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Advancing Excellence in Health Care

RESEARCH ACTIVITIES

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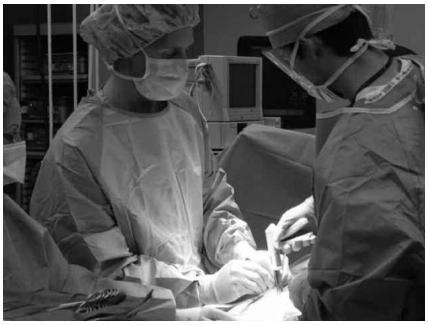
AHRQ-funded medical liability and patient safety initiative shows promise for reducing patient harm, lawsuits, and costs

Many medical students believe that if they study hard in medical school, train with the best physicians, and perfect their skills, they will never make a mistake. At least that's what Timothy McDonald, M.D., J.D., chief safety and risk officer for health affairs at the University of Illinois Hospital and Health Sciences System (UIHHSS), thought. When he did make a mistake, it was devastating.

"The first time I made a mistake, I was horrified and terrified all at the same time. It was so clear to me when it happened. I had just started my anesthesiology residency and I had done what is called a syringe swap, where I had given the patient the wrong medication. It had an absolutely profound effect on the patient, who almost went into complete respiratory arrest. It was incredibly difficult just to steady my hands and try to take care of her. And everything you could possibly imagine was going through my head."

The reality is that despite health care providers' dedication and best efforts, an alarming number of patients are harmed by medical mistakes in the health care system and far too many die prematurely as a result. Michelle Malizzo Ballog, a young mother, was one of them. In 2008, she died of cardiac arrest on the operating table due to an error in monitoring her sedation. When her family asked how this could have happened, officials at UIHHSS in Chicago did not defer the question to their lawyers.

Instead, they investigated the source of the problem, told the truth and shared the facts, apologized, accepted accountability, and provided a financial settlement for Ms. Ballog's young children. They also changed their sedation monitoring and anesthesia scheduling processes. This is a total turnaround from the "deny and defend" response to medical errors in the past, according to Dr. McDonald.



An operating room team works together during a simulated emergency c-section.

The approach at UIHHSS is called the Seven Pillars and includes: (1) patient safety incident reporting, (2) investigation of the event, (3) communication and disclosure to the patient, (4) apology and remediation, including waivers of hospital and physician fees, (5) system process and performance improvement, (6) data tracking and performance evaluation, and (7) education and training of staff.

UIHHSS's Seven Pillars Program, begun in 2006 and led by Dr. McDonald, is being expanded to nine other Chicago-area hospitals as part of a 3-year demonstration project funded in June 2010 under AHRQ's Medical Liability and

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From the Director

The seven demonstration projects that are part of AHRQ's Medical Liability Reform and Patient Safety Initiative have the potential to transform how our nation's health care system handles medical liability. These projects are building evidence that alternative approaches to traditional medical liability, linked with different responses when patient harms do occur, can improve patient safety, reduce malpractice suits and premiums, reduce the costs of defensive medicine, and fairly compensate patients and families who have been harmed my medical errors.

Rather than the old approach of "deny and defend," these projects focus on finding ways to reduce harm before it leads to a lawsuit, increase transparency, learn from patient safety events to prevent future errors, and fairly and quickly compensate patients who have been harmed by errors.

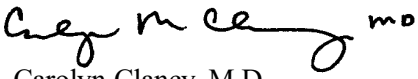
Like all the projects, the ones discussed in this month's cover story have made great strides. The Seven Pillars Program first and foremost seeks to prevent patient harm by reporting—and correcting—flaws in processes that can undercut the work of the most dedicated clinicians. Second, the environment fostered by communication and disclosure builds respect and trust, which figure prominently in the well-being of patients and physicians. Third, the Seven Pillars process establishes and reinforces a culture of learning, especially among medical residents who have previously had few opportunities to identify and learn from patient safety events.

The result at the University of Illinois is a 40 to 50 percent reduction in claims and lawsuits per quarter compared to 6 or 7 years ago, a 22 percent reduction in the hospital system's medical malpractice premium for FY 2013, and $3 million in annual savings to payers, including Medicare and Medicaid.

The Fairview Health Services project to reduce preventable birth-related injuries and related malpractice claims demonstrates the value of best practices such as checklists, communications techniques, teamwork, and simulation exercises for reducing medical errors. The result has been a 74 percent reduction in preventