



# Research Activities



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Agency for Healthcare Research and Quality

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## National anatomic pathology errors database can reduce hospital pathology errors

Pathology errors made on tissue specimens from patients can affect patient diagnosis and treatment. To find out how often pathology errors occur and with what types of tissues, and to decrease the clinical impact of these errors, the Agency for Healthcare Research and Quality funded a national anatomic pathology errors database in 2002 (HS13321). The database tracks more frequent pathology errors and those that result in serious harm in order to design quality improvement interventions to reduce such errors.

In the first year of funding, four institutions, the University of Pittsburgh, Henry Ford Hospital, University of Iowa, and Western Pennsylvania Hospital, reported cell-tissue correlation error data, that is, when there was a discrepancy between cell and tissue pathology reports of the same anatomic tissue. They performed root cause analysis to determine the source of error and implemented error reduction plans.

The correlation error frequency ranged from 0.17 percent to 0.63 percent for patients who had both a Pap test (of cervical cells) and a procedure that generated tissue samples (for example, cervical or vaginal biopsy, cone biopsy, or hysterectomy).

The lungs (ranging from 16.5 percent to 62.3 percent of all pathology errors) and bladder (ranging from 4.4 to 25 percent of all pathology errors) were the anatomical sites with the most nongynecologic pathology errors. They were also the sites that had the most frequent discrepancy between cell and tissue pathology reports (for example, a diagnosis of atypical cells made on a bronchial washing specimen and a diagnosis of non-small-cell carcinoma made on a bronchial biopsy specimen). Thus, the participating sites developed plans to specifically reduce pulmonary and urinary bladder pathology errors, for example, double-viewing of all bronchial washing and brushing specimens to decrease the number of specimen

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## Pathology errors

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interpretive errors. Other plans were aimed at problems with the specimen sampling process.

More details are available in “Anatomic pathology databases and patient safety,” by Stephen S. Raab, M.D., Dana M. Grzybicki, M.D., Ph.D., Richard J. Zabo, M.D.,

D.M.D., and others, in the October 2005 *Archives of Pathology and Laboratory Medicine* 129, pp. 1246-1251. ■

## Health Information Technology

### Computerized drug-laboratory interaction alerts change doctors' prescriptions

**A** new study shows that when a computerized order entry system uses a clinical-decision support system to provide alerts about laboratory-drug interactions to outpatient care providers, they respond to the alerts and use the information to improve patient care. After receiving an alert, doctors either changed the dosage or stopped the order for a medication if it would worsen the problem indicated by the lab results, or they ordered laboratory tests to monitor potential problems for a drug.

The study, supported by the Agency for Healthcare Research and Quality (Contract No. 290-00-0014), focused on drug-laboratory interactions for 18 high-volume and high-risk medications that can lead to abnormally high or low blood potassium levels, kidney toxicity, low blood platelet count, or liver inflammation. Andrew W. Steele, M.D., M.P.H., and Sheri Eisert, Ph.D., of Denver Health, and colleagues compared outpatient clinic provider medication and laboratory orders at baseline and after implementation of the drug-laboratory interaction alerts.

During the post-alert period, an alert was displayed 11.8 percent of the times a potential drug-laboratory interaction was processed, with 6 percent for only abnormal laboratory values, 5.6 percent for only missing laboratory values, and 0.2 percent for both types of alerts. Alerts for an abnormal laboratory result significantly increased the percentage of time that clinicians did not complete the medication order (5.6 percent at baseline vs. 10.9 percent post-intervention) or the ordering of a recommended laboratory test (39 vs. 51 percent). Overall, ordering of the appropriate laboratory test increased by 33 percent with the presentation of the alert.

See “The effect of automated alerts on provider ordering behavior in an outpatient setting,” by Dr. Steele, Dr. Eisert, Joel Witter, M.D., and others, in the September 2005 *PloS Medicine* 2(9), pp. 864-870. ■

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## Small medical practices are slow to adopt health information technology

**H**ealth information technology (health IT) can help reduce medication errors, improve the quality of care, lower costs, and increase patient and clinician satisfaction. Yet, small practice settings, where 80 percent of physicians work and where most patient care is provided, have been slow to adopt health IT, according to two studies supported by the Agency for Healthcare Research and Quality (AHRQ). The first AHRQ-supported study (Contract No. 290-00-0017), found that the adoption of electronic health records (EHRs) by small medical group practices is happening slowly, but a number of them plan to implement an EHR within the next 2 years. The second AHRQ-supported study suggests that one problem hindering adoption of health IT is that small physician practices have complex workflows that are poorly addressed by standardized health IT systems. Reprints of the second study (AHRQ Publication No. 06-R010) are available from AHRQ.\* Both studies are discussed here.

**Gans, D., Kralewski, J., Hammons, T., and Dowd, B. (2005, September). "Medical groups' adoption of electronic health records and information systems." *Health Affairs* 24(5), pp. 1323-1333.**

Adoption of EHRs by small medical group practices is progressing slowly, although a number of group practices plan to implement an EHR within the next 2 years. Researchers found the barriers to group practices adopting an EHR system are greater than expected. Also, the process of choosing and implementing an EHR appears to be more complex and varied than was previously

thought. Because of the large number of EHR systems available, it is not easy to identify which systems meet a practice's needs and which companies offering EHRs have adequate technical support. It is also especially difficult for small and physician-owned practices to meet the managerial challenges and capital costs of EHR systems, note the researchers.

Researchers assessed the rate and process of adoption of health IT and EHRs by medical group practices by analyzing 2005 data from a nationally representative survey of 34,490 medical groups (those with 3 or more physicians) and conducting a series of interviews and site visits to practices. Overall, 15 percent of practices surveyed had EHRs. About 12 percent of practices with 5 or fewer full-time-equivalent (FTE) physicians had EHRs compared to 19 percent of practices with more than 10 physicians, which probably have more financial resources and administrative capacity.

However, a substantial number of practices indicated that they were planning to adopt EHRs in the future. If their plans are fully carried out, about 60 percent of all practices will have adopted EHR technologies 2 years from now. However, nearly half of practices with five or fewer FTE physicians currently do not have EHRs and have no plans to implement them within the next 2 years.

Practices without EHRs cited costs and concern about physicians' support and ability to use the new system as chief barriers to their adoption. Interviews revealed that the majority of practices found the transition to EHRs difficult even if the physicians and nurses were supportive.

**Lee, J., Cain, C., Young, S., and others. (2005, September). "The adoption gap: Health information technology in small physician practices." *Health Affairs* 24(5), pp. 1364-1366.**

Successful adoption of health IT requires close attention to office workflow — how tasks are

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### Also in this issue:

Sex and ethnic differences in chest pain management, see page 5

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Treatment for women with pelvic inflammatory disease, see page 8

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## Health information technology

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organized and resources are used to achieve outcomes — concludes a panel of leading national experts. The panel of practitioners, consumer advocates, researchers, consultants, vendors, and policymakers was convened in April 2005 by the National Institute for Health Care Management (NIHCM) Foundation, at a conference supported by AHRQ, to gain insight into health IT adoption in small practices.

The panelists pointed out that small physician practices

encompass diverse delivery systems with complex workflows that are poorly addressed by standardized health IT systems. Classification of practices by clinical specialization or size may need to expand to include such factors as the patient population served, dynamic reimbursement models, whether the practice belongs to a managed care plan, and staffing. Differences in small practices also make it difficult to develop standardized recommendations about optimal system design of health IT products and services.

The panelists agreed that well-integrated health IT has the potential to greatly improve patient

care. Panelists who successfully made the leap to health IT described immediate and long-term gains for their clinicians, consumers, and the public health system. In the short term, patients and clinicians appreciated the greater flexibility and efficiency in scheduling, communication, prescribing, disease management, chart review, and education. Practices that redesigned their workflows discovered fewer interruptions, a better ability to deliver comprehensive care, including preventive services, and improved ability to address patient concerns. ■

## Disparities/Minority Health

### Black patients fare worse than white patients after treatment for heart attack or unstable angina

**B**lacks are 46 percent more likely than whites to suffer from angina (crushing chest pain), have worse quality of life, and experience poor physical function 1 year after being hospitalized for acute coronary syndrome (ACS, unstable angina or heart attack). Black patients with ACS may require closer monitoring to determine if they need additional treatment to improve their health, recommends John A. Spertus, M.D., M.P.H., of Saint Luke's Hospital. Supported by the Agency for Healthcare Research and Quality (HS11282), Dr. Spertus and colleagues compared symptoms, function, and quality of life of 1,159 patients included in a registry of patients with ACS who were treated in 2000 and 2001 at two

Kansas City hospitals. Researchers quantified the patients' health status 1 year after ACS treatment using the Seattle Angina Questionnaire (SAQ) and the Short Form-12 Physical Component Score (SF-12 PCS).

