



RESEARCH ACTIVITIES

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Tough questions get answers through health IT

There's no doubt that health IT is a major force in efforts to improve health care for Americans. But making sure that we're using the most effective approaches requires real-world research.

How can we reach patients in rural areas? It's not always feasible for patients and clinicians to travel hundreds of miles. An Internet-based network can help.

How can we convince inner city asymptomatic patients with hypertension to take care of themselves? One answer wouldn't

have been feasible or even fathomable a decade ago.

How do we learn who is in patients' social networks so we can better reach them? Interview questions revealed that patients' networks extend beyond the expected doctors and family members.

The Agency for Healthcare Research and Technology (AHRQ) has invested over \$300 million in contracts and grants to over 200 communities, hospitals, providers, and health care systems in 48 States to promote access to and encourage the adoption of health IT. The projects described here show how health IT reaches and improves care for at-risk populations.

Rural clinicians get current

Patients with hepatitis C in rural New Mexico would often travel 200 to 250 miles each way to see Sanjeev Arora, M.D. The journey was not only tough for his patients, it was hard on Arora, who says, "I had this nagging thought that if I had just been able to treat them earlier, I would have been able to prevent problems."

Now he can and does.

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Hepatitis C affects about 32,000 people or 1.5 percent of people in New Mexico. Although this blood-borne infection is treatable, it's not easy to treat. It requires a year-long regimen of weekly injections with advanced drugs like Interferon and often causes side effects such as anemia and depression. Many rural clinicians lack the expertise needed to treat hepatitis C.

Through Project ECHO (Extension for Community Healthcare Outcomes), Arora participates in an Internet-based, audiovisual network at the University of New Mexico that helps him train rural doctors, nurses, physician assistants, and other clinicians to care for patients with hepatitis C.

"AHRQ funding allowed us to set up these Internet systems and support rural sites, and that paved the way for an ongoing State-funded program," said Arora, professor of medicine for the Department of Internal Medicine

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From the Director



health information technology (IT) systems are developed, so does our awareness of the need to use the right

technology to target a specific problem or help a particular patient. At the Agency for Healthcare Research and Quality (AHRQ), our research in health IT is helping us gain an understanding of multicultural factors, the way humans interact with technology and each other, and better ways to manage medical conditions.

By investing in this type of research, we're saving time, money, and lives. In 2012, we'll be building on our previous successes.

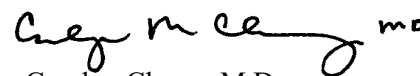
example, when children get sick at school or day care, parents often must leave work early to go to the doctor's office or even the emergency room (ER). But with technology and parental permission, some schools allow a child's own doctor to make a virtual office visit to the school or day care center. Trained assistants use cameras, an electronic telescope, and other equipment to share information with children's doctors. Physicians can then diagnose, prescribe, and discuss treatments with parents and school staff over a secure Internet connection. This Health-e-Access program has lowered health costs by more than 23 percent by reducing ER visits in the Rochester, NY, area.

Another health IT program makes it less likely that people in nursing homes will develop pressure ulcers, which when untreated can become life-threatening. A computer

program called On-Time helps identify patients who are likely to develop pressure sores and then creates care plans to prevent them. As a former nursing home aide, I'm particularly excited about On-Time. In the 21 facilities that used this program, the incidence of pressure ulcers declined by more than 42 percent.

The cover story in this issue of *Research Activities* highlights other ways that health IT is tackling difficult problems to improve care access and quality for diverse populations.

Of course, even the best health IT can't replace the clinician-patient relationship, but health IT gives us more ways to deliver the right care to the right patient at the right time.


Carolyn Clancy, M.D.

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at the University of New Mexico Medical School, and a driving force behind ECHO. “The AHRQ grant also enables us to share our data with other people.”

Since ECHO started in 2003, the project has linked the University of New Mexico Medical School with dozens of clinics and has grown to include other diseases and conditions. In 2011, Project ECHO expanded to Washington State and Chicago. You could call it the “ECHO effect.”

Phones give instant access to health tips

Alfred Bove, M.D., Ph.D, of Temple University in Philadelphia, faces the challenge of reaching a disadvantaged urban population with asymptomatic hypertension. As former chief of cardiology, he is well aware of the potential dangers of hypertension. Helping hundreds of people with hypertension who don't feel sick but need help isn't easy.

Through an AHRQ grant, Bove recruited 250 people who were in treatment for hypertension, but as Bove says, “were relatively asymptomatic. They weren't paying much attention to their hypertension, but they needed to. About 50 percent of people in our study live at or below the poverty line, only about 60 percent have a high school education or better, and 80 percent are African American.”

Bove and his team communicated by computer with 35 percent of the participants and by automated telephone messages with the rest. “Everyone has a phone, but not everyone has access to a computer,” says Bove. “We recommended they check in twice a week and on

average they responded seven times a month.”

Nurses who the participants had met sent them recorded reminders to check blood pressure and weigh themselves, supportive messages about salt intake, and reminders to come in for appointments. Not only were the nurses familiar, they were friendly, not punitive. “They were like the GPS system when you take a wrong turn; they never sound angry,” says Bove.

Each message was about 15 seconds long. “Most of the participants buy phone cards with minutes. They don't want to burn their minutes,” explains Bove. Not only were the messages short, they were also simple. “They were at a sixth grade reading level.”

At the end of the study, 54 percent improved their blood pressure to below hypertensive levels, but 50 percent of the control group did the same. “We were surprised,” says Bove, “but the control group had to select themselves. They already had an incentive to participate, because they were interested.”

“In this world of chronic disease, patients need to be engaged and participating in their health care,” says Bove. “This is a way to reach out to people without overwhelming the health care system.”

This is a way to reach out to people without overwhelming the health care system.

A multicultural approach

By reaching at-risk, diverse groups, health IT holds the promise of reducing disparities. But knowing how to communicate with diverse

groups through social networks is as critical as choosing the right technology.

Rupa Valdez, M.S., Ph.D. candidate in the Department of Industrial and Systems Engineering at the University of Wisconsin-Madison, asks, “In the long run, how can culturally informed approaches to health IT help reduce racial and ethnic disparities in health care?”

To start, Valdez is interviewing patients with type 2 diabetes who seek care at federally funded health clinics to learn what decisions people make about sharing health information within their social networks. “Health care is very personal, so we need to be culturally informed,” she explains. “From icons that represent males and females to colors used to represent health and wellness to a patient's belief that she must always share medical information with her parents, our backgrounds are important.”

Health care is very personal, so we need to be culturally informed.

Her research focuses on four factors: whom patients communicate with, why they communicate, how they communicate, and what they communicate. When asked who they communicated with, patients not only said their family members and doctors, they also named Jesus and God. Some patients also mentioned people who had died or former relatives such as ex-daughter-in-laws. Sometimes patients can be particular about who they would share information

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with, as they may not want to burden a close relative or friend. “Other reasons that people may not want to communicate is that they are trying to avoid negative

feedback from others or that they don’t want conversations about their health to always take priority,” says Valdez.

To design technologies for in-home and out-of-home use for a culturally

diverse group of patients, Valdez acknowledges, “We may need an array of approaches.” ■ *KM*

Editor’s Note: To find out more about AHRQ’s health IT program, go to www.healthit.ahrq.gov.

Health Information Technology

E-prescribing systems within electronic health records reduce ambulatory prescribing errors in community-based practices

Physicians in community-based office practices have error rates nearly 50 percent lower 1 year after adopting a commercially available electronic prescribing (e-prescribing) system integrated within an electronic health record (EHR), according to a new study. The researchers found that physicians who switched from paper prescribing to e-prescribing (“adopters”) reduced their error rates nearly 1.5-fold, from 26.0 to 16.0 per 100 prescriptions by the end of 1 year. For physicians in practices who continued to use paper prescriptions (“non-adopters”), errors remained high at 1 year (37.3 per 100 prescriptions). Illegibility errors were numerous at baseline and completely eliminated by e-prescribing.

E-prescribing reduced many types of prescribing errors, including route errors, strength errors, use of inappropriate abbreviations, and refill errors. Although most of the errors would not cause serious harm to patients, they could result in callbacks from pharmacies and inefficiencies for doctors, patients, and pharmacists.

The researchers studied a total of 21 providers at baseline and 1 year. All providers worked in adult primary care practices located in a predominantly rural and suburban region of upstate New York. Providers all used paper prescriptions at the beginning of the study. Six providers adopted e-prescribing while another 15 providers continued to use paper

prescribing during the study. Researchers analyzed 2,432 prescriptions at baseline and 2,079 prescriptions at one year.

