



RESEARCH ACTIVITIES

U.S. Department of Health and Human Services | No. 377, January 2012

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Experts call for integrating mental health into primary care

A young woman's diagnosis of infertility leads her to commit suicide a short time later much to the horror of her caring and well-intentioned doctor, who never saw it coming. He thinks it may have been avoided if there had been a mental health professional on his staff. This is one of many stories recounted in a Mental Health Forum and Town Hall held by the Agency for Healthcare Research and Quality (AHRQ) at its September annual meeting. A large panel of experts discussed the importance of integrating mental

health professionals into primary care practices. The goal of integration is to reduce the fragmented and inadequate care of mental health problems in primary care patients.

Primary care clinicians are not fully trained to diagnose or treat mental health problems, yet people with these conditions typically are seen in primary care more than any other setting. To make matters worse, referrals to community-based mental health providers are a persistent problem. "Studies show that well over half of primary care docs are not successful in referring patients to mental health professionals in the community for a variety of reasons," says Charlotte Mullican, M.P.H., senior advisor for mental health research at AHRQ. "This could be due to insurance and payment barriers, limited availability of mental health providers and other access problems, as well as stigma."

The result? Depression and other mental health problems are undiagnosed or inadequately treated, inappropriate psychotropic drugs are prescribed with little followup, and the contribution of these mental health problems to chronic disease symptoms is often overlooked.



"Melancholia," a 16th century engraving by Albrecht Dürer from the National Library of Medicine collection.

While family medicine doctors get some training in mental health as residents, other primary care doctors may not, according to Frank DeGruy, M.D., chairman of the Department of Family Medicine at the University of Colorado. He told *Research Activities*, "The majority of family docs will tell you that they wish for more behavioral health expertise in their practice.... The training in mental health for primary care physicians is very superficial and it's not very deep.... Family docs don't want to spend the time, they don't want to deal with anything but the most straightforward mental health

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From the Director



for Healthcare Research and Quality (AHRQ) supports diverse projects that advance the primary care

patient-centered medical home (PCMH) that comprehensively treats the whole person. However, the PCMH will not achieve its goals of comprehensive and quality care, unless and until it embraces and addresses patients' mental health needs. Hence, AHRQ strongly supports projects that foster integration of mental health services in primary care.

We held the Mental Health Forum and Town Hall at the AHRQ annual meeting this September to fully explore the topic. Nine national leaders in health care provided experiences and insights about the

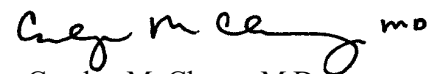
ical/community, financing/policy, and research aspects of integrating mental health into primary care. The Forum was also set up to be as interactive as possible, so that health care professionals, researchers, policymakers, the public, and other stakeholders nationwide could participate in the discussion via a live Twitter feed. The attending audience also actively participated with comments and questions.

The result? A rich exchange of information and experiences that elevated the discussion with a candid appraisal of barriers to integration, promising models of integration, and suggestions for research to improve implementation of integrated care.

AHRQ has developed an Academy for Integrating Mental Health and Primary Care (<http://prezi.com/pdwleusvlceo/the-ahrq-academy-for-integrating-mental-health-and->

primary-care) to function as both a coordinating center and a national resource for people committed to delivering comprehensive, integrated health care. The goal is a centralized and respected resource to provide the tools and materials necessary to advance the field of integration: We want to promote a collaborative environment that fosters dialogue among leaders who treat mental/substance use disorders and provide primary care.

Once mental health care is part of care in a person's "medical home," the less the stigma of mental health problems and greater willingness of people to seek treatment. The result will be truly patient-centered care that treats the whole patient.


Carolyn M. Clancy, M.D.

Research Activities is a digest of research findings that have been produced with support from the Agency for Healthcare Research and Quality. *Research Activities* is published by AHRQ's Office of Communications and Knowledge Transfer. The information in *Research Activities* is intended to contribute to the policymaking process, not to make policy. The views expressed herein do not necessarily represent the views or policies of the Agency for Healthcare Research and Quality, the Public Health Service, or the Department of Health and Human Services. For further information, contact:

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problems, and they don't know what to do if anything goes wrong. That's pretty much our story." What many primary care physicians would like, he says, and what patients would benefit from, is the help of mental health professionals.

Barriers to integration

Yet few mental health providers are trained to work in the primary care setting and neither primary care nor mental health physicians are trained to work as a primary care team. "These workforce and culture issues are a barrier to integration of mental health in primary care," adds Mullican. "Problems with reimbursement of mental health services in the primary care setting is another major barrier to integration. Unfortunately, the bottom line is inadequate care for patients with mental health problems. We need to change that."

Problems with reimbursement of mental health services in the primary care setting is another major barrier to integration.

The current system is fragmented and doesn't promulgate successful models of team-based care, asserts Benjamin Miller, Psy.D., assistant professor in the Department of Family Medicine at the University of Colorado Denver School of Medicine.

Miller envisions the future role of clinical psychologists and other mental health professionals like him as embedded in a primary care practice collaborating with the

other primary care providers to provide comprehensive care to the patient. These providers would be seamlessly integrated in one primary care practice and regularly see patients for 5, 7, or 15 minutes for a host of mental health issues, many of which may be affecting their chronic health problems. But the way the current health system is set up, integration of the mental health professional in primary care is not financially sustainable. That's because mental health and "physical" health are paid out of different pots of money.

"What happens if I go into the room to see the patient with the physician? asks Miller. "Who is going to pay for that? That's where sustainability starts to rear its ugly head. What happens when I am the one who starts to do an intervention around mental health or health behaviors? There will not necessarily be a billable code to classify what I just did. It's all in the codes. The codes force you to do what they value versus what the patient sitting in front of you is telling you they value."

There is growing recognition that many health problems are affected by mental health problems. Day in and day out, primary care clinicians see a significant proportion of common symptoms such as fatigue, abdominal pain, and back pain for which they don't find a cause. "If we understood people's psychosocial stressors, their adverse childhood experience, and we were better at identifying common mental and behavioral conditions such as depression, anxiety, and substance use, we'd understand a lot more about what's driving those symptoms," noted Neil Korsen, M.D., medical director at MaineHealth, at the Forum. Embedding mental health

professionals in primary care could enhance a more patient-centered approach to care.

Promising models of integrated care

The Forum panelists all agreed that payment drives practice and how services are reimbursed will have to be changed if mental health is to be integrated in primary care. That's what has happened in Maine and it's making a difference.

In the State of Maine, to participate in the patient-centered medical home (PCMH) pilot project, a primary care practice has to integrate mental health or behavioral health services. "We've been working hard on improving care for diabetes, care for people with heart disease, and you can't do that if you're not addressing the mental health components," says Korsen. "Primary care clinicians can do some of that work, but we need help. Increasingly, health care is a team sport and we need help from people who have more expertise.... So in Maine, the patient-centered medical home equals integration."

Increasingly, health care is a team sport and we need help from people who have more expertise.

Maine is a good example of how changes in reimbursement start to change how care is delivered, explains Miller. "Look at the payment structure of the PCMH. Let's say you get \$7 per patient per month in the PCMH and then you get a financial incentive for integrating mental health care by

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getting paid more per patient per month. This may be the money you need to offset the cost of bringing in the mental health provider to take care of these patients.”

The Cherokee Health Systems in Tennessee began integrating mental health and primary care as early as 1984. Its largest payer is Medicaid, comprising 42 percent of visits. Cherokee negotiates a payment stream that covers all the professional activities that comprise the integrated care model. This includes consultation among providers (including mental health providers) and care coordination, not just face-to-face encounters with the patient.

Cherokee’s clinical model uses an embedded licensed behavioral health provider (typically a clinical psychologist or clinical social worker) on the primary care team, who partners with the primary care doctor to help patients manage stress, depression, or lifestyle changes required to better manage their medical condition. The benefits are reduced emergency room use, fewer inpatient admissions, reduced specialty referrals, enhanced patient satisfaction, increased primary care use, and improved patient outcomes, notes Parinda Khatri, Ph.D., director of integrated care at Cherokee Health Systems.

Every day Khatri sees patients who are much better off with integrated care. She cites the example of a woman in her early 40s who was hospitalized in an inpatient psychiatric unit due to altered mental status and discharged with a referral to a psychiatrist. The woman showed up at Khatri’s clinic

on a very high dose of the antipsychotic Seroquel®, an antidepressant, and another medication for sleep.

Upon Khatri’s initial assessment, she realized that this was not someone with a thought disorder. So she did a full assessment and found out that the woman’s calcium levels were critically low and that the woman was not taking any of her calcium tablets, which she refused to take because they were big like “horse pills.”

“Since low calcium levels can cause altered mental status, this triggered her hospitalization and medications,” Khatri told *Research Activities*. “If it had not been for our comprehensive assessment, the woman could have easily seen a psychiatrist, been on three or four psychotropic medications, which can cause weight gain and diabetes, not shown any improvement, and probably gone back to the hospital inpatient psychiatric unit, because her calcium levels would not have gotten better.”

Instead Khatri talked to the woman and her daughter about self management and adherence to her medical regimen. The result? The woman normalized her calcium level, was off all her psychotropic medications, and didn’t need to see a psychiatrist.

Integrated care saves money

Data from Cherokee and other systems suggest that integrating primary care and mental health care saves 20 percent in health care costs. This point was underscored at the Forum by Stephen Melek, principal and consulting actuary at Milliman, Inc. Melek worked with a health plan that believed

integration was valuable and developed an integrated care management approach. Medical and behavioral providers and health coaches advised by telephone an insured population of about 15,000 Medicare patients. “Long story short, a lot of disbelievers up front—\$16 million dollars spent on the integration initiative,” said Melek. “Yet, 15,000 patients and one year later they saved \$40 million dollars on avoided health costs. They are growing the program. This can work. You just need more and more evidence and innovators to get out there, do it, and spread the results.”

Yet, 15,000 patients and one year later they saved \$40 million dollars on avoided health costs.

Retraining professionals

To achieve integrated care, mental health and primary care providers will have to be retrained and rethink their roles to some extent, notes Miller. “If I’m used to seeing patients for 50 minutes and doing traditional mental health visits, in primary care you’re seeing patients for anywhere between 5 and 30 minutes and you must learn to communicate a very complicated patient to a primary care physician in 30 seconds or less. That requires new training that you are not going to get in graduate school.” Programs like Cherokee Health Systems use internships to train psychologists for this new role. Postdoctoral fellowships in primary care are also available at places like the University of Colorado.

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Research agenda

Many of the panelists agreed there is much evidence to support the integration of mental health into primary care, even though it is not clear what exactly about integration makes it work and how best to implement it. DeGruy summed it up this way for *Research Activities*. “The main area of research that we need to undertake now is learning

how to actually implement integration. What does a team look like? Is it better if the case manager knows how to do motivational interviewing? Should she manage many problems or just a few problems? There are a lot of details about what specifically happens in the practice that need to be researched.” ■ *GSM*

Editor’s note: You can access AHRQ’s recently published research agenda on integrating

primary care and mental health care at www.ahrq.gov/research/collaborativecare/collab1.htm, and the AHRQ Academy for Integrating Mental Health and Primary Care at <http://prezi.com/pdwleusvlceo/the-ahrq-academy-for-integrating-mental-health-and-primary-care>. You can access the patient-centered medical home page at http://www.pcmh.ahrq.gov/portal/server.pt/community/pcmh__home/1483.

