adults. The number of mechanical ventilation days and proportion of mechanically ventilated days to total inpatient bed days increased 69 percent and 30 percent, respectively, to 1.8 percent and 6.2 percent. The proportion of patients

who died within 1 month of beginning mechanical ventilation increased from 27 to 32 percent. Significant predictors of 30-day mortality were calendar year, age over 80 years, having three or more coexisting illnesses, and specific diagnosis. The increase, over time, in the risk-adjusted mortality rate of mechanically ventilated patients is concerning and requires further investigation, notes Dr. Pronovost. In conclusion, he notes that as the population ages, identifying trends

in use of mechanical ventilation and other intensive care unit resources will be critical in planning future health care resources.

See “Mechanical ventilation in Ontario, 1992-2000: Incidence, survival, and hospital bed utilization of noncardiac surgery adult patients,” by Dale M. Needham, M.A.C.C., C.A., M.D., Susan E. Bronskill, Ph.D., William, J. Sibbald, M.D., and others, in *Critical Care Medicine* 32(7), pp. 1504-1509, 2004. ■

## Testing for hypercoagulable disorders in patients with deep vein thrombosis followed by 2 years of anticoagulation is cost effective

**H**ypercoagulable disorders, which cause abnormal blood thickening, include antiphospholipid antibody syndrome and factor V Leiden mutation. Among patients with deep vein thrombosis (a blood clot that develops in a deep vein, usually in the leg), hypercoagulable conditions raise a substantial risk of recurrent blood clots (thrombosis). A recent study found that testing for hypercoagulable disorders in patients with deep vein thrombosis followed by 2 years of anticoagulation therapy in affected patients is cost effective. The study was supported by the Agency for Healthcare Research and Quality (K08 HS11416).

Andrew D. Auerbach, M.D., M.P.H., of the University of California, San Francisco, and his colleagues performed a cost-effectiveness analysis using a model that simulated transitions between several coagulation-related health states (for example, recurrent thrombosis or bleeding complications due to anticoagulation therapy). They compared strategies of testing or not testing for a hypercoagulable state followed by anticoagulation therapy for 6 to 36 months in a hypothetical group of patients with deep vein thrombosis (of unknown cause) who were followed for life.

Testing followed by 24 months of anticoagulation in patients with a hypercoagulable condition was more cost effective (\$54,820; 23.76 quality-adjusted life years, QALYs) than usual care, which involved 6 months of anticoagulation without testing (\$55,260; 23.72 QALYs). All hypercoagulable conditions were common enough and associated with a sufficient risk of clot recurrence to justify inclusion in a test panel. An initial period of 2 years of anticoagulation was preferred (less than \$50,000/QALY) for most conditions, whereas lifetime anticoagulation was preferred for patients with antiphospholipid antibody syndrome (\$2,928/QALY) or homozygous factor V Leiden mutation (\$3,804/QALY). Models using newer evidence on recurrence suggested forgoing testing and instead anticoagulating all patients for 18 months or longer when clot recurrence rates remained high in the 3 years following initial thrombosis.

See “Cost-effectiveness of testing for hypercoagulability and effects on treatment strategies in patients with deep vein thrombosis,” by Dr. Auerbach, Gillian D. Sanders, Ph.D., and Julie Hambleton, M.D., in the June 15, 2004 *American Journal of Medicine* 116, pp. 816-828. ■

## Participants in a community-based mind-body training program report moderate improvements in quality of life after 3 months

**P**opular interest in yoga and other mind-body practices is strong, but few data exist on the health effects of these practices. A recent study of a community-based mind-body training program found that participants had

significantly improved quality of life after 3 months of training. The program, dahn-hak, originated in South Korea, and shares elements of hatha yoga (stretching, postures) and qigong (energy cultivation).

In the study, which was supported by the Agency for Healthcare Research and Quality (T32 HS00066), researchers from the Weill Medical College of

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## Community-based mind-body training

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Cornell University assessed the quality of life of 171 individuals at the start of 10 dahn-hak classes at one of eight community centers and again 3 months later. They examined participants' responses to the Medical Outcomes Study SF-36 general health questionnaire.

The goal of dahn-hak is to learn how to harness the body's energy to control one's mind and body. Training in dahn-hak typically consists of a 1-hour class two or three times per week. The class begins with stretching exercises,

which increase flexibility in the large muscle groups and shoulders, neck, hips, back, and knees. In the second phase, postures are held for "energy accumulation" followed by a 5- to 10-minute period of meditation intended to facilitate "energy awareness." The class concludes with a repetition of the large muscle group stretches.

Before starting the classes, the participants reported lower scores than U.S. norms for seven of eight domains of the SF-36: mental health, emotional role, social function, vitality, general health, body pain, and physical role. After 3 months of training, patient scores

improved in all domains, including an increase of 15.5 in the score for mental health domain. On average, class participants reported fewer depressive symptoms, less anxiety, and greater self-efficacy than they reported prior to taking the classes. Future studies are needed to determine if the observed benefits are transient or enduring.

Details are in "Prospective study of new participants in a community-based mind-body training program," by Sung W. Lee, M.D., M.Sc., Carol A. Mancuso, M.D., and Mary E. Charlson, M.D., in the July 2004 *Journal of General Internal Medicine* 19, pp. 760-765. ■

## Quality/Patient Safety

### Very little of the variation in quality of diabetes care is explained by practice factors

Physician practice management strategies and financial arrangements have very little impact on quality of diabetes care, according to a study supported by the Agency for Healthcare Research and Quality (HS09936). This suggests that other approaches may be needed for health care organizations to improve the quality of diabetes care, says Nancy L. Keating, M.D., M.P.H., of Harvard Medical School.

Dr. Keating and her colleagues studied medical records of 652 adult diabetes patients in three Minnesota health plans. They also surveyed 399 physicians in 135 practices who cared for these patients in order to correlate practice characteristics with diabetes quality of care indicators (for example, tests for blood-sugar level, cholesterol level, and blood pressure and assessments of diabetes-related eye, kidney, and foot problems).

Overall, 12 percent of physicians used a computerized medical record, about 65 percent had been provided with practice guidelines related to diabetes, 45 percent were paid by salary that depended on the performance of the physician or group, and 49 percent received incentive payments or bonuses. Also,

26 percent of physicians were dissatisfied with their overall career in medicine. Only 5 percent of the variation in quality could be attributed to these practice characteristics.

Quality of care scores were higher among patients whose physicians received quality performance reports from two or more sources (versus none), received diabetes-specific performance reports, and routinely enrolled patients with diabetes in disease management programs. Quality scores were lower for patients of dissatisfied physicians and for patients whose physicians were required to serve as a gatekeeper (authorize referrals, hospitalizations, and other services) for more than half of their patients and were paid according to fee-for-service arrangements (versus being paid a set salary), but the score differences were small.

See "The influence of physicians' practice management strategies and financial arrangements on quality of care among patients with diabetes," by Dr. Keating, Mary Beth Landrum, Ph.D., Bruce E. Landon, M.D., M.B.A., and others, in the September 2004 *Medical Care* 42(9), pp. 829-839. ■

## Daily visit volume is similar for dying patients receiving hospice care in nursing homes and in the community

The average number of daily hospice visits to dying patients is similar, whether the patients are in nursing homes (NHs) or other settings. However, the mix of services varies, according to a recent study supported in part by the Agency for Healthcare Research and Quality (HS11004). For example, compared with non-NH patients, NH patients had a 41 percent lower probability of having a nurse average daily visit volume above the median, but they were two to three times as likely to have social worker, aide, and clergy average daily visits above the median.

This different mix of services—but not overall volume of hospice services—appears to be used to address the differing patient/family physical, psychosocial, and spiritual needs in these two settings. Based on these findings,

differential Medicare hospice payments in NH and non-NH sites of care do not appear to be warranted, concludes Susan C. Miller, Ph.D., of the Brown University School of Medicine. She retrospectively studied data from 21 hospices owned by the same provider across seven States. The data used to examine the association between site of care and probability of daily hospice visits covered 9,460 NH hospice patients and 15,484 non-NH hospice patients.