Mortality rates were similar among the 196 black and 963 white participants (7.1 vs. 7.0 percent), after adjustment for differences in sociodemographic and clinical characteristics and types of treatment (for example, cardiac catheterization, bypass surgery, and medication). However, 1 year after treatment, more blacks than whites suffered from angina (43.4 vs. 27.1 percent), worse quality of life (SAQ score 70.6 vs. 83.9), and poorer physical function (SF-12 PCS 36.8 vs. 43.2).

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## Acute coronary syndrome

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Adjusting for differences in hospital treatments between black and white patients did not eradicate the racial differences in outcomes in this study. The results suggest that other factors in the care of patients with ACS between hospital discharge and 1 year post-discharge may be responsible for this disparity in

outcome, such as differences in outpatient treatment, compliance with antianginal medications, and biologic mechanisms.

See “The influence of race on health status outcomes one year after an acute coronary syndrome,” by Dr. Spertus, David Safley, M.D., Mukesh Garg, M.D., and others, in the November 15, 2005 *Journal of the American College of Cardiology* 46(10), pp. 1838-1844. ■

## Nearly half of urban American Indians and Alaskan Natives travel back to their reservation to visit during the year

The health of American Indians and Alaska Natives (AI/ANs) is worse than that of the general population in the United States, with a life expectancy nearly 5 years lower. Of the more than two million AI/ANs living in the United States today, only 25 percent reside on reservations, while 60 percent live in cities. Those who live in cities often travel to reservations, yet little is known how this travel may be related to health. This study, supported in part by the Agency for Healthcare Research and Quality (HS10854), is one of the few to provide information on AI/AN travel to reservations and its relationship to health status and use

of health services among urban AI/ANs.

Researchers surveyed more than 500 AI/AN adults at a primary care clinic in Seattle about time spent visiting a reservation during the past year, and sociodemographic, cultural, and clinical characteristics. Thirty-four percent of respondents had spent up to 30 days traveling, 14 percent had spent more than 30 days traveling, and 52 percent had not traveled to reservations. Strong Native American cultural identification, presence of lung disease, absence of thyroid or mental problems, and greater dissatisfaction with care were independently associated with more travel to reservations.

Reservation visits were not consistently linked to self-reported health outcomes, nor could the researchers determine how often respondents traveled to the reservation for health care. The findings underscore the importance of considering the role of culture as well as residence and patterns of travel in both research and clinical care involving AI/ANs.

See “Characteristics associated with reservation travel among urban Native American outpatients,” by Dorothy A. Rhoades, M.D., M.P.H., Spero M. Manson, Ph.D., Carolyn Noonan, M.S., and Dedra Buchwald, M.D., in the August 2005 *Journal of Health Care for the Poor and Underserved* 16, pp. 464-474. ■

## Management of chest pain in patients with hypertension differs in men, women, and ethnic groups

About one of eight patients with hypertension treated by primary care doctors are diagnosed with some type of chest pain syndrome (CPS), and these patients are usually aggressively treated for cardiovascular risk factors. However, management of these patients differs by ethnicity and sex, according to a study supported in part by the Agency for Healthcare Research and Quality (HS10871).

The chest pain syndromes studied included general chest pain, angina (chest pain, tightness, or pressure due to lack of oxygen to the heart muscle), chronic angina, and pre-heart attack angina/intermediate coronary syndrome (ICS). More men than women were diagnosed with angina (18 vs. 4 percent) and ICS

(21 vs. 10 percent), while more women than men were diagnosed with vague chest pain only (86 vs. 61 percent). Blacks also received more chest pain diagnoses than whites (71 vs. 62 percent), similar angina diagnoses (14 vs. 16 percent), and slightly fewer ICS diagnoses (15 vs. 22 percent). However, women and blacks with CPS received fewer cardiovascular medications than men and whites, respectively, both overall and within diagnostic categories.

Researchers analyzed the care of 72,508 people with hypertension listed in the Hypertension Initiative primary care database who were receiving care at

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## Hypertension

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about 50 primary care practices in the Southeastern United States. Overall, 11 percent of patients with hypertension had CPS, and most of these patients were prescribed statin drugs, aspirin, angiotensin converting enzyme inhibitors, and diuretics. About half were prescribed a beta-blocker.

More details are in “Prevalence, treatment, and control of chest pain syndromes and associated risk factors in hypertensive patients,” by Katharine H. Hendrix, M.S., Ph.D., Susan Mayhan, Daniel T. Lackland, Dr.P.H., and Brent M. Egan, M.D., in the August 2005 *American Journal of Hypertension* 18(8), pp. 1026-1032. ■

## Child/Adolescent Health

### Broad-spectrum antibiotics given during labor are linked to late-onset serious bacterial infections in infants

**G**roup B *Streptococcus* (GBS) infection can cause a life-threatening blood infection and meningitis in newborns. Over one-third of women receive antibiotics during labor to prevent the transmission of GBS from themselves to their newborns. Intrapartum antibiotics (IPA) have been very successful in preventing early-onset (first week of life) neonatal GBS infection. However, a new study shows a relationship between exposure to broad-spectrum IPA and occurrence of late-onset (7-90 days after birth) serious bacterial infections (SBIs). Tiffany S. Glasgow, M.D., and Paul C. Young, M.D., and their University of Utah colleagues, supported in part by the Agency for Healthcare Research and Quality (HS11826), found that infants with late-onset SBI were

more likely to have been exposed to IPA than uninfected infants. Also, pathogens that caused late-onset SBIs were more likely to be resistant to ampicillin, if the mother was treated with ampicillin. Thus, penicillin, an antibiotic that treats a narrow range of bacteria, is recommended for IPA to prevent GBS instead. The researchers compared the use of IPA and antibiotic-resistant strains of bacteria in 90 previously healthy full-term infants hospitalized for late-onset SBI (case infants) with 92 healthy full-term infants, who were known not to have an SBI in the first 90 days (control infants).

Considering all types of IPA, nearly twice as many case infants (41 percent) than control infants (27 percent) had been exposed to IPA, after controlling for hospital of delivery and other factors. The

association was much stronger when IPA was with broad-spectrum antibiotics. Bacteria that were isolated from infected infants who had been exposed to IPA were nearly 6 times more likely to exhibit ampicillin resistance, but not resistance to other antibiotics commonly used to treat SBI in infants. The researchers recommend that clinicians find out infants' exposure to IPA when they are seen for late-onset SBI, so that they can gauge which antibiotics will be more effective for treatment.

See “Association of intrapartum antibiotic exposure and late-onset serious bacterial infections in infants,” by Dr. Glasgow, Dr. Young, Jordan Wallin, B.S., and others in the September 2005 *Pediatrics* 116(3), pp. 696-702. ■

**Note:** Only items marked with a single (\*) asterisk are available from the AHRQ Clearinghouse. Items with a double asterisk (\*\*) are available from the National Technical Information Service. 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.

## Cognitive behavioral therapy offers adolescents with depression some benefit over treatment with antidepressants alone

Approximately 35 to 65 percent of adolescents diagnosed with depression are considered fully recovered at the end of treatment with selective serotonin reuptake inhibitors (SSRIs), a newer class of antidepressants. Combining brief cognitive-behavioral therapy (CBT) with SSRIs adds some small improvement for adolescents with depression, according to a study supported in part by the Agency for Healthcare Research and Quality (HS10535 and HS13854).

Gregory Clarke, Ph.D., of the Kaiser Permanente Center for Health Research, and colleagues randomly assigned 152 adolescents (aged 12 to 18) with major depressive disorder in treatment at an HMO pediatric primary care

practice to either a treatment-as-usual group consisting primarily of SSRI medication or to an SSRI plus brief CBT group (5 to 9 sessions).

The CBT program employed cognitive restructuring and/or behavioral activation training by an on-site mental health specialist, who collaborated with the primary care provider. Therapists in the CBT program made brief “check-in” phone calls to the adolescents at 1, 2, 3, 5, 7, and 9 months after completing the initial sessions. The researchers detected a marginal trend favoring the CBT condition on one depression scale, but failed to find any advantage in recovery from major depressive disorder.

Adolescents in the CBT treatment used approximately 20

percent less medication than the treatment-as-usual group, which may have masked the potential advantages of CBT. The researchers note that these results are consistent with recent studies suggesting that depressed youths only reluctantly take antidepressant medication and look for opportunities to discontinue it.

More details are in “A randomized effectiveness trial of brief cognitive-behavioral therapy for depressed adolescents receiving antidepressant medication,” by Dr. Clarke, Lynn Debar, Ph.D., Frances Lynch, Ph.D., and others, in the September 2005 *Journal of the American Academy of Child and Adolescent Psychiatry* 44(9), pp. 888-898. ■

## Having a usual source of care increases wellness visits among children with asthma

Childhood asthma is a chronic inflammatory disease that requires the child and family to monitor symptoms daily and regularly evaluate the effects of treatment with a health care provider in order to avoid acute breathing problems that may lead to emergency department (ED) visits. According to a study supported in part by the Agency for Healthcare Research and Quality (HS13110), children with asthma who have a usual source of care (USC) are twice as likely as those without one to have a wellness examination during the course of a year. They are also more likely to fill or refill a rescue bronchodilator prescription to use in case of an asthma flareup to help prevent trips to the ED. Having a USC, however, is not significantly related to asthma-related ED use.