The e-prescribing system was a popular, commercially available system with clinical decision support integrated within an EHR. The system provided alerts for drug allergies, drug-drug and drug-disease interactions, duplicate therapies, and contraindications for pregnant and breastfeeding women.

Given that the Federal government and many State governments, led by New York State, are making unprecedented investments in health information technology such as EHRs and e-prescribing, understanding the effect of these systems in actual use is essential to ensure that funding targets effective interventions. Designing systems that are well suited to provider workflow and providing technical support is also important to maximize safety benefits. The study was funded in part by the Agency for Healthcare Research and Quality (HS15316).

More details are in “Electronic prescribing within an electronic health record reduces ambulatory prescribing errors,” by Erika L. Abramson, M.D., M.S., Yolanda Barron, M.S., Jill Quaresimo, R.N., J.D., and others in the October 2011 *The Joint Commission Journal on Quality and Patient Safety* 37(10), pp. 470-478. ■ *DIL*

Pharmaceutical Research

The effects of direct-to-consumer drug advertising on statin use depends on the person's experience with the statin

Direct-to-consumer (DTC) advertising of statins has different effects on product switching depending on whether the person is just being prescribed a statin, has been on a statin for only a short time, or has been using a statin for a long time, concludes a new study. Economic models of the impact of DTC ads over time have failed to include drug quality, which can be observed directly for statins by the degree of reduction over time of blood low-density lipoprotein (LDL) levels, according to the researchers. Using clinical data together with national and local costs for advertising each of the three major statins (Lipitor®, Pravachol®, and Zocor®), the researchers tested econometric models of beginning a statin after diagnosis and of switching between the statins as a function of length of product use.

They found that the longer a patient is on one of the drugs, the weaker is the effect of DTC advertising in providing information on the drug's experience characteristics. In other words, the patient substitutes his or her own experience for that conveyed in the ads. In contrast, the FDA-required verbal listing of possible side effects increase the likelihood of the patient switching away from the statin in use over time, because the patient has to rely on information from DTC ads on negative side effects. Finally, the researchers confirmed the importance of statin quality (decline of LDL-cholesterol levels from baseline to recommended levels) in reducing the likelihood of a patient deciding to switch to another lipid-lowering drug.

The researchers developed the econometric models based on data

on more than 600,000 patients extracted from the electronic medical records of the Practice Partner Research Network (90 primary care practices in 33 cities across the United States). Local and national monthly DTC advertising expenditures were obtained for each of the three brands for 1998 through 2004. The study was funded in part by the Agency for Healthcare Research and Quality (HS11326).

More details are in "Can credence advertising effects be isolated? Can they be negative? Evidence from pharmaceuticals," by W. David Bradford, Ph.D., and Andrew N. Kleit, Ph.D., in the *Southern Economic Journal* 78(1), pp. 167-190, 2011. ■ DIL

Educational intervention helps doctors and patients split statin tablets to save money for patients and payers

Most patients want to save money on their prescriptions, particularly those that are brand name. Because the price per tablet for many medications is the same regardless of the dose, patients can save money by splitting a higher-dose tablet in two, a practice known as "tablet splitting." While not all medications can be split, research has shown that statins used to lower cholesterol, which are often quite expensive, can be split without compromising safety or efficacy. For example, if a patient needs 40 mg per day of a cholesterol medication, the physician can write a prescription for the higher-dose 80 mg tablet. The patient can then split the 80 mg pill in half and get two 40 mg doses from the one tablet, thus cutting costs in half. Physicians don't always think about doing this for their patients or if they do, may worry about the safety

implications of tablet splitting. Using an inexpensive intervention, researchers have found a way to educate general practitioners (GPs) about the safety, efficacy, and cost benefits of statin splitting. A simple statin chart insert significantly increased splitting rates among these physicians.

GPs in British Columbia, Canada, received three chart inserts to encourage and educate them about statin splitting and its benefits. Two inserts, meant for the physician only, detailed the average yearly costs of statins and recommended how to write tablet-splitting prescriptions. The third insert, which instructed patients on how to use a tablet splitter, was given to patients to

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Statin tablets

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take home. Physicians were also called on the phone to reinforce the intervention.

A total of 282 GPs agreed to participate in the intervention. Prior to receiving the three inserts, the rate of splitting statins was 2.6 percent. Following the intervention, however, the rate increased to 7.5 percent and was sustained during a 22-month follow-up period. Those patients most likely to receive a split-statin prescription had lower incomes or no drug coverage, suggesting that physicians were mindful of their patients' ability to pay for their medications. Women were 26 percent more likely than men to receive these

types of prescriptions. In contrast, physicians were less likely to write a tablet-splitting prescription for patients age 80 or older than patients age 55 to 59. Physicians may have perceived that elderly patients were too frail or cognitively impaired to adequately split their statin tablets. The study was supported in part by the Agency for Healthcare Research and Quality (HS10881).

See "Time series evaluation of an intervention to increase statin tablet splitting by general practitioners," by Jennifer M. Polinski, Sc.D., M.P.H., Sebastian Schneeweiss, M.D., Sc.D., Malcolm Maclure, Sc.D., and others in *Clinical Therapeutics* 33(2), pp. 235-243, 2011. ■ KB

Comparative Effectiveness Research

Newer antidepressants equally effective in treating major depressive disorder

A new report from the Agency for Healthcare Research and Quality (AHRQ) reinforces previous findings that second-generation antidepressants are equally effective in treating major depressive disorder and its symptoms. There is no evidence to support choosing one antidepressant over another based on either greater efficacy or effectiveness. Although second-generation antidepressants are similar in efficacy, they cannot be considered identical drugs. Evidence supports some differences among individual drugs with respect to onset of action, side effects, and some measures of

health-related quality of life.

The updated evidence review from AHRQ's Effective Health Care Program, *Comparative Effectiveness of Second Generation Antidepressants in the Pharmacologic Treatment of Adult Depression – An Update to a 2007 Report*, reviews the evidence on 13 second-generation antidepressants—bupropion, citalopram, desvenlafaxine, duloxetine, escitalopram, fluoxetine, fluvoxamine, mirtazapine, nefazodone, paroxetine, sertraline, trazodone, and venlafaxine. The report updates current evidence on

the comparative efficacy, benefits, and harms of second-generation therapies in treating patients with major depressive disorder, dysthymia, and subsyndromal depression. It also highlights areas for future research, including the need for research on the efficacy of second-generation antidepressants in subpopulations and in patients who have not responded to initial treatments.

You can view this report and other publications at AHRQ's Effective Health Care Program Web site, www.effectivehealthcare.ahrq.gov. ■

Older medications for epilepsy obtain better control but have more adverse effects

A new evidence review from the Agency for Healthcare Research and Quality (AHRQ) evaluates the effectiveness and risks of antiepileptic medications. Among the findings: the older drug carbamazepine had advantages in epilepsy control over newer antiepileptic medications as a class, but had more adverse effects. In addition, older drugs, valproic acid and phenytoin,

provided similar epilepsy control as newer antiepileptic medications, but adverse events occurred more often with them. However, these adverse events did not significantly increase the risk of medication withdrawals.

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Epilepsy medications

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Approximately one to three percent of people in the United States will develop epilepsy over the course of their lives. Epilepsy begins most commonly during the first 9 years of life, plateaus over the next 30 years, dips in patients 40 to 59 years of age, and then rises again in the elderly.

Research review authors found a lack of evidence to support substantive differences in terms of benefits or harms associated with the use of an innovator versus generic treatments. This report, *Comparative Effectiveness of Medications in Patients with Epilepsy*, and many other resources for evidence-based decisionmaking are available on the AHRQ's Effective Health Care Program Web site at www.effectivehealthcare.ahrq.gov. ■

Evidence lacking on devices used with percutaneous coronary interventions

A new research review from AHRQ's Effective Health Care Program found evidence is lacking on the benefits, harms, and safety of adjunctive devices for acute coronary syndrome (ACS) patients undergoing percutaneous coronary interventions (PCI). PCI is a common method to relieve the symptoms of patients suffering from ACS by opening the coronary arteries and allowing improved blood flow. Patients suffering from ACS who undergo PCI are susceptible to blood clots (thrombi), which can travel to other parts of the body and potentially cause a heart attack or stroke. The review

found that, while use of thrombus removal and embolic protection devices hold promise in the adjunctive treatment of patients with ACS undergoing primary PCI, larger research studies are needed to measure benefits and harms. The overall safety of adjunctive devices is also unclear due to a lack of data. Additional research may also provide insight on the impact of these therapies in subpopulations.