Overall, the average daily visit volume was 1.2; the mean was 1.1 (standard deviation [SD] 1.3) in NHs and 1.2 (SD 1.1) in non-NH settings. Considering all patients, the medians of average daily visit volumes were 0.8 for all visits, 0.4 for nursing, 0.2 for aide, 0.03 for social worker, 0.02 for clergy, and 0 for physician visits. Being cared

for in a NH was associated with a slightly greater (although not statistically significant) likelihood of having an average daily visit volume above the sample's median. In both settings, the likelihood of having average daily visits above the median increased dramatically when hospice lengths of stay were short. For example, compared with hospice stays between 31 and 180 days, having a hospice stay of 1-7 days in either care setting was associated with an over 20 times greater likelihood of receiving average daily visits above the sample median.

See "Hospice care in nursing homes: Is site of care associated with visit volume?" by Dr. Miller, in the August 2004 *Journal of the American Geriatrics Society* 52, pp. 1331-1336. ■

## Extended work shifts, common among nurses, substantially increases the likelihood of medical errors

With no State or Federal regulations restricting the number of hours a nurse may work in 24 hours or in a 7-day period, hospitals have extended nurses' work shifts and overtime to cope with the shortage of registered nurses (RNs). In many cases, nurses work a shift lasting longer than 12 hours, which triples the likelihood of medical error, according to a study supported by the Agency for Healthcare Research and Quality (HS11963). Logbooks completed in 2002 by a random nationwide sample of 393 hospital staff nurses over a 4-week period revealed that 80 percent of the time nurses worked longer shifts than scheduled, nearly 40 percent of the 5,317 work shifts they logged exceeded 12 hours, and half of them exceeded 10.5 hours.

The nurses used the logbooks to collect information about hours worked (both scheduled and actual hours), time of day worked, overtime, days off, and sleep/wake patterns, as well as information about medical errors and near errors. The logbooks also showed that 14 percent of nurses worked 16 or more consecutive hours (double shifts) at least once during the 4-week period. The

longest shift worked was nearly 24 hours. Nurses left work at the end of their scheduled shift less than 20 percent of the time. They worked, on average, 55 minutes longer than scheduled each day, and one-quarter of the nurses worked more than 50 hours per week for 2 or more weeks of the 4-week period.

These long hours increase the likelihood of medical errors, notes Anne E. Rogers, Ph.D., R.N., F.A.A.N., of the University of Pennsylvania School of Nursing. The likelihood of making an error was more than three times as high when nurses worked shifts lasting 12.5 hours or more. Working overtime doubled the odds of making at least one error, regardless of how long the shift was originally scheduled. Finally, working more than 40 hours per week significantly increased the risk of making an error or near error.

See "The working hours of hospital staff nurses and patient safety," by Dr. Rogers, Wei-Ting Hwang, Ph.D., Linda D. Scott, Ph.D., R.N., and others, in the July/August 2004 *Health Affairs* 23(4), pp. 203-212. ■

## Physicians say they favor disclosure of medical errors to patients and families, but disclosure often does not occur

Ethical and professional guidelines make clear that physicians have a responsibility to disclose medical errors. Although physicians agree that patients should be informed about medical errors, many do not disclose errors to patients, according to a recent review of studies on the topic. The review was supported in part by the Agency for Healthcare Research and Quality through the Centers for Education and Research on Therapeutics program (HS10391 and HS11843). The researchers examined in detail the results of studies described in 17 articles that were culled from over 800 articles reviewed on the disclosure of medical errors to patients and families.

In one survey of U.S. physicians, 77 percent responded that physicians should be required to

tell patients when errors are made in their care. Focus group discussions found patients were unanimous in their desire to be told about any error that caused harm. Yet, in a recent national survey, only one-third of those who had experienced an error in their care or the care provided to a family member had been told of the error by the health care professional involved. In another study describing a vignette of a medication error that resulted in death, only half of physicians indicated that they would admit the error.

In response to a national survey, hospital risk managers reported that the most common elements of the disclosure process were explanations (92 percent), an undertaking to investigate the incident (87 percent), an apology (68 percent), and an

acknowledgment of harm (66 percent). Less frequently reported were offering to share the results of the investigation (41 percent) and assuming responsibility for harm (33 percent). Physician fear of litigation is a significant obstacle to disclosure. In addition, physicians may anticipate patient distress, loss of patients, damage to their reputation, license revocation, loss of privileges, and other consequences. There is scant evidence on the positive and/or negative outcomes of medical error disclosure.

Details are in "Communicating with patients about medical errors," by Kathleen M. Mazor, Ed.D., Steven R. Simon, M.D., and Jerry H. Gurwitz, M.D., in the August 2004 *Archives of Internal Medicine* 164, pp. 1690-1697. ■

## Mental Health

### Cognitive testing can indicate when patients with Alzheimer's disease may lose the ability to make medical decisions

Although patients with mild-stage Alzheimer's disease (AD) are impaired in certain areas of cognition such as verbal recall, semantic memory, and conceptualization, they generally are still involved in making medical decisions. However, over time, someone else, usually a family member, has to make decisions for them. A new study uses point changes in a cognitive functioning measure to define when that change is necessary.

In a study supported in part by the Agency for Healthcare Research and Quality (K08 HS00002), Chris Feudtner, M.D., Ph.D., M.P.H., of the University of Pennsylvania, and colleagues prospectively studied 77 AD patient-caregiver dyads to examine the factors that influence when AD patients lose their ability to make medical decisions.

The researchers assessed dementia severity using the 22-item Mini-Mental State Examination (MMSE, score range 0-30).

Usually, a score of 20 or higher indicates mild dementia, moderate dementia 12-19, and severe dementia less than 12. They also asked caregivers to rate the level and severity of caregiver burden they experienced in the past 2 weeks.

At the final clinic visit, 59 percent of mild-stage patients were still involved in making medical decisions, whereas only 31 percent of moderate-stage patients were involved, and only 5 percent of

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## Alzheimer's disease

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severe-stage patients continued to be involved. Also, older patient age and mounting caregiver burden were significant independent predictors of transition to caregiver-dominated medical

decisions. These results provide clinicians with prognostic information that can help caregivers understand how their role in decision making will change over the course of an AD patients' illness.

Details are in "How does an Alzheimer's disease patient's role in

medical decision making change over time?" by Karen B. Hirschman, Ph.D., M.S.W., Sharon X. Xie, Ph.D., Dr. Feudtner, and Jason H. Karlawish, M.D., in the June 2004 *Journal of Geriatric Psychiatry and Neurology* 17(2), pp. 55-60. ■

## Latinos benefit more than whites from psychotherapy-based quality improvement for depression, and they have lower costs for care

Latinos are less likely than whites to receive care for depression and even less likely to receive quality depression care. However, they benefit even more from improved care for depression, and enhanced resources for psychotherapy for depression was highly cost-effective for Latino patients. These are new findings from the Partners in Care (PIC) randomized controlled trial to improve care for depression in managed primary care settings. PIC is supported in part by the Agency for Healthcare Research and Quality (HS08349) and led by Kenneth Wells, M.D., M.P.H., of the University of California, Los Angeles.

The study involved 46 primary managed care clinics, 181 primary care providers, and 398 Latino and 778 white patients with current depression. The researchers compared outcomes of white and Latino patients who were randomized to usual care or to one of two interventions designed to increase the rate of effective depression treatment. One intervention was focused on medication management, (QI-Meds) and the other intervention was focused on psychotherapy (QI-Therapy). Clinicians and patients could choose the type of treatment or no treatment.

