



RESEARCH ACTIVITIES

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AHRQ Annual Conference focuses on implementing research at the frontlines of care

Nearly 1,500 attendees gathered in Bethesda, MD, for AHRQ's Annual Conference September 9 to 11 to discuss the challenges facing health care and how health services researchers can turn those challenges into opportunities.

In the first plenary session, "Carolyn Clancy 'Unplugged': A Conversation About the Research," AHRQ's director charted the course of health services research. "We need to find ways that we ourselves can do more to ensure that the fruits of our labor translate into innovation that makes the system better," she said. "We need to follow



Drs. Tuckson, Hyde, Clancy, Carman, and Betancourt share a light moment during a plenary session at the AHRQ Annual Conference.

our research, follow up on it, to see that it reaches its point of intended use, whether that's at the point of care, to educate consumers and patients, or in the halls of legislatures across the Nation. The time for action is now."

The conference was held just 3 days after the Institute of Medicine released its report "Best Care at Lower Cost: The Path to Continuously Learning Health Care in America," which delivered all-too-familiar news for health service researchers on the state of the U.S. health care system:

- Unnecessary spending on health care totaled an estimated \$750 billion in 2009.
- We have experienced an explosion in knowledge, innovation, and capacity to manage previously fatal conditions, yet we still fall short

on fundamental issues such as quality, outcomes, cost, and equity.

- The Government and private sector need to accelerate payment reforms.
- Employers need to move beyond shifting costs to employees and begin demanding accountability from providers.
- Health care professionals need to engage more in collaboration with their peers.

Challenges

The second plenary, "Implementation, Engagement, and Use: Making Health Care More Patient-Centered, Reliable, and Safe," enumerated the realities that the health care system is facing. Keynote speaker for the

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From the Director



This year's AHRQ Annual Conference brought together nearly 1,500 professionals, many of whom have

been engaged in efforts to transform the health care system for some time. The good news is that private health care systems and others are increasingly looking to health services research to provide evidence on how to improve care, safety, quality, and value.

But to fulfill the promise of our research, it is urgent that we change the way we do our work, with whom, and how we report results. Often researchers are not thinking about how their work fits into the larger picture. Research findings by design aren't always focused on how to put them into practice.

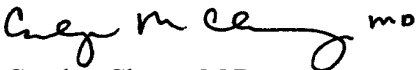
We could learn from the Department of Defense, which is

designing studies on acupuncture to treat pain, so that fewer soldiers are dependent on opioids. The first questions asked of the research team focused on how the study could be scaled up rapidly: who would need to be trained and can a training program for medics be developed while the study is in progress? We don't really do that. We typically do the study first and then try to figure out how to train people. Our goal for this year's conference was to focus on the results of our research and how it can be used to improve health and health care.

The conference, "Moving Ahead: Leveraging Knowledge and Action To Improve Health Care Quality," focused on six themes: making care safer, engaging families and patients as partners in care, promoting communication and coordination of care, promoting effective prevention and treatment practices, working with communities to improve health, and making care more affordable.

Many conference sessions revealed the innovative ways in which public and private groups are leveraging unbiased research to drive change. For example, one session described several new programs that have reduced the number of injuries due to medical care, as well as lawsuits and costs related to medical errors. Another session discussed innovative technologies and strategies to engage patients with disabilities in their own care. Other sessions explored topics ranging from the challenges of sustaining, scaling, and spreading innovations in cardiovascular care, and barriers to meaningful use of electronic health records, to an examination of health insurance coverage strategies.

It was heartening to hear the tremendous strides made to improving care quality, safety, and efficiency profiled during our sessions. The energized and illuminating discussions at each session augur well for further advances in transforming our health care system.


Carolyn Clancy, M.D.

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AHRQ
Office of Communications
and Knowledge Transfer
540 Gaither Road
Rockville, MD 20850
(301) 427-1360

Gail S. Makulowich
Managing Editor

Kevin Blanchet
David I. Lewin
Kathryn McKay
Mark W. Stanton
Contributing Editors

Joel Boches
Design and Production

Farah Englert
Media Inquiries

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plenary, Reed Tuckson, M.D., FACP, executive vice president and chief of medical affairs, UnitedHealth Group, listed four longstanding challenges the field is facing.

The first is cost. Commercial employers, small business owners, Medicare, and States do not have any extra money to pay for health care, noted Tuckson. “The only place to go to get any more money to pay for health care in America is the American people, the consumer, the average person,” he said. “When our industry continues to escalate cost, do you know who the person is who is going to pay the bill? It is the average American. It is not some faceless gnome out there. These are real people.”

The second challenge is that “the country is facing a tsunami of preventable chronic illnesses washing through a delivery system that we already can’t afford,” he said. “We are about to put a bolus of preventable chronic illness into a delivery system that is already unaffordable.”

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Suboptimal quality and use of existing expensive assets is the third challenge. “\$750 billion of waste—did you really need to be reminded that we’re already p--- away our assets at unbelievable rates? Half of health care is using the best evidence-based medicine, half of the time,” he said.

Finally, because individuals who have preventable chronic illnesses will be entering a highly technical delivery system, they will likely live a long time, which means they have to have their care coordinated. But the current care system is too fragmented in silos and disconnected across systems.

“We are facing the collision of two dramatic diametrically opposed sets of forces,” Tuckson said. “On the one hand, we have exciting new capacities, exciting new capabilities, which will enable us to make real exciting innovations in wellness, in health promotion, disease prevention, and in medical care delivery. On the other hand, we have extraordinarily severe affordability challenges, which have an unsustainable impact on health care cost and the cost to our society.”

Opportunities

Engaging patients holds promise for answering some of these challenges. Because experts think that patients are part of the problem of inefficiency and waste in the system, they also believe that patients should be part of the solution and bear more responsibility for outcomes, said plenary panelist Kristin Carman, Ph.D., M.A., from the American Institutes for Research.

“What do patients think? If patients are asked to take on increased accountability, then they want authority to go with that. Patients must be partners at the table, just as they are. Everybody’s got to get out of their comfort zone,” she said.

Engagement entails more than giving a patient a list of questions to ask, because for some people, it may be difficult for people to do that, said panelist Joe Betancourt,

Patients must be partners at the table, just as they are. Everybody’s got to get out of their comfort zone.

M.D., M.P.H., from Massachusetts General Hospital, who focuses on health equity and disparities. He related his own story of serving, as a 7 year old, as his grandmother’s Spanish translator for a medical appointment.

Despite his efforts and the fact that both the doctor and his grandmother smiled and nodded their heads, Betancourt heard his grandmother say after the appointment that she wasn’t sure what the doctor had said and wasn’t going to do it anyway. “She saw him as an authority figure and didn’t feel comfortable questioning him,” he said. “When we’re thinking about engagement ... we need to ask how can we work together to the best possible outcome and then build a team around what patients need.”

Panelist Pamela Hyde, J.D., administrator of the Substance Abuse and Mental Health Services Administration of the U.S. Department of Health and Human Services, said the system has an obligation to structure practice to engage patients. For instance, her team engaged practitioners, clients, advocates, family members, and others to come up with an integrated suite of support tools, including the computer-based decision aid “What’s Right for Me? Considering the Role of Antipsychotic Medications in My Recovery Plan.” “We don’t think of it as encouraging people not to take

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their medication,” she said. “In fact, we think it actually helps people get the right medication and stay on it.”

Ensuring patients receive high-quality health care regardless of their ethnicity also can help contain costs, Betancourt said. For example, because minorities suffer more medical errors and are more likely to be readmitted to the hospital with congestive heart failure within 30 days than their white counterparts, their care costs are higher.

“If we are progressive ... we see the cost connections between all these issues and quality and safety. Our inattention to meeting the needs of those who are most vulnerable among us costs us a lot. We fail to account for all the ways these inefficiencies cost us every single day in both dollars and lives. The cost conversation, it is not rocket science.”

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Cost containment may also result from creating a health care system that coordinates care—including social services. For example, if a child who is insured by Medicaid

has asthma, not only should the system be accountable for ensuring he has an inhaler and gets the right immunizations, it should also ensure that his home is free of allergens, such as rodent droppings, which can trigger asthma attacks.

“We don’t think how to stitch together the medically necessary social support services as part of the continuum of health,” Tuckson said. “That’s that soft stuff over there, that social work.”

Value will inevitably force change. Corporations, business owners, States, Medicare, and the average consumer are asking the tough questions: What are we buying? What are the cost effectiveness and the quality of what we are buying? “Everybody cannot have everything all the time,” Tuckson said.

“Somewhere along the line, tough choices have to be made. You can’t avoid it. You can’t spend \$4 trillion on health care. There is a limit.”

“We need disruptive innovation in the tools that we have,” he said.

“We need new things that take quality higher and drive costs down. If it doesn’t do that, then we don’t need it.”

Role of Research

To be relevant in the future, health services researchers need to do a better job of communicating how their piece of the puzzle fits into the bigger picture, Clancy said.

“For people to see how what you’re doing relates to the problems they have to solve, they have to know

We need new things that take quality higher and drive costs down. If it doesn’t do that, then we don’t need it.

what you’re doing a lot earlier in the process,” she said.

Further, the field needs to more quickly determine what works and what can be scaled up and spread. “There’s no shortage of will and excitement across the country, but there’s a shortage of understanding of how to do this and what needs to happen,” Clancy said. “It’s a long process and the research community needs to be a part of this.”

As an example of research that successfully scaled and spread, Clancy cited the AHRQ-funded Comprehensive Unit-based Safety Program that Johns Hopkins University developed to reduce central line bloodstream infections. The program was deployed in Michigan intensive care units and later in hospitals nationwide. In Michigan, some units reduced their rates to zero for more than 2 years, she said, and the national project’s final report is due this fall.

“This is your moment. This is what you have been waiting for. This is why you trained. This is the reason you became health services researchers. Are you ready?”

Tuckson asked. ■ *KFM*

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.

Many Federal drug risk alerts fail to achieve the recommended changes in prescribing

Drug safety alerts issued by the U.S. Food and Drug Administration (FDA) after a drug is on the market can have mixed results, according to a new review of studies. After approval of a new drug by the FDA, additional information on safety often comes to the Agency once a drug is marketed. This postmarketing surveillance can lead to identification of a new safety concern for a specific subpopulation or requirement of additional clinical or laboratory monitoring for patients taking the drug. The researchers completed a systematic review and identified 49 studies of 16 drug classes or individual pharmaceuticals that evaluated the impact of FDA regulatory actions on prescription drug use. Nearly half of the studies focused on three drugs or drug classes: antidepressants, glitazones (that target insulin resistance), and cisapride (used to treat symptoms of nighttime heartburn). An additional two studies looked at both antidepressant and antipsychotic drugs.

Recommendations for additional clinical or laboratory testing, such as monitoring patients taking antipsychotic drugs for hyperlipidemia or diabetes, had

minimal or only temporary effects. In contrast, warnings against coprescribing drugs due to their interactions were effective in changing clinical practice, but often months or years after the warning was issued. Recommendations against use of a drug or use of a drug category in a subpopulation of patients (such as against using antipsychotic drugs in elderly dementia patients) often resulted in large decreases in use among the targeted population but also in modest decreases in use in subpopulations not at risk (i.e., spillover effects).

These findings demonstrate the complexity of using risk communication to improve the quality and safety of prescription drug use, note the researchers. The review was funded in part by the Agency for Healthcare Research and Quality (HS18996).

More details are in “Impact of FDA drug risk communications on health care utilization and health behaviors,” by Stacie B. Dusetzina, Ph.D., Ashley S. Higashi, M.P.H., E. Ray Dorsey, M.D., M.B.A., and others in the June 2012 *Medical Care* 50(6), pp. 466-478. ■ *DIL*

Label changes, manufacturer’s warning letter did not reduce use of propofol for conscious sedation in children

A new study reveals that the use of the anesthetic propofol for moderate conscious sedation (MCS) in pediatric patients increased threefold from 2001 to 2007, despite an early 2001 cautionary change in the drug’s label and a letter to physicians from the manufacturer. Drug labels are often complex, with information about recommended dosing, contraindications, and black box warnings.

In 2001, the label for propofol (a rapid-onset, short-duration sedative hypnotic) was changed to describe increased mortality with propofol use in a clinical trial involving

patients in pediatric intensive care units (ICUs, 9 percent mortality vs. 4 percent for a standard sedative). Shortly after the label change, the manufacturer sent out a letter to physicians noting that propofol “is currently not approved for sedation in pediatric ICU patients in the U.S.”

Despite these warnings, discharges for moderate conscious sedation using propofol dropped from 12 percent in 2001 to 9 percent in 2003, but then rose to 33 percent by the end of 2007. After adjusting for multiple variables, the odds of receiving propofol for moderate

conscious sedation in 2007 was 3.32 times greater than in 2001.

A higher frequency of propofol use was seen among pediatric patients who were Hispanic or white, 5–9 years old, insured through a public payer such as Medicaid, had an extended hospital stay, or whose attending physician specialized in critical care or gastroenterology. The findings were based on analysis of the Premier Perspective Comparative Hospital Database, an all-payer database with data from more than 400 hospitals nationally. The researchers did a trend analysis of data on inpatient pediatric

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Propofol

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discharges from January 2001 through December 2007. Their study was funded in part by the Agency for Healthcare Research and Quality (HS16957) to the Center for Education and Research

on Therapeutics (CERT) on Pediatric Therapeutics at Cincinnati Hospital Children's Medical Center. For more information on the CERTs program, visit www.certs.hhs.gov.