Researchers analyzed data from the 1996-2000 Medical Expenditure Panel Survey, an ongoing, nationally representative survey of the U.S. population on the financing and use of medical care. This study focused on the wellness visits, bronchodilator

fills/refills, and ED visits of 1,726 children with asthma and their usual source of care (including characteristics such as ease of getting an appointment on short notice).

Overall, 95 percent of children had a USC. Half (51 percent) of the children used a USC which was reported to be a facility (doctor’s office, health center, or clinic) rather than a named person. Most parents (82 percent) were very satisfied with the quality of care received at the USC. Over the calendar year, 10 percent of children made at least one asthma-related visit to the ED, 40 percent had at least one wellness visit, and 50 percent filled a rescue bronchodilator prescription.

See “Presence and characteristics of medical home and health services utilization among children with asthma,” by Gail M. Kieckhefer, Ph.D., A.R.N.P., April A. Greek, Ph.D., Jutta M. Joesch, Ph.D., and others in the September 2005 *Journal of Pediatric Health Care* 19(5), pp. 285-292. ■

## Despite increase in cat ownership, the hospitalization rate for children with cat-scratch disease remains stable

**B**oth children and adults can develop cat-scratch disease (CSD) from exposure to cats infected with *Bartonella henselae*, but CSD is principally a pediatric disease. Despite the rise in cat ownership in the United States, the rate of children hospitalized for CSD in 2000 was similar to that of the 1980s, according to a new study. Typical CSD is generally benign and self-limited and is characterized by enlarged lymph nodes and fever. However, atypical CSD infections can be accompanied by inflammatory responses involving the neurologic, organ, lymphatic, or skeletal systems, which can lead to hospitalization.

Researchers at the Centers for Disease Control and Prevention, and co-author Claudia A. Steiner, M.D., M.P.H., of the Center for Delivery, Organization, and Markets, of the

Agency for Healthcare Research and Quality (AHRQ), used data from the Kids' Inpatient Database of AHRQ's Healthcare Cost and Utilization Project to examine pediatric hospitalizations for CSD. During 2000, an estimated 437 CSD-associated hospitalizations occurred among children younger than 18 years in the United States. The national CSD-associated hospitalization rate was 0.60:100,000 children younger than 18 years and 0.86:100,000 for children younger than 5 years.

Accompanying diagnoses included neurologic complications (12 percent), liver/spleen involvement (7 percent), and other problems (5 percent). Atypical CSD accounted for about 24 percent of the CSD-associated hospitalizations. Hospital stays were as long as 19 days for typical CSD and 22 days

for atypical CSD, with average charges almost double for atypical CSD hospitalizations. Procedures usually included operations on lymph nodes or tissues, probably for diagnostic evaluation. The median charge for a CSD-associated hospitalization was \$6,140 with total annual hospital charges of about \$3.5 million.

See "Epidemiology of cat-scratch disease hospitalizations among children in the United States," by Mary G. Reynolds, M.S., Ph.D., Robert C. Holman, M.S., Aaron T. Curns, M.P.H., and others, in the August 2005 *The Pediatric Infectious Disease Journal* 24(8), pp. 700-704. Reprints (AHRQ Publication No. 06-R011) are available from AHRQ.\* ■

## Women's Health

### Women with mild-to-moderate pelvic inflammatory disease have similar reproductive outcomes from inpatient and outpatient care

**P**elvic inflammatory disease (PID) affects about 8 percent of all women of reproductive age in the United States. PID can lead to infertility, tubal pregnancy, and chronic pelvic pain. Over three-fourths of women treated for PID are managed as outpatients, a move away from hospital-based management that has accelerated over the past two decades. A new Pelvic Inflammatory Disease Evaluation and Clinical Health (PEACH) study, supported in part by the Agency for Healthcare Research and Quality (HS08358), found no differences in reproductive outcomes among women with mild-to-moderate PID regardless of whether they were treated as inpatients or outpatients.

Roberta B. Ness, M.D., M.P.H., of the University of Pittsburgh, and colleagues randomized 831 women with clinical signs and symptoms of mild-to-moderate PID into a multicenter trial. Inpatient treatment included intravenous cefoxitin and doxycycline, while

outpatient treatment consisted of a single intramuscular injection of cefoxitin and oral doxycycline. They followed the treatment groups for an average of 84 months. When compared with inpatient treatment, outpatient treatment did not adversely affect pregnancy frequency, live births, tubal pregnancies, time to pregnancy, infertility, PID recurrence, or chronic pelvic pain, regardless of factors such as race, previous PID, the presence of *Neisseria gonorrhoeae* and/or *Chlamydia trachomatis* infection, or a high temperature, high white blood cell count, and pelvic tenderness.

More details are in "Effectiveness of treatment strategies of some women with pelvic inflammatory disease," by Dr. Ness, Gail Trautmann, M.A., Holly E. Richter, Ph.D., M.D. and others, in the September 2005 *Obstetrics & Gynecology* 106(3), pp. 573-580. ■



### Certain clinical and surgical factors affect a patient's risk of death or stroke following carotid endarterectomy

**C**arotid endarterectomy, surgical removal of plaque from the carotid artery in the neck, is done to prevent strokes or stroke recurrence. Despite guidelines for selecting appropriate patients for the procedure, nearly 11 percent of patients appear to be inappropriately selected to undergo the surgery. A new study, supported in part by the Agency for Healthcare Research and Quality (HS09754), may help improve selection of candidates for carotid endarterectomy and identify patients in need of closer monitoring after surgery.

Researchers retrospectively studied 1,972 patients treated by 64 surgeons at 6 hospitals who

underwent carotid endarterectomy in 1997 and 1998. They analyzed patients' medical records to identify clinical, radiographic, surgical, anesthesia, and medical management variables associated with deaths or strokes within a month of surgery.

The researchers found that, after adjustment for other factors affecting the likelihood of postoperative complications, three clinical factors doubled or tripled the odds of complications (strokes or death) within 30 days of surgery. These were stroke as the indication for surgery, presence of active coronary artery disease, and contralateral carotid narrowing of 50 percent or more.

Death or stroke occurred in 2.28 percent of patients without carotid symptoms, 2.93 percent of those with carotid transient ischemic attacks (mini strokes), and 7.11 percent of those who underwent the surgery due to stroke. On the other hand, two surgical techniques, local anesthesia and patch closure, reduced the odds of death or stroke by 70 and 57 percent, respectively.

Further information can be found in "Clinical and operative predictors of outcomes of carotid endarterectomy," by Ethan A. Halm, M.D., M.P.H., Edward L. Hannan, Ph.D., Mary Rojas, Ph.D., and others, in the September 2005 *Journal of Vascular Surgery* 42, pp. 420-428. ■

### Improved survival rate after prostate cancer treatment may reflect a statistical artifact

**M**any researchers cite improvements in 5- and 10-year survival rates of men treated for prostate cancer as evidence of the effectiveness of prostate-specific antigen (PSA) testing. However, the decline in mortality rate may simply be due to a statistical artifact, suggests a study supported in part by the Agency for Healthcare Research and Quality (HS09578). Since the introduction of PSA testing, the reported incidence of low-grade prostate cancer (which is less likely to spread), measured by the Gleason score, has declined.

However, this appears to be the result of Gleason score reclassification over the past decade, note the researchers.

They used the Connecticut Tumor Registry to examine a group of 1,858 men, aged 75 years and under, who were diagnosed with prostate cancer between 1990 and 1992. They retrieved tissue slides of their prostate tissue, which were reread between 2002 and 2004 by an experienced pathologist blinded to the

original Gleason score readings. They then compared prostate cancer mortality rates of the group calculated using the original Gleason score readings with those calculated using the contemporary Gleason score readings.

The contemporary Gleason score readings were significantly higher than the original readings (mean score increased from 5.95 to 6.8), indicating more advanced cancer. As a result, the Gleason score-standardized contemporary prostate cancer mortality rate (1.50 deaths per 100 person-years) appeared to be 28 percent lower than standardized historical rates (2.08 deaths per 100 person-years), even though the overall outcome was unchanged.

See "Prostate cancer and the Will Rogers phenomenon," by Peter C. Albertsen, M.D., James A. Hanley, Ph.D., George H. Barrows, M.D., and others, in the September 7, 2005 *Journal of the National Cancer Institute* 97(17), pp. 1248-1253. ■

### Patients refuse lung cancer treatment for complicated social and psychological reasons

Patients who refuse cancer treatment are often labeled as irrational or inexplicably non-compliant. A new study, supported in part by the Agency for Healthcare Research and Quality (HS10876), explored reasons why some informed, competent patients refuse further diagnosis or treatment for lung cancer. Researchers interviewed nine male patients (aged 48 to 80), recruited from a Veterans Affairs hospital over a 2-year period, who had refused doctors' recommendations for further diagnosis or treatment for non-small cell lung cancer.

