



RESEARCH ACTIVITIES

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Community hubs ensure better care for the most vulnerable

It wasn't just because a few people cared that three patients with different but equally dire circumstances were helped.

There's another reason these individuals received the medical and social services they needed. . . again, and again.

In Ohio, a community health worker discovered a young woman living in a dilapidated apartment building. When the worker convinced the woman to seek medical care, they were both surprised to learn she was in her second trimester and pregnant with triplets. Later in the pregnancy

when the woman wanted to leave the hospital against medical advice, the health worker convinced her to stay. All three babies were born so healthy, they didn't need a ventilator, a typical need for triplets.

In Indiana, an unemployed father of an adolescent was promised a job in manufacturing. When the job didn't materialize, the father thought he could pick up his former career as a truck driver. But high blood pressure kept him from being hired and fueled fears he would lose his son. On the night his blood pressure spiked so high he thought he was having a heart attack, he went to the emergency room. A health access worker referred him to a federally qualified health care center and helped him get his blood pressure under control. The man was not only hired, he could care for his son.

In Oklahoma, a homeless man with diabetes was showing up in the emergency room once or twice a week for 6 months. He wanted more than medical care; he wanted socialization. By putting him on a pathway for the local clinic to become his medical home for care—and comfort—his emergency room visits dropped to only twice during the next 6 months.

Community hubs

These patients are part of community "hubs" that coordinate the delivery of health care and social services for the most vulnerable Americans. These hubs have the infrastructure to connect at-risk individuals to health and social services, while avoiding duplication of services.

Some hubs focus on high-risk pregnant women. Others care only for children. One serves recently released prisoners. All focus on people at risk, providing quality care while working to eliminate duplication and disparities.

Three principles guide community hubs:

- Find: Identify those at greatest risk.
- Treat: Ensure treatment through evidence-based interventions and evaluate their impact.
- Measure: Document and evaluate benchmarks and final outcomes.

These principles are the driving force behind 16 hubs in 10 States that participate in the Community Care Coordination Learning Network, sponsored by the Agency

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From the Director



Mind the gap” is a warning sign for passengers crossing the gap between the platform and the train. When I think

about disparities in health care, “Mind the gap” is more than a warning. It’s a call to action.

At AHRQ, our Health Care Innovations Exchange program is all about taking action to solve problems, improve health care quality, and reduce disparities by sharing evidence-based innovations and solutions.

pathways model is a perfect fit for our Innovations Exchange program. Developed by Drs. Mark and Sarah Redding, a husband-wife team, pathways help find those at risk, connect them to care, and measure the outcomes. The Reddings even propose that reimbursement be directly linked to these outcomes.

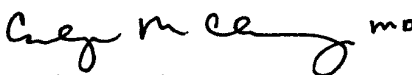
We developed a Community Care Coordination Learning Network to provide information and support for communities interested in this model. We now have 16 communities or “hubs” in 10 States.

The Reddings’ Community Health Access Project in Ohio focuses on geographic areas with high rates of low-birth-weight deliveries. In a

growing Hispanic community, the Rural and Urban Access to Health in Indiana serves individuals primarily with incomes below 200 percent of the Federal poverty line. Central Oklahoma Project Access works with the homeless, underserved, and uninsured populations.

All the community hubs link patients in difficult places and circumstances to quality care, while saving costs for the health care system.

These communities are doing more than “minding the gap.” They’re helping to mend it.


Carolyn M. Clancy, M.D.

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for Healthcare Research and Quality (AHRQ)'s Health Care Innovations Exchange, which connects people with innovations and solutions that improve care and reduce disparities.

We want to see things like diabetic education and immunizations be like packages on a shelf—within reach for everyone.

Through the Learning Network, representatives from each community hub share ideas, stories, and strategies with each other on a formal and informal basis.

The Network is led by Mark Redding, M.D., a pediatrician in Mansfield, Ohio, and an advocate for the underserved. "Five percent of the population uses 50 percent of our health care resources, and those most at risk are often the hardest to serve," Redding told *Research Activities*. "This is a national emergency."

Caring for the most vulnerable can get complicated and Redding knows it. "An amazing amount of work goes on. I know when a patient comes through my door, it may have taken 20 hours of work to get her here." But the payoff is huge when babies are born healthy, excessive emergency room visits are avoided, and patients get the care they need.

"We want to see things like diabetic education and immunizations be like packages on a shelf—within reach for everyone," he says.

Pathways

Redding and his wife, Sarah Redding, M.D., executive director of the Children's Community Health Access Project (CHAP), cofounded the pathways model that hubs use. "Basically, a pathway is a measurement tool or metric focused on achievable outcomes," explains Sarah Redding. Pathways can address education, depression, prenatal care, housing, and more. An individual may have many pathways. A pathway is only complete when an identified problem is solved.

Key to the pathways is community care coordinators who navigate care and advocate for patients. They may be nurses, social workers, or community health workers. "It doesn't matter who does it," says Sarah Redding. It does matter what they do and how they do it.

"Each pathway is tracked. The model is rather simple, but even though it's not rocket science, it can be messed up." That's why measurement is so important. But even then, she admits, "Measurement can only get you so far. You have to take that information and do something better."

"The pathways allow for local innovation, but ultimately they hold people accountable," explains Mark Redding. He proposes that payment for completed pathways be directly linked to outcomes.

"One of our Medicaid managed care organizations looked at our patients who received care coordination from 2007 to 2009 and found that our NICU [neonatal intensive care unit] costs for pregnant members only increased by a nickel," Sarah Redding explains. "This shows how

connecting those most at risk with care adds up to real cost savings."

At Health Care Access Now, which stretches across nine counties in southwestern Ohio and northern Kentucky, executive director and Learning Exchange member Judith Warren, M.P.H., puts the pathways model in action for outcomes that affect high-risk pregnant women and adults who frequent hospital emergency departments. Warren says, "As we struggle with budget cuts, this type of structure helps us reduce duplication, improve outcomes, and simplify contracts."

Laura Brennan, M.S.W., Learning Exchange member and senior manager of CareOregon, says, "No matter what we do within the clinic walls, until we reach out and coordinate and address psychological and social factors, we're never going to meet our quality standards or improve the health of our members." This can be particularly challenging, since CareOregon provides translation for patients who speak nearly 20 different languages and are from even more cultures, notes Brennan. "We have a triple aim of improving the health of the population, bending the cost curve, and improving the quality of care."

This shows how connecting those most at risk with care adds up to real cost savings.

Learning Network members stay connected. "We're not competitive, but we don't always like to admit what doesn't work," says Sherry Gray, M.A., Learning Exchange member. "We ask each other,

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‘What did you guys do? How do you do this?’ We all do a lot with very little money.” Gray is director of a community hub that serves homeless, underserved, and uninsured populations in Indiana called Rural and Urban Access to Health or RUAH. She says, “The acronym in Yiddish means ‘breath of life.’ We’re breathing life into the system for real benefits that everyone can feel good about.”

Where are they now?

In Ohio, the triplets are both healthy and in school. In Indiana, the truck driver recently was interested in making a donation to the program that helped him. And in Oklahoma, Mary Overall, M.S.N., director of health systems and compliance for Central Oklahoma, says even though they didn’t completely end the homeless man’s use of the emergency room, the reduction was “incredible.” She says, “When we can put pathways

in place, we’ll have positive outcomes.”

Editor’s note: *Connecting Those at Risk to Care*, a guide to building community hubs, is available online at <http://www.innovations.ahrq.gov/content.aspx?id=2956>. Printed copies are also available free of charge by calling the AHRQ Clearinghouse at 800-358-9295 or sending an e-mail to ahrqpubs@ahrq.hhs.gov. Ask for publication number 09(10)-0088. ■ KM

Disparities/Minority Health

Treatment by physicians with same race and language as the patient may improve medication adherence

Blacks and Hispanics are disproportionately affected by diabetes and its related cardiovascular effects, making it even more important for them to take all their medications as directed. Receiving treatment from a doctor of the same race or language may improve medication adherence rates among blacks and Hispanics, suggests a new study. However, it appears to have no effect on Asian patients or those Hispanic patients who are proficient in English.

The study included 131,277 adults with diabetes receiving care from Kaiser Permanente, a large health maintenance organization in northern California. Results showed that patient-physician race concordance was highest for Asian (63 percent) and white (47 percent) patients, and lowest for black (10 percent) and Hispanic (11 percent) patients. Just under a quarter (24 percent) of Spanish-speaking patients were treated by physicians fluent in the language. When blacks had black doctors, adherence rates rose to 53.2 percent

compared with 49.8 percent for blacks without black doctors. Adherence rates also improved for Hispanic patients whose doctors spoke Spanish (50.6 percent) compared with those whose doctors did not (44.8 percent).

Further efforts are needed to recruit and retain minority and language-proficient physicians who can help improve outcomes in these populations, suggest the researchers. Their study was supported in part by the Agency for Healthcare Research and Quality (HS13902).

See “Adherence to cardiovascular disease medications: Does patient-provider race/ethnicity and language concordance matter?” by Ana H. Traylor, M.P.P., Julie A. Schmittiel, Ph.D., Connie S. Uratsu, B.A., and others in the *Journal of General Internal Medicine* 25(11), pp. 1172-1177, 2010. ■ KB

Note: Only items marked with a single (*) asterisk are available from the AHRQ Clearinghouse. Items with a double asterisk (**) are available from the National Technical Information Service. 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.

Different attitudes among blacks and whites affect their preference for same-race physicians

Just as some patients prefer to be seen by a physician of the same sex, other patients may feel more comfortable with a doctor of the same race/ethnicity. This is called race concordance. A new study reveals very different motivators behind these attitudes among black and white patients. It looked at what drives preferences for race-concordant physicians in black and white patients.

Blacks were more likely than whites to have positive beliefs and expectations for same-race doctors. Only 2.5 percent of whites felt they had not received the best medical care from a different-race doctor; however, 10 percent of blacks felt this way. As a result, this feeling among blacks was associated with positive attitudes toward race-

concordant doctors. For whites, those who preferred not to have interracial contact in their lives expected to feel more comfortable with white doctors and to have them understand their health problems. The findings show the importance of considering social context when studying attitudes toward race in health care interactions, note the researchers.