The report, *Comparative Effectiveness of Adjunctive Devices to Remove Thrombi or Protect Against Distal Embolization in*

Patients with Acute Coronary Syndrome Undergoing Percutaneous Coronary Intervention of Native Vessels, summarizes evidence on different adjunctive devices when used with PCI, compares rates and types of adverse events, and reviews the impact of patient characteristics on health outcomes.

You can read and download the full review and other publications from AHRQ's Effective Health Care Program Web site, www.effectivehealthcare.ahrq.gov. ■

Benefits of active surveillance therapy for localized prostate cancer not yet demonstrated

The clinical benefit of active surveillance compared to immediate therapy for early-stage, localized prostate cancer has not yet been demonstrated, concludes a new evidence report from the Agency for Healthcare Research and Quality (AHRQ). Active surveillance and watchful waiting are used by physicians to monitor patients after they have been diagnosed with early-stage prostate cancer. Under active surveillance using regular monitoring, physicians immediately intervene at the earliest sign of cancer progression with treatments such as surgery or radiation therapy. Watchful waiting, in contrast, involves interventions that are implemented when symptoms develop, with the chief aim to reduce

symptoms rather than cure the disease. Researchers at AHRQ's Tufts Evidence-based Practice Center summarized existing evidence on the role of active surveillance in the management of early-stage, low-risk prostate cancer and identified the need for additional research on observational therapies. The review was commissioned by the National Institutes of Health for presentation at its State-of-the-Science Conference on December 5–7, 2011. You can access the report, *The Role of Active Surveillance in the Management of Men With Localized Prostate Cancer*, at AHRQ's Effective Health Care Program Web site, www.effectivehealthcare.ahrq.gov. ■

Patient Safety and Quality

Superficial surgical site infections are a reliable measure of hospital quality

The most common complication following surgery is a superficial infection at the surgical site (SSI). Rates of these infections are now being used as a measure of hospital quality. Interest is mounting as The Centers for Medicare & Medicaid Services will publically report on SSI rates on their Hospital Compare Web site. A new study that looked at SSIs in patients undergoing colon surgery found that once an adequate number of SSI cases had been reported, the rates of SSI were a reliable measure of hospital quality of care.

The researchers examined the records of 18,455 patients who

underwent colon resection at 181 hospitals. All of the hospitals were participants in the American College of Surgeons National Surgical Quality Improvement Program. Risk-adjusted rates of SSI were determined based on a variety of patient risk factors.

On average, each hospital performed 102 colon resections in 2007. SSI rates (adjusted for patient risk factors for infection) ranged from 0 to 30 percent, with a mean of 10.5 percent. More than half (54 percent) of the hospitals had a reliability of more than 0.70, considered a minimum acceptable level. This was based on having at least 94 cases of SSI at a given

hospital. According to the researchers, additional methods are needed to increase the reliability of these measured outcomes. The study was supported in part by the Agency for Healthcare Research and Quality (HS17765).

See “Reliability of superficial surgical site infections as a hospital measure,” by Lillian S. Kao, M.D., M.S., FACS, Amir A. Ghaferi, M.D., M.S., Clifford Y. Ko, M.D., M.S., M.S.H.S., FACS., and Justin B. Dimick, M.D., M.P.H., FACS., in the August 2011 *Journal of the American College of Surgeons* 213(2), pp. 231-235. ■
KB

Emergency Care

Patient flow strategies may help to address emergency department crowding

Implementation of strategies to improve patient flow in hospital emergency departments (EDs) may modestly decrease the average ED length of stay (LOS) and the proportion of ED patients who leave without being seen (LWBS), according to a new study. Five hospitals implemented a total of seven improvement strategies over 18 months as part of a collaborative to improve patient flow and reduce crowding in the ED. By the end of the collaborative, four of the five hospitals had at least one fully implemented improvement strategy. Those hospitals showed modest improvements in patient flow.

The improvement strategies and associated impacts on LOS and LWBS varied considerably across the five

hospitals. For example, one hospital that both implemented front-end improvements (such as a more efficient intake process for nonurgent patients) and devoted additional staffing resources for fast-track patients had a 51-minute reduction in ED LOS. Another hospital that implemented only front-end improvements had a 9-minute reduction in LOS. A third hospital that improved communication between the ED and inpatient units to facilitate hospital admissions reduced the proportion of patients leaving the ED without being seen from 0.6 percent to 0.4 percent. A fourth hospital reduced LOS by nearly 1

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Patient flow strategies

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hour (59 minutes) for mid-acuity patients by establishing a new expedited care process for them.

Although most changes were small, the largest improvement for all ED patients occurred at the hospital that fully implemented two of its three proposed strategies. This hospital also had considerably longer LOS than the other hospitals and the national average. The authors note that a variety of factors may influence

the success of strategies, including the challenges encountered, the time-frame of implementation, and the type of strategy selected.

More details are in “Changes in patient flow among five hospitals participating in a learning collaborative,” by Megan McHugh, Ph.D., Kevin J. Van Dyke, M.P.P., Embry Howell, Ph.D., and others in the September 13, 2011 *Journal for Healthcare Quality* (Epub ahead of print). ■ DIL

New rule on when to have a trauma surgeon meet a transported trauma patient is found more sensitive than existing criteria

An evidence-based rule to determine the need to involve a trauma surgeon with a transported patient from the time of his (or her) arrival at a trauma center has higher sensitivity, while being less complex to implement, than the existing standard, a new study finds. Emergency departments (EDs) in the United States deal with 41 million trauma cases each year, which account for substantial ED resources and health care expenditures. After the decision to transport an injured patient to a trauma center, the ED physician uses standard rules to identify those few trauma patients who need immediate attention by a trauma surgeon upon arrival. This could be a procedure such as opening the chest to access the heart or lungs.

The researchers compared the predictive accuracy of a rule developed at Loma Linda University Medical Center,

consisting of three criteria, to the standard required by the American College of Surgeons (ACS), consisting of six major resuscitation criteria. Emergency surgery or procedural intervention was required in 5.3 percent of 20,872 patients registered over 13 years in the regional trauma center’s registry.

The trauma patients who received emergency intervention (EI) were more likely to be male, younger in age, and more seriously injured than those without emergency intervention. Injuries requiring EI were much more likely to be due to a penetrating event—a gunshot wound or stab wound—than blunt force. The sensitivity (fraction of trauma patients receiving EI who met the criteria) of the Loma Linda rule was 95.6 percent versus 85.5 percent for the ACS standard, while the Loma Linda rule’s specificity (fraction of those not receiving EI

who did not meet the criteria) was 56.3 percent versus 80.9 percent for the ACS standard. When the researchers made minor adjustments to the Loma Linda rule—while keeping it to 3 simple criteria—the refined Loma Linda rule’s predictive accuracy improved (sensitivity = 89.7 percent and specificity = 75.2 percent). The study was supported in part by the Agency for Healthcare Research and Quality (HS17526).

More details are in “Validation and refinement of a rule to predict emergency intervention in adult trauma patients,” by Jason S. Haukoos, M.D., M.Sc., Richard L. Byyny, M.D., M.Sc., Catherine Erickson, M.D., and others in the 20 September 2011 *Annals of Emergency Medicine*; 155(6); pp. 353-360. ■ DIL

Note: Only items marked with a single (*) asterisk are available from the AHRQ Clearinghouse. 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.

Chronic Disease

Posttraumatic stress disorder (PTSD) associated with elevated hemoglobin A1c levels in low-income blacks with diabetes

The frequency of posttraumatic stress disorder (PTSD) ranges from 10 to more than 50 percent in urban primary care settings where the prevalence of trauma is high. There is also growing evidence that PTSD is linked with chronic disease, such as diabetes and heart disease, and with poorer health outcomes. In fact, a recent study found that PTSD was significantly associated with a hemoglobin (Hb) A1c level (a marker of diabetes control) greater than 7 percent among low-income minorities.

The researchers recruited men and women with type 2 diabetes from four community-based primary care clinics in Harlem, New York City. In addition to demographic information, participants were screened for depressive symptoms and for lifetime PTSD. A total of 103 adults were included in the final analysis.