In QI-Meds, trained nurses provided followup assessments and support for adherence to antidepressant

medication for 6 to 12 months. In QI-Therapy, therapy copayments were reduced to the amount charged for primary care visits for visits to local psychotherapists who had been trained to perform cognitive behavioral therapy. QI-Therapy was highly cost effective for Latino patients, due both to very positive outcomes (fewer days burdened by depression) and to very modest costs. In contrast, QI-Meds did not improve depression burden or quality of life for Latino patients and thus was not cost effective. Relative to usual care, QI-Therapy resulted in increased days employed for white patients—more than 5 work weeks over 2 years.

The estimated cost per quality-adjusted life year (QALY) for Latinos was \$6,100 or less under QI-Therapy but \$90,000 or more for QI-Meds. Estimated costs per QALY for white patients were around \$30,000 under both interventions, within the range of other accepted medical interventions. The researchers suggest that the benefits of improved care may be particularly strong for Latino patients due to their low treatment rates under usual care.

See "Cost-effectiveness of interventions for depressed Latinos," by Michael Schoenbaum, Ph.D., Jeanne Miranda, Ph.D., Cathy Sherbourne, Ph.D., and others, in the *Journal of Mental Health Policy and Economics* 7, pp. 69-76, 2004. ■

## Health Care Costs and Financing

### Over the period 1963-2000, per person spending on health care grew most rapidly among those aged 65 and older

During the nearly 40-year period from 1963 to 2000, medical spending grew fastest among the elderly relative to the nonelderly. There was rapid growth in per person spending

among the elderly from 1963 to 1987. This trend then reversed during the next decade, reflecting Medicare reforms that reduced fees for hospital stays, physician services, and home care services,

particularly skilled nursing care, notes Chapin White, Ph.D., of the National Bureau of Economic Research in Cambridge, MA.

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## Health care spending

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In a study that was supported in part by the Agency for Healthcare Research and Quality (T32 HS00020), Dr. Chapin and his colleagues used data from five national household surveys to estimate the fraction of spending accounted for by different age groups. The surveys included the 1963 and 1970 surveys of Health Services Utilization and Expenditures and three AHRQ-sponsored surveys, the 1977 National Medical Care Utilization and Expenditure Survey, the 1987 National Medical Expenditure Survey, and the 2000 Medical Expenditure Panel Survey.

Spending for the two most costly types of services—hospital care and physician and clinical services—grew more rapidly among the elderly than among the nonelderly during 1963-1987, but it then slowed to 0.8 percent growth per year for hospital care and 1.9 percent per year for physician and clinical services during 1987 to 1996. While growth in hospital spending was slow for nonelderly and elderly age groups during 1996-2000, spending for physician and clinical services for the elderly accelerated to 5.1 percent per year compared with 2.6 percent among the nonelderly.

Home health care spending trends also differed dramatically by age and time period. Following the Balanced

Budget Act of 1997, Medicare payments to home health agencies fell dramatically, as reflected in the 12.5 percent annual decline in elderly spending on home health during 1996-2000. From 1987 to 1996, per person spending for prescription drugs grew 6.4 percent annually for the nonelderly and 6 percent annually for the elderly. This spending continued to accelerate from 1996 to 2000, growing 13.8 percent annually for the nonelderly and 10.3 percent annually for the elderly.

See “Trends in medical spending by age, 1963-2000,” by Ellen Meara, Ph.D., Dr. White, and David M. Cutler, Ph.D., in the July 2004 *Health Affairs* 23(4), pp. 176-183. ■

## CHIRI™ study finds that SCHIP benefits low-income children, and vulnerable children share in the improvements

The State Children’s Health Insurance Program (SCHIP) in three States with separate, freestanding SCHIP programs increased vulnerable and other enrollees’ access to and satisfaction with health care, according to a study from the Child Health Insurance Research Initiative (CHIRI™), funded by the Agency for Healthcare Research and Quality (HS10465, HS10536, and HS10450), The David and Lucile Packard Foundation, and the Health Resources and Services Administration. SCHIP was enacted in 1997 to provide health insurance coverage to low-income, uninsured children who lack private insurance but are ineligible for Medicaid.

Researchers in Florida, Kansas, and New York examined the impact of SCHIP on selected sub-groups of vulnerable low-income children: minorities, children and adolescents with special health care needs (CSHCN and ASHCN, respectively), and the long-term uninsured. These sub-groups represent a significant proportion of SCHIP enrollees.

The study found that among all new SCHIP enrollees, more children had a usual source of care (reaching levels as high as 98 percent in one State), had received a preventive visit (an 8 percent to 13 percent increase), and fewer children had unmet health care needs (a 12 percent to 43 percent reduction) as a result of being enrolled in SCHIP for 1 year. Families of new SCHIP enrollees were more satisfied with the health care their children received after enrollment as

compared with before SCHIP. In spite of these gains, 19 percent to 28 percent of children and adolescents did not receive a preventive care visit while enrolled in SCHIP. Furthermore, 19 percent to 23 percent of children and adolescents still had unmet health care needs.

In order to determine the impact of SCHIP on vulnerable children, researchers examined whether being black or Hispanic, having a special health care need, or being long-term uninsured made a difference in the gains experienced by SCHIP enrollees. For the most part, vulnerable children shared in most of the SCHIP gains in access and satisfaction as compared to their counterparts with a few exceptions. For instance, Hispanic children did not experience a substantial increase in preventive visits after SCHIP enrollment.

SCHIP eliminated disparities between children and adolescents who were long-term uninsured and other enrollees. Although SCHIP minimized many racial/ethnic health care disparities, some disparities remained after SCHIP enrollment. The inability of SCHIP to fully eliminate these disparities was due to insufficient improvements for black and Hispanic children in areas where white children gained. Some vulnerable children—almost one-third of CSHCN and ASHCN—had substantial unmet needs after SCHIP enrollment.

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## CHIRI™ study

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The authors conclude that many vulnerable children experienced significant improvements in access to and satisfaction with their health care after enrolling in SCHIP and suggest several areas for further improvement. Given the high success rate of increasing children's access to a usual source of care, improvements could be made in other areas of access and quality such as ensuring smooth transitions to SCHIP and new providers. There is considerable opportunity to improve preventive care use for all SCHIP enrollees, particularly Hispanic children and adolescents. Finally, strategies to reduce unmet health care needs could be implemented, including conducting needs assessments, identifying CSHCN, changing reimbursement to reflect greater needs of some enrollees, expanding benefit packages, and

arranging for wrap-around services (e.g., case management) from other programs and agencies.

More findings can be found in, "SCHIP impact in three States: How do the most vulnerable children fare?" by Andrew W. Dick, Cindy Brach, R. Andrew Allison, and others, in the September/October 2004 *Health Affairs*, 23(5):63-75. Reprints (AHRQ Publication No. 04-R066) are available from AHRQ.\*\* A CHIRI™ Issue Brief, *SCHIP's Impact on Vulnerable Children*, highlighting key findings from the study for policymakers will be available in November.

**Editor's note:** CHIRI™ provides policymakers with information to help them improve the quality of health care and access to care for low-income children. Additional CHIRI™ findings can be accessed on the CHIRI™ Web site at [www.ahrq.gov/chiri/](http://www.ahrq.gov/chiri/). ■

## Medicare drug benefits with high out-of-pocket costs might not be effective for low-income beneficiaries with chronic diseases

The Medicare Modernization Act of 2003 added a Medicare prescription drug benefit to begin in 2006, along with other changes. Prior to passage of the Act, Thomas Rector, Ph.D., and Patricia Venus, M.A., of the Center for Health Care Policy and Evaluation in Minnesota, surveyed a random sample of 1,500 elderly people with chronic diseases about their health, medication use and costs, and income. The study participants were enrolled in one of eight Medicare+Choice plans in five States in 2002. The plans had a zero-premium, \$200 to \$300 annual drug benefit, and no deductible.

