



Research Activities



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Agency for Healthcare Research and Quality

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Results of a consumer survey on patient safety present both an opportunity and a challenge to make health care safer

Five years after a groundbreaking Institute of Medicine report focused attention on medical errors in hospitals, the results of a new survey show that Americans do not believe the Nation's quality of care has improved. Four in 10 (40 percent) people surveyed said the quality of health care has gotten worse in the past 5 years, while one in six (17 percent) said the quality of care has gotten better. Nearly four in 10 (38 percent) said it has stayed the same.

Nearly half (48 percent) of those surveyed said they are concerned about the safety of the medical care that they and their families receive, and more than half (55 percent) said they are dissatisfied with the quality of health care in this country—up from 44 percent who reported the same in a survey conducted 4 years ago. People with chronic health conditions were considerably more likely than other consumers to express concerns about their quality of care and to report having

personal experiences with medical errors.

The survey, which involved 2,012 adults, was conducted by telephone from July 7 to September 5, 2004. It was supported by the Henry J. Kaiser Family Foundation, the Agency for Healthcare Research and Quality, and the Harvard School of Public Health.

These perceptions exist despite efforts by hospitals, doctors, health plans, and purchasers to reduce medical errors and improve the quality of care in the wake of the 1999 Institute of Medicine report, *To Err is Human: Building a Safer Health System*. This IOM report concluded that hospital-based medical errors were the eighth leading cause of death in the United States, and that the primary cause was problems with the health system itself rather than the performance of individual doctors, nurses, and other providers.

The survey results reveal a great deal about patients' concerns and emphasize the

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Survey on patient safety

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need to communicate more effectively about what is being done to improve the quality and safety of the Nation's health care system. Many of the system-related improvements that have been made to improve patient safety—such as the use of computerized order entry in hospitals and better physician staffing in emergency rooms—are largely transparent to patients and

their families. The challenge is to show the connection between these kinds of changes and improvements in the care patients receive, while at the same time expanding and accelerating these efforts.

For more information about the *National Survey on Consumers' Experiences with Patient Safety and Quality Information* go to www.ahrq.gov/qual/consattitud.htm on the AHRQ Web site.

Editor's note: In addition to the new survey, Kaiser Family Foundation President Drew E.

Altman, Ph.D., AHRQ Director Carolyn M. Clancy, M.D., and Robert J. Blendon, Sc.D., Professor of Health Policy at Harvard School of Public Health, collaborated on a perspectives column that examines patient safety efforts and public opinion trends. See "Improving Patient Safety—Five Years After the IOM Report," in the November 11, 2004 *New England Journal of Medicine*, 351(20), pp. 2041-2043. Reprints (AHRQ Publication No. 04-R017) are available from AHRQ.** ■

Patient Safety/Quality

Anonymity, feedback, and a blame-free environment promote reporting of medical errors

Nurses and doctors know they should report medical errors associated with serious adverse events, but they often are uncertain about the need to report less serious errors or near misses, according to a recent study that was supported by the Agency for Healthcare Research and Quality

(HS11898). Researchers led by Donna B. Jeffe, Ph.D., of the Washington University School of Medicine, analyzed audiotaped discussions of nine focus groups—four involving 49 staff nurses, two with 10 nurse managers, and three with 30 physicians—from 20 academic and community hospitals in 2002.

Focus group discussions revealed that nurses were more knowledgeable than physicians about how to report errors. All focus groups mentioned barriers to error reporting: not knowing what to report, not knowing how to report, fear of repercussions (culture of blame), lack of confidentiality, lack of time and easy systems for reporting, and lack of followup on errors reported.

Nurses and doctors said more errors would be reported if there were clear guidelines for what to report, clear reporting mechanisms that health care providers have been trained to use, a blame-free mentoring/collegial environment, anonymous reporting mechanisms, sufficient personnel and efficient reporting tools, and routine followup of error report. Such followup would help to educate staff and demonstrate that hospitals intend to act on error reports.

Physicians' reluctance to report errors is based on fear of litigation and fear of criticism and embarrassment in front of their peers. Fear of reprisals

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Reporting of medical errors

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has also been noted by nurses. Nurses and physicians both alluded to the necessity of a culture change that would result in anonymous reporting, freedom from punishment, and consistent educational feedback about errors that are reported.

For more details, see “Using focus groups to understand physicians’ and nurses’ perspectives on error reporting in hospitals,” by Dr. Jeffe, William C. Dunagan, M.D., Jane Garbutt, M.B., Ch.B., and others, in the September 2004 *Joint Commission Journal on Quality and Safety* 30(9), pp. 471-479. ■

Many primary care errors stem from problems with access to clinicians and doctor/patient interaction

The current focus of the patient safety movement on drug errors and surgical mishaps may overlook other patient priorities, according to a recent study. The researchers found, for example, that many errors reported by primary care patients involve breakdowns in access to and relationships with clinicians and do not involve technical errors in diagnosis and treatment. These breakdowns led to anger and frustration and, in some case, to worsened or untreated medical conditions and adverse drug reactions.

For the study, which was supported by the Agency for Healthcare Research and Quality (HS11117), Steven H. Woolf, M.D., M.P.H., of Virginia Commonwealth University, and his colleagues conducted in-depth interviews with 38 adults from rural, suburban, and urban locales in Virginia and Ohio. Their goal was to solicit stories of preventable problems with primary health care that led to physical or psychological harm.

Rushed, dehumanized health care experiences pervaded the narratives. Analysis of the interview transcripts revealed 221 problematic incidents, 37 percent of which involved breakdowns in the clinician-patient relationship. For instance, the clinician did not

spend adequate time with the patient or ignored the patient’s comments or preferences. Communication breakdowns also occurred during the visits. For example, the wrong chart was used for a patient, a referral was not done, or a medication refill was not called to the pharmacy.

Twenty-nine percent of problematic incidents involved difficulty gaining access to clinicians. For example, the office telephone often went unanswered (or patients were left holding for long periods of time), office waiting time was excessive, and referrals to a specialist were delayed. These incidents were linked to 170 reported harms, 70 percent of which were psychological, including anger, frustration, belittlement, and loss of relationship and trust in the clinician. Physical harms accounted for 23 percent of the total and included pain, bruising, worsening medical condition, undertreated and untreated conditions, and adverse drug reactions.

Details are in “Patient reports of preventable problems and harms in primary health care,” by Anton J. Kuzel, M.D., M.P.H., Dr. Woolf, Valerie J. Gilchrist, M.D., and others, in the July 2004 *Annals of Family Medicine* 2(4), pp. 333-340. ■

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Improving nurses' working conditions can potentially decrease the incidence of many infectious diseases

About 14 percent of U.S. hospitals are suffering from a severe shortage of nurses, with over 20 percent of nursing positions unfilled. To handle this shortage, many health care facilities have increased nurses' patient loads or expanded the use of nonpermanent staff, such as float pool and agency nurses. Extended work shifts and overtime for nurses also have escalated. Overwork and fatigue among nurses have been associated with medication errors and falls, increased deaths, and spread of infection among patients and health care workers.

Improving the working conditions of registered nurses (RNs) can potentially decrease the incidence of many infectious diseases among staff and patients, according to a recent study that was supported in part by the Agency for Healthcare Research and Quality (HS13114). For the study, researchers conducted a review of published research on the nursing workforce and nursing as it relates to infectious diseases. Their review revealed that a higher ratio of pool staff to regular nursing staff tends to increase health care-associated infections, while greater RN skill mix decreases the incidence.

Without adequate numbers of trained hospital employees to implement effective infection control

procedures, such as hand hygiene and proper isolation procedures, emergency departments and hospital wards can easily become venues for the spread of epidemics. For example, in a study of over 1,500 nurses working in 40 units in 20 hospitals, poor organizational climate and high workloads were associated with 50 to 200 percent increases in the likelihood of needlestick injuries (which can transmit infectious blood pathogens) and near-misses among hospital nurses.

Nurses are concerned about their exposure to infection, and their perception of unsafe working conditions may hinder their recruitment and retention. This perception may constrain the ability of hospitals to deal with future infectious disease threats, caution the researchers.

See "Nurses' working conditions: Implications for infectious disease," by Patricia W. Stone, Ph.D., M.P.H., R.N., Sean Clarke, R.N., Ph.D., C.R.N.P., C.S., Jeannie Cimiotti, R.N., and Rosaly Correa-de-Araujo, M.D., M.Sc., Ph.D., in the November 2004 *Emerging Infectious Diseases* 10(11), pp. 1984-1989. Reprints (AHRQ Publication No. 05-R006) are available from AHRQ.** ■

Although high-intensity pain has been linked to adverse outcomes, many hospitalized patients report severe pain as acceptable

Untreated pain has been associated with problems ranging from impaired functional recovery and higher rates of postoperative complications to longer hospital stays and higher costs. Although it is not in patients' best interests to let high-intensity pain remain

undertreated, a new study found that 31 percent of patients at one hospital considered such pain acceptable. They considered the pain acceptable because it had resolved (34) percent, they believed the pain would eventually go away (19 percent), or they were able to tolerate the pain (19 percent).

Patients already being treated with analgesics (nonsteroidal anti-inflammatory drugs, acetaminophen, or opioids) were 30 to 40 percent less likely to consider severe pain acceptable compared with patients not receiving

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High-intensity pain

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analgesics. One possible explanation is that patients who reported their severe pain to be acceptable were less likely to request or accept analgesics. On the other hand, analgesic therapy may be a marker for patients who have had their pain recognized, have sought and received treatment, but have not yet achieved relief. A third possibility is that providing suboptimal analgesic therapy may have shifted the experience of severe pain from acceptable to unacceptable when patients became aware that pain relief was possible.

Older patients were 1.5 percent less likely than younger patients and black patients were 30 percent less likely than white patients to describe severe pain as acceptable. These are important findings, given that earlier studies have shown that geriatric and minority patients are less likely than younger and white patients to receive appropriate opioid therapy. Studies directed at improving the management of pain should target both pain intensity and patients' beliefs about the acceptability of severe pain, conclude the Mount Sinai School of Medicine researchers who conducted the study. Their work

was supported in part by the Agency for Healthcare Research and Quality (HS10539). They conducted daily interviews with 1,254 patients admitted to nine medical/surgical units in a New York City hospital. Patients were asked about pain intensity (using a 4-point scale), analgesic use, and acceptance of pain.

Details are in "Acceptability of severe pain among hospitalized adults," by Catherine L. Maroney, M.A., M.P.H., Ann Litke, M.A., M.F.A., Daniel Fischberg, M.D., Ph.D., and others, in the June 2004 *Journal of Palliative Medicine* 7(3), pp. 443-450. ■

Researchers examine factors that affect voluntary reporting of medication errors

Poor and minority children are at greater risk of being hospitalized for asthma than other children, often due to inadequate primary care for their asthma. The quality of asthma care could be improved for impoverished, Medicaid-insured children if primary care practices promote cultural competence, provide feedback reports to clinicians, and provide easy access to and continuity of care, according to a study supported in part by the Agency for Healthcare Research and Quality (HS09935). Primary care for asthma is also improved when one practice physician is trained in asthma care guidelines as a peer leader, and nurses visit patients and provide self-management support, according to a second AHRQ-supported study (HS08363). Both studies are described here.

Lieu, T.A., Finkelstein, J.A., Lozano, P., and others. (2004, July). "Cultural competence policies and other predictors of asthma care quality for Medicaid-insured children." *Pediatrics*

114(1). Available at: www.pediatrics.org/cgi/content/full/114/1/e102.

This study found that when primary care practices are attuned to the needs of poor and minority patients, allow for same-day appointments and evening and weekend telephone advice, and provide physicians with reports on asthma patients and feedback on their asthma care, quality of care is improved for Medicaid-insured children with asthma.

The investigators surveyed 83 primary care practices of five health plans in California, Washington, and Massachusetts, and their clinicians about their policies to promote cultural competence (understanding of and ability to communicate with different minority/ethnic groups), use of several types of reports to clinicians, and support of self-management of asthma (for example, making peak flow meters available at low cost), case management and care coordination, and access to and continuity of care. They also interviewed parents of children with asthma cared for at

the practices at baseline and 1 year later. Finally, the researchers measured the children's quality of care based on five measures.