Non-small cell lung cancer has a median survival of 6 to 12 months, and a 5-year survival rate of 10 to 15 percent. Surgical treatment offers a chance for cure in early stage disease, with a 5-year survival of 40

to 50 percent, and chemotherapy may improve quality of life for incurable cancer. In addition, a newly identified genetic marker can identify a subset of patients with this cancer who are responsive to targeted chemotherapy.

The interviews found many areas of uncertainty for these patients, who are faced with a suspect abnormality or, in the worst case, lung cancer. Analysis of the interviews revealed 16 basic themes, which the researchers then divided into three categories: rationale for decisionmaking, context and relationships, and other concerns.

The rationales for refusing treatment included themes of self-efficacy (belief in one's own internal ability to influence health outcomes), minimizing the threat of

the disease, fatalism and faith, distrust of the health care professions, desiring more information, the ability to live without knowing a diagnosis, futility, postponing treatment, concerns about physical discomfort, quality of life priorities, and the will to live. Context and relationship themes included the doctor-patient relationship, social relationships with family and friends, and the health care system. Other concerns included themes of mortality and altruism.

See "A little bitty spot and I'm a big man: Patients' perspectives on refusing diagnosis or treatment for lung cancer," by Barbara F. Sharf, Ph.D., Linda A. Stelljes, M.A., and Howard S. Gordon, M.D., in *Psycho-Oncology* 14, pp. 636-646, 2005. ■

### Watchful waiting is an option for men with minimally symptomatic inguinal hernias

Watchful waiting seems to be a safe method of treating men who have inguinal hernias with minimal or no symptoms, according to a new study funded in part by the Agency for Healthcare Research and Quality (HS09860). Robert J. Fitzgibbons, Jr., M.D., of Creighton University in Omaha, and colleagues randomly assigned 720 men with inguinal hernias with minimal symptoms from five community and academic health centers into two groups: one managed with watchful waiting and a second group who had a hernia repair. Depending on when they entered the study, patients were followed for at least 2 years or 4.5 years between January 1, 1999 and December 31, 2004.

Of the patients in the watchful waiting group, 23 percent requested and received surgical repair within 2 years, primarily because of an increase in hernia-related pain. Patients assigned to watchful waiting who requested surgical repair most commonly reported increased pain as the reason for the crossover, and

nearly half reported that pain interfered with normal activities. In the surgical group, 17 percent of patients ultimately refused the procedure within 2 years and opted for watchful waiting.

After 2 years, low proportions of patients in both the watchful waiting and surgical repair groups had pain sufficient to limit usual activities, and their levels of physical functioning were similar. Overall, the rate of complications was similar among those who were assigned to and received surgical repair (21.7 percent) and those assigned to watchful waiting who crossed over to receive surgical repair (27.9 percent), showing that they suffered no penalty for waiting to have the operation until they had developed symptoms.

More details are in "Watchful waiting vs. repair of inguinal hernia in minimally symptomatic men" by Dr. Fitzgibbons, Anita Giobbie-Hurder, M.S., James O. Gibbs, Ph.D., and others, in the January 18, 2006 *Journal of the American Medical Association* 295(3), pp. 285-292. ■

## Individual characteristics, complications, and treatments influence quality of life among adults with diabetes

The quality of life (QOL) of adults with diabetes is affected by a number of interrelated factors including sex, age, educational levels, duration of the disease, complications, and treatment. Susan L. Norris, M.D., M.P.H., a researcher with the Center for Outcomes and Effectiveness, Agency for Healthcare Research and Quality, recently reviewed studies on how personal characteristics, complications, and treatment regimens affected health-related quality of life (HRQOL) of adults with diabetes.

The studies reviewed indicate that adults with diabetes have lower QOL than people without the disease, but not as low as people with congestive heart failure, coronary artery disease, or depression (although diabetes doubles the risk of depression). On the other hand, people with diabetes who remain free of complications have a HRQOL only slightly lower

than people of similar ages in the general population.

Insulin therapy, obesity, and complications of diabetes are associated with lower HRQOL, independent of age and sex. For both type 1 and type 2 diabetes, QOL decreases in relation to an increase in the number of complications. In fact, complications may be the most important disease-specific determinant of QOL. Adults who have diabetes a shorter time have higher QOL than those who live with the disease longer.

People with type 2 diabetes using insulin report lower physical and social functioning than those taking oral medications or using diet only for glycemic control. Conversely, improved glycemic control with oral agents among those with type 2 diabetes may improve QOL.

The relationship between treatment regimens and QOL is less clear in type 1 diabetes. Several

studies suggest that HRQOL among people with type 1 diabetes is not negatively affected by intensive insulin regimens, and that the new types of rapid-acting insulin may increase dietary and leisure time flexibility.

Finally, the meaning of QOL changes with age. Younger people with diabetes are more concerned with fitness, sexuality, peer group acceptance, and fertility, while people in middle age are concerned with fulfilling daily tasks and sexual and motor function, and the elderly are concerned with their capacity to live independently.

See “Health-related quality of life among adults with diabetes,” by Dr. Norris, in the April 2005 *Current Diabetes Reports* 5, pp. 124-130, 2005. Reprints (AHRQ Publication No. 06-R003) are available from AHRQ.\* ■

## Few cardiology fellowship programs offer advanced congenital heart disease training

An estimated 650,000 to 1.3 million adults in the United States suffer from congenital heart disease (CHD), a number that is expected to grow at 5 percent per year. At least half of these patients will likely require care by a physician specializing in CHD, who can perform specific complex cardiac procedures; however, few cardiology fellowship programs offer advanced adult CHD training. This makes it likely that there will not be enough CHD specialists to meet future clinical needs, concludes a study supported in part by the Agency for Healthcare Research and Quality (T32 HS00046 and HS13217).

Researchers analyzed survey responses of directors of 94 adult cardiology and 34 pediatric cardiology

(PC) fellowship programs in the United States. Nine adult and 2 pediatric programs offered adult CHD fellowships, and only 31 adult and 11 pediatric fellows had pursued advanced CHD training in the last 10 years. Most PC programs were in children’s hospitals (38 percent) or children’s hospitals within adult hospitals (50 percent). Of adult programs, 70 percent were in university hospitals and 40 percent were associated with PC groups.

PC-affiliated adult programs allowed fellows to see more CHD patients, since they had more adult CHD clinics and more adult CHD visits than those without PC affiliation. Over 60 percent of the adult cardiology fellowship programs evaluated 10 or fewer CHD

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## Congenital heart disease

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outpatients per month, and 69 percent evaluated less than 5 inpatients per month. Most of the fellowship programs were medium-sized with 6 to 20 adult fellows (76 percent) or 4 to 9 pediatric fellows (59 percent).

See “Variations in adult congenital heart disease training in adult and pediatric cardiology fellowship programs,” by Michelle Z. Gurvitz, M.D., Ruey-Kang Chang, M.D., M.P.H., F.A.C.C., Fernando J. Ramos, and others, in the September 6, 2005 *Journal of the American College of Cardiology* 46(5), pp. 893-898. ■

## Health Care Costs and Financing

### Studies examine the impact of Medicaid managed care programs on access to and use of care

**D**uring the past two decades, nearly all States have implemented managed care for their Medicaid health insurance programs for the poor, including mental health services. Three new studies, supported in part by the Agency for Healthcare Research and Quality (AHRQ), recently examined the impact of Medicaid managed care (MMC) on access to care and use of care.

The first study (AHRQ grant HS10925) concluded that concerns of reduced access to care for the uninsured through MMC programs appear to be unwarranted. According to the second study (AHRQ grant HS09703), the advantages of MMC for mental health care may be diminished in rural, medically underserved States like New Mexico. The third study (AHRQ grants HS10249 and HS10384) unexpectedly found that lapses in enrollment in an MMC program did not affect emergency department visits and hospitalizations for children with asthma. The studies are briefly summarized here.

**Haberer, J.E., Garrett, B.M. and Baker, L.C. (2005, July). “Does Medicaid managed care affect access to care for the uninsured?”** *Health Affairs* 24(4), pp. 1095-1105.

Some have been concerned that the prevalence of MMC patients at safety-net providers, such as community health centers, would reduce available care for the uninsured, and that less Medicaid funding to cross-subsidize care for the uninsured would also reduce their access to care. However, these concerns appear to be unwarranted, concludes this study. Researchers examined the relationship between MMC and care access for the uninsured, using county-level data from the National Health Interview Survey on a nationwide sample over an 8-year period (1994-2001) during which MMC enrollment increased dramatically. After controlling for other factors that typically affect care access (such as race/ethnicity and income), the researchers found that MMC had no consistent effect on care access for the uninsured.

The findings suggest that safety-net providers are coping with the changes associated with MMC. However, it is not known if MMC has affected quality of care for the uninsured or how MMC will evolve in the future.