Nearly one-third (32 percent) of enrollees with common chronic diseases did not fill prescriptions or

used less medication than prescribed because of the out-of-pocket costs they incurred under the small supplemental drug benefit. Significantly more enrollees stinted when the drug benefit was limited to \$200 rather than \$300. Also, enrollees who had the lowest household income were most likely to stint, according to the study, which was supported by the Agency for Healthcare Research and Quality (contract 290-00-0012).

Drug benefits with high out-of-pocket costs may not be adequate for Medicare beneficiaries who have chronic medical conditions, especially those with low incomes, conclude the researchers. Three-quarters of those surveyed reported an income of \$2,000 per month or

less, and almost one-third reported an income of less than \$1,000 per month. Nearly 40 percent rated their health as fair or poor, and each beneficiary had about five (4.7) different prescription drugs listed on pharmacy claims during the 9 months prior to the survey.

For more information, see "Do drug benefits help Medicare beneficiaries afford prescribed drugs?" by Dr. Rector and Ms. Venus, in the July 2004 *Health Affairs* 23(4), pp. 213-222. ■

## Large firms are more likely to offer health insurance plans with high quality ratings

More than 90 percent of privately insured individuals obtain their health insurance from their employer or as dependents of a family member with employer-sponsored health insurance. The good news is that large firms are more likely to offer health insurance plans with quality that is highly rated. This suggests that employers may be internalizing the preferences of their employees. It also refutes critics who say employers only care about low premiums, conclude the authors of a study that was supported in part by the Agency for Healthcare Research and Quality (HS10771).

To shed some light on the relationship between health plan performance and the plans offered by employers, the researchers combined data on HMO health plan offerings in 2000 by metropolitan statistical area (MSA) for 17 large employers with data on plan price and performance (based on the Health Plan Employer Data Information Set, HEDIS, and the Consumer Assessment of Health Plans Study

(CAHPS®). Better CAHPS and HEDIS performance were associated with greater market share. For example, a one standard deviation increase in the CAHPS ratings was associated with a 4.69 percentage point increase in market share.

The study was not designed to uncover whether employers were acting because of pressure from labor markets to offer plans with good performance or a correlation between plan performance and unobserved plan traits, such as provider networks. Employers were less likely to offer plans with high prices. They were more likely to offer plans that were more established, non-profit, and affiliated with national chains. In general, they also were more likely to offer network model plans and plans with relatively few Medicaid enrollees.

See "Quality and employers' choice of health plans," by Michael Chernew, Gautam Gowrisankaran, Catherine McLaughlin, and Teresa Gibson, in the May 2004 *Journal of Health Economics* 23, pp. 471-492. ■

### Agency News and Notes

## New grants and contracts will help improve patient safety and quality of care

In October 2004, the Agency for Healthcare Research and Quality awarded \$139 million in grants and contracts to promote the use of health information technology (HIT). This multi-year program builds on President Bush's initiative to use HIT to improve the Nation's health care system.

These awards will provide insight into how best to use health information technologies to improve patient safety by reducing medication errors; increasing the use of shared health information between providers, laboratories, pharmacies and patients; helping to ensure safer patient transitions between health care settings, including hospitals, doctors' offices, and nursing homes; and

reducing duplicative and unnecessary testing.

In addition to improving care for patients and giving health care providers additional support, health information technology has the potential to produce savings of up to 10 percent of the country's total annual spending on health care.

The \$139 million will be used in the following ways:

- **Promoting access to HIT.**

Over 100 grants to communities, hospitals, providers, and health care systems to help in all phases of the development and use of health information technology. The grants are spread across 38 States, with a special focus on small and rural hospitals and

communities. First year funding is \$41 million, and total funding will be nearly \$96 million over 3 years.

- **Developing State-wide and regional networks.** These are 5-year contracts to each of five States or their designees to help them develop State-wide networks that are secure, ensure privacy of health information, and make an individuals' health information more available to health care providers. The five States are Colorado, Indiana, Rhode Island, Tennessee, and Utah. Participants include major purchasers of health care,

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## New grants

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public and private payers, hospitals, ambulatory care facilities, home health care providers, and long-term care providers. First-year funding is \$1 million for each State; funding will total \$25 million over the course of the contracts.

- **Encouraging adoption of HIT by sharing knowledge.** The creation of the National Health Information Technology Resource Center to aid grantees and other Federal partners by providing technical assistance and a focus for collaboration, serving as a repository for best practices, and disseminating needed tools to help providers explore the adoption and use of health information technology to improve patient safety and

quality of care. The 2-year contract, which is renewable for up to 3 years, was awarded to NORC, a national organization for research at the University of Chicago. First year funding is \$4 million, with an estimated value of \$18.5 million over the course of the contract.

These awards address directly the four goals of HHS Secretary Tommy Thompson's recently announced Framework for Strategic Action, "The Decade of Health Information Technology: Delivering Consumer-centric and Information-rich Health Care," which are: informing clinical practice, fostering the use of electronic health records, electronically connecting clinicians to other clinicians so they can exchange health information using information tools to personalize

care delivery, and advancing surveillance and reporting for population health improvement. The Framework for Strategic Action was released in July, 2004 by Secretary Thompson at a Secretarial Summit on Health Information Technology that brought together many of the Nation's technology and health leaders.

President Bush in April called for electronic health records for most Americans within 10 years. An executive order provided for the establishment of the office of the "National Coordinator for Health Information Technology" and in May, Secretary Thompson appointed David J. Brailer, M.D., Ph.D., to the new position.

For specific information on each project, go to [www.ahrq.gov/research/hitfact.htm](http://www.ahrq.gov/research/hitfact.htm). ■

## New AHRQ Senior Nurse Scholar-in-Residence now on board

**S**andra R. Edwardson, Ph.D., R.N., F.A.A.N., has been selected as the sixth Senior Nurse Scholar-in-Residence at the Agency for Healthcare Research and Quality. This 1-year appointment is jointly sponsored by AHRQ and the American Academy of Nursing. Dr. Edwardson was chosen for this position from a competitive field of candidates who have demonstrated significant research, writing, publication, and teaching experience.

Dr. Edwardson will work with her colleagues at AHRQ in pursuing areas of investigation that integrate contemporary clinical nursing care questions with critical health care issues concerning quality of care, patient safety, health care costs, access to care, outcomes of care, and other related topics.

Prior to her appointment to this new position, Dr. Edwardson served as dean of the School of Nursing,

University of Minnesota, from 1990 to the present. Before that, she was a faculty member in the same institution and at St. Olaf College in Northfield, MN.

Dr. Edwardson has a background in health services research and administration. Her research has focused on alternative systems for delivering and evaluating health care and on self-care responses to medical symptoms encountered by elderly people. She is a founding board member and past officer of Minnesota International Health Volunteers. Dr. Edwardson has served as a consultant with educators in Uganda and Asia on nursing education and with U.S. and Canadian hospitals regarding workload measurement and patient classification. She currently leads a project for developing nursing education and leadership in several central Asian nations. ■

## AHRQ publishes new evidence reports on treatment for extremely obese individuals and other topics

A report published recently by the Agency for Healthcare Research and Quality indicates that surgery for extremely obese patients who have tried and failed to lose weight with exercise and diet may be more effective for weight reduction. It can also improve control of some obesity-related health problems such as high blood pressure and diabetes. In addition, extremely obese individuals—those who have a body mass index (BMI) of 40 or greater—often suffer from severe health problems such as heart disease, musculoskeletal disorders, and sleep apnea that limit daily activities and put their lives at greater risk.

BMI can be calculated as weight in pounds divided by inches squared and then multiplied by 703. An online BMI calculator can be found at [www.nhlbisupport.com/bmi/](http://www.nhlbisupport.com/bmi/). A person who is 5 feet 8 inches tall and weighs 276 pounds has a BMI of 42, for example, and is considered extremely obese.