Primary Care

Primary care coordination is more difficult for patients who see many specialists

A patient’s high use of specialty care may strain the ability of primary care clinicians to coordinate care effectively, suggests a new study. It found a positive association between primary care continuity and care coordination among patients who had nine or fewer specialty care visits in a year. An increase of 1 standard deviation in continuity measure ranging from 0 to 1 was associated with an increase of 2.71 in patient-reported coordination of care. However, this relationship was not observed in patients with 10 or more specialty care visits in a year.

The researchers conclude that visit-based continuity in the primary care setting is not sufficient to facilitate care coordination for complex patients with high specialty care use. They call for more research on protocols that allow for appropriate specialty referrals, but do not diminish the ability of the primary care physician to manage overall patient care. Examples

might include formal service agreements, electronic referrals, nurse support, and adequate visit time.

Findings were based on utilization data and responses to questionnaires mailed to Medicare enrollees receiving care from Group Health, an integrated health care delivery system. All of the 2,051 respondents in the final analysis were age 65 or older, had at least one chronic health condition, and had three or more primary care visits during the study year. The study was supported in part by the Agency for Healthcare Research and Quality (HS13853).

See “Patient-reported care coordination: Associations with primary care continuity and specialty care use,” by David T. Liss, M.S., Jessica Chubak, Ph.D., Melissa L. Anderson, M.S., and others in the July/August 2011 *Annals of Family Medicine* 9(4), pp. 323-329. ■ *KB*

Accessible services in primary care practices promote preventive health screenings and care

The patient-centered medical home (PCMH) is a concept aimed at improving the quality of primary care. In order to qualify as a PCMH, primary care practices embrace several principles that promote the delivery of preventive services. Although still evolving, one of these important principles is continuity with a personal provider. Another is the availability and accessibility of services, such as getting appointments and telephone advice—called first-contact access. A new study suggests that first-contact accessibility in addition to provider continuity promotes the receipt of preventive services, such as cholesterol screening and prostate examinations.

Researchers collected data on 5,507 insured adults in Wisconsin who had a usual physician they relied upon for medical care. All had participated in the 2003 to 2006 round of the Wisconsin

Longitudinal Study. To determine first-contact accessibility, participants could rate eight items from excellent to poor. These included things such as office hours, location of the doctor's office, waiting room times, ability to make phone appointments, amount of time spent with the doctor, and how easy it was to receive advice over the telephone.

Among those studied, 18 percent had high ratings for their first-contact accessibility in addition to continuity of care with their physician. In the past year, 83 percent of eligible women received a mammogram, 78 percent of men had a prostate examination, and 63 percent of participants had a flu shot. In addition, the vast majority (90 percent) received a cholesterol test. Adding first-contact access to existing continuity of care with a primary care physician boosted the likelihood of receiving preventive

services compared to just having continuity of care alone. Even though this study population already had rates of preventive services higher than national rates, the addition of first-contact accessibility increased the odds of receiving flu shots, prostate exams, and cholesterol tests. Additional studies are needed to determine how different PCMH principles impact care outcomes. The study was supported in part by the Agency for Healthcare Research and Quality (HS16181).

See "Preventive service gains from first contact access in the primary care home," by Nancy Pandhi, M.D., M.P.H., Jennifer E. DeVoe, M.D., D.Phil., Jessica R. Schumacher, Ph.D., and others in the July/August 2011 *Journal of the American Board of Family Medicine* 24(4), pp. 351-359. ■ KB

Residents should document sexual history during health care maintenance visits for older, asymptomatic adults

Clinicians need an accurate sexual history of patients in order to properly screen them for sexually transmitted infections (STIs) and to counsel them about safer sex, family planning, and sexual dysfunction. Yet, a new study shows that only about one-fourth of internal medicine residents documented the sexual history of patients during a routine health maintenance visit. Documentation was particularly low for older, asymptomatic patients.

The researchers reviewed charts on health care maintenance visits conducted by internal medicine residents at two outpatient clinics affiliated with an academic medical center. These included reviews of 360 clinic notes in charts written by 26 residents. Only a quarter of all charts (25 percent) documented at least one component of a patient's sexual history—a mean percent by resident of 23 percent. Lack of documentation of sexual history was associated with patients 45 years and older compared with patients who

were 18 to 25 years of age. When compared to patients documented as married, those with no documented marital status had a lower odds of having a documented sexual history.

Notably, Pap smears and prostate exams were not associated with documentation. Visits with patients with specific symptoms and complaints did have higher odds of having a documented sexual history. These symptoms include genitourinary or abdominal complaints, STI concerns, and the use of contraception. The study was supported in part by the Agency for Healthcare Research and Quality (HS19464).

See "Patient, resident physician, and visit factors associated with documentation of sexual history in the outpatient setting," by Danielle F. Loeb, M.D., Rita S. Lee, M.D., Ingrid A. Binswanger, M.D., and others in the *Journal of General Internal Medicine* 26(8), pp. 887-893, 2011. ■ KB

Health Care Costs and Financing

Bundled payments for heart failure disease management programs can save money while reducing readmissions

Bundling payments for all related care within 30 days after an initial hospitalization, a cost-saving mechanism included in the recent Affordable Care Act, can reduce the cost of treatment and decrease readmissions for heart failure (HF), concludes a new study. This is good news, since HF is the most common reason for hospitalization among the elderly in the United States. Eric D. Peterson, M.D., M.P.H., and his colleagues at the Duke Clinical Research Institute in Durham, N.C., analyzed the impact of bundling payments for Medicare beneficiaries with HF for 30 days (proposed by the Center for Medicare & Medicaid Services to begin in 2013) or 180 days after hospitalization.

With a known 30-day readmission rate of 22.9 percent (median inpatient cost of \$9,923 per readmitted patient) and a 180-day readmission rate of 54.1 percent

(median cost of \$13,463 per readmitted patient), the researchers found that break-even cost for a 30-day disease management (DM) program that reduced readmissions by 21 percent was \$477, or \$1,530 for an 180-day DM program.

Dr. Peterson and his colleagues noted that a small number of expensive cases skewed the distribution of 30-day costs for readmitted patients, resulting in an average cost of \$17,122. If this was used as the bundled payment, four out of five DM programs that underwent randomized trials produced cost savings, ranging from \$96–\$875 per patient, while the fifth produced an additional cost of \$52 per patient. The researchers concluded that if Medicare increased the bundling payments to 180 days, DM programs would be expected to yield even greater savings. Their findings were based on a decision

model to assess the cost savings potential of enhanced DM care versus routine care. The likelihood of readmission of patients within 30 or 180 days was taken from previous analyses of a national sample of Medicare beneficiaries hospitalized for HF, and the costs of five DM programs came from published studies. The researchers used cost data for all Medicare beneficiaries hospitalized for HF between January 2001 and December 2004. The study was funded in part by the Agency for Healthcare Research and Quality (HS16964).

More details are in “Do heart failure disease management programs make financial sense under a bundled payment system?” by Zubin J. Eapen, M.D., Shelby D. Reed, Ph.D., Lesley H. Curtis, Ph.D., and others in the May 2011 *American Heart Journal* 161(5), pp. 916-922. ■ DIL

Medicaid pay-for-performance program in Massachusetts fails to improve quality during first-year

In 2008, the State of Massachusetts began a pay-for-performance initiative for hospitals under its Medicaid program (MassHealth). The goal was to improve quality care for patients with pneumonia and to prevent infections after surgery. Despite best efforts, after 1 year pay-for-performance did little to improve hospital quality for the two outcomes measured, concludes a new study. The pay-for-performance program targeted MassHealth patients enrolled in plans that directly bill the State Medicaid Program. Hospitals were able to submit data electronically to MassHealth. If quality measures were met, hospitals received incentive payments averaging \$40,000 per hospital. Examples of these measures for pneumonia care included the timing

and selection of antibiotics as well as smoking-cessation counseling. To prevent surgical infections, measures included the selection and preventive use of antibiotics during and 24 hours after surgery.

Researchers compared care quality data from 2004 to 2009 submitted by 62 hospitals in Massachusetts. They also looked at data from 3,676 hospitals in other States. They found no evidence that the pay-for-performance program improved the quality of care for patients with pneumonia or prevented patients from getting surgical infections. When compared to hospitals in other States, those in Massachusetts had similar initial quality for

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Medicaid pay-for-performance

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pneumonia that improved at the same rate over time, regardless of financial incentives in Massachusetts. For surgical infection prevention, the State had quality levels 12 percentage points higher in 2004 compared with other State hospitals. However, by 2009, after the pay-for-performance program had been in place for a year, these levels narrowed to being nearly equal to other States. The researchers offer several possible explanations as to why the program didn't improve

quality. These included financial incentives being too small and hospitals being overwhelmed with other reporting requirements. The study was supported in part by the Agency for Healthcare Research and Quality (HS18546).

See "The effect of the MassHealth hospital pay-for-performance program on quality," by Andrew M. Ryan, M.A., Ph.D. and Jan Blustein, M.D., Ph.D., in the June 2011 *HSR: Health Services Research* 46(3), pp. 712-728. ■ KB

Elderly/Long-Term Care

State regulation of care quality is costly to nursing homes

Nursing homes are a highly regulated industry in the United States. They must comply with Federal Medicare and Medicaid standards, as well as those imposed by individual States. Maintaining compliance with all of these regulations imposes costs on nursing homes, concludes a new study. William D. Spector, Ph.D., a researcher at the Agency for Healthcare Research and Quality (AHRQ), and Dana B. Mukamel Ph.D., and Charlene Harrington R.N., Ph.D., of the University of California, and other coinvestigators found that the more stringent the regulatory requirements, the higher the costs nursing homes face.

They collected data on 11,168 free-standing U.S. nursing homes

between 2004 and 2006. Medicare cost reports yielded information on total expenditures and wages. The researchers also conducted a survey of each State's Certification and Licensing Office for information on nursing home quality deficiencies and the associated financial penalties. From these and other data, they calculated for each State a regulatory stringency index. Higher index values indicate stricter State regulation of quality.

The researchers found that nursing homes located in States with more stringent regulation of quality had higher costs. The incremental costs of one standard deviation increase in regulation stringency resulted in \$78,467 in costs (in 2006 dollars). This translates into

1.1% of the yearly expenditures for an average nursing home. The researchers caution that the findings should not deter continuing attempts to regulate quality and note that research underway is aimed at estimating the impact of State regulation on quality. Estimates of both the costs and benefits of regulation are needed to assess the value of regulation.

More details are in "Does state regulation of quality impose costs on nursing homes?" by Dr. Mukamel, Yue Li, Ph.D., Dr. Harrington, Dr. Spector, and others in the June 2011 *Medical Care* 49(6), pp. 529-534. Reprints (AHRQ Publication No. 11-R062) are available from AHRQ.* ■ KB

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.

Clinical informatics monitoring tool helps reduce adverse drug events in nursing home settings

In nursing homes, 40 percent of residents use at least nine different medications, and adverse drug events (ADEs) are common. Yet many ADEs are preventable if adequate medication monitoring is performed. The use of the Geriatric Risk Assessment MedGuide (GRAM), a clinical informatics tool that implements prospective monitoring plans, markedly reduced the risk of potential delirium in newly admitted and long-stay nursing home residents, according to a new study. Potential hospitalizations and deaths due to ADEs and mortality were also reduced, but the effect was weaker in longer-stay residents. There was no effect of the monitoring system on the incidence of falls.

Kate L. Lapane, Ph.D., of Virginia Commonwealth University, worked with Janice Feinberg, Pharm.D., J.D., of the American Society of Consultant Pharmacists Foundation that developed the tool, and colleagues to test the GRAM software in 26 nursing homes during 2003-2004. This technology was designed to assist health care professionals with expertise in geriatric pharmacotherapy in problem identification when evaluating complex medication regimens of older

adults. It was used to engage consultant pharmacists and nursing staff to identify residents at risk for delirium and falls, implement proactive medication monitoring plans as appropriate, and provide reports to assist consultant pharmacists in conducting the medication regimen review.