Of the 1,663 children studied, 38 percent were black, 19 percent Latino, and 53 percent had household incomes below the poverty level. At 1-year follow-up, patients of practice sites with the highest cultural competence scores were 85 percent less likely to be underusing preventive asthma medications, and the practices had better parent ratings of care. Also, use of asthma reports to clinicians (for example, reminders about asthma care for particular patients or feedback reports to improve asthma care) substantially reduced the underprescribing of preventive medication.

Children cared for at practice sites with policies to promote access to and continuity of care (for example, easy same-day appointments and evening and weekend telephone advice) had

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Pediatric asthma care

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44 percent less underuse of preventive medications. Practice size, organizational type, percentage of patients insured by Medicaid, mechanism of payment for specialty care, and other primary care features were not consistently associated with asthma care quality measures.

Lozano, P., Finkelstein, J.A., Carey, V.J., and others. (2004, September). "A multisite randomized trial of the effects of physician education and organizational change in chronic asthma care." *Archives of Pediatric and Adolescent Medicine* 158, pp. 875-883.

Compared with usual primary care for asthma, use of physician peer leaders and asthma care planning coordinated by a nurse improves children's adherence to asthma controller medication (inhaled steroids, cromolyn, nedocromil, long-acting bronchodilators, and theophylline). This approach also substantially reduces their need for an oral steroid burst each year to get

control of their asthma, according to the Pediatric Asthma Care Patient Outcomes Research Team-II study. The study included children aged 3 to 17 years cared for at 1 of 42 primary care pediatric practices affiliated with four managed care organizations.

In the peer leader education intervention, one physician was trained at each practice site to serve as an asthma "champion," sharing asthma care guidelines and other information with colleagues and encouraging their implementation. For the planned care intervention, a nurse trained in asthma care guidelines and self-management support techniques proactively scheduled four to five planned asthma care visits during the 2 years of the study to augment children's visits to the primary care physician. Between visits, the nurse provided telephone and other followup efforts to monitor each child's progress.

Of the 688 children who were initially screened, 55 percent were taking controller medications. Overall, children suffered from asthma symptoms (including cough, wheeze, limited activity, or night

wakening) an annualized mean of 107 days. Children in the peer leader group had 6.5 fewer symptom days per year, a nonsignificant difference, but they had a 36 percent lower oral steroid burst rate per year compared with usual care children. Children in the planned care group had an average of 13.3 fewer symptom days annually and a 39 percent lower oral steroid burst rate per year relative to the usual care group. Both interventions showed small, but significant improvements in activity levels and physical health.

Editor's note: Another AHRQ-supported study on a related topic found no differences in health-related quality of life (HRQOL) in young urban children with asthma based on current asthma or severity of asthma, and concluded that HRQOL for these children is influenced by several factors other than asthma status and severity. For more details, see Montalto, D., Bruzzese, J.M., Moskaleva, G., and others. (2004). "Quality of life in young urban children: Does asthma make a difference?" (AHRQ grant HS10136). *Journal of Asthma* 41(4), pp. 497-505. ■

Underreporting of medical errors affecting children is a significant problem, particularly among physicians

The majority of medical errors committed by physicians and nurses during the care of pediatric patients go unreported, according to a new study supported by the Agency for Healthcare Research and Quality (HS11590). Fewer than half of doctors and nurses surveyed completed incident reports on 80 percent or more of the errors that they committed, and about one-third reported less than 20 percent of their errors. Physicians and nurses were more likely to report serious errors and those that affected the patient as opposed to "close calls."

Virtually all respondents said they would likely report a 10-fold overdose of morphine leading to respiratory depression in a child. However, only 32 percent said they would report an event in which a

supply of breast milk was inadvertently connected to an infant's central venous catheter but was discovered before any breast milk went into the catheter (a potentially fatal error).

No corrections can be made to reduce future errors (for example, making different types of connectors for breast milk supply and intravenous fluids) unless close calls are reported, explains James A. Taylor, M.D., of the University of Washington. Dr. Taylor and his colleagues analyzed responses to a survey by 140 randomly selected physicians and nurses at a large children's hospital about their use of incident reports to document medical errors and whether they would report certain hypothetical medical errors.

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Medical errors

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Overall, 35 percent of respondents had reported less than 20 percent of their perceived medical errors in the past year, and 33 percent had reported less than 40 percent of perceived errors committed by colleagues. Nurses were nearly three times as likely to report 80 percent or more of their own medical errors as physicians. Physicians and nurses commonly underreported errors due to uncertainty about what is considered an error (41 percent) and concerns about

implicating others (37 percent). Respondents noted several changes that would lead to more error reporting. These ranged from education about which errors should be reported and regular feedback on reported errors to evidence of system changes because of error reports and an electronic format for reports.

Details are in "Use of incident reports by physicians and nurses to document medical errors in pediatric patients," by Dr. Taylor, Dena Brownstein, M.D., Dimitri A. Christakis, M.D., M.P.H., and others, in the September 2004 *Pediatrics* 114(3), pp. 729-735. ■

Children's Health

Misconceptions are common among child care center staff about the need for antibiotics for upper respiratory infections

About 41 percent of preschool children are cared for in organized child care settings at least part of the time. Many child care center staff members mistakenly believe that antibiotics are needed for viral upper respiratory infections (URIs). Yet, they don't report pressuring parents to seek medical attention or antibiotics for their children, according to a study supported by the Agency for Healthcare Research and Quality (T32 HS00063 and HS10247). This is good news, given the concern about growing rates of bacterial resistance to antibiotics stemming from overuse of the drugs, according to researchers from Harvard Medical School and Children's Hospital Boston.

The researchers surveyed staff at randomly selected child care centers in Massachusetts to assess knowledge regarding common infections. Over the course of 6 weeks, staff completed a record of

absences each day, describing the reason for the absence and the advice given to the parents regarding exclusion, referral to a health care provider, and obtaining antibiotics. Overall, 80.5 percent of the staff surveyed incorrectly believed that antibiotics were indicated for bronchitis and for green nasal discharge in children. In addition, 27 percent and 25 percent, respectively, mistakenly believed that antibiotics speed recovery from colds and flu and are helpful for treating viral infections.

On average, 17 percent of children were absent from child care each day. In the majority (74.7 percent) of the 538 absences due to illness, parents rather than child care staff made the decision to keep a child home. Among the 136 (25.3 percent) instances in which children were excluded by child care staff, 45 (33 percent) were inappropriate based on guidelines available at the

time from the American Public Health Association and the American Academy of Pediatrics. However, many cases were for gastrointestinal illnesses that do warrant exclusion under more recently released guidelines. More importantly, in only one case did a staff member report inappropriately recommending to a parent that they seek an antibiotic for their child before the child returned to the center. If these self-reports by child care staff reflect actual behavior, they suggest that child care staff are a less common source of pressure for unnecessary antibiotic use than is commonly assumed by clinicians.

See "Child care center policies and practices for management of ill children," by Jennifer F. Friedman, M.D., M.P.H., Grace M. Lee, M.D., M.P.H., Ken P. Kleinman, Sc.D., and Jonathan A. Finkelstein, M.D., M.P.H., in the September 2004 *Ambulatory Pediatrics* 4(5), pp. 455-460. ■

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.

Patterns of care and outcomes of pneumonia in children vary substantially by ethnicity and race

The patterns of pneumonia care and outcomes of care vary substantially among children of different ethnic/racial groups, according to a recent study that was supported by the Agency for Healthcare Research and Quality (HS13056). For example, minority children were hospitalized for pneumonia at younger ages than white children, were more likely to be admitted to the hospital through the emergency department (ED), and were less likely to receive bronchoscopy or mechanical ventilation. Hispanic and Asian infants younger than 3 months were more likely than white or black infants to be hospitalized for pneumonia. Among children 3 months to 4 years of age with pneumonia, Hispanics had the highest percentage of children admitted to the hospital, followed by Asians, blacks, and whites.

More black children were admitted to the hospital through the

ED (67 percent) followed by Hispanic, Asian, and white children (59, 49, and 42 percent, respectively). More Hispanic and Asian children suffered from respiratory failure as identified by the need for mechanical ventilation (both at 3 percent) than black and white children (both at 2 percent). However, minority children were less likely than white children to receive either bronchoscopy or mechanical ventilation. Hispanic children had the longest average hospital stay (5.1 days), followed by Asian children (3.9 days), blacks (3.6 days), and whites (3.5 days). The total charges from highest to lowest were for Hispanic children (median \$6,770), Asian children (median \$6,154), black children (median \$4,690), and white children (median \$3,988). In conclusion, the researchers note the need for additional studies to better clarify how differences in quality of care,

access to care, disease severity, and care-seeking behaviors contribute to ethnic differences in care outcomes.

For the study, researchers from Governors State University, University Park, IL, used abstracted data on pediatric hospital stays from the 1998, 1999, and 2000 Nationwide Inpatient Sample (NIS). The NIS, which contains data on 20 percent of total U.S. hospital discharges, is maintained by AHRQ and is a component of the Healthcare Cost and Utilization Project.

See "Patterns of hospital-based pediatric care across diverse ethnicities: The case of pneumonia," by Elmer I. Washington, M.D., M.P.H., Jay J. Shen, Ph.D., Ralph Bell, Ph.D., and others, in the *Journal of Health Care for the Poor and Underserved* 15, pp. 462-473, 2004. ■

Some low-income parents do not recognize mental health problems and service needs of children with special health care needs

Over one-third of children with special health care needs (CSHCN) have a mental health problem, but only one-quarter of caregivers recognize the need for mental health services, according to a recent study supported in part by the Child Health Insurance Research Initiative (CHIRI™). CSHCN comprise approximately 13 to 17 percent of all children in the United States.

CSHCN who are from low-income families and those who are members of a racial/ethnic minority group have higher rates of mental health problems, yet they are less likely than their counterparts to receive mental health services. Ensuring that these children receive early diagnosis and treatment for mental health problems depends, in part, on the parents recognizing that their child has a mental health need and identifying, accessing, and accepting services.

Researchers surveyed caregivers who were seeking primary health care services for their Medicaid-enrolled children in six urban Midwestern community health centers, to determine the prevalence of mental health problems among CSHCN and caregiver perceptions. The study found that among the caregivers seeking health care services, 30 percent had a child with a special health care need, a significantly higher prevalence than among the general population. Using the Child Behavior Checklist (CBCL), 38 percent of the CSHCN were determined to have a mental health problem. In contrast, only 26 percent of caregivers reported that their child had a need for mental health services.

The authors conclude that mental health screenings and assessments should be incorporated as a routine

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Mental health problems

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part of primary health care practice. Additional findings can be found in, "Behavioral and mental health problems in low-income children with special health care needs (CSHCN)" by Janie Canty-Mitchell, Joan K. Austin, Kim Jaffee, and others in the June 2004 *Archives of Psychiatric Nursing* 18(3), pp. 79-87.

Editor's note: CHIRI™ is cosponsored 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 health care access and quality for low-income children. Additional CHIRI™ findings can be accessed on the CHIRI™ Web site at www.ahrq.gov/chiri/. ■

Use of antipsychotic medications nearly doubled among low-income children in Tennessee in the late 1990s

New use of antipsychotics nearly doubled from 1996 to 2001 for children insured by Tennessee's program for the uninsured and Medicaid, TennCare, according to a recent study. Nearly 1 of every 100 adolescents in the TennCare group became a new user of an antipsychotic drug in 2001. Much of this increase was due to prescribing of antipsychotics for nonpsychotic conditions such as attention-deficit/hyperactivity disorder (ADHD), conduct disorder, and affective disorders.

Although new atypical antipsychotic medications such as risperidone and olanzapine have fewer side effects than the older antipsychotic drugs, they nevertheless can cause serious problems ranging from weight gain and diabetes to cardiovascular disorders. In addition, use of antipsychotics in children and

adolescents for indications other than psychosis or Tourette syndrome is controversial. This doubling of their use (from 22.9 to 45.4 per 10,000 children) for new behavioral problems raises concern about whether this practice is clinically justified, notes Wayne A. Ray, Ph.D., of the Center for Education and Research in Therapeutics (CERT) at Vanderbilt University.

In the study, which was supported in part by the Agency for Healthcare Research and Quality through the CERTs program (HS10384), Dr. Ray and his colleagues retrospectively studied new use of antipsychotic medications among TennCare-enrolled children and adolescents from 1996 through 2001. They examined the impact of the introduction of atypical antipsychotics (for example,

risperidone in 1993 and olanzapine in 1995) on clinical practice.