**Willging, C., Waitzkin, H., and Wagner, W. (August, 2005). “Medicaid managed care for mental health services in a rural state.”** *Journal of Health Care for*

*the Poor and Underserved* 16, pp. 497-514.

In 1997, the rural State of New Mexico, in which one of every five people holds Medicaid coverage, implemented Medicaid managed care for both physical and mental health services. The reform led to administrative burdens, payment problems, stress, and high turnover among providers. In addition, restrictions on inpatient and residential treatment worsened access problems for Medicaid-insured individuals with mental health problems, according to this study. These findings suggest that for rural, medically underserved States, the advantages of managed care for mental health care may be diminished.

The investigators conducted interviews, made field observations, and reviewed legal documents and State monitoring data to examine the impact of Medicaid reform on mental health safety net institutions and on the patients they served in an urban and rural county in New Mexico. MMC made it increasingly difficult for safety net institutions to maintain their tradition of service to the poor. Patients also faced greater barriers in obtaining inpatient care and community-

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## Managed care programs

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based services such as outpatient therapy and case management.

Continuity of care for some patients became compromised when their providers ceased participation in Medicaid because of work-related stress and low reimbursements. Reduced case management, due to large caseloads and low wages, decreased coordination of mental health. Social services tasks fell to clinicians or were neglected entirely. Sixty child and adolescent mental health programs closed between 1998 and 2001, and one hospital ended its adolescent

residential treatment program to conserve financial resources.

**Cooper, W.O., Arbogast, P.G., Hickson, G.B., and others. (2005, July). "Gaps in enrollment from a Medicaid managed care program." *Medical Care* 43(7), pp. 718-725.**

This study found that children with asthma, whose enrollment in the Tennessee Medicaid managed care program (TennCare) lapsed, had no more asthma-related emergency department visits and hospitalizations than children without gaps in enrollment. Also, children with gaps in coverage were less likely to have emergency department visits and hospitalizations for nonrespiratory

conditions. Several factors may have contributed to the first unexpected finding. For example, private coverage may have been present before the gap began or families might have sought private insurance coverage once the child's TennCare coverage lapsed. Also, coverage gaps may have been too short to have impeded access to medications sufficiently to cause poorer asthma outcomes. In other cases, families may have paid for the prescription out of pocket for a child with worsening asthma symptoms. On the other hand, providers may have avoided hospitalizing children with gaps in enrollment because of the families' inability to pay. ■

## Insurance status influences patients' access to urgent followup appointments after emergency department care

**M**ost patients who visit an emergency department (ED) are treated and discharged with a recommendation to follow up with a primary care physician. To avoid hospitalization or an adverse outcome, patients need timely access to followup care after the ED visit. Insurance status influences whether a patient can get a timely follow-up appointment, according to a study supported in part by the Agency for Healthcare Research and Quality (HS13007).

Researchers found that 98 percent of clinics contacted by individuals needing followup care after an ED visit screened callers to determine their insurance status, yet only 28 percent of clinics attempted to determine the severity of the caller's condition. Appointment rates for callers insured by Medicaid were only marginally better than those for uninsured callers who offered to pay \$20.

Brent R. Asplin, M.D., M.P.H., of HealthPartners Research Foundation, and colleagues had research assistants call 430 randomly selected outpatient clinics in 9 cities in 2002 and 2003. The research assistants identified themselves as new patients who had been seen in an ED and needed an urgent followup

appointment within a week for one of three clinical vignettes (pneumonia, hypertension, or possible tubal pregnancy).

Nearly half (47 percent) of total callers and 64 percent of privately insured callers were offered appointments within a week. Callers who claimed to have private insurance were more likely to receive appointments than those who claimed to have Medicaid coverage (64 vs. 34 percent). Callers reporting private insurance coverage had higher appointment rates than callers who reported that they were uninsured but offered to pay \$20 and arrange payment of the balance (65 vs. 25 percent), but the same appointment rates as uninsured callers who were willing to pay cash for the entire visit fee (66 vs. 63 percent). One-third of the clinics contacted could not provide access to a new patient within a week, even one with private insurance.

More details are available in "Insurance status and access to urgent ambulatory care follow-up appointments," by Dr. Asplin, Karin V. Rhodes, M.D., Helen Levy, Ph.D., and others, in the September 22, 2005 *Journal of the American Medical Association* 294, pp. 1248-1254. ■

## State-subsidized health insurance programs provide both benefits and difficulties for low-income children

A growing number of States have begun to explore premium subsidy programs, which help low-income working families purchase health insurance through the workplace or private plans. These plans help States cover a larger number of the uninsured than they could through traditional Medicaid. Three studies from the Child Health Insurance Research Initiative (CHIRI™), supported in part by the Agency for Healthcare Research and Quality (AHRQ), recently examined the benefits and difficulties in several subsidy programs. The first study (AHRQ grant HS10463) found that Oregon's State Children's Health Insurance Program (SCHIP) and premium subsidy programs serve different children, but appear to serve them equally well. The second study (AHRQ grant HS10465) found that SCHIP can improve care for vulnerable children and reduce racial/ethnic disparities in health care. The third study (AHRQ grant HS10435) found that families have difficulty shifting to Medicaid primary care case management programs.

**Mitchell, J.B., Haber, S.G., and Hoover, S. (2005, September). "Premium subsidy programs: Who enrolls, and how do they fare?" *Health Affairs* 24(5), pp. 1344-1355.**

This study examined the factors leading parents to choose Oregon's premium subsidy program, the Family Health Insurance Assistance Program (FHIAP), over SCHIP, and compared the experience of children enrolled in each program with regard to access, use of services, and satisfaction.

Janet B. Mitchell, Ph.D., and colleagues from RTI International surveyed parents randomly selected

from the enrollment rosters of Oregon's Medicaid Program and the FHIAP. Because FHIAP and SCHIP have the same income eligibility requirements, low-income families in Oregon have a choice between the free SCHIP program and FHIAP, which requires copayments and has more restricted benefits. More than half of parents (52 percent) said they chose to enroll their child in FHIAP because they did not think their child was eligible for SCHIP. Other major reasons included a preference for private, rather than public, insurance (16 percent); the desire to insure the entire family (16 percent); and a wish to keep their current insurance plan or physicians (7 percent). The majority of SCHIP parents (83.8 percent) had not heard of FHIAP and did not know it was an option.

The majority (70 percent) of families in FHIAP purchased insurance through the individual market, and the remainder purchased employer-sponsored coverage. Parents choosing to enroll their children in FHIAP were more likely than parents of children enrolled in SCHIP to be employed, highly educated, speak English, have prior experience with premiums and private health insurance, and perceive insurance as protection against future health care needs.

The two programs afforded low-income children similar access to health care services. Nearly all the children had a usual source of care, and roughly equal proportions had seen their primary care physician at least once in the past 6 months. However, a higher proportion of SCHIP enrollees cited an unmet need for primary care (6.9 vs. 2.0 percent) and specialty care (11.2 vs. 3.8 percent). Conversely, FHIAP enrollees reported a

higher unmet need (39 percent vs. 29.7 percent) for dental care, citing high costs and lack of dental insurance.

There were also differences in where children received their care. FHIAP children were more likely to receive their care in a doctor's office or health maintenance organization, whereas SCHIP children were more likely to visit a hospital clinic or community health center.

The authors conclude that efforts to enroll low-income children in premium subsidy programs may need to be accompanied by education on how insurance works. They also should consider whether insurers include provider networks that serve non-English-speaking families, and the possible burden of even the modest FHIAP deductibles and copayments on low-income families.

**Shone, L.P., Dick, A.W., Klein, J.D., and others. (2005, June). "Reduction in racial and ethnic disparities after enrollment in the state children's health insurance program." *Pediatrics* 115(6), pp. e697-e705.**

SCHIP provides health insurance to low-income children, many of whom are members of racial/ethnic minority groups. This study found that after enrollment in New York State's SCHIP, more children of all races and ethnicities had a usual source of care (USC). They were also more likely to get their care from their USC, and fewer had unmet needs for care than they did before they enrolled in SCHIP. In addition, racial/ethnic disparities in USC, unmet need, and continuity of care that existed prior to SCHIP virtually disappeared.

Researchers conducted two telephone surveys with parents of

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## Health insurance programs

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white, black, and Hispanic children throughout New York State. Parents of 2,644 children were interviewed shortly after enrollment, and 2,290 of those completed the follow-up interview 1 year later.

Before SCHIP, 95 percent of white children had a USC compared to 86 percent of black and 81 percent of Hispanic children. During SCHIP, nearly all white, black, and Hispanic children had a USC (98, 95, and 98 percent, respectively). Similarly, disparities were virtually eliminated in continuity of care, as measured by the increased proportion of health care visits to the USC during SCHIP. Before SCHIP, more white than black and Hispanic children made all or most of their visits to their USC (61, 54, and 34 percent, respectively); all improved during SCHIP, with no remaining disparities (87, 86, and 92 percent, respectively).