They used data from a random telephone survey of residents living in the Cincinnati area. Their sample included 695 whites and 510 blacks. Two questions were asked of each individual to determine their attitudes regarding race concordance with doctors. They were first asked to agree or disagree with this statement: "In general, doctors understand my

health problems better when they are the same race as me rather than a different race." This was followed with a second statement: "In general, I feel more at ease when the doctor is the same race as I am." Participants were also asked if they didn't receive the best medical care in the past from a doctor who was a different race. The study was supported in part by the Agency for Healthcare Research and Quality (HS13280).

See "Factors affecting whites' and blacks' attitudes toward race concordance with doctors," by Jennifer Malat, Ph.D., David Purcell, Ph.D., and Michelle Van Ryn, Ph.D., M.P.H., in the *Journal of the National Medical Association* 102(9), pp. 787-793, 2010. ■ KB

Hispanics with HIV have different communication styles with their health care providers than whites

One aspect of the medical encounter with health care providers is interpersonal communication during the visit. This is particularly important in HIV care, where discussions about treatment are often complex and personalized. Hispanic patients with limited English proficiency are expected to have communication barriers. However, a new study finds that even Hispanics who speak English well have different communication styles than white patients.

The researchers found significantly less patient-centered communication during encounters between Hispanic patients and their doctors compared with white patients. Specifically, Hispanic patients, regardless of their English proficiency, tended to engage in less psychosocial talk with their providers.

However, despite these differences in communication styles, Hispanic patients rated their providers' communication higher than white patients. In light of their findings, the researchers suggest that health care providers make every effort to ensure that psychosocial issues are addressed during encounters with all patients.

For the study, they recruited 19 HIV providers and 113 patients seen by them at two sites in New York City and Portland. The patient group consisted of 58 Hispanics and 55 whites. Patient-provider encounters were recorded in examination rooms and later analyzed to determine how well the patient communicated with their provider. This included whether they asked questions, engaged in information exchange, and participated in emotional talk, including positive and negative talk and social chit-chat—areas where the researchers found no significant differences. The study was supported in part by the Agency for Healthcare Research and Quality (Contract No. 290-01-0012).

See "Differences in patient-provider communication for Hispanic compared to non-Hispanic white patients in HIV care," by Mary Catherine Beach, M.D., M.P.H., Somnath Saha, M.D., M.P.H., P. Todd Korthuis, M.D., and others in the *Journal of General Internal Medicine* 25(7), pp. 682-687, 2010. ■ KB

Immigrants to the United States and Canada have worse access to care than native-born counterparts

Every year, the United States and Canada receive new immigrants who will require access to primary and preventive health care services. A new study reveals that foreign-born immigrants have worse access to care in both countries compared with native-born persons, for certain access indicators. Immigrants in the United States fared worse than nonimmigrants when it came to having a regular doctor and an annual visit with a health care provider. Overall, immigrants in Canada had better health care access compared with their counterparts in the United States. However, immigrants living in Canada had lower rates of timely Pap tests compared with U.S. immigrants. Significant differences exist

between these two countries when it comes to health insurance coverage, and these differences help to explain some of the differences in access to care across countries. Canadians rely on universal access to publicly funded health care services. In contrast, the majority of Americans have private health insurance, and a significant portion lack any insurance. Other differences in the sociodemographic composition of each country's immigrant population may also help to explain access-to-care differences.

Findings were based on a telephone survey, conducted between 2002 and 2003, of residents living in both countries. The sample included 6,620 adults aged 18-64 years with known information on nativity

status. Participants were asked about their access to health care in the past 12 months, Pap test screening in the past 3 years, and mammograms in the past 2 years. Out of 2,729 participants living in Canada, 473 were born outside the country. The sample also included 3,267 native-born U.S. residents and 624 foreign-born individuals. The study was supported in part by the Agency for Healthcare Research and Quality (T32 HS00029).

See "Access to primary and preventive care among foreign-born adults in Canada and the United States," by Lydie A. Lebrun, M.P.H., and Lisa C. Dubay, Ph.D., in the December 2010 *HSR: Health Services Research* 45(6) Part I, pp. 1693-1719. ■ KB

Patient gender does not influence the management or diagnosis of acute abdominal pain in the elderly, but affects outcome

Some 7.6 million people in the United States visit the emergency department (ED) each year for acute abdominal pain, making it the commonest reason for ED visits. Elderly men and women seen in the ED for this problem are managed similarly and have similar diagnoses in contrast to elderly patients seen for heart attack or stroke, according to a new study. However, elderly men have worse outcomes than elderly women.

In their study of 131 consecutive patients with abdominal pain seen at a major teaching hospital's ED, the researchers found similarity for the 52 men and 79 women in terms of mean age, ethnicity, primary language, insurance status, and coexisting illnesses at baseline. There were no significant differences in the median time to evaluation by a doctor (approximately 20 minutes for both sexes) or the median time at the ED for patients discharged to home (280 minutes for men, 319 minutes for women). Little difference was noted in the types of physical examination performed, laboratory tests conducted, imaging used, medication given (opioid analgesics, antibiotics), or frequency of surgical consultations.

A majority of both men (60 percent) and women (70 percent) were admitted to the hospital, mostly to nonsurgical services, for a median of 4 days for each group. The only notable difference was that 19 percent of all the men, but only 1 percent of all the women, died within 3 months of their ED visit, despite having similar predicted mortalities on the basis of their coexisting conditions. Data on the patients were abstracted from ED physician documentation, nursing notes, and medication records—as well as electronic and paper hospital records for those who were admitted. The study was funded in part by the Agency for Healthcare Research and Quality (HS11416).

More details are in "Does gender influence emergency department management and outcomes in geriatric abdominal pain?" by Rebekah L. Gardner, M.D., Richard Almeida, M.D., Judith H. Maselli, M.S.P.H., and others in the *Journal of Emergency Medicine* 39(3), pp. 275-281, 2010. ■ DIL

Health Care Costs and Financing

Increasing premiums and other costs in Oregon's Medicaid program in 2003 led many to drop out

Oregon's Medicaid program was created to be a sustainable program that could weather budgetary storms without having to cut enrollees. However, a study done in Oregon in the wake of a 2003 fiscal crisis shows that the redesign of its Medicaid program was a key factor in the disenrollment rate rising to 77 percent and the number of enrollees falling from 104,000 to 24,000 between February 2003 and November 2005.

In 2003, the Oregon Health Plan was split into two parts. The first part, Oregon Health Plan Plus, to which no changes were made, was for those who fit into the Federal government's mandatory coverage categories for Medicaid, such as low-income pregnant women and disabled adults. The second part, Oregon Health Plan Standard, to

which major changes were made, was for those who qualified under Oregon's State-specific rules—in particular, nondisabled adults and couples earning less than the Federal poverty level.

Under the redesigned program, persons enrolled in the standard plan faced higher premiums, greater cost sharing, and strict payment deadlines. Some categories of services such as mental health and substance abuse, dental care, and durable medical equipment were eliminated. Some mandatory point-of-service copayments were added. The premiums nearly doubled for couples, with exemptions eliminated for homeless people and those with zero income. Finally, for those who did not pay premiums on time, a 6-month "lockout" was imposed.

Recent data show a dramatic increase in States' Medicaid enrollees while at the same time three-quarters of the States report a possible Medicaid budget shortfall in fiscal year 2010. The researchers conclude that as policymakers consider various ways to contain costs in these difficult economic times, it is vital that they understand the likely impact of increased cost sharing and other changes on vulnerable Medicaid populations. This study was supported by the Agency for Healthcare Research and Quality (HS16119).

See "Raising premiums and other costs for Oregon health plan enrollees drove many to drop out," by Bill J. Wright, Matthew Carlson, Heidi Allen, and others in *Health Affairs* 29(12), pp. 2311-2316, 2010. ■ MWS

Patients with chronic diseases who pay coinsurance less likely to refill their medication than those with fixed copayments

Patients with a chronic illness such as diabetes are more likely to refill a prescription to treat their condition if they pay a copayment (fixed dollar amount) rather than coinsurance (a fixed percentage of the cost of the drug), even if the actual cost to the patient is the same, a new study finds. William Encinosa, Ph.D., of the Agency for Healthcare Research and Quality, and Avi Dor, Ph.D., of George Washington University, compared adult patients with type II diabetes in copayment plans with matched patients in coinsurance plans for a 90-day period after the patient completed a diabetes drug prescription.

Patients with coinsurance were 10 percent lower in refill compliance than those with copayments (50 vs. 60 percent fully compliant by the end of 4 weeks). The findings from the matched patients confirmed a prediction from the researchers' economic model that the coinsured patients would be less likely to comply with filling their prescriptions since they are exposed to any drug price increases compared with patients with fixed copayments.

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Copayments

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The researchers developed a theoretical model relating coinsurance and copayment levels with the probability of complying with filling a prescription. They then collected data from the Thomson Reuters MarketScan[®] database, encompassing up to 3.5 million individuals covered by employer-sponsored health insurance. They merged data on prescriptions for type II diabetes with information on whether these plans required copayments or variable coinsurance. The final sample included 6,537 persons in copayment plans (who had similar characteristics to the coinsured sample) matched with 6,537 persons in the coinsurance plans.

The researchers recommend that private and government payers re-examine strategies that have imposed higher levels of cost-sharing on patients. They point out that use of higher cost-sharing ignores the importance of consistent use of prescription drugs in preventing complications from chronic diseases such as diabetes and cardiovascular disease.

More details are in “How does cost-sharing affect drug purchases? Insurance regimes in the private market for prescription drugs,” by Drs. Dor and Encinosa, in the 2010 *Journal of Economics and Management Strategy* 19(3), pp. 545-574, 2010. Reprints (AHRQ Publication No. 11-R032) are available from the Agency for Healthcare Research and Quality.* ■ DIL

“Piece-rate” performance incentives for physicians improve childhood immunization rates

A variety of pay-for-performance (P4P) incentives are used in health care to improve quality. Most programs pay physicians in an “all or nothing” fashion and may dissuade physicians from even trying to improve. “Piece rate” P4P programs—ones that reward physicians for each patient receiving proper care—are a promising alternative, but little is known about how effective they are.

A new study found that a health plan using “piece rate” P4P significantly improved immunization rates for 2-year-olds compared with health plans not using this approach. The study looked at the experiences of a not-for-profit Medicaid-focused managed care plan in New York. In 2003, the plan introduced a P4P program whereby physicians

received a \$200 bonus payment for each child fully immunized in a timely fashion by age 2. The researchers compared immunization rates from this plan with rates obtained from 16 other Medicaid plans that used non-P4P methods.

