AHRQ

Research Activities

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Highlights

Departments

Regular Features

New study finds that each year thousands of c-sections are performed too early in labor

Of the 1 million c-sections performed in the United States each year, about 294,000 are done because of lack of progress in labor. A recent study found that up to 24 percent of the c-sections done for lack of progress may be performed too early. These women had a c-section with a dilation of only 0 to 3 centimeters contrary to recommendations of the American College of Obstetricians and Gynecologists (ACOG) that the cervix should be dilated to 4 centimeters or more before a diagnosis of failure to progress is made.

The study was conducted by researchers at RAND, Brown University, and the University of California, Los Angeles, and funded by the Agency for Healthcare Research and Quality (contract 290-90-0039). The study was part of AHRQ's Management and Outcomes of Childbirth Patient Outcomes Research Team (PORT), led by Emmett Keeler, Ph.D., of RAND.

According to the researchers, doctors may be more at ease with risks associated with c-sections than they are with continuing to observe a labor in the second stage that is not progressing as rapidly as expected. Also, doctors may either disagree with the ACOG recommendations or interpret them differently. As a result, doctors may formulate their own definition of "lack of progress in labor." The authors point to the need for more research to understand the health effects of diagnosing lack of progress earlier in labor and why doctors do not follow the ACOG recommendations.

Researchers reviewed medical records and collected postpartum telephone surveys from 733 women who delivered full-term, nonbreech infants by unplanned c-sections. The data were captured from 30 hospitals in Los Angeles County and Iowa between March 1993 and February 1994.

Details are in "Lack of progress in labor as a reason for cesarean," by Deidre Spelliscy Gifford, M.D., M.P.H., Sally C. Morton, Ph.D., Mary Fiske, M.D., M.P.H., and others in the April 2000 *Obstetrics & Gynecology*, 95, pp. 589-595. ■

Hysterectomy substantially improves symptoms, physical functioning, and quality of life for some women

Hysterectomy can lead to substantial improvements for women suffering multiple and severe symptoms associated with gynecologic disorders, such as uterine fibroids (benign tumors), abnormal uterine bleeding, and endometriosis. However, for some women, hysterectomy does not relieve specific symptoms, and some even develop new symptoms or other problems after surgery, according to a study supported by the Agency for Healthcare Research and Quality (HS06865).

The study found that 8 percent of women who had hysterectomies had just as many symptoms or more severe symptoms 2 years after hysterectomy as they had before the surgery. However, these women were more likely to be in therapy for emotional problems at the time of surgery or to have a low household income (less than $35,000). These findings underscore the relevance of factors in patients' private lives that affect treatment effectiveness but of which gynecologists might not be aware, notes Kristen H. Kjerulff, M.S., Ph.D.

Dr. Kjerulff and colleagues at the University of Maryland School of Medicine prospectively studied 1,299 women who had hysterectomies for benign conditions at 28 Maryland hospitals. They documented symptoms, psychological functioning, and quality of life before surgery and at 3, 6, 12, 18, and 24 months after surgery.

Most of the women in this study reported substantial improvement in symptoms, quality of life, and psychologic function following hysterectomy, with no evidence of regression of improvement over 2 years. Whether the hysterectomy was done abdominally or vaginally or whether the women were on hormone replacement therapy following the operation had no impact on symptom relief. Trend analysis from 6 to 24 months after surgery showed significant reduction in pelvic pain, activity limitation, abdominal bloating, anxiety, and depression; substantial improvement in physical function; and borderline improvement in social function. In addition, about three-fourths of women who scored as depressed before hysterectomy were no longer depressed, and two-thirds of those who scored as anxious before the operation were no longer anxious 1 and 2 years later.

More details are in "Effectiveness of hysterectomy," by Dr. Kjerulff, Patricia W. Langenberg, Ph.D., Julia C. Rhodes, M.S., and others, in the March 2000 *Obstetrics & Gynecology* 95(3), pp. 319-326 ■

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AHRQ
Office of Health Care Information
2101 East Jefferson Street, Suite 501
Rockville, MD 20852
(301) 594-1364

Mary L. Grady, Managing Editor
David I. Lewin, Senior Editor
Gail Makulowich, Contributing Editor
Joel Boches, Design and Production
Karen Migdail, Media Inquiries

Zinc blood levels during pregnancy don't seem to affect pregnancy complications or neonatal outcomes

Zinc deficiency during pregnancy in experimental animals causes fetal growth retardation and malformations. A firm consensus has never been reached about the impact of zinc intake during human pregnancy and its impact on pregnancy, delivery, and neonatal outcomes. However, the largest study to date found no relationship between blood zinc levels and pregnancy outcomes. The study was conducted by the Patient Outcomes Research Team (PORT) on

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Zinc blood levels and pregnancy outcomes

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Prevention of Low Birthweight in Minority and High-Risk Women and supported in part by the Agency for Healthcare Research and Quality (PORT contract no. 290-92-0055).

Led by PORT principal investigator Robert L. Goldenberg, M.D., of the University of Alabama at Birmingham, the researchers measured zinc concentrations in plasma samples at a mean of 16 weeks gestation from 3,448 women attending a public health clinic for their prenatal care; 85 percent of the women were black, and 15 percent were white. They ranged in age from 11 to 44 years, with a mean age of 22.4.

After adjustments were made for gestational age, plasma zinc concentrations were not significantly associated with any measure of pregnancy outcome or neonatal condition. For example, the researchers found no significant differences in the prevalence of maternal complications among women with the lowest and the highest plasma zinc concentrations. Nor were there any significant differences in the groups in the prevalence of fetal growth restriction, preterm delivery (less than 37 weeks), early preterm delivery (less than 32 weeks gestation), hypertension, amnionitis, or postpartum infections.

In addition, there were no significant correlations between plasma zinc scores and various neonatal measures such as birth weight, head circumference, Apgar scores at 1 and 5 minutes, gestational age at birth, and crown-heel length. This study agrees with the findings of about half of previous studies that found no relationship between zinc concentration and pregnancy outcome, and it disagrees with the other half of studies that did find some positive association. However, this study was the largest one to date; the other studies involved fewer than 1,000 women.

See "Maternal plasma zinc concentrations and pregnancy outcome," by Tsunenobu Tamura, M.D., Dr. Goldenberg, Kelley E. Johnston, B.A., and Mary DuBard, B.A., in the January 2000 *American Journal of Clinical Nutrition* 71, pp. 109-113. ■

Evidence-Based Medicine

Newer antidepressants are as effective as older tricyclic agents in primary care patients

Three out of four adults suffering from depression seek help from their primary care physician. For these patients, the newer antidepressants relieve depression as effectively as the older tricyclic agents and may cause fewer side effects, concludes a review of 28 trials involving nearly 6,000 adult primary care patients. The review was conducted by researchers at the Evidence-based Practice Center at the University of Texas Health Sciences Center, which is one of 12 such centers supported by the Agency for Healthcare Research and Quality (Contract no. 290-97-0012).

Cynthia D. Mulrow, M.D., M.Sc., and colleagues reviewed the literature comparing new drugs such as selective serotonin reuptake inhibitors, serotonin norepinephrine inhibitors, reversible inhibitors of monoamine oxidase, and dopamine antagonists, with either placebo or tricyclic agents. They found that on average 63 percent of adults taking newer agents and 60 percent of adults taking tricyclics found significant relief from depression (at least a 50 percent improvement in symptoms as measured by a depressive symptoms rating scale). Only 35 percent of adults taking a placebo found such relief.