During the 6-year study period, 6,803 children (mean age 11.5 years) became new users of antipsychotic medications. While the rates of use for schizophrenia, acute psychosis, and Tourette syndrome remained relatively constant, rates of use for behavioral conditions such as ADHD and affective disorders increased 1.5-fold. More studies are needed to determine whether the benefits of this expanded use outweigh the risks, concludes Dr. Ray.

See "New users of antipsychotic medications among children enrolled in TennCare," by William O. Cooper, M.D., M.P.H., Gerald B. Hickson, M.D., Catherine Fuchs, M.D., and others, in the August 2004 *Archives of Pediatric and Adolescent Medicine* 158, pp. 753-759. ■

Two approaches hold promise for lowering U.S. infant mortality rates, which are particularly high for minority infants

The United States has one of the highest infant mortality rates among industrialized countries.

Two approaches hold promise for improving U.S. infant mortality rates, suggests a study supported by the Agency for Healthcare Research and Quality (HS13371 and HS10858).

Jeannette A. Rogowski, Ph.D., of the University of Medicine and Dentistry of New Jersey and her colleagues used 1994-2000 data from a collaborative network of neonatal intensive care units (NICUs) in 49

States and 22 countries (the Vermont Oxford Network, VON) to assess the potential of collaborative quality improvement and selective referral to improve the quality of neonatal care. The collaborative approach systematically identifies "best practices" being used in hospitals with the best outcomes and then encourages the adoption of these practices at all hospitals.

By 2000, the VON database included about half of all very- low-birthweight (VLBW; less than

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Infant mortality rates

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3.5 pounds) infants born in the United States and 40 percent of the Nation's NICUs. Analysis of VON data revealed a mortality rate (adjusted for patient risk factors) ranging from 9 percent for low-mortality hospitals to 15 percent for high-mortality hospitals. The investigators calculated that if all hospitals were to achieve the rate of the best-performing quintile (9 percent), then the overall mortality rate for all infants would fall 24 percent. The decline would likely be greater for minority infants, who are more likely to be VLBW and to be cared for at hospitals with poor outcomes.

The evidence-based selective referral approach relies on consumer choice and competition among

health care providers based on public reporting of quality information. In one study, the difference in mortality rates between hospitals ranked in the best and worst quintiles was more than 5 times as large when hospitals were ranked on past mortality rates (9 vs. 19 percent) than when they were ranked on past NICU patient volume (13 vs. 15 percent). The researchers conclude that more lives could be saved if referrals were based on infant outcome data, as routinely collected by the VON, rather than high NICU volume.

See "Variations in the quality of care for very-low-birthweight infants: Implications for policy," by Dr. Rogowski, Douglas O. Staiger, Ph.D., and Jeffrey D. Horbar, M.D., in the September 2004 *Health Affairs* 23(5), pp. 88-97. ■

Physicians who feel confident in delivering preventive services to adolescents are more likely to screen them for risky behaviors

The majority of adolescent morbidity and mortality can be attributed to preventable causes, including risky behaviors such as use of alcohol and drugs and failure to use seatbelts and helmets. When pediatricians and nurse-practitioners feel confident in screening adolescents for these risky behaviors, they are more likely to conduct such screening, according to a study that was supported in part by the Agency for Healthcare Research and Quality (HS11095) and conducted by researchers at the University of California, San Francisco, and Kaiser Permanente, Northern California.

The researchers found that providers' confidence in their ability to deliver preventive services was correlated with provider-reported screening in the five areas studied: tobacco use, alcohol use, sexual behavior, seat belt use, and helmet use. In

addition to provider self-report, the researchers also collected independent data through adolescent report. Provider confidence was significantly related to adolescent reports of being screened during well visits for sexual activity, alcohol use, and tobacco use but not for seat belt or helmet use.

The researchers asked 66 pediatricians and nurse practitioners working in three pediatric clinics within a managed care organization to complete surveys assessing their confidence in screening adolescent patients in the five areas. They compared the clinicians' responses to provider-reported screening and screening reported by 323 adolescent patients (aged 14 to 16 years). Adolescent reports were for a single visit, while providers reported on the percentage of adolescents screened

in each area during the preceding month.

Self-reported provider screening rates ranged from a low of 57 percent for helmet use to a high of 85 percent for tobacco use, whereas adolescent reports of screening rates ranged from a low of 28 percent for helmet use to a high of 65 percent for screening for tobacco use. These findings underscore the importance of increasing clinicians' perceptions of competence to screen adolescents for high-risk behaviors during outpatient, well-care visits.

See "Provider self-efficacy and the screening of adolescents for risky health behaviors," by Elizabeth M. Ozer, Ph.D., Sally H. Adams, Ph.D., Linda Rieder Gardner, M.P.H., and others, in the *Journal of Adolescent Health* 35, pp. 101-107, 2004. ■

Clinical Decisionmaking

Clinical signs help identify blunt head trauma patients with unremarkable CT scans who may need neurosurgery

Each year, well over 1 million patients arrive at U.S. and Canadian emergency departments (EDs) for evaluation after blunt head trauma. About 20 percent of these patients have computed tomographic (CT) head scans. Of these patients, less than 2 percent have CT findings that are considered “therapeutically inconsequential,” that is, would not lead to a poor outcome or the need for a neurological procedure, according to a new study. Yet the same study found that 12 percent of patients with therapeutically inconsequential CT findings nonetheless had important neurosurgical outcomes. An important neurosurgical outcome was defined as the performance of a directed intervention (craniotomy within 5 days of injury or intracranial pressure monitoring) or a poor neurologic outcome (Glasgow Coma Score of 1, death; 2, persistent vegetative state; or 3, severe disability).

Because poor outcomes can occur in the presence of a normal CT scan result, the researchers sought to determine whether the patients with an important neurosurgical outcome could have been identified clinically. They found that two clinical indicators were predictive of a poor outcome: abnormal mental status and/or abnormal coagulation. Of the nine patients for whom followup data were available, all had abnormal mental status on admission (Glasgow Coma Scale score

less than 15 indicating problems such as delayed response to stimuli, disorientation, memory problems, or excessive sleepiness). Also abnormal coagulation (often sparked by traumatic injury) was present in five of the seven patients for whom coagulation status was known.

Emergency practice should not be changed on the basis of this small number of patients, but these findings do suggest the need for extra caution in patients with head injuries who have one of these clinical findings, regardless of CT findings thought to be inconsequential, notes William R. Mower, M.D., Ph.D., of the University of California-Los Angeles School of Medicine.

For the study, which was supported in part by the Agency for Healthcare Research and Quality (HS09699), the researchers enrolled all blunt head trauma patients undergoing emergency head CT imaging at 18 centers participating in the National Emergency X-radiography Utilization Study II (NEXUS). From these cases, they identified patients seen at six sites whose official CT reading met the criteria for “therapeutically inconsequential” injuries.

See “Defining therapeutically inconsequential head computed tomographic findings in patients with blunt head trauma,” by Clare Atzema, M.D., Dr. Mower, Jerome R. Hoffman, M.A., M.D., and others, in the July 2004 *Annals of Emergency Medicine* 44(1), pp. 47-56. ■

Risk of rupture from tubal pregnancy is highest within 48 hours after onset of symptoms

A new study shows that the risk of rupture from tubal pregnancy is highest, at 5 to 7 percent, within 48 hours after onset of symptoms such as abdominal or pelvic pain, vaginal bleeding, and tenderness or mass of the fallopian tubes or ovaries. Once a woman has untreated symptoms beyond 48 hours, there is about a 2.5 percent risk of rupture for every 24-hour period she goes untreated. Treatment usually involves injection of methotrexate and/or surgical incision or removal of the involved fallopian tube. For women with

early rupture, their initial warning sign often is the rupture.

Unfortunately, factors important in diagnosing tubal pregnancy are not helpful in predicting the risk of rupture, according to Nina A. Bickell, M.D., M.P.H., of Mount Sinai School of Medicine, and her colleagues. For example, time since last menstrual period, symptoms, physical findings, level of beta-human chorionic gonadotropin (B-hCG, the hormone released at the beginning of pregnancy), and tubal mass size on ultrasound examination were not associated with rupture in a recent study. For

the study, the researchers reviewed inpatient, clinic, and physician office charts of 221 women with tubal pregnancy to assess the conditional risk of rupture with time passed since onset of symptoms and other factors related to rupture. The study was supported by the Agency for Healthcare Research and Quality (HS09698).

See “Time and the risk of ruptured tubal pregnancy,” by Dr. Bickell, Carol Bodian, Dr.P.H., Rebecca M. Anderson, M.P.H., and Nathan Kase, M.D., in the October 2004 *Obstetrics & Gynecology* 104(4), pp. 789-794. ■

Women's preferences for prenatal testing depend more on their attitudes toward pregnancy outcomes than their age

A pregnant woman's attitude toward miscarriage, pregnancy termination, and the possibility of giving birth to a baby with Down syndrome are more important than her age in determining her preferences for prenatal testing to detect fetal chromosomal abnormalities such as Down syndrome. Current age- and risk-based guidelines for prenatal testing should account for women's different preferences, according to Miriam Kuppermann, Ph.D., M.P.H., of the University of California, San Francisco.

In a study that was supported in part by the Agency for Healthcare Research and Quality (HS07373 and HS10214), Dr. Kuppermann and her colleagues assessed the preferences for 12 potential prenatal testing outcomes of 584 racially/ethnically and socioeconomically diverse pregnant women recruited from 23 San Francisco Bay Area practices.

Researchers asked the women about their preferences using a time trade-off metric (how many life months they were willing to give up for a certain outcome) and standard gamble metric (how much they were willing to risk for a certain outcome). They

calculated preferences on a scale of 0 (death) to 1 (perfect health). Women also completed a sociodemographic and attitude survey.

Women gave the highest preference scores to outcomes resulting in the birth of a chromosomally normal infant (mean of 0.91-0.93) and less for pregnancy loss (mean of 0.69 to 0.87). Women gave the lowest preference scores to Down syndrome-affected births (mean 0.67-0.69).

The scores were correlated with attitudes toward miscarriage, pregnancy termination, and Down syndrome. White women tended to value unaffected births higher than blacks, Asians, and Latinos, and Asians had lower preference scores for Down syndrome births. The researchers did not find a significant relationship between women's preference scores and their age.

See "How do women of diverse backgrounds value prenatal testing outcomes?" by Dr. Kuppermann, Robert F. Nease Jr., Ph.D., Elena Gates, M.D., and others, in *Prenatal Diagnosis* 24, pp. 424-429, 2004. ■

Trauma centers should routinely screen trauma victims for mental health problems and alcohol abuse or dependence

More than half of trauma center patients suffer from high early levels of posttraumatic stress or alcohol abuse/dependence. Indeed, many are intoxicated with alcohol or stimulants at the time of their acute care admission, according to a study supported in part by the Agency for Healthcare Research and Quality (HS11372). Early mental health screening and intervention procedures that target both posttraumatic stress disorder (PTSD) and alcohol use should be developed for acute care settings, suggests Douglas Zatzick, M.D., of the University of Washington School of Medicine.

Dr. Zatzick and his colleagues screened 269 randomly selected injury survivors (aged 14 years and

older) hospitalized at two trauma centers for PTSD (typically characterized by symptoms such as intrusive thoughts or nightmares, emotional numbing, avoidance of trauma reminders, irritability, and insomnia), depression, and peritraumatic dissociative symptoms (for example, feelings that the event was unreal or amnesia for all or part of the event). The researchers conducted 1-hour face-to-face interviews with injured surgical inpatients to obtain demographic information and assess early posttraumatic distress, alcohol use, and prior trauma.

Overall, 58 percent of the trauma patients demonstrated high levels of immediate posttraumatic distress or alcohol abuse/dependence.

Also, 45 percent of the patients showed high levels of immediate distress in the surgical ward, and 26 percent were diagnosed with alcohol abuse/dependence. Across both sites, 20 percent of the trauma victims had high levels of PTSD symptoms, 36 percent had high levels of depressive symptoms, and 20 percent met symptomatic criteria for acute stress disorder (ASD). More than 60 percent of patients at one site and 36 percent of patients at the other site reported experiencing four or more serious traumas before the event that brought them to the hospital. Greater prior trauma, female sex, minority race, and treatment site independently predicted high levels of distress.