The researchers point out that systems using information technology to improve the monitoring stage of the medication-use process are sparse. How to pay for such services has yet to be determined, because information technology adoption in nursing homes has been slow. This study was supported in part by the Agency for Healthcare Research and Quality (HS11835).

See "Effect of a pharmacist-led multicomponent intervention focusing on the medication monitoring phase to prevent potential adverse drug events in nursing homes," by Dr. Lapane, Carmel M. Hughes, Ph.D., Lori A. Daiello, Pharm.D., and others in the *Journal of the American Geriatric Society* 59, pp. 1238-1245, 2011. ■ MWS

Patient Safety and Quality

Interdisciplinary team training with in-situ simulation helps reduce adverse events in obstetric patients

Labor and delivery units in hospitals are challenging, high-stress environments where birth trauma is a low-frequency but high-severity event. The most common cause of these events is communication failure. A new study shows that interdisciplinary team training that focuses on cognitive and interpersonal skills, along with simulated scenarios, can have a significant and persistent improvement on perinatal morbidity.

The researchers looked at deliveries at three community hospitals that accounted for approximately 1,800

deliveries each year. One hospital served as the usual-care control. A second hospital received the TeamSTEPPS didactic training program. Finally, the third hospital received intensive training that combined TeamSTEPPS with in-situ simulation training exercises. TeamSTEPPS consists of a curriculum that focuses on leadership, situation monitoring, mutual support, and communication. The in-situ training consisted of real-life scenarios covering uterine rupture, placental abruption, and post-partum hemorrhage.

Only the TeamSTEPPS-simulation program resulted in a 37 percent improvement in perinatal morbidity. No significant differences were found between the control hospital and the hospital receiving just the didactic curriculum training. There were no significant improvements on culture of safety perceptions as a result of the trainings. However, perceptions of safety were already high at all three hospitals prior to the study. The study was supported in part by the Agency for

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Team training

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Healthcare Research and Quality (HS16728).

See “Didactic and simulation nontechnical skills team training to improve perinatal patient outcomes

in a community hospital,” by William Riley, Ph.D., Stanley Davis, M.D., Kristi Miller, R.N., M.S., and others in the August 2011 issue of *The Joint Commission Journal on Quality and Patient Safety* 37(8), pp. 357-364. ■ KB

No greater risk or mortality observed for endoscopic vein harvesting for coronary bypass surgery

During coronary artery bypass surgery, a vein is taken from the leg to replace blocked arteries in the heart. Today, the majority of vein harvesting is done endoscopically rather than using an open surgical procedure. By using this minimally invasive approach, the surgeon can reduce pain and infection. Recently, some experts have questioned whether this approach to leg vein harvesting may expose patients to the risk of vein-graft failure, death, heart attack, and repeated blockages after surgery. A new study that compared the two techniques over a 4-year period found no increase in harm to patients who underwent endoscopic vein harvesting.

Between 2001 and 2004, 8,542 patients underwent coronary artery bypass grafting procedures in northern New England. More than half (52.5 percent) had endoscopic vein harvesting. Over the study period, endoscopic vein harvesting grew in popularity, from 34 percent in 2001 to 75 percent in 2004. Patients receiving endoscopic vein harvesting were more likely

to be male, have vascular disease, and have two-vessel disease. They were less likely to have a history of a heart attack or congestive heart failure.

In terms of hospital outcomes, open surgical harvesting was associated with an increase in postoperative leg wound infections. On the other hand, endoscopic harvesting resulted in an increase in patients being returned to the operating room to correct postoperative bleeding. With respect to long-term outcomes, there was a significant reduction in long-term mortality with endoscopic harvesting. The relatively small increased risk of repeat revascularization over four years with endoscopic harvesting was non-significant. The study was supported in part by the Agency for Healthcare Research and Quality (HS15663).

See “Long-term outcomes of endoscopic vein harvesting after coronary artery bypass grafting,” by Lawrence J. Dacey, M.D., John H., Braxton, Jr., M.D., Robert S. Kramer, M.D., and others in the January 18, 2011 *Circulation* 123(2), pp. 147-153. ■ KB

Duplicate medication order errors increase after computerized provider order entry is implemented

Electronic health records that include computerized provider order entry (CPOE) with clinical decision support (CDS) have been shown to improve areas of patient safety, such as reducing duplicate orders and other medication errors. However, some studies have noted continuing or even increasing medication errors even after implementation of CPOE. A new study found that factors contributing to an increase in duplicate medication order errors after CPOE implementation were

related to the CPOE technology and/or CDS design, organizational factors, user practices, tasks, and the environment.

The study focused on the implementation of CPOE with duplicate medication order alerts in a 400-bed hospital. Through chart reviews, computer-generated reports, provider alerts, and staff reports, the researchers were able to identify an increase in duplicate orders in two intensive care units, from 1.16 errors/100 patient-days pre-implementation to 4.16

errors/100 patient-days post-implementation.

Most of the orders involved identical orders or same-medication orders. Several contributing factors were identified. On hospital rounds, two orders were often placed within minutes by different members of the rounding team, who were unaware of each other's activity. Shift changes were also associated with duplicate orders. Information-display issues, included confusing

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Duplicate medication orders

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alerts and difficulty reviewing existing orders, were also associated with duplicate orders.

The researchers offer eight approaches to reducing duplicate medication ordering errors. All of them relate to supporting

communication and teamwork among CPOE users or to improving usability and functionality of CPOE systems. The study was supported in part by the Agency for Healthcare Research and Quality (HS15274 and HS17014).

See “Factors contributing to an increase in duplicate medication

order errors after CPOE implementation,” by Tosha B. Wetterneck, M.D., James M. Walker, M.D., Mary Ann Blosky, M.S., R.N., and others in the *Journal of the American Medical Informatics Association* 18, pp. 774-782, 2011. ■ KB

Medical residents can use quality improvement methods to promote obesity screening

Although traditionally excluded from quality improvement (QI) initiatives, more and more medical residents are being trained in the use of QI methods to analyze their practice. A new study found that a medical resident QI initiative to improve obesity screening in a primary care clinic not only increased the documentation of body mass index (BMI) in the patients’ charts, but also promoted lifestyle counseling efforts.

After undergoing QI training, second-year residents created ways to streamline the way BMI documentation was collected. They also developed a variety of educational materials to be used as part of the screening initiative. Only 4 percent of patients seen in the clinic were at the BMI goal of less than 25. Despite the fact that many of the patients were obese, resident audits of charts revealed little obesity screening or calculation of BMI prior to the QI intervention.

During the initial 2 weeks of the intervention, documentation of height, weight, and BMI increased dramatically. BMI documentation declined from 79 percent after 2 weeks to 41 percent at 6 months. Nevertheless, at the end of 1 year, BMI documentation rates remained significantly higher (43 percent) compared to before the initiative (4 percent). Patients who had their BMI recorded by the resident were also more likely to receive lifestyle modification counseling (34 percent) than patients who didn’t get their BMI documented in the chart (14 percent). BMI documentation, however, did not promote referral to a dietitian. The study was supported in part by the Agency for Healthcare Research and Quality (T32 HS00084).

See “A resident-led quality improvement initiative to improve obesity screening,” by Neda Laiteerapong, M.D., Chris E. Keh, M.D., Keith B. Naylor, M.D., and others in the *American Journal of Medical Quality* 26, pp. 315-322, 2011. ■ KB

Measuring quality of care for middle ear infection has many pitfalls

Using data from multiple pediatric practices to measure the quality of care for painful inner ear infections (otitis media with effusion [OME]), uncovers a number of problems that may require changes in the quality measures or how they are calculated, according to a new study. OME is common, resulting in an estimated 2.2 million episodes and \$4.0 billion in costs each year.

Data from 19 participating practices in 10 States across the United States revealed suboptimal average percentages for proper diagnosis of youngsters seen for possible OME (33 percent use of pneumatic otoscopy or tympanometry to diagnose OME) and proper evaluation (29 percent of patients meeting current

guidelines set for hearing evaluation).

This contrasted with the high average percentages for avoidance of inappropriate use of three classes of medications (97 percent for avoiding inappropriate use of antihistamines or decongestants, 87 percent for avoiding inappropriate use of systemic antibiotics, and 95

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Middle ear infections

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percent for avoiding inappropriate use of systemic corticosteroids). However, further analysis of the antibiotic score suggested the true value was likely much lower.

Among 375 charts reviewed for use of antibiotics, 131 (35 percent) patients with a diagnosis of OME were taking antibiotics concurrently. However, 94 (70 percent) of these patients had reasons documenting their use of

antibiotics, 15 legitimately, while the rest represented either use of a wrong diagnostic code or probable inappropriate antibiotic use. An additional 37 patients had no documented reason for being prescribed an antibiotic.

The findings were based on chart data from pediatric practices belonging to either of two primary care research networks. The study was funded in part by the Agency for Healthcare Research and Quality (HS16957) to the

Cincinnati Center for Education and Research on Therapeutics (CERT). For more information on the CERTs program, visit www.certs.hhs.gov.

More details are in “Quality measures for the care of children with otitis media with effusion,” by Carole Lannon, M.D., M.P.H., Laura E. Peterson, B.S.N., M.S., and Anthony Goudie, Ph.D., in the June 2011 *Pediatrics* 127(6), pp. e1490-e1497. ■ *DIL*

California nurse staffing mandate did not reduce nursing workforce skill levels

In 1999, California passed legislation requiring minimum nurse-to-patient staffing ratios for hospitals. The same law allowed up to 50 percent of the nursing staff to be licensed vocational nurses, as opposed to registered nurses who have a broader scope of practice. A new study found that California did not reduce the nurse workforce skill level as had been feared; instead, average skill levels increased, in keeping with a national trend.

The staffing mandate resulted in roughly an additional half-hour of nursing per adjusted patient day beyond what would have been expected in the absence of the policy. Although hospitals in other States also experienced increases in nurse staffing, the rate of increase was steeper in California (from 6.44 hours in 2004 to 7.11 hours in 2008, compared to 5.75 hours to 6.22 hours in comparison hospitals in the other States).

A team of researchers led by Matthew D. McHugh, Ph.D., of the University of Pennsylvania, compared the changes in staffing in California to Texas, New York, Florida, Pennsylvania, and the nation as a whole between 1999 and 2008.

California remains the only State to have implemented minimum nurse staffing ratios. For general medical and surgical units, minimum staffing is set at one nurse for five patients.

Whether the cost of increased staffing provides adequate returns compared to other quality-improvement initiatives remains to be determined. Other research following the implementation of California's staffing mandate has shown that the increased staffing in California hospitals was associated with better outcomes compared with patients treated in hospitals in other States. This study was supported by the Agency for Healthcare Research and Quality (HS17551).

See “Contradicting fears, California's nurse-to-patient mandate did not reduce the skill level of the nursing workforce in hospitals,” by Dr. McHugh, Lesly A. Kelly, Ph.D., Douglas M. Sloane, Ph.D., and Linda H. Aiken, Ph.D., in *Health Affairs* 30(7), pp. 1299-1306, 2011. ■ *MWS*

Leg compression devices are not a significant factor in in-hospital falls

Sequential compression devices (SCDs) help to prevent development of a blood clot in the leg (deep vein thrombosis, in hospitalized patients. However, physicians and nurses frequently decline to utilize this therapy. They fear that such devices, which sequentially squeeze the leg to keep the blood flowing, increase the risk of in-hospital falls, because patients may trip over the tubing that connects the pneumatic sleeves around the legs to the fixed pump on the patient bed. However, a new study demonstrates that SCDs are only rarely implicated in in-hospital falls, dispelling a common

misconception. Moreover, such falls are not associated with significant patient harm.