Roughly 60 million adults in the United States are obese, and 9 million adults are extremely obese. A BMI of 40 or greater is not the sole criterion for selecting patients who might benefit from weight-loss surgery. Of the 9 million extremely obese adults, only a small fraction, about 1.5 percent or 140,000, undergo weight-loss surgery each year in the United States.

Approximately 20 percent of those who have weight-loss surgery experience complications. Although most complications are minor, some can be serious, according to the study authors. These include nutritional deficiencies, leaks from staple line breakdown, and deep vein thrombosis. Laparoscopic procedures result in fewer wound

complications and incision hernias than traditional abdominal surgery.

The scientific evidence review that was used as the basis for the new AHRQ report revealed data suggesting that weight-loss surgery, also known as bariatric surgery, may be more effective than drugs for people with BMIs of 35 to 40; however, the evidence is not strong enough to draw firm conclusions for this group of patients. In addition, the review found that Roux-en-Y gastric bypass surgery results in greater weight loss than vertical-banded gastroplasty.

The AHRQ review did not find enough evidence to draw conclusions about differences in the safety of different types of weight-loss surgery, which include adjustable gastric banding, vertical-banded gastroplasty, and biliopancreatic diversion procedures. Less than 1 percent of patients operated on by experienced bariatric surgeons die as a result of the surgery or from complications, but the rate may be higher for less-experienced surgeons.

The evidence review also found that some prescription medicines—particularly orlistat and sibutramine, the most widely studied drugs—promote moderate weight loss when prescribed along with recommendations for dieting. The amount of weight loss directly attributable to these drugs averages less than 11 pounds, but research shows that even such a modest weight loss may decrease the occurrence of diabetes.

No weight-loss drug appears to be superior to others, and like all medications, each has side effects. The drugs have not been studied sufficiently to evaluate the risk of rare side effects, and there has not

been enough research to determine the optimal time to treat obesity with drugs or how this may vary by a patient's age, sex, or race. The evidence review found that very little research has been done on either surgery or medical treatment of obesity in children and adolescents.

The report will be considered along with other information when the Medicare Coverage Advisory Committee meets on November 4, 2004, to discuss the risks and benefits of bariatric surgery in the Medicare population.

In December 2003, the U.S. Preventive Services Task Force recommended that clinicians screen all adult patients for obesity and offer or refer obese patients for intensive counseling and behavioral interventions to promote sustained weight loss. The Task Force, which is supported by AHRQ, is the leading independent panel of private-sector experts in prevention and primary care. The Task Force conducts rigorous, impartial assessments of the scientific evidence for a broad range of preventive services.

The evidence report was prepared by researchers led by Paul G. Shekelle, M.D., Ph.D., of the Southern California-RAND Evidence-based Practice Center in Santa Monica, under a contract with AHRQ (contract 290-02-0003) through AHRQ's Evidence-based Practice Center Program. The evidence review was requested by the American College of Physicians, American Academy of Pediatrics, and American Academy of Family Physicians. These and other

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## Evidence reports

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organizations, including NIH's National Heart, Lung, and Blood Institute, contributed to the report.

Copies of Evidence Report/Technology Assessment No. 103, *Pharmacological and Surgical Treatment of Obesity* (AHRQ Publication No. 04-E028-1, summary\*\* and 04-E028-2, full report\*) are available from AHRQ. In addition, *Managing Obesity: A Clinician Aid*, a short, AHRQ-produced document that summarizes the recent obesity screening recommendations of the U.S. Preventive Health Services Task Force, as well as the key findings of the evidence report, is also available online at [www.ahrq.gov](http://www.ahrq.gov).

In addition to the obesity report, AHRQ has several other newly published evidence reports and technical reviews. These reports and reviews were developed by AHRQ-supported Evidence-based Practice Centers (EPCs). There are 13 AHRQ-supported EPCs. They systematically review the relevant scientific literature on topics assigned to them by AHRQ and conduct additional analyses when appropriate prior to developing their reports and assessments.

The goal is to inform health plans, providers, purchasers, and the health care system as a whole by providing essential information to

improve health care quality. AHRQ technical reviews and EPC reports and reviews are available online and through the AHRQ clearinghouse. Visit the AHRQ Web site at [www.ahrq.gov](http://www.ahrq.gov) and click on "Clinical Information" or see the back cover of *Research Activities* for ordering information.

### Evidence Reports

**Celiac Disease.** Evidence Report/Technology Assessment No. 104 (AHRQ Publication No. 04-E029-1, summary\*\* and 04-E029-2, full report\*).

**Community-Based Participatory Research Assessing the Evidence.** Evidence Report/Technology Assessment No. 99 (AHRQ Publication No. 04-E022-1, summary\*\* and 04-E022-2, full report\*).

**Criteria to Determine Disability Related to Multiple Sclerosis.** Evidence Report/Technology Assessment No. 100 (AHRQ Publication No. 04-E019-1, summary\*\* and 04-E019-2, full report\*).

**Economic Incentives for Preventive Care.** Evidence Report/Technology Assessment No. 101 (AHRQ Publication No. 04-E024-1, summary\*\* and 04-E024-2, full report\*).

**Islet Transplantation in Patients with Type 1 Diabetes Mellitus.** Evidence Report/Technology

Assessment No. 98 (AHRQ Publication No. 04-E017-1, summary\*\* and 04-E017-2, full report\*).

**Measuring the Quality of Breast Cancer Care in Women.** Evidence Report/Technology Assessment No. 105 (AHRQ Publication No. 04-E030-1, summary\*\* and 04-E030-2, full report\*).

**Preventing Violence and Related Health-Risking Social Behaviors in Adolescents.** Evidence Report/Technology Assessment No. 107 (AHRQ Publication No. 04-E032-1, summary\*\* and 04-E032-2, full report\*).

### Technical Reviews

**Closing the Quality Gap: A Critical Analysis of Quality Improvement Strategies.** Technical Review No. 9. *Volume 1. Series Overview and Methodology* (AHRQ Publication No. 04-0051-1).\*

*Volume 2. Diabetes Mellitus Care* (AHRQ Publication No. 04-0051-2).\*

*Volume 3. Hypertension Care* (AHRQ Publication No. 04-0051-3).\*

**Strategies to Support Quality-Based Purchasing: A Review of the Evidence.** Technical Review No. 10 (AHRQ Publication No. 04-0057).\*



## New guide now available for using AHRQ's Quality Indicators for hospital quality reporting and payment

The Agency for Healthcare Research and Quality has released a new guide for using the Agency's Inpatient Quality Indicators or Patient Safety Indicators to report on hospital quality or make payment decisions. The *Guidance for Using the AHRQ Quality Indicators for Hospital-Level Public Reporting or Payment* can be downloaded from AHRQ's Quality Indicators Web site at [www.qualityindicators.ahrq.gov/documentation.htm](http://www.qualityindicators.ahrq.gov/documentation.htm).

AHRQ's Quality Indicators are measurement tools that were originally developed by AHRQ and researchers at the University of California, San Francisco and Stanford University to help individual hospitals use their own discharge data to better understand and improve the care they provide. Hospitals and hospital associations have used these tools extensively for this purpose. More recently, the

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## New Quality Indicators guide

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indicators have been used by State data organizations, employers, health plans, and others seeking to improve quality through public reporting and pay-for-performance initiatives. Given the expanding use and interest in the Quality Indicators, AHRQ created the guide to help answer questions about if, when, and how to use them for these new purposes.

The Quality Indicators measure outcomes that are of interest to consumers, such as patient safety and complication rates. They are based on data that hospitals already collect, which makes their use relatively accessible and inexpensive.

This guide is the first in a series of activities that will help users evaluate which individual indicators or

groups of indicators they may want to incorporate into their local quality reporting or payment programs. The new guide helps users customize their use of the Quality Indicators. For example, they can place greater or lesser emphasis on a particular type of care, such as cardiac care, or they can make allowances for the types of hospitals (e.g., community or teaching, low volume or high volume) in their area and for variations in the quality of data provided by area hospitals. The guide also suggests ways to best use the Quality Indicators, such as pairing data on deaths and volume indicators or using multiple years of data.