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Newer antidepressants

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Eight percent of adults taking new agents and 13 percent of those taking tricyclics dropped out of treatment because of adverse effects such as headache, nausea, constipation, and dizziness. These adults suffered from either major depression, depression requiring treatment as judged by the primary care physician, dysthymia (mild, lingering depression), mixed anxiety depression, or more than one type of depressive disorder. Except for one study, patients were not alcoholics and did not have serious medical illnesses or cognitive impairment.

This review highlights major gaps in the evidence concerning the optimal treatment of depression in primary care settings, according to the authors. Trials of new medications have been limited in scope and have not addressed the benefits, risks, and costs of alternative psychosocial and herbal treatments. The authors call for effectiveness studies conducted in broader groups of primary care patients with less severe depression and greater medical and psychiatric problems instead of more studies of similar antidepressants.

For more information, see "Efficacy of newer medications for treating depression in primary care patients," by Dr. Mulrow, John W. Williams, Jr., M.D., M.H.S., Elaine Chiquette, Pharm.D., and others, in the January 2000 *American Journal of Medicine* 108, pp. 54-64.

Editor's note: Copies of the complete AHRQ-supported Evidence Report No. 7, *Treatment of Depression–Newer Pharmacotherapies* (AHRQ Publication No. 99-E014), are available from the AHRQ Clearinghouse.* Copies of the report summary (AHRQ Publication No. 99-E013) also are available from the Clearinghouse.* See the back cover of *Research Activities* for ordering information. ■

Clinical Decisionmaking

General anesthesia is as effective and may be better than long-acting spinal anesthesia

More than 250,000 elderly men and women in the United States will fracture a hip during the coming year. One-third of them will die within a year after their fractures, and most will suffer from impaired mobility and independence. Doctors usually prefer "safer" spinal anesthesia over general anesthesia to repair hip fractures. However, a new study of elderly hip fracture patients showed similar outcomes for both types of anesthesia. What's more, it found that patients receiving general anesthesia had better cognitive functioning and walking ability up to 24 months after surgery than those who received long-acting spinal anesthesia.

Researchers at the University of Maryland School of Medicine studied 741 elderly patients who were enrolled in the Baltimore Hip Studies, a multicenter, noninterventional observational research project investigating long-term recovery from hip fracture. Patients enrolled in the study were given either spinal anesthesia (430 patients using lidocaine, bupivacaine, or tetracaine) or general anesthesia (311 patients using induction agents, benzodiazepines, narcotics, and other medications) for hip fracture repair. The researchers evaluated the patients' progress at 2, 6, 12, 18, and 24 months after surgery with a portable gait and balance laboratory. There were no significant differences for in-hospital complications or deaths either by route of anesthesia or the type of hospital (academic or community) where the surgery was done.

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

Anesthesia for hip fracture

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There was no significant difference in outcomes 2 years after surgery between the two types of anesthesia. The general anesthesia group did show a 43 percent reduction in the odds of impaired ability to walk 10 feet a year after surgery, as well as nonsignificant trends toward better social interaction and cognitive functioning. Of the three spinal anesthetics (i.e., epinephrine, lidocaine, and tetracaine) there was little difference between lidocaine and general anesthesia. However, general anesthesia was associated with slightly better outcomes than was either tetracaine or bupivacaine, which are longer acting drugs than lidocaine. This suggests that longer acting, but lower concentration, local anesthetics might be associated with subtle neurologic injury. On the other hand, lidocaine may have been selected for shorter, less complicated surgeries, which was reflected in better outcomes.

More details are in "Spinal anesthesia versus general anesthesia for hip fracture repair: A longitudinal observation of 741 elderly patients during 2-year follow-up," by Timothy B. Gilbert, M.D., William G. Hawkes, Ph.D., Richard Hebel, Ph.D., and others, in the January 2000 *American Journal of Orthopedics* 29(1), pp. 25-35. ■

CT scans taken during the initial hours of a suspected stroke cannot rule out stroke

Noncontrast cranial computed tomography (CT) is not very good at identifying acute stroke in the first hours after symptom onset, concludes a review of the subject by Richelle J. Cooper, M.D., and David L. Schriger, M.D., of the University of California, Los Angeles. However, it is the imaging method of choice for suspected stroke victims because it is readily available in most emergency departments (EDs) and can be performed quickly. CT is also the best way to identify intracranial hemorrhage, a contraindication to clot-busting (thrombolytic) therapy, which should be given within 3 hours after stroke onset.

Unfortunately, emergency medicine, radiology, and neurology physicians only correctly identify these hemorrhages 73 to 87 percent of the time. Large infarcts near the middle cerebral artery are also relative contraindications to thrombolytic therapy, but again physicians typically identify just 67 to 93 percent of these infarcts. Also, the classic neurologic changes associated with stroke, such as ischemic infarction, may not be visible on a CT scan until more than 24 hours after symptom onset. Some subtle signs of stroke, such as cerebral edema, do appear. Although these signs are helpful when present, their absence in no way rules out acute stroke, note the authors, whose work is supported by the Agency for Healthcare Research and Quality (National Research Service Award fellowship F32 HS00134).

Magnetic resonance imaging (MRI) can identify acute stroke more predictably and sooner after stroke symptom onset than CT scans. However, MRI is more time consuming than CT scans and is not readily available around the clock at many hospitals. Also, MRI images are more susceptible to movement artifact, and some patients are precluded from MRI either because they are too large for the scanner or have intracranial surgical clips or a pacemaker. As more specific therapies for stroke become available, MRI and MR angiography appear promising both for identifying acute strokes and for selecting among treatments.

See "How accurate is a CT scan in identifying acute strokes?" by Drs. Cooper and Schriger, in the November 1999 *Western Journal of Medicine* 171, pp. 356-357. ■

Odontoid fractures following blunt trauma often involve certain spinal and sometimes non-spinal damage

Victims of forceful blunt trauma to the neck often suffer from a certain type of spinal injury, odontoid fractures. These fractures often produce instability of the cervical spine. In fact, patients often have other spine injuries and frequently suffer non-spine-related injuries and neurologic impairment, concludes the largest study ever done on patients with blunt trauma to the neck.

Knowing this may help doctors identify and manage patients with odontoid fractures, note William R. Mower, M.D., Ph.D., and colleagues at the University of California, Los Angeles School of Medicine. As part of the National X-Radiography Utilization Study, NEXUS)—the most definitive study to date of this type of odontoid injury—they prospectively studied x-rays of the cervical spine and any ancillary studies for 34,069 blunt trauma patients evaluated at 21 emergency departments (EDs) across the United States. This research was supported by the Agency for Healthcare Research and Quality (HS08239).

Dr. Mower and colleagues found that 2.4 percent (818) of these blunt trauma victims sustained a cervical spine injury, with slightly more than 10 percent of these victims (94) sustaining a fracture of the odontoid. The rate of odontoid fractures varied by age, from less than 3 percent among those under age 20 years to greater than 20 percent in patients over 80 years of age. Over half of the odontoid fracture victims sustained additional cervical spine injuries, with 90 percent of these injuries involving the atlanto-axial complex. Also, 52 percent suffered from non-spine-related injuries, over one-third (34 percent) arrived at the ED with an altered level of alertness, and almost one-fourth (23 percent) exhibited some form of focal neurologic deficit associated with their injury.