Only 16 of 3,562 falls at a university-affiliated hospital were SCD-related falls, according to the 5-year study by a research team from the Johns Hopkins University. Of the 16 SCD-related falls, only 2 caused temporary harm that required intervention.

SCDs play a critical adjunctive role in the prevention of venous thromboembolism (VTE), which occurs when a leg clot travels to the lungs or other area. VTE is responsible for 100,000 deaths

annually in the U.S. Despite the evident threat of VTE to patients, rates of compliance with provider orders for use of SCDs remain at approximately 50 percent. This study was supported by the Agency for Healthcare Research and Quality (HS17952).

See “Are sequential compression devices commonly associated with in-hospital falls? A myth-busters review using the Patient Safety Net Database,” by Matthew M. Boelig, M.D., Michael B. Streiff, M.D., Deborah B. Hobson, B.S.N., and others in the June 2011 *Journal of Patient Safety* 7(2), pp. 77-79. ■
MWS

Child/Adolescent Health

A large proportion of hospitalized children receive numerous medications during their hospitalization

A large proportion of hospitalized babies and children are given five or more drugs and therapeutic agents during each day they are in the hospital, reveals a new study. Children with less common conditions were more likely to be exposed to more drugs. A dozen drugs and therapeutic agents were taken over the course of the hospitalization for the typical child admitted to a children's hospital (median stay of 5 days) and two drugs and therapeutic agents for the typical child admitted to a general hospital (median stay of 2 days). However, these differences between hospital types were nullified when patient clinical characteristics were taken into account.

Children younger than 1 year at children's hospitals, who were at the 90th percentile of the number of the distinct drugs received, received 11 drugs on the first day of hospitalization, while children 1 year and older received 13 drugs; in general hospitals, the numbers were 8 and 12 drugs, respectively. By hospital day 7, those in children's hospitals who were younger than 1 year and at the 90th percentile of drug exposure had received 29 drugs and those 1 year or older had

received 35 drugs; in general hospitals, the numbers were 22 and 28 drugs, respectively.

Cumulative numbers of distinct agents varied substantially among hospitals for three common conditions (asthma, appendectomy, and seizure), even after accounting for differences in length of stay for the condition. This suggests that actions can be taken to reduce the degree to which a child is exposed to multiple medications for common ailments while maintaining—or even improving—patient outcomes, note Chris Feudtner, M.D., Ph.D., M.P.H., of Children's Hospital of Philadelphia and the University of Pennsylvania School of Medicine, and colleagues. Their findings were based on 2006 data from the Pediatric Health Information System (40 children's hospitals) and the Perspective Data Warehouse (423 academic and community hospitals nationwide). The study was funded in part by the Agency for Healthcare Research and Quality (HS17991) to the University of Pennsylvania School of Medicine's Center for Education and Research on Therapeutics (CERT). For

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Hospitalized children

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more information on the CERTs program, visit www.certs.hhs.gov.

More details are in “Prevalence of polypharmacy exposure among hospitalized children in the United

States” by Chris Feudtner, M.D., Ph.D., M.P.H., Dingwei Dai, Ph.D., Kari R. Hexem, M.P.H., and others in the September 2011 *Archives of Pediatric and Adolescent Medicine* (epub ahead of print). ■ DIL

Clostridium difficile infection rate has risen among hospitalized children since late 1990s

The number of cases of *Clostridium difficile* infection (CDI) among hospitalized children in the United States more than doubled over a 10-year period, according to a new study. A bacterium that can colonize the gastrointestinal tract, *C. difficile* can cause symptoms ranging from nothing to severe diarrhea, inflammation of the colon, bowel perforation, and even death. The researchers found that the incidence of CDI in hospitalized children increased from 3,565 cases in 1997 to 7,779 cases in 2006.

Children with CDI had a 20 percent greater risk of death and a 36 percent higher risk of requiring surgery to remove part of or the entire colon. In addition, children diagnosed with CDI were four times more likely to have an

extended hospital stay and twice as likely to have higher hospital costs than hospitalized children not infected by *C. difficile*.

The researchers found no trend in the severity of CDI over time, despite the disease’s increased incidence. However, patients with inflammatory bowel disease were 11.4 times as likely to have CDI compared with children without this condition. Solid-organ transplants, HIV infection, and transplantation of blood-forming stem cells—all requiring or resulting in immune suppression—increased the odds of CDI 3.3- to 4.5-fold in adjusted multivariable analysis. The researchers used data from the AHRQ-funded Healthcare Cost and Utilization Project Kids’ Inpatient Database (HCUP-KID)

for 1997, 2000, 2003, and 2006. HCUP-KID is a stratified random sample of 5.8 million inpatient discharges for children from 22 to 38 States (depending on the year). For 2006, it represented an estimated 89 percent of all pediatric hospital discharges in the United States. The study was funded in part by the Agency for Healthcare Research and Quality (HS016957).

More details are in “*Clostridium difficile* infection in hospitalized children in the United States,” by Cade M. Nylund, M.D., Anthony Goudie, Ph.D., Jose M. Garza, M.D., and others in the May 2011 *Archives of Pediatrics and Adolescent Medicine* 165(5), pp. 451-457. ■ DIL

Pediatric cardiology centers vary in treatment of infants with single-ventricle congenital heart disease

Pediatric cardiology centers vary greatly in their initial treatment of infants and newborns with single-ventricle congenital heart defects (CHD) such as hypoplastic left heart syndrome (HLHS), according to three studies supported in part by the Agency for Healthcare Research and Quality (HS16957). This variability makes the initial treatment of these congenital heart problems, in which the infant is missing the left ventricle, a clear target for quality improvement efforts, note the researchers from

the Joint Council on Congenital Heart Disease’s National Pediatric Cardiology Quality Improvement Collaborative (NPC-QIC).

Repair of HLHS involves a series of surgeries that are typically performed over the child’s first 4 years of life, with stage-I surgery typically occurring within days after birth. Additional corrective surgeries are performed at later ages (typically between 4–6 months and 18 months to 3 years, respectively). Since the infant is

missing the left ventricle, which normally pumps oxygen-rich blood to the body, the goal of the initial Norwood procedure is to reroute blood flow from the right ventricle to serve this function.

To conduct the studies, the researchers drew on data for the first 100 infants enrolled in the NPC-QIC registry through 21 participating centers. Most of the infants (75 percent) had received a

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Pediatric cardiology centers

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prenatal diagnosis of their heart disease. The three studies are briefly described here.

Brown, D.A., Connor, J.A., Pigula, F.A., and others. "Variation in preoperative and intraoperative first-stage palliation of single-ventricle heart disease: A report from the Joint Council on Congenital Heart Disease National Pediatric Cardiology Quality Improvement Cooperative." (2011, March/April). *Congenital Heart Disease* 6(2), pp. 108–115.

This study found substantial variation across surgical centers in the successful initial palliation of infants with single-ventricle heart disease, particularly with regard to choice of palliation strategy and intraoperative techniques such as use of regional perfusion and depth of hypothermia. Infants with a prenatal diagnosis of CHD were significantly less likely to have preoperative problems than those diagnosed after birth (45 percent versus 84 percent). The median age of stage-I repair was 5 days, but ranged from 2–78 days.

The majority of infants (55 percent) were treated with a stage-I right ventricle to pulmonary artery (RV-PA) conduit, with 28 percent receiving a stage-I Norwood shunt. There was great variation in the surgical approach taken by the 11 centers contributing at least 4 patients to the database. Several of the centers used only the RV-PA conduit procedure, while another center performed mostly hybrid stage-I procedures (and accounted for 89 percent of such procedures in the registry).

Excluding the patients who underwent hybrid stage-I repairs,

the median time for a patient to be on total cardiopulmonary bypass during surgery was 137 minutes, with most participating centers' medians staying in the 100 to 200 minute range. The intraoperative procedures with the greatest degree of center-specific variation were circulatory arrest (used in 77 percent of the patients for a median of 10 minutes; range = 0–79 minutes) and hypothermia (median lowest temperature in the operating room of 18°C, and under 20°C for most of the participating centers). Immediately after surgery, three patients required use of extracorporeal membrane oxygenation support, but most only required postoperative mechanical ventilation (a median of 9 days on ventilation in the intensive care unit). Reoperations were done on 19 patients, in 6 cases to manage recurrent bleeding.

Baker-Smith, C.M., Neish, S.R., Klitzner, T.S., and others. (2011, March/April). "Variation in postoperative care following stage I palliation for single-ventricle patients: A report from the Joint Council on Congenital Heart Disease National Pediatric Cardiology Quality Improvement Cooperative." *Congenital Heart Disease* 6(2), pp. 116–127.

This study examined variations in treatment while the infant was still in the hospital after stage-I surgery for HLHS. Infants stayed a median of 11 days in the intensive care unit (ICU) following stage-I surgery, with a range between 3 and 68 days. The 47 infants with the aortic atresia variety of HLHS stayed in the ICU longer than 24 infants with the aortic hypoplasia variety (10 vs. 8 median days). The length of postoperative stay in the ICU also varied depending on the type of surgery performed, from a median

of 18 days for the 16 patients who underwent the modified Blalock-Taussig shunt (mBTS), to a median of 11 days for the 44 patients undergoing the RV-PA shunt, to a median of 9 days for the 10 patients undergoing hybrid repair.

However, ICU stays varied by center, as did use of inotropic agents (that affect the strength of cardiac contraction), need for reoperation or cardiac catheterization, and postoperative complications. Neurologic injury was the most common complication (15 events occurred in 13 patients); 20 postoperative infections occurred in 15 patients; and 22 instances of arrhythmia occurred in 19 patients.

Complications occurred least frequently for infants who underwent the hybrid procedure (2 patients, or 20 percent) and were most common for those who underwent the RV-PA shunt (27 patients, or 49 percent). Some patients experienced more than one complication.

Schidlow, D.N., Anderson, J.B., Klitzner, T.S., and others. "Variation in interstage outpatient care after the Norwood Procedure: A report from the Joint Council on Congenital Heart Disease National Quality Improvement Collaborative." (2011, March/April). *Congenital Heart Disease* 6(2); pp. 98–107.

This study examined the care and outcomes of infants after discharge from the hospital following stage-I repair of HLHS. Of the 100 infants in the group, 62 received outpatient care from the center that performed their surgery, 25 infants were cared for at another center, and 13 infants

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received care from more than one center. Communication with the patients' outpatient physicians (a written medication list, nutrition plan, and red-flag checklist) was quite variable and incomplete for the majority of these practitioners.

Nearly half of the outpatient primary cardiologists (45 percent) received all three elements of the communications compared with only 26 percent of the primary care physicians (PCPs). None of the

elements of communications were received by 10 outpatient cardiologists and 19 PCPs. Nutrition management was quite variable, with 49 infants fed orally, 38 receiving a combination of oral and nasogastric/nasojejunal feeding, and 6 receiving a combination of oral and gastrostomy tube feeding. One infant was fed by gastrostomy tube exclusively. Caloric density ranged from 20 to 30 kcal/oz of nonfortified formula or breast milk, with more than half the infants using fortified formula initially

(24 kcal/oz at time of hospital discharge).