More details are in "Impact of drug label changes on propofol use in

pediatrics for moderate conscious sedation," by Pamela C. Heaton, Ph.D., Joseph Schuchter, M.P.H., Carole M. Lannon, M.D., M.P.H., and others in *Clinical Therapeutics* 33(7), pp. 886-895, 2011. ■ *DIL*

Drug discontinuation effects are not limited to psychoactive drugs, but may be important for cardiovascular drugs as well

Possible adverse effects from drug discontinuation is important, not just for drugs associated with potential abuse (such as opioids and benzodiazepines), but also with a number of cardiovascular drugs (including adrenergic receptor antagonists, aspirin, statins, and heparin), says Marcus M. Reidenberg, M.D., of Weill Cornell Medical College in New York City in a new paper. Pharmacologists and physicians have long attributed adverse effects after a patient stops taking a drug to the drug itself, rather than its absence, he notes. A recent study of patients taken off aspirin prophylaxis for heart attack showed increased mortality, especially in the first 5–7 days after aspirin was stopped. Adverse effects of drug cessation can be the result of the underlying condition recurring (for example, hypothyroidism after stopping thyroid medication) or a withdrawal syndrome linked to the body's adaptation to the drug.

Despite evidence of drug discontinuation syndromes with low-dose aspirin (with increased risk of ischemic stroke), heparin (blood clots), statins (patients who

stopped statin use on hospital admission developed more cardiovascular problems than patients never on statins), and other classes of cardiovascular drugs, the U.S. Food and Drug Administration-approved labels sometimes do not mention the possibility of adverse effects from abrupt drug discontinuation, notes Reidenberg. He urges the collection of data on discontinuation in clinical trials of new drugs, and in the search for adverse events in databases of drugs already in clinical use.

Dr. Reidenberg's work was supported, in part, by a grant from the Agency for Healthcare Research and Quality (HS16075) to the Weill Cornell College of Medicine Center for Education and Research on Therapeutics (CERT). For more information on the CERTs program, visit www.certs.hhs.gov.

More details are in "Drug discontinuation effects are part of the pharmacology of a drug," by Dr. Reidenberg in the November 2011 *Journal of Pharmacology and Experimental Therapeutics* 339(2), pp. 324-328. ■ *DIL*

Giving consumers easy-to-understand information on health care quality and costs boosts the choice of high-value care

If something seems too cheap, many people will assume it is low quality. The same tendency is seen in health care, where some consumers assume that high-cost providers give higher quality care than low-cost providers, according to a new study. The researchers note that without looking at the provider's quality rating, consumers who link quality to cost will avoid the highest-value providers, who give high-quality care at low cost.

In a study of 1,421 employed adults, researchers used a variety of ways to present quality and cost information to find a presentation that enabled consumers to readily identify high-quality, low-cost providers. Respondents were least likely to select high-cost providers as high-value providers if the cost information was provided by a one to three-star rank in a column labeled "careful with your health care dollars" (1 star = less careful/higher costs; 2 stars =

somewhat careful/average costs; 3 stars = very careful/lower costs), rather than providers with the "average cost of office visit" listed in dollars. However, the difference in selection of providers using stars and dollar amounts was much smaller than the difference between those two display methods and dollar signs (\$ = low cost, \$\$ = medium cost, \$\$\$ = high cost).

Also, giving a strong quality signal ("uses treatments proven to give

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High-value care

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results;” “has safeguards to protect patients from medical errors;” “is responsive to patients’ needs and preferences”) helped consumers identify high-value providers better than a weak quality signal (“diabetes patients tested for blood sugar [percent];” “uses electronic health record;” “patients say office staff is helpful [percent]”) or no quality signal (“Saturday hours;” “driving distance [miles];” “same-day office visits”). The strong, clear quality signal also increased

consumers’ confidence in their choice of provider. When a hospital was specifically marked as “high value,” consumers were also significantly more likely to choose that hospital.

The researchers worked with Massachusetts Health Quality Partners and two of its member employers to recruit employees for participation. The participants were randomly assigned to groups that were asked to choose the high-value physician from a list of six, with each group seeing a different presentation of the cost information

along with no, weak, or strong quality signals. The study was supported in part by the Agency for Healthcare Research and Quality (T32 HS00083).

More details are in “An experiment shows that a well-designed report on costs and quality can help consumers choose high-value health care,” by Judith H. Hibbard, Ph.D., M.P.H., Jessica Greene, Ph.D., M.P.H., M.I.A., Shoshanna Sofaer, Dr.P.H., M.P.H., and others in the March 2012 *Health Affairs* 31(3), pp. 560-568. ■ *DIL*

Chronic Disease

Diabetes treatment involves more multidrug regimens and high financial burden

Over the last several years, the care and treatment of patients with diabetes has changed considerably, including the introduction of more expensive drug therapies. A new study finds that nonelderly patients with diabetes are increasingly being treated with multidrug regimens and that the proportion of family income spent by nonelderly patients on health care remains high. Eric M. Sarpong, Ph.D., Didem M. Bernard, Ph.D., and G. Edward Miller, Ph.D., of the Agency for Healthcare Research and Quality (AHRQ), recently examined changes in diabetes care and financial burden of treatment.

They analyzed AHRQ’s Medical Expenditure Panel Survey data from two time periods: 1997–1998 and 2006–2007. They identified nonelderly adults with diabetes and also identified their coexisting conditions, such as cardiovascular disease, hypertension, and disorders of lipid metabolism (e.g., hyperlipidemia). The researchers assessed patients’ drug use, expenditures, and their family financial burden for diabetes care.

Between the two time periods studied, the total number of nonelderly adults treated for diabetes

nearly doubled, representing 5.7 percent of the total United States population in 2006–2007. The prevalence of treated coexisting conditions also grew significantly, including a tripling of lipid disorders. There was also a change in the use of multidrug regimens. The proportion of those using two or more oral drugs increased from 15.7 percent to 30.1 percent. In terms of family financial burden, approximately one-fifth of patients spent 10 percent or more of their income on health care. One in nine spent 20 percent or more. Higher financial burdens were experienced more by patients who were older, female, had poor health, or were uninsured. The authors note that this financial strain may result in inadequate treatment of some patients with diabetes.

More details are in “Changes in pharmaceutical treatment of diabetes and family financial burdens,” by Drs. Sarpong, Bernard, and Miller in the August 2012 *Medical Care Research and Review* 69(4), pp. 474-491. Reprints (AHRQ Publication No. 12-R079) are available from AHRQ.* ■ *KB*

Survival rates for colon cancer patients on chemotherapy improve with addition of oxaliplatin

Studies have shown improved survival rates for patients with stage III colon cancer when oxaliplatin was added to adjuvant 5-fluorouracil (5-FU) chemotherapy. However, since patients in those trials were younger, less ethnically diverse, and in good health, the applicability of the findings to patients treated in the community has been uncertain. Now a new study finds that a wider variety of patients also benefit from this approach. The use of oxaliplatin-containing adjuvant therapy was associated with a consistent pattern

of improved survival for older, sicker, and minority group patients with stage III colon cancer.

Data on patients came from five datasets and diverse treatment settings, including specialty cancer centers, academic oncology groups, community oncology practices, and Veterans Administration hospitals. All patients with stage III colon cancer were younger than 75 and had received chemotherapy within 120 days of surgery. The authors conclude that oxaliplatin is associated with marginally but consistently superior survival for

patients diagnosed before age 75 years in community settings. This study was supported in part by the Agency for Healthcare Research and Quality (Contract Nos. 290-05-0016, 290-05-0040).

See “Comparative effectiveness of oxaliplatin vs. non-oxaliplatin-containing adjuvant chemotherapy for Stage III colon cancer,” by Hanna K. Sanoff, M.D., William R. Carpenter, Ph.D., Christopher F. Martin, M.S.P.H., and others in the *Journal of the National Cancer Institute* 10, pp. 211-227, 2012. ■ MWS

Diagnostic coding formulas underestimate hospitalizations for acute exacerbations of COPD

Individuals with chronic obstructive pulmonary disease (COPD) often suffer from acute exacerbations over the course of the disease. The resulting hospitalizations cost nearly \$30 billion annually and 120,000 people die each year. Various algorithms based on ICD-9-CM discharge diagnosis codes are used to identify patients with COPD exacerbations. However, a new study finds that such algorithms are not accurate at identifying patients hospitalized with COPD exacerbations. What's more, they misidentify other patients as having a COPD exacerbation.

Four algorithms using ICD-9-CM codes were evaluated in the study of 200 adults admitted at two academic medical centers. These adults were hospitalized with and without acute exacerbations of

COPD. The researchers also looked at patient demographics, length of stay, and mortality outcomes.

A total of 8,790 patients met eligibility criteria. Overall, 7.9 percent of patients, or 1 in 13, were hospitalized for acute exacerbations of COPD. All four algorithms had very low sensitivity when it came to identifying these patients, ranging from 12 to 25 percent. As a result, hospitalizations for acute exacerbations of COPD were undercounted. The two algorithms that used a combination of primary and secondary discharge codes demonstrated the highest sensitivity. All of the algorithms had a similarly high negative predictive value of 93 to 94 percent.

Depending on the algorithm used to identify exacerbations, as many as 1 in 5 patients were mistakenly identified as having a COPD exacerbation. Out of the four algorithms, the researchers suggest using one that relies on a single primary code specifically for acute-exacerbation COPD when conducting quality improvement initiatives. The study was supported by the Agency for Healthcare Research and Quality (HS16967).

See “The validity of International Classification of Diseases, Ninth Revision, clinical modification diagnosis codes for identifying patients hospitalized for COPD exacerbations,” by Brian D. Stein, M.D., Adriana Bautista, M.D., Glen T. Schumock, Pharm.D., and others in the January 2012 *Chest* 141(1), pp. 87-93. ■ KB

About three fourths of patients in the United States estimated to remain in HIV care

Keeping patients with HIV in continued care (retention) is critical for successful treatment outcomes and survival. It may also reduce HIV transmission in the community and lower costs. Recently, John A. Fleishman from the Agency for Healthcare Research and Quality and others compared three different measures of retention in a large group of HIV patients. Retention rates ranged from 71 percent to 75 percent. Certain groups were at an increased risk for low retention.

Data were retrieved from the medical records of 17,425 patients with HIV infection. All were receiving their care at 12 HIV clinical sites located in various geographic regions of the United States. Three measures of retention were used. One measure was the proportion of time not spent in a gap of more than 6 months between successive outpatient visits. The second measure was the proportion of 91-day quarters during which at least 1 visit took place. Finally, the third measure was the proportion of years where two or more visits were separated by at least 90 days.

On average, 71 percent of time in care was not spent in a gap of more than 6 months. Also, 73 percent of all quarters had at least one patient visit. For the third measure, 75 percent of all years had at least 2 visits separated by at least 90 days. Retention rates were highest for women, whites, older individuals, and men having sex with men (MSM). An initial CD4 T lymphocyte cell count of 50 cells/ μ l or less (an indicator of more advanced disease) was also associated with a higher retention rate. Groups at greater risk for low retention rates included younger patients, men, blacks, non-MSM risk groups, and individuals with higher initial CD4 cell counts.

More details are in “Comparing different measures of retention in outpatient HIV care,” by Baligh R. Yehia, M.D., Dr. Fleishman, Joshua P. Metlay, M.D., Ph.D., and others in the June 1, 2012 *AIDS* 26(9), pp. 1131-1139. Reprints (AHRQ Publication No. 12-R064) are available from AHRQ.* ■ KB

Health Information Technology

Electronic health records improve diabetes care and outcomes

The implementation of commercially available electronic health records (EHRs) in primary care practices may lead to significant improvements in both process of care and patient outcomes for diabetes, concludes a new study. Researchers obtained data on 6 years of semi-annual chart reviews of 14,051 adult patients 40 years of age and older with diabetes. All patients were receiving care from 34 primary care practices that were part of a large, fee-for-service network. The chart reviews included data on several diabetes process-of-care measures and patient outcome measures. Several optimal care measures were

used as benchmarks: an HbA1c (measure of blood-sugar level) of 8 percent or less, an LDL-cholesterol level of <100 mg/dl, a blood pressure of less than 130/80 mmHg, documented aspirin use, and no smoking. An EHR was rolled out over a 3-year period allowing data to be collected on patients who were never exposed to an EHR and patients who were exposed to the EHR, both before and after implementation.

A greater percentage of patients met the standards of optimal care in the EHR-exposed group compared to the non-exposed group. The longer a patient was exposed to an EHR, the greater the likelihood of

optimal care. EHR exposure also significantly improved the individual measures of aspirin use, blood pressure control, and smoking status. Longer exposure to an EHR also produced significant improvements in individual process measures, except for blood pressure measurement, which remained unchanged over time.

However, the results found no evidence that EHR use affected HbA1c control, the most important measure of diabetes care. HbA1c and lipid measurement were process-of-care measures that declined slightly under EHR

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Diabetes care

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exposure; urinalysis decreased a little more. In the future, decision-support capabilities in EHRs should be enhanced and expanded to target specific outcomes in diabetes care,

suggest the researchers. Their study was supported in part by the Agency for Healthcare Research and Quality (HS20696).