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Trauma centers

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See “Posttraumatic distress, alcohol disorders, and recurrent trauma across level 1 trauma centers,” by Dr. Zatzick, Gregory Jurkovich, M.D., Joan Russo, Ph.D., and others, in the August 2004 *Journal of Trauma* 57, pp. 360-366.

Editor’s note: Another AHRQ-supported study of emergency care shows that the physician-patient encounter during care in the emergency department is typically brief and lacking in important health information. The authors call for more provider education and significant system support to improve emergency department

communication. For more details, see Rhodes, K.V., Vieth, T., He, T., and others. (2004, September). “Resuscitating the physician-patient relationship: Emergency department communication in an academic medical center.” (AHRQ grant HS11096). *Annals of Emergency Medicine* 44, pp. 262-267. ■

Experts focus on prognosis, symptom management, and supportive care for patients with advanced heart failure

Patients with advanced heart failure (HF) are commonly distressed by lack of energy, weakness or fatigue, pain, shortness of breath, insomnia, and depression, and they require specialized interventions to manage symptoms and prolong life. Management of HF patients often involves chronic outpatient care interspersed with hospitalization and aggressive rescue efforts.

A panel of experts in heart failure, palliative medicine, geriatrics, outcomes measurement, and health care improvement recently participated in a consensus conference that was supported in part by the Agency for Healthcare Research and Quality (HS13804). They discussed current knowledge and proposed further research on prognosis, symptom management, and supportive care for advanced heart failure patients.

Sarah J. Goodlin, M.D., of Intermountain Health Care in Salt Lake City, and other panel members reached several conclusions. First, although supportive care should be integrated throughout treatment of patients with advanced HF, data are needed to understand how to best decrease physical and

psychosocial burdens of advanced HF to meet patient and family needs. Second, since determining a patient’s prognosis in advanced HF is difficult, data are also needed to understand which patients will benefit from which interventions and how best to counsel patients.

Third, research is needed to identify which interventions improve quality of life and best achieve the outcomes desired by patients and family members. Fourth, care should be coordinated between sites of care. Fifth, physicians caring for patients with advanced HF should develop skills to better integrate the patient’s preferences into the goals of care. A patient-centered, family-focused structure should frame the approach to care for advanced HF in light of the symptoms and burdens occurring throughout the illness. This approach offers more informed choices and support for patients and families and allocates scarce medical resources most appropriately.

See “Consensus statement: Palliative and supportive care in advanced heart failure,” by Dr. Goodlin, Paul J. Hauptman, M.D., Robert Arnold, M.D., and others, in the *Journal of Cardiac Failure* 10(3), pp. 200-209, 2004. ■

Outcomes/Effectiveness Research

Outcomes of repeat coronary bypass surgery are comparable to outcomes of initial bypass surgery

The number of people who underwent repeat coronary artery bypass grafting (CABG) in the United States more than quadrupled from 1.9 percent of all CABG operations in 1980 to 8.4 percent in 1999. Individuals who undergo repeat CABG improve their health and

functioning as much as those who undergo a first CABG, according to the findings of a study supported in part by the Agency for Healthcare Research and Quality (HS11282).

Repeat CABG was as effective as a first CABG in relieving angina (crushing chest pain), improving

function, and enhancing quality of life. This information should be useful in counseling patients about the benefits of reoperation and in justifying the use of repeat surgery, notes David M. Safley, M.D., of the University of Missouri, Kansas City.

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Repeat coronary bypass surgery

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Dr. Safley and his colleagues examined the 12-month outcomes of 690 patients who had CABG surgery at one hospital between February 1999 and August 2000. Of these, 62 (9 percent) had undergone a previous CABG. Patients completed questionnaires at baseline and 1 year after CABG (for survivors) to assess their angina frequency, physical limitations, and quality of life. Scales ranged from 0 to 100, with higher scores indicating

better function, fewer symptoms, and higher quality of life.

Overall incidence of complications was not significantly different for repeat compared with first CABG, although in-hospital mortality was substantially higher for repeat CABG patients (9.7 vs. 1.8 percent) who had more coexisting illnesses and more severe symptoms than first-time CABG patients. An equal rate of first-time and repeat CABG patients died within a year of discharge from the hospital. One year after CABG, repeat CABG patients had similar physical limitation scores as first-

time CABG patients (86 vs. 91) and similar quality of life scores (86 vs. 91) but slightly more residual angina (92 vs. 96). Given their worse health status at the time of their procedure, changes in angina scores for repeat CABG patients were equal to those of patients who underwent their first CABG.

See "Comparison of quality of life after repeat versus initial coronary artery bypass grafting," by Dr. Safley, John A. House, M.S., A. Michael Borkon, M.D., and John A. Spertus, M.D., M.P.H., in the *American Journal of Cardiology* 94, pp. 494-497, 2004. ■

Cardiac resynchronization improves functioning and reduces deaths for certain heart failure patients

Congestive heart failure is a debilitating condition that affects nearly 5 million individuals in the United States. Implanting biventricular pacemakers to resynchronize the ventricular contraction to improve ejection fraction (fraction of blood ejected from the ventricle) and relaxation of the left ventricle improves outcomes of heart failure in certain patients and could be cost effective when used in certain patient groups. These are the findings of the following two studies that were supported in part by the Agency for Healthcare Research and Quality (contract 290-02-0023) and conducted by AHRQ's University of Alberta Evidence-based Practice Center, Edmonton, Alberta, Canada.

McAlister, F.A., Ezekowitz, J.A., Wiebe, N., and others. (2004). "Systematic review: Cardiac resynchronization in patients with symptomatic heart failure." *Annals of Internal Medicine* 141, pp. 381-390.

This systematic review of the literature included studies, reports, and conference proceedings from 1980 to 2004 focused on cardiac

resynchronization via implanted biventricular pacemakers in patients with symptomatic heart failure. The nine trials selected for efficacy review involved 3,216 patients who had reduced ejection fraction and prolonged QRS duration on the electrocardiogram. Also, 85 percent had New York Heart Association (NYHA) class III symptoms (markedly limited physical activity, with slight activity causing fatigue, shortness of breath, or angina) or class IV symptoms (discomfort with any physical activity, with some symptoms even at rest).

Cardiac resynchronization therapy improved ejection fraction by .035, quality of life (a mean reduction of 7.6 points in score on the Minnesota Living with Heart Failure questionnaire), and function (58 percent vs. 37 percent of patients improved by at least 1 NYHA class). Heart failure hospitalizations were reduced by 32 percent, with benefits most marked in patients with NYHA class III or IV symptoms at baseline (35 percent reduction). All-cause mortality was reduced by 21 percent, driven largely by a 40 percent reduction in death from progressive heart failure.

Biventricular pacemaker implant success rate was 90 percent in 19 studies of safety, with 0.4 percent of patients dying during implantation. Over a median 6-month followup, implant leads dislodged in 9 percent of patients, and mechanical malfunctions occurred in 7 percent of patients. Since few patients in these trials had bradyarrhythmias or atrial fibrillation, the benefit of cardiac resynchronization in such patients is uncertain.

Nichol, G., Kaul, P., Huszti, E., and Bridges, J.F. (2004). "Cost-effectiveness of cardiac resynchronization therapy in patients with symptomatic heart failure." *Annals of Internal Medicine* 141, pp. 343-351.

This is the first published economic evaluation of the long-term costs and effects of cardiac resynchronization therapy via biventricular pacemaker implant compared with medical therapy in patients with heart failure. The authors developed a model based on data from their systematic review of studies on the topic and health-

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Cardiac resynchronization

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related quality-of-life and cost data from publicly available survey data. Based on the model, medical therapy saved a median of 2.64 quality-adjusted life years (QALYs) at a median lifetime cost of \$34,400. Cardiac resynchronization therapy was associated with a median incremental cost of

\$107,800 per additional QALY saved. Although these costs are in the general range of other commonly used medical interventions, the authors caution that the estimates depend strongly on their assumptions about mortality and hospitalization rates after cardiac resynchronization.

The experience of these patients and providers may not be applicable to other settings, since only selected

patients and experienced physicians participated in the randomized trials of the effectiveness of cardiac resynchronization. The procedure should not be considered in heart failure patients with coexisting conditions that shorten life expectancy. Also, these findings should be reevaluated when more is known about the likelihood of long-term complications of resynchronization. ■

Obesity contributes to early-onset heart problems and longer hospital stays

Nearly 65 percent of the U.S. population is overweight (body mass index or BMI of 25 kg/m² or more), and 30.5 percent of the population is obese (BMI of 30 kg/m² or more). Obesity increases the risk of developing cardiovascular and other diseases. Although obese individuals undergo coronary angioplasty and other techniques to relieve coronary narrowing at a younger age than people who are not obese, weight does not appear to affect their recovery from these procedures, according to a study supported in part by the Agency for Healthcare Research and Quality (HS11282). On the other hand, obese individuals stay in the hospital longer for cardiac and other problems than normal-weight individuals, according to another AHRQ-supported study (National Research Service Award T32 HS00032). Both studies are discussed here.

Poston, W.S., Haddock, C.K., Conard, M., and Spertus, J.A. (2004). "Impact of obesity on disease-specific health status after percutaneous coronary intervention in coronary disease patients." *International Journal of Obesity* 28, pp. 1011-1017.

Obesity is known to elevate the risk of postoperative complications

following coronary artery bypass graft surgery (CABG). However, obesity doesn't seem to affect recovery from percutaneous coronary intervention (PCI), which includes coronary angioplasty and other non-CABG revascularization procedures, according to this study. The researchers classified 1,631 PCI patients as underweight (BMI less than 20), normal weight (BMI 20 to 25), overweight (BMI 25 to 30), or obese (class I obese, BMI 30 or more; class II and III obese, BMI 35 or more). They examined by weight class patients' need 12 months later for repeat procedure, survival, quality of life, and health status using angina-specific and general health questionnaires.

Obese patients with and without a history of revascularization were significantly younger than overweight, normal weight, or underweight patients at the time of PCI. However, obese patients had similar survival, quality of life, and disease-specific health status as normal-weight patients 1 year after PCI. Also, there was no association between obesity status and need for repeat revascularization or 12-month mortality.

Overweight and obese patients appeared to benefit just as much from PCI as normal-weight patients. In contrast, underweight patients

reported lower quality of life and poorer physical functioning than the other BMI groups 1 year after PCI. These results suggest that clinicians should not significantly alter their recommendations for PCI based on patients' overweight or obesity status.

Zizza, C., Herring, A.H., Stevens, J., and Popkin, B.M. (2004). "Length of hospital stays among obese individuals." *American Journal of Public Health* 94, pp. 1587-1591.

Obese individuals stay in the hospital longer than normal-weight individuals, according to this study. As BMI increased, so did the number of inpatient hospital days. In all likelihood, treatment and prevention of obesity will reduce use of hospital care and the subsequent health care costs associated with the obesity epidemic, suggest the researchers. They used data from the first National Health and Nutrition Examination Survey Epidemiologic Followup Survey to estimate hospital stay differences over four 5-year periods among individuals in the following BMI groups: less than 18.5, underweight; 18.5 to 24.9, normal weight; 25 to 29.9,

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Obesity and heart problems

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overweight; 30 to 34.9, obese; and 35 or above, severely obese.

Overweight and obese individuals had longer hospital stays than normal-weight individuals, although the association between BMI and length of stay varied over the four

time periods. For example, overweight, obese, and severely obese individuals had 25 percent, 45 percent, and 54 percent, respectively, longer hospital stays than normal weight individuals during the period 1971-1975. During the period 1976-1980, their stays were 60 percent, 94 percent, and 218 percent longer, respectively, than normal-weight individuals. For

the period 1981-1985, their stays were two to three times longer, and from 1986 to 1992, their stays were 36 percent, 60 percent and 231 percent longer, respectively. With the exception of the final followup period (1986-1992), underweight individuals had longer hospital stays than normal-weight individuals, probably due to illness-induced weight loss. ■

Exercise may not mitigate the weight gain of late middle age, but it can reduce the risk of health decline

Few studies have tried to identify the factors that place middle-aged adults at risk for gaining weight, and the evidence that regular physical activity prevents weight gain is inconsistent. Two recent studies led by Northwestern University researchers Xiaoxing Z. He, M.D., M.P.H., and David W. Baker, M.D., M.P.H., examined weight gain among U.S. adults aged 51 to 61 years and the relationship of weight and physical activity to overall health and functioning. The studies were supported by the Agency for Healthcare Research and Quality (HS10283). The studies are summarized here.