Odontoid cervical spine injuries are important to detect because immediate treatment and long-term prognosis depend on accurate diagnosis of the injury. Odontoid fractures that are mechanically stable tend to heal with conservative treatment, while those that involve fractures of the vertebral body may require prolonged immobilization or surgery. The authors suggest that radiologists be cognizant of the high prevalence of odontoid fractures in victims of blunt trauma to the neck and focus careful attention on the region of the atlanto-axial complex.

See "Odontoid fractures following blunt trauma," by Dr. Mower, Jerome R. Hoffman, M.D., and Michael I. Zucker, M.D., *Emergency Radiology* 7, pp. 3-6, 2000. ■

More attention should be paid to palliative care for children dying of cancer

Cancer is the second leading cause of death in children, after accidents. Children dying of cancer typically receive aggressive treatment at the end of life. But many of these children suffer greatly in the last month of life, and aggressive attempts to control their symptoms often fail.

More attention should be given to palliative care for these children, concludes a study supported by the Agency for Healthcare Research and Quality (National Research Service Award training grant T32 HS00063). Joanne Wolfe, M.D., M.P.H., of the Dana-Farber Cancer Institute, and colleagues interviewed the parents of children who had died of cancer between 1990 and 1997 and who were cared for at Children's Hospital or the Dana-Farber Cancer Institute in Boston. They also reviewed the children's medical records.

Forty-nine percent of the children died in the hospital; nearly half of these deaths occurred in the intensive care unit. According to the parents, 89 percent of the children suffered "a lot" or "a great deal" from at least one symptom in their last month of life, most commonly pain, fatigue, or dyspnea (labored breathing); 51 percent suffered from three or more symptoms. Treatment alleviated pain for only 27 percent of children and dyspnea for only 16 percent of children. Based on a review of the medical records, parents were significantly more likely than physicians to report that their child had fatigue, poor appetite, constipation, and diarrhea, suggesting that these symptoms were not recognized by the medical team.

Suffering from pain was nearly three times more likely in children whose parents reported that the

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Palliative care for dying children

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physician was not actively involved in providing end-of-life care. It may be difficult for physicians to change their focus from treatment to comfort, even when there is little hope of a cure. Yet, earlier discussion of hospice care was associated with a greater likelihood that parents would describe their child as calm and peaceful during the last month of life. The researchers conclude that active involvement by caregivers committed to palliation can help alleviate the suffering of dying children.

See "Symptoms and suffering at the end of life in children with cancer," by Dr. Wolfe, Holcombe E. Grier, M.D., Neil Klar, Ph.D., and others, in the February 3, 2000 *New England Journal of Medicine* 342, pp. 326-333. ■

Health Care Delivery

Homeless people are willing to obtain health care if they believe it is important

About one-third of homeless adults living in Los Angeles have impaired vision, skin/leg/foot problems, or tuberculosis (TB). Many have been in prison or been the victim of a crime. Most have been homeless for several years and suffer from chronic mental illness, alcoholism, or drug addiction. Fortunately, these homeless individuals can be motivated to seek medical care for conditions they consider serious, despite mental illness or substance abuse problems. This requires case identification and referral to a community physician for care, notes Lillian Gelberg, M.D., M.S.P.H., of the University of California, Los Angeles.

In a study supported in part by the Agency for Healthcare Research and Quality (HS06696), Dr. Gelberg and her colleagues tested a behavioral model of access to care that is particularly applicable to vulnerable populations. They analyzed data from the UCLA Homeless Health Study to determine factors that influence whether a homeless person will see a clinician for one of four conditions prevalent among the homeless—vision impairment, skin/leg/foot problems, high blood pressure, and positive tuberculosis (TB) skin test—and the impact of that care on their health status. The researchers interviewed 363 homeless people in Los Angeles and gave them a limited physical examination and TB skin test. Those found to have any one of the four study conditions were contacted every 4 months (up to 8 months) to see if they had sought medical care and to assess whether they still had the condition(s).

The majority of study participants had no regular source of care (only 4 percent used a private doctor), and only one-third were covered by health insurance. Homeless people were more apt to seek care for conditions that had a less immediate but longer term effect, such as high blood pressure and TB skin test positivity, than for symptomatic conditions of their skin and vision. They may have been coping or at least getting by. Or, they may have felt that they could treat such conditions on their own, for example, by obtaining reading glasses from a local store. However, use of care didn't always affect outcome, perhaps due to the harshness of their environment and the current state of health care available to these homeless individuals.

The researchers point out that residential history, mental health, substance abuse, history of victimization, and competing needs affect the use of health services and clinical outcomes. They recommend that the model tested in this study–the Behavioral Model for Vulnerable Populations–be considered in future research on the health of disadvantaged populations.

For more information, see "The behavioral model for vulnerable populations: Application to medical care use and outcomes for homeless people," by Dr. Gelberg, Ronald M. Andersen, Ph.D., and Barbara D. Leake, Ph.D., in the February 2000 *Health Services Research* 34(6), pp. 1273-1314. ■

Better use of available TB prevention strategies will be needed to eliminate the disease by the year 2010

Tuberculosis (TB) rates rose dramatically in the United States from 1985 to 1992 due to several factors. These include a rise in the number of people infected with the human immunodeficiency virus (HIV), which increases susceptibility to TB, and lack of effective TB control in certain regions of the country. Federal support to control TB led to a steady decline in the number of TB cases in the United States to an all-time low rate of 6.8 per 100,000 in 1998. However, better use of available TB prevention techniques must be made for the national goal of TB elimination (1 case per million people) by the year 2010 to be achieved, concludes a commentary by Timothy F. Brewer, M.D., M.P.H., formerly of Harvard Medical School and now with the London School of Hygiene and Tropical Medicine. Dr. Brewer's work was supported in part by the Agency for Healthcare Research and Quality (National Research Service Award fellowship F32 HS00079).

Dr. Brewer and his colleagues recommend using several available strategies. Prevention should be targeted at populations in which TB remains a threat: children born to HIV-infected mothers, injection drug users, the homeless, and health workers and others exposed to TB patients. TB skin testing and preventive therapy should be expanded for people infected with HIV. Foreign-born individuals who arrive in the country with noninfectious TB should receive followup preventive therapy or treatment, since foreigners accounted for 42 percent of all reported TB cases in the United States in 1998.

Bacille Calmette-Guerin (BCG) vaccine should be considered for HIV-negative people who are at increased risk of TB, including children of HIV-infected mothers. BCG vaccine should also be considered for homeless people and substance abusers. Skin testing and use of preventive therapy are problematic in these groups because of noncompliance or liver toxicity (due to already damaged livers from alcohol or drug abuse) from isoniazid, a key drug for treating TB. A goal should be to increase treatment completion rates from a low of 11 percent in some States to 90 percent. Finally, more costly but cost effective rapid TB culture and identification tests should be used to improve diagnostic accuracy and reduce the time to diagnosis and treatment.

See "New approaches to preventing and eliminating tuberculosis in the United States," by Dr. Brewer, S. Jody Heymann, M.D., Ph.D., and Jennifer P. Stevens, in the January 2000 *Infections in Medicine* 17, pp. 57-62. ■

Outcomes/Effectiveness Research

Back pain studies examine outcomes of surgery as well as long-term disability and return to work

Most Americans have suffered from back pain at one time or another. In fact, low back problems are one of the most frequent reasons for disability compensation claims in workers. A typical decision for chronic back pain is whether to undergo surgery or whether nonsurgical approaches will eventually reduce pain and improve functioning. Three recent studies, supported by the Agency for Healthcare Research and Quality and summarized here, examine these issues.