Immunization rates increased for all New York Medicaid health plans from approximately 60 percent in 2003 to approximately 80 percent in 2007. However, this rate increase was 11 percent greater for the plan offering the \$200 bonus program. Patients most likely to be fully immunized included children with chronic conditions, those who were Hispanic, and children cared for in private practices. This was also true for patients in practices with a high number of patients enrolled in the P4P plan.

The researchers caution that P4P alone is not a panacea. A variety of patient and provider factors affect performance, including administrative support. Therefore, each health plan must decide the best, most cost-effective ways to encourage immunization based on their particular patient and provider characteristics. The study was supported in part by the Agency for Healthcare Research and Quality (HS17146).

See “Improving timely childhood immunizations through pay for performance in Medicaid-managed care,” by Alyna T. Chien, M.D., M.S., Zhonghe Li, M.S., and Meredith B. Rosenthal, Ph.D., in the December 2010 *HSR: Health Services Research* 45(6) Part II, pp. 1934-1947. ■ KB

Half of all annual medical expenditures are for chronic diseases

Chronic conditions are responsible for nearly half of all annual health care expenditures for persons not in nursing homes or other institutions. In addition, more than a third of hospital-based expenditures are for the care of patients with these conditions, reveals a new study. Patrick Conway, M.D., M.Sc., of Cincinnati Children's Hospital Medical Center, Steven Machlin, M.S., and Joel Cohen, Ph.D., from the Agency for Healthcare Research and Quality (AHRQ), and colleagues used data from the 2007 Medical Expenditure Panel Survey (MEPS). Produced by AHRQ, the annual survey collects data on medical expenditures, health conditions, health care services used, and individual consumer characteristics based on a nationally representative sample of about 15,000 households. The researchers grouped expenditures reported in MEPS into seven care categories: chronic conditions, acute illness, trauma or poisoning, pregnancy or birth-related, dental, routine preventative health care, and other.

An estimated \$1.13 trillion was spent on health care for more than 300 million persons in the U.S. civilian

noninstitutionalized population in 2007. Nearly half (47 percent) of these expenditures were for chronic conditions, with acute illness taking up another quarter (25 percent). Spending for the other five categories was 8 percent or less.

Overall, 31.3 percent of all expenditures were for inpatient treatment, followed by office-based visits at 23.5 percent and prescription drugs at 20.7 percent. Prescription medicines (34.8 percent) and inpatient treatment (29.9 percent) accounted for nearly two-thirds of all spending on chronic conditions. Expenditures for chronic conditions increased from 31.7 percent for persons 0-17 years of age to more than half for those aged 45 and over.

More details are in "Patient-centered care categorization of U.S. health care expenditures," by Dr. Conway, Kate Goodrich, M.D., M.H.S., Dr. Machlin, and others in the April 2011 *HSR: Health Services Research* 46(2), pp. 479-490. ■ KB

Patient Safety and Quality

Nursing homes more often voluntarily terminate from Medicare and Medicaid programs in States with strong quality regulations

Medicare- and Medicaid-certified nursing homes must meet a variety of regulations put in place by Federal and State governments. More than 95 percent are certified by either Medicare or Medicaid. State-imposed nursing home terminations of certification occur rarely in most States. However, nursing homes in States with strong quality regulations are more likely to voluntarily terminate from the Medicaid or Medicare certification programs, finds a new study. State policymakers need to assess the impact of this increase in terminations on quality of and access to nursing home care,

suggests William D. Spector, Ph.D., a researcher with the Agency for Healthcare Research and Quality (AHRQ).

He and colleagues used information on terminations from the Medicaid and Medicare programs from the 2006 and 2007 National Online Survey, Certification and Reporting data and constructed a regulatory stringency index for each State based on a prior survey of State licensing and certification directors. The stringency of State regulation varied widely. States considered the most stringent were Connecticut, Kansas, Oregon, and Washington, D.C. Some of the least stringent

States were Hawaii, Pennsylvania, South Dakota, and Kentucky.

A direct relationship was found between voluntary termination and a State's level of regulatory stringency. During 2006-2007, the national 2-year voluntary termination rate was 2.16 percent. Washington, D.C. had the highest rate of voluntary terminations (10 percent). Nursing homes in States with high regulatory enforcement were 50 percent more likely to voluntarily terminate their Medicare-Medicaid certification than nursing homes in other States. Characteristics of voluntary

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Nursing homes

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terminated nursing homes were small size, low occupancy rate, and being for-profit, hospital-based, or non-chain-affiliated. In addition, these homes tended to be in highly competitive geographical areas and in States with lower Medicaid reimbursement rates.

More details are in “State regulatory enforcement and nursing home termination from the Medicare and Medicaid programs,” by Yue Li, Ph.D., Charlene Harrington, Ph.D., Dr. Spector, and Dana B. Mukamel, Ph.D., in the December 2010 *HSR: Health Services Research* 45(6) Part I, pp. 1796-1814. ■ KB

Length of stays in emergency departments varies considerably

Quality emergency department (ED) care is often defined by time spent in the ED by the patient. This can be broken down into three distinct periods: waiting room time, treatment time, and boarding time (waiting for an inpatient bed). Recently, researchers used quantile regression, a statistical method, to characterize service completion times for these different phases at four academic medical center EDs. They found that patient waiting and treatment times varied widely among the four institutions.

The study used data on all visits to each of the EDs over a period of 1 year. Patient volumes ranged from 50,000 to 62,000. Emergency room bed capacities also differed, from 26 beds at one hospital to 41 beds at another. In terms of patient characteristics, one ED treated a

higher percentage of the uninsured (37 percent). Another hospital ED treated a higher percentage (45 percent) of low-acuity patients compared with the others.

Waiting room times were influenced by the day of the week, time of day, and patient acuity level. Median waiting room times ranged from 15 to 44 minutes. Time spent in the waiting room was most influenced by the patient's mode of arrival. Ambulance patients waited less time to be put in a room compared with other patients, but experienced longer treatment times. Significant predictors of treatment time included chief complaint and acuity level. Patients arriving at the ED with a psychiatric problem had the longest treatment times regardless of their acuity level.

The researchers' statistical approach demonstrated just how variable length of stay can be across a variety of ED environments. In the future, such statistical analysis can serve as the basis for redesigning EDs and patient flow procedures to improve care. The study was supported in part by the Agency for Healthcare Research and Quality (HS17957).

See “Characterizing waiting room time, treatment time, and boarding time in the emergency department using quantile regression,” by Ru Ding, M.S., Melissa L. McCarthy, Sc.D., Jeffrey S. Desmond, M.D., and others in *Academic Emergency Medicine* 17(8), pp. 813-823, 2010. ■ KB

An automated phone response system can help track adverse drug events in primary care patients

Gathering information on adverse drug events (ADEs) or side effects from patients seen at primary care clinics could be assisted by use of an interactive voice response system (IVRS), according to a feasibility study. The researchers confirmed that the IVRS can be used to contact patients to find out if they have suffered any ADEs or side effects from any of a targeted group of drugs, primarily used to treat chronic diseases, which were selected because of safety concerns or because they had been approved by the U.S. Food and Drug Administration within the past 7 years.

Some patients were more likely to participate in the IVRS study than others. The 902 patients with new prescriptions of 31 target drugs who participated in the

study represented 43.3 percent of those who were contacted and 25.7 percent of potentially eligible patients with a working phone. Adjusting for demographic information and drug class, potentially eligible patients older than 66 years were 47 percent more likely to participate than those aged 56-65. Ethnicity and income level also influenced the likelihood of participation, with Hispanics 44 percent less likely to participate than non-Hispanic whites, and patients from low-income communities (median household income under \$50,000/year) 31 percent less likely to participate than those from high-income communities (median more than \$50,000/year).

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Adverse drug events

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Compared with patients prescribed drugs for insomnia, those successfully contacted who received drugs for erectile dysfunction or smoking cessation were 30-37 percent less likely to participate, while patients prescribed anti-seizure drugs were 65 percent more likely to participate. To conduct their study, the researchers sought the involvement of patients from 11 primary care clinics in and around Boston that used the same Web-based electronic health record. Patients were eligible if between 18 and 84 years old, had a visit with

a primary care physician at one of the clinics, and received a prescription for one of 31 target medications. The study was funded in part by the Agency for Healthcare Research and Quality (HS16970).

More details are in “Participation in an ambulatory e-pharmacovigilance system,” Jennifer S. Haas, M.D., M.S.P.H., Aarthi Iyer, M.P.H., E. John Orav, Ph.D., and others in *Pharmacoepidemiology and Drug Safety* 19(9), pp. 961-969, 2010. ■ DIL

Outcomes/Effectiveness Research

Organizational culture distinguishes top-performing hospitals in patient outcomes from heart attack

Hospitals with the lowest mortality rates for patients with acute myocardial infarction (AMI) or heart attack don't differ much from hospitals with high mortality rates in their use of evidence-based protocols and processes. Organizational culture is what distinguishes the top-performing hospitals, according to a new study. The difference in risk-standardized mortality rates (RSMRs) between the highest- and lowest-performing hospitals in the study was approximately 33 percent (average of 13.3 vs. 19.4). The researchers found that staff at the high-performing hospitals shared organizational values of providing exceptional, high-quality care. In these hospitals, senior management exhibited unwavering commitment to high-quality AMI care through providing adequate financial and nonfinancial resources, by using quality data in their strategic planning, and by

fostering staff accountability for poor performance and recognition for high performance.

Low-performing hospitals were more likely to have the sporadic involvement of senior management and allocate insufficient resources to accomplish quality goals. High-performing hospitals were more likely to have physician-champions for quality AMI care, empower their nurses, and involve pharmacists in patient care. Low-performing hospitals typically were inconsistent in treating nurses as valued members of a team, and had narrowly defined roles for pharmacists. Finally, coordination among teams and units and innovative problem-solving by front-line staff were routine in the high-performing hospitals.

The researchers listed hospitals by their AMI 30-day RSMRs from the Centers for Medicare & Medicaid Services' Hospital Compare

database for 2005 to 2006 and 2006 to 2007. Hospitals that were in either the top or bottom 5 percent for both time periods were selected. The researchers conducted site visits at 11 hospitals (7 high-performing and 4 low-performing), interviewing a total of 158 staff members (physicians, nurses, administrators, and other clinical staff) who were most involved in AMI care. The study was funded in part by the Agency for Healthcare Research and Quality (HS16929).