See “The effectiveness of implementing an electronic health record on diabetes care and

outcomes,” by Jeph Herrin, Ph.D., Briget da Graca, M.S., David Nicewander, M.S., and others in the August 2012 *Health Services Research* 47(4), pp. 1522-1540. ■
KB

Electronic medical records reduce negative outcomes and related costs after patient safety events occur

Expectations remain high that health information technology, particularly electronic medical records (EMRs), will improve clinical outcomes while reducing health care costs. One of the most costly aspects of medical care is patient safety events. A new study by William E. Encinosa, Ph.D., from the Agency for Healthcare Research and Quality (AHRQ), and Jaeyong Bae, M.A., from Emory University found that EMRs do not reduce the rate of these events. However, after they occur, EMRs do reduce the negative outcomes and related costs that can occur.

The two researchers obtained patient outcome data on 35 million enrollees in employer-sponsored benefit plans for large employers in all 50 States. This included information on claims for inpatient and outpatient care and prescription drugs. They also used an information technology database to obtain EMR data on 92,853 non-elderly adults undergoing major surgeries at 2,619 hospitals. Annual hospital survey data were used to determine hospital characteristics.

Nearly 21 percent of surgeries were performed in hospitals with basic EMRs. Overall, 5 percent of the surgeries resulted in at least 1 of 24 potentially preventable adverse medical events. No differences in the rates of patient safety events were observed between EMR and non-EMR hospitals. However, EMR hospitals spent less on a patient safety event (\$55,810) than non-EMR hospitals (\$60,093). Also, in EMR hospitals, deaths after patient safety events were reduced by 34 percent and hospital readmissions by 39 percent. Additional research is needed to determine why EMRs do not prevent patient safety events, but do reduce negative outcomes once they occur.

See “How can we bend the cost curve? Health information technology and its effects on hospital costs, outcomes, and patient safety,” by Dr. Encinosa and Ms. Bae, in the Winter 2011/2012 *Inquiry* 48, pp. 288-303. Reprints (AHRQ Publication No. 12-R069) are available from AHRQ.* ■ KB

Study describes challenges of using electronic health record-derived measurements for quality reporting

New York City has made a big effort to convince more than 3,000 primary care providers to adopt and use a preventive care-oriented electronic health record (EHR) in order to improve care outcomes. Their systems include built-in population health-monitoring tools to report care quality measures and performance. A new study finds that workflow and documentation habits significantly influence EHR-derived quality measures. While they may be convenient, such automated measures may not accurately reflect the actual number

of patients receiving preventive services or achieving treatment goals.

Researchers conducted electronic chart reviews of 4,081 patient records that spanned 57 practices in New York City. Each EHR was reviewed for patient demographics, diagnoses, medications, lab results, and appropriate referrals to specialists. The practices that participated had higher-than-average percentages of patients covered by Medicaid as well as those diagnosed with diabetes or hypertension.

Data recognized for automated quality measurement across 11 clinical quality measures varied. Vital signs, vaccinations, and medications had the highest proportion of information documented in structured fields within the EHR.

However, orders for mammograms and their results had the lowest proportion (10.7 percent) of data recorded in structured fields included in automatic quality measurements. These orders tended

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Quality reporting *continued from page 10*

to be stored as scanned documents or images. Information on laboratory results and smoking status was documented in the structured fields in less than half of the cases.

Overall, the average primary care practice failed to capture half of the patients eligible for 3 of the 11 quality measures. These were hemoglobin A1c (a marker for diabetes), cholesterol, and smoking cessation. This study shows that EHR-derived quality measures

underestimated practice performance for many of the measures and, therefore, may not be ready for “prime time.”

More research is needed to determine which quality measures are best suited for EHR accounting in an automated fashion. In addition, providers need additional training on proper documentation techniques to make these measurements more accurate, suggest the researchers. While they identified challenges with automated EHR quality measures, they are confident that if these

challenges are addressed, automated EHR-derived quality measures can be a practical way to extract practice performance. Their study was supported by the Agency for Healthcare Research and Quality (HS17059).

See “Validity of electronic health record-derived quality measurement for performance monitoring,” by Amanda Parsons, M.D., Colleen McCullough, Jason Wang, and Sarah Shih, M.P.H., in the February 9, 2012 *Journal of the American Medical Informatics Association* [Epub ahead of print]. ■ KB

Research shows health IT enables quality measurement, but obstacles remain

Research funded by the Agency for Healthcare Research and Quality (AHRQ) made advances in measuring quality using health information technologies. Based on the experiences of 17 researchers, the synthesis report *Findings and Lessons from the Enabling Quality Measurement Through Health IT Grant Initiative* incorporates cross-cutting results from a series of grants that examined the development of electronic quality measures, methods of capturing and integrating quality data in electronic health records, the accuracy of information technology (IT)-enabled measurements, methods for providing meaningful feedback to clinicians, and ways that health IT could improve the efficiency of quality measurement.

To address these challenges Dr. Rainu Kaushal, of Weill Cornell Medical College, spearheaded an

initiative to generate and test the reliability of prioritized quality measures. Fifteen of these measures were subsequently included in Stage 1 Meaningful Use requirements. Transforming data into meaningful feedback that clinicians can use to improve practice is an additional issue faced in automated quality measurement. To conquer this obstacle, Dr. Judith Logan of Oregon Health Sciences University worked with clinicians to generate and report prioritized quality measures through interactive Web-based quality reports.

To learn more about Dr. Kaushal’s and Logan’s projects that tested new quality measurement methods, please see their success stories available at <http://healthit.ahrq.gov/ASQ>. For the full synthesis report, please visit <http://healthit.ahrq.gov/ASQEQMRPT2012.pdf>. ■

Sending health maintenance reminders to personal health records helps patients adhere to some screenings

More and more patients are choosing personal health records (PHRs) to be proactive about their health. With their linkages to electronic health records, these systems can notify patients of various preventive screenings, such as mammograms and flu shots. A

new study finds that patients with access to a PHR are more likely to obtain a mammogram and a flu shot compared to those not using a PHR. However, the impact of a PHR on other screenings is minimal.

The study involved 11 primary care practices where 21,533 patients with access to a PHR were invited to participate. Of these, 3,979 elected to enroll in the study. Those in the intervention arm received

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Health maintenance reminders

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various health maintenance reminders through an eJournal, an interactive electronic communication and information-sharing tool. The eJournal allowed them to review and update these reminders as well as family history information. Those patients assigned to the control arm had access to an eJournal where they could input and review information about their medications, allergies, and diabetes management, but not receive these reminders.

Patients in the intervention arm who received health maintenance reminders were more likely to receive mammograms (48.6 percent) compared to patients in the control arm (29.5 percent) and more likely to receive flu shots (22 percent vs. 14 percent). However, there were no significant differences in obtaining Pap smears between the two groups. More research is needed to determine which screenings improve with PHR systems as well as how to encourage more patients to use a PHR. The study was supported in

part by the Agency for Healthcare Research and Quality (HS13660).

See “Randomized controlled trial of health maintenance reminders provided directly to patients through an electronic PHR,” by Adam Wright, Ph.D., Eric C. Poon, M.D., M.P.H., Jonathan Wald, M.D., M.P.H., and others in the *Journal of General Internal Medicine* 27(1), pp. 85-92, 2012. ■ KB

Men's Health

Effectiveness of active surveillance for men with localized prostate cancer is unclear

Active surveillance (AS) is an observational strategy that involves forgoing immediate therapy for patients with low-risk localized prostate cancer. A systematic review of the literature on AS has concluded that evidence is insufficient to assess the comparative effectiveness of AS versus immediate active treatment for these men. The authors also reviewed other observational strategies, including watchful waiting (WW), to determine the factors affecting their use.

AS is appropriate for men with disease that is believed to be indolent who do not require immediate therapy. Men on AS are followed regularly with clinical, laboratory, and biopsy monitoring. Monitoring parameters are used to determine when curative treatments should be considered. On the other hand, WW is a more passive strategy with interventions—often palliative—triggered largely by symptomatic progression. It is usually reserved for older men with localized cancer or major coexisting conditions who are not likely to benefit from curative treatments.

The authors found that patients for whom AS was considered appropriate were most commonly selected on the basis of the following criteria: tumor stage, Gleason score, prostate-specific antigen concentration, and number of biopsy cores testing positive for cancer. The reviewers also found that studies of factors influencing the implementation of observational management strategies were hampered by the lack of clear definitions of these strategies and the limited information available in existing data sets. Evidence on the comparative effectiveness of AS to immediate clinical treatment was lacking. The Agency for Healthcare Research and Quality funded this review (Contract No. 290-07-10055).

See “Active surveillance in men with localized prostate cancer. A systematic review,” by Issa J. Dahabreh, M.D., Mei Chung, Ph.D., Ethan M. Balk, M.D., and others in the April 2012 *Annals of Internal Medicine* 156, pp. 582-590. ■ MWS

Children with juvenile idiopathic arthritis are at high risk of hospital stays that involve bacterial infections

Children with juvenile idiopathic arthritis (JIA) have been significantly helped with biologic agents, such as tumor necrosis factor alpha (TNF) inhibitors. Unfortunately, a side effect of these drugs, which suppress the immune system (and thus inflammation related to arthritis), can be an increased risk of infection.

A new study reveals that children with JIA do have a higher rate of infection than that experienced by children with attention deficit hyperactivity disorder (ADHD). However, the use of TNF inhibitors or methotrexate (MTX) did not further increase the rate of hospital stays that involved bacterial infections. Infection rates were, however, significantly higher in patients taking 10 mg or more of prednisone daily or a comparable amount of another glucocorticoid.

Using Medicaid data, the researchers identified 8,479 children with JIA. The patients were younger than 16 years and suffered from any of the entities that comprised JIA (for example, psoriatic arthritis, ankylosing spondylitis, or arthritis associated with inflammatory bowel disease). For comparison, the researchers used a group of children who suffered from ADHD but did not have JIA.

Among children with JIA not being treated with TNF inhibitors or MTX the rate of hospital stays that involved bacterial infections was twice that of the children without JIA. No additional risk of infection was found with the use of MTX, a longstanding treatment for JIA, or with TNF inhibitors. However, the children with JIA who took high doses of prednisone were three

times as likely to have a hospital stay with a bacterial infection as were the arthritis patients who took no glucocorticoids. The findings suggest that the inflammatory or autoimmune processes present in JIA may increase the risk of infection in these children regardless of the therapy used. The study was supported in part by the Agency for Healthcare Research and Quality (HS17919).

See “Rates of hospitalized bacterial infection associated with juvenile idiopathic arthritis and its treatment,” by Timothy Beukelman, M.D., M.S.C.E., Fenglong Xie, M.S., Lang Chen, Ph.D., and others in the August 2012 *Arthritis & Rheumatism* 64(8), pp. 2773-2780.

■ KB

Nuclear kidney scans in children with urinary tract infections increase costs and radiation exposure

Controversy exists among pediatricians as to the best way to evaluate a first urinary tract infection (UTI) in children.

A UTI in children can be due to vesicoureteral reflux (VUR), which is the abnormal flow of urine from the bladder back up the tubes that connect the kidneys to the bladder. The disorder is associated with an increased risk of UTIs, which, if left untreated, can lead to kidney damage.

The traditional approach to diagnosing VUR in children with a first UTI uses an ultrasound of the kidneys followed by a radionuclide or fluoroscopic cystogram. A cystogram includes the discomfort of urethral catheterization and ionizing radiation exposure to the gonads during imaging. More recently, some

pediatricians have favored starting with a nuclear scan of the kidneys, resorting to a cystogram only if scans are abnormal.

They cite the benefit of lower detection of clinically insignificant VUR, fewer catheterizations, and a possible decrease in gonadal radiation. A new study that looked at these two “bottom-up” and “top-down” methods found that using nuclear scans of the kidneys significantly increased not only costs, but also radiation exposure.

The researchers used a decision model with a scenario of a 1-year-old child with a recent diagnosis of a first UTI. Prior published studies were reviewed to establish probability estimates and effective radiation dose

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Nuclear kidney scans

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estimates. Costs were estimated by averaging Medicare reimbursements for each diagnostic test.

The traditional bottom-up approach resulted in an average radiation dose of 0.06 mSv. This increased to 0.72 mSv with the top-down nuclear scan approach. Although small, there is a measurable increase in the long-term risk of developing cancer from the ionizing radiation exposure used with scans. The estimated population-level risk was 10.1 cancers per 100,000 patients for the top-down approach compared to 0.8

cancers for the bottom-up approach. Top-down imaging costs were estimated at \$82.9 million for 100,000 children versus just \$59.2 million for bottom-up imaging. The study was supported in part by the Agency for Healthcare Research and Quality (HS100063).

See “Economic and radiation costs of initial imaging approaches after a child’s first febrile urinary tract infection,” by Jonathan C. Routh, M.D., M.P.H., Frederick D. Grant, M.D., Paul J. Kokorowski, M.D., M.P.H., and others in *Clinical Pediatrics* 51(1), pp. 23-30, 2012. ■ KB

Certain antibiotics increase the risk of treatment failure in children with MRSA-related skin and soft-tissue infections

Children continue to be at risk for developing methicillin-resistant *Staphylococcus aureus* (MRSA) infections of the skin and soft-tissue (SSTIs). These antibiotic-resistant infections have forced clinicians to look for optimal antibiotics to treat them.