The first study (AHRQ grant HS06344) shows that surgery improved the outcomes of patients with severe lumbar spinal stenosis compared with nonsurgical treatments. The second study (AHRQ grant HS09804) finds that patients who have high hopes that surgery will improve their sciatica fare better than patients who have lower expectations. The third study (AHRQ grant HS06344) demonstrates that surgically treated patients with herniated discs or sciatica had fewer symptoms and better functional status than nonsurgically treated patients, even though disability and work outcomes were comparable.

Atlas, S.J., Keller, R.B., Robson, D., and others. (2000, March). "Surgical and nonsurgical treatment of lumbar spinal stenosis: Four year outcomes

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Back pain studies

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from the Maine Lumbar Spine Study." ***Spine*** **25, pp. 556-562.**

In this study, the researchers found that of 119 patients with symptomatic lumbar spinal stenosis, surgically treated patients (decompressive laminectomy with or without fusion) had more severe symptoms and worse functional status at baseline, yet had better outcomes 4 years later compared with nonsurgically treated patients. At that point, 70 percent of patients who had surgery and 52 percent of nonsurgically treated patients reported that their predominant symptom, either leg or back pain, was better. Nonsurgical treatment ranged from bedrest, back exercises, physical therapy, and spinal manipulation to narcotic analgesics and epidural steroids.

After 4 years, 63 percent of surgically treated patients and 42 percent of nonsurgically treated patients were satisfied to spend the rest of their lives with their current back symptoms. Also, 79 percent of surgically treated patients said that if they had the choice to make again, they would still choose surgery. Outcomes of nonsurgically treated patients improved modestly and remained stable over 4 years, with differences narrowing between the two groups during that time.

Nevertheless, 30 to 40 percent of patients treated surgically and 50 to 60 percent of patients treated nonsurgically had unsatisfactory outcomes after 4 years. The researchers conclude that the treatment options offered to individual patients should be based on their symptoms, functional impairment, and other limiting medical conditions. They interviewed patients at baseline and via mailed questionnaires at 3, 6, 12, 24, 36, and 48 months. Physicians completed a standard baseline questionnaire of patients' medical history, physical and neurologic findings, diagnostic procedures, and planned treatment.

Lutz, G.K., Butzlaff, M.E., Atlas, S.J., and others. (1999, December). "The relation between expectations and outcomes in surgery for sciatica." ***Journal of General Internal Medicine*** **14, pp. 740-744.**

Patients who expect symptom relief and a short recovery from surgery for their sciatica (low back pain with radiating leg pain, numbness, or weakness) have better surgical outcomes than patients with lower expectations, according to this study. The researchers recruited 273 patients from the offices of orthopedic surgeons, neurosurgeons, and occupational medicine physicians in Maine; the patients all underwent diskectomy for sciatica. They measured patients' and physicians' expectations before surgery and their satisfaction with care and changes in symptoms and functional status 1 year after surgery.

About two-thirds of patients expected less than a 3-month recovery time after surgery and expected to return to their usual health state. These patients were twice as likely to be pleased or delighted with their outcomes a year later than patients who expected recovery to last longer than 3 months. Also, more patients who preferred surgery, even after learning that sciatica could get better without surgery, had nearly three times the likelihood of lower symptom scores a year after surgery than patients who did not prefer surgery.

On the other hand, physicians' expectations for surgery were often overblown. When physicians predicted a "great deal of improvement" after surgery, 39 percent of patients were not satisfied with their outcomes, and 25 percent said their symptoms had not improved. The researchers conclude that asking patients about what they expect from the surgery may help physicians identify patients who are more likely to benefit from diskectomy for sciatica.

Atlas, S.J., Chang, Y., Kammann, E., and others. (2000, January). "Long-term disability and return to work among patients with lumbar disc herniation: The impact of disability compensation at baseline." ***Journal of Bone and Joint Surgery*** **82(1), pp. 4-15.**

Workers' compensation status does not seem to affect the long-term outcomes of workers with sciatica, concludes this study. The researchers prospectively studied patients with sciatica seeking care from specialist physicians in community-based practices throughout Maine. About half were receiving worker's compensation at baseline and half were not. Followup questionnaires at 4 years were used to assess patients' disability compensation and work status, as well as symptom relief, functional status, and quality of life.

At baseline, patients receiving workers' compensation reported worse functional status, even though clinical findings were similar to patients not receiving workers' compensation. Four years later, patients who received workers' compensation at baseline were more apt to be receiving disability benefits (27 vs. 7 percent) but were only slightly less likely to be working (80 vs. 87 percent). Operative treatment did not influence these comparisons, although it did improve symptoms and functional status.

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Surgically treated patients, whether receiving workers' compensation at baseline or not, reported greater improvement in symptoms and functional status at 4 years, even though disability and work outcomes were comparable in those treated nonsurgically. The researchers conclude that physician reluctance to operate on patients with sciatica who are receiving workers' compensation—and thus perceived as more likely to exaggerate their symptoms—must be tempered by the fact that the patients may benefit from surgery. ■

Both specialists and internists improve outcomes for knee and shoulder pain, but they go about it differently

Knee pain and shoulder pain are second only to low back pain as musculoskeletal disorders that plague adults in the United States each year. Patients with knee and shoulder pain are managed by many types of doctors, ranging from family doctors and chiropractors to rheumatologists and orthopedic surgeons. Determining which type of provider gives better care for these problems depends on which outcomes are measured, according to a recent study.

General internists, rheumatologists, and orthopedic surgeons provide about the same improvement in functioning and symptom relief. However, when it comes to patient satisfaction and cost, there are trade-offs between generalist and specialist care, conclude the authors of the study. The research was supported in part by the Agency for Healthcare Research and Quality (HS09775).

Jeffrey N. Katz, M.D., of Harvard Medical School, and his colleagues evaluated the outcomes of care provided to over 400 adult patients diagnosed with noninflammatory knee or shoulder disorders by general internists, rheumatologists, and orthopedic surgeons in 1996 and 1997. They analyzed patient responses to a baseline survey and a second survey 3 months later about pain severity, functional status, medical resource use, and satisfaction with care. After adjusting for individual patient factors at baseline, there were no significant differences among provider groups in pain relief or functional improvement during followup.

Those treated by rheumatologists were more satisfied with the doctor-patient interaction than those treated by general internists, and patients of orthopedic surgeons were most satisfied with treatment results. Patients reported that rheumatologists and orthopedic surgeons were more likely to answer their questions than internists. However, the specialists were more costly. Orthopedic surgeons obtained significantly more x-rays of the knee or shoulder and more magnetic resonance imaging scans of the knee. Rheumatologists performed significantly more aspirations or injection procedures.

These findings confirm that there is greater patient satisfaction, but higher costs, associated with specialist care for shoulder and knee pain.

See "Outcomes of care and resource utilization among patients with knee or shoulder disorders treated by general internists, rheumatologists, or orthopedic surgeons," by Dr. Katz, Daniel H. Solomon, M.D., M.P.H., Jonathan L. Schaffer, M.D., and others, in the January 2000 *American Journal of Medicine* 108, pp. 28-35. ■

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Researchers assess programs to improve the quality of primary care for depression in managed care

Depression is expected to be the second leading cause of disability worldwide in the 21st century. Unfortunately, treatment of depression in primary care practices often fails to meet treatment standards. Efforts are being made to employ quality improvement (QI) strategies to improve depression treatment.