The use, type, location, and frequency of monitoring strategies varied widely. Nineteen of the infants had no monitoring done between visits to the cardiology center. Surveillance strategies were used in 81 infants; the majority were monitored in the home. Of these infants, 77 had both weight and blood-oxygen levels measured regularly, and 4 had only oxygen levels monitored. ■ *DIL*

Women's Health

Breast cancer is associated with higher health care use and costs for women covered by fee-for-service Medicaid

In addition to being the most frequently diagnosed cancer among women in the United States, breast cancer accounts for up to 20 percent of the total costs of cancer overall. Women covered by Medicaid have unique challenges when it comes to this disease. For example, Medicaid recipients are more likely to be diagnosed at an advanced stage. They also have much lower screening rates compared to the general population. A new study found a high prevalence of breast cancer in Medicaid patients as well as significantly higher health care use and costs.

The study was based on administrative claims data for fee-for-service recipients enrolled in West Virginia Medicaid. A total of 876 Medicaid recipients, 21 to 64 years of age and who had breast cancer-related treatment, were identified during 2005. Nearly half were between the ages of 50 and 59. Prevalence rates for breast cancer were highest for women 60 to 64 years of age, white women, and women residing in rural counties. These three groups also had the highest rates of office visits. Older and rural groups also had the highest rates of emergency room (ER) visits and cancer-related hospitalizations.

Nearly three-fourths (73 percent) of the women had at least one claim for treatment. The vast majority of

treatment services (98 percent) were delivered in the office setting. Hormone therapy was the most common form of treatment, with more than half (55.1 percent) of women receiving it.

Women with breast cancer were compared to a matched control group of female Medicaid recipients without breast cancer. Health care costs for all causes were significantly higher for the women with breast cancer (\$16,345) compared with the women without breast cancer (\$13,027). These additional costs were driven by expenses for office and ER visits as well as for prescription medications. The West Virginia Medicaid fee-for-service program paid approximately \$4.9 million for breast cancer-related treatment and services in 2005. The study was supported in part by the Agency for Healthcare Research and Quality (HS18546).

See "Prevalence, healthcare utilization, and costs of breast cancer in a state Medicaid fee-for-service program," by Rahul Khanna, M.B.A., Ph.D., S. Suresh Madhavan, M.B.A., Ph.D., Abhijeet Bhanegaonkar, M.P.H., and Scott C. Remick, M.D., in the *Journal of Women's Health* 20(5), pp. 739-747, 2011. ■ *KB*

Lower educational level increases the likelihood of preclinical changes in mobility in older women

If you have less than 9 years of schooling, you are more likely than someone with 12 or more years of education to report changing the way or how often you do at least one of four mobility tasks: walking 0.5 miles, climbing up steps, doing heavy housework, and getting in/out of a bed or chair, even though you don't report difficulty with the task, according to a new study. Such a change, made before difficulty with the task arises, is termed preclinical mobility disability (PCD), and has previously been identified as an independent predictor of functional decline in the elderly.

The study authors suggest that PCD is a marker for early attempts to preserve function by compensating for impairments at an early stage, when intervention may be beneficial. Using a longitudinal

study of initially high-functioning older women, the researchers found that 66 of 174 women who had high mobility function at their baseline examination developed PCD during the study. Those women with less than 9 years of education were 3.1 times more likely to develop PCD during followup than did those with over 12 years of education—even after adjusting for age, race, income, number of diseases, and other factors. The number of chronic diseases a woman reported was the single other factor significantly associated with increased risk of PCD, which boosted PCD risk by 30 percent.

The researchers recruited 436 women, ages 70–79 years, from neighboring ZIP codes in Baltimore City and Baltimore County, MD. They interviewed the women at

baseline and during six followup exams (all spaced 18 months apart, except for an average of 3 years between the third and fourth followup). The researchers suggest that future studies should evaluate the ability of interventions to aid women with lower education in accessing resources to prevent functional loss. The study was funded in part by the Agency for Healthcare Research and Quality (HS17956).

More details are in “Education predicts incidence of preclinical mobility disability in initially high-functioning older women: The Women's Health and Aging Study II,” by Patricia C. Gregory, M.D., Sarah L. Szanton, Ph.D., M.S.N., Qian-Li Xue, and others in the May 2011 *Journal of Gerontology: Medical Sciences* 66A(5); pp. 577–581. ■ DIL

Disparities/Minority Health

Many Texas residents cross Mexican border to obtain health care services

The U.S.-Mexico border stretches from San Diego, CA all the way to Brownsville, TX. Many residents living on the U.S. side of the border are poor and uninsured, and have difficulties accessing health care services. A new study reveals that many U.S.-border residents in Texas cross the border into Mexico for health care services. Overall, 63.4 percent of those surveyed said they used one of the four types of health care services in Mexico: medications, visits to doctors, visits to dentists, and hospital admissions. Nearly half of respondents (49.3 percent) admitted to crossing the border to purchase medications in Mexico, 41 percent visited a doctor, and 37.3 percent visited a dentist. Inpatient care in Mexico had the lowest utilization rate among respondents at 6.7 percent. Factors associated with using health care services in Mexico included having no health insurance, being dissatisfied with the

quality of care in the United States, and having poor self-reported health status.

The findings were based on responses to the Cross-Border Utilization of Health Care Survey. This was a telephone survey conducted in 2008 of residents living in 32 Texas counties within 62 miles of the Mexican border. Responses came from 1,405 adults who were mostly of Mexican origin. Participants were asked about seeking out health care services in Mexico. Nearly half of those participating had no health insurance coverage. The study was supported in part by the Agency for Healthcare Research and Quality (HS17003).

See “Cross-border utilization of health care: Evidence from a population-based study in south Texas,” by Dejun Su, Ph.D., Chad Richardson, Ph.D., Ming Wen, Ph.D., and José A. Pagán, Ph.D., in the June 2011 *HSR: Health Services Research* 46(3), pp. 859-876. ■ KB

Communications between patients with HIV and their providers differ along racial and substance use lines

Two new studies reveal that communications between patients with HIV and their providers differ along racial and substance-use lines. This is important, given that significant racial disparities exist in HIV care in the United States and that more than half of Americans infected with HIV report a history of substance use. The first study found that providers were more verbally dominant in conversations with black than white patients. The second study revealed that, while it appears there is healthy patient-provider communication with illicit drug users, patients with unhealthy alcohol use are less satisfied with their provider encounters. Both studies, supported by the Agency for Healthcare Research and Quality (Contract No. 190-01-0012 and grant HS13903) are briefly summarized here.

Beach, M.C., Saha, S., Korthuis P.T., and others. (2011). "Patient-provider communication differs for black compared to white HIV-infected patients." *AIDS Behavior* 15, pp. 805-811.

This study found providers to be more verbally dominant with their black patients than their white patients. In other words, providers expressed more complete thoughts (utterances) than the patient did and blacks provided less information to their providers than whites during clinic visits. However, there was no association between visit length and the patient's race.

The researchers audio recorded patient care visits at four HIV outpatient care sites in Baltimore, Detroit, New York, and Portland. A total of 45 providers, including physicians, nurse practitioners, and physician assistants, agreed to

participate in the study. The final sample of patients included 246 blacks and 100 whites. Recordings were analyzed using a coding system that categorizes utterances into question-asking, counseling, and socio-emotional communication.

Overall, the patients who participated in the study were satisfied with the care they received at these clinics. The amount and quality of patient and provider socio-emotional communication was similar for blacks and whites. However, because blacks spoke less during their clinic visits, the researchers recommend that providers make an extra effort to engage and involve blacks with HIV more during the medical encounter.

Korthius, P.T., Saha, S., Chander, G., and others. (2011). "Substance use and the quality of patient-provider communication in HIV clinics." *AIDS Behavior* 15, pp. 832-841.

This study found that providers spent less time talking with patients who reported either current or past unhealthy alcohol use. In addition, they used fewer patient-engagement and activating statements and fewer counseling statements on lifestyle or psychosocial behaviors to patients reporting current unhealthy drinking patterns compared with patients who were not problem drinkers. In turn, these patients made fewer engaging, activating, and positive statements to their providers. Patients without a history of unhealthy drinking had clinic visits that averaged around 4 minutes longer and received more patient-engagement and activating statements during their visit with providers.

With illicit drug users, providers were more likely to make negative statements and ask more questions during encounters compared with patients without a history of illicit drug use. These drug users also made more negative statements. However, more counseling and lifestyle statements were exchanged during these medical visits than with visits with problem drinkers.

Problem drinkers rated the quality of provider-patient communication lower than patients without unhealthy alcohol use. On the other hand, there was no difference in the ratings of provider-patient communication between illicit drug users and non-users of illicit drugs.

The study used the same 45 providers who participated in the first study. Among the patient participants, 39 were current unhealthy alcohol users, 198 past users, and 170 who never had unhealthy alcohol use. The study also included 113 current illicit drug users, 203 former users, and 97 who never used these drugs. As in the other study, clinic encounters were audiotaped and analyzed using the same method.

According to the researchers, the communication patterns between providers and unhealthy drinkers with HIV infection suggest a higher risk for poor HIV-related outcomes. Even as patients' levels of depression increased, they were still less likely to receive psychosocial or counseling statements from their providers. The researchers suggest that more resources, time, and interventions need to be in place so that care can be improved for patients with unhealthy alcohol use and HIV. ■ KB

Agency News and Notes

ADHD medications don't increase serious heart risks in children or adults

Medications used to treat attention-deficit/hyperactivity disorder (ADHD) are not linked to increased risk of heart attack or other serious cardiovascular problems in children or adults, according to two studies from the Effective Health Care Program of the Agency for Healthcare Research and Quality (AHRQ). The first study, published November 1 in the *New England Journal of Medicine*, reported no evidence of increased risk of serious cardiovascular effects among children and young people who use ADHD medications. The study used data from more than 1.2 million children and young adults from ages 2 to 24.

The second study, published December 8 in the *Journal of the American Medical Association*, found medications used to treat ADHD in adults are not linked to increased risk of heart attack, sudden cardiac

death, or stroke. The study of adults ages 25 to 64 included more than 150,000 users and nearly 300,000 non-users of ADHD medications. Researchers found no evidence of an increased risk of serious cardiac outcomes associated with current use compared to non-use or former use of ADHD medications. Researchers also found little support for an increased risk for any specific medication or with longer duration of current use. Both studies resulted from a research collaboration between AHRQ and U.S. Food and Drug Administration. The research was conducted by Vanderbilt University's and the HMO Research Network DEcIDE (Developing Evidence to Inform Decisions about Effectiveness) centers. Both reports can be viewed at AHRQ's Effective Health Care Program Web site at www.effectivehealthcare.ahrq.gov. ■

New study finds e-prescribing is safe and efficient, but barriers remain

Physician practices and pharmacies generally view electronic prescribing as an important tool to improve patient safety and save time, but both groups face barriers to realizing the technology's full benefit, according to a study funded by the Agency for Healthcare Research and Quality (AHRQ). The study was published online November 18 in the *Journal of the American Medical Informatics Association*.

Electronic prescribing, or e-prescribing, has multiple potential benefits, including helping to reduce the risk of medication errors caused by illegible or incomplete handwritten prescriptions. The study focused on a key aspect of e-

prescribing: the electronic exchange of prescription data between physician practices and pharmacies, which can save time and money by streamlining the way in which new prescriptions and renewals are processed.

Physician practices and pharmacies generally were positive about the electronic transmission of new prescriptions, the study found. However, prescription renewals, connectivity between physician offices and mail-order pharmacies, and manual entry of certain prescription information by pharmacists—particularly drug name, dosage form, quantity, and patient instructions—continue to pose problems.