A recent study of three different antibiotics found that, compared with clindamycin, use of trimethoprim-sulfamethoxazole (TMP-SMX) or β -lactams was linked to increased risks of treatment failure and infection recurrence in MRSA-prevalent communities in which clindamycin resistance remains low. This link was stronger for children who underwent a drainage procedure.

The study included 47,501 children up to 17 years of age being treated for SSTIs from 2004 to 2007. Treatments were as

follows: 61.9 percent received a β -lactam, 22.3 percent received TMP-SMX, and 15.7 percent received clindamycin. Duration of treatment was slightly longer (9.7 days) for TMP-SMX compared to 9.4 days for the other two antibiotics.

The use of β -lactams declined significantly from 85.1 percent of all prescriptions in 2004 to 43.8 percent by 2007. On the other hand, there was a dramatic increase in the use of TMP-SMX from just 3.9 percent in 2004 to 38.5 percent in 2007. Children undergoing a drainage procedure were more likely to receive either clindamycin or TMP-SMX. Among the 6,407 who did receive drainage, 8.9 percent experienced a treatment failure and 22.8 percent had a recurrence. β -lactams and TMP-SMX were associated with increased risks for

treatment failure and recurrence compared to clindamycin.

In the non-drainage group, the recurrence rate was 18.2 percent and the treatment failure rate was 5.9 percent. The authors note, however, that, although β -lactams are no longer recommended when MRSA is a consideration, these agents may still be effective for nonpurulent SSTIs such as uncomplicated cellulitis or impetigo. The study was supported in part by the Agency for Healthcare Research and Quality (HS13833).

See “Comparative effectiveness of antibiotic treatment strategies for pediatric skin and soft-tissue infections,” by Derek J. Williams, M.D., M.P.H., William O. Cooper, M.D., M.P.H., Lisa A. Kaitenbach, M.S., and others in *Pediatrics* 128(3), pp. e479-e487, 2011. ■ KB

Hospitals vary widely in their use of dopamine and dobutamine in preterm/low birthweight neonates

Dopamine and dobutamine are medications used to help preterm babies increase their heart output and blood pressure in the immediate newborn period.

This use does not have Food and Drug Administration approval, and both medications have been prioritized for further study and drug labeling. One challenge to the design of studies assessing efficacy and safety is the lack of information about patterns of use.

A new study looked at 65,216 neonates to examine use of dopamine and dobutamine in 7,459 preterm or low birthweight (LBW) neonates, including 1,143 very low birthweight (VLBW) neonates. Dopamine or dobutamine was used for 4.9 percent (362) of neonates who were either preterm or LBW and 25.1 percent of VLBW neonates at 11 hospitals. Treatment with dopamine alone was more common than treatment with dobutamine alone.

Neonates receiving both dopamine and dobutamine were more likely to have dopamine as the first treatment. Within this group, 251 were treated with dopamine, 20 with dobutamine, and 91 treated with both drugs. A significantly higher percentage of black neonates received dobutamine (45.5 percent) versus dopamine (27.3 percent). Most of the hospitals using these drugs were large and located in urban settings. In the 1,143 VLBW neonates, 194 received

dopamine, 14 received dobutamine, and 79 received both drugs.

The probability of treatment of VLBW neonates with dopamine or dobutamine varied across 11 of the 421 hospitals with pediatric hospitalizations, ranging from 4.4 percent to 38.4 percent. However, hospitals varied in their prevalence of treatment with dopamine versus dobutamine.

For example, three hospitals used dopamine only and six hospitals had greater than 50 percent of neonates receiving dopamine versus dobutamine. At only one hospital was dobutamine used more often than dopamine.

The researchers point out that this variation in hospital practice may be explained in part, by the scarcity of clinical studies and absence of labeling information for drugs used to treat hypotension in VLBW neonates. The study was supported by the Agency for Healthcare Research and Quality (HS17998).

See “Dopamine and dobutamine use in preterm or low birth weight neonates in the Premier 2008 Database,” by Tamar Lasky, Ph.D., Jay Greenspan, M.D., M.B.A., Frank R. Ernst, Pharm.D., and Liliana Gonzalez, Ph.D., in *Clinical Therapeutics* 33(12), pp. 2082-2088, 2011. ■ KB

Two different tools help measure tracheal intubation adverse events and performance in pediatric intensive care units

Tracheal intubation in pediatric intensive care units (ICUs) is often performed on critically ill children in emergency situations. While this procedure can be life-saving, it can also result in adverse events ranging from esophageal intubation or a drop in blood pressure to—worst case—cardiac arrest. Preventing these events requires ways to characterize and improve care and safety outcomes.

Two recent studies describe tools that can be used to accomplish these goals. The first study adapted the National Emergency Airway Registry to identify unwanted intubation-associated events. The second study used an assessment tool to rate the technical and behavioral performance of airway management teams during real intubation events. Both studies,

supported in part by the Agency for Healthcare Research and Quality (HS16678), are summarized here.

Nishisaki, A., Ferry S., Colborn S., and others. (2012).

“Characterization of tracheal intubation process of care and safety outcomes in a tertiary pediatric intensive care unit.”

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Tracheal intubation
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Pediatric Critical Care Medicine
13(1), pp. e5-e10.

The National Emergency Airway Registry was established in 1996 as a multicenter emergency department advanced airway management registry. Researchers modified the data elements so that the registry could characterize the process of care and safety outcomes for critically ill children in a 45-bed tertiary noncardiac pediatric ICU. The data collection forms were completed by a bedside airway team after a tracheal intubation was performed.

Day and night care teams were also interviewed to make sure all procedures related to advanced airway management were detailed. Explicit operational definitions were established to analyze the data collected for the presence of unwanted tracheal intubation-associated events.

During a 15-month period of evaluation, 200 initial intubation encounters were reported, with 1 occurring every 2.3 days. Oxygenation failure and ventilation

failure were the two most common reasons for requiring an airway intervention. More than half (57.4 percent) of first tracheal intubation attempts were performed by a fellow, followed by a resident (34.5 percent), and an attending physician (6.1 percent).

The majority of first-course intubations were done by the oral route (91.9 percent). There were 38 unwanted tracheal intubation-associated events reported for a rate of 19.3 percent. However, severe events were rare, occurring only in six cases. Factors such as the patient's age, difficult airway history, and attempts by a resident did not influence the occurrence of any events.

Nishisaki, A., Nguyen, J., Colborn, S., and others. (2012). "Evaluation of multidisciplinary simulation training on clinical performance and team behavior during tracheal intubation procedures in a pediatric intensive care unit." *Pediatric Critical Care Medicine* 12(4), pp. 406-414.

In this study, every morning, a

pediatric ICU on-call resident, a pediatric ICU nurse, and a respiratory therapist received a brief simulation-based multidisciplinary airway management training session. Following the development of an assessment tool, trained observers rated the training sessions as well as actual intubations in the pediatric ICU. The tool measured both technical skills and behavioral performance.

Airway teams consisting of two or more simulation-trained members performed significantly better during actual intubations when compared to teams with less than two trained members. Technical, behavioral, and total scores were higher for these teams. Overall intubation success rates (defined as fewer than 3 attempts) were 89 percent for teams with two or more trained members and 67 percent for teams with fewer than two trained members. In addition, the teams with two or more trained members had no unwanted tracheal intubation-associated events, while the teams with fewer than two trained members had one event. ■
KB

Elderly Health/Long-Term Care

Depression, falls, and low blood sugar affect quality of life as much as diabetes complications in older adults with diabetes

Most diabetes care guidelines are based on research with middle-aged patients and focus on blood pressure, cholesterol, and glycemic control. However, the care and treatment of older adults with diabetes is more complex. These individuals are at increased risk for geriatric syndromes, such as depression and falls, as well as hypoglycemia (low blood sugar) resulting from drugs they are taking. A new study reveals that geriatric syndromes and hypoglycemia are associated with lower health-related quality of life (HRQL) as much as diabetes complications.

The study included 6,317 adults aged 60 to 75 years with type 1 or type 2 diabetes, who were enrolled in a large health maintenance organization in northern California. Each participant completed a health survey asking questions about their physical functioning, role limitations, pain levels, social functioning, and mental health. The researchers also used medical records to identify geriatric syndrome diagnoses, diabetes complications, and hypoglycemic events.

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Diabetes

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Any geriatric syndrome or diabetes complication, as well as hypoglycemia, were all associated with lower physical HRQL. The most significant problem was amputation, followed by congestive heart failure (CHF), falls, chronic pain, and heart attack. No association was found between significantly lower mental HRQL and having a geriatric syndrome or diabetes complication in general. However, some conditions, such as depression and being underweight, resulted in lower mental HRQL.

Amputation, CHF, falls, chronic pain, heart attack, depression, underweight, and hypoglycemia were more strongly associated with lower HRQL than diabetes-related factors, such as duration of diabetes and insulin use. The study was supported in part by the Agency for Healthcare Research and Quality (HS00084).

See “Correlates of quality of life in older adults with diabetes: the diabetes & aging study,” by Neda Laiteerapong, M.D., Andrew J. Karter, Ph.D., Jennifer Y. Liu, M.P.H., and others, in the *Diabetes Care* 34(8), pp. 1749-1753, 2011. ■ KB

Alcohol may be misused by residents in assistant living places

As baby boomers grow older, assisted living (AL) settings become more popular. AL facilities may allow alcohol use, including offering cocktail hours and letting residents keep alcohol in their rooms. However, a new study suggests that alcohol use is rather widespread and may be abused in AL facilities.

The researchers identified 832 nurse aides who indicated AL as a prior place of employment from a Pennsylvania nurse aide registry. Each filled out a questionnaire that included items related to alcohol use at their facilities, including evidence of misuse and abuse. The

nurse aides believed that the majority of AL residents (69 percent) drank alcohol. Of these, a third (34 percent) of residents were considered by the nurse aides to drink on a daily basis. Also, 44 percent of the nurse aides suspected that some residents under their care made poor choices about alcohol, with 40 percent saying such use had a negative impact on residents' health.

According to the researchers, AL facilities are faced with a dilemma. On one hand, they need to attract paying customers who may demand opportunities for drinking alcohol. At the same time, these facilities

must ensure the health and safety of their residents. The study's findings suggest the opportunity to implement prevention and screening programs at AL facilities and to offer detection and management training to nurse aides. The study was supported in part by the Agency for Healthcare Research and Quality (HS16547).

See “Alcohol misuse and abuse reported by nurse aides in assisted living,” by Nicholas G. Castle, Ph.D., Laura M. Wagner, Ph.D., Jamie C. Ferguson-Rome M.H.A., and others, in *Research on Aging* 34(3), pp. 321-326, 2012. ■ KB

Comparative Effectiveness

Behavioral counseling is an effective treatment for alcohol misuse

Behavioral counseling interventions improved certain behavioral outcomes for adults with risky/hazardous drinking habits (i.e., consumption of alcohol above recommended amounts or at levels that increase the risk for health consequences), according to a new review from the Effective Healthcare Program of the Agency for Healthcare Research and Quality (AHRQ). The research review assessed the effectiveness of screening followed by behavioral counseling for alcohol misuse in adolescents and adults in primary

care settings. Among adults who received behavioral counseling interventions, alcohol consumption decreased by 3.6 drinks per week (from an average of about 23 drinks to about 19 drinks per week).

For most medical outcomes, such as kidney/liver damage, etc., available evidence either found no difference between interventions and controls or was insufficient to draw conclusions. The best evidence of

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Alcohol misuse

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effectiveness was for 10-15 minute sessions on behavior improvement focusing on how patients use or misuse alcohol.

Alcohol misuse, which includes a range of behaviors from risky/hazardous drinking to alcohol dependence, is associated with numerous health and social problems, more than 85,000 deaths per year in the

United States, and an estimated annual cost to society of more than \$220 billion.

To access *Screening, Behavioral Counseling, and Referral in Primary Care To Reduce Alcohol Misuse* and other materials that explore the effectiveness and risks of treatment options for various conditions, visit AHRQ's Effective Health Care Program Web site: www.effectivehealthcare.ahrq.gov. ■

Evidence lacking on best approaches to treat autism in teens and young adults

Despite the number of teens and young adults affected by Autism Spectrum Disorders (ASDs), there is insufficient evidence available for caregivers to choose the best therapies for this group, concludes a research review on the topic. The review focused on the comparative effectiveness of behavioral, educational, vocational, adaptive-life-skill, and medical interventions. It found that most studies had low strength of evidence, addressed different interventions and outcomes, and lacked replication, making it challenging to draw comparisons across therapies.

Additional research is needed that includes standardized intervention

protocols and outcomes, and that addresses the long-term effectiveness and harms of each intervention. Given the large number of children affected, more research is necessary to fill the current gaps in research.

ASDs affect roughly one in 88 children in the United States, and more than 55,000 teenagers between the age of 15 and 17. As children with ASD transition to adolescence and young adulthood, available research suggests that some range of medical and non-medical interventions (e.g., special education, daycare) will be required. Estimated medical and non-medical costs are as high as \$3.2 million per person and \$35

billion per year for the entire birth group of individuals with autism.