Within the group, 12 percent had lifetime full PTSD, while another 12 percent had sub-threshold PTSD. Those with lifetime PTSD were significantly more

likely to have an HbA1c level of greater than 7 percent compared to patients not experiencing PTSD symptoms. The most common sources of trauma were childhood physical abuse (22 percent) and the death of a child (18 percent). Patients with PTSD were also more likely to suffer from depressive symptoms and to be taking a psychiatric medication. In addition to PTSD, patients with HbA1c levels above 7 percent had diabetes for 15 or more years and were more likely to be taking insulin. The researchers encourage physicians to consider a diagnosis of PTSD in low-income patients with diabetes who are experiencing poor glucose control. The study was supported in part by the Agency for Healthcare Research and Quality (T32 HS00066).

See “Associations between posttraumatic stress disorder and hemoglobin A1c in low-income minority patients with diabetes,” by Samantha A. Miller, M.D., M.S., Carol A. Mancuso, M.D., Carla Boutin-Foster, M.D., M.S., and others in *General Hospital Psychiatry* 33, pp. 116-122, 2011. ■ KB

Increasing body mass index lowers quality of life in obese individuals

As the rate of obesity increases in the United States, so too does its impact on a person's health-related quality-of-life (HRQoL), suggests a new study. Although some past studies have explored the impact of obesity on two to three measures of HRQoL, this was the first study to investigate nine HRQoL measures. It assessed how HRQoL varied by body mass index (BMI) in gender and racial subgroups. It found that six HRQoL indexes and two of three health status summary measures detected significantly worse quality of life in obese individuals compared to those with normal BMIs.

For this study, 3,710 adults were given commonly used HRQoL

questionnaires. Following the telephone interview, they also received another questionnaire, the Health and Activities Limitations Index (HALex). The adults were classified by BMI as being of normal weight, overweight, or obese.

Within the sample, 29 percent of men and 27 percent of women were considered obese. There were twice as many blacks in the obese group (42 percent) than in the normal BMI group (21 percent). Significant differences were found on all HRQoL measures (except for the mental component score) for overweight and obese individuals compared to normal-weight individuals. Overall, a

higher BMI was associated with worse physical health aspects but not worse mental health. However, women had both worse mental and physical health as their BMI increased, and blacks had higher HRQoL when they were overweight than when they were normal weight or obese. The study was supported in part by the Agency for Healthcare Research and Quality (T32 HS00046).

See “Race and gender associations between obesity and nine health-related quality-of-life measures,” by Tanya G.K. Bentley, Ph.D., Mari Palta, Ph.D., Adam J. Paulsen, M.S., and others in the *Quality of Life Research* 20, pp. 665-674, 2011. ■ KB

HIV outcomes and medication use are similar between rural and urban HIV patients

Whenever possible, patients with HIV infection want to receive care locally where they live. While patients living in urban areas can access a variety of treatment sites, rural patients and those in outlying urban areas (peri-urban) may not have as many services available to them. As a result, they may decide to seek care at major treatment sites located in urban areas. John A. Fleishman, Ph.D., of the Agency for Healthcare Research and Quality (AHRQ), and colleagues found that overall, most HIV outcomes and medication use were comparable across patients living in rural, urban, and peri-urban areas.

The study involved 8,773 patients with HIV infection who were followed clinically at 7 high-volume, urban HIV Research Network sites in 2005. Each patient was determined to be rural if they lived in an area with a population of less than 10,000 or urban if the population was greater than 100,000. Patients considered to be “peri-urban” lived in areas with populations between rural and urban parameters.

Rural and peri-urban patients were significantly less likely to be black (22 percent and 21 percent, respectively) compared with urban patients (40 percent). Those living in peri-urban areas were more likely to have an HIV transmission risk factor of men who have sex with men. The researchers did not find

any significant differences in median CD4 cell counts, CD4 distribution, and median HIV viral loads (all indicators of HIV disease progression) among the three groups.

Overall, rural and peri-urban individuals receiving care at urban sites had high levels of appropriate medication to prevent opportunistic infections (infections that are more prevalent among patients with deficient immune systems) and good HIV outcomes compared with their urban-living counterparts. However, the researchers discovered some health care use differences. For example, patients living in rural and peri-urban areas were less likely to have four or more outpatient visits a year than their urban counterparts. The findings suggest that HIV patients living in non-urban areas can receive high-quality HIV care if they take advantage of high-volume, urban-based care sites. The study was supported in part by AHRQ (Contract No. 290-01-0012).

More details are in “HIV-related medical service use by rural/urban residents: A multistate perspective,” by Lucy E. Wilson, M.D., Todd Korthuis, M.D., M.P.H., Dr. Fleishman, and others in the August 2011 *AIDS Care* 23(8), pp. 971-979. Reprints (AHRQ Publication No. 12-R006) are available from AHRQ.* ■ KB

Physicians need better understanding of factors that patients use to decide about colorectal cancer screening

Although patient barriers to obtaining colorectal cancer (CRC) screening have been identified by researchers, physicians overestimate or underestimate the factors that patients consider in their CRC screening decisions, according to a new study. A better understanding of the influence of these factors may aid physician–patient interactions to encourage such screening, note the researchers. Because CRC is the third most commonly diagnosed cancer and the second leading cause of death in adult men and women, screening is important to detect the disease at an early, treatable stage.

The researchers conducted 30-minute, semistructured interviews with patients, general internists, and family practitioners between 2004 and 2006. The interviews used a standardized script in which patients were asked about their knowledge of CRC, the factors influencing their screening decision, and their general decisionmaking process. Physicians were asked to describe the factors that patients consider when deciding whether or not to have CRC screening.

During the interviews, patients mentioned 16 factors (predisposing,

enabling, or reinforcing) that influenced their CRC screening decisions. Patients described an average of 7.2 of these barriers each, in contrast to an average of 6.2 barriers cited by the 41 general internists participating in the study and an average of 10.9 barriers noted by the 25 participating family practitioners. The factors most frequently mentioned by patients included personal well-being (96.7 percent), experiences of others and the screening process (both 86.7 percent), patient knowledge (83.3 percent), and physician

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Colorectal cancer screening

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recommendation (80.0 percent). The general internists under-reported all of the predisposing factors and some of the reinforcing factors and two enabling factors. Conversely, they over-reported most enabling factors and the influence of media as a reinforcer. Family practitioners under-reported only

two of the predisposing factors: age and fear of cancer, and two of the reinforcing factors: assistance of others and experience of others. However, they over-reported the rest of the predisposing factors. The study was funded in part by the Agency for Healthcare Research and Quality (HS11845).

More details are in “Colorectal cancer screening: Patients’ and

physicians’ perspectives on decision-making factors,” by Yelena N. Tarasenko, M.P.H., M.P.A., Sarah B. Wackerbarth, Ph.D., Margaret M. Love, Ph.D., and others, in the *Journal of Cancer Education* 26(2), pp. 285-293, 2011. ■ *DIL*

Access to Care

Adults with individual and employment-related health insurance report similar, often good, access to care

Persons who have individual health insurance report having similar access to care as those covered through employment-related insurance, according to a new study. Several provisions in the recently-passed Patient Protection and Affordable Care Act increase the generosity of individual insurance to more closely match the generosity of employer-related coverage. Steven C. Hill, Ph.D., a researcher at the Agency for Healthcare Research and Quality (AHRQ), compared 1,097 adults (ages 18 to 64 years) with individual private health insurance and 26,405 adults covered by employment-related private health insurance.

Adults covered by individual plans were less likely than those covered by employment-related plans to have prescription drug coverage (69.5 vs. 94.0 percent), dental care coverage (22.0 vs. 74.2 percent), or coverage through a health maintenance organization (25.7 vs. 42.9 percent). In addition, mean annual out-

of-pocket expenses for adults with individual insurance was nearly twice that of those with employment-related private insurance (\$1,154 vs. \$682).

Both groups were similar in the proportions having a usual source of care or any medical visits in the past year. However, adults with individual insurance were less likely to report having an illness or injury requiring immediate care (20.7 vs. 25.3 percent). Similar proportions of both groups felt they could get needed care as soon as they wanted. The findings were based on analysis of data from the AHRQ Medical Expenditure Panel-Household Survey for 2002 through 2007.

More details are in “Individual insurance and access to care,” by Dr. Hill in the Summer 2011 *Inquiry Journal* 48(2), pp. 155-168. Reprints (AHRQ Publication No. 12-R002) are available from AHRQ.* ■ *DIL*

Being foreign-born affects access to care

A new study of factors influencing access to health care finds that being foreign-born or native-born (nativity) can have a significant effect on access to care in both Canada and the United States, independent of race/ethnicity or socioeconomic status. The researchers found disparities in access to care based on nativity

status overall, as well as by nativity-by-race joint effects in both countries.