Disparities in unmet needs for medical care were eliminated. Before SCHIP, 38 percent of black children had an unmet need for care compared with 27 percent of white children; white and Hispanic children did not differ significantly (27 versus 29 percent). During SCHIP, 19 percent of children of all three racial/ethnic groups had unmet needs.

Finally, parent-rated visit quality improved for all groups, but preexisting racial/ethnic disparities in quality of care assessments remained during SCHIP. Sociodemographic and health system factors did not explain disparities or their reduction. The authors conclude that the provision of health insurance to uninsured low-income children may enhance efforts to reduce preexisting racial/ethnic disparities in care, and emphasize the importance of

continued efforts to improve the quality of care for all racial/ethnic groups.

**Bronstein, J.M., Adams, K.E., Florence, C.S., and others. (2005, Summer). "Children's service use during the transition to PCCM in two states." *Health Care Financing Review* 26(4), pp. 95-107.**

During the initial implementation years of Medicaid primary care case management (PCCM) in Alabama and Georgia, use of primary, preventive, and emergency department (ED) services declined. This study concludes that the primary reason for the decline was the difficulty families had understanding and adjusting to restrictions on the providers they were authorized to use for routine care.

PCCM is a form of managed care in which the primary medical provider provides primary and preventive care, coordinates referrals for specialty and ancillary care, and usually authorizes the use of ED facilities. The program's goals are to provide a medical home and reduce unnecessary specialty and ED care.

Janet M. Bronstein, Ph.D., of the University of Alabama at Birmingham, and colleagues used Medicaid claims data from both States to track children during the implementation of PCCM from 1994 to 1999 and to control for geographic availability of Medicaid providers, which also declined during this period.

Focus groups conducted in 2001 with enrollees and providers shed some light on the decrease in primary care, preventive visits, and ED care associated with PCCM implementation. Enrollees reported they were assigned physicians rather than being asked to choose them, and some stated they no longer took their children to the physician because they were not familiar with

their assigned physician. Many were unaware they could change their assigned physician, or had tried but found it difficult. Providers for the most part endorsed the concept of children having a medical home, but felt there were many problems with implementing this system through the Medicaid program. Public health department providers felt office physicians were too busy and too acute-care oriented to focus on preventive care.

The authors concluded that the decline in primary and preventive care could be due to several reasons. First, children possibly received less care from public health departments which had previously been major providers of this service. Second, some visits may not have been captured by Medicaid claims data because some public health providers had indicated they were willing to continue to see patients and forgo payment. Third, claims data may not have captured ED visits that were disallowed by Medicaid because enrollees reported that PCCM had not radically changed their use of ED services and they ignored hospital bills because they expected Medicaid to cover the services. However, Dr. Bronstein concludes that care use rates will increase as the PCCM programs mature and providers and enrollees adjust to the system.

**Editor's note:** These studies are part of the Child Health Insurance Research Initiative (CHIRI™), which is co-sponsored by the Agency for Healthcare Research and Quality, The David and Lucile Packard Foundation, and the Health Resources and Services Administration. CHIRI™ provides policymakers with information to help them improve access to and the quality of health 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/). ■

## Implantable pacemakers are cost-effective in preventing sudden death in people without a life-threatening cardiac arrhythmia

The implantable cardioverter-defibrillator (ICD) can convert episodes of irregular and abnormally fast heart rhythm to regular cardiac sinus rhythm, thus potentially averting sudden death from cardiac causes. ICDs have been shown to reduce the risk of death among patients resuscitated from a cardiac arrest. However, prophylactic use of ICDs may also be cost-effective for patients at risk for sudden death due to poor functioning of the heart's left ventricle, but who have not had a life-threatening cardiac arrhythmia, suggests a study supported in part by the Agency for Healthcare Research and Quality (HS10623).

Researchers reviewed the results of eight clinical trials that randomly assigned patients to receive an ICD or alternative therapy, and developed a model to assess the cost-effectiveness of the ICD in these patients. Two studies found that prophylactic implantation of an ICD in these patients did not reduce the risk of death, and thus was more expensive and less effective than alternative therapy. However, for the

other six trials, the use of an ICD was projected to add between 1 and 3 quality-adjusted life-years (QALY) and between \$68,300 and \$101,500 in cost.

The researchers calculated that the cost-effectiveness of the ICD as compared with control therapy in these six populations ranged from \$34,000 to \$70,200 per QALY gained. This cost-effectiveness ratio would remain below \$100,000 per QALY as long as the ICD reduced mortality for 7 or more years. The prophylactic ICD resulted in a substantial increase in life expectancy compared with that provided by many other medical interventions. Also, its cost-effectiveness in appropriately selected patients was similar to that of other medical interventions often accepted as cost-effective.

More details are in "Cost-effectiveness of implantable cardioverter-defibrillators," by Gillian D. Sanders, Ph.D., Mark A. Hlatky, M.D., and Douglas K. Owens, M.D., in the October 6, 2005 *New England Journal of Medicine* 353, pp. 1471-1480. ■

## Pharmaceutical Research

### Prohibiting physicians from dispensing drugs reduces overall drug use and inappropriate prescribing

Some industrialized nations, including many Asian countries, allow physicians to directly dispense drugs to patients. Yet in Korea, prohibiting physicians from dispensing drugs improved the quality of drug prescribing and decreased overall medication use. When Korean national policy prohibited doctors from dispensing drugs in 2000, it reduced overall drug prescribing, both of antibiotics and other drugs, and reduced inappropriate antibiotic prescribing for viral illness. Prior to that, the national health insurance system reimbursed doctors for dispensed drugs with predetermined prices. This allowed

physicians to profit on the mark-up over drug purchase costs.

Forbidding Korean doctors to dispense drugs removed the potential profit incentive for drug prescribing, note the researchers. With partial support from the Agency for Healthcare Research and Quality (HS10391), they examined how many of 50,999 bacterial and viral illness episodes were prescribed an antibiotic and the total number of different antibiotics prescribed at 1,372 primary care clinics before and after the policy was implemented.

After the drug dispensing restriction, antibiotic prescribing declined substantially for patients with viral illness (from 80.8 to 72.8

percent of patients) and only minimally for patients with bacterial illness (from 91.6 to 89.7 percent of patients). The number of different antibiotics prescribed per episode also decreased significantly after the policy. The dispensing restriction also reduced prescribing of non-antibiotic drugs.

More details are in "Antibiotic use following a Korean national policy to prohibit medication dispensing by physicians," by Sylvia Park, Ph.D., M.P.H., Stephen B. Soumerai, Sc.D., Alyce S. Adams, Ph.D., M.P.P., and others, in the September 2005 *Health Policy and Planning* 20(5), pp. 302-309. ■



### Salmonella aortitis should be considered in adults with evidence of salmonella bloodstream infection but no associated GI symptoms

**A** diagnosis of salmonella aortitis (inflammation of the aorta, the main artery that carries blood from the heart to the body) is an option worth considering in any adult with salmonella infection in the blood, particularly in the absence of associated gastrointestinal symptoms. Researchers, supported in part by the Agency for Healthcare Research and Quality (HS11540), based this conclusion on the case of a 50-year-old man who arrived at a clinical center with fever, chills, and generalized weakness that had lasted for 3 weeks.

The patient had pain and swelling in his right hand and left elbow, weight loss of about 4.5 kg, and occasional pressure in the upper abdominal area. He had not had nausea, vomiting, diarrhea, shortness of breath, or painful or difficult urination. This patient's case was challenging in that several features were absent that might have suggested the correct diagnosis of salmonella aortitis, such as abdominal pain, back pain, and an abnormally high number of white blood cells.

The patient's history of adult-onset Still's disease further complicated the picture. His fever, pattern of inflammation in many joints, enlarged spleen, and higher serum levels of the iron-carrying protein, ferritin, were all typical symptoms of a flareup of adult-onset Still's disease, which can sometimes be triggered by infections.

The case highlights the importance of diligently searching for infection in patients with rheumatic disease before attributing systemic illness to a flareup of the disease, note the researchers. They recommend that, in most cases, treatment of the flareup of rheumatic or autoimmune disease should be delayed until infection has been ruled out. Treatment of salmonella aortitis, unlike autoimmune diseases, usually requires surgery and a prolonged course of antibiotics.

See "Still consider the source," by Amr H. Sawalha, M.D., Sanjay Saint, M.D., M.P.H., Robert W. Ike, M.D., and Michael S. Bronze, M.D., in the October 6, 2005 *New England Journal of Medicine* 353(14), pp. 1503-1507. ■

## Complementary and Alternative Medicine

### Study describes training and practice characteristics of massage therapists

**I**nterest in massage therapy grew during the 1970s and it is now one of the most popular complementary and alternative medical (CAM) treatments. In a study supported in part by the Agency for Healthcare Research and Quality (HS09565 and HS08194), interviews with 226 licensed massage therapists in Connecticut and Washington revealed that most massage therapists were women (85 percent) and white (95 percent). Most had completed some continuing education training in therapeutic massage (79 percent in Connecticut and 52 percent in Washington). They practiced a

median of 4 to 5 years and received a median of 600 hours of clinical training (a minimum of 500 hours and passing a national certification exam is required in most of the 33 States regulating massage practice).