Two recent studies, supported by the Agency for Healthcare Research and Quality and summarized here, reach different conclusions about the impact of QI programs on primary care for depression in managed care organizations (MCOs). The first study (HS08349) found that QI interventions improved use of medications and psychotherapy for depression, reduced symptoms, and increased employment retention of depressed MCO primary care patients. The second study (HS07649) concluded that QI teams alone were insufficient to improve depressive symptoms among primary care MCO patients with chronic depression.

Wells, K.B., Sherbourne, C., Schoenbaum, M., and others, "Impact of disseminating quality improvement programs for depression in managed care," January 12, 2000 *Journal of the American Medical Association* 283(2), pp. 212-220.

When primary care physicians in managed care practices in this study used QI interventions that improved resources for medication management or psychotherapy, their care became more appropriate. More of their patients received the appropriate, recommended antidepressants and counseling. What's more, their patients became less depressed and were more apt to remain at work.

The researchers conducted a 1-year study of 46 primary care clinics in six U.S. managed care organizations. They randomized matched clinics to usual care (mailing of depression care guidelines) or to one of two QI programs, which trained local experts and nurse specialists to provide clinician and patient education, identified a pool of potentially depressed patients, and provided nurses for medication followup or access to trained psychotherapists. At 6 months, 51 percent of QI patients versus 40 percent of controls (usual care) had counseling or used antidepressant medication at an appropriate dosage, with a similar pattern at 12 months (59 percent vs. 50 percent).

In practices receiving QI interventions, 30 percent more patients received counseling and 40 percent more were prescribed appropriate antidepressants in the first 6 months compared with practices not receiving QI interventions. Over the next 6 months, the numbers were 20 percent and 30 percent more, respectively, for counseling and appropriate antidepressants. Also, QI patients were 7 to 10 percentage points less likely to have probable depression at 6- and 12-month followup than usual care patients. Initially employed QI patients were more apt to remain working at 12 months than controls (90 vs. 85 percent).

Brown, J.B., Shye, D., McFarland, B.H., and others, "Controlled trials of CQI and academic detailing to implement a clinical practice guideline for depression," January 2000 *Journal on Quality Improvement* 26(1), pp. 39-54.

This study of two QI approaches to improving primary care for depression failed to show any difference between patients treated by QI-exposed clinicians and those of nonexposed clinicians in a large health maintenance organization. The HMO used an 11-member continuous quality improvement (CQI) team at certain HMO sites to develop depression solution tracks, for example, to promote patient awareness and reduce stigma, increase clinician willingness and ability to diagnose and treat depression, and provide system supports to enable better care. The results were not encouraging. Patients of CQI-exposed clinicians had no significant decrease in mean depression symptoms compared with patients seen by unexposed clinicians.

Most of the CQI team's recommendations were not implemented. The inability of the CQI team to get its recommended solution tracks staffed and funded, despite sincere promises of support from senior management and an organization-wide commitment to CQI, suggests that CQI teams cannot, by themselves, do the job. They cannot eliminate fundamental resource constraints, competing resource needs, decades-old barriers between primary and specialty care, or inefficiencies in organizational structures, conclude the researchers.

In the second QI approach, certain HMO clinicians were randomized to be exposed to academic detailing (AD). Trained pharmacists from the clinicians' own medical offices visited the doctors four times with handouts containing basic messages about

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Primary care for depression

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the key role of the clinician in treating depression, the value of depression screening, and the message that depression can be treated. AD increased treatment rates, but it failed to improve symptoms and it reduced overall functional status of patients with chronic depression. This might have been due to the little information directly relevant to chronically depressed patients in the 1993 depression practice guideline sponsored by the Agency for Healthcare Research and Quality (then the Agency for Health Care Policy and Research), which the QI programs implemented. The researchers suggest that future depression guidelines should adopt an approach more tailored to chronic illness care, rather than focusing on acute depression.

An important difference in the QI approaches used by the two AHRQ-funded studies described here is the practice resources—such as nurse specialists and trained psychotherapists—available to support and implement treatment recommendations in the first study. Looking across the two studies, the researchers conclude that expert QI teams and trained clinicians alone may be insufficient; additional resources to support primary care practices in this role may be needed to affect patient outcomes. ■

Long-Term Care

Improved nursing home quality does not necessarily have to cost more

Many Americans continue to be concerned about the quality of care in nursing homes. In particular, they fear that implementation of Medicare and other policies that reduce nursing-home reimbursement may further undercut quality of care. However, a new study suggests that it may be possible to both improve quality and cut costs. The study, conducted by Dana B. Mukamel, Ph.D., of the University of Rochester School of Medicine, and William D. Spector, Ph.D., of the Agency for Healthcare Research and Quality, found that improved quality of care need not cost more.

The researchers studied 525 private and public nursing homes in New York State during 1991. They estimated a variable cost function based on three quality of care measures that can be affected by care management: deterioration in patient functional status during the first 6 months after admission to a nursing home, worsening of pressure ulcers during the same time, and death. They defined the quality measures for each nursing home by its predicted outcome rate (given the mix of patients and their risk of poor outcomes) minus observed outcome rate.

The relationship between costs and all quality measures followed an inverted U shape, which indicates that there were quality of care regimens in which higher quality was associated with lower costs. Also, while quality of care factors were associated with costs, the impact was relatively small. Costs for facilities within one standard deviation of the mean for each quality measure (that is, between 4 and 10 percentage points around the average outcome rate) ranged from 5 percent below the average to 2 percent above the sample mean cost.

It could be that some nursing homes use innovative care protocols or management strategies that are both quality enhancing and cost reducing. For example, improvement in food quality increases the likelihood that residents eat regular meals and reduces the need for expensive food supplements and parenteral feeding. Improved scheduling of toileting and bladder training increases residents' independence and lowers the costs of laundry and incontinence supplies.

See "Nursing home costs and risk-adjusted outcome measures of quality," by Drs. Mukamel and Spector, in *Medical Care* 38(1), pp. 78-89, 2000. Reprints (AHRQ Publication No. 00-R019) are available from AHRQ.** ■

Adults who feel persistently threatened by violence are more apt to smoke than those who don't feel threatened

Adults living in Harlem in New York City, who have witnessed lifetime violence and perceive their neighborhood as unsafe, are more likely to be current smokers than those who feel less threatened, finds a study supported in part by the Agency for Healthcare Research and Quality (HS09610). The results suggest that negative external factors beyond the individual's control in his or her social and physical environment may be associated with unhealthy behaviors such as smoking. Public health interventions aimed at decreasing violence and improving housing and living conditions may improve health behaviors and, by implication, life expectancy, notes Michael Lee Ganz, Ph.D., M.S., of the Harvard School of Public Health, and formerly of Columbia University.

Dr. Ganz analyzed a survey of residents of Central Harlem from 1992 through 1994 (the Harlem Household Survey) to assess the relationship between smoking and two measures of external threats to health: level of neighborhood danger and lifetime trauma. The survey contained data on demographic and socioeconomic measures, as well as health practices, health conditions, living conditions, and other social factors thought to influence health behaviors and contribute to the high morbidity and mortality in Central Harlem.

Overall, Harlem residents experienced substantial lifetime trauma (for example, a serious accident while using public or other transportation, a large fire or explosion, physical assault or abuse, sexual assault or rape). The 44 percent of residents who were current smokers reported a higher prevalence of lifetime traumas than nonsmokers. Living in a "somewhat unsafe neighborhood" was also significantly related to current smoking status. On average, smokers smoked slightly more than half a pack a day (13 cigarettes) and were more likely to report living in a less-safe neighborhood, being unemployed, having fewer years of education, and having a lower household income than nonsmokers.