Effective intervention strategies are a key to providing affordable care. These findings can be found in the new research review, *Interventions for Adolescents and Young Adults with Autism Spectrum Disorders*, produced by the Effective Health Care Program of the Agency for Healthcare Research and Quality (AHRQ). To access this review and other materials that explore the effectiveness and risks of treatment options for various conditions, visit AHRQ's Effective Health Care Program Web site at www.effectivehealthcare.ahrq.gov. ■

Noninvasive positive pressure ventilation improves COPD patient outcomes

Patients with acute respiratory failure due to severe worsening of chronic obstructive pulmonary disease (COPD) or congestive heart failure have improved outcomes, including mortality and intubation rates, with noninvasive positive pressure ventilation (NPPV) compared to supportive care (hospital support without invasive ventilation) alone, according to a new research review. In the United States, millions of patients are admitted to intensive care each year because of acute respiratory failure. This condition is severe enough to require life support with invasive mechanical ventilation for approximately 800,000 Americans a

year, many of whom do not survive. NPPV is increasingly recognized as an alternative to conventional mechanical ventilation for treating acute respiratory failure, and may offer several benefits with minimal side effects for patients suffering from COPD.

Current evidence suggests that NPPV offers potential benefits for patients with acute respiratory failure who are postoperative or post-transplant. In select populations it may facilitate weaning from invasive

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COPD patient outcomes

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ventilation, or prevent recurrent respiratory failure after a breathing tube is removed. These findings are generally consistent with previous systematic reviews and clinical guidelines on NPPV. There is a need for more research in patient populations where NPPV has not been rigorously studied, and to better understand how clinician experience, setting, system resources, and patient characteristics affect treatment as part of routine clinical care.

Details on current research on the effectiveness of NPPV can be found in the evidence-based review, *Noninvasive Positive Pressure Ventilation for Acute Respiratory Failure* from the Effective Health Care Program of the Agency for Healthcare Research and Quality. To access this review and other materials that explore the effectiveness and risks of treatment options for various conditions, visit the Effective Health Care Program Web site, www.effectivehealthcare.ahrq.gov. ■

More research needed on coronary artery disease treatments for women

Current evidence is too limited to draw firm conclusions about the comparative benefits or harms of different treatment strategies for women with coronary artery disease (CAD), concludes a new review by the Effective Health Care Program of the Agency for Healthcare Research and Quality (AHRQ). However, some evidence suggests that women may respond differently to some treatment strategies than men.

In the few studies that reported results for women separately, both women and men who suffer a severe heart attack and undergo percutaneous coronary intervention to unblock arteries have better results than using medicine (fibrinolysis) alone to reduce cardiovascular events such as heart attack and stroke.

Limited evidence also suggests that an early invasive approach reduces heart attack and stroke for women with partial artery blockages or unstable angina. These results were not statistically significant, but do point in the same direction as data from a larger number of studies that combine results for men and women that indicate the significant benefits of early intervention. The limited sex-specific data for treatment of stable angina suggests that more research is needed to understand possible different responses.

Although cardiovascular disease is the leading cause of death for women in the United States, most studies do not focus on the effectiveness of treatments in women. Existing research may not adequately reflect the benefits and

risks that women experience. More than 6 percent of women in the United States have CAD, and more than 500,000 women die from it each year. A better understanding of the effectiveness of different medical treatments in women is needed.

These findings can be found in the research review, *Treatment Strategies for Women With Coronary Artery Disease*. Visit Inside Track, AHRQ's Effective Health Care (EHC) Program newsletter, to learn more about important health news and developments. You can also see more reviews at the EHC Program Web site at www.effectivehealthcare.ahrq.gov. ■

Insulin pump and glucose monitoring improve blood-sugar control for patients with type 1 diabetes

Sensor-augmented insulin pumps (intensive insulin therapy combined with real-time continuous blood-glucose monitoring) are superior to multiple daily insulin injections and self-monitoring of blood glucose (fingersticks) to lower hemoglobin A1c (the preferred method of assessing blood-sugar control) in patients with type 1 diabetes. That's the conclusion of a research review from the Agency for Healthcare Research and Quality (AHRQ). The review found an improved quality of life for patients using insulin-intensive therapies and real-time self-monitoring of glucose

(sensors attached to the body that continuously measure blood sugar), when the patients wear the sensor at least 60 percent of the time. However, insulin-intensive therapies are expensive and require increased monitoring and engagement with health care professionals, and are not right for every patient. Insulin therapies can be individualized for every patient to accommodate their needs.

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Type 1 diabetes

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Diabetes is a chronic condition that affects nearly 8 percent of Americans. Of the people who have diabetes 90 to 95 percent of them have type 2 diabetes, which is typically characterized as resistance to insulin. Insulin is necessary in order to break down glucose (blood sugar) into energy. Insulin resistance or lack of insulin (type 1 diabetes), or both, can cause severe long-term side effects such as coronary artery disease, chronic kidney disease or retinal damage if untreated. Diabetes can be treated by monitoring glucose levels in the blood and reducing hemoglobin A1c levels, which is done by insulin therapies or through dietary maintenance.

Methods of Insulin Delivery and Glucose Monitoring: A Comparative Effectiveness Review, produced by AHRQ's Effective Health Care Program, summarizes evidence on the effectiveness of intensive insulin therapies in individuals with type 1, type 2 and gestational diabetes. The review suggests additional research is needed to investigate the effectiveness of these treatments in isolation and in specific patient populations. To access this review and other materials that explore the effectiveness and risks of treatment options for various conditions visit AHRQ's Effective Health Care Program Web site at www.effectivehealthcare.ahrq.gov. ■

Best strategies to treat traumatic brain injury patients are unclear

A new review finds that for patients suffering from moderate to severe traumatic brain injury (TBI), there is insufficient evidence to draw conclusions about the effectiveness of multidisciplinary post-acute rehabilitation programs (programs that focus on improving all aspects of a TBI patient's physical, cognitive, and behavioral health).

TBI occurs when there are changes to brain activity due to an external force. Severe injuries can lead to long-term disability. TBI is a significant public health issue in the United States, affecting approximately 1.7 million people annually. Major causes of TBI include falls, motor vehicle accidents, struck by/against incidents, assaults, and explosions/blasts for military personnel. TBI disproportionately

affects males, those aged 15–24, and individuals with lower socioeconomic status.

There is much diversity and complexity of TBI populations and intervention approaches within studies, including time since injury, injury severity, impairment type and severity, and different intervention strategies to address needs. This diversity in cases makes it difficult to carry out, combine, and draw firm conclusions about research on this topic.

Future research is needed to increase the number of studies on TBI rehabilitation interventions, including the need to identify and test potential patient and intervention combinations that are most likely to achieve success. Studies should also aim to compare similarly affected

patients, improve reporting of conditions and treatments, and expand study sizes, note authors of the review from the Effective Health Care Program of the Agency for Healthcare Research and Quality (AHRQ).

More information on multidisciplinary rehabilitation approaches can be found in the evidence-based review, *Multidisciplinary Postacute Rehabilitation for Moderate to Severe Traumatic Brain Injury in Adults*. This review adds to AHRQ's growing library of resources. To access this review and other materials that explore the effectiveness and risks of treatment options for various conditions, visit the Effective Health Care Program Web site, www.effectivehealthcare.ahrq.gov. ■

Extending use of anti-clotting medication following major orthopedic surgery may help prevent post-operative blood clots

For patients who have undergone major orthopedic surgery such as hip or knee replacement, extending post-surgery use of medications to prevent blood clots may be beneficial, according to a new review by the Agency for Healthcare Research and Quality (AHRQ). Blood clots in the legs, pelvis, lungs, or other areas, as well as other bleeding issues, are common among major orthopedic surgery patients. While current standard clinical practice recommends that patients take these medications for 7-10 days following surgery, the new research review finds that extending use to 28 days or longer may increase benefits.

Among the many types of available anti-clotting medications, there is not enough evidence to determine which type of medication is best. However, within the heparin class of medications, the review found that low

molecular-weight heparin is superior to unfractionated heparin. The review calls for further studies to evaluate the use of medications after less serious types of orthopedic surgery. More research is also needed to compare the effectiveness of using one medication or combining multiple medications, as well as combining medications with other types of therapies, such as leg compression or foot pumps.

The review also notes that there is not currently enough evidence to conclude that deep vein thrombosis, blood clots in the veins, causes pulmonary embolism, an often fatal blockage of the main artery of the lung. To access the review, *Venous Thromboembolism Prophylaxis in Orthopedic Surgery*, and other AHRQ products, visit AHRQ's Effective Health Care Program Web site at www.effectivehealthcare.ahrq.gov. ■

New research examines use of nitrous oxide for labor pain

A new research review from the Agency for Healthcare Research and Quality's (AHRQ's) Effective Healthcare Program has evaluated the use of inhaled nitrous oxide, or "laughing gas," to manage maternal pain during labor. Although nitrous oxide is commonly used in many countries for labor pain management, only five centers in the United States are known to provide it as an option. However, nitrous oxide offers several potential benefits that may make it appealing to women in the United States. For example, it is inexpensive, noninvasive, and can be self-administered as needed at any point during labor.

As expected, the research review found that nitrous oxide was less

effective at controlling pain than epidural analgesia, but it noted that the quality of available studies was generally poor. The review also examined the effect of nitrous oxide on route of birth (i.e., vaginal, assisted, or cesarean), but the strength of evidence was insufficient to determine the effect. Additional research is needed to assess its effectiveness for pain control, women's satisfaction, type of birth, harms, and health system factors related to the use of nitrous oxide in labor.

Most negative effects to the mother reported in the study were unpleasant side effects, such as nausea, vomiting, dizziness, and drowsiness. The study also looked at the effects on newborns and

found that delivery room testing scores in newborns whose mothers used nitrous oxide were similar to those of newborns whose mothers used other labor pain management methods or no pain management treatments.

These findings can be found in the research review, *Nitrous Oxide for the Management of Labor Pain*. This review adds to AHRQ's growing library of resources on women's health. To access this review and other materials that explore the effectiveness and risks of treatment options for various conditions, visit the Effective Health Care Program Web site at www.effectivehealthcare.ahrq.gov. ■

Tactics to improve medication adherence in short-term shown effective

A new evidence report from the Agency for Healthcare Research and Quality (AHRQ) found consistent evidence that patients were more likely to follow medication instructions if given incentives such as reductions in out-of-pocket prescription drug costs or improvements in prescription drug coverage. Case management and educational interventions were also shown to improve medication adherence. The tactics were shown to be effective for a wide range of chronic illnesses, including asthma, depression, diabetes, and cardiac conditions.

Studies estimate that half of all medications for chronic conditions are not taken as prescribed, and medication non-adherence costs the U.S. health care system between \$100 billion and \$289 billion annually in direct medical costs. The strongest evidence came from studies using medication self-management for asthma patients, collaborative care or case management for patients taking drugs for depression, and pharmacist-led approaches to improve systolic blood pressure in hypertensive patients.

Meera Viswanathan, Ph.D., led the team of researchers at the Research Triangle Institute International-University of North Carolina Evidence-based Practice Center. He noted that there was limited evidence as to whether the approaches studied have broad applicability for chronic conditions and patient populations. The team also found limited evidence of these tactics for long-term medication adherence or health outcomes. The review is part of a larger initiative, *Closing the Quality Gap: Revisiting the State of the Science*, and builds on an earlier AHRQ series of evidence reports, *Closing the Quality Gap: A Critical Analysis of Quality Improvement Strategies*.

The initiative was developed by AHRQ's Effective Health Care Program, which funds effectiveness and comparative effectiveness research and makes findings available for clinicians, consumers, and policymakers. To read *Medication Adherence Interventions: Comparative Effectiveness*, go to the Effective Health Care Program Web site at www.effectivehealthcare.ahrq.gov. ■

New effectiveness review discusses treatment options for inguinal hernia

For painful hernias in adults, the risk of a recurrent hernia after open surgery was less than the risk of recurrence after laparoscopic surgery, according to a research review. However, the review from the Effective Health Care Program of the Agency for Healthcare Research and Quality (AHRQ) did show that for pediatric hernias laparoscopy is generally more effective than surgery for reducing

recurrence. The review did not highlight many negative side effects for open surgery versus laparoscopy, but did note that the recovery time for open surgery was generally longer. The review also noted that quality of life after the diagnosis of an inguinal hernia was higher after one year for individuals that chose open surgery or laparoscopy rather than watchful waiting.

These findings can be found in the research review, *Surgical Options for Inguinal Hernia*. This review adds to AHRQ's growing library of resources on health topics. To access this review and other materials that explore the effectiveness and risks of treatment options for various conditions, visit the Effective Health Care Program Web site at www.effectivehealthcare.ahrq.gov. ■

More evidence needed on benefit of additional procedure for diagnosing plasma cell cancer

There may not be sufficient evidence to determine whether the addition of the Serum Free Light Chain (SFLC) procedure to traditional testing increases diagnostic accuracy for Plasma Cell Dyscrasias (PCD, a cancer of the plasma cells) or whether it helps predict disease progression. That's the conclusion of a new research review from the Effective Health Care Program of the Agency for Healthcare Research and Quality.

Although the SFLC procedure has been in use for a decade for PCD diagnosis, how best to incorporate it into practice remains unclear. The review determined that evidence was mostly insufficient to determine the extent to which adding SFLC to current tests improves diagnosis, prognosis, monitoring of therapy, and treatment decisions. It found that more research is

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Plasma cell cancer

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needed to understand the exact role of SFLC and its most effective use across the full range of PCD cancers and clinical settings. Evaluating the comparative effectiveness of SFLC will allow for use of the procedure to be refined and recommendations optimized.

The review also explained that additional research on the SFLC procedure should focus on standardizing the process for calculating its role in diagnostic testing and

disease progression, as well as defining outcomes and responses in patients.