More details are in “What distinguishes top-performing hospitals in acute myocardial infarction mortality rates? A qualitative study,” by Leslie A. Curry, Ph.D., Erica Spatz, M.D., Emily Cherlin, Ph.D., M.S.W., Harlan M. Krumholz, M.D., S.M., Elizabeth H. Bradley, Ph.D., and others in the March 15, 2011, *Annals of Internal Medicine* 154(6), pp. 384-390. ■ DIL

No consistent association found between volume or quality and outcomes of complex surgeries for cancer

The link between high-volume surgery and improved surgical outcomes has become the focus of payer-driven proposals to regionalize care to high-volume centers. Yet a research team headed by Andrew D. Auerbach, M.D., M.P.H., of the University of California, San Francisco, found no consistent association between higher hospital or surgeon volume and mortality, readmission, length of stay, or costs for complex cancer surgery. Neither was there any consistent association between individual quality measures and readmission, mortality, and other outcomes. Lower overall adherence to quality-of-care measures was associated with higher costs and longer hospital stays, but not improved outcomes.

The study included 14,170 patients 18 years or older who were operated on for cancer by 1,629 physicians at 266 U.S. hospitals during the period 2003-2005. The procedures included pneumonectomy, esophagectomy, pancreatectomy, and pelvic surgery.

Quality measures included whether antimicrobials were used to prevent surgical site infection on the operative day, whether an antimicrobial was continued inappropriately past the first day after surgery, and whether appropriate strategies were used to prevent venous thromboembolism on the operative day.

The findings suggest that quality improvement efforts aimed at improving the reliability of systems that provide care for cancer surgery patients can have a substantial impact on costs of care. This study was supported by the Agency for Healthcare Research and Quality (HS11416).

See “The relationship between case volume, care quality, and outcomes of complex cancer surgery,” by Dr. Auerbach, Judith Maselli, M.S.P.H., Jonathan Carter, M.D., and others in the *Journal of the American College of Surgery* 211, pp. 601-608, 2010. ■ MWS

Chemotherapy and radiation therapy for lung cancer linked to cardiac disorders

Chemotherapy, radiation therapy, and the combination of chemotherapy and radiation therapy have been shown to result in increased survival time of patients with non-small-cell lung cancer (NSCLC). Since chemotherapy may affect healthy cells as well as cancer cells and radiation therapy in high doses can compromise the heart, a research team from the University of Texas sought to investigate the likelihood of an increased risk of developing cardiac disorders following the administration of these forms of therapy in NSCLC patients. They found that all three modalities of treatment—chemotherapy only, radiation therapy only, and chemoradiation—were associated with increased risks for developing

cardiac dysfunction. Persons at highest risk were men, blacks, older patients, those with more coexisting illness, and those with advanced disease.

Patients who received chemotherapy only were more likely to develop ischemic heart disease and heart failure, while those who received chemoradiation were at increased risk for conduction disorders and heart failure. The study also found an increased risk of ischemic heart disease in patients with left-sided tumors treated with radiation only and with chemoradiation given to both lungs. The risk for cardiac dysfunction following chemoradiation was above that for chemotherapy only and radiation therapy only.

The researchers used the Surveillance, Epidemiology, and End Results (SEER) Program-Medicare linked data files to gather information about incident cancer cases and cancer-directed therapy. The final study sample consisted of 34,209 patients aged 65 and over with stages I-IV NSCLC who were diagnosed from 1991 to 2002. The study was supported by the Agency for Healthcare Research and Quality (HS16743).

See “Cardiac toxicity in association with chemotherapy and radiation therapy in a large cohort of older patients with non-small-cell lung cancer,” by Dale Hardy, Ph.D., Chih-Chin Liu, M.S., Janice N. Cormier, M.D., M.P.H., and others in the *Annals of Oncology* 21, pp. 1825-1833, 2010. ■ MWS

Combination diuretic therapy for heart failure appears useful, but needs a stronger evidence base

The first line of treatment for heart failure, which accounts for more than 1 million U.S. hospitalizations each year, are the so-called loop diuretics (LDs) to prevent sodium retention in the kidney that can lead to fluid overload. When LD therapy becomes unable to reduce the fluid overload, a number of studies over the past 40 years suggest the addition of thiazide-type diuretics or TDs. However, a review of the scientific literature by three Duke University researchers found that specialty society endorsement of the combination therapy was based on expert opinion, and not strong, quantitative evidence.

They found that LD-TD combination therapy, while useful in overcoming resistance to LD therapy through increased loss of sodium, was also often associated with problems. LD-TD combination therapy, compared with LD therapy alone, can benefit patients in a number of ways: by overcoming diuretic resistance, causing weight loss, lowering drug cost, decreasing systematic congestion, improving ventricular function, speeding hospital discharge by several days, and preventing readmission to the hospital. However, potential adverse effects of combination therapy include: worsening kidney function (leading to

increased retention of nitrogenous wastes), increasing dehydration, causing reduced sodium/calcium/magnesium levels in the blood, and increasing heart arrhythmias.

Nevertheless, studies supporting the combination therapy were generally small and none were placebo-controlled trials, the researchers noted. The researchers suggest that probably all TDs, which have longer-lasting effects on diuresis than do typically short-acting LDs, are effective as part of combination therapy.

However, they strongly urge close laboratory monitoring of sodium ion levels. The safety and effects of combined therapy on morbidity and mortality are unknown and require further research, they caution. The study was funded in part by the Agency for Healthcare Research and Quality (HS16964).

More details are in "Combination of loop diuretics with thiazide-type diuretics in heart failure," Jacob C. Jentzer, M.D., Tracy A. DeWald, R.D., Pharm.D., B.C.P.S., and Adrian F. Hernandez, M.D., in the November 2, 2010 *Journal of the American College of Cardiology* 56(19), pp. 1527-1534. ■ DIL

Patients with sickle cell disease employ various strategies to control their pain

Patients with sickle cell disease (SCD) often experience excruciating, sometimes daily, pain episodes that can lead to emergency department visits and hospitalizations. At a workshop in 2008, seven patients who were successfully managing their SCD said tactics such as keeping journals, seeking spiritual support, choosing the right career, and ensuring proper rest and nutrition were instrumental in helping them manage their disease and pain.

The patients, recruited from across the country by the workshop panel, shared that self awareness was an effective strategy for managing

their disease. Journal entries that tracked which foods or activities triggered pain episodes were especially helpful, as was heeding body signals that told them they needed more rest. Emotional support through spiritual support, friends and family, and professional counseling was the second most common strategy the patients mentioned for disease management. Paula Tanabe, Ph.D., M.P.H., and Jerlym Porter, Ph.D., of the Northwestern University Feinberg School of Medicine and colleagues suggest that health care providers might consider encouraging their patients with SCD to use journals or seek counseling or support groups to control symptoms.

The patients also recommended choosing a career that offers flexibility and health and retirement benefits and is not physically overtaxing. A diet rich in fruits, vegetables, and whole grains, but sparse in meats with high iron content was also recommended. The authors suggest physicians consider referrals to nutritionists for patients with SCD. Adequate sleep and exercise are also important for all patients to maintain general good health, which can help avoid pain crises. Finally, being involved in activities that educate others, including health care professionals, about SCD helped these patients feel more in control of their

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Sickle cell disease
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disease. Dr. Porter's work was supported by the Agency for Healthcare Research and Quality (T32 HS00078).

See "A qualitative analysis of best self-management practices: Sickle cell disease," by Drs. Tanabe and Porter, Melissa Creary, M.P.H., and others in the November 2010

Journal of the National Medical Association 102(11), pp. 1033-1041. ■ *KFM*

Child/Adolescent Health

Doctor's comments during a child's physical exam can affect whether parents push for antibiotics

Positive, supportive comments made by the doctor during the physical examination of a child seen for a viral upper respiratory tract infection (URI) can markedly reduce the percentage of patients who receive an inappropriate antibiotic prescription, a new study suggests. Viruses, which do not respond to antibiotics, cause more than two-thirds of URIs, but URIs account for approximately 75 percent of children's antibiotic prescriptions.

The researchers report that parents who hear positive comments during their child's examination, such as "no problem," in contrast to comments suggesting that there is a "problem" to be concerned about, are less likely to question the doctor's plan not to use antibiotics to treat the URI. The researchers analyzed videotapes of 261 patient encounters for viral childhood URI involving 38 California pediatricians in 27 community practices. They found that comments during the physical exam occurred in 71 percent of these visits (61 percent with only "no problem" comments, 10 percent with at least one "problem" comment).

For patient encounters for viral URI, "problem" comments were associated with a 13 percent increase in parents' questioning of the subsequent no-antibiotic treatment plan compared with visits involving "no problem" comments or no comments during the examination. Statements ruling out the need for antibiotics were independently associated with a 24 percent boost in parents' questioning of the treatment plan. Patient visits in which the doctor made any "problem" comments resulted in 27 percent more inappropriate prescriptions of antibiotics than visits in which only "no problem" comments were made. The study was funded in part by the Agency for Healthcare Research and Quality (HS13299).

More details are in "Reducing inappropriate antibiotics prescribing: The role of online commentary on physical examination findings," by John Heritage, Ph.D., Marc N. Elliott, Ph.D., Tanya Stivers, Ph.D., and others in *Patient Education and Counseling* 81(1), pp. 119-125, 2010. ■ *DIL*

Obesity among South Carolina children differs by age, gender, and race

Excess weight and obesity are an evolving national crisis for America's children. Past comparisons of South Carolina and national samples had suggested that South Carolina children were heavier than American children generally. However, a new study using 2006 data finds that this is no longer the case. The prevalence of obesity among South Carolina children aged 2 to 5 years was 14 percent, 6 to 11 years was 21.7

percent, and 12 to 19 years was 17.3 percent. Among children nationally, these age groups had obesity rates of 13.9 percent, 18.8 percent, and 17.4 percent, respectively. None of these differences were significant.

Some significant differences did emerge when gender and race were factored in. Obesity levels in white boys in South Carolina remain below the national prevalence of

obesity through all age groups. Obesity levels in black boys and white girls in South Carolina are above the national levels until they reach adolescence. Black girls in South Carolina are below the national level of obesity at the younger age groups, but exceed it during adolescence. The small sample size of Hispanic children precluded any significant findings.