See "The relationship between external threats and smoking in Central Harlem, New York," by Dr. Ganz, in the March 2000 *American Journal of Public Health* 90(3), pp. 367-371. ■

Coinfection with hepatitis B or C does not necessarily rule out antiretroviral therapy for HIV patients

Many people who are infected with the human immunodeficiency virus (HIV) that causes AIDS are also infected with hepatitis C virus (HCV) and hepatitis B virus (HBV), which damage the liver. These individuals can develop liver toxicity when they receive antiretroviral therapy for HIV. However, the risk varies substantially, depending on the specific antiretroviral medication, and is not sufficient to withhold antiretroviral therapy from these patients, according to a study supported in part by the Agency for Healthcare Research and Quality (HS07809).

The study found that risk for severe liver toxicity was increased five-fold in patients taking the protease inhibitor (PI) ritonavir, which accounted for half of all toxicity cases. Liver toxicity risk was lower and similar with nelfinavir, indinavir, saquinavir, and nucleoside analog (NA) regimens.

However, more studies are needed in this area, according to the researchers who are from the Johns Hopkins University Schools of Medicine and Public Health. They assessed liver toxicity among 298 HIV-infected patients of a university-based urban HIV clinic who were prescribed new antiretroviral therapies between 1996 and 1998; 71 percent of the patients received PIs as part of combination therapy, and 29 percent received dual NA regimens.

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Antiretroviral therapy for HIV patients

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Of these patients, 52 percent had chronic HCV infection and nearly 3 percent had chronic HBV infection. The incidence of toxicity was five-fold higher with use of ritonavir (30 percent) compared with nucleoside analogs (6 percent), nelfinavir (6 percent), saquinavir (6 percent), and indinavir (7 percent). Although chronic viral hepatitis was associated with a nearly four-fold increase in risk of severe liver toxicity among patients prescribed nonritonavir regimens, most patients with chronic hepatitis infection (88 percent) did not experience significant toxic effects. Rate of severe toxicity with use of any PI in patients with HCV infection was 12 percent. However, no irreversible outcomes were seen in patients with severe hepatotoxicity.

Details are in "Hepatotoxicity associated with antiretroviral therapy in adults infected with human immunodeficiency virus and the role of hepatitis C or B virus infection," by Mark S. Sulkowski, M.D., David L. Thomas, M.D., M.P.H., Richard E. Chaisson, M.D., and Richard D. Moore, M.D., in the January 5, 2000 *Journal of the American Medical Association* 283(1), pp. 74-80. ■

AHRQ News and Notes

AHRQ resource helps newly diagnosed patients

The Agency for Healthcare Research and Quality has released a new resource that helps patients find and use reliable health care information to evaluate treatment options. *Now You Have a Diagnosis: What's Next?* is one component of AHRQ's broader agenda to promote health care quality and improve health care decisionmaking through research and evidence. This resource was developed in partnership with the Kanter Family Foundation.

Receiving a diagnosis can be both confusing and overwhelming, especially when a person is faced with a serious medical condition. In many cases, there is no one "right" treatment. To ensure the best possible medical care and to avoid unnecessary or even harmful treatments, it is important for patients to carefully consider their treatment options before deciding which course to follow. With this in mind, AHRQ and the Kanter Family Foundation have teamed up to produce a guide that can help patients find information on their particular illness or condition through the Internet, counselors, and advocacy groups.

In the guide, patients are encouraged to work with their doctors in developing treatment plans and to seek support from others sharing the same health concerns. In addition, the guide explains the four main types of research studies, how to find reliable health-related information, how to use that information in making a decision, and how to discuss treatment choices with a physician.

Together, AHRQ and the Kanter Family Foundation are working to improve health care decisionmaking by providing patients with information based on scientific research; supporting development of a national outcomes database to be used by doctors and patients in determining which treatments work best for specific diseases and conditions; and encouraging the standardization of health outcomes data throughout the health care system.

Free copies of *Now You Have a Diagnosis: What's Next?* (AHRQ Publication No. 00-0004) are available from AHRQ.* See the back cover of *Research Activities* for ordering information. Visit AHRQ's Web site at http://www.ahrq.gov/consumer/diaginfo.htm to access an online version of the guide. ■

Announcing a new AHRQ patient fact sheet on medical errors

The Agency for Healthcare Research and Quality has developed a new fact sheet with practical tips to help people protect themselves from errors in their health care. *20 Tips to Help Prevent Medical Errors* has specific, research-based recommendations on preventing medical errors related to medicines, hospital stays, and surgery. It also includes other general recommendations to help prevent medical errors. *20 Tips to Help Prevent Medical Errors* advises patients that the single most important way to help prevent errors is to be an active member of their own health care team, taking part in every decision about the care they receive. This one-page fact sheet (AHRQ Publication No. 00-P038, English; No. 00-P039, Spanish) is available from AHRQ.** Or, visit AHRQ's Web site at www.ahrq.gov and click on "Research on Medical Errors" to find the fact sheet and other information on this important topic. ■

Announcements

Grant final reports now available from NTIS

The following grant final reports are now available for purchase 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 description of the project. See the back cover of *Research Activities* for ordering information.

Assessing Pediatric Quality of Life in a Clinical Trial. **Robert D. Annett, Ph.D., University of New Mexico, Albuquerque. AHRQ grant HS09123, project period 6/1/96-11/30/98.**

This study examined the relationship between health status measures and quality of life outcomes within a population of 339 children with mild to moderate asthma and their parents participating in the Childhood Asthma Management Program. Moderate asthma occurred in 63 percent of the children, with the remainder demonstrating mild asthma. Predictors of child-reported quality of life were the child's anxiety, sociodemographic variables, extent of symptom exaggeration, and asthma severity ratings. Measures of asthma severity played no role in predicting quality-of-life outcomes reported by the children's parents. Children experienced few asthma symptoms and had a generally positive quality of life, suggesting that mild to moderate asthma does not impair quality of life. (Abstract, executive summary, and final report, NTIS accession no. PB2000-100275; 18 pp, $23.00 paper, $12.00 microfiche)***

Cochrane Collaboration's Sixth Annual International Colloquium. **Patricia P. Dickersin, Ph.D., University of Maryland, Baltimore. AHRQ grant HS09818, project period 5/1/98-2/28/99.**

This report presents the proceedings of the Cochrane Collaboration's sixth annual international meeting, which was held October 22-26, 1998, in Baltimore, MD. The Cochrane Collaboration is an international, nonprofit organization that prepares, maintains, and promotes the accessibility of evidence-based health care information. (Abstract, executive summary, and final report of conference, NTIS accession no. PB2000-101193; 28 pp, $23.00 paper, $12.00 microfiche)***

Cost and Quality in the Treatment of Hypertension. **Randall S. Stafford, M.D., Ph.D., Massachusetts General Hospital, Boston. AHRQ grant HS09538, project period 9/1/97-2/28/99.**

The researchers examined factors associated with managing hypertension, including how the use of calcium channel blockers has changed over time, differences in cardiovascular disease prevention practices among various medical specialties, factors that can predict patterns of hypertension treatment, and medical journal advertising for hypertension treatment. They also examined a framework for measuring the quality of medication prescribing for hypertension. (Abstract, executive summary, and final report, NTIS accession no. PB2000-102841; 18 pp, $23.00 paper, $12.00 microfiche)***

Demonstrating Computer Support Impact on AIDS Patients. **David H. Gustafson, Ph.D., University of Wisconsin, Madison, WI. AHRQ grant HS08096, project period 12/01/93-06/30/97.**