Using data on more than 6,000 non-elderly adults from the Joint Canada-U.S. Survey of Health, the researchers found that foreign-born adults in the U.S. had 48 percent lower odds of having a consultation with a health professional in the

past 12 months than did native-born adults, after accounting for potential confounding from other sociodemographic and health-related factors.

When the researchers looked at joint effects of nativity and race/ethnicity on access to care,

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Access to care

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they found even greater disparities. In the United States, foreign-born Hispanics had 55 percent lower odds of having a regular medical doctor than did native-born non-Hispanic whites. However, the difference in these odds between native-born Hispanics and native-born non-Hispanic whites was not significant.

In addition, foreign-born whites had 58 percent lower odds than native-born whites of having a consultation with a health

professional within the past 12 months. Yet, both foreign- and native-born Hispanics had 35 percent and 42 percent lower odds, respectively, of having had a dental visit in the past 12 months than native-born non-Hispanic whites.

Education level affected access to care in the United States more strongly among native-born than foreign-born adults. Specifically, higher education was associated with better access to consultations with a health professional and dental visits among the native-born, but this association was not found

among the foreign-born. However, there were few nativity-by-income joint effects. The study was funded in part by the Agency for Healthcare Research and Quality (T32 HS00029).

More details are in “Nativity status and access to care in Canada and the U.S.: Factoring in the roles of race/ethnicity and socioeconomic status,” by Lydie A. LeBrun, Ph.D., M.P.H., and Leiyu Shi, Dr.P.H., M.B.A., M.P.A. in the August 2011 *Journal of Health Care for the Poor and Underserved* 22(3), pp. 1075-1100. ■ DIL

Child/Adolescent Health

Children of working mothers face more health problems

Children of working mothers are approximately 200 percent more likely than those with stay-at-home mothers to have been hospitalized overnight, had an asthma episode within the past 12 months, or had an injury or poisoning episode within the past 3 months, according to a new study.

Although the percentage of women with children participating in the labor force has risen from 54.9 percent in 1975 to 79.4 percent in 2001 (declining to 76.9 percent by 2005), the impact of maternal work on children's health has remained unclear, reports Melinda Sandler Morrill, Ph.D., of North Carolina State University.

A mother's participation in the labor force can improve her children's health by bringing in

money that can permit a healthier lifestyle for the family, and may also permit better health care through employer-provided health insurance coverage. However, her children's health could also be impacted negatively because of the added burden on the mother's time, resulting in less supervision or care of the children (for example, less time to prepare healthy meals or clean the home).

In her study, Dr. Morrill looked at the three potentially adverse health events cited above in a population of children, ages 7–17 years. Her data revealed a clear increase in the percentage of mothers working once their youngest child reached 60 months of age by their State's kindergarten enrollment cutoff date. She found that a mother's

employment increased overnight hospitalizations by 4 percentage points, injuries/poisonings by 5 percentage points, and the rate of asthma episodes by 12 percentage points, each by about 200 percent. The findings were based on data from 1985 to 2004 from the National Health Interview Survey, which is conducted annually by the Centers for Disease Control and Prevention. The study was funded in part by the Agency for Healthcare Research and Quality (HS17375).

More details are in “The effects of maternal employment on the health of school-age children,” by Dr. Morrill, in the *Journal of Health Economics* 30(2), pp. 240-257, 2011. ■ DIL

Recommendations on rounding pediatric doses may improve e-prescribing while reducing risk of adverse drug events

A key problem in designing electronic prescribing (e-prescribing) systems for pediatric patients has been solved, according to a new study. Clinical decision support systems for e-prescribing need to calculate a dose that is both appropriate for a child's age and weight (or body surface area)—yet is safe, effective, and can be prepared readily. The percentage change by which the prescribed dose can be rounded for ease of preparation or administration, while remaining effective and safe, varies from drug to drug. Some medicines given to children have a small range for dosages that are both effective and safe, while other drugs have wider tolerances.

In the course of the study, the researchers drew on expert opinion and the scientific literature to classify 120 medications (comprising more than 95 percent of the most commonly prescribed pediatric medications at two academic medical centers) into three major categories related to dose rounding—plus a small category of medications for which data was inadequate and very little rounding was recommended.

The major categories were: (1) medications for which doses could be rounded by 5–10 percent while retaining the intended effect; (2) medications for which dose rounding of 10–15 percent was possible, with a focus on preventing potential dose-dependent adverse effects; and (3) medications that could only be rounded by 1–5 percent because of a high risk for toxicity. After four rounds of discussion by their expert panel, consensus was reached on 99.3 percent of the medications. The researchers view this process as critical for developing the information needed for e-prescribing dose-rounding calculations. The study was funded in part by the Agency for Healthcare Research and Quality (HS17216).

More details are in “Automated dose-rounding recommendations for pediatric medications,” by Kevin B. Johnson, M.D., M.S., Carlton K.K. Lee, Pharm.D., M.P.H., S. Andrew Spooner, M.D., M.S., and others, in the August 2011 *Pediatrics* 128(2), pp. e422-e428. ■ *DIL*

Children's unmet health needs similar for low- and middle-income families with either public or private insurance

Both public and private health insurance appear equally able to guarantee children access to needed health services, concludes a new study. Previous studies have reported that children with public insurance may have worse access to outpatient specialist care and higher use of inpatient services (such as hospital emergency departments), while children with private insurance may have poorer access to trauma facilities. However, studies have not determined whether public or private health insurance is more effective in reducing children's unmet health needs, a finding that could influence the direction of future health care reform.

The researchers compared children whose family income was either low-income (less than 200 percent of the Federal poverty level [FPL])

or middle-income (between 200 and 400 percent of the FPL), and who had full-year coverage by public or private insurance. They examined whether the child had a usual source of care (USC), no doctor visits in the past year, unmet medical or prescription needs, less-than-yearly dental visits, or unmet dental needs. The findings were comparable for both children with full-year public and full-year private health insurance.

The only difference was that children in low-income families with public insurance had a 21 percent lower likelihood of having a USC than children with private insurance. All other comparisons between the publicly and privately insured groups related to unmet health care or preventive counseling needs were essentially the same, regardless of family income.

However, unmet needs were higher among children with coverage gaps or no health insurance coverage during the year than among children with full-year private insurance, regardless of family income level. The findings were based on analysis of pooled data from the Agency for Healthcare Research and Quality (AHRQ) Medical Expenditure Panel Survey-Household Component for 2002 through 2006. The study was funded in part by AHRQ (HS16181 and HS18569).

More details are in “Comparing types of health insurance for children: A public option versus private option,” by Jennifer E. DeVoe, M.D., D.Phil., Carrie J. Tillotson, M.P.H., Lorraine S. Wallace, Ph.D., and others in the September 2011 *Medical Care* 49(9), pp. 818-827. ■ *DIL*

Women's Health

Lack of folic acid supplementation for nonpregnant women means missed opportunities to prevent neural tube defects in children

Less than a tenth of preventive visits for women of childbearing age, who are not pregnant, result in the clinician ordering folic acid (FA) or folic acid-containing multivitamins (FA/MVI) for the patient. Intake of 400g of FA in either form during the time surrounding conception has been shown to reduce the risk of neural tube defects in the developing embryo such as spina bifida (failure of the fetal spinal column to close properly) or anencephaly (the failure of key brain structures to form, resulting in stillbirth or neonatal death).

Because 20–50 percent of pregnancies are unplanned, professional and governmental health care organizations recommend that all women of childbearing age should take FA or MVI daily. The researchers used recent data from two cross-sectional surveys to determine that, among 32.1 million preventive visits nationally for nonpregnant women of childbearing age, 7.2 percent resulted in providers ordering FA/MVI. In comparison, providers ordered FA/MVI in 42.8 percent of preventive visits for pregnant women.

Nonpregnant women ages 30–34 were most likely to have FA/MVI ordered during a preventive visit (12.5 percent), while those 15–19 and 40–44 years old were least likely (3.1 percent and 3.3 percent, respectively).

Women seen by an obstetrician-gynecologist were more likely to have FA/MVI ordered than those seen by all other providers combined (9.8 vs. 3.9 percent). After adjusting for other factors, women insured through Medicaid were more than twice as likely to have FA/MVI ordered as those with private insurance. Based on their findings, the researchers suggest that, despite existing guidelines, there may be more than 29 million missed opportunities each year to formally order FA in some form for women of childbearing age.