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Obesity

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According to the Centers for Disease Control and Prevention, children between the ages of 2 and 19 are considered obese if their body mass index is higher than the 95th percentile. The study sample included 989 South Carolina children and adolescents seen in 6 practices associated with the South Carolina Pediatric Practice

Research Network. Considerable variation in percentage of obesity (from 7.5 percent to 27 percent) was seen within the six practices. The researchers believe that the variation by practice and age groups demonstrates that it is important for practices to make a measured assessment of their patients rather than relying on national or regional data. This study was partly supported by the Agency

for Healthcare Research and Quality (HS15679).

See “Prevalence of obesity in children: Comparing children from the South Carolina Pediatric Practice Research Network with a national sample,” by James R. Roberts, M.D., M.P.H., Shannon A. Kennedy, M.D., Paul M. Darden, M.D., and William T. Basco, Jr. M.D., M.S. in *Clinical Pediatrics* 49(8), pp. 750-755, 2010. ■ *MWS*

Dilators more cost-effective than surgery for correcting congenital condition in females

One in every 4,000 to 10,000 female infants is born with a congenital condition in which the vagina does not grow during embryologic development. Called vaginal agenesis, the condition can usually be corrected by surgery or by using dilators that are pushed daily against the area where the vagina should have formed to create a functional vagina. A new study finds that treating vaginal agenesis with dilators is much more cost-effective than surgery.

Using 2004 to 2009 cost data for 75 females from the Pediatric Health Information System database, researchers found that the cost of vaginoplasty, a surgery that creates a vagina using part of the woman's bowel, was \$18,520. However, progressive perineal dilation (PPD) cost just \$796. If PPD was unsuccessful and vaginoplasty was then pursued, the average per-patient cost rose to just \$2,497. Further, using PPD

alone yielded 60.2 quality-adjusted life years (QALYs) while vaginoplasty yielded just 55.7 QALYs.

Acknowledging that using dilators daily for 6 months to 2 years to create a vagina may be burdensome for young women, the authors found that using PPD first to correct vaginal agenesis was more cost-effective in 99.9 percent of all combinations of procedure costs, patient ages, and quality of life. This study was funded in part by the Agency for Healthcare Research and Quality (T32 HS00063).

See “Management strategies for Mayer-Rokitansky-Kuster-Hauser related vaginal agenesis: A cost-effectiveness analysis,” by Jonathan C. Routh, M.D., Marc R. Laufer, M.D., Glenn M. Cannon, Jr., M.D., and others in the November 2010 *The Journal of Urology* 184(5), pp. 2116-2122. ■ *KFM*

Elderly/Long-Term Care

Mental status deficits a major factor in elderly falls in the hospital

Falls in hospitals or other settings are a frequent cause of morbidity and mortality in older people with cognitive impairment, dementia, or confusion. A new study found that a faller's mental status deficit (MSD) was related to falls documented by nurses in fall incident reports. In 34 percent of falls (346 out of 1,017) in adult

inpatient acute care settings, MSDs were identified as the dominant factor, according to Huey-Ming Tzeng, Ph.D., of the University of Michigan. Fallers with MSDs tended to have more injurious falls than those without such deficits. They also seemed to have fewer toileting-related falls than patients without such deficits.

Falls may be precipitated by intrinsic or extrinsic risk factors. Intrinsic factors are those integral to the patient, such as age-related changes, previous falls, reduced vision, unsteady gait, chronic illness, medication use, and MSD. Extrinsic factors are environmental

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Elderly falls

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and other hazards, such as time of day and staffing.

Dr. Tzeng examined reports of 1,017 falls occurring in 6 inpatient acute care units in a community,

not-for-profit hospital between 2005 and 2009. She believes that risk assessment of falls and targeted surveillance should be part of fall-prevention policies for cognitively impaired older patients during hospital stays. This study was supported by the Agency for

Healthcare Research and Quality (HS18258).

See “Inpatient falls in adult acute care settings: Influence of patients’ mental status,” by Dr. Tzeng, in the *Journal of Advanced Nursing* 66(8), pp. 1741-1746, 2010. ■ MWS

Older persons with chronic kidney disease and lower systolic blood pressure have higher mortality rates

Chronic kidney disease (CKD) guidelines recommend a blood pressure target of less than 130/80 mm Hg for all patients. Since these guidelines are age-neutral, the potential benefits of reducing blood pressure to that level in older patients with CKD are unclear.

However, a new study finds that the mortality rates for CKD patients over age 75 with systolic blood pressure (SBP) under 130 mm Hg are higher than those whose SBP is between 130 and 160. This finding is unexplained by conventional knowledge and raises new questions regarding the appropriateness of current CKD hypertension guidelines in the elderly. The study also found that mortality rates for older patients with CKD are higher if their SBP is greater than 160. Both of these groups had higher rates of cardiovascular hospitalization.

CKD, the slow loss of kidney function over time, is especially common among older adults; 37 percent of

those over 65 and 50 percent of those over 85 are estimated to have CKD. The researchers included 3,099 community-dwelling adults aged 75 and over with stages 3-5 CKD in their study, which tracked their SBP, mortality rates, and cardiac hospitalization rates for a 5-year period. Since the study was retrospective, causation could not be inferred.

The researchers suggest that aggressive anti-hypertensive management may not be without risk for older patients with CKD. This study was supported in part by the Agency for Healthcare Research and Quality (HS17582).

See “Systolic blood pressure and mortality among older community-dwelling adults with CKD,” by Jessica W. Weiss, M.D., Eric S. Johnson, Ph.D., Amanda Petrik, M.S., and others in the December 2010 *American Journal of Kidney Diseases* 56(6), pp. 1062-1071. ■ MWS

Elders’ preferences for end-of-life care are not captured by documentation in their medical records

Advance care planning informs medical decisionmaking for seriously ill patients, particularly older patients. This planning typically includes several elements: documentation of patient preferences for care, designation of a surrogate decisionmaker to enact those preferences, and the completion of an advance directive. Despite acceptance of advance care planning and advance directives in the care of older patients, less than

30 percent of Americans, including those with chronic disease, have advance directives.

To understand why advance care planning is not more successful, a team of Los Angeles-based researchers analyzed the flow of advance care planning information from patients to medical records by examining two Assessing Care of Vulnerable Elders (ACOVE) studies. These two studies

compared patient preferences in these areas, as expressed in structured interviews, with information found in their medical records. The vast majority of the seriously ill elderly (88 to 93 percent) preferred to die rather than remain permanently in a coma, on a ventilator, or tube fed. In ACOVE-1 and ACOVE-2, 67 percent and 73 percent of patients, respectively,

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Advance care planning

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reported having an advance directive compared with less than 30 percent of people nationally.

Yet only 15-22 percent of patients had preference information in their medical record. Among patients who reported that they had completed an advance directive and had given it to their health care provider, 15 percent (ACOVE-1) and 47 percent (ACOVE-2) had advance directive information in the

medical record. Among patients who had not completed an advance directive but reported that they had given surrogate decisionmaker information to their provider, 0 percent (ACOVE-1) and 16 percent (ACOVE-2) had documentation of this in the medical record. The researchers believe that electronic health records and standardized data collection for end-of-life care could begin to ameliorate the problem of documentation not reflecting the preferences and

proposed decisionmakers of the seriously ill. This study was supported in part by the Agency for Healthcare Research and Quality (HS17621).

See “Documentation of advance care planning for community-dwelling elders,” by Victoria Y. Yung, B.A., Anne M. Walling, M.D., Lillian Min, M.D., M.S.H.S., and others in the *Journal of Palliative Medicine*, 13(7), pp. 861-867, 2010. ■ MWS

Health Information Technology

Physicians' unfamiliarity with electronic personal health records may slow their adoption

Personal health records (PHRs) have the potential to improve health care quality. PHRs can also coordinate fragmented health information such as test results and medical records from different providers and incorporate new data sources such as patient-reported blood pressure or glucose readings. PHRs have been defined as any health record maintained by the patient, including paper-based, Web-based, carried on a USB drive, or something else.

In order to elicit the views of physicians and medical staff on the benefits of, barriers to, and use of electronic PHRs, the researchers conducted four focus groups consisting of 28 providers from four different family medical practices in Iowa. Five main themes emerged: PHR benefits, concerns with PHRs, how PHRs might be used by providers, PHR maintenance, and perceptions about how patients might use and interact with PHRs.

PHRs were considered beneficial for patients who traveled a lot, had complex medical conditions, or were visiting an emergency room. Providers could use

PHRs to get an up-to-date list of medications, past medical history, and a list of providers.

The principal concerns expressed by physicians were with accuracy and privacy of the PHRs. Some expressed concern over who can enter data into the PHR. Others expressed doubts that patients would take the necessary responsibility for creating a PHR and keeping it updated. The study's authors suggest that providers predominantly view PHRs as a backup source of medical information to the patient's medical record as opposed to a tool for patients. Providers' relative unfamiliarity with electronic PHRs appears to have created preconceptions about PHRs that may slow PHR adoption. This study was supported by the Agency for Healthcare Research and Quality (HS17034 and HS16094).

See “Family physicians perceptions of personal health records,” by Matthew J. Witry, Pharm.D., William R. Doucette, Ph.D., Jeanette M. Daly, Ph.D., and others in the Winter 2010 *Perspectives in Health Information Management*, pp. 1-14, 2010. ■ MWS

Physicians weigh the costs and benefits of integrating e-prescribing systems with electronic health records

Many physicians are actively considering adopting e-prescribing either as a stand-alone system or integrated into an electronic health record. They wonder if the additional expense of moving to an integrated system would be offset by the system's benefits. The authors of a new study surveyed physicians to determine what benefits they see in ease of prescribing, office administration, and patient safety with their type of system. They found that physicians who use e-prescribing systems integrated into an electronic health record have different characteristics, usage patterns, perceived benefits, and levels of satisfaction than those who use stand-alone systems.

For example, only 56 percent of physicians surveyed said they had checked a patient's drug history most or all of the time when they wrote a prescription. Yet those with

integrated systems were significantly more likely to report doing so than colleagues with standalone systems. Physicians with integrated systems were more likely to be primary care physicians, to practice in larger groups, and to have practiced for fewer years. They were also more likely to report writing prescriptions electronically most or all of the time.