Licensed massage therapists typically saw 10 to 15 patients per week and treated a limited number of conditions. Swedish, deep tissue, and trigger (pressure) point were the most popular techniques in both States. The massage therapists mostly used massage to treat back, neck, and shoulder problems (59 percent in Connecticut and 63 percent in Washington), for wellness care (20 and 19 percent), and for

psychological complaints, especially anxiety and depression (9 and 6 percent). Although most patients referred themselves to a massage therapist, more than one-fourth received concomitant care for the same problem from a physician, with whom massage therapists rarely communicated.

See "A survey of training and practice patterns of massage therapists in two U.S. states," by Karen J. Sherman, Ph.D., M.P.H., Daniel C. Cherkin, Ph.D., Janet Kahn, Ph.D., and others, in the June 2005 *BMC Complementary and Alternative Medicine* 5(13), online at [www.biomedcentral.com](http://www.biomedcentral.com). ■

## AHRQ releases 2005 National Healthcare Quality and Disparities Reports

Quality of health care for Americans has continued to improve at a modest pace, and health care disparities are narrowing overall for many minority Americans. But for Hispanics, disparities have widened in both quality of care and access to care, according to the *2005 National Healthcare Quality Report* and its companion document, the *2005 National Healthcare Disparities Report*. These reports, issued annually, measure quality and disparities in four key areas of health care: effectiveness, patient safety, timeliness, and patient centeredness.

The quality report employs a wide range of measures, including health care outcomes such as hospital-acquired infections and reductions in deaths from certain diseases. It also measures how well the health care system is using specific treatments that are known to work most effectively. The disparities report compares these measures by race and ethnicity and by income. It also measures access to care, using indicators such as health insurance status and frequency of visits to a physician. This year, for the first time, the report also shows trends in health care disparities from year to year.

The *2005 National Healthcare Quality Report* finds that overall quality of care for all Americans improved at a rate of 2.8 percent, the same increase shown in last year's report. However, the report notes there has been much more

rapid improvement in some measures, especially where there have been focused efforts to improve care.

The *2005 National Healthcare Disparities Report* finds that many of the largest disparities in measures of quality and access are observed for low-income people regardless of race or ethnicity, with some signs of improvement. Overall, more racial disparities in quality of care were narrowing than were widening, and most racial disparities in access to care were narrowing (affecting blacks, Asians and American Indians/Alaska Natives). But for Hispanics, the majority of disparities for both quality and access were growing wider.

Examples of findings in the AHRQ disparities report include:

- Rates of late-stage breast cancer decreased more rapidly from 1992 to 2002 among black women (169 to 161 per 100,000 women) than among white women (152 to 151 per 100,000), resulting in a narrowing disparity.
- Treatment of heart failure improved more rapidly from 2002 to 2003 among American Indian Medicare beneficiaries (69 percent to 74 percent) than among white Medicare beneficiaries (73 percent to 74 percent), resulting in an elimination of this disparity.
- The quality of diabetes care declined from 2000 to 2002 among Hispanic adults (44

percent to 38 percent) as it improved among white adults (50 percent to 55 percent).

- The quality of patient-provider communication (as reported by patients themselves) declined from 2000 to 2002 among Hispanic adults (87 percent to 84 percent) as it improved among white adults (93 percent to 94 percent).
- Access to a usual source of care increased slightly from 1999 to 2003 for Hispanics (77 percent to 78 percent) and whites (88 percent to 90 percent), with Hispanics less likely to have access to a usual source of care.

The report finds a 10.2 percent annual improvement in the five core measures of patient safety. These are areas where coordinated national efforts are underway to improve the delivery of specific "best practice" treatments to improve patient safety and reduce medical errors.

Improvements were greatest in quality measures for diabetes, heart disease, respiratory conditions, nursing home care, and maternal and child health care. The overall rate of change for these measures was 5.4 percent.

The AHRQ reports are available online at [www.qualitytools.ahrq.gov](http://www.qualitytools.ahrq.gov) or through the AHRQ Publications Clearinghouse.\* ■

### AHRQ announces new brochure to help people make decisions about surgery

AHRQ has released a new publication, *Having Surgery? What You Need to Know*, to help patients make informed decisions when planning for surgery.

The brochure suggests questions to help patients obtain needed information, including how and where their operation will be performed, what kind of anesthesia will be used, if non-surgical medical treatment and watchful waiting are options, possible risks of not having the surgery, potential risks and expected benefits if they have the surgery, and how long recovery is expected to take.

Other questions in the brochure help patients determine whether and how much of the cost of the operation will be covered by their insurance; whether a second opinion is required and/or covered; how they can learn the surgeon's qualifications for and

experience with their particular procedure; and how to find out how many times the procedure has been performed in the hospital the surgeon suggests, or in other hospitals if patients have a choice of where to go for the operation.

The publication is part of a series of health care resources from AHRQ to help people be more active in making informed decisions that can help them obtain high-quality health care.

The brochure and the Spanish-language version, *Va a tener una cirugía? Lo que usted necesita saber*, are available online, respectively, at <http://www.ahrq.gov/consumer/surgery/surgery.htm> and at <http://www.ahrq.gov/consumer/spsurgery/spsurgery.htm>. Free single copies are also available from the AHRQ Publications Clearinghouse.\* ■

### AHRQ announces recent recipients of Health Services Research Dissertation awards

The Agency for Healthcare Research and Quality (AHRQ) supports dissertation research undertaken as part of an academic program to earn a research doctoral degree. Through this program, AHRQ seeks to expand the number of researchers who address its mission "to improve the quality, safety, efficiency and effectiveness of health care for all Americans." Recently, AHRQ awarded six dissertation grants to individuals from universities throughout the country. AHRQ congratulates these recipients and wishes them well as they join the community of health

services researchers to contribute knowledge that will help enhance the quality of health care in the future. Sincere thanks to their mentors/advisors.

Kevin Moloney  
R36 HS015682-01A1  
HCI Evaluation of Medication Use  
HITS in Pediatric Care  
Georgia Institute of Technology  
Advisor: Julie A. Jacko, Ph.D.

Laura Phillips  
R36 HS 016218-01  
Aged Prisoners Treatment Selection (APTS)  
University of Alabama  
Advisor: Rebecca Allen, Ph.D.

Miriam Ryvicker  
R36-HS 016207-01  
Organizational Culture and Quality of Life in Nursing Homes: A Qualitative Study  
New York University  
Advisor: Ruth Horowitz, Ph.D.

Linda Samia  
R36 HS016224-01  
The Work Environment and Job-Related Stress among Home Healthcare Nurses  
University of Massachusetts-Boston  
Advisor: Carol Hall Ellenbecker, Ph.D. ■

**Clancy, C.M. (2005, September). "Training health care professionals for patient safety." *American Journal of Medical Quality* 20(5), pp. 277-279.**

In this commentary, the Director of the Agency for Healthcare Research and Quality (AHRQ) discusses AHRQ's commitment to patient safety training and some of the results of the Agency's latest patient safety training projects. One project, the ICU Safety Reporting System, is a voluntary, anonymous, Web-based system that collects data about adverse events and "near misses" from all staff in ICUs around the country and provides feedback to participating ICUs so they can change procedures to improve safety. A component of AHRQ's larger Patient Safety Network Web site, the WebM&M (<http://webmm.ahrq.gov>) takes a similar approach.

AHRQ's Patient Safety Improvement Corps Program, conducted in collaboration with the Department of Veterans Affairs, is a nationwide "train the trainer" program by State officials and selected hospital staff members who have been trained in "root cause analysis" of medical errors. AHRQ also makes federal patient safety research findings, programs, and products available via a series of reports available at [www.ahrq.gov/qual/advances](http://www.ahrq.gov/qual/advances), and the Patient Safety Network Web site.

Reprints (AHRQ Publication No. 06-R006) are available from AHRQ.\*

**Doshi, J.A., Shaffer, T., and Briesacher, B.A. (March 2005). "National estimates of medication use in nursing homes: Findings from the 1997 Medicare Current Beneficiary Survey and the 1996**

**Medical Expenditure Survey." *Journal of the American Geriatric Society* 53, pp. 438-443.**

Researchers used nursing home medication files from two nationally representative data sets, the 1997 Medicare Current Beneficiary Survey (MCBS) and the 1996 Medical Expenditure Panel Survey-Nursing Home Component (MEPS-NHC) to examine characteristics of facilities and residents. About 8 percent of residents in the MCBS and 5 percent in the MEPS-NHC had simple medication regimens consisting of one to two drug therapies in the course of a month. Most residents took between three and eight different medicines every month (58 percent in MCBS and 61 percent in MEPS-NHC). About 32 percent of residents in both surveys had monthly drug regimens consisting of nine or more medicines, with an average of seven to eight prescriptions per month. The most commonly used medications were pain relievers and fever reducers (76-82 percent), followed by gastrointestinal agents (75-76 percent), electrolytic and caloric preparations (70-71 percent), central nervous system agents (65-66 percent), anti-infective agents (62-68 percent), and cardiovascular agents (55-59 percent).