Go to [www.qualityindicators.ahrq.gov](http://www.qualityindicators.ahrq.gov) for more information on AHRQ's Quality Indicators. ■

## Grant final reports now available from NTIS

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

Records of all 750,000 documents archived at NTIS—including many AHRQ documents and final reports from all completed AHRQ-supported grants—can now be searched on the new NTIS Web site. For information about findings from the projects described here, please access the relevant final reports at the NTIS Web site. Also, all items in the database from 1997 to the present can be downloaded from the Web site. Go to [www.ntis.gov](http://www.ntis.gov) for more information.

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

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

**AcademyHealth Annual Research Meeting. Wendy G. Valentine, M.H.A., AcademyHealth, Washington, DC. AHRQ grant HS08201, project period 3/20/03-2/29/04.**

This project provided support for AcademyHealth's annual meeting held June 23-25, 2003 in Nashville, TN. This report describes the meeting, which featured 124 regular sessions and 2 poster sessions, as well as a wide range of affiliate meetings and an exhibit program. (Abstract, executive summary, and final report, NTIS accession no. PB2004-104610; 34 pp, \$8.95 download from Web site, \$18.95 customized CD)\*\*\*

**Advancing Risk Adjustment for Schizophrenia. Bradley C. Martin, Ph.D., University of Georgia Research Foundation, Inc., Athens. AHRQ grant HS10815, project period 7/1/00-12/31/02.**

The goal of this study was to develop and validate a series of schizophrenia-specific risk adjustment cost models. The researchers linked Georgia Medicaid claims data with institutional inpatient data for 21,602 continuously eligible people with schizophrenia. They used the data to build a prospective diagnosis-, demographic-, and drug-based combined risk adjustment cost model. The found that risk adjustment models based on drug or ICD-9-CM information performed equally well, and the combined models outperformed other models. The models can be used to stratify prospective 1-year total costs or payments and, with caution, to stratify mental health costs and payments. (Abstract, executive summary, and final report, NTIS accession no. PB2004-104991; 94 pp, \$34.00 paper, \$13.00 microfiche)\*\*\*

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## Grant final reports

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**Application of Conjoint Analysis to Preferences of Low Back Pain Patients.** Richard T. Meenan, Ph.D., Kaiser Foundation Research Institute, Oakland, CA. AHRQ grant HS11726, project period 9/30/01-3/31/03.

Conjoint analysis (CA) establishes the relative importance of different attributes of a good or service, as well as marginal rates of substitution between attributes. The two main goals of this project were (1) to examine the feasibility of CA for eliciting preferences over hypothetical chiropractic and primary care visits that vary by process and outcome attributes among Kaiser Permanente Northwest enrollees with acute low back pain and (2) produce preliminary utility and willingness-to-pay estimates related to low back pain treatment that incorporate process and outcome attributes. (Abstract, executive summary, and final report, NTIS accession no. PB2004-103332; 60 pp, \$31.50 paper, \$14.00 microfiche)\*\*\*

**Assessment of Physician-Patient Communication.** Sheldon D. Horowitz, M.D., American Board of Medical Specialties, Evanston, IL. AHRQ grant HS12083, project period 3/20/02-3/19/03.

The project provided support for a conference held March 21-22, 2002 to (1) provide a forum for discussion of qualitative and quantitative approaches to assess physician-patient communication, and (2) begin to develop tools to assess such communication by residents during training and by physician specialists for maintenance of certification. (Abstract, executive summary, and final report, NTIS accession no. PB2004-103326; 16 pp, \$26.50 paper, \$14.00 microfiche)\*\*\*

**Conference on Communication and Patient Safety.** Jay Callahan, Ph.D., National Patient Safety Foundation, Chicago, IL. AHRQ grant HS11012, project period 4/15/01-12/15/01.

This project provided support for a conference held in Rancho Mirage, CA, in 2001. Attendees focused on the crucial role of communication research on communication for the purpose of reducing medical errors and improving patient safety. Highlights included intra-staff communication, effective communication as a core element in a culture of safety, human factors, health literacy, disclosing medical errors, and the threat of litigation as a deterrent to disclosure and communication. (Abstract and executive summary, NTIS accession no. PB2004-106426; 16 pp, \$26.50 paper, \$14.00 microfiche)\*\*\*

**Cultural Relevance of a Continuity of Care Measure.** Norma C. Ware, Ph.D., Harvard Medical School, Boston, MA. AHRQ grant HS10335, project period 9/30/99-9/29/03.

The goal of this project was to evaluate the cultural relevance of CONNECT, a structured interview designed to assess continuity of care in mental health services. Focus groups were held with black and Puerto Rican mental health service providers, and open-ended interviews were conducted with 62 individuals with serious mental illness (black, Puerto Rican, white). The goal was to identify new, culturally relevant domains and items for CONNECT. Based on the study findings, neither the qualitative nor the quantitative data suggest a need to make changes to CONNECT to increase cultural relevance for the target groups. (Abstract, executive summary, and final report, NTIS accession no. PB2004-105630; 30 pp, \$26.50 paper, \$14.00 microfiche)\*\*\*

**Developing a Model for the Allocation of Resources for the Prevention of CVD in South Carolina.** David M. Ward, Ph.D., Medical University of South Carolina, Charleston. AHRQ grant HS09809, project period. 2/1/98-1/31/99.

The objective was to develop a resource allocation model to assess the impact on efficiency of different resource apportionment decisions for the prevention of cardiovascular disease (CVD). The model was developed to allow for the distribution of resources across the 46 counties of South Carolina, five age strata, both sexes, two racial strata, five CVD risk factors (smoking, hypertension, hyperlipidemia, sedentary lifestyle, and menopause), and two interventions (drug therapy and counseling) for each CVD risk factor. The findings suggest that short-term allocations for prevention of CVD should be targeted to hypertension drug therapies for the elderly. (Abstract, executive summary, and final report, NTIS accession no. PB2004-105578; 28 pp, \$26.50 paper, \$14.00 microfiche)\*\*\*

**Effects of WIC on Child Medicaid Dental Use and Costs.** Jessica Y. Lee, D.D.S., University of North Carolina, Chapel Hill. AHRQ grant HS11607, project period 9/30/01-9/29/02.

The project objective was to evaluate the relationship of WIC to the use of oral health services and expenditures among Medicaid preschool aged children and assess WIC's potential to improve access to dental care. A total of 49,783 children with over 200,000 visits were enrolled in the study. WIC children used more preventive and diagnostic services, had fewer dental-related emergency room and hospital visits, used more restorative

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services, and had lower dental-related expenditures than non-WIC children covered by Medicaid. (Abstract, executive summary, and final report, NTIS accession no. PB2004-105631; 28 pp, \$26.50 paper, \$14.00 microfiche)\*\*\*

### ***Improving Quality with Outpatient Decision Support.* David W. Bates, M.D., Brigham and Women's Hospital, Boston, MA. AHRQ grant HS11046, project period 9/30/01-12/31/03.**

The researchers examined the gaps between evidence and practice and assessed the ability of computer-based decision support to overcome the barriers to evidence-based practice. They focused on the ambulatory setting and patient visit to examine the usefulness of computer-generated alerts, reminders, and guidelines for health maintenance, disease and medication management, and ordering of ancillary tests. (Abstract, executive summary, and final report, NTIS accession no. PB2004-105258; 18 pp, \$26.50 paper, \$14.00 microfiche)\*\*\*

### ***Inpatient Practices of Hospitalists vs. Traditional PCPs.* Melissa K. Rowe, Ph.D., RAND, Santa Monica, CA. AHRQ grant HS10696, project period 4/1/00-3/31/02.**