A major factor driving the spread of e-prescribing is a Center for Medicare & Medicaid Services (CMS) incentive program to reimburse physicians for using electronic health record technology. Under the CMS program, "meaningful use" standards require the following activities related to e-prescribing: the use of computerized provider order entry, implementation of drug-drug interaction and drug allergy checks, maintenance of active medication

lists in an electronic format, and electronic generation and transmission of prescriptions.

The researchers believe that integrated e-prescribing systems offered incremental benefits over stand-alone systems. Whether the benefits and the meaningful use-incentives offered by CMS will be sufficient to overcome the costs of moving to an integrated system will be a critical factor in whether the technology is widely adopted. This study was supported by the Agency for Healthcare Research and Quality (HS17151).

See "Differences between integrated and stand-alone e-prescribing systems have implications for future use," by Catherine M. DesRoches, Dr.P.H., Ritu Agarwal, Ph.D., Corey M. Angst, Ph.D., and Michael A. Fischer, M.D., in the December 2010 *Health Affairs* 29(12), pp. 2268-2277. ■ MWS



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Agency News and Notes

Medication side effects, injuries up dramatically

The number of people treated in U.S. hospitals for illnesses and injuries from taking medicines jumped 52 percent between 2004 and 2008—from 1.2 million to 1.9 million—according to the latest *News and Numbers* from the Agency for Healthcare Research and Quality. These medication side effects and injuries resulted from taking or being given the wrong medicine or dosage. The Federal agency also found that in 2008:

- The top five categories of medicines that had more than 838,000 people treated and released from emergency departments were: unspecified medicines (261,600); painkillers (118,100); antibiotics (95,100); tranquilizers and antidepressants (79,300); corticosteroids and other hormones (71,400).
- For patients admitted to the hospital, the top five categories causing side effects and injuries were corticosteroids—used for such illnesses as asthma, arthritis, ulcerative colitis, and other conditions (283,700); painkillers (269,400); blood-thinners (218,800); drugs to treat cancer and immune system disorders (234,300); and heart and blood pressure medicines (191,300).

- More than half (53 percent) of hospitalized patients treated for side effects or other medication-related injuries were aged 65 or older, 30 percent were 45 to 64, 14 percent between 18 and 44, and 3 percent under age 18. Children and teenagers accounted for 22 percent of emergency cases.
- About 57 percent of the hospitalized patients and 61 percent of emergency department cases were female.

This AHRQ *News and Numbers* is based on data in *Medication-Related Adverse Outcomes in U.S. Hospitals and Emergency Departments, 2008* (available at www.hcup-us.ahrq.gov/reports/statbriefs/sb109.pdf). The report uses data from the agency's 2008 *Nationwide Inpatient Sample* and 2008 *Nationwide Emergency Department Sample*. For information about these two AHRQ databases, go to <http://www.ahrq.gov/data/hcup/datahcup.htm>.

For more information, contact Bob Isquith at bob.isquith@ahrq.hhs.gov (301-427-1539). ■

Use of episiotomy and forceps during childbirth down, C-section rates up

Use of episiotomy, a surgical incision to widen the vaginal area during childbirth, fell by 60 percent between 1997 and 2008, according to the latest *News and Numbers* by the Agency for Healthcare Research and Quality. However, the proportion of hospital stays of women who delivered via Cesarean section (C-section) increased by 72 percent during the same period. AHRQ's analysis also found that from 1997 to 2008:

- The use of forceps to aid delivery declined by 32 percent, from 14 percent to 10 percent.
- The number of hospital stays for childbirth fell by 300,000 between 2007 and 2008—from 4.5 million to 4.2 million. In comparison, the annual number of childbirth stays had been increasing by an average of 2 percent a year starting in 1999.
- The average childbirth stay involving C-section with no complications cost hospitals an average of \$5,700 and \$7,600 when there were complications. By comparison, a vaginal childbirth stay without complications cost hospitals an average of \$3,400 and \$4,400 when there were complications.
- Forty percent of all childbirth stays were billed to Medicaid, 53 percent to private insurers, 4 percent were uninsured, and the rest were charged to other payers.
- Roughly 36 percent of all childbirth hospital stays in 2008 occurred in the South compared with 16 percent in the Northeast. The West and Midwest accounted for 26 percent and 23 percent, respectively, of childbirth stays.

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Childbirth

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This AHRQ *News and Numbers* is based on data in *Hospitalizations Related to Childbirth, 2008* (<http://www.hcup-us.ahrq.gov/reports/statbriefs/sb110.pdf>). The report uses data from the 2008

Nationwide Inpatient Sample, a database of hospital inpatient stays in all short-term, non-Federal hospitals. The data are drawn from hospitals that comprise 95 percent of all discharges in the United States and include patients,

regardless of insurance type, as well as the uninsured.

For other information, or to speak with an AHRQ data expert, please contact Bob Isquith at Bob.Isquith@ahrq.hhs.gov or call (301) 427-1539. ■

Announcements

Partnership for Patients initiative launched to improve care and lower costs for Americans

The Department of Health and Human Services Secretary Kathleen Sebelius and Center for Medicare & Medicaid Services Administrator Donald Berwick recently launched the Partnership for Patients initiative. Partnership for Patients is a new public-private partnership that brings together leaders of major hospitals, employers, health plans, physicians, nurses, and patient advocates along with State and Federal governments in a shared effort to make hospital care safer, more reliable, and less costly. The two goals of the new Partnership for Patients campaign are to:

- Keep hospital patients from getting injured or sicker. By the end of 2013, to decrease instances of patients acquiring preventable conditions while in hospitals by 40 percent compared with 2010.
- Help patients heal without complication. By the end of 2013, to decrease preventable complications during a transition from one care setting to another,

so that the number of patients who must be re-admitted to the hospital would be reduced by 20 percent compared with 2010.

Achieving these goals holds potential to save both lives and money. The combined efforts of this partnership could save 60,000 American lives and reduce millions of preventable injuries and complications in patient care over the next three years. It also could save as much as \$35 billion to the health care system, including up to \$10 billion in Medicare savings. More than 500 hospitals, as well as physician and nurse groups, consumer groups, and employers have pledged their commitment to the Partnership. Details on the campaign can be found at www.healthcare.gov/center/programs/partnership/index.html. A list of resources, including AHRQ patient safety tools and products being used as part of the campaign, can be found at www.healthcare.gov/center/programs/partnership/resources/index.html. ■

New comparative effectiveness review released on traumatic brain injury and depression

The Agency for Healthcare Research and Quality (AHRQ) has released a new systematic review of 115 clinical studies involving depression after traumatic brain injury (TBI). *Comparative Effectiveness Review of Traumatic Brain Injury and Depression*, prepared by researchers at the AHRQ-funded Vanderbilt Evidence-based Practice Center, addresses key questions on depression after traumatic brain injury.

Key findings include:

- The prevalence of depression after a TBI was approximately 30 percent across multiple time points up to and beyond 1 year.
- Based on structured clinical interviews, on average 27 percent of individuals met criteria for depression 3 to 6 months after injury; 32 percent at 6 to 12 months; and 33 percent beyond 12 months. Higher prevalence estimates were reported in many study populations.
- Data are sparse to assess the relationship of severity, mechanism, or area of the brain injured to risk of depression.
- Few risk factors for depression have been studied across populations in models that adjust for confounding factors. Alcohol and substance abuse, coexisting illness or injury, degree of disability, and older age at injury may contribute to increased risk.
- The literature is insufficient to determine whether tools validated in other populations for detecting depression appropriately identify individuals with depression after a TBI.

Given the at least 1.5 million TBIs per year, with many potential consequences that impair quality of life and function, substantially greater efforts are warranted to understand the biologic causes, natural history, treatment, and prevention of depression after TBI. The information in this report, including the discussion of current research needs, may help inform research in this area. ■

New guide helps TeamSTEPPS® trainers learn how to teach simulation

The Agency for Healthcare Research and Quality and the Department of Defense have released a new guide that provides instruction on using simulation-based training when teaching TeamSTEPPS®. *Training Guide: Using Simulation in TeamSTEPPS® Training* integrates teamwork, interpersonal, and communication skills into simulation-based training. It offers strategies and tools that can improve team performance and enhance patient

safety. The training course is intended as a train-the-trainer program in which key personnel become familiar with the materials and activities so that they can offer the simulation-based TeamSTEPPS® training to local health care teams. Users of this training course may adapt and augment activities to meet the needs of their specific health care teams and program. For a copy of the guide, visit www.ahrq.gov/teamsteppstools. ■

HCUP offers new online tutorial series modules

The Agency for Healthcare Research and Quality has released a new module and an updated re-release of a favorite in the Healthcare Utilization Project (HCUP) Online Tutorial Series (http://hcup-us.ahrq.gov/tech_assist/tutorials.jsp). These online training modules are designed to provide data users with information about HCUP data and

tools, as well as training on technical methods for conducting research using HCUP datasets.

The new Calculating Standard Error tutorial (http://hcup-us.ahrq.gov/tech_assist/tutorials.jsp) is designed to help users determine the precision of the estimates they produce from the HCUP nationwide databases. Users will

learn two methods for calculating standard errors for estimates produced from the HCUP nationwide databases.

The newly revised HCUP Overview Course (<http://www.hcup-us.ahrq.gov/overviewcourse.jsp>) is a helpful introduction to HCUP for

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HCUP online tutorial module

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new users. The original course has been updated to include the latest additions to the HCUP family of

databases and tools, including the Nationwide Emergency Department Sample.