He, X.Z. and Baker, D.W. (2004). "Changes in weight among a nationally representative cohort of adults aged 51 to 61, 1992-2000." *American Journal of Preventive Medicine* 27(1), pp. 8-15.

In this study, both men and women aged 51 to 61 in all ethnic groups gained weight from 1992 to 2000, and their current levels of physical activity did not appear to protect against weight gain. The researchers analyzed activity level and changes in weight and body mass index (BMI) of 7,391 ethnically diverse community-dwelling U.S. adults aged 51 to 61

using data from the 1992, 1994, 1996, 1998, and 2000 Health and Retirement Survey interviews. The baseline interview (1992) asked respondents how often they participated in light physical activity, such as walking, dancing, and gardening; vigorous exercise or sports such as running, swimming, bicycling, or heavy housework; and work-related physical activity such as lifting heavy loads.

The mean weight gain during the study period was higher for women (3.67 pounds) than for men (3.15 pounds). White men and women had the lowest baseline BMI, but tended to gain more weight than other racial/ethnic groups. After controlling for other factors, individuals who were older or had higher baseline weight showed less weight gain. Men who reported poor health at baseline were less likely to gain weight than men who reported excellent health. Race, education, and income were not associated with weight gain, after accounting for other factors.

Regular light or vigorous recreational activities, household chores, or work-related activities were not associated with less weight gain. The authors conclude that high-frequency, moderate-intensity exercise is probably needed for weight loss.

They suggest that

physicians, nurses, and public health messages focus less on the benefits of exercise for weight control and instead emphasize the other health benefits that accrue from regular exercise.

He, X.Z. and Baker, D.W. (2004, September). "Body mass index, physical activity, and the risk of decline in overall health and physical functioning in late middle age." *American Journal of Public Health* 94(9), pp. 1567-1573.

Although maintaining ideal body weight is important in preventing decline in overall health and physical functioning, regular exercise can reduce the risk of health decline even among individuals who cannot achieve ideal weight, according to this study. The investigators used data from the 1992, 1994, and 1996 Health and Retirement Survey to examine the relationship between BMI, exercise, overall health, and physical functioning among 7,867 adults who were aged 51 to 61 years during the study period.

After adjustment for risks of health decline and new physical problems, overweight and obese individuals had a 29 percent and 36 percent, respectively, higher risk of

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Weight gain

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health decline and a 27 percent and 45 percent, respectively, higher risk of developing a new physical difficulty (for example, being unable to walk as far or climb a flight of stairs without resting). The good news is that regular exercise significantly reduced the risk of health decline and development of a new physical difficulty, even among obese individuals.

For example, after adjusting for other factors, the relative risk of a decline in overall health was over 30 percent lower for individuals who performed light exercise one to three times per month, one to two

times per week, or three or more times per week, and 25 percent lower for individuals who ever performed vigorous exercise, whether they performed it an average of three or more times per week or less than once per month. Similarly, the risk of developing a new physical difficulty was 22 to 31 percent lower for individuals who performed light exercise more than once per month. This risk also declined 17 percent for those who performed vigorous activities less than once per month to as much as 43 percent lower for those who performed vigorous activities three or more times per week.

Editor's note: According to another AHRQ-supported study on a related topic, strategies that increase the likelihood of patients identifying weight as a problem or that provide clinicians with a way to "medicalize" the patient's obesity are likely to increase the frequency of weight loss counseling in primary care visits. For more details, see Scott, J.G., Cohen, D., DiCicco-Bloom, B., and others. (2004). "Speaking of weight: How patients and primary care clinicians initiate weight loss counseling." (AHRQ grants HS08776 and HS09788). *Preventive Medicine* 38, pp. 819-827. ■

Diabetes-specific knowledge is associated with performance of self-management activities but not with outpatient care

Adults with diabetes who are knowledgeable about their disease are more likely than those with less knowledge to manage their disease by checking blood sugar levels and following recommended diet and exercise. However, they are no more likely to receive recommended outpatient diabetes care to monitor the disease and prevent diabetes complications, according to a new study. This is an unexpected finding, according to the study's authors, since knowledgeable patients would be expected to be more likely to seek out needed preventive care. Also, providers who educate their diabetes patients would be expected to be more consistent in providing necessary ambulatory care.

In the study, which was supported in part by the Agency for Healthcare Research and Quality (HS09936 and T32 HS00020), Stephen D. Persell, M.D., M.P.H., of Northwestern University, and his colleagues surveyed 670 adults with diabetes from three managed care plans to assess their diabetes knowledge and self-management activities. The researchers reviewed medical charts to assess the subjects' receipt of five processes of diabetes care: eye and foot exams, low-density lipoprotein cholesterol (LDL-C) testing, hemoglobin A1c (HbA1c) testing (indicating blood-sugar level), and urine microalbumin testing (an indicator of kidney function), as well as three metabolic outcomes: controlled hyperglycemia (HbA1c at 9.5 percent or less), controlled cholesterol

(LDL-C less than 130 mg/dL), and controlled blood pressure (less than 140/90 mm Hg).

A one-point increase on the knowledge scale was associated with 23 percent, 29 percent, and 15 percent greater likelihood, respectively, of following a diabetes diet, taking blood glucose self-measurements, and exercising regularly, but there was no association with processes of care or metabolic outcomes. Using patient education to empower diabetes patients to oversee the quality of their outpatient care in addition to self-managing their diabetes could increase the benefits of patient education.

See "Relationship of diabetes-specific knowledge to self-management activities, ambulatory preventive care, and metabolic outcomes," by Dr. Persell, Nancy L. Keating, M.D., M.P.H., Mary Beth Landrum, Ph.D., and others, in the October 2004 *Preventive Medicine* 39, pp. 746-752.

Editor's note: Another AHRQ-supported study on a related topic suggests that "readiness to change" behaviors associated with medication adherence, home glucose monitoring, and other self-care behaviors among diabetes patients with high functional health status are a significant predictor of future glycemic control. For more details, see O'Connor, P.J., Asche, S.E., Crain, A.L., and others. (2004, October). "Is patient readiness to change a predictor of improved glycemic control?" (AHRQ grant HS09946). *Diabetes Care* 27, pp. 2325-2329. ■

Patients awaiting liver transplantation have poor quality of life

Some patients with end-stage liver disease (ESLD) can survive without a transplant for many years, but while waiting for a new liver, their quality of life is severely compromised. They are unhappy, suffer from physical and psychological problems, and have difficulty functioning socially and physically, according to a study supported in part by the Agency for Healthcare Research and Quality (HS09694). The 78 ESLD patients studied needed a transplant because of liver failure due to alcoholic liver disease, Hepatitis B or C virus infection, cancer, or other liver diseases.

The researchers measured the quality of life of the ESLD patients prior to liver transplantation at one medical center using questionnaires and face-to-face interviews to assess health status and preference for his or her current health state (utility assessment). Time-tradeoff

utility questions addressed how patients valued their current and possible health states by asking how much time they would trade for a better health state. Standard gamble utility questions asked how much risk they were willing to take for better health. A 70-item liver disease-specific health status questionnaire addressed the number of ESLD-related physical symptoms and associated distress, psychological status, personal function (for example, ability to walk or climb stairs), social and role function, and general health perception.

Patients' health status was generally poor. On a 0 (worst) to 1 (best) scale, their median physical symptoms score was 0.33; psychological symptoms, 0; happiness, 0.50; personal function, 0; social/role function, 0.40; and general health perception, 0.40. The median time tradeoff score was

0.79, indicating that half of the patients chose healthier life in return for a 21 percent shorter life expectancy. The median standard gamble score was .50, indicating that half of the patients were willing to take up to a 50 percent risk of death in exchange for perfect health. Despite the overall consistency between the two approaches in evaluating the quality of life of these patients, for cost-effectiveness analyses, only direct measures of utility can be used to quantify health states, conclude the researchers.

See "Health status versus utilities of patients with end-stage liver disease," by Cindy L. Bryce, Ph.D., Derek C. Angus, M.D., M.P.H., JoAnn Switala, M.P.A., and others, in the May 2004 *Quality of Life Research* 13, pp. 773-782. ■

Elderly Health/Long-Term Care

Patients with Alzheimer's disease and their caregivers need a comprehensive care program that addresses problem behaviors

A newly developed, multicomponent care management intervention program may help Alzheimer's disease patients and their families obtain the comprehensive care and support services they need. The program, which is coordinated by a geriatric nurse practitioner, provides protocols to manage the behavioral problems often exhibited by Alzheimer's patients. It also provides caregiver education and support. The program was developed by researchers at Indiana University and the Indiana Alzheimer Disease Center. Although it is too early to gauge the success of the program, it has been well received by patients, caregivers, and primary care physicians, according to the researchers.

In a study supported by the Agency for Healthcare Research and Quality (HS10884), Mary G. Austrom,

Ph.D., and colleagues implemented the program at a university-affiliated primary care practice serving predominantly poor and black patients. The clinical team included a geriatric nurse practitioner, social psychologist, geriatrician, and geriatric psychiatrist who made patient-specific treatment recommendations (including medications) once a patient's diagnostic workup was completed.

Based on caregiver responses to questionnaires about the patient's behavior, the team recommended specific behavioral protocols accompanied by user-friendly handouts. The nurse practitioners regularly contacted the family to track progress and address any new or continuing concerns. They also encouraged patients and caregivers to attend monthly support meetings.

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Alzheimer's patients

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The goal of the behavioral protocols is to minimize behaviors that typically cause tremendous distress for patients and caregivers. For example, to reduce aggression or agitation, caregivers should identify potential triggers of emotional outbursts and try to prevent them; establish a calm environment and gentle approach; avoid arguing, confronting, or trying to reason with the patient; and redirect the patient's attention. Other behavioral protocols include ways to

distract or redirect patients from delusions or hallucinations, reduce anxiety or depression, maintain independence in personal care, avoid wandering and falls, and reduce sleep disturbances.

For more information, see "Development and implementation of nonpharmacologic protocols for the management of patients with Alzheimer's disease and their families in a multiracial primary care setting," by Dr. Austrom, Teresa M. Damush, Ph.D., Cora West Hartwell, A.N.P., and others, in the August 2004 *Gerontologist* 44(4), pp. 548-553. ■

Nursing home treatment for lower respiratory infection is safe and less costly than hospitalization for some residents

From 21 to 30 percent of nursing home residents are hospitalized for lower respiratory infections (LRIs), primarily pneumonia and bronchitis. Yet, nursing home residents at low and medium risk of dying from an LRI can be treated at the nursing home safely and less expensively than in the hospital, according to a study supported in part by the Agency for Healthcare Research and Quality (HS08551).

David R. Mehr, M.D., of the University of Missouri-Columbia, and his colleagues prospectively studied residents of 36 Missouri nursing homes who had an LRI between 1995 and 1998. They compared the mortality and cost of over 1,000 LRI episodes initially treated in the hospital (those hospitalized within 24 hours of evaluation who had received no

antibiotics in the nursing home in the 2 days before evaluation) with those treated in the nursing home.

After controlling for residents' probability of hospitalization and illness severity, residents who were treated at the nursing home were not significantly more or less likely to die than those who were hospitalized for LRI (odds ratio 0.89 and 1.0 for 30-day mortality, depending on method of analysis; 1 is equal odds). In addition, nursing home treatment was less costly, with a mean daily cost over 30 days of \$138.24 for initial nursing home treatment compared with \$419.75 for hospital treatment.

Thus, for nursing home residents at low or medium risk of death from LRI, nursing home treatment is likely to be safe and less costly than hospitalization, conclude the researchers. Their findings revealed

an overall LRI mortality rate of 14.7 percent, with 24.7 percent mortality for episodes initially treated in the hospital and 13.1 percent for episodes initially treated in the nursing home. Of residents who died, 75.4 percent were initially treated in the hospital. The researchers note, however, that aggressive therapy may not be appropriate for some frail nursing home residents, and hospitalization may lead to complications such as delirium and pressure sores.