“Physicians and pharmacies have come a long way in their use of e-prescribing, and that’s a very positive trend for safer patient care and improved efficiency,” said AHRQ Director Carolyn M. Clancy, M.D. “This study identifies issues that need attention to improve e-prescribing for physicians, pharmacies, and patients.”

Researchers at the Center for Studying Health System Change, Washington, D.C., conducted 114 interviews with representatives of 24 physician practices, 48 community pharmacies, and three mail-order pharmacies using

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E-prescribing

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e-prescribing. Community pharmacies were divided between local and national companies.

Physician practices and pharmacies used e-prescribing features for electronic renewals much less often than for new prescriptions. More than a quarter of the community pharmacies reported that they did not send electronic renewal requests to physicians. Similarly, one-third of physician practices had e-prescribing systems that were not set up to receive electronic renewals or only received them infrequently.

Physician practices reported that some pharmacies that sent renewal requests electronically also sent requests via fax or phone, even after the physician had responded electronically. At the same time, pharmacies reported that physicians often approved electronic requests by phone or fax or mistakenly denied the request and sent a new prescription.

The study noted that resolving e-prescribing challenges will become more pressing as increasing numbers of physicians adopt the technology in response to Federal incentives. Physicians can qualify for Medicare and Medicaid electronic health record incentive payments by generating and transmitting more than 40 percent of all prescriptions to pharmacies electronically, excluding prescriptions for controlled substances, as part of the HITECH Act of 2009.

Other key study findings include:

- About three-quarters of physician practices reported problems sending new prescriptions and renewals electronically to mail-order pharmacies. Many practices were unsure which mail-order pharmacies accepted e-prescriptions and believed that, even when a mail-order company did accept them, the process was unreliable.

- Pharmacies noted the need to sometimes manually edit certain prescription information, such as drug name, dosage, and quantity. One common cause reported by both physicians and pharmacists was that physicians must select medications with more specificity when e-prescribing and make decisions about such factors as packaging and drug form. Such decisions had typically been made by pharmacists for handwritten prescriptions.
- Nearly half of pharmacies reported that patient instructions typically had to be rewritten for patients to understand them.

The study, "Transmitting and processing electronic prescriptions: Experiences of physician practices and pharmacies," concludes that a broad group of public and private stakeholders will need to work together to address these issues. Stakeholders include the Federal government, e-prescribing standard-setting organizations, vendors, and others. ■

Cost of hospitalization highest among the non-elderly

The average cost of a hospital stay grew more quickly for patients age 64 and younger than it did for the elderly between 1997 and 2009, according to the latest News and Numbers from the Agency for Healthcare Research and Quality (AHRQ).

According to data from the Federal agency, the cost of a stay in a community hospital during this period increased by 4 percent per year for patients 64 and younger, and by 3 percent per year for those 65 and older. AHRQ also found that:

- A total of \$208 billion was spent for hospital stays for patients age 64 and younger in 2009, compared with \$154 billion for older patients.
- Between 1997 and 2009, the average hospital stay remained constant at 4 days for patients age 64 and

younger, yet the average stay among older patients decreased from 6 days to 5 days.

- Among all patients, septicemia, back problems, and osteoarthritis were the three conditions that had the greatest increase in hospital costs.

This AHRQ News and Numbers summary is based on data from Statistical Brief #123: *Components of Growth in Inpatient Hospital Costs, 1997-2009* (www.hcup-us.ahrq.gov/reports/statbriefs/sb123.pdf). The report uses data from the Nationwide Inpatient Sample. For information about this AHRQ database, go to www.ahrq.gov/data/hcup/datahcup.htm.

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

More seniors getting pneumonia shots, but some lag behind

The overall proportion of Americans age 65 and older who have ever been vaccinated against pneumonia, a leading killer of seniors, increased from 53 to 60 percent between 2000 and 2008, according to the latest News and Numbers from the Agency for Healthcare Research and Quality (AHRQ).

Specifically, AHRQ found that in 2008:

- Almost two thirds (65 percent) of high-income seniors reported ever being vaccinated against pneumonia compared with less than half (46 percent) of poor seniors.
- Only 52 percent of seniors who live in a large inner-city area, where residents tend to be low-income and minority, reported ever being vaccinated against pneumonia compared with 64 percent of seniors who live in medium-size cities.
- Just 37 percent of Hispanic seniors reported ever being vaccinated against pneumonia compared with 65 percent of white seniors. The proportion of Asian and black seniors who

have ever been vaccinated against pneumonia fell in between—46 and 45 percent, respectively.

This AHRQ News and Numbers is based on information in Chapter 2 of the 2010 *National Healthcare Quality Report*. (www.ahrq.gov/qual/nhqr10/Chap2c.htm). The report examines Americans' access to and quality of health care.

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

Evidence is weak on whole-body vibration therapy for osteoporosis

A new report finds that there is little scientific evidence evaluating the benefits and harms of whole-body vibration (WBV) therapy for the prevention and treatment of osteoporosis, and claims about its effectiveness cannot be made without further research. The review of the published literature and discussions with osteoporosis clinicians, researchers, patient advocates, and WBV device manufacturers describes the state of the science and summarizes the key issues related to the use of whole-body vibration therapy. The technical brief, produced by the Agency for Healthcare Research and Quality's Effective Health Care Program, identifies a number of questions about the optimal population for treatment, optimal treatment protocol, key outcome measures, and whether whole-body vibration therapy is an adjunctive or distinctive therapy.

Osteoporosis is a significant public health problem that leads to increased bone fragility and greater fracture risk, especially of the wrist, hip, and spine. In the United States an estimated 1.5 million yearly osteoporotic fractures result in more than 500,000 hospitalizations, 800,000 emergency room visits, 2.6 million physician office visits, and 180,000 nursing home placements. By 2020, approximately half of all older Americans will be at risk for fractures from osteoporosis or osteopenia. You can read *Whole-Body Vibration Therapy for Osteoporosis* at AHRQ's Effective Health Care Program Web site at www.effectivehealthcare.ahrq.gov. ■

New AHRQ campaign encourages Hispanics to work with their doctors to make the best treatment decisions

The Agency for Healthcare Research and Quality (AHRQ) is partnering with Hispanic-serving organizations to promote the Agency's Spanish-language resources and to encourage consumers to become more active partners in their health care. AHRQ's easy-to-read resources

help consumers understand the benefits and risks of treatment options and encourage shared decisionmaking between patients and their health care teams.

To date, 10 organizations have signed a pledge of commitment to promote AHRQ's Spanish-

language, evidence-based resources, including the National Hispanic Medical Association, Latino Student Medical Association, National Association of Hispanic Elderly, District of Columbia Office on Latino Affairs,

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New AHRQ campaign

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National Latina Health Network, Telemundo, and the National Center for Farmworkers Health.

To assist in this effort, AHRQ recently launched the “Toma las riendas” (“Take the reins”) campaign, a nationwide effort to encourage Hispanics to take control of their health and explore treatment options. The campaign launched November 13 at the Telemundo-sponsored Feria de la Familia (Family Fair) event at the D.C. Armory in Washington, D.C.

The Toma las riendas campaign addresses the need for high-quality health information in Spanish. It promotes a wide variety of resources produced by AHRQ’s Effective Health Care Program. These tools, which include consumer-friendly publications that summarize treatment options for common health conditions, help Hispanics work with their health care teams to select the best possible treatment option. The tools do not tell patients and doctors what to do, but offer factual, unbiased information to help answer questions such as: What are the benefits and risks of

different medical treatments? How strong is the science behind each option? Which treatment is most likely to work best for me?

“The Toma las riendas campaign comes at a terrific time for spreading the word about AHRQ’s evidence-based Spanish-language resources,” said AHRQ Director Carolyn M. Clancy, M.D. “AHRQ’s Effective Health Care Program now has more than 20 free, Spanish-language publications that provide information about common health conditions, including diabetes, heart disease and depression.”

Hispanics, who account for 15 percent of the U.S. population, are often more likely than whites to experience poor health outcomes. For example, Hispanics have significantly higher rates of hospital admissions for short-term complications due to diabetes, according to AHRQ’s 2010 *National Healthcare Disparities Report*. Hispanics are also less likely to take prescription medications to control asthma. For many Hispanics, seeking treatment means using a new language to navigate a complex health care system. AHRQ’s Spanish-

language publications provide opportunities for Hispanics to easily compare treatments for many common conditions.

“If you don’t get the best possible information about all your treatment options, you might not make an informed decision on which treatment is most appropriate for you,” said AHRQ Scientific Review Officer Ileana Ponce-González, M.D., and Toma las riendas campaign spokesperson.

To encourage use of the materials and engage Hispanics in the discussion, AHRQ has also launched a Facebook Page, <http://www.facebook.com/AHRQehc.espanol>. AHRQ’s Spanish-language Effective Health Care Program patient guides are available online at <http://effectivehealthcare.ahrq.gov/index.cfm/informacion-en-espanol>. To order printed copies, email the AHRQ Publications Clearinghouse at ahrqpubs@ahrq.gov or call 1-800-358-9295. For other AHRQ Spanish-language consumer tools, go to www.ahrq.gov/consumer/espanoix.htm. ■

Potential role of physical therapy in ICU patients

A recent issue of the Agency for Healthcare Research and Quality’s Web M&M (www.webmm.ahrq.gov/home.aspx) examines the risks of immobility associated with an intensive care unit (ICU) stay and the criteria that can indicate if a patient is a good candidate for physical therapy. The Spotlight Case involves a man with a prolonged ICU visit for injuries that included a dislocated shoulder. The physical therapist consulted after the patient’s release from the ICU felt that the limitations due to the shoulder injury could have been mitigated with earlier physical therapy interventions in the ICU.

A commentary on the case, including criteria to inform decisionmaking, is provided by Jim Smith, an associate

professor of physical therapy at Utica College, NY. The Perspectives on Safety section features an interview with Paul G. Shekelle, M.D., Ph.D., who directs the Southern California Evidence-based Practice Center at Rand Corporation. Dr. Shekelle led an AHRQ-funded effort to better define the role of context in patient safety. In the accompanying Perspective, John Øvretveit, Ph.D., professor of health improvement, implementation, and evaluation at The Karolinska Institute, Stockholm, Sweden, discusses how social sciences can help us understand influences that affect patient safety. ■

Evidence lacking on optimal transition-of-care programs for heart attack and stroke patients following hospitalization

Few studies support the adoption of any specific transition-of-care program as a matter of health policy, according to a new report from the Agency for Healthcare Research and Quality (AHRQ). Despite advances in the quality of acute-care management of stroke and heart attacks, gaps in knowledge persist about effective programs that improve the post-hospitalization quality of care for patients who have undergone a stroke or heart attack.

Researchers at AHRQ's Duke University Evidence-based Practice

Center, who conducted the evidence review, found no interventions that consistently improved functional recovery after stroke or heart attack. None seemed to consistently improve quality of life or factors such as anxiety or depression. The researchers, led by DaiWai M. Olson, Ph.D., found that some components of care transition, such as early supported discharge from hospital with rehabilitation at home following stroke, appear to shorten the length of hospital stay without increased death rates or adverse effects on functional recovery.