The HCUP Online Tutorial Series is available on the HCUP Web site at

http://hcup-us.ahrq.gov/tech_assist/tutorials.jsp. For more information, contact HCUP User Support at hcup@ahrq.hhs.gov. ■

AHRQ's Effective Health Care Program presentations from the Eisenberg Conference Series 2010 are now available

Presentations from the Eisenberg Conference Series 2010 are now available on the Agency for Healthcare Research and Quality's Effective Health Care (EHC) Program Web site. These presentations explore the key tasks of the EHC Program and proposed Web 2.0 solutions that can enhance public interaction throughout the research process, expand the

dissemination of EHC Program products, increase the use of EHC Program materials at the point of care, and boost the comprehension and use of evidence among vulnerable and disparate populations. These and previous presentations can be viewed at www.effectivehealthcare.ahrq.gov. ■

New AHRQ podcasts focus on cystic fibrosis and health literacy

The Agency for Healthcare Research and Quality has released two new podcasts on the treatment of cystic fibrosis and improving health literacy. Managing cystic fibrosis can be challenging, but a new guide from AHRQ can help you understand treatment options. In similar fashion, understanding health care information isn't always easy. But taking an active role and asking questions can help. Both podcasts can be heard at <http://healthcare411.ahrq.gov>. ■

Grant applications requested that focus on health care for priority populations

The Agency for Healthcare Research and Quality (AHRQ) has issued two special emphasis notices with an interest in research on priority populations and health issues of minority women. The Agency encourages grant applications that propose research that focuses on the health care for priority populations with specific emphasis in the following areas: explaining disparities in health care and clinical practice; implementation of research and interventions that aim to reduce disparities in priority populations and setting; addressing known gaps in research dealing with priority populations; development of methods to address the heterogeneity of priority populations, small sample sizes, and improved outcomes for priority populations in AHRQ-sponsored research; research on cross-cutting issues involving multiple priority population groups and settings (for example, disabled children, minority women, rural maternal and child health, etc); and development of innovative service delivery models for settings in which priority populations receive care. The notices can be viewed at <http://grants.nih.gov/grants/guide/notice-files/NOT-HS-11-014.html>.

The request for grant proposals focused on health issues of minority women encourages grant applications that propose research that focuses on minority women in health services research. This focus on a dual priority population is designed to improve clinical practice; improve the health care system's ability to provide access to and deliver high quality, high-value health care; and provide policymakers with the ability to assess the impact of system changes on outcomes, quality, access to, cost, and use of health care services. Research lags in its ability to analyze the health services to women and minorities, especially when examining the cross-cutting issue of health issues affecting minority women. For example, primary outcomes may not be powered for subgroup analyses or recruitment strategies are not designed to focus on and attain subpopulation samples that are sufficient for subgroup analysis. In addition, the Institute of Medicine report on women's health research noted that racial and ethnic minority women have been underrepresented in many studies and as a result, generalizing findings is extremely limited. ■

Research Briefs

Calderon, J. L., Bazargan, M., and Sangasubana, N. (2010). "A comparison of two educational methods on immigrant Latinas' breast cancer knowledge and screening behaviors." (AHRQ grant HS14022). *Journal of Health Care for the Poor and Underserved* 21, pp. 76-90.

Although the United States has made great strides educating women about breast cancer screening, such is not the case when it comes to immigrant Hispanic women (Latinas). Many of these women do not get yearly mammograms or perform breast self-examination. The researchers studied two interventions to address these problems. In the first intervention, 200 Latinas participated in focused discussion groups alone. These moderated sessions assessed the women's knowledge about breast cancer and asked about barriers to breast self-examination and mammograms. In the second intervention, another group of 200 Latinas participated in the same discussion groups and also viewed an animated video on breast self-examination and received training in the technique using latex models. Both interventions were successful in increasing the Latinas' knowledge and screening behaviors and were cost-effective.

Calvillo-King, L., Xuan, L., Zhang, S., and others. (2010). "Predicting risk of perioperative death and stroke after carotid endarterectomy in asymptomatic patients. Derivation and validation of a clinical risk

score." (AHRQ grant HS 09754). *Stroke* 41, pp. 2786-2794.

National guidelines on carotid endarterectomy (CEA) for asymptomatic patients state that the procedure should be performed with a 3 percent or less risk of perioperative death or stroke. The researchers developed a multivariable model to predict the risk of death and stroke for asymptomatic patients and to create a practical clinical prediction rule that could be used by physicians and patients. Analyzing the results of CEA on 6,555 asymptomatic patients, the researchers found that the perioperative risk of death or stroke was 3 percent. Eight variables were independent predictors of death or stroke: two were sociodemographic, three were neurologic, and three were cardiac comorbidities. The CEA-8 risk score developed by the researchers stratified patients with a predicted probability of death or stroke rate from 0.6 percent (0 risk score) to 9.6 percent (risk score of 5+).

Cho, A. H., Arar, N. H., Edelman, D. E., and others. (2010). "Do diabetic veterans use the Internet? Self-reported usage, skills, and interest in using My HealtheVet web portal." (AHRQ grant T32 HS00079). *Telemedicine and e-Health* 16(5), pp. 595-602.

Glycemic control for patients with diabetes treated within the Veterans Health Administration continues to be suboptimal. A new study finds that when given the opportunity, many older veterans with diabetes are willing to try using the Internet to help manage their disease. The

researchers mailed surveys and received responses from 201 veterans with diabetes who were receiving care at 1 of 5 primary care clinics run by the Veteran Affairs (VA) health care system. Veterans were asked about their Internet usage in the past 30 days. They were also asked about their use of the VA's own Web-based portal, called "My HealtheVet," where vets can enter blood glucose and blood pressure readings, along with other health data.

Chou, R., and Dana, T. (2010, October). "Screening adults for bladder cancer: A review of the evidence for the U.S. Preventive Services Task Force." (AHRQ Contract No. 290-07-0057). *Annals of Internal Medicine* 153(7), pp. 461-468.

Bladder cancer is the fourth most commonly diagnosed cancer among men and the ninth among women in the United States. For 2009, about 71,000 new cases of bladder cancer are estimated to have been diagnosed, and more than 14,000 patients are estimated to have died of the disease. Risk factors for the disease include older age, male sex, white race, smoking, occupational exposures to carcinogens, certain parasitic infections, and a family or personal history of the disease. A systematic review was conducted to help the United States Preventive Services Task Force update its 2004 evidence review for this condition. The review found that the lack of high-quality controlled studies comparing clinical outcomes of

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adults screened for bladder cancer with those who were not makes it impossible to recommend use of this screening in primary care without additional research.

Clancy, C. (2011). “As obesity epidemic escalates, need for more screening and counseling grows.” *Journal of Nursing Care Quality* 26(1), pp. 1-3. Reprints (AHRQ Publication No. 11-R039) are available from AHRQ.*

Despite rising obesity rates, reports from the Agency for Healthcare Research and Quality (AHRQ) show that fewer adults were told by a health care professional that their weight classified them as obese or overweight. Data from AHRQ’s *National Healthcare Disparities Report* show that disparities in access to counseling exist for blacks, Hispanics, the poor, and the uninsured. The new Patient Protection and Affordable Care Act contains provisions that make it easier for Medicare beneficiaries to receive obesity counseling. These expanded benefits are welcome given that Americans now use preventive services at about half the recommended rate, notes the author, director of AHRQ. Bariatric surgery provides one option for reversing the negative effects of obesity and AHRQ-funded research has found that complications from this surgery declined by 21 percent between 2002 and 2006.

Elixhauser, A., and Andrews, R. (2011). “A tool for reporting hospital data on care.” *Health Affairs* 30(3), p. 538. Reprints (AHRQ Publication No. 11-R040) are available from AHRQ.*

A current project at the Agency for

Healthcare Research and Quality (AHRQ) seeks to address the challenges and burdens faced by local and State data organizations in publicly reporting hospital-based quality of care. This project is called MONAHRQ®, short for “my own network, powered by AHRQ.” MONAHRQ® 1.0 was released in June 2010. It efficiently analyzes, summarizes, and presents hospital-level information on use and quality of care (using AHRQ quality indicators). MONAHRQ® 2.0 is to be released in 2011. It will add information from the Centers for Medicare & Medicaid Services’ Hospital Compare data on 30-day mortality, readmissions, process-of-care measures, and patient assessments, based on the Hospital Consumer Assessment of Healthcare Providers and Systems.

Etchegaray, J. M., and Throckmorton, T. (2010). “Barriers to reporting medication errors: A measurement equivalence perspective.” (AHRQ grant HS11544). *Quality and Safety in Health Care* 19, pp. 1-4.

The Medication Administration Error Reporting (MAER) survey was developed to better understand why medication errors are not reported. The researchers extend previous research on the MAER by examining whether it demonstrates measurement equivalence, an important psychometric property of surveys that health services researchers need to examine prior to making comparisons between groups. Their study involved administering the survey to 435 nurses who were divided into two groups, those with more than 20 years of experience and those with less than 20 years of experience.

The results indicate that with the exception of one of the four factors included in the MAER, the MAER appears to measure the factors equivalently across groups. Specifically, more and less experienced nurses disagreed on the definition of medication errors.

Goeschel, C. A., Holzmüller, C. G., Cosgrove, S. E., and others. (2010, December). “Infection preventionist checklist to improve culture and reduce central line-associated bloodstream infections.” (AHRQ Contract No. 290-06-0002). *Joint Commission Journal on Quality and Patient Safety* 36(12), pp. 571-575.

Infection preventionists (IPs) play a crucial role in supporting the unprecedented national momentum to reduce healthcare-associated infections. This checklist tool provides explicit activities that IPs should perform to enhance teamwork and collaboration with frontline staff, and to eliminate preventable infections. The checklist includes eight activities representing the Comprehensive Unit-Based Safety Program and nine representing the central line-associated bloodstream infections intervention. The checklist is appropriate for any clinical setting. It is best applied during the initial phase of a national program to align the activities undertaken in the infection control department with the chief executive officer and board of trustees’ tasks.

Gordon, J. A., Alexander, E. K., Lockley, S. W., and others. (2010, October). “Does simulator-based clinical performance correlate with actual hospital behavior?”

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The effect of extended work hours on patient care provided by medical interns.” (AHRQ grant HS12032). *Academic Medicine* 85(10), pp. 1583-1588.

In 2004, the Harvard Intern Sleep and Patient Safety Study demonstrated that medical interns working in intensive care units committed fewer medical errors when they got more sleep and did not work long (24- to 30-hour) shifts. A simulator-based study of intern performance has yielded very similar results, providing strong evidence for simulation’s usefulness in testing medical performance. Boston researchers used an 8-point scale (with 8 representing top marks) to evaluate 17 medical interns’ performance on cardiac or pulmonary scenarios in a simulator laboratory, when the interns were well-rested and again after they completed 24- to 30-hour shifts. The authors found that the 17 interns averaged a score of 6 when they were rested, but that score dropped to 5 after they pulled a long shift.

Gregory, P. C., Lam, D., and Howell, P. (2010). “Osteoporosis treatment following hip fracture: How rates vary by service.” (AHRQ grant HS17956). *Southern Medical Journal* 103(10), pp. 977-981.