Men and women (n = 279) with advanced HIV infection who were

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treated at HIV clinics in Madison and Milwaukee, WI, were randomly assigned to receive in-home access to a computer-based information and support system (CHESS) for 1 year or no intervention beyond standard care. Data collected included use of CHESS, pre- and posttest surveys and interviews, health care billing information, and medical records. As in previous studies involving CHESS, the system was heavily used, an average of 248 times per subject. Beneficial effects of CHESS were smaller and less consistently apparent than in previous studies, however. More frequent CHESS users appeared to have better quality of life outcomes than lighter users. (Abstract, executive summary, and final report, NTIS accession no. PB2000-101741; 176 pp, $44.00 paper, $17.00 microfiche)***

Developing Culturally and Linguistically Appropriate Prenatal Health Education Materials for Spanish-Speaking Women. **Virginia Gonzales, Ed.D., University of Washington, Seattle, WA. AHRQ grant HS09836, project period 9/30/98-9/29/99.**

This project tested a protocol for adapting existing English-language health education materials to serve non-English-speakers. In this case, prenatal health information was adapted for use by Spanish-speaking women. The materials were evaluated in terms of comprehension and usefulness. Users were able to decipher meaning despite low-literacy skills. Translated test materials proved easy to read, acceptable, and persuasive for Medicaid-funded mothers who had 9 years of education, on average. (Abstract, executive summary, and final report, NTIS accession no. PB2000-101194; 26 pp, $23.00 paper, $12.00 microfiche)***

Economics of Spend-Down to Medicaid. **Edward C. Norton, Ph.D., University of North Carolina, Chapel Hill. AHRQ grant HS09515, project period 9/30/96-9/29/99.**

Assets must be depleted before Medicaid will cover nursing home care, a process termed "spend-down to Medicaid." The researchers studied four specific economic issues related to spend-down: (1) Why has the market for private long-term care insurance been slow to evolve, making spend-down to Medicaid the default insurance for many Americans? (2) Are trusts used to hasten spend-down to Medicaid? (3) Has the Medicare Catastrophic Coverage Act (MCCA) achieved its intended goals of reducing spousal impoverishment for those also covered by Medicaid? and (4) How do expectations about entering a nursing home depend on expectations about continuing to live and leaving a bequest? The study showed that Medicaid crowds out private insurance, trusts are usually established for reasons other than spend-down, the MCCA did not achieve its desired effects, and Medicaid does not raise expectations about nursing home entry. (Abstract, executive summary, and final report, NTIS accession no. PB2000-102842; 76 pp, $29.50 paper, $12.00 microfiche)***

Effectiveness of Treatment Strategies for Low Back Pain. **Richard A. Deyo, M.D., M.P.H., University of Washington, Seattle. AHRQ grant HS08194, project period 8/1/94-7/31/99.**

The goals of this project were to characterize treatment outcomes of patients with sciatica and spinal stenosis; assess the impact of interventions on back surgery patterns; and survey alternative providers about back pain. Patients treated surgically for herniated discs of spinal stenosis had better outcomes over 5 years than patients treated nonsurgically. However, return-to-work rates were equivalent, and other outcomes converged somewhat by 5 years. Areas with the highest surgery rates also had the worst surgical outcomes. Guidelines for spinal fusion surgery coupled with reimbursement incentives reduced rates of spine fusion in Washington State, and a community-based intervention resulted in a significant decrease among communities with unusually high back surgery rates. Massage therapists and acupuncturists had more back pain visits than naturopaths. Although each profession had a distinctive approach, cross licensure was common, and massage was used by all three professions. (Abstract, executive summary, and final report, NTIS accession no. PB2000-101829; 46 pp, $25.50 paper, $12.00 microfiche)***

Efficiency of Prenatal Care for Women and Children's Health. **Marie E. McCormick, M.D., Harvard School of Public Health, Boston, MA. AHRQ grant HS09528, project period 1/1/97-12/31/98.**

This conference summary discusses the effectiveness of prenatal interventions in women's and children's health, gaps in the literature, and recommendations for future research. According to conference speakers, few adverse fetal outcomes (preterm delivery, intrauterine growth restriction, or congenital malfunctions) can be prevented with current technology.

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However, appropriate prenatal management could substantially reduce infant morbidity. (Abstract, executive summary, and final report, NTIS accession no. PB2000-102853; 14 pp, $23.00 paper, $12.00 microfiche)***

Exits, Recidivism, and Caseload Growth: The Effects of Private Health Insurance Markets and the Demand for Medicaid. **Krista M. Peireira, B.A., University of California, Berkeley. AHRQ grant HS09894, project period 8/1/98-7/31/99.**

Using administrative data from the California Longitudinal Database of Cases, the researchers examined the effects of local labor market conditions and the availability of employer-sponsored health insurance on exits from Medicaid, reentry into Medicaid, and the program's overall caseload growth in California between 1987 and 1995. (Abstract and executive summary of dissertation, NTIS accession no. PB2000-100612; 12 pp, $23.00 paper, $12.00 microfiche)***

Hospital Response to Medicare Reimbursement Incentives: Hospital-Based Skilled Nursing Facilities and Their Impact on Discharge Behavior. **Stuart A. Hagen, M.B.A., University of Chicago, Chicago, IL. AHRQ grant HS09676, project period 9/30/97-9/29/98.**

This study examined two hypotheses: one, that incentives created by Medicare's Prospective Payment System (PPS) induced hospitals to open hospital-based skilled nursing facilities, and two, that the impact of opening such a facility was a reduction in average length of hospital stay and a predisposition to use skilled nursing care as a discharge destination alternative. Using California hospital-level and patient-level data for 1982 to 1992, the researchers found that changes in Medicare policy were largely responsible for the decision of hospitals to open hospital-based skilled nursing facilities. Hospitals with skilled nursing facilities have shorter lengths of stay than they would otherwise be able to achieve. They also are more likely to use skilled nursing care and less likely to use home health care as a discharge destination than hospitals without skilled nursing facilities. (Abstract, executive summary, and dissertation, NTIS accession number PB2000-101809; 338 pp, $51.00 paper, $23.00 microfiche)***

Manual Therapy in Primary Care of Low Back Pain. **Timothy S. Carey, M.D., M.P.H., University of North Carolina, Chapel Hill. AHRQ grant HS08293, project period 2/1/95-7/31/99.**

The researchers recruited and trained 33 primary care allopathic physicians in the basics of spinal manipulation for acute low back pain. They enrolled 295 patients in a randomized trial of therapies for low back pain in 31 physician's offices, comparing manual therapy with enhanced care (a similar number of visits, a specific explanation of the spinal problem, and a series of instructional pamphlets). Patient followup at 2, 4, and 8 weeks found that clinical outcomes were similar between the two patient groups. Ninety percent of patients had returned to their previous level of functioning by 8 weeks, and satisfaction was high in both groups. The researchers conclude that training primary care physicians in manual therapy is feasible, but that the similarity of outcomes seen in this trial makes it unlikely that this will become a major therapeutic tool for allopathic physicians. (Abstract, executive summary, and final report, NTIS accession no. PB2000-101832; 42 pp, $25.50 paper, $12.00 microfiche)***

Model of the RN Labor Supply in Western New York. **Carol S. Brewer, Ph.D., State University of New York at Buffalo, Buffalo, NY. AHRQ grant HS09353, project period 9/30/96-9/29/99.**