See "Does hospitalization impact survival after lower respiratory infection in nursing home residents?" by Robin L. Kruse, Ph.D., Dr. Mehr, Keith E. Boles, Ph.D., and others, in the September 2004 *Medical Care* 42(9), pp. 860-870. ■

Minority Health

Evidence-based care for depression is clinically effective for minority patients

White patients are more likely than minority patients to receive appropriate care for depression. However, evidence-based care for depression is equally effective in reducing depressive disorders for minority and white patients. Following a quality improvement initiative to provide evidence-based depression care at six managed primary care practices, minority patients who received appropriate care,

compared with those who did not, had lower rates of probable depressive disorder at 6 months (20.5 vs. 70.5 percent). The findings were similar for white patients (24.3 percent vs. 71.2 percent).

On the other hand, functional outcomes of appropriate care, such as continued employment, may be more

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limited for minority than for white patients. For example, white patients who received appropriate depression care had higher rates of employment than those who did not receive appropriate care (71.4 vs. 52.4 percent). For minority patients, the effect was smaller (68.2 vs. 56.5 percent) and not statistically significant. The reasons for this difference are unclear. One possible explanation is that minority individuals may be less likely to capitalize on improvements in functioning by obtaining jobs because of educational and occupational preparedness differences, note the researchers.

The study findings suggest that efforts to develop ethnic-specific treatments for depression may be

unnecessary, at least for Hispanics and blacks. However, that does not mean that treatment strategies do not need to be modified for minorities, caution the researchers. They examined depression and work status after an initiative to follow evidence-based guidelines for depression care at six managed primary care practices over 6 months. Their work was supported in part by the Agency for Healthcare Research and Quality (HS10858).

For more details, see "Effects of primary care depression treatment on minority patients' clinical status and employment," by Jeanne Miranda, Ph.D., Michael Schoenbaum, Ph.D., Cathy Sherbourne, Ph.D., and others, in the August 2004 *Archives of General Psychiatry* 61, pp. 827-834. ■

Researchers compare receipt of health care from public and private providers serving one North Carolina Indian tribe

About 60 percent of the Nation's 2.4 million American Indians are eligible to receive Indian Health Service (IHS) benefits. This leaves those who are ineligible, like the North Carolina Lumbee Indians, to seek health care from non-IHS public clinics and private physicians. Lumbees are recognized by the State but not the Federal government as American Indians and therefore are ineligible for IHS benefits. Consequently, they obtain their general health care at a single federally funded community health center or, for those who have the necessary resources, from private physicians.

A recent study that was supported in part by the Agency for Healthcare Research and Quality (HS10854) found that Lumbee Indians who usually obtain care from a public clinic physician

receive similar preventive services and have comparable health (except for more frequent use of smokeless tobacco) to Lumbee Indians whose usual source of care is a private physician. Researchers led by Alfred Bryant, Jr., Ph.D., of the University of North Carolina at Pembroke, surveyed 939 Lumbee Indians about their usual source of care and health status. Of these, 80 percent had a private physician, and 18 percent had a public health clinician as their usual source of care; 2 percent reported having neither.

Receipt of flu vaccination, diabetes screening, blood pressure monitoring, prostate exam, Pap smear, and mammogram was not significantly different between the two groups. Health behaviors were similar for exercise, smoking (but not smokeless tobacco), and performing breast self-examination.

The finding of no differences in receipt of preventive services is notable, particularly because procedures such as prostate examinations and Pap smears require considerable time, the reasons cited most often for not following care guidelines. Also, use of private physicians should not be equated with insurance coverage since, like 1 million other American Indians, Lumbees have few alternatives. Since this study was conducted in a single rural tribe, results may not generalize to other American Indians or urban communities.

See "Health differences among Lumbee Indians using public and private sources of care," by Dr. Bryant, Turner Goins, Ph.D., Ronny Bell, Ph.D., and others, in the Summer 2004 *Journal of Rural Health* 20(3), pp. 231-236. ■

Mail surveys and telephone interviews can be used to survey Asian Americans with limited English proficiency

The cost of translation services and bilingual personnel recruitment are a consideration when researchers decide whether or not to include minorities, especially those with limited-English proficiency (LEP), in studies of health and health care. Asian Americans are one of the fastest growing groups in the United States, and many of them have a limited ability to speak and understand English. Nevertheless, telephone interviews and mail surveys with phone reminder calls are both feasible options for including these populations in health research surveys, according to a study supported by the Agency for Healthcare Research and Quality (HS10316).

These findings differ from findings in previous studies among hard-to-reach populations, which suggest that expensive and labor-intensive methods, such as face-to-face or in-home interviews, are the optimal mode of data collection. For the new study, researchers examined survey response rates and missing data by mode of survey (mail or telephone interview) and language groups. The 78-item survey given to Vietnamese, Mandarin, and Cantonese

Chinese patients in their native languages asked about the quality of their health care.

The overall survey response rate was 67 percent of the 479 patients surveyed, which is comparable to the response rate for studies conducted in English-speaking populations. Almost half of the respondents had 9 or fewer years of education, and 83 percent reported that they spoke English not well or not at all. More participants responded to phone interviews (75 percent) than mail surveys with reminder telephone calls (59 percent). The mean number of missing items for the mail survey was 4.14 versus 1.67 for the phone survey. There were no significant differences in missing data among the language groups and no significant differences in scale reliability by survey modes or language groups.

See "Surveying minorities with limited-English proficiency: Does data collection method affect data quality among Asian Americans?" by Quyen Ngo-Metzger, M.D., M.P.H., Sherrie H. Kaplan, Ph.D., M.P.H., Dara H. Sorkin, B.A., and others, in the September 2004 *Medical Care* 42(9), pp. 893-900. ■

HIV/AIDS Research

Maintenance of antiretroviral therapy despite low-level viremia in HIV patients appears to be appropriate

A recent study from the University of Pennsylvania Center for Education and Research on Therapeutics (CERT) found that maintaining the same well-tolerated antiretroviral therapy among patients with HIV disease, despite low-level HIV viremia (between 50 and 500 copies of HIV RNA per ml), provided sustained immunological benefit for two-thirds of the patients studied over the 2-year period. One-third of the group returned to an undetectable viral load (less than 50 copies per ml), one-third continued to have low-level viremia without reaching 1,000 copies per ml, and one-third (37 percent) had an increase in viral load (more than 1,000 copies per ml;

virologic failure). The study was supported in part by the Agency for Healthcare Research and Quality through the Agency's CERTs program (HS10399).

The researchers retrospectively observed 79 HIV-infected adults with low-level HIV viremia who had been on a stable antiretroviral regimen for at least 3 months, which they continued for at least 3 more months. Changes in CD4 cell count (a lower count indicates weaker immune system function) were modest. Even the group experiencing virologic increase had a smaller loss of CD4 count (median decrease of 1.8 cells/mm³ per month) than would be expected in untreated individuals. The other two

groups had modest gains in CD4 cell counts (median increase of 0.5 cell/mm³ per month).

These findings indicate that maintenance of a well-tolerated regimen despite low-level viral replication may be beneficial. Changing antiretroviral drug regimens is not without complications, such as reduced medication adherence, additional toxic effects from new therapies, and depletion of useful therapeutic options. However, the study results should be interpreted with caution, since continued antiretroviral therapy in the presence of low-level HIV viremia has been shown to lead to the accumulation of drug-resistant

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mutations and loss of subsequent treatment options. Also, this study involved a relatively small sample size, had relatively brief followup

time, involved a limited number of study sites, and included a substantial number of patients who were not receiving highly active antiretroviral therapy.

See "Natural history of patients with low-level HIV viremia on

antiretroviral therapy," by Vincent Lo Re III, M.D., Leanne Gasink, M.D., Jay R. Kostman, M.D., and others, in the August 2004 *AIDS Patient Care and STDs* 18(8), pp. 436-442. ■

Health Care Costs and Financing

Inequities continue in reimbursement for mental health care compared with physical health care

The goal of the Mental Health Parity Act (MHPA) of 1996 was to establish equity of health insurance coverage of mental health care and physical health care. For example, the MHPA prohibited the use of different lifetime and annual benefit limits for physical and mental illness. Yet inequity of coverage for mental health care remains, according to the findings of a 4-year study of denials of coverage by payers of inpatient care. The study was supported in part by the Agency for Healthcare Research and Quality (HS10667) and conducted by University of Wisconsin School of Nursing researchers, Mary Ellen Murray, Ph.D., R.N., and Jeffrey B. Henriques, Ph.D.

The researchers compared reimbursement denials for psychiatry at one hospital to denials for the hospital's other clinical services with a similar number of annual admissions and utilization reviews (which determine if planned care is appropriate, medically necessary,

and allowable). For each of the 4 years studied (1998-2001), psychiatry had the highest numbers of cases denied (52) and patient days denied (237) compared with oncology, neurology, family practice, and other clinical services. The most frequent reason for a psychiatric denial was that the inpatient benefit level (of allowable dollars or hospital days) had been exceeded, a reason cited only once in 4 years for a patient with a physical illness.

Similarly, the care of a patient admitted to a psychiatric service was four to eight times as likely to be reviewed as the care of a patient admitted to family practice. There was no consistent downward trend in cases reviewed, cases denied, or days denied for psychiatric cases that would indicate progress toward parity with medical cases. Either more stringent utilization review is taking place or treatment of mental illness is less well understood, and standards of care are less clear. On the other hand, payers may comply with the MHPA by providing equal lifetime coverage but implement

new measures that restrict coverage of hospital days for mental illness compared with medical illness.

See "A test of mental health parity: Comparisons of outcomes of hospital concurrent utilization review," by Drs. Murray and Henriques, in the July 2004 *Journal of Behavioral Health Services & Research* 31(3), pp. 266-277.

Editor's note: Another AHRQ-supported study on a related topic examined mental health reform in New Mexico, which requires all State agencies that finance mental health and substance abuse services to establish an interdepartmental behavioral health purchasing collaborative to coordinate, administer, and oversee these services. For more details, see Willging, C.E., and Semansky, R.M. (2004, September). "Another chance to do it right: Redesigning public behavioral health care in New Mexico." (AHRQ grant HS09703). *Psychiatric Services* 55(9), pp. 974-976. ■

Improved health insurance coverage may enhance access to care among rural Hispanic elders

Elderly Hispanics living in rural areas find it more difficult than their white counterparts to see their personal doctor for routine care or injury/illness when wanted. They also find it more difficult to see a specialist or obtain transportation to the clinic, according to a recent study. Enabling factors such as health insurance have a greater effect than ethnicity on their ability to obtain care, concludes Tyrone F. Borders, Ph.D., of the University of North Texas Health Sciences Center. The study was supported in part by the Agency for Healthcare Research and Quality (HS11606).

Dr. Borders conducted a telephone survey of 2,097 rural community-dwelling elders in West Texas about their ability to see a

personal doctor/nurse, see a specialist, obtain help over the phone, and obtain transportation to the clinic. The survey also asked about factors that might facilitate or impede the respondents' ability to access care. Hispanic participants had lower income and were less likely to have health insurance than the elderly whites who were surveyed. More Hispanics also had diabetes, and they had lower mental health scores than whites.

After accounting for several factors affecting receipt of care, Hispanic ethnicity was not directly associated with the ability to obtain care. However, age was important. The oldest old (80 years and older) were less likely to always/usually see their personal doctor/nurse than those aged 65 to 70 years. Elders

with higher income were more likely to obtain transportation to the clinic. Those with Medicare and supplemental private or government coverage were more likely to see their personal doctor/nurse than those without insurance. Similarly, individuals with Medicare only, Medicare plus other private or government coverage, and Medicaid only were more likely to see a specialist when they needed to. Finally, those with poorer health were less likely to see a specialist.

See "Rural community-dwelling elders' reports of access to care: Are there Hispanic versus non-Hispanic white disparities?" by Dr. Borders, in the Summer 2004 *Journal of Rural Health* 20(3), pp. 210-220. ■

When managed care market share increases in a geographic area, procedures decrease for Medicare fee-for-service patients

Rates of coronary angiography among fee-for-service (FFS) Medicare patients admitted for heart attack fall slightly as managed care market share increases, according to a study supported by the Agency for Healthcare Research and Quality (HS10803). When managed care patients comprise a larger share of business, providers may practice medicine more conservatively, conclude the Harvard Medical School researchers who conducted the study.