Additionally, specialty care followup after a heart attack was associated with reduced mortality. Researchers noted that additional research is needed before any conclusion can be reached that a specific care transition approach is effective and worthy of widespread adoption. You can access a copy of the report, *Transition of Care for Acute Stroke and Myocardial Infarction Patients: From Hospitalization to Rehabilitation, Recovery, and Secondary Prevention*, at www.ahrq.gov/clinic/tp/strokecaretp.htm. ■

Screening and treatment of subclinical thyroid dysfunction inadequately studied

A new research review, *Effectiveness of Subclinical Hypothyroidism or Subclinical Hyperthyroidism*, focuses on whether evidence demonstrates that treatment improves morbidity rates in adults with screen-detected thyroid disease, as well as the benefits and harms of treating subclinical hypo- or hyperthyroidism. The report updates a 2004 United States Preventive Services Task Force (USPSTF) report.

The 2004 USPSTF report established that subclinical thyroid dysfunction is quite prevalent and that the serum thyroid stimulating hormone test is a readily available, reliable, and acceptable test to detect the condition. However, in 2004, it remained unclear

whether treating subclinical thyroid dysfunction would reduce morbidity.

This review by the Effective Health Care Program of the Agency for Healthcare Research and Quality indicates that the benefits and harms of screening for subclinical thyroid dysfunction remain inadequately studied. It also highlights the need for more research related to treatment for subclinical hypo- or hyperthyroidism. Larger clinical trials that are longer in duration would help improve the quality of evidence for all of these outcomes.

You can read the full review at the Effective Health Care Program Web site at www.effectivehealthcare.ahrq.gov. ■

Announcements

AHRQ releases first primary care workforce facts and stats series

To further inform policy discussions around the U.S. primary care workforce, AHRQ's Center for Primary Care, Prevention, and Clinical Partnerships has released the first two in a series of fact sheets to provide health care policy and decisionmakers with information on:

- The primary care workforce currently in place in the United States
- Its capacity to care for the current U.S. population
- Needed growth in this workforce to accommodate population changes and expanded health insurance coverage.

The two fact sheets available now are:

- The Number of Practicing Primary Care Physicians in the U.S., which reports that, of the 624,434 physicians who spend the majority of their time in direct patient care, slightly less than one-third are in primary care.
- The Number of Nurse Practitioners and Physician Assistants Practicing Primary Care in the U.S., which estimates that, in 2010, approximately 56,000 nurse practitioners and 30,000 physician assistants were practicing primary care.

AHRQ commissioned the Robert Graham Center, a non-partisan primary care policy and analysis organization, to conduct a comprehensive primary care workforce analysis that includes

secondary analyses of several workforce, population, and health outcome data sources. During the coming months, AHRQ will release additional Primary Care Workforce Fact Sheets examining topics such as:

- The distribution of the U.S. primary care workforce
- Patient panel sizes in primary care
- Primary care workforce needs due to changes in population growth, demographics, and other factors.

You can view the U.S. Primary Care Workforce Facts and Stats Series at www.ahrq.gov/research/pcworkforce.htm. ■

Report explores prevalence of hypertension and use of antihypertensive drugs

A new Data Points report, *Utilization of Antihypertensive Drug Classes Among Medicare Beneficiaries with Hypertension, 2007 to 2009*, is available from the Agency for Healthcare Research and Quality. This report explores the prevalence of hypertension and utilization of antihypertensive drugs

among Medicare fee-for-service beneficiaries from 2007 to 2009, as well as the costs of antihypertensive drugs. You can access the report at AHRQ's Effective Health Care Program Web site at www.effectivehealthcare.ahrq.gov. ■

New health information technology funding opportunity on advancing health services through system modeling research

The Agency for Healthcare Research and Quality (AHRQ), in collaboration with the National Science Foundation (NSF), will accept and review investigator-initiated proposals that address systems modeling in health services research. The NSF's Service Enterprise Systems

Program in the Civil, Mechanical, and Manufacturing Innovation Division of the Engineering Directorate will be the lead program on this interdisciplinary topic. Through this partnership, AHRQ and NSF look to foster new collaborations among health services researchers and industrial

and systems engineers with a specific emphasis on the supportive role of health information technology. Proposals are due by February 15, 2012. For more information or to submit a proposal, go to http://nsf.gov/funding/pgm_summ.jsp?pims_id=504720. ■

Two EHC program report series identify research needs and provide guidance on identifying gaps in clinical evidence

Needs for Future Research

A growing series of reports from the Effective Health Care (EHC) Program of the Agency for Healthcare Research and Quality (AHRQ) identifies gaps in clinical evidence so that researchers and funders of research can improve the body of knowledge available to health care decisionmakers. The series, *Future Research Needs*, currently includes eight reports that identify research needs in areas such as management of gestational diabetes, treating prostate cancer, and treating common hip fracture. Forty reports are expected over the next several years. These reports are produced by AHRQ-supported Evidence-based Practice Centers, which conduct systematic reviews of existing research on the effectiveness, comparative effectiveness, and comparative harms of different health care interventions. Gaps in evidence identified in these projects are highlighted in the Future Research Needs series. The reports are designed to help researchers and funders of research identify research

projects that will expand the body of patient-centered outcomes research available to help health care decisionmakers make evidence-based decisions.

Download and read the *Future Research Needs* reports at www.effectivehealthcare.ahrq.gov/futureresearch.cfm.

Methods for Future Research

Another EHC Program series of reports titled, *Future Research Needs – Methods Research*, is also available from AHRQ. These reports provide guidance on methodological approaches to identifying gaps in clinical evidence. They are intended to support the ongoing effort to evaluate and improve the knowledge base in priority clinical areas. The series complements the *Future Research Needs* series. You can download and read the methods research series at www.effectivehealthcare.ahrq.gov/futureresearchneeds/methods.cfm. ■

Ale , (2011). "Seeding trials and the subordination of science." (AHRQ grant HS18996). *Archives of Internal Medicine* 171(12), pp. 1107-1108.

A seeding trial is a study of an approved drug or device in which the primary objective is marketing, not scientific investigation. Such trials necessarily depend on deception, according to the author. The author comments in detail on an article analyzing a trial of the drug Neurontin, which concludes that the trial was actually a seeding trial used to promote and increase the prescribing of the drug.

Austad, K.E., Avorn, J., and Kesselheim, A.S. (2011, May). "Medical students' exposure to attitudes about the pharmaceutical industry: A systematic review." (AHRQ grant HS18465). *PLoS Medicine* 8(5) online.

Given the controversy over the pharmaceutical industry's role in undergraduate medical training, synthesizing the current state of knowledge is useful for setting priorities for changes to educational practices. A systematic review of 32 studies concerning the frequency and nature of medical students' exposure to the drug industry found that a substantial proportion of students believe that gifts from industry influence prescribing.

Bracha, Y., Brottman, G., and Carlson, A. (2011). "Physicians, guidelines, and cognitive tasks." (AHRQ Contract No. 290-2006-

00020). *Evolution and the Health Professions* 34(3), pp. 310-335.

This article compares the workflows and knowledge requirements of primary care practice to a set of clinical guidelines, *Expert Panel Report 3 (EPR-3): Guidelines for the Diagnosis and Treatment of Asthma*, a summary report prepared by the authors for the Agency for Healthcare Research and Quality. It finds discrepancies between the physician workflow and the structure of the EPR-3 and suggests that alternative ways be found to represent guidelines' knowledge and recommendations.

Burda, B.U., Norris, S.L., Holmer, H.K., and others. (2011).

"Quality varies across clinical practice guidelines for mammography screening in women aged 40-49 years as assessed by AGREE and AMSTAR instruments." (AHRQ grant HS18500). *Journal of Clinical Epidemiology* 64, pp. 968-976.

This study assessed the quality of clinical practice guidelines for mammography screening for breast cancer in asymptomatic average-risk women 40-49 years of age. It found that among the eleven guidelines appraised, the quality varies considerably. Also, more than one-half of these guidelines have poor-quality evidence reviews and are not recommended for use in practice.

Clancy, C. (2011). "Best practices in systems interventions to

reduce the burden of fractures." *Osteoporosis International* 22(Suppl 3), pp. S441-S444. Reprints (AHRQ Publication No. 12-R008) are available from AHRQ.*

In a keynote address to the 2010 Bone Health Conference, Carolyn Clancy, M.D., director of the Agency for Healthcare Research and Quality (AHRQ), discusses some medical care encounters and relates them to various aspects of the Agency's work. She discusses AHRQ's comparative effectiveness research, the Patient-centered Outcomes Research Institute, the scientific infrastructure needed to identify and implement effective systems-based interventions, and the National Health Care Quality Strategy.

Cohen, S.B., Ezzati-Rice, T.M., Zodet, M., and others. (2011). "An assessment of the impact of two distinct survey design modifications on health care utilization estimates in the Medical Expenditure Panel Survey." *Journal of Economic and Social Measurement* 36, pp. 33-69. Reprints (AHRQ Publication No. 12-R004) are available from AHRQ.*

In 2007, the Medical Expenditure Panel Survey was upgraded to a windows-based Computer Assisted Personal Interview platform and a sample redesign as a result of its linkage to the National Health Interview Survey. This study examined the impact of these

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survey design modifications on the national estimates of health care utilization patterns.

Croswell, J.M., Kramer, B.S., and Crawford, E.D. (2011, May). "Screening for prostate cancer with PSA testing: Current status and future directions." *Oncology* 25(6), pp. 1-15. Reprints (AHRQ Publication No. 12-R009) are available from AHRQ.*

Screening for prostate cancer by prostate-specific antigen (PSA) testing has been advocated as a means of reducing mortality from this disease. However, the best quality evidence currently available suggests that PSA screening for prostate cancer is either ineffective at reducing deaths due to prostate cancer, or confers a modest mortality advantage, but at the cost of an important degree of overdiagnosis and overtreatment.

Curtis, J.R., Delzell, E., Chen, L., and others. (2011). "The relationship between bisphosphonates adherence and fracture: Is it the behavior or the medication? Results from the placebo arm of the fracture intervention trial." (AHRQ grant HS16956). *Journal of Bone and Mineral Research* 26(4), pp. 683-688.

Several studies have reported a strong inverse relation between high compliance with oral bisphosphonates and fracture risk. Among women participating in the Fracture Intervention Trial who were randomized to placebo, there were no significant associations between compliance with placebo and fractures. However, high compliance with placebo was

associated with total-hip bone loss and a similar trend was observed for changes in femoral neck bone mineral density.

Daly, J.M., Ely, J.W., Levy, B.T., and others. (2011). "Primary care clinicians' perspectives on management of skin and soft tissue infections: An Iowa research network study." *Journal of Rural Health* 27, pp. 319-328. Community-associated methicillin-resistant *Staphylococcus aureus* (CA-MRSA) is resistant to several commonly used antibiotics and that resistance is increasing. Analysis of a series of 9 focus groups conducted with 78 primary care clinicians found that no well-accepted diagnostic or treatment algorithms were used by physicians attending the focus groups. The clinicians in the study noted that there was considerable confusion and inconsistency in the management of skin and soft tissue infections.

Edwardsen, E.A., Horwitz, S.H., Pless, N.A., and others. (2011, June). "Improving identification and management of partner violence: Examining the process of academic detailing: A qualitative study." (AHRQ grant HS11490). *BMC Medical Education* 11(36), pp.10-14.

Many physicians still do not routinely inquire about intimate partner violence (IPV). After receiving a seven-session modular curriculum over a 10 week period from a non-physician academic detailer, three physicians reported increased clarity with regard to the scope of their responsibility to their patients suffering from IPV. Academic detailing may improve physician attitudes and practices

towards patients in violent relationships.

Fagnan, L.J., Dorr, D.A., Davis, M., and others. (2011). "Turning on the care coordination switch in rural primary care. Voices from the practices—clinician champions, clinician partners, administrators, and nurse care managers." (AHRQ Contract No. 290-07-10016). *Journal of Ambulatory Care Management* 34(30), pp. 304-318.