These findings can be found in the research review, *Serum-Free Light Chain Analysis for the Diagnosis, Management, and Prognosis of Plasma Cell Dyscrasias*. This review adds to AHRQ's growing library of resources on key health topics. To access this review and other materials that explore the effectiveness and risks of treatment options for various conditions, visit the Effective Health Care Program Web site at www.effectivehealthcare.ahrq.gov. ■

Disparities/Minority Health

Black patients are negatively affected by clinicians' attitudes about race

Clinicians may have conscious or unconscious biases when it comes to the race and ethnicity of patients. These racial attitudes can have a negative impact on the patient-doctor relationship, including communication problems and how patients experience their care, suggests a new study. Researchers examined visits between 40 primary care clinicians and 269 patients from urban community-based practices.

They used cognitive tests of unconscious bias among the clinicians and analyzed audiotapes of the visits to reveal communication patterns. They found that bias and stereotyping were associated with markers of poor communication during patient visits and resulted in low ratings of care by patients in a post-visit survey. The findings were particularly evident among black patients, who appeared most affected by these attitudes and behaviors.

The patients were participating in two randomized trials investigating patient-provider communication for patients with hypertension and depression. Clinicians demonstrated general race bias displayed more verbal dominance and had poorer ratings of interpersonal care among black patients.

Black patients also ranked these clinicians lower in their respect for them, liking their provider, having confidence in them, and recommending the provider to friends and family. White patients perceived clinicians with higher levels of general race bias differently. They were more likely to perceive respect from these providers and believed they were liked by them.

Results were somewhat different for clinicians who demonstrated implicit race and compliance stereotyping. In the case of black patients, race and compliance stereotyping resulted in longer visits, a slower pace of speech, less

patient-centered dialogue, and poorer ratings of interpersonal care. White patients experienced shorter visits, more rapid pace of speech, more patient-centered dialogue, and less verbal dominance by clinicians. Blacks and whites perceived clinicians with race and compliance stereotyping more negatively.

The researchers speculated that due to greater exposure to discrimination in society, blacks may be particularly sensitive to verbal and non-verbal cues, such as smiling, social comments made, and speech factors. The study was supported in part by the Agency for Healthcare Research and Quality (HS13645).

See "The associations of clinicians' implicit attitudes about race with medical visit communication and patient ratings of interpersonal care," by Lisa A. Cooper, M.D., M.P.H., Debra L. Roter, Dr.P.H., Kathryn A. Carson, Sc.M., and others in the May 2012 *American Journal of Public Health* 102(5), pp. 979-987. ■ KB

Physicians' implicit racial attitudes influence prescribing of opioids for black children

Asthma, attention deficit hyperactivity disorder (ADHD), urinary tract infection, and pain are common conditions that children are routinely treated for by pediatricians. A new study suggests that physicians' implicit racial attitudes may influence their prescribing of opioids for black children. To examine the association between pediatricians' attitudes about race and their treatment recommendations, a research team from the University of Washington conducted an online survey of 86 pediatricians at a large urban research university. They looked at the association between implicit attitudes and stereotypes about race with recommendations for pain management, urinary tract infections, ADHD, and asthma, measured by case vignettes.

The only significant correlation found was between recommendations for pain management and implicit measures of racial bias. Physicians with stronger pro-white bias were more ready to prescribe opioid pain medication (the appropriate treatment option for the scenario) to white children than to black children.

Pain management was selected to be one of the case vignettes because this is an area with reported

disparities, a high level of clinical subjectivity, and reports of clinicians' perceptions of blacks misusing opioids. The survey incorporated case vignettes using scenarios that pediatricians would likely encounter in their own clinical practice, and questions about explicit attitudes and stereotypes.

It also included the Implicit Association Test, a timed cognitive test used to measure the relative strength between positive and negative associations toward one social group compared with another. The researchers call for more studies to understand the influence of physicians' unconscious beliefs about race on pain management and other areas of care. This study was supported in part by the Agency for Healthcare Research and Quality (HS15760).

See "The influence of implicit bias on treatment recommendations for 4 common pediatric conditions: pain, urinary tract infection, attention deficit hyperactivity disorder, and asthma," by Janice A. Sabin, Ph.D., and Anthony G. Greenwald, Ph.D., in the May 2012 *American Journal of Public Health* 102(5), pp. 988-995. ■ MWS

Blacks treated at community health centers are less likely than Hispanics or whites to have controlled blood pressure

Low-income, minority, and/or immigrant populations often access care in federally qualified community health centers (FQHCs). A new study reveals that blacks treated at these centers are less likely than Hispanics or whites to have controlled blood pressure.

Researchers looked at the electronic medical records of 18,996 adults from four FQHCs in New York to examine the correlates of hypertension control. The hypertension rate among blacks (32.8 percent) was more than twice the rate of whites (16.2 percent) and nearly three times that of Hispanics (11.5 percent).

Blacks were more likely than whites or Hispanics to have a higher body mass index (BMI) and to have stage 2 hypertension at the initial visit during the study period. Blacks were also more likely than whites or Hispanics to be taking three or more medications.

Uncontrolled hypertension was associated with male gender, race/ethnicity, income, fewer clinical encounters, higher BMI, and a greater number of prescribed medications. Among the total patient population, 14 percent had a diagnosis of hypertension. In this diverse population of hypertensive patients with regular access to primary care services, 49 percent

had controlled blood pressure at their last visit. The researchers found no racial/ethnic disparities in treatment such as differences in medication intensification, number of encounters, or in other quality indicators. The study was supported by the Agency for Healthcare Research and Quality (HS17167).

See "Predictors of blood pressure control among hypertensives in community health centers," by Donna Shelley, M.D., M.P.H., Tuo-Yen Tseng, M.A., Howard Andrews, Ph.D., and others in the December 2011 *American Journal of Hypertension* 24(12), pp. 1318-1323. ■ MWS

Elderly blacks less likely than elderly whites to receive a depression diagnosis or treatment

Researchers examining racial and ethnic disparities in the diagnosis and treatment of depression among the elderly found that 4.2 percent of blacks received a diagnosis of depression compared to 6.4 percent of whites, 7.2 percent of Hispanics, and 3.8 percent of other groups. Blacks who were diagnosed were also less likely to be treated for depression than non-Hispanic whites. For example, among blacks diagnosed with depression, 39.6 percent did not receive treatment compared with 27.0 percent of whites.

These differences in depression diagnosis and treatment remained significant, even after adjusting for income, education, insurance coverage, perceived access to care, and other factors. The authors point out that differences in depression diagnosis rates among racial/ethnic groups may be the result of both differences in underlying rates of pathology and underdiagnosis of depression in certain groups.

They also suggest a need to look at other factors, including racial/ethnic differences in depression help-seeking behaviors, stigma, knowledge, and attitudes. They conclude that vigorous clinical and public health initiatives are needed to address this persistent disparity in care. The study used data on 12,353 Medicare beneficiaries drawn from the Medicare Current Beneficiary Survey (2001–2005). It was supported in part by the Agency for Healthcare Research and Quality (HS16097).

See “Racial and ethnic disparities in depression care in community-dwelling elderly in the United States,” by Ayse Akincigil, Ph.D., Mark Olfson, M.D., Michele Siegel, Ph.D., Karen A. Zurlo, Ph.D., and others in the February 2012 *American Journal of Public Health* 102(2), pp. 319-328. ■ MWS

Agency News and Notes

AHRQ safety project reduces bloodstream infections by 40 percent

A unique nationwide patient safety project funded by the Agency for Healthcare Research and Quality (AHRQ) reduced the rate of central line-associated bloodstream infections (CLABSIs) in intensive care units by 40 percent, according to the Agency’s preliminary findings of the largest national effort to combat CLABSIs to date. The project used the Comprehensive Unit-based Safety Program (CUSP) to achieve its landmark results—preventing more than 2,000 CLABSIs, saving more than 500 lives, and avoiding more than \$34 million in health care costs.

The Agency and key project partners from the American Hospital Association (AHA) and

Johns Hopkins Medicine discussed these dramatic findings at the AHRQ annual conference in September in Bethesda, Maryland, and introduced the CUSP toolkit that helped hospitals accomplish this marked reduction.

“CUSP shows us that with the right tools and resources, safety problems like these deadly infections can be prevented,” said AHRQ Director Carolyn M. Clancy, M.D. “This project gives us a framework for taking research to scale in practical ways that help front-line clinicians provide the safest care possible for their patients.”

CLABSIs are one type of healthcare-associated infection (HAI). HAIs are infections that

affect patients while they are receiving treatment for another condition in a health care setting. HAIs are a common complication of hospital care, affecting one in 20 patients in hospitals at any point in time.

The national project involved hospital teams at more than 1,100 adult intensive care units in 44 states over a 4-year period. Preliminary findings indicate that hospitals participating in this project reduced the rate of CLABSIs nationally from 1.903 infections per 1,000 central line days to 1.137 infections per 1,000 line days, an overall reduction of 40 percent.

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Bloodstream infections

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The CUSP is a customizable program that helps hospital units address the foundation of how clinical teams care for patients. It combines clinical best practices with an understanding of the science of safety, improved safety culture, and an increased focus on teamwork. Based on the experiences gained in this successful project, the CUSP toolkit helps doctors, nurses, and other members of the clinical team understand how to identify safety problems. It also gives them the tools to tackle these problems that threaten the safety of their patients. It includes teaching tools and resources to support implementation at the unit level.

The first broad-scale application of CUSP was in Michigan, under the leadership of the Michigan Health & Hospital Association, where it was used to significantly reduce

CLABSIs in that State. Following that success, CUSP was expanded to 10 States and then nationally through an AHRQ contract to the Health Research & Educational Trust, the research arm of the AHA.

“This partnership between the Federal government and hospitals provides clear evidence that we can protect patients from these deadly infections,” said AHA President and CEO Richard J. Umbdenstock.

“Hospitals remain committed to curtailing CLABSIs and enhancing safety in all clinical settings. Tools such as CUSP go a long way toward accomplishing that goal.”

CUSP was created by a team led by Peter J. Pronovost, M.D., Ph.D., senior vice president for patient safety and quality at Johns Hopkins Medicine. “It is gratifying that this method has become such a powerful engine for improving the quality and safety of care nationwide,” said

Dr. Pronovost. “It is a really simple concept; trust the wisdom of your front-line clinicians.”

In addition, CUSP also builds on important work led by the Centers for Disease Control and Prevention and its evidence-based recommendations on treating infections. Together with HHS’ National Action Plan to Prevent Healthcare Associated Infections (www.hhs.gov/ash/initiatives/hai/index.html) and the Partnership for Patients (www.healthcare.gov/compare/partnership-for-patients), AHRQ’s efforts are a part of a coordinated approach drawing on the strengths and expertise across HHS.

Details about AHRQ’s national CUSP project are available at www.ahrq.gov/qual/hais.htm. AHRQ’s CUSP toolkit is available at www.ahrq.gov/cusptoolkit. ■

Number of Americans prescribed anticonvulsant drugs has nearly doubled

Between 1999 and 2009, the number of Americans prescribed anticonvulsant drugs nearly doubled, rising from 8.6 million to 15.2 million, while spending increased from \$3.3 billion to \$10.6 billion, according to a new statistical brief from the Medical Expenditure Panel Survey of the Agency for

Healthcare Research and Quality. You can read more details in Statistical Brief #372: *Trends in Anticonvulsants Utilization and Expenditures for the U.S. Civilian Noninstitutionalized Population, 1999 and 2009* at http://meps.ahrq.gov/mepsweb/data_files/publications/st372/stat372.shtml. ■

More safeguards needed to prevent adverse drug events caused by medication administration errors

Additional interventions are needed to prevent adverse drug events (ADEs) caused by administration errors in a hospital setting, according to a new study funded by the Agency for Healthcare Research and Quality. “Adverse Drug Events Caused by Serious Medication Administration Errors,” was published online July 12 in the

British Medical Journal of Quality & Safety.

Study researchers concluded that unintercepted potential ADEs at the medication administration stage can cause serious patient harm. At hospitals where 6 million doses are administered per year, about 4,000 preventable ADEs would be attributable to medication

administration errors annually. The high incidence and cost implications for ADEs due to medication administration errors justify the need to target interventions to prevent these errors in a hospital setting.

To access the article abstract, please visit www.ncbi.nlm.nih.gov/pubmed/22791691. ■

Videonovela for Hispanics on managing diabetes uses family drama to educate patients and families

Does Don Felipe have more to worry about than his diabetes? Maybe so, when a handsome stranger appears at the door with flowers for his wife.

Drama and diabetes go together in a three-part videonovela series produced and distributed by AHRQ especially for a Spanish-speaking audience. “Aprende a vivir” tells the story of Felipe, who has type 2 diabetes, and how he has problems learning to manage his disease.

Just like a soap opera, each episode ends with a cliffhanger. But unlike a daytime drama, the videonovela does more than amuse viewers. Felipe and his family learn instructions for type 2 diabetes patients regarding medication adherence, diet, and exercise during each 5- to 7-minute episode.

Since the first episode was released in April 2012, “Aprende a vivir” has been featured in both English and Spanish speaking media outlets, including Telemundo Television’s facebook page; V-me, a PBS Hispanic television network; Good Morning America,

USA Today, the *Los Angeles Daily News*, and many others.