Their findings were based on data from two annual surveys conducted by the Centers for Disease Control and Prevention of outpatient and emergency department visits in the United States, the National Ambulatory Medical Care Survey (NAMCS) and the National Hospital Ambulatory Medical Care Survey (NHAMCS), for both 2005 and 2006. The study was funded in part by the Agency for Healthcare Research and Quality (T32 HS00063).

More details are in “U.S. provider reported folic acid or multivitamin ordering for non-pregnant women of childbearing age: NAMCS and NHAMCS, 2005–2006,” by Heather H. Burris, M.D., M.P.H., and Martha M. Werler, Sc.D., in the *Maternal and Child Health Journal* 15(3); pp. 352–359, 2011. ■ *DIL*

Depending on a woman's age, hysterectomy may be the best option for resolving chronic pelvic pain and heavy bleeding

Women who suffer from heavy or frequent uterine bleeding or pelvic pain but do not want hysterectomies do have other treatment options. Common uterus-preserving treatments (UPTs) include myomectomy (a surgery to remove uterine fibroids), endometrial ablation (a procedure to destroy the uterine lining), and uterine fibroid embolization (a procedure that stops blood flow to uterine fibroids). A new study finds that these options usually provide relief for women who are 40 and older,

but not for women younger than that.

Miriam Kuppermann, Ph.D., M.P.H., and colleagues used data from 557 women who had undergone a UPT. Sixteen percent of the women ended up having hysterectomies after their UPTs, and 37 percent embarked on menopause. Regardless of age, women who had hysterectomies after UPTs were more likely to have their symptoms resolved than women who entered into menopause or who only had UPTs

(82.6 percent, 52.6 percent, and 41.2 percent, respectively).

Further, women who were 40 or older when they underwent their first UPT were more likely to have their symptoms subside than younger women undergoing their first UPT. The authors recommend that clinicians consider a woman's age when they counsel women on treatment options for heavy or frequent bleeding or pelvic pain, because UPT ultimately may only

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Pelvic pain

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delay, not replace, hysterectomy for women under 40. This study was funded in part by the Agency for Healthcare Research and Quality (HS11657 and HS07373).

See “Success of uterus-preserving treatments for abnormal uterine

bleeding, chronic pelvic pain, and symptomatic fibroids: Age and bridges to menopause,” by Lee A. Learman, M.D., Ph.D., Sanae Nakagawa, M.A., Steven E. Gregorich, Ph.D., and others in the *American Journal of Obstetrics & Gynecology* 204(3), pp. 272e1-272e7, 2011. ■ *KFM*

Elderly/Long-Term Care

Depression, hearing impairment, and health literacy influence older adults' abilities to self-manage their care

The degree to which elderly patients with high blood pressure can effectively assist in their own care (activation) is influenced by a set of measurable factors, according to a new study. It found that elderly persons with hypertension were more likely to be activated to self-manage their conditions if they had higher self-ratings of their own health, higher degrees of health literacy, greater receipt of patient-centered care, shorter lengths of stay in long-term care (LTC), and lower levels of depression and hearing impairment.

The researchers looked at the scores of 275 chronically ill patients on the Patient Activation Measure (PAM). Of this group, 57 percent scored in the two lowest

PAM stages, with only 8 percent scoring in the highest PAM stage. The researchers suggest that, to improve patient self-management, clinicians should seek to expand their repertoire (and intensity) of patient communications and education methods to meet the individual's limitations. This particularly includes better management of depression symptoms, addressing hearing impairment, and adapting approaches to the patient's level of health literacy.

The researchers used data from patients who were part of a New York State Medicaid-managed LTC program. The participants also underwent an in-home survey by trained interviewers that

administered the PAM, a patient assessment of chronic illness care, a health-related quality-of-life measure, a measure of health literacy, and a geriatric depression scale. The study was funded in part by the Agency for Healthcare Research and Quality (Contract No. 209-00-0013).

More details are in “Activation among chronically ill older patients with complex medical needs. Challenges to support effective self-management,” by Linda M. Gerber, Ph.D., Yolanda Barrón, M.S., Jennifer Mongoven, M.P.H., and others in the July/September 2011 *Journal of Ambulatory Care Management* 34(3), pp. 292-303. ■ *DIL*

Study finds potentially suboptimal use of antidepressants for residents in Veterans Affairs nursing homes

Older residents in Veterans Affairs (VA) Community Living Centers (CLCs), the equivalent of nursing homes, often fail to get optimal treatment with antidepressant drugs, concludes a new study. It found that 25 percent of the 877 residents with depression did not receive antidepressant drugs. In addition, 58 percent of the 654 residents with depression and receiving antidepressant medication had evidence of possible inappropriate use (most commonly, potential

drug–drug or drug–disease interactions). Among the 2,815 residents without diagnosed depression, 42 percent received at least one antidepressant drug.

Depressed black residents were about half as likely as depressed whites to experience potential inappropriate use, while depressed residents with cancer were less

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Antidepressant usage

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likely to experience either possible underuse or inappropriate use. The researchers also found that nondepressed residents who received antipsychotic drugs without a diagnosis of schizophrenia and or those with a history of stroke or anxiety were about 1.5 times more likely to be given an antidepressant.

The findings were based on data on 3,692 veterans admitted to 133 VA CLCs over a 17-month period ending in early June 2005. The CLCs were from 21 VA

regions across the United States. The study was funded in part by the Agency for Healthcare Research and Quality (HS17695, HS18721, and HS19461).

More details are in “Potential underuse, overuse, and inappropriate use of antidepressants in older veteran nursing home residents,” by Joseph T. Hanlon, Pharm.D., M.S., Xiaoqiang Wang, M.S., Nicholas G. Castle, Ph.D., and others in the August 2011 *Journal of the American Geriatric Society* 59(8), pp. 1412-1420. ■
DIL

Agency News and Notes

Bronchitis and asthma most commonly treated conditions among children

The five most commonly treated medical conditions among children in 2008 were acute bronchitis, asthma, trauma-related disorders, middle-ear infections, and mental disorders, according to the latest News and Numbers from the Agency for Healthcare Research and Quality.

More than 40 percent of the nation's 74 million children age 17 and younger were treated for at least one of those conditions that year.

The Federal agency also found that of the five most commonly treated conditions among children in 2008:

- Mental disorders represented the fifth most commonly treated condition—million children

were treated—yet the average expense per child was highest at \$2,483.

- Bronchitis was one of the most widely reported ailments, for which 12 million children received medical care. Yet, of the top five most commonly treated conditions, the cost of treatment was lowest at an average of \$226 per child.

Private insurance paid the largest share of treatment costs for bronchitis (55 percent), trauma (62 percent) and middle-ear infections (64 percent), while Medicaid paid the largest share for treatment of asthma (51 percent) and mental disorders (46 percent). Expenses included the costs of doctor's office visits, prescription drugs, and hospital care.

The data in this AHRQ News and Numbers summary are taken from the Medical Expenditure Panel Survey, a detailed source of information on the health services used by Americans, the frequency with which they are used, the cost of those services, and how they are paid. For more information, view Statistical Brief #349: *Health Care Expenditures for the Five Most Common Children's Conditions, 2008* at

http://meps.ahrq.gov/mepsweb/data_files/publications/st349/stat349.pdf.

For additional information, or to speak with an AHRQ data expert, please contact Linwood Norman at Linwood.Norman@ahrq.hhs.gov or call (301) 427-1248. ■

Announcements

New AHRQ report examines who visits hospital public reporting Web sites and why

A new AHRQ report of a three-month study of 16 hospital quality-reporting Web sites affiliated with the Chartered Value Exchange program provides evidence about who visits such Web sites and why, and what they think of them. Researchers analyzed (1) responses to AHRQ's new Hospital-Public Report Survey (available at www.ahrq.gov/qual/value/publicsurveys.htm) implemented by each site, (2) Web analytics to determine site usage patterns for visitors across all the sites, and (3) expert qualitative review of the Web sites.

Among the findings by Naomi S. Bardach, M.D., of the University of California, San Francisco, and her fellow researchers were that consumers—patients and their family members and friends—made up half of all visitors to the sites, and health care professionals—primarily hospital quality managers, nurses and nurse-practitioners, and hospital executives—accounted for almost one-third. The

researchers also found that consumers were roughly equally interested in information about patient experience, complication and error rates, and rates of correct care, and were less interested in survival rates and the cost of care; only 1 in 10 were from minority populations; and two-thirds of all consumer visitors were college graduates.