Hospitalists are inpatient physicians who provide care for patients from admission to discharge, allowing primary care physicians (PCPs) to use their time more effectively by focusing on outpatient practice. The goal of this study was to develop and pilot-test a structured, Web-based survey to measure PCP and hospitalist clinical and professional practices and their attitudes toward different aspects of the hospitalist model. The comparative analyses of PCP and

hospitalist responses indicated several areas that warrant further study with a larger sample. The survey was shown to have sound psychometric properties, allow detection of differences in the populations sampled, and provide a foundation for further development and testing in a large, nationally representative sample of physicians. (Abstract, executive summary, final report, and appendixes, NTIS accession no. PB2004-104612; 80 pp, \$34.00 paper, \$14.00 microfiche)\*\*\*

### ***International Crossing Borders Conference.* Mary L. Bond, Ph.D., University of Texas, Arlington. AHRQ grant HS13803, project period 9/6/02-9/5/03.**

The international conference, "Emerging Knowledge in Culture and Health: Caring for Hispanic Populations," a component of the "Crossing Borders" series, was held October 11-12, 2002, at the University of Texas in Arlington. The goal was to disseminate state-of-science information to health providers, administrators, and educators on two Healthy People 2010 indicators: responsible sexual behavior and injury and violence as they influence the health and welfare of Hispanic populations. (Abstract and final report, NTIS accession no. PB2004-104607; 14 pp, \$26.50 paper, \$14.00 microfiche)\*\*\*

### ***Managed Care Impact on Critical Care Service Utilization.* Diane M. Dewar, Ph.D., Research Foundation of SUNY, Albany, NY. AHRQ grant HS10713, project period 6/1/00-5/31/02.**

These researchers investigated the impact of managed care on economic and clinical outcomes for hospitalized patients with prolonged mechanical ventilation who were discharged with specific diagnoses during the period 1995-1998. This period encompasses the time before and after enactment of the

competitive hospital reimbursement system, the Health Care Reform Act of 1996, in New York State. They found that managed care and enactment of the competitive reimbursement system were associated with decreased use of hospital resources. Competition also was associated with poorer long term health outcomes and greater numbers of discharges to skilled nursing facilities. On the other hand, the increase in social worker and case management interventions under the competitive regime resulted in a greater likelihood of hospital survival. Managed care had no unique impact on health outcomes. (Abstract, executive summary, and final report, NTIS accession no. PB2004-104608; 20 pp, \$26.50 paper, \$14.00 microfiche)\*\*\*

### ***Measuring Quality of Care for High-Risk Infants.* Jeannette A. Rogowski, Ph.D., RAND, Santa Monica, CA. AHRQ grant HS10328, project period 9/30/99-9/29/03.**

There is wide variation in mortality rates across neonatal intensive care units, even after controlling for severity of illness, that is not well understood. These researchers used data from the Vermont Oxford Network for the period 1994-2000 to identify ways to improve measurement of the quality of neonatal intensive care for infants with very low birthweight (VLBW, under 1500 grams) and to study the hospital characteristics associated with high quality care. Mortality rates were found to be higher for hospitals with less than 50 VLBW admissions per year and for hospitals that treat a high percent of black VLBW infants (more than 35 percent). However, volume explained only 9 percent of the variations across hospitals in mortality rates and therefore may not

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be useful as a proxy indicator for hospital quality. (Abstract, executive summary, and final report, NTIS accession no. PB2004-105629. 26 pp, \$26.50 paper, \$14.00 microfiche)\*\*\*

***Measuring Quality of Care for Vulnerable Children.* Michael Seid, Ph.D., Children's Hospital Research Center, San Diego, CA. AHRQ grant HS10317, project period 9/30/99-9/29/02.**

The goal of this research was to develop and test measures of quality of care for vulnerable children, including young children of Latino farm workers. Two measures were tested in four languages—English, Spanish, Vietnamese, and Tagalog—to examine how vulnerable children access and navigate the health care system and the resulting outcomes of care. The researchers also examined the links between race/ethnicity, language, and access to care on parents' perceptions of the quality of primary care provided to their children. (Abstract, executive summary, and final report, NTIS accession no. PB2003-104238; 24 pp, \$26.50 paper, \$14.00 microfiche)\*\*\*

***Policy Appraisal of the U.S. Human Genome Project.* Lauren A. McCain, M.A., University of Colorado, Boulder. AHRQ grant HS11401, project period 4/5/01-5/31/03.**

For this thesis, the researcher performed a policy appraisal of the U.S. Human Genome Project (HGP), which involves a \$3.3 billion public investment. Project promoters justified the project with assurances that sequencing the human genome would lead to health benefits for all. This analysis shows that although some people have benefitted from HGP, problems exist at every level of the research, technology

development, and clinical application processes. One problem lies in the fragmented nature of the larger network of institutions and policies responsible for overseeing development and dissemination of genetic and genomic products and services. Another problem arises from the narrow and technical definition of the project, which isolates HGP from its larger social context and excludes patients and consumers from decisionmaking. (Abstract, executive summary, and thesis, NTIS accession no. PB2004-104993; 396 pp, \$75.50 paper, \$29.50 microfiche)\*\*\*

***Quality of Hypertension Care for Asian Refugees.* Candice C. Wong, Ph.D., University of California, San Francisco. AHRQ grant HS10276, project period 9/30/99-9/29/03.**

The purpose of this project was to develop and test a survey on quality of hypertension care for use among Hmong Americans, who have the highest poverty rate (64 percent) and the highest proportion of linguistic isolation (61 percent) of all Asian Americans. Hmong community members were involved in developing the survey, and the instrument was tested among 323 hypertensive patients recruited through clinics, community organizations, and medical outreach in Fresno and Sacramento, CA. The mean age of participants was 58, 91 percent had no formal education, and 86 percent spoke English poorly. Although more than 90 percent of subjects had health insurance, 47 percent could not name their health plan, and 55 percent had difficulty choosing a doctor. Knowledge about hypertension was inconsistent and influenced by cultural beliefs. Although 55 percent rated their health as excellent or good, 90 percent suffered from psychological distress that interfered with

hypertension management, which in turn contributed to a high rate of uncontrolled hypertension (72.9 percent). (Abstract, executive summary, and final report, NTIS accession no. PB2004-105628; 16 pp, \$26.50, microfiche \$14.00)\*\*\*

***Status Epilepticus Outcomes in the United States.* N. Edwin Trevathan, M.D., Washington University, St. Louis, MO. AHRQ grant HS11453, project period 7/1/01-6/30/02.**

The researchers examined data from the National Inpatient Sample, a component of AHRQ's Healthcare Cost and Utilization Project (HCUP), to determine whether status epilepticus (SE) increases the risk of death. They also determined the risk factors for having SE among inpatients. Overall, convulsive SE more than doubled the risk for death among U.S. inpatients, even after controlling for multiple coexisting conditions. SE also increased the risk of death among young children (1 month to 4 years). SE increased the risk of death among subpopulations of U.S. inpatients with certain conditions, such as bacterial meningitis, carotid stroke, and several others. The researchers conclude that SE is a major risk factor for inpatient death. (Abstract, executive summary, and final report, NTIS accession no. PB2004-104990; 50 pp, \$29.50 paper, \$14.00 microfiche)\*\*\*

***Using Cancer Registries to Assess Quality of Cancer Care.* John Ayanian, M.D., Harvard Medical School, Boston, MA. AHRQ grant HS09869, project period 9/30/98-9/29/03.**

These researchers evaluated the accuracy of treatment data in population-based cancer registries and assessed the quality of care for colorectal cancer using registry data

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and a survey of physicians and patients. They studied cohorts of patients diagnosed with colorectal cancer during the period 1994-2000 in California. To augment the registry data, they surveyed physicians of 1,956 patients diagnosed during 1996

and 1997 and obtained responses for 1,449 patients (74.1 percent). They found that surgical outcomes and use of adjuvant therapy differed significantly by age, race, socioeconomic factors, and hospital volume. When surveyed, minority patients and non-English speaking white patients reported significantly

more problems than English-speaking white patients with coordination of care, access to cancer care, and receipt of desired information from physicians. (Abstract and final report, NTIS accession no. PB2004-106429; 24 pp, \$26.50 paper, \$14.00 microfiche)\*\*\* ■

## Research Briefs

**Alster, K.B., and Radwin, L.E. (2004, August). "The deserved care framework for evaluating health care quality." (AHRQ grant HS11625). *Home Health Care Management & Practice* 16(5), pp. 332-338.**

Excessively narrow definitions of health care quality do not identify certain important components of health care for clinicians, providers, or patients. On the other hand, excessively broad definitions drive up health care costs and encourage unjustified interventions. These authors propose a framework for examining health care quality in terms of what patients need, want, and deserve, and they advance the idea that deserved care is the relevant concept of care to inform health policy debates.