In addition, the Boricua Senior Center in the Bronx, NY, will be recreating the episodes as a play, employing seniors as the characters.

“Aprende a vivir is an entertaining way to model and reinforce healthy behaviors without lecturing,” said Ileana Ponce-Gonzalez, M.D., AHRQ’s Spanish-language spokesperson. “The videonovela as an educational tool is beneficial for individual consumers, patients, clinicians, promotores de salud, educators, and advocates to improve the quality of care and patient safety of people living with diabetes.”

To view all three episodes in Spanish or with English subtitles, go to <http://healthcare411.ahrq.gov/videonovela.aspx>. To order a free DVD with free health education brochures for your waiting area or health education presentations, contact Bob Isquith at bob.isquith@ahrq.hhs.gov. ■ *KM*

AHRQ reviews evidence on multigene panels for prostate cancer risk assessment

Evidence is currently insufficient to conclude whether single nucleotide polymorphism-based (SNP) panels perform adequately as screening or risk-stratification tools to genetically assess whether a man is at increased risk for prostate cancer, concludes a new review. The evidence review was conducted by the McMaster University Evidence-based Practice Center in Hamilton,

Ontario, Canada, with support from the Agency for Healthcare Research and Quality (AHRQ). The review was conducted to address questions about the accuracy of prostate-specific antigen screening (PSA) in asymptomatic men, the difficulty of determining prognosis in many affected men, and the lack of clarity on the utility of different therapeutic approaches.

Given the issues with PSA testing, SNP panels were seen as possible substitutes for or as a supplement to PSA screening. Prostate cancer, one of the most common types of cancer, led to more than 36,000 deaths among men in North America in 2010. For the executive summary and full evidence report, *Multigene Panels in Prostate Cancer Risk Assessment*, go to www.ahrq.gov/clinic/tp/mgenprcatp.htm. ■

AHRQ launches its new Facebook page

AHRQ's new Facebook page (www.facebook.com/ahrq.gov) is now live. Like our page and be kept up-to-date about what is new from AHRQ. With links to the latest campaigns, publications, reports, and more, you'll be among the first to know what is new in health care quality and safety. We encourage everyone with a Facebook page to "like" us. Remember to share our posts with your friends too! ■

New Web page for evaluation of CHIPRA Quality Demonstration Grant Program

A new AHRQ Web page offers information about the national evaluation of a Quality Demonstration Grant Program to identify effective strategies for enhancing quality and delivery of care for children. The grant program, which funds efforts in 18 States, was funded by the Children's Health Program Reauthorization Act of 2009 (CHIPRA), and AHRQ is overseeing its national evaluation. The new AHRQ Web page includes descriptions of the 51 projects being implemented, which fall into these categories:

- Using quality measures to improve child health care

- Applying health information technology for quality improvement
- Implementing provider-based delivery models
- Investigating a model format for pediatric electronic health records
- Assessing the utility of other innovative approaches to enhance quality

You can access the Web page and sign up for email updates at www.ahrq.gov/chipra/demoeval. ■

New surveys evaluate culturally competent and health-literate care

A series of studies funded by the Agency for Healthcare Research and Quality (AHRQ) focuses on the development and evaluation of new questions (item sets) to assess culturally competent and health-literate care added to the Consumer Assessment of Healthcare Providers and Systems (CAHPS®) surveys. The goal of the CAHPS surveys is to provide patients with a way of reporting on their experiences with health care services. CAHPS surveys go beyond standard patient satisfaction ratings by asking patients to provide feedback that is more specific and actionable. The

CAHPS cultural competence item set was developed to promote and measure the provision of care that is culturally and linguistically appropriate.

In several new studies, patients are asked to share their experiences in the health care system on issues such as language access, trust, complementary and alternative medicine, communication, and discrimination. Other studies cover the development and evaluation of two supplemental CAHPS item sets—one for the Clinician/Group CAHPS and one for Hospital CAHPS—that evaluate how well

providers address health literacy—that is, patients' varying ability to obtain and understand the basic health information needed to make appropriate health decisions. Both supplements to the Clinician/Group CAHPS have been endorsed by the National Quality Forum and may be found at https://cahps.ahrq.gov/clinician_group. The studies were published August 16, 2012 in a special supplement to *Medical Care*, which can be accessed free of charge at <http://journals.lww.com/lww-medicalcare/toc/2012/09002>. ■

Arora, V.M., Fazal, A.Z., Zee, P.C., and Knutson, K.L. (2011, November). "Objective sleep duration and quality in hospitalized older adults: Associations with blood pressure and mood." (AHRQ grant HS16967). *Journal of the American Geriatric Society* 59(11), pp. 2185-2186.

This study of 40 nights of sleep sampled from 20 inpatients aimed to characterize sleep duration and quality in hospitalized older adults. It found that hospitalization represents a period of clinically significant sleep loss that may be associated with higher morning blood pressure.

Bayliss, E.A., Ellis, J.L., Shoup, J.A., and others. (2012, April). "Association of patient-centered outcomes with patient-reported and ICD-9-based morbidity measures." (AHRQ grant HS18404). *Annals of Family Medicine* 10(2), pp. 126-133.

This study compared the contributions of self-reported morbidity and morbidity measured using administrative diagnosis data for both patient-reported outcomes and health care utilization outcomes. Higher morbidity measured by ICD-9 diagnoses was independently associated with less favorable levels of seven of nine clinical outcomes. Higher self-reported disease burden was significantly associated with less favorable levels of eight of the outcomes.

Bennett, W.L., Odelola, O.A., Wilson, L.M., and others. (2012, January). "Evaluation of guideline recommendations on oral medications for type 2 diabetes mellitus." (AHRQ Contract No. 290-02-0018). *Annals of Internal Medicine* 156(1) Part 1, pp. 27-36.

In this systematic review of clinical practice guidelines on treating type 2 diabetes with oral medications, the authors identified 11 guidelines that had been published during the 4 years after the 2007 review on medications for type 2 diabetes by the same authors. Most diabetes guidelines had multiple recommendations that were consistent with the evidence-based conclusions from the earlier review. There were no guidelines with contradictory conclusions.

Curtis, J.R., Baddley, J.W., Yang, S., and others. (2011).

"Derivation and preliminary validation of an administrative claims-based algorithm for the effectiveness of medications for rheumatoid arthritis." (AHRQ grant HS18517). *Arthritis Research & Therapy* 13, R155. Administrative claims data have not commonly been used to study the clinical effectiveness of medications for rheumatoid arthritis (RA) because of the lack of a validated algorithm for this outcome. The authors created and tested a claims-based algorithm to serve as a proxy for the clinical effectiveness of RA medications. They concluded that administrative claims data may be useful in

evaluating the effectiveness of medications for RA.

Fehr, J.J., Boulet, J.R., Waldrop, W.B., and others. (2011, December). "Simulation-based assessment of pediatric anesthesia skills." (AHRQ grant HS18734). *Anesthesiology* 115(6), pp. 1308-1315.

The purpose of this study was to develop a set of relevant simulated pediatric perioperative scenarios and to determine their effectiveness in the assessment of anesthesia residents and pediatric anesthesia fellows. The scores obtained from the assessment indicated that the content was relevant and that raters could reliably score the scenarios. Additional measures of validity obtained from comparisons with clinical performance are needed to establish this approach as a method to evaluate competence.

Fernald, D.H., Coombs, L., DeAlleaume, L., and others. (2012). "An assessment of the Hawthorne Effect in practice-based research." (AHRQ Contract No. 290-07-10008). *Journal of the American Board of Family Medicine* 25, pp. 83-86.

As part of a larger practical intervention designed to improve the clinical management of skin and soft tissue infections, the researchers examined the potential for a Hawthorne Effect from the extra attention some clinicians received when completing follow-up case reviews with the research

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Research briefs

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team. They did not find evidence suggestive of a Hawthorne Effect related to the prescription of antibiotics or in the selection of antibiotics that cover MRSA (methicillin-resistant *Staphylococcus aureus*).

Fitzgibbon, M.L., Tussing-Humphreys, L.M., Porter, J.S., and others. (2011). “Weight loss and African-American women: A systematic review of the behavioural weight loss intervention literature.” (AHRQ grant T32 HS00078). *Obesity Reviews* 13, pp. 193-213.

The authors conducted a systematic review of all behavioral weight-loss intervention trials published between 1990 and 2010, which reported results separately for black women. Twenty-five studies met inclusion criteria. Their findings suggest that more intensive randomized behavioral weight-loss trials with medically at-risk populations offer the most promising results.

Gierisch, J.M., Bastian, L.A., Calhoun, P.S., and others. (2012). “Smoking cessation interventions for patients with depression: A systematic review and meta-analysis.” (AHRQ grant T32 HS00079). *Journal of General Internal Medicine* 27(3), pp. 351-360.

The authors conducted a systematic literature review of smoking cessation interventions for patients with histories of depressive disorders or current significant depressive symptoms. They identified 16 unique randomized controlled trials, only three of which recruited participants with

current depression. They found that several promising interventions exist, especially smoking-cessation services that include nicotine replacement therapy and behavioral mood management.

Goetzel, R.Z., Schoenman, J.A., Chapman, L.S., and others.

(2011). “Strategies for strengthening the evidence base for employee health promotion programs.” (AHRQ grant HS18132). *American Journal of Health Promotion* 26(1), pp. TAHP-1-TAHP-8.

This article summarizes key themes developed by 36 health promotion practitioners, researchers, employers, health insurance representatives, government officials, and other stakeholders who were convened by the National Institute for Health Care Management with funding from the Agency for Healthcare Research and Quality. The purpose was to develop a research agenda to guide future efforts aimed at strengthening the evidence base for worksite health promotion programs.

Haynes, K., Bilker, W.B., TenHave, T.R., and others. (2011). “Temporal and within practice variability in the health improvement network.” (AHRQ grant HS10399). *Pharmacoepidemiology and Drug Safety* 20, pp. 948-955.

Using the Health Improvement Network (THIN) database, a primary care electronic medical record database in the United Kingdom, researchers analyzed mortality rates, cancer incidence rates, prescribing rates, and encounter rates across 415 practices from 2000 to 2007. They found

significant variability among practices, of which 40 percent or less is explained by practice-level factors. They also found increases in rates of cancer, prescriptions per patient, and encounters per patient along with significant declines in mortality rates.

Holden, R.J. (2011, December). “What stands in the way of technology-mediated patient safety improvements? A study of facilitators and barriers to physicians’ use of electronic health records.” (AHRQ grant T32 HS000083). *Journal of Patient Safety* 7(4), pp. 193-203.

The existence of electronic health records (EHRs) does not guarantee successful use of the systems or of their specific functions. EHR use requires the presence of certain user and system attributes, support from others, and numerous organizational and environmental facilitators. This study identifies and describes 19 categories of facilitators and barriers based on the perceptions of 20 attending physicians using EHR systems at 2 community hospitals.

Kong, M.H., Al-Khatib, S.M., Sanders, G.D., and others. (2011). “Use of implantable cardioverter-defibrillators for primary prevention in older patients: A systematic literature review and meta-analysis.” (AHRQ grant HS16964). *Cardiology Journal* 18(50), pp. 503-514.

The findings of this study contrast with a previously published age-specific meta-analysis that demonstrated a lack of implantable cardioverter-defibrillator (ICD) efficacy for the secondary

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prevention of sudden cardiac death (SCD) in patients 75 and over. This meta-analysis of ICD use for primary prevention of SCD suggests that ICDs may be beneficial for older patients, including those over age 75.

LaFleur, J., Nelson, R.E., Sauer, B.C., and Nebeker, J.R. (2011). “Overestimation of the effects of adherence on outcomes: A case study in healthy user bias and hypertension.” (AHRQ grant HS18582). *Heart* 97, pp. 1862-1869.

This study found that the associations between poor adherence to antihypertensive medications and outcomes such as hospitalization, heart attack, and death are largely independent of the pharmacological effects of these drugs on blood pressure control. The study adjusted for patient demographics, disease severity, and comorbidity. This suggests that other unmeasured confounders such as healthy user bias must explain most of the association between patient medication adherence and outcomes.

Lee, J.S., Primack, B.A., Mor, M.K., and others. (2011). “Processes of care and outcomes for community-acquired pneumonia.” (AHRQ grant HS10049). *American Journal of Medicine* 124, pp. 1175.e5-1175.e17.

This study of 2,076 patients hospitalized with pneumonia found no associations between processes of care and mortality or hospital readmissions within 30 days. The lack of consistent evidence associating performance of

pneumonia processes of care with improved patient outcomes, coupled with the high national levels of performance for these measures, casts doubts on their continued utility as care quality proxies for pneumonia.

M’ikanatha, N.M., Dettinger, L.A., Perry, A., and others. (2012, March). “Culturing stool specimens for *Campylobacter* spp., Pennsylvania, USA.” *Emerging Infectious Diseases* 18(3), pp. 484-487.

This study surveyed 176 clinical laboratories in Pennsylvania about selected characteristics of stool-testing practices, including the types of testing for routine stool specimen workup, use of transport media for stool samples, specimen-processing time, and specific testing practices for *Campylobacter* spp. The researchers suggest that variations in laboratory practices are a potential problem in surveillance of *Campylobacter* spp. in Pennsylvania and possibly elsewhere.

Newcomer, S.R., Steiner, J.F., and Bayliss, E.A. (2011). “Identifying subgroups of complex patients with cluster analysis.” (AHRQ grant HS15476). *American Journal of Managed Care* 17(8), pp. 3324-3332.