An in-depth expert review of the sites identified many areas for improvements, including: almost all sites used technical language that is difficult for consumers to understand; many sites did not allow visitors to select specific hospitals to be compared next to each other; and most did not use interpretive labels for performance measures (e.g., “better,” “average,” “worse”) to help visitors interpret the information. To access the report, *Users of Public Reports of Hospital Quality: Who, What, Why and How?*, go to www.ahrq.gov/qual/value/pubreportusers. ■

New brief and white paper suggest ways to improve patient-centered medical home evidence and evaluations

Primary care clinicians, health care systems, insurers, State governments, families, and communities are turning to the primary care patient-centered medical home (PCMH) as a solution to many of the troubles of the fragmented U.S. health care system. The PCMH model is a way of organizing and delivering primary health care that is patient- and family-centered, comprehensive, coordinated, accessible, and structured to

continuously improve quality and safety.

AHRQ has released a white paper describing the sample and sample size that studies of the medical home need to detect true effects. The paper discusses how to improve the quality of evaluations of the PCMH to ensure that the best policy decisions are made. Suggestions are provided to improve the quality of the evidence, by raising awareness about the need to account for clustering of patients

within practices—an issue inherent in medical home research—and offering practical suggestions for designing studies. The paper provides information about how to determine the effect sizes a given study can expect to detect, identifies the number of patients and practices required to detect policy-relevant, achievable effects, and demonstrates how evaluators can select the outcomes and types of patients included in analyses to

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Medical home

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improve a study's ability to detect true effects.

You can access the paper, *Building the Evidence Base for the Medical Home: What Sample and Sample*

Size Do Studies Need? at

http://pcmh.ahrq.gov/portal/server.pt/community/pcmh__home/1483.

Please feel free to share this paper with colleagues who may be interested. Additional resources can also be found on the PCMH Web site at www.pcmh.ahrq.gov. ■

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Research Briefs

A
Kukafka, R. (2011, February). “Effect of arrangement of stick figures on estimates of proportion in risk graphics.” (AHRQ grant HS16333). *Medical Decision Making* 31(1), pp.143-50.

Stick-figure graphics are frequently used to illustrate health risks in educational and decision support materials for patients and consumers. In a test with a 10-second deadline, a heterogeneous group of 165 health consumers was able to estimate proportions depicted by these graphics with fair accuracy, although individual estimates varied widely.

Ancker, J.S., Weber, E.U., and Kukafka, R. (2011, February). “Effect of game-like interactive graphics on risk perceptions and decisions.” (AHRQ grant HS16333). *Medical Decision Making* 31(1), pp. 130-142.

The researchers tested the effects of interactive graphics on risk perceptions and decisions in a group of 165 respondents. They found that the game-like interactive computer graphics had no main effect on risk perceptions, but did reduce differences in risk feelings based on numeracy. In one condition, the game-like graphic increased concern about rare risks.

Bell, S.K., Delbanco, T., Anderson-Shaw, L., and others. (2011, August). “Accountability for Medical Error.” (AHRQ grant HS16506). *Chest* 140(2), pp. 519-526.

The authors describe the mismatch between how we view errors (systems) and how we apportion

(individuals) by using an example of a delayed lung cancer diagnosis. They discuss “collective accountability,” suggesting that this construct may offer a way to balance a “just culture” and a doctor’s specific responsibilities within the framework of team delivery of care.

Berlowitz, D.R., and Stineman, M. (2011). “Risk adjustment in rehabilitation quality improvement.” (AHRQ grant HS 18540). *Topics in Stroke Rehabilitation* 17(4), pp. 252-261.

Risk adjustment is an essential tool for monitoring and improving stroke rehabilitation care. Risk adjustment systems such as the FIM-function-related groups are now being used to monitor the quality of stroke rehabilitation. The authors demonstrate a specific application of this risk-adjustment system.

Chou, R., Croswell, J.M., Dana, T., and others. (2011). “Screening for prostate cancer: A review of the evidence for the U.S. Preventive Services Task Force.” (AHRQ grant HS18540). *Annals of Internal Medicine* 155(11), pp. 762-771.

The authors updated the 2002 and 2008 U.S. Preventive Services Task Force evidence reviews on screening and treatment for prostate cancer. Of five screening trials, the two largest and highest-quality studies reported conflicting results. They concluded that prostate-specific antigen-based screening results in small or no reduction in prostate cancer-specific mortality and is associated with harms related

to subsequent evaluation and treatments.

Dorsey, E.R., and Meltzer, D.O. (2011). “The economics of comparative effectiveness research.” (AHRQ grant HS16967). *Neurology* 75, pp. 492-493.

The authors examine whether and how comparative effectiveness research (CER) may affect both the level and growth of health care expenditures. By identifying cost-effective ways to deliver care, CER may reduce the level of health care spending. By comparing the benefits and costs of new technologies to existing alternatives, CER has the potential to align better the economic interests of firms with societal interest in improving health, thus reducing the rate of spending growth.

Fusco, D.N., Downs, J.A., Satlin, M.J., and others. (2011). “Case report: Non-oral treatment with ivermectin for disseminated strongyloidiasis.” (AHRQ grant T32 HS00066). *American Journal of Tropical Medicine Hygiene* 83(4), pp. 879-883.

In patients who are critically ill with disseminated strongyloidiasis (a parasitic intestinal infection), absorption of oral ivermectin is likely to be suboptimal. The authors report on four patients, believed to be unable to absorb oral therapy, who were treated by parenteral and/or subcutaneous administration. Access to parenteral ivermectin is difficult under the best of circumstances and more pharmacological data on the overall

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Research briefs

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efficacy of ivermectin is needed to guide the use of this treatment approach.

Gierisch, J.M., Reiter, P.L., Rimer, B.K., and others. (2010). “Standard definitions for infrequent yet repeated health behaviors.” (AHRQ grant T32 HS00079). *American Journal of Health Behavior* 34(6), pp. 669-679.

In order to present a common language for defining adherence to infrequent yet repeated health behaviors, the authors advocate use of three standard definitions of adherence: initiation of behavior, adherence to most recent opportunity, and timely adherence across multiple opportunities. Methodological and conceptual issues are illustrated through the examples of human papillomavirus vaccination and screening mammography study data.

Govindarajan, P., Larkin, G.L., Rhodes, K.V., and others. (2011). “Patient-centered integrated networks of emergency care: Consensus-based recommendations and future research priorities.” (AHRQ grant HS17965). *Academic Emergency Medicine* 17, pp. 1322-1329.

A working group associated with the 2010 Academic Emergency Medicine Consensus Conference was tasked with developing recommendations for providing patient-centered emergency care, together with a related set of research priorities. The authors present four recommendations on the following themes: enhancing communication and patient advocacy in emergency

departments; facilitating care coordination after discharge; defining metrics for patient-centered care; and giving patients control of medical information.

Graham, J.L., Giordano, T.P., Grimes, R.M., and others. (2010, November). “Influence of trust on HIV diagnosis and care practices: A literature review.” (AHRQ grant HS16093). *Journal of the International Association of Physicians in AIDS Care* 9(6), pp. 346-252.

Trust is conceptualized in several studies as a vital component of the physician-patient relationship. It benefits the patient by improving health status and outcomes, while distrust leads to decreased health status and may serve as a barrier to care. The authors review various studies of trust as a concept and the effect of patient trust on the receipt of health care, specifically care for HIV infection.

Hoenig, H., Lee, J., and Stineman, M. (2011). “Conceptual overview of frameworks for measuring quality in rehabilitation.” (AHRQ grant HS18540). *Topics in Stroke Rehabilitation* 17(4), pp. 239-21.

The authors review conceptual models pertinent to evaluating quality of care in rehabilitation, with a focus on the seminal Donabedian model of structure, process, and outcome. Topics discussed include: applying the Donabedian framework to rehabilitation services; recent innovations in quality improvement; linguistic problems and solutions in rehabilitation quality of care; and complexities related to the interface between structure and process.

Issel, L.M., and Bekemeier, B. (2011). “Safe practice of

population-focused nursing care: Development of a public health nursing concept.” (AHRQ grant HS18852). *Nursing Outlook* 58, pp. 226-232.

Public health nursing is distinguished by its focus on providing care focused at the population level. The authors seek to define safe provisions of care when the nursing practice is population-focused and, subsequently, how safe practice of population-based care might affect health outcomes of population patients. Key literature on patient safety is reviewed. Practice, research, and policy implications are explored.