The researchers used data from the Cooperative Cardiovascular Project to study the spillover effect of managed care market share (based on data from the Centers for Medicare & Medicaid Services) on the appropriate use of coronary angiography among a national group of 110,000 Medicare FFS beneficiaries hospitalized for heart attack at hospitals in most States. Moving from a county with average managed care penetration to one with a penetration rate 10 percentage points above the average modestly reduced (by 1 to 2 percentage points) the likelihood of angiography for individuals who were likely to benefit from the procedure (appropriate) as well as those unlikely to benefit from it (inappropriate).

This finding implies that higher managed care market share is associated with a modest reduction in quality of

care for patients who are likely to benefit from coronary angiography, along with a reduction in unnecessary angiography among patients for whom the procedure is inappropriate. These effects did not appear to be mediated by the number of cardiologists, hospital teaching and ownership status, the admitting hospital's capability to perform coronary angiography, or the volume of heart attack patients.

For more information, see "The effect of managed care market share on appropriate use of coronary angiography among traditional Medicare beneficiaries," by Ellen Meara, Ph.D., Mary Beth Landrum, Ph.D., John Z. Ayanian, M.D., M.P.P., and others, in the Summer 2004 *Inquiry* 41, pp. 144-158.

Editor's note: A second AHRQ-supported study on a related topic reveals that average coronary angioplasty prices are 8 percent lower for PPOs than for fee-for-service plans, followed by point-of-service HMOs, which capture a 24 percent discount. For more details, see Dor, A., Koroukian, S.M., and Grossman, M. (2004, Summer). "Managed care discounting: Evidence from the MarketScan database." (AHRQ grant HS10282). *Inquiry* 41, pp. 159-169. ■

Agency News and Notes

Major health plans and organizations join AHRQ in working to reduce racial and ethnic disparities in health care

The Agency for Healthcare Research and Quality has announced a new public-private partnership, the National Health Plan Learning Collaborative to Reduce Disparities and Improve Quality, which is designed to help reduce disparities in health care for people with diabetes and other conditions. This collaborative brings together nine of the Nation's largest health insurance plans: Aetna, CIGNA, Harvard Pilgrim Health Care, HealthPartners, Highmark Inc., Kaiser Permanente, Molina Healthcare, UnitedHealth Group (UnitedHealthcare, Ovation and AmeriChoice), and WellPoint, Inc., as well as several other organizations.

This collaborative is the first national effort of its kind to go beyond research and actively tackle racial and ethnic inequities in health care service delivery. Nationally, only one-fifth of patients with diabetes receive routinely recommended health care services, including eye exams, flu shots, blood sugar (hemoglobin A1c) tests, foot exams, and cholesterol screening, according to AHRQ's *National Healthcare Quality Report*

released in December 2003. Blacks, Hispanics and people who live in poor neighborhoods are even less likely to receive these services and consequently are hospitalized more often for complications of diabetes, according to AHRQ's *National Healthcare Disparities Report*. The 2004 versions of both reports are expected to be released soon.

To guide quality improvement activities, a key goal of the collaborative is to address and reduce barriers to data collection to facilitate identification of disparities. A study by America's Health Insurance Plans (AHIP) and The Robert Wood Johnson Foundation (RWJF) earlier this year found that approximately one-half of all health plans now collect data on the race and ethnicity of their members to help the plans reduce disparities in health care. However, the study also found that companies continue to cite barriers to data collection, especially concerns about the perceptions of members and local communities, difficulties in obtaining reliable data, and questions about limitations that may exist in Federal and State laws or regulations.

Over the next 3 years, the collaborative will test ways to improve the collection and analysis of data on race and ethnicity, match the data to existing quality measures in the Health Plan Employer Data and Information Set (HEDIS), develop quality improvement interventions that close the gaps in care, and produce results that can be replicated by other health insurers and providers serving Medicare, Medicaid, and commercial populations. The goal is to share the lessons learned by plans in the collaborative with other health plans so that they too can improve the care they provide.

To further the aims of this unique collaboration, AHRQ has joined with RWJF, which is supporting the Center for Health Care Strategies and the Institute for Healthcare Improvement, to provide expertise in the areas of data collection, quality improvement, and evaluation. The RAND Corporation is also sharing its expertise in these areas. In addition, AHIP and the Blue Cross and Blue Shield Association will participate in the work of the collaborative. ■

Announcements

AHRQ announces list of priority conditions for research under the Medicare Modernization Act

The Agency for Healthcare Research and Quality has announced a \$15 million initiative to provide support for development of state-of-the-art information about the effectiveness of interventions, including prescription drugs, for the 10 top conditions affecting Medicare beneficiaries. Funding for the

initiative, authorized by Section 1013 of the Medicare Prescription Drug, Improvement, and Modernization Act of 2003, was included in the Fiscal Year 2005 Consolidated Appropriations Act that was passed by Congress.

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Priority conditions for research

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The list of 10 priority conditions was developed with input from the public and stakeholders through testimony at a May 21, 2004, listening session and through written comments submitted to the Department of Health and Human Services. The comments were compiled and reviewed by a steering committee comprising representatives from AHRQ, CMS, the Food and Drug Administration, and the Office of the Secretary, Department of Health and Human Services.

The priority conditions identified for study are:

- Ischemic heart disease
- Cancer
- Chronic obstructive pulmonary disease/asthma
- Stroke, including control of hypertension
- Arthritis and non-traumatic joint disorders

- Diabetes mellitus
- Dementia, including Alzheimer's disease
- Pneumonia
- Peptic ulcer/dyspepsia
- Depression and other mood disorders

The research, which will take the form of systematic reviews and syntheses of the scientific literature, will focus on the evidence of outcomes, comparative clinical effectiveness, and the appropriateness of health care items, such as pharmaceuticals and health care services, including the manner in which they are organized, managed, and delivered. The results of the studies will be made available to Medicare, Medicaid, and State Children's Health Insurance Program (SCHIP) programs, as well as to health plans, prescription drug plans, other health care providers, and the public. ■

New AHRQ consumer tool puts a quit plan in a smoker's hands

The Agency for Healthcare Research and Quality recently released a new consumer tool for Palm™ and Pocket PCs to help smokers who want to quit. *Quit Smoking: Consumer Interactive Tool* is drawn from the evidence-based recommendations of the Public Health Service guideline, *Treating Tobacco Use and Dependence*, and helps smokers set up a program tailored to their individual needs.

Tobacco addiction is one of the greatest threats to the health of the public and our Nation, with over 46 million smokers in the United States. As part of the Department of Health and Human Services' recognition of the Great American Smokeout, this program provides a quick and easy way for tobacco

users to take a more hands-on approach to quitting smoking.

Handheld devices are moving beyond the basic applications of personal information management. As a result, more patients and consumers are tapping into specialized health-related information content on the Web via wireless units every day. In fact, more than 15 million units have been sold this year alone.

To use the application, the smoker plugs in the date he or she wants to quit, and the program counts back 5 days leading up to the quit date. It then offers a 5-day countdown of daily practical steps to help the smoker quit, such as identifying reasons to quit smoking; talking to the doctor about medications, including the

nicotine patch or gum; and getting support from family and friends.

Quitting smoking has immediate and long-term benefits, including reducing the risk for diseases caused by smoking and improving health in general. Soon after a smoker quits, his or her body experiences immediate health improvements that can last a lifetime.

The AHRQ Palm™ and Pocket PC applications are available as a free download at <http://pda.ahrq.gov>. For more information about quitting smoking, go to www.ahrq.gov/path/tobacco.htm or call the new toll-free National Quitline at 1-800-QUIT NOW. ■

Research Briefs

Bakken, S., and Hripcsak, G. (2004, May). "An informatics infrastructure for patient safety and evidence-based practice in home healthcare." (AHRQ grant HS11806). *Journal of Healthcare Quality* 26(3), pp. 24-30.

Despite the age and frailty of home health care recipients and the complexity of care that puts them at risk, adverse events in home health care have received little attention, note the authors of this paper. They describe the components of an informatics infrastructure for patient safety and evidence-based practice (EBP) in home health care. These include data acquisition methods, health care standards, data repositories and clinical event monitors, data-mining techniques, digital sources of evidence, and communication technologies. These components and the applications that bring them together to promote patient safety and enable EBP have shown promising results in the acute care setting. Yet, a number of challenges hinder their implementation in home health care. The authors detail these challenges and call on key stakeholders to resolve them.

Beach, M.C., Roter, D., Larson, S., and others. (2004, September). "Is physician self-disclosure related to patient evaluation of office visits?" and "What do physicians tell patients about themselves?" (AHRQ grant HS07289) *Journal of General Internal Medicine* 19, pp. 905-910, 911-916.

Physician self-disclosure is a physician's description of a personal experience that has medical and/or emotional relevance for the patient. It has been viewed either positively (fosters trust and

rapport) or negatively (violates professional boundaries). The first study of audiotaped primary care and surgical visits found that physician self-disclosure was significantly associated with higher patient satisfaction ratings for surgical visits and lower ratings for primary care visits. The second study of audiotaped routine office visits revealed that self-disclosing statements that were self-preoccupied or intimate were rare. Self-disclosure generally fell into the following categories: reassurance ("I've used quite a bit of that medicine myself"), counseling (usually intended to guide action, such as "I just got my flu shot"), rapport-building, casual, intimate ("I cried a lot with my divorce too"), and extended narratives, which were generally irrelevant to the patient.

Begun, J.W., and Jiang, H.J. (2004). "Changing organizations for their likely mass-casualties future." *Advances in Health Care Management* 4, pp. 163-180.

The threat of bioterrorism presents an opportunity for health care organizations to transform into more resilient learning organizations, according to these authors. They recommend that rather than focusing solely on preparing for what might be expected in a bioterrorist attack, organizations strengthen their infrastructures to better manage surprises of all types. They advocate a combination of guidelines that advocate leadership commitment, self-organization, culture change, and interorganizational connections. In self-organization, people and groups interact with one another in the absence of an overall system-

wide blueprint. Informal networks are formed through self-organization so that different expertise can be rapidly pooled to handle a crisis. Reprints (AHRQ Publication No. 05-R004) are available from AHRQ.**

Breugelmans, J.G., Ford, D.E., Smith, P.L., and Punjabi, N.M. (2004). "Differences in patient and bed partner-assessed quality of life in sleep-disordered breathing." (AHRQ grant HS10786). *American Journal of Respiratory and Critical Care Medicine* 170, pp. 547-552.

Sleep-disordered breathing (SDB) is a chronic condition that is characterized by frequent episodes of partial or complete upper airway collapse that usually interrupts sleep. It often causes daytime sleepiness and impaired quality of life. Bed-partner ratings can be useful in evaluating the quality of life of patients with SDB, concludes this study. Patients with SDB generally rated their quality of life (physical functioning, general health, and vitality) higher than their respective bed partners. Yet, no differences were noted in the self-assessments of quality of life done by people without SDB or by their bed partners. Results are based on responses to a questionnaire assessing quality of life by 122 patients with SDB and their bed partners and by 15 people without SDB and their bed partners.

Clarke, P.S. (2004, July). "Causal analysis of individual change using the difference score." (AHRQ grant HS06516). *Epidemiology* 15(4), pp. 414-421.

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Causal analysis of change in time-related characteristics such as health or disease is an increasingly important area of epidemiology. This article focuses on analyzing individual change by asking whether exposure affects the way in which individuals change over time. Longitudinal studies are used in social epidemiology to measure the effect of social exposures (such as socioeconomic status) on health. In areas such as clinical epidemiology, longitudinal intervention studies allow assessment of whether drug exposure slows or halts disease progression. Thus, the focus is on individual change rather than change in population characteristics such as prevalence. The authors illustrate this approach by applying it to data from the Whitehall II study of British civil servants.

Deshefy-Longhi, T., Dixon, J.K., Olsen, D., and Grey, M. (2004). "Privacy and confidentiality issues in primary care: Views of advanced practice nurses and their patients." (AHRQ grant HS11196). *Nursing Ethics* 11(4), pp. 378-393.

These authors discuss the concepts of privacy and confidentiality in relation to health care information in primary health care settings. They also present findings from patient and nurse practitioner focus groups, which were held to elicit concerns of the two groups regarding privacy and confidentiality in their respective primary care settings. The focus groups were held prior to the implementation of the Health Insurance Portability and Accessibility Act in the United States, which set standards for individual health information security to assure privacy of such

information. Even this law contains phrases such as "minimum necessary disclosures of protected health information," which are open to a range of interpretations by all parties involved.