This study demonstrates how cluster analysis can be used to identify homogeneous groups of complex patients from a large heterogeneous population. This cluster analysis of a large group of individuals with many illnesses suggests that complex patients with high health care use represent a highly diverse group of individuals. The researchers suggest that data mining methods like cluster

analysis can be applied in other settings where electronic diagnosis data are readily available.

Rich, E.C., Lipson, Libersky, J., and others. (2012). “Organizing care for complex patients in the patient-centered medical home.” (AHRQ Contract No. 290-09-00019). *Annals of Family Medicine* 10, pp. 60-62. Reprints (AHRQ Publication No. 12-R076) are available from the Agency for Healthcare Research and Quality.*

This report summarizes strategies to help typical, smaller primary care practices transform into effective medical homes that appropriately serve patients with complex needs. It draws on the experience of five programs around the country that illustrate promising approaches for supporting and collaborating with smaller, independent primary care practices serving these challenging patients.

Santaguida, P., Oremus, M., Walker, K., and others. (2012). “Systematic review identifies important methodological flaws in stroke rehabilitation therapy primary studies: Review of reviews.” *Journal of Clinical Epidemiology* 65, pp. 358-367. Reprints (AHRQ Publication No. 12-R066) are available from the Agency for Healthcare Research and Quality.*

This review of 38 systematic reviews found most to be of high methodological quality. However, the authors’ evaluation of the primary studies within the reviews shows consistent problems with randomization, allocation concealment, and blinding. Most of the reviews did not evaluate

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baseline comparability, adverse events, and cointervention or contamination of the primary studies.

Schneeweiss, S., Seeger, J.D., and Smith, S.R. (2012). “Methods for developing and analyzing clinically rich data for patient-centered outcomes research: An overview.” (AHRQ Contract No. 290-05-0016).

Pharmacoepidemiology and Drug Safety 21(S2), pp. 1-5.

This article introduces a group of presentations drawn from an AHRQ-sponsored conference on research methods for comparative effectiveness research and patient-centered outcomes research. The aim of the conference was to explore methodological options for enhancing secondary data sources or prospectively designed registry studies and randomized trials that reflect routine care as much as possible.

Seida, J.C., Schoutne, J.R., Boylan, K., and others. (2012). “Antipsychotics for children and young adults: A comparative effectiveness review.” (AHRQ Contract No. 290-07-10021).

Pediatrics 129(3), pp. e771-e784.

This is the first comprehensive review comparing the effectiveness and safety across the range of antipsychotics for children and young adults. The researchers find that the evidence on the comparative benefits and harms of antipsychotics within and across classes is limited. Some second-generation antipsychotics (SGAs) have a better profile than other SGAs.

Sills, M.R., Fairclough, D., Ranade, D., and others. (2011).

“Emergency department crowding is associated with decreased quality of care for children.” (AHRQ grant HS16418). *Pediatric Emergency Care* 27(9), pp. 837-845.

This is the first study to associate emergency department (ED) crowding measures with quality of emergency care for children. It found that the key crowding factors are global and input measures, indicating that crowding is multifactorial and cannot be mitigated by ED providers simply working harder.

Singh, R., Anderson, D., McLean-Plunkett, E., and others. (2012).

“IT-enabled systems engineering approach to monitoring and reducing ADEs.” (AHRQ grant HS01702). *American Journal of Managed Care* 18(3), pp. 169-175.

This study pilot-tested a Web-based implementation of a self-empowering team resource management (TRM) intervention aimed at improving medication safety in primary care settings. The intervention sites showed a significant reduction in adverse drug events. The study suggests that the Web-based TRM has the potential to improve medication safety in busy primary care offices.

Sprung, J., Flick, R.P., Katusic, S.K. and others. (2012).

“Attention-deficit/hyperactivity disorder after early exposure to procedures requiring general anesthesia.” (AHRQ grant (HS29745). *Mayo Clinic Procedures* 87(2), pp. 120-129.

This study examined the effects of exposure to general anesthesia before the age of 2 on the incidence

of attention deficit/hyperactivity disorder (ADHD). The researchers found that children repeatedly exposed to procedures requiring general anesthesia before age 2 are at increased risk for the later development of ADHD.

Starmer, A.M., Spector, N.D., Srivastava, R., and others. (2012, March). “I-PASS, a mnemonic to standardize verbal handoffs.” (AHRQ grant HS19456).

Pediatrics 129(2), pp. 201-204.

The novel mnemonic, I-PASS, was developed from best handoff practices cited in the literature, resident feedback from a pilot study, and observations made by faculty of the handoff process. The easy-to-remember mnemonic was developed to ensure that key information is imparted during each patient handoff (I – illness severity; P – patient summary; A – action list for the next team; S – situation awareness and contingency plans; S – synthesis and “read-back” of the information). The multisite I-PASS study will test the effectiveness of the resident handoff bundle, including the I-PASS mnemonic, on medical errors in ten pediatric institutions.

Suri, P., Miyakoshi, A., Hunter, D.J., and others. (2011). “Does lumbar spinal degeneration

begin with the anterior structures? A study of the observed epidemiology in a community-based population.” (AHRQ grant HS19222). *BMC Musculoskeletal Disorders* 12, pp. 202-208.

This study examined whether the view that spinal degeneration

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begins with the anterior spinal structures is supported by epidemiologic observation. The researchers concluded that this view was accurate for a majority of individuals. However, some individuals exhibit atypical patterns of degeneration, beginning in the posterior joints. Increased age, body mass index, and female sex may be related to posterior degeneration in these individuals.

Taylor, B.D., Darville, T., Ferrell, R.E., and others. (2012, February). “Variants in toll-like receptor 1 and 4 genes are associated with *Chlamydia trachomatis* among women with pelvic inflammatory disease.” (AHRQ grant HS08358). *Journal of Infectious Diseases* 205(4), pp. 603-609.

In a sample of 205 black women with pelvic inflammatory disease (PID), those who carried a particular single-nucleotide polymorphism (SNP) in their TLR4 gene were 3.7 times more likely to harbor *Chlamydia* infection than those with the most common DNA sequence at that site. Similarly, women with PID who carried a particular SNP in their TLR1 gene were 2.8 times more likely to have a *Chlamydia* infection than women with the commonest sequence at that site.

Toledo, P. (2011, December). “What’s new in obstetric anesthesia? The 2011 Gerard W. Ostheimer Lecture.” (AHRQ grant HS20122). *Anesthesia & Analgesia* 113(6), pp. 1450-1456. This review summarizes the most relevant publications on obstetric anesthesia during 2010. It focuses

on innovations relevant to the initiation, management, and maintenance of labor analgesia; anesthetic management of cesarean deliveries; changes in obstetric management affecting the practice of obstetric anesthesiology; and advances in neonatal resuscitation.

Trogdon, J.G., Finkelstein, E.A., Feagan, C.W., and Cohen, J.W. (2012, January). “State- and payer-specific estimates of annual medical expenditures attributable to obesity,” *Obesity* 20(1), pp. 214-220. Reprints (AHRQ Publication No. 11-R063) are available from AHRQ.*

In the absence of obesity, annual medical expenditures would be between 7 and 11 percent lower across all States, concludes this study. The researchers calculated obesity-attributable fractions (OAF) of annual medical expenditures for each State. Across all payers, Colorado had the lowest OAF at 7 percent and West Virginia had the highest at 11 percent. In addition, West Virginia had the highest prevalence of obesity across all States (32.2 percent).

Vistnes, J., and Selden, T. (2011). “Premium growth and its effect on employer-sponsored insurance.” *International Journal of Health Care Finance and Economics* 11, pp. 55-81, 2011. Reprints (AHRQ Publication No. 11-R064) are available from AHRQ.*

Employers and employees alike face rising health care costs and insurance premiums. As premiums rise, employers often pass the costs onto their employees in the form of higher premium contributions and deductible levels, according to a new study. The findings of this

study demonstrate the financial burdens and challenges faced by employers in their attempts to provide and maintain coverage for employees and their families.

Wagner, J., and Halpern, S.D. (2012, March). “Deferred admission to the intensive care unit. Rationing critical care or expediting care transitions?” (AHRQ grant HS18406). *Archives of Internal Medicine* 172(6), pp. 474-476.

The authors comment on a study finding that in-hospital mortality was not affected by the availability of intensive care unit (ICU) beds. They point out that the influence of various factors on decisionmaking with respect to ICU admissions suggests that many ICU admissions are unnecessary, either because the patient is too well or too sick to benefit. It appears that clinicians can allocate beds efficiently by eliminating nonbeneficial admissions when scarcity forces them to do so.

Ward, M.M., Clabaugh G., Evans, T.C., and Herwaldt, L. (2011). “A successful, voluntary, multicomponent statewide effort to reduce health care-associated infections.” (AHRQ Contract No. 290-06-000021). *American Journal of Medical Quality* 27(1), pp. 67-73.

The authors describe a statewide multicomponent approach to reduce health care-associated infections that was implemented in Iowa. The Iowa Healthcare Collaborative (IHC) was successful in developing a reporting system, involving all Iowa hospitals in the 5 Million Lives Campaign, and significantly

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improving the rate of influenza immunization among health care workers. IHC's approach to health care improvement is a model for other States.

Williams, C.D., Whitley, B.M., Hoyo, C., and others. (2011). "A high ratio of dietary n-6/n-3 polyunsaturated fatty acids is associated with increased risk of prostate cancer." (AHRQ grant T32 HS00079). *Nutrition Research* 31, pp. 1-8.

This study found no significant link between specific dietary intake of omega 3 (n-3) and omega 6 (n-6) polyunsaturated fatty acids and prostate cancer risk. However, the highest dietary ratio of n-6/n-3 was associated with nearly 3.6 times more elevated risk of high-grade, prostate cancer. This ratio was not associated with low-grade prostate cancer.

Willis, C.D., Elshaug, A.G., Milverton, J.L., and others. (2011). "Diagnostic performance of serum cobalamin tests: A systematic review and meta-analysis." *Pathology* 43(5), pp. 473-481. Reprints (AHRQ Publication No. 11-R067) are available from the Agency for Healthcare Research and Quality.*

Vitamin B12 or serum cobalamin (cbl) deficiency is a widely prevalent, potentially debilitating, yet often treatable condition. A blood test of cbl has remained the most commonly employed tool to investigate suspected B12 deficiencies. However, false results from this test are common. An international team of researchers, who reviewed 54 studies on the

diagnostic accuracy for serum cbl tests across patient subgroups, found that serum cbl tests rated poorly.

Witt W.P., Wisk L.E., Cheng E.R., and others. (2011). "Poor prepregnancy and antepartum mental health predicts postpartum mental health problems among U.S. women: A nationally representative population-based study." (AHRQ grant T32 HS00083). *Women's Health Issues* 21(4), pp. 304-313.

Researchers found that nearly a tenth (9.5 percent) of the women studied reported experiencing mental health problems after giving birth, and women who had poor prepregnancy mental health were twice as likely as those with good prepregnancy mental health to have poor postpartum mental health. The odds for poor postpartum mental health were 11-fold higher for women reporting poor, as opposed to good, mental health during pregnancy.

Yoder, J.C., Staisunas, P.G., Meltzer, D.O., and others. (2012). "Noise and sleep among adult medical inpatients: Far from a quiet night." (AHRQ grant HS16967). *Archives of Internal Medicine* 172(1), pp. 68-69.

This study measure noised and sleep duration in adult medical ward patients. It found that hospital noise levels in patient rooms are markedly higher than recommended levels and associated with significant sleep loss among hospitalized patients. The most common sources of noise disruption reported by patients: staff conversations, roommates, alarms, intercoms, and pagers.

Yu, Z., and Liu, L. (2011). "A joint model of recurrent events and a terminal event with a nonparametric covariate function." (AHRQ grant HS16543). *Statistics in Medicine* 30, pp. 2683-2695.

This work further extends the flexibility of current joint models by incorporating into these models semiparametric components for the potential nonlinear predictors. The simulation study shows that the proposed estimates are generally unbiased for parametric coefficients and nonlinear function. The inference based on the proposed covariate is close to nominal level too. In summary, the estimation and inference procedures were shown to be valid.

Zimmerman, S., Love, K., Sloan, P.D., and others. (2011). "Medication administration errors in assisted living: Scope, characteristics, and the importance of staff training." (AHRQ grant HS16171). *Journal of the American Geriatrics Society* 59(6), pp. 1060-1068.

More than 75 percent of the residents of assisted living facilities, many with dementia or cognitive impairment, need assistance with taking medications. Unlike nursing homes, which require nurses to administer medications, assisted living facilities also use medication assistants and other staff for this job. This study reveals that medication aides do not make more medication errors than nurses. However, personnel who are not nurses or medication aides commit more errors than nurses and medication aides.

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Zuvekas, S.H. (2011). “The effects of recall length and reporting aids on household reporting of health care events in the Medical Expenditure Panel Survey.” *Journal of Economic and*

Social Measurement 36, pp. 321-343.

Consistent with his previous study of Medicare beneficiaries in the Medical Expenditure Panel Survey (MEPS), the researcher found that household respondents imperfectly recall emergency department and

office-based visits. The findings suggest that the length of recall period is an important factor in determining the level of recall. As the recall period increased, the agreement between MEP’s respondents reports of use and Medicare claims widened. ■

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