The National Osteoporosis Foundation guidelines recommend that clinicians consider initiating treatment for osteoporosis (loss of bone mass) in patients who have had a hip or vertebral fracture, to lower the risk of subsequent fractures. However, only 35 percent of patients started any form of osteoporosis treatment during their hospitalization for the fracture, according to this study. A team of

researchers examined the medical charts of 191 elderly patients at an academic medical center. They found that both the medicine (58 percent) and rehabilitation services (44 percent) were much more likely than the orthopedic service (12 percent) to initiate osteoporosis treatment. The researchers recommend instituting an osteoporosis consultative service to improve the likelihood of starting osteoporosis treatment in patients who have suffered a fragility fracture.

Guise, J.-M., Lowe, N. K., Deering, S., and others. (2010, October). “Mobile in situ obstetric emergency simulation and teamwork training to improve maternal–fetal safety in hospitals.” (AHRQ grant HS15800). *The Joint Commission Journal on Quality and Patient Safety* 36(10), pp. 443-453.

A simulator initiative was developed, in part, to address a crisis in obstetric care in Oregon, where a 2002 survey indicated that a third of maternity providers (66 percent of whom were rural) planned to stop delivering babies in the next 1–5 years. While there are a number of permanently located simulation centers, the cost of travel, limitations on the number of team members who could be spared for training, and other factors made this option less attractive to teams from smaller hospitals. In contrast, a mobile simulation can run using two rooms (one housing the simulation setup and one for debriefing the team members) at the hospital, allowing team members to work in a familiar setting, with supplies organized in a recognizable way. The researchers found that mobile simulators can bring to rural and community hospitals hands-on experience in handling rare

childbirth emergencies as well as an opportunity for improving teamwork skills.

Hersh, A. O., Trupin, L., Yazdany, J., and others. (2010, August). “Childhood-onset disease as a predictor of mortality in an adult cohort of patients with systemic lupus erythematosus.” (AHRQ grant 13893). *Arthritis Care & Research* 62(8), pp. 1152-1159.

Systemic lupus erythematosus (lupus) is a chronic, inflammatory disorder of the immune system that disproportionately affects women and minorities. Researchers analyzed data from the California Lupus Outcomes Study on 957 adults with lupus, including 98 individuals who were diagnosed with the disorder as children. After a median followup of 4 years, there were 72 deaths. Of these, nine individuals had been diagnosed with lupus in childhood. When they adjusted for age, the researchers found that the adults with childhood-onset lupus were at increased risk for mortality during the followup period. There was no association between mortality and ethnicity. Those who died tended to be older, male, and have a longer duration of disease. They also were more likely to have less education, be below the poverty line, and be covered by Medicare or Medicaid.

Johnson, K. B., Ho, Y.-X., Cala, C. M., and Davison, C. (2010). “Showing your work: Impact of annotating electronic prescriptions with decision support results.” (AHRQ grant HS16261). *Journal of Biomedical Informatics* 43, pp. 321-325.

Electronic prescribing systems with decision support provide important

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safety features to patients, pharmacists, and clinicians. For example, the ability of physicians to annotate prescriptions automatically with explanatory notes can convey to the pharmacist such things as dose calculations and warnings. A recent study, using such a system, increased communication between physicians and pharmacists, resulting in improved patient safety. The study looked at the success of “Show Your Work” (SYW), a system at one institution that allows prescribers to add notes below each medication order. Researchers turned this feature on and off on various days. Three pharmacies were selected to complete and submit callback logs each day. When the SYW system was on, the callback rate was 45 callbacks/1,000 prescriptions and when SYW was off and unavailable, the callback rate was 40 callbacks/1,000 prescriptions. With 38 surveys returned, most pharmacies felt that the SYW had a favorable impact on callbacks (69 percent).

Kaufman, A. V., Kosberg, J. I., Leeper, J. D., and others. (2010, April). “Social support, caregiver burden, and life satisfaction in a sample of rural African American and white caregivers of older persons with dementia.” (AHRQ grant HS13189). *Journal of Gerontological Social Work* 53(3), pp. 251-269.

This study found that certain demographic factors and coping strategies improved the quality of life of 141 family caregivers of persons with dementia in rural Alabama. The researchers analyzed four dimensions of social support based on results for the widely used

Interpersonal Support Evaluation List (ISEL). Female caregivers reported significantly higher mean scores than males for three of the four ISEL dimensions of social support (tangible support from others, belonging to a network of persons to talk to or socialize with, and obtaining self-esteem from others). Self-esteem and belonging accounted for 32 percent of the variance in the caregivers’ reported quality of life.

Kim-Hwang, J. E., Chen, A. H., Bell, D. S., and others. (2010). “Evaluating electronic referrals for specialty care at a public hospital.” (AHRQ Contract No. 290-06-0017). *Journal of General Internal Medicine* 25(10); pp. 1123-1128.

Existing referral processes involve verbal or paper-based methods that often provide vague reasons for the specialist consult, inadequate pre-referral clinical or laboratory investigation of the patient’s problems, and delayed communication between the primary care provider and specialist. The researchers developed and implemented eReferral, a Web-based program embedded in the electronic health record at San Francisco General Hospital, to allow a structured review process for new referrals to a hospital’s specialty clinics. Specialists reported the reason for referral was difficult to determine in 19.8 percent of medical and 38 percent of surgical referrals using the paper-based system compared with 11 percent and 9.5 percent, respectively, after implementation of eReferral. The researchers concluded that the eReferral system increases the effectiveness of the specialty referral.

Leipzig, R. M., Whitlock, E. P., Wolff, T. A., and others. (2010). “Reconsidering the approach to prevention recommendations for older adults.” *Annals of Internal Medicine* 153, pp. 809-814. Reprints (AHRQ Publication No. 11-R038) are available from AHRQ.*

Many U.S. Preventive Services Task Force (USPSTF) recommendations focus on prevention through the early identification of specific diseases with clearly defined risk factors or opportunities for early intervention. Using the current USPSTF approach for older adults has not been easy, because many geriatric disorders have multifactorial risk factors, interventions, and expected outcomes. The USPSTF is developing new methods to review evidence and make recommendations for the geriatric population: addressing aging-specific issues to disease prevention in older adults; expanding and adapting its typical analytic framework to better recognize the multifactorial nature of selected geriatric syndromes and their interventions; addressing the outcomes that are important to patients; and building recommendations on related topics.

Lomotan, E. A., Michel, G., Lin, Z., and others. (2010). “How ‘should’ we write guideline recommendations? Interpretation of deontic terminology in clinical practice guidelines: Survey of the health services community.” (AHRQ grant HS10045). *Quality and Safety in Health Care* 19, pp. 509-513.

An understanding of how readers interpret deontic terminology

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(words such as “should,” “may,” “must,” and “is indicated”) may allow guideline developers to strengthen the connection between guideline language and expected adherence to guideline recommendations, suggest the authors of this study. They surveyed registrants at the 2008 annual conference of the Agency for Healthcare Research and Quality. Of the 445 respondents, 57 percent reported experience in developing clinical practice guidelines and 33 percent indicated that they provide health care. The results of the survey were that “must” conveyed the highest level of obligation and least amount of variability. “May” and “may consider” conveyed the lowest level of obligation. All other terms conveyed intermediate levels of obligation. These results suggest that three separate levels of recommendation strength should be available to guideline developers. As long as terms conveying distinct levels of obligation were chosen, guideline developers could take advantage of a natural ranking of deontic terms.

Makary, M. A., Clarke, J. M., Shore, A. D., and others. (2010). “Medication utilization and annual health care costs in patients with type 2 diabetes mellitus before and after bariatric surgery.” (AHRQ Contract No. 290-05-0034). *Archives of Surgery* 145(8), pp. 726-731.

A new study finds that bariatric surgery for obesity reduces medication use in patients with type 2 diabetes and lowers their overall

health care costs. The majority of individuals (85.8 percent) studied were taking at least one diabetes medication for 3 months prior to having bariatric surgery. Six months after surgery, this fell dramatically to 25.3 percent. At the end of 3 years, health care costs per person were reduced by 70.5 percent. The researchers conclude that private and public insurers, including Medicaid, should pay for bariatric surgery in appropriate patient candidates. The researchers identified from commercial insurance claims 2,235 adults with type 2 diabetes who underwent bariatric surgery between 2002 and 2006.

Mukamel, D. B., Spector, W. D., Zinn, J., and others. (2010, October). “Changes in clinical and hotel expenditures following publication of the Nursing Home Compare report card.” *Medical Care* 48(10), pp. 869-874. Reprints (AHRQ Publication No. 11-R001) are available from AHRQ.*

Nursing homes have two large categories for spending. Hotel expenses include room, board, and building maintenance, while clinical service expenses cover all health-related care. Starting in 2002, when the Nursing Home Compare Web site began publishing report cards based on the less-observable clinical services, nursing homes increased funding for clinical services to attract future residents, a new study finds. A team of researchers determined that after the Nursing Home Compare report cards were published, the ratio of clinical to hotel services for 10,022 nursing homes increased 5

percent from 2001 to 2006. For instance, prereport card ratios were 1.71 and 1.72 in 2001 and 2002, respectively, but 1.76, 1.84, and 1.85 in 2003, 2004, and 2005, respectively. The increase in spending for clinical services was most notable in nursing homes that had poor reported quality, had low occupancy, were in competitive markets, were for profit, and were part of a chain of nursing homes.

Nishisaki, A., Donoghue, A., Ferry, S., and others. (2010, December). “Just-in-time (JIT) tracheal intubation simulation training for pediatric residents phase II: Retention of resident participation and provider safety performance after discontinuation of JIT training.” (AHRQ grant HS16678). *Simulation in Healthcare* 5(96), p. 405.

The researchers evaluated retention of resident tracheal intubation participation, success, and patient safety for 18 months after the Just-in-Time pediatric tracheal intubation training interventions were discontinued. During Phase I, pediatric intensive care unit residents received 20 minutes of multidisciplinary simulation-based tracheal intubation overtraining, and 10 minutes of psychomotor skill refresher training prior to their 24-hour on-call period. In their study, including 181 primary orotracheal intubations (Phase I) and 316 during Phase II, the researchers found that resident participation significantly decreased (from 36 to 27 percent). However, first attempt success and overall success rates did not significantly change. ■

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