The socioeconomic characteristics and work attitudes of 802 registered nurses (RNs) were compared during a period of transition to greater managed care penetration and deregulation in Western New York. Hospital-based nurses had the highest hourly wages and income and more benefits than other RNs. Spousal incomes were lower for full-time nurses. Hospital-based RNs experienced more job redefinition and RN replacement and indicated significantly less satisfaction over the previous year than nonhospital nurses. (Abstract, executive summary, and final report, NTIS accession no. PB2000-100276; 40 pp, $25.50 paper, $12.00 microfiche)***

Outcomes of Pharmaceutical Therapy of HIV Disease. **Richard D. Moore, M.D., M.H.Sc., Johns Hopkins University, Baltimore, MD. AHRQ grant HS07809, project period 2/1/93-1/31/99.**

The researchers developed a comprehensive, longitudinal database of individuals infected with HIV in an urban primary care setting. They used the data to examine the effectiveness of a wide range of antiretroviral and antimicrobial therapies in preventing progression of HIV disease and opportunistic infections, determine the association of surrogate laboratory

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markers with clinical outcomes, delineate the frequency and consistency of prescription drug use, and identify the sociodemographic and clinical characteristics associated with the use of and response to drug therapy for HIV infection. (Abstract, executive summary, and final report, NTIS accession no. PB2000-100684; 52 pp, $27.00 paper, $12.00 microfiche)***

Patterns of Care and Costs Among TMD Patients in an HMO. **B. Alex White, D.D.S., M.P.H., Kaiser Foundation Research Institute, Oakland, CA. AHRQ grant HS09347, project period 9/30/96-9/29/98.**

This project compared the use and cost of medical and dental care services for 8,801 patients with temporomandibular disorders (TMDs) who were members of the Kaiser Permanente Northwest Division and had at least one TMD clinic visit or TMD-related procedure from January 1990 through December 1995. The researchers identified an equal number of comparison subjects without TMD visits or procedures from the same HMO. The mean age for patients in both groups was about 40.5 years, and about 80 percent of the subjects were female. Excluding out-of-plan services, TMD patients used significantly more services than comparison subjects, and they had 1.6 times higher mean costs for all services. These differences in use and costs were consistent over a wide range of service categories and could not be explained by TMD treatment alone. (Abstract, executive summary, and final report, NTIS accession no. PB2000-100682; 58 pp, $27.00 paper, $12.00 microfiche)***

Pharmaceutical Care and Pediatric Asthma Outcomes. **Andreas S. Stergachis, M.S., Ph.D., University of Washington, Seattle. AHRQ grant HS07834, project period 3/1/93-2/28/98.**

The PEAK (Pharmaceutical Care Evaluation of Asthma in Kids) study was a community-based randomized controlled trial designed to assess the changes in disease control, functional status, and cost associated with the introduction and delivery of a structured program of pharmaceutical care for pediatric patients with asthma. The study involved 330 children aged 6 to 17 years from 14 pharmacies providing intervention (IN) and 18 pharmacies providing usual care (UC) in Western Washington State. After specialized training, pharmacists in the IN group provided individualized asthma care assessment and patient education for up to 1 year following each child's entry into the study. Of the 153 subjects recruited into the IN Group, 105 (69 percent) received at least one intervention from a pharmacist, mostly during face-to-face visits with the parent and/or the child. Compared with the UC group, there was no evidence that IN patients experienced improvements in pulmonary function, functional status, quality of life, asthma management, or satisfaction with care. (Abstract, executive summary, and final report, NTIS accession no. PB2000-101828; 70 pp, $27.00 paper, $12.00 microfiche)***

PROs Febrile Infant Study. **Robert H. Pantell, M.D., American Academy of Pediatrics, Elk Grove, IL. AHRQ grant HS06485, project period 5/1/93-4/30/98.**

The purpose of this prospective, observational cohort study was to document current clinical practices and costs of care in infants with fever, determine the accuracy of current clinical parameters, and develop an optimal clinical prediction model. The researchers obtained data collected by 577 pediatricians from March 1, 1995, to April 30, 1998, on 3,066 infants less than 3 months old with fever of at least 38ºC (100.4°F). Over 1,100 of the infants required more than one office visit, and laboratory testing was performed on three-quarters of infants. Slightly more than one-third of the infants were hospitalized, while 52 percent received antibiotics. The average cost of treatment for a non-hospitalized infant was $192.29, compared with $3,412.82 for a hospitalized infant. No association between type of insurance and hospitalization rate was found. Rates of serious bacterial illness (SBI) were less than previous reports: 0.5 percent of infants had bacterial meningitis, and 1.7 percent had bacteremia. According to the researchers, findings from this study warrant changing current practice behaviors. (Abstract, executive summary, final report, and appendixes, NTIS accession no. PB2000-100683; 176 pp, $44.00 paper, $17.00 microfiche)***

Landrum, M.B., Bronskill, S.E., and Normand, S-L. T. (2000, January). "Analytic methods for constructing cross-sectional profiles of health care providers." (AHRQ grant HS08071). ***Health Services & Outcomes Research Methodology 1(1),*** **pp. 23-47.**

National efforts are currently underway to develop and disseminate comparative information about both the outcomes and processes of care for health care providers. However, many different performance measures may be used to assess quality for a particular provider, and this information can often be contradictory and overwhelming. Thus, there is a need for measures that summarize quality at a provider level. This article proposes the use of latent variable models for comparing health care providers in the cross-sectional setting, when each provider is measured on more than one dimension of care. This may produce a composite measure of quality with more statistical power to detect differences among providers.

Longenecker, J.C., Coresh, J., Klag, M.J., and others. (2000, March). "Validation of comorbid conditions on the end-stage renal disease medical evidence report: The CHOICE study." (AHRQ grant HS08365). ***Journal of the American Society of Nephrology 11*****, pp. 520-529.**

The Health Care Financing Administration's medical evidence report for end-stage renal disease (ESRD), known as Form 2728, documents a patient's need for renal replacement therapy and provides important baseline data upon patient entry into the ESRD program. High mortality rates among dialysis patients, along with other concerns, prompted the addition of a section on 20 coexisting medical conditions in 1995. Since that time, Form 2728 has been used nationally to collect information on comorbid conditions. To date, these data have not been validated. These researchers conducted a national cross-sectional study of 1,005 dialysis patients enrolled between 1995 and 1998 using clinical data to validate 17 comorbid conditions on the form. Sensitivity was fairly high for HIV infection, diabetes, and hypertension and intermediate for other conditions. The specificity was very good for hypertension and excellent for the other 16 conditions. Given the underreporting of comorbid conditions, the authors suggest improving Form 2728 coding if it is to provide accurate estimates of total disease burden in ESRD.

Walston, S.L., Burns, L.R., and Kimberly, J.R. (2000, February). "Does reengineering really work? An examination of the context and outcomes of hospital reengineering initiatives." (AHRQ grant HS09581). ***Health Services Research*** **34(6), pp. 1363-1388.**

The authors explore the direct effects of hospital reengineering on the competitive cost position of hospitals and the modifying effects of implementation factors. Reengineering is the radical redesign of business processes to achieve dramatic improvements in critical measures of performance, such as cost, quality, and service. The researchers used data from a 1996-1997 national survey of hospital chief executive officers (CEOs) on restructuring and reengineering, and combined it with data from another annual hospital survey. Results suggest that reengineering without integrative and coordinated efforts may damage an organization's competitive position. Organizations attempting to improve their cost competitiveness must consider the way in which change is implemented. The authors point out that the process of change may be as important as the change instrument. ■

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