**Baser, O., Bradley, C.J., Gardiner, J.C., and Given, C. (2003). "Testing and correcting for non-random selection bias due to censoring: An application to medical costs." (AHRQ grant HS09514). *Health Services & Outcomes Research Methodology* 4, pp. 93-107.**

A common problem with medical cost data is censoring. Since costs accrue over time and some patients may not be followed until the endpoint of interest, their medical costs are not fully observed. This paper presents a systematic treatment of the correction for nonrandom sample selection bias of medical cost data, where the selection rule is

described by a censored regression model. Data from a study on the medical cost of breast, prostate, colon, and lung cancer are used as an application of the method.

**Bent, S., Shojania, K.G., and Saint, S. (2004, June). "The use of systematic reviews and meta-analyses in infection control and hospital epidemiology." (AHRQ grant HS11540). *American Journal of Infection Control* 32, pp. 246-254.**

Systematic research reviews adhere to a prospectively defined protocol that specifies how studies should be identified, evaluated, and statistically combined. This approach reduces the bias inherent in traditional narrative reviews, allowing authors to pick and choose the studies they discuss and the depth of their discussion. About 1,000 systematic reviews published annually focus on topics important to infection control professionals. This article discusses the essential elements of a systematic review and provides a framework for evaluating the quality of the review. It should help the infection control professional and hospital epidemiologist in determining whether the results of such reviews should change clinical practice.

**Kan, H., Goldman, D., Keeler, E., and others. (2003). "An analysis of unobserved selection in an inpatient diagnostic cost group**

**model." (AHRQ grant HS11403). *Health Services & Outcomes Research Methodology* 4, pp. 71-91.**

Models that better capture selection bias are needed to reduce overestimation of Medicare HMO enrollees' resource use. These researchers assessed unobserved selection bias in an inpatient diagnostic cost group (DCG) model similar to Medicare's Principal Inpatient Diagnostic Cost Group (PIP-DCG) risk adjustment model. They used a unique data set containing hospital discharge records for both fee-for-service (FFS) and HMO Medicare beneficiaries in California from 1994 to 1996. They found that the inpatient DCG model did not adequately adjust for biased selection in Medicare HMOs. New HMO enrollees were healthier than FFS beneficiaries, even after adjustment for the included PIP-DCG risk factors. A model developed over an FFS sample that ignored unobserved selection overestimated hospital use of new HMO enrollees by 28 percent compared with their use if they had remained in an FFS plan.

**McDonagh, M., Helfand, M., Carson, S., and Russman, B.S. (2004, July). "Hyperbaric oxygen therapy for traumatic brain injury: A systematic review of the evidence." (AHRQ contract 290-97-**

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## Research briefs

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**0018). Archives of Physical Medicine and Rehabilitation 85, pp. 1198-1204.**

These authors systematically reviewed the evidence for the benefits and harms of hyperbaric oxygen therapy (HBOT) for traumatic brain injury (TBI). Two fair-quality trials of patients with severe brain injury reported conflicting results. One found no difference in mortality or morbidity at 1 year between HBOT and control patients. The other found significantly lower mortality in the HBOT group at 1 year compared with controls (17 vs. 31 percent). However, this decrease in mortality was accompanied by an increase in the proportion of patients with severe disability. No study systematically assessed adverse events, and none reported adverse events in control groups. The authors conclude that the available evidence for HBOT for TBI is insufficient to establish effectiveness or ineffectiveness; they call for more high-quality studies on this topic.

**Ness, R.B., Randall, H., Richter, H.E., and others. (2004, August). "Condom use and the risk of recurrent pelvic inflammatory disease, chronic pelvic pain, or infertility following an episode of pelvic inflammatory disease." (AHRQ grant HS08358). American Journal of Public Health 94(8), pp. 1327-1329.**

For this study, researchers correlated self-reports of condom use with recurrent pelvic inflammatory disease (PID), chronic pelvic pain, and infertility among 684 sexually active women with PID, whom they followed for a mean of 35 months. The women were enrolled in the PID Evaluation and Clinical Health (PEACH) cohort and were recruited from 13 U.S. sites between 1996 and 1999. Condom use was considered to be consistent if a woman reported use

in at least 6 of the last 10 sexual encounters. Rates of recurrent PID, chronic pelvic pain, and infertility were highest among inconsistent condom users (condom use reported at 25 percent to less than 50 percent of interviews) and lowest among consistent condom users (condom use reported at 75 to 100 percent of interviews). After adjusting for other factors, consistent condom users had 50 percent less risk than inconsistent condom users of recurrent PID. Reduced risk of recurrent PID for users of other barrier methods such as diaphragms was nonsignificant. Use of oral contraceptives or medroxyprogesterone was not associated with significantly elevated or reduced risks of the PID sequelae studied.

**Resnic, F.S., Zou, K.H., Do, D.V., and others. (2004, August). "Exploration of a Bayesian updating methodology to monitor the safety of interventional cardiovascular procedures." (AHRQ grant HS13234). Medical Decision Making 24, pp. 399-407.**

Development and implementation of appropriate methods for monitoring the safety of cardiology interventions have proven difficult. These authors propose Bayesian updating, which incorporates existing knowledge regarding adverse event rates into the estimation of risk, as a method to monitor the safety of interventional cardiovascular procedures. They use this method to retrospectively analyze the clinical outcomes of 309 patients undergoing an infrequent interventional cardiology procedure, rotational atherectomy. Their analysis demonstrates the feasibility of Bayesian updating applied to medical device safety evaluation and indicates that the method can generate stable estimates in a variety of patient risk groups.

**Rovner, D.R., Wills, C.E., Bonham, V., and others. (2004, July).**

**"Decision aids for benign prostatic hyperplasia: Applicability across race and education." (AHRQ grant HS10608). Medical Decision Making 24, pp. 359-366.**

Patient decision aids have not been widely tested in diverse audiences. These authors conducted interviews with 188 adults 50 years of age or older to test their knowledge about benign prostatic hyperplasia both before and after watching a videotape on the condition. The subjects were stratified by race and level of education. Contrary to expectations, results showed no difference by race or college education in knowledge gain or increase in reported readiness to decide about treatment after watching the videotape. This suggests that a well-designed decision aid may be equally effective for men of different races and education levels.

**Seid, M., Sobo, E.J., Gelhard, L.R., and Varni, J.W. (2004, July). "Parents' reports of barriers to care for children with special health care needs: Development and validation of the barriers to care questionnaire." (AHRQ grant HS13058). Ambulatory Pediatrics 4(4), pp. 323-331.**

This article describes the development and validation of the Barriers to Care Questionnaire (BCQ). The 39-item BCQ was developed through review of the literature, focus groups, and cognitive interviews of Spanish- and English-speaking parents of children with chronic health conditions. The authors field tested the BCQ in three samples of children with special health care needs. BCQ scores were higher (fewer barriers) for children with a primary care physician and for those who reported no problems getting care or having to forgo care. The authors conclude that the BCQ is a feasible, reliable, and valid instrument for measuring barriers to care for children with special health care needs. ■

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