Reprints (AHRQ Publication No. 05-R057) are available from AHRQ.\*

**Elliott, M.N., Farley, D., Hambarsoomians, K., and Hays, R.D. (2005, October). "Do Medicaid and commercial CAHPS scores correlate within plans?" (AHRQ grant HS00924). *Medical Care* 43(10), pp. 1027-1033.**

The 3,939 Medicaid enrollees of 6 New Jersey managed care plans reported poorer care than 3,027

commercial enrollees in the same plans on 6 measures evaluated by the Consumer Assessment of Health Plans Study survey, but on none of the 4 global measures. After controlling for these main effects, variability in care evaluations between commercial and Medicaid enrollees within plans exceeded variability between plans for 4 out of the 10 measures. The researchers conclude that within-plan variability in care evaluations by these two groups is too great to permit meaningful inference about plan performance for one group from the other for many important outcomes. They recommend that separate surveys should still be fielded.

**Miller, M.R., Gergen, P., Honour, M., and Zhan, C. (2005, September). "Burden of illness for children and where we stand in measuring the quality of this health care." *Ambulatory Pediatrics* 5(5), pp. 268-278.**

Measures of health care quality for children are not as well developed as those for adults. This study identified high-prevalence conditions for children using the 2000 National Ambulatory Medical Care Survey, 2000 National Hospital Ambulatory Medical Care Survey, 1999 Medical Expenditure Panel Survey, 2000 Healthcare Cost and Utilization Project State Inpatient Databases and Ambulatory Surgery Databases. The goal was to create lists of high-priority conditions for children, which the researchers then cross-tabulated with existing quality measures for pediatric health care.

They found numerous and large gaps in existing quality-of-care

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measures for children relative to high-burden conditions in both the inpatient and outpatient setting. Efforts are needed to build a representative repertoire of quality measures for the high-burden conditions children experience, conclude the researchers.

Reprints (AHRQ Publication No. 06-R0004) are available from AHRQ.\*

**Miller, M.M., Pronovost, P., Donithan, M., and others. (2005, September). "Relationship between performance measurement and accreditation: Implications for quality of care and patient safety." *American Journal of Medical Quality* 20(5), pp. 239-252.**

This study concludes that all health care performance measurement tools need to be continuously reevaluated to ensure that they are providing the public with reliable, consistent information about health care quality and safety. The investigators examined the association between the Joint Commission on Accreditation of Healthcare Organizations (JCAHO) accreditation scores from 1997 to 1999 with the Agency for Healthcare Research and Quality's Inpatient Quality Indicators and Patient Safety Indicators (IQIs/PSIs) from 24 States involved in the Healthcare Cost and Utilization Project. Most institutions scored high on JCAHO measures despite IQI/PSI performance variation. No significant relationship existed between JCAHO categorical accreditation decisions and IQI/PSI performance.

Reprints (AHRQ Publication No. 06-R005) are available from AHRQ.\*

**Pronovost, P., Weast, B., Rosenstein, B., and others. (2005, March). "Implementing and validating a comprehensive unit-based safety program." (AHRQ grant HS11902). *Journal of Patient Safety* 1(1), pp. 33-40.**

Researchers implemented a comprehensive unit-based safety program (CUSP) in the Weinberg oncology surgical intensive care unit (WICU) at Johns Hopkins Hospital, while a surgical ICU (SICU) served as a control. Six months later, they implemented the program at the SICU. Thus, they had two 6-month periods (pre and post) in the WICU and three 6-month periods in the SICU (pre, control, and post).

CUSPs work to engage and empower ICU staff to identify and eliminate patient safety hazards. The eight CUSP steps are: culture and safety assessment; science of safety education; staff identification of safety concerns; senior executives adopt a unit; improvements implemented from safety concerns; efforts documented/analyzed; results shared; and culture reassessment.

Prior to CUSP, 94 percent of WICU orders and 40 percent of SICU charts contained medication errors at patient transfer out of the ICU to another hospital unit, errors that were eliminated after CUSP implementation. Nursing turnover rates decreased from 9 percent (pre-CUSP) to 2 percent (post-CUSP) in the WICU and from 8 percent (pre-CUSP) and 9 percent (control) to 2 percent (post-CUSP) in the SICU. Mean WICU and SICU stays shortened from 2 days to 1 day and 3 days to 2.3 days, respectively.

**Stukenborg, G.J., Kilbridge, K.L., Wagner, D.P., and others. "Present-at-admission diagnoses improve mortality risk adjustment and allow**

**more accurate assessment of the relationship between volume and lung cancer operations and mortality risk." (AHRQ grants HS10134 and HS11419). *Surgery* 138, pp. 498-507.**

Patient diagnoses made at the time of hospital admission can be used to improve mortality risk adjustment for lung cancer patients undergoing surgery. These present-at-admission diagnoses also may allow a more accurate assessment of the relationship between volume of lung cancer operations and mortality risk, concludes this study. The investigators used adjustments for conditions identified as present-at-admission to examine the relationship between the volume of lung cancer operations and mortality among 14,456 California hospital patients. Mortality risk adjustment using present-at-admission diagnoses yielded better discrimination and explained more of the variability in observed deaths than other methods of risk adjustment used in previous studies. Also large increases in hospital procedure volume were associated with much smaller decreases in mortality risk than those estimated using comparable risk-adjustment models.

**Weissman, J.S., Annas, C.L., Epstein, A.M., and others. (July 13, 2005). "Error reporting and disclosure systems: Views from hospital leaders." (AHRQ grant HS11928). *Journal of the American Medical Association* 293(11), pp. 1359-1366.**

In 2002 and 2003, researchers surveyed chief executive and chief operating officers (CEOs/COOs) from 203 randomly selected hospitals in 2 States with mandatory reporting and public disclosure, 2 States with mandatory reporting without public disclosure, and 2 States without mandatory

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systems. The survey asked the hospital executives about their perceptions of the effects that mandatory systems would have on error reporting, the likelihood of lawsuits, and patient safety.

Overall, 69 percent of CEOs/COOs thought that a mandatory, nonconfidential system would discourage reporting of patient safety incidents to their hospital's own internal reporting system, and 79 percent thought it would encourage lawsuits. Less than one-third (28 percent) thought that it would have a positive effect on patient safety while 73 percent felt it would have no effect or a negative effect. More than 80 percent felt that the names of both the hospital and the involved professionals should be kept confidential. Hospital executives from States with mandatory public disclosure systems were more likely than those in other States to approve releasing the hospital name (22 vs. 4 percent). Based on vignettes of hypothetical errors, 89 to 98 percent of hospital leaders said their hospital would always or usually report incidents involving serious injury, but far fewer would report less severe injuries.

**Wu, A.W., Holzmüller, C.G., Lubomski, L.H., and others. (2005, March). "Development of the ICU safety reporting system." (AHRQ grant HS11902). *Journal of Patient Safety* 1(1), pp. 23-32.**

The Intensive Care Unit Safety Reporting System (ICUSRS) is a voluntary, confidential, Web-based reporting system, with the goal of improving ICU patient safety. This article describes development of the system using 18 ICUs (2 pediatric and 16 adult units). Using a simple computer word processing program, patients or providers can anonymously report any adverse event, health care situation leading to patient harm, or near miss (an incident with potential for harm, but harm did not occur).

Individuals completing the form answer questions about factors that might have contributed to, minimized, or prevented similar incidents. They also report outcomes such as death, patient physical injury, discomfort, dissatisfaction, and economic consequences. After submission, reports are stripped of identifiers and analyzed by ICU safety experts. Monthly feedback reports are ICU site-specific and compare the ICU with data from all other participating ICUs. Occasional alerts are sent to all ICUs if an

urgent situation is identified. The focus is not on naming and blaming (the system is anonymous and non-punitive), but on needed changes in care processes or systems.

**Zarbo, R.J., Meier, F.A., and Raab, S.S. (2005, October). "Error detection in anatomic pathology." (AHRQ grant HS13321). *Archives of Pathology and Laboratory Medicine* 129, pp. 1237-1245.**

Because of its complex nature, anatomic pathology is prone to error at many steps throughout the testing process. The authors reviewed the literature to examine the magnitude of error occurring in anatomic pathology. They conclude that there are currently no standardized tools for defining error in anatomic pathology; therefore, it cannot be reliably measured, nor can its clinical impact be assessed. The authors propose a standardized error classification that would permit measurement of error frequencies, clinical impact of errors, and the effect of error reduction and prevention errors. They note that the value of double-reading, case conferences, and consultations (the traditional triad of error control in anatomic pathology) awaits objective assessment. ■

## 2005 Author and Subject Index

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