Feurer, I.D., Moore, D.E., Speroff, T., and others. (2004). "Refining a health-related quality of life assessment strategy for solid organ transplant patients." (AHRQ grant HS13036). *Clinical Transplantation* 19(Suppl 12), pp. 39-45.

These researchers evaluated three generic health-related quality of life (HRQOL) assessment instruments to identify a reliable, valid, and non-redundant battery to measure outcomes in organ transplant patients. They assessed functional performance and HRQOL in 371 liver, heart, kidney, and lung transplant patients using the Karnofsky scale, the SF-36 Health Survey, and Psychosocial Adjustment to Illness Scale (PAIS). The SF-36 mental and physical components and PAIS summary scales were internally consistent, but statistically redundant (except for the PAIS). Thus, either one could be used to measure generic HRQOL in solid organ transplant candidates and recipients. The SF-36 has the advantages of wider use, more norms, and lesser response burden. The researchers developed a transplant-specific patient satisfaction inventory in place of the more generic PAIS.

Fiore, M.C., Croyle, R.T., Curry, S.J., and others. (2004). "Preventing 3 million premature deaths and helping 5 million smokers quit: A national action plan for tobacco cessation." *American Journal of Public Health* 94(2), pp. 205-210.

In August 2002, the Interagency Committee on Smoking and Health (ICSH) Subcommittee

on Cessation was charged with developing recommendations to substantially increase rates of tobacco cessation in the United States. The goals were to help 5 million smokers quit within 1 year, reduce the national smoking rate by at least 10 percent within a year, deter 6 million youths from becoming smokers, and prevent 3 million premature deaths. Examples of recommendations include: create a national toll-free Tobacco Cessation Quitline to be managed by the States; launch a paid national media campaign to encourage Americans to quit using tobacco; include tobacco cessation medication and counseling in benefits provided in all federally funded health insurance programs; and invest in training and education to ensure that all U.S. clinicians are competent to help their patients quit tobacco use. Reprints (AHRQ Publication No. 05-R003) are available from AHRQ.**

Johantgen, M., Trinkoff, A., Gray-Siracusa, K., Muntaner, C., and Nielsen, K. (2004). "Using state administrative data to study nonfatal worker injuries: Challenges and opportunities." (AHRQ grant HS11990). *Journal of Safety Research* 35, pp. 309-315.

Despite some limitations, State administrative data are an untapped resource that can be used to study nonfatal worker injury patterns and etiologies, concludes this study. The researchers used State administrative databases to examine organizational influences on both worker and patient injuries in hospitals and nursing homes in four States. Worker injury data varied in terms of inclusion criteria, variables, and coding schemes used. Linkages to organizational level characteristics can be difficult. Nevertheless, as State

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worker compensation data systems become more consistent, administrative data can provide a clearer understanding of the variations and etiologies of worker injury.

Konetzka, R.T., Spector, W., and Shaffer, T. (2004, October).

“Effects of nursing home ownership type and resident payer source on hospitalization for suspected pneumonia.”

***Medical Care* 42(10), pp. 1001-1008.**

The risk of hospitalization for suspected pneumonia varies widely by nursing home ownership type and resident payer source, with the lowest overall risk for residents of not-for-profit nursing homes, found this study. The investigators analyzed data from the 1996 Medical Expenditure Panel Survey Nursing Home Component, a nationally representative sample of 5,899 nursing home residents in 815 facilities. They used regression analysis to assess factors affecting the decision to hospitalize the 766 elderly residents with suspected pneumonia. Residents with suspected pneumonia in not-for-profit facilities were hospitalized at a rate half that of for-profit facilities. The difference was most pronounced for residents who were older and more cognitively impaired and for those who were covered by Medicare or private funds. Reprints (AHRQ Publication No. 05-R002) are available from AHRQ.**

Kumari, M., Head, J., and Marmot, M. (2004, September).
“Prospective study of social and other risk factors for incidence of type 2 diabetes in the Whitehall II study.” (AHRQ grant

HS06516). *Archives of Internal Medicine* 164, p. 1873-1880.

An inverse relationship exists between social position and incidence of diabetes that is partly explained by health behaviors and other risk factors, concludes this study. The investigators prospectively studied the diagnosis of diabetes among 10,308 British civil servants at baseline (1985-1988) and followup at phases 2 (1989), 3 (1992-1993), 4 (1995), and 5 (1997-1999); they studied glucose tolerance tests in phases 3 and 5. The incidence of diabetes was twice as high for women and three times as high for men in the lower employment grades, compared with workers in higher employment grades. High body mass index and other risk factors considered traditional for type 2 diabetes were found in the lower employment group.

Luo, W., Wang, F., and Douglass, C. (2004, June).
“Temporal changes of access to primary health care in Illinois (1990-2000) and policy implications.” (AHRQ grant HS11764). *Journal of Medical Systems* 28(3), pp. 287-299.

These authors examined temporal changes of access to primary health care in Illinois between 1990 and 2000. They used census data in 1990 and 2000 to define the population (demand), distribution, and related socioeconomic attributes. They used the Physician Masterfile of the American Medical Association in corresponding years to define the physician (supply) distribution at the zip code level. They measured spatial access by considering locations of physicians and populations and the travel times between them. Spatial accessibility to primary care physicians for the majority of the

State improved over the study period. Worsened accessibility was primarily concentrated in rural areas, some limited pockets in urban areas, and among populations that were socioeconomically disadvantaged, had sociocultural barriers to care access, or had increased health care needs.

Macnee, C.L., and McCabe, S. (2004).
“Satisfaction with care among homeless patients: Development and testing of a measure.” (AHRQ grant HS09834). *Journal of Community Health Nursing* 21(3), pp. 167-178.

The purpose of this study was to establish the reliability and validity of the Homeless Satisfaction with Care Scale (HSCS) and to examine selected predictors of satisfaction with care. The investigators compared the newly developed measure of satisfaction with two established satisfaction measures in a sample of 168 homeless clients who used either a rural or urban clinic. The HSCS was reliable and valid. Generally, patient characteristics were not associated with satisfaction level. However, black homeless clients were significantly less satisfied than their white counterparts, and satisfaction differed between rural and urban sites. The researchers conclude that HSCS provides an appropriate measure of satisfaction with care for future studies of the homeless.

Maiuro, L.S., Schneider, H., and Bellows, N. (2004, September).
“Endangered species? Not-for-profit hospitals face tax-exemption challenge.” (AHRQ grant T32 HS00086). *Healthcare Financial Management*, pp. 74-77.

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Not-for-profit hospitals have been under increased scrutiny as local and State governments have placed more emphasis on holding these hospitals accountable to their communities for their tax-exempt benefits. As yet, there is no consensus on how charity care or community benefits should be measured. Results of one study by the authors disclosed a 26-fold difference in average hospital costs, depending on how charity care was defined. Differences in how States define charity care could have a bearing on any State's decision about whether or not a hospital should be allowed to retain its tax-exempt status, note the authors. They discuss the issues involved and suggest what hospital leaders can do to retain their tax-exempt status.

Poker, A., Hubbard, H., and Collins, B.A. (2004, December). "The first national reports on United States healthcare quality and disparities." *Journal of Nursing Care Quality* 19(4), pp. 316-321.

In the Healthcare Research and Quality Act of 1999, Congress directed the Agency for Healthcare Research and Quality (AHRQ) to produce annual reports on health-related quality and disparities in the United States. AHRQ released the first *National Healthcare Quality Report* and the first *National Healthcare Disparities Report* in 2003. The second reports will be released in the near future. These reports include broad sets of performance measures to portray the Nation's progress toward improving the quality of care provided to all Americans. This article provides an overview of the framework, development, and future uses of the reports by consumers, practitioners,

researchers, and policymakers. Reprints (AHRQ Publication No. 05-R001) are available from AHRQ.**

Reis, B.Y., and Mandl, K.D. (2004, September). "Syndromic surveillance: The effects of syndrome grouping on model accuracy and outbreak detection." (AHRQ contract no. 290-00-0020). *Annals of Emergency Medicine* 44(3), pp. 235-241.

This study examined the effects of different syndrome grouping methods on model accuracy, a key factor in the ability of syndrome surveillance systems to detect disease outbreaks. The researchers analyzed daily emergency department visit rates from two urban hospitals for 1,680 consecutive days. They used three methods to group the visits into a respiratory-related syndrome category: relying on the patient's chief complaint, relying on diagnostic codes, or relying on a combination of the two. For both hospitals, the data grouped according to chief complaint alone yielded the lowest model accuracy and lowest detection sensitivity. Diagnostic codes yielded better accuracy and sensitivity. Combining the two methods yielded the best result in accuracy and sensitivity for detecting disease outbreaks.

Schmid, C.H., Stark, P.C., Berlin, J.A., and others. (2004). "Meta-regression detected associations between heterogeneous treatment effects and study-level, but not patient-level, factors." (AHRQ grant HS10064). *Journal of Clinical Epidemiology* 57, pp. 683-697.

Randomized controlled trials collected for meta-analysis often exhibit substantial heterogeneity of treatment effects. Meta-regression

can detect interactions of treatment with study-level factors when treatment effects are heterogeneous. However, individual patient data are needed for patient-level factors and homogeneous effects, concludes this study. The researchers used two investigations to evaluate Bayesian meta-regression for detecting treatment interactions. In the first meta-analysis of studies on the use of angiotensin converting enzyme (ACE) inhibitors for nondiabetic kidney disease, treatment effects were homogeneous, so meta-regression identified no interactions. However, analysis of individual patient data revealed that treatment reduced the glomerular filtration rate more among patients with higher baseline proteinuria.

Stahl, J.E., Rattner, D., Wiklund, R., and others. (2004). "Reorganizing the system of care surrounding laparoscopic surgery: A cost-effectiveness analysis using discrete-event simulation." (AHRQ grant HS11637). *Medical Decision Making* 24, pp. 461-471.

These investigators used discrete-event simulation methods to compare the cost-effectiveness of currently used laparoscopic surgery with a new modular system in which patient care is handed off between two anesthesiologists. In the current system, an individual anesthesiologist remains with and is responsible for the patient from anesthesia induction through surgery and recovery. Results found the new strategy to be more effective but with similar costs to the current strategy (\$5,327 vs. \$5,289 average cost per patient day), with an incremental cost-effectiveness of \$318 per additional patient treated per day. The surgical mortality rate must be over

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4 percent or hand-off delay longer than 15 minutes before the new strategy is no longer more effective.

Taylor, S.L., Burnam, M.A., Sherbourne, C., and others. (2004). "The relationship between type of mental health provider and met and unmet health needs in a nationally representative sample of HIV-positive patients." (AHRQ grant HS08578). *Journal of Behavioral Health Services & Research* 31(2), pp. 149-163.

Researchers used data from the HIV Cost and Services Utilization Study (HCSUS) mental health survey of 1,489 HIV-positive individuals conducted in 1997 and 1998 to examine the use of mental health services or perceived need for such services among adults with HIV and psychiatric disorders. They found that 70 percent of

individuals with HIV needed mental health care. Of these, 30 percent had received no mental health services in the previous 6 months, 16 percent had received services from general medical providers only, and 54 percent had used mental health specialists. Patients who thought they needed mental health care were more likely to receive mental health services and to receive them from a mental health specialist (versus generalist) than those who had mental disorders but did not perceive a need for care.

Woolf, S.H., Kuzel, A.J., Dovey, S.M., and Phillips, R.L. (2004). "A string of mistakes: The importance of cascade analysis in describing, counting, and preventing medical errors." (AHRQ grant HS11725). *Annals of Family Medicine* 2(4), pp. 317-326.

Cascade analysis of physicians' error reports is helpful in understanding the precipitant chain of events, but physicians provide incomplete information about how patients are affected, according to this study. Miscommunication appears to play an important role in propagating diagnostic and treatment mistakes. Overall, 18 U.S. family physicians participating in a six-country international study filed 75 anonymous error reports. The researchers examined their narratives to identify the chain of events and predominant proximal errors, as well as the consequences to patients. The researchers documented a chain of errors in 77 percent of incidents. Physicians acknowledged that the patient was harmed in only 43 percent of cases in which their narratives described harms. ■

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