Implementing care coordination to improve chronic illness care faces monumental challenges. This qualitative analysis explored convergence and divergence in perceptions among the four practice cohorts (clinician champions, clinicians, administrators, and nurse care managers) regarding implementation of nurse care management in medium to large rural primary care practices. Based on their analysis of interviews with the different cohorts, the researchers identified seven factors needed to assure the overall success of a care coordination program.

Gadd, C.S., Ho, Y.-X., Cala, C.A., and others. (2011). "User perspectives on the usability of a regional health information exchange." (AHRQ Contract No. 290-04-0006). *Journal of the Medical Informatics Association* 18, pp. 711-716.

The need for electronic health records with information from multiple sites has steadily grown since 1990. The study used a rapid deployment model to develop a health information exchange (HIE). By surveying HIE users, the researchers found that three

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usability factors were positively predictive of system usage: overall reactions, learning, and system functionality.

Handley, M.A., Shillinger, D., and Shihoski, S. (2011, October). “Quasi-experimental designs in practice-based research settings: Design and implementation considerations.” (AHRQ grant HS17261). *Journal of the American Board of Family Medicine* 24(5), pp. 589-596.

In the area of practice-based research (PBR), quality improvement, and public health, there are many situations where randomization is not possible. The researchers present a review of design features and practical considerations for PBR implementation of the stepped-wedge and wait-list design. They also discuss published examples from studies of clinic-based interventions using these designs. These features allow for the collection of control data, but also permit all participants to receive the intervention.

Haukoos, J.S. (2011, July). “Rethinking how we perform HIV testing in the emergency department.” (AHRQ grant HS17526). *Annals of Emergency Medicine* 58(1), S160-S163.

The author’s goals are to briefly summarize a conceptual framework for performing HIV testing in emergency departments (EDs) and to discuss what is generally known about how these approaches work in clinical practice, with an emphasis on the performance of nontargeted opt-out screening. He

also provides a few focused thoughts about how to proceed with the evaluation and implementation of ED-based HIV testing both in terms of clinical practice and academic development.

Hayes, H., Parchman, M.L., and Howard, R. (2011, September/October). “A logic model framework for evaluation and planning in a primary care practice-based research network (PBRN).” *Journal of the American Board of Family Medicine* 24(5), pp. 576-582.

A logic model is a framework for describing the relationships between resources, activities, and results as they relate to a specific program or project goal. The purpose of this article is to describe the development of a logic model and how the framework has been used in a primary care practice-based research network, the South Texas Ambulatory Research Network.

Johnson, K.B., Unertl, K.M., Chen, Q., and others. (2011). “Health information exchange usage in emergency departments and clinics: The who, what, and why.” (AHRQ Contract No. 290-04-006). *Journal of the American Medical Informatics Association* 18, pp. 690-697.

The Mid-South eHealth Alliance is an operational health information exchange (HIE). The study evaluates this exchange to characterize the extent and patterns of use as they relate to different HIE workflows, and to inform the national discussion about both HIE implementation strategies and usage benchmarks. Its data should form an important foundation as

other sites embark upon HIE implementation.

Kahn, J.M., Hill, N.S., Lilly, C.M., and others. (2011, July). “The research agenda in ICU telemedicine.” (AHRQ grant HS19946). *Chest* 140(1), pp. 230-238.

The Critical Care Societies Collaborative convened a working group to provide a conceptual and practical framework for intensive care unit (ICU) telemedicine research. It included experts in critical care delivery, telemedicine delivery, organizational science, health services research, and health care policy. The goals were to examine the state of the science underlying ICU telemedicine, identify key methodological and knowledge gaps, and develop a focused agenda for future research.

Kamalian, S., Maas, M.B., Goldmacher, G.V., and others. (2011). “CT cerebral blood flow maps optimally correlate with admission diffusion-weighted imaging in acute stroke but thresholds vary by postprocessing platform.” (AHRQ grant HS11392). *Stroke* 42, pp. 1923-1928.

The purposes of this study were to: (1) determine the optimal computed tomography perfusion parameter to define infarct core using various postprocessing platforms; and (2) establish the degree of variability in threshold values between these different platforms. The researchers found that the marked variability in quantification among different postprocessing software limits

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generalizability of parameter map thresholds between platforms.

Kappelman, M.D., Dorn, S.D., Peterson, E., and others. (2011). “Quality of care for gastrointestinal conditions: A primer for gastroenterologists.” (AHRQ grant HS19468). *American Journal of Gastroenterology* 106, pp. 1182-1187.

The authors review current efforts to measure and improve the quality of care for digestive diseases, with a focus on colonoscopy, inflammatory bowel diseases, gastroesophageal reflux disease, chronic hepatitis C virus infection, and liver transplantation. Incorporation of quality improvement principles into clinical practice will ultimately be needed to improve care and outcomes for patients with these diseases.

Kauffmann, R.M., Landman, M.P., Shelton, J., and others. (2011, July/August). “The use of a multidisciplinary morbidity and mortality conference to incorporate ACGME general competencies.” (AHRQ grant HS13833). *Journal of Surgical Education* 68(4), pp. 303-308.

The Department of Surgery at Vanderbilt University Medical Center implemented a multidisciplinary morbidity and mortality (MM&M) conference as a means to establish a culture of safety, while teaching the Accreditation Council of Graduate Medical Education General Competencies to surgery residents. The results discussed in this paper are largely qualitative in nature and describe the process of

implementing an MM&M conference.

Kudryakov, R., Bowen, J., Ewen, E., and others. (2011, August). “Electronic health record use to classify patients with newly diagnosed versus preexisting type 2 diabetes: Infrastructure for comparative effectiveness research and population health management.” (AHRQ Contract No. 290-05-00361). *Population Health Management* 14. (ePub ahead of print).

The authors describe a practical approach to identifying a cohort of newly diagnosed type 2 diabetes cases in an electronic health record (EHR). The EHR has advantages over administrative data and prospective clinical trials as a data source for comparative effectiveness research and population management. However, use of data from current systems mandates significant tailoring for application in research.

Verifications of EHR data with external data sources is a high-yield step.

Leach, C.R., Schoenberg, N.E., and Hatcher, J. (2011). “Factors associated with participation in cancer prevention and control studies among rural Appalachian women.” (AHRQ grant HS16347). *Family and Community Health* 34(2), pp. 119-125.

In terms of their cancer burden, underserved populations, including minorities and rural residents, tend to be underrepresented in cancer prevention and control research. The two case studies discussed here demonstrate certain overlapping as well as distinctive strategies that can be used to deal with barriers to

recruitment and retention of rural participants in research studies.

Loit, E., Tricco, A.C., Tsouros, S., and others. (2011). “Pre-analytic and analytic sources of variations in thiopurine methyltransferase activity measurement in patients prescribed thiopurine-based drugs: A systematic review.” (AHRQ Contract No. 290-2007-10059). *Clinical Biochemistry* 44, pp. 754-757.

The authors’ review summarizes the evidence regarding thiopurine methyltransferase (TPMT) testing in chronic autoimmune disease. Their review showed that sufficient pre-analytical data were available to recommend preferred specimen collection, stability, and storage conditions for determination of TPMT status. There was no clinically significant effect on TPMT activity of age, gender, various co-administered drugs, or most morbidities.

Meddings, J., and Saint, S. (2011). “Disrupting the life cycle of the urinary catheter.” (AHRQ grant HS19767). *Clinical Infectious Diseases* 52(11), pp. 1291-1293.

Tackling unnecessary urinary catheter use is certainly the most important goal in preventing catheter-associated urinary tract infection. However, kicking the catheter habit can be difficult. The authors discuss an article by Knoll, et al. in this issue describing a 5-year hospital-wide “catheter quit program,” which is similar in its successes and challenges to aspects of other habit-changing programs such as treating an addiction to tobacco.

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Meyers, D. (2011). “A tribute to Dr. David Lanier.” *Journal of the American Board of Family Medicine* 24(5), pp. 494-495.

Reprints (AHRQ Publication No. 12-R011) are available from AHRQ.*

Dr. David Meyers, director of the Agency for Healthcare Research and Quality’s (AHRQ) Center for Primary Care, pays tribute to David Lanier, M.D., on the occasion of his retirement from AHRQ in December 2010. Over the past decade, Dr. Lanier provided visionary leadership as he designed, implemented, and nurtured AHRQ’s primary care Practice-based Research Networks.

Murray, D.J. (2011, May). “Current trends in simulation training in anesthesia.” (AHRQ grant HS18374). *Minerva Anesthesiologica* 77, pp. 528-533. Simulation includes a number of devices and technologies that, when used in training, offer the potential to accelerate the acquisition of skills and expand the breadth of a trainee’s clinical experiences. The purpose of this review is to highlight some of the more recent studies that have advanced simulation-based training and assessment strategies, with particular emphasis on those studies that either describe the results of a curriculum intervention or provide insight about the future uses of simulation.

Navathe, A.S., Clancy, C., and Glied, S. (2011). “Advancing research data infrastructure for patient-centered outcomes research.” *Journal of the American Medical Association* 306(11), pp. 1254-1255. Reprints

(AHRQ Publication No. 12-R013) are available from AHRQ.*

Much of patient-centered outcomes research relies on observational and quasi-experimental methods applied to data generated as a byproduct of providing care. While existing data sources have improved, there remain important data-related barriers to rapid, efficient research. The latest developments in information technology (virtual data access and distributed data network technologies) can help create an efficient data infrastructure supporting patient-centered care.

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. e324-e332.

Cluster analyses are common in psychology and sociology, but have been used to a limited extent in health services research, mainly to discover patterns of multimorbidities. This study demonstrated the application of such methods for identifying clusters of patients with high health care utilization that may suggest opportunities for enhanced care management in a managed care setting.

Ritchie, C.S., Roth, D.L., and Allman, R.M. (2011). “Living with an aging parent. It was a beautiful invitation.” (AHRQ grant HS 17786). *Journal of the American Medical Association* 306(7), pp. 746-753.

Increasing numbers of older parents are living with their adult children. Using the case of a couple receiving care from their daughter in her home, the authors review the

prevalence and epidemiology of adult children caring for a parent in an adult child’s home, important issues to consider, and a framework for clinicians to help guide their patients through this transition.

Sawchuk, C.N., Russo, J.E., Bogart, A., and others. (2011, May). “Barriers and facilitators to walking and physical activity among American Indian elders.” (AHRQ grant HS108542).

Preventing Chronic Disease: Public Health Research, Practice, and Policy 8(3), pp. 1-9.

The researchers used descriptive statistics to report barriers and facilitators to walking and physical activity among older American Indians. Lack of willpower was the most commonly reported barrier. Health-related quality of life was inversely related to physical activity barriers, and poor mental health quality of life was more strongly associated with total barriers than poor physical health.

Schiff, G.D., Galanter, W.L., Duhig, J., and others. (2011, July). “Principles of conservative prescribing.” (AHRQ grant HS16973). *Archives of Internal Medicine* 171(16), pp. 1433-1440.

Prescribing is often driven by pharmaceutical marketing and by patients requesting drugs they hear advertised. To counterbalance these prescribing pressures, which include often unrealistic patient expectations, practice time constraints, and paucity of data and practical guidance, the authors (physicians, pharmacists, and educators) have identified principles for safer and more evidence-based prescribing. ■

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The following is an alphabetical listing of the first authors of journal articles, book chapters, and reports summarized in *Research Activities* during 2011. Month of publication and page number(s) are given.

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AHRQ Pub. No. 12-RA004
January 2012

ISSN 1537-0224

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