Jhaveri, R., Byington, C.L., Klein, J.O., and Shapiro, E.D. (2011). “Management of the non-toxic-appearing acutely febrile child: A 21st century approach.” (AHRQ grant HS18034). *Journal of Pediatrics* 159(2), pp. 181-186.

The risk of serious bacterial infection (SBIs) in the immediate neonatal period and during the first months of life is increased in preterm infants. Infants less than 60 days old continue to have the highest risk of SBI and pose a challenge to practitioners about how extensive an evaluation to perform in a non-toxic appearing child. Recommendations to simplify the management of these febrile infants and children are needed.

Kilbourne, A.M., Keyser, D., and Pincus, H.A. (2010, September). “Challenges and opportunities in measuring the quality of mental health care.” (AHRQ grant HS16097). *Canadian Journal of Psychiatry* 55(9), pp. 549-557.

The authors delineate the barriers to mental health quality measurement

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and identify strategies to enhance the development and use of quality measures by mental health providers, programs, payers, and other stakeholders. The goal is to improve outcomes for people with mental health disorders and substance use disorders. Included is a discussion of what other countries are doing in this area.

Laiteerapong, N., and Huang, E.S. (2010, September). “The public health implications of the cost-effectiveness of bariatric surgery for diabetes.” (AHRQ grant T32 HS00084). *Diabetes Care* 33(9), pp. 2126-2127.

Understanding the cost-effectiveness of bariatric surgery for diabetes is critical for policy discussions regarding any ongoing or additional public health investment in bariatric surgery. In this editorial, the authors discuss a new study in the same issue of the journal that provides a strong argument for the economic value of bariatric surgery as a treatment for diabetes. However, they conclude that because of increases in overall costs, limited bariatric surgeons, and uncertain public health support, bariatric surgery is unlikely to be the sustainable treatment for diabetes and obesity for future generations.

LeBlanc, E.S., O'Connor, E., Whitlock, E.P., and others. (2011, October). “Effectiveness of primary-care relevant treatments for obesity in adults: A systematic evidence review for the U.S. Preventive Services Task Force.” (AHRQ Contract No. 290-07-10057). *Annals of Internal Medicine* 155(7), pp. 434-447.

The authors undertook a systematic review to help update

recommendations of the U.S. Preventive Services Task Force regarding the use of counseling and/or behavioral interventions to promote sustained weight loss. They found that behavioral weight-loss interventions with or without orlistat or metformin yielded clinically meaningful weight loss; however, health outcomes data were sparse.

Li, D.-K., Yang, C., Andrade, S., and others. (2011, October). “Maternal exposure to angiotensin converting enzyme inhibitors in the first trimester and risk of malformations in offspring: A retrospective cohort study.” *British Medical Journal* 343, p 5931.

This study did not confirm a previously reported unique association between use of angiotensin-converting enzyme inhibitors in the first trimester and risk of malformations in offspring. Instead, its findings suggest that the underlying hypertension, rather than the use of antihypertensive drugs in the first trimester, increases the risk of malformation in offspring. It evaluated a population of 465,000 mother-infant pairs in a large HMO between 1995 and 2008.

Memtsoudis, S.G., Salvati, E.A., Go, G., and others. (2010, October). “Perioperative pulmonary circulatory changes during bilateral total hip arthroplasty under regional anesthesia.” (AHRQ CERT grant HS00514). *Regional Anesthesia and Pain Medicine* 35(5), pp. 417-421.

The pulmonary embolization of fat, bone debris, and cement during total hip arthroplasty (THA) can sometimes be of major clinical significance. The researchers studied the hemodynamic changes of 24 patients undergoing elective,

cemented bilateral THA. They found that the embolization of material during bilateral THA is associated with prolonged increases in pulmonary artery pressures and vascular resistance, particularly after completion of the second side.

Sarkar, U., Lopez, A., Black, K., and Schillinger, D. (2011, October). “The wrong tool for the job: Diabetes public health programs and practice guidelines.” (AHRQ grant HS17594). *Research and Practice* 101(10), pp. 1871-1873.

The researchers surveyed federally funded diabetes prevention and control programs (DPCPs) in all 50 U.S. States and 7 Territories in order to explore DPCPs’ perceptions about and use of diabetes practice guidelines. The survey addressed the extent of guideline dissemination, use of various organizations’ guidelines, resource availability to deliver guideline-concordant care, prioritization and perceived cost-effectiveness of individual recommendations within guidelines, and other topics.

Spaeth-Rublee, B., Pincus, H.A., and Huynh, P.T. (2010, September). “Measuring quality of mental health care: A review of initiatives and programs in selected countries.” (AHRQ grant HS16097). *Canadian Journal of Psychiatry* 55(9), pp. 539-548.

This article presents a systematic review of literature describing current initiatives that assess the quality of mental health care in participating countries. The authors plan to pilot a process for making cross-country comparisons of selected key clinical and outcomes

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measures available. The long-term goal is to develop and implement a framework for the comparison of quality measures across the 12 participating countries.

Stineman, M.G., Charles, J., and Kurichi, J.E. (2010). “Grading: An annotated ‘pen and paper’ approach to multidimensional case-mix-adjusted continuous quality improvement.” *Topics in Stroke Rehabilitation* 17(4), pp. 262-270.

The authors present a multidimensional approach to case-mix adjustment that can be used without sophisticated statistical or computer programs. Their objectives are to synthesize and offer examples of practical applications of the principles provided in the other articles in the same issue of this journal. Their approach applies functional grading to show how to evaluate the impact on patient outcomes after major changes in the structural aspects of an integrated rehabilitation program.

Sun, E., Dexter, F., and Macario, A. (2010, October). “Can an acute pain service be cost-effective?” (AHRQ grant T32 HS00046). *Anesthesia & Analgesia* 111(4), pp. 841-844.

An Acute Pain Service is an anesthesiologist-led, nurse-based team charged with managing intravenous patient-controlled analgesia in the period following surgery. In this editorial, the authors estimate the number of surgical patients who could benefit from an Acute Pain Service, define possible structures and functions of such a service, and outline research questions deserving further study.

Trochim, W., Kane, C., Graham, M.J., and Pincus, H.A. (2011). “Evaluating translational research: A process marker model.” (AHRQ grant HS16097). *Clinical Translational Science* 4, pp. 153-162.

This paper examines the concept of translational research from the perspective of evaluators charged with assessing translational efforts. The authors consider the most prominent models of translational research that have been offered and synthesize the major features that are shared across these models. They also suggest a new synthetic framework for evaluating progress in enhancing research translation that is consistent with existing models, but avoids some of the current major problems.

Vesco, K.K., Whitlock, E.P., Eder, M., and others. (2011, November). “Risk factors and other epidemiologic considerations for cervical cancer screening: A narrative review for the U.S. Preventive Services Task Force.” (AHRQ Contract No. 290-07-10057). *Annals of Internal Medicine* 155(10), pp. 698-705.

To assist the U.S. Preventive Services Task Force (USPSTF) in updating its recommendation on cervical cancer screening, the authors performed a systematic review summarizing specific technological methods to improve screening test performance. This concurrent narrative review uses the USPSTF’s methods for assessing contextual questions to explore and critique various epidemiological and contextual data on cervical cancer screening.

Weinick, R.M., and Hasnain-Wynia, R. (2011). “Quality improvement efforts under health reform: How to ensure that they help reduce disparities—not increase them.” *Health Affairs* 30(10), pp. 1837-1842.

The authors provide a brief overview of how efforts to reduce racial and ethnic disparities came to focus on quality improvement activities. They then highlight five challenges to ensuring that quality improvement activities are integrated with efforts to reduce disparities. Finally, they conclude with a call for incorporating two types of analyses into quality improvement efforts and Affordable Care Act implementation activities, with the explicit goal of ensuring that such efforts focus on reducing disparities.

Whitlock, E.P., Vesco, K.K., Eder, M., and others. (2011, November). “Liquid-based cytology and human papillomavirus testing to screen for cervical cancer: A systematic review for the U.S. Preventive Services Task Force.” (AHRQ Contract No. 290-07-10057). *Annals of Internal Medicine* 155(10), pp. 687-697.

The purpose of this article is to systematically review the evidence on liquid-based cytology (LBC) and high-risk human papillomavirus (HPV) screening for U.S. Preventive Services Task Force use in updating its 2003 recommendation. The review found that evidence supports the use of LBC or conventional cytology for cervical cancer screening, but more complete evidence is needed before HPV-enhanced primary screening is widely adopted for women aged 30 years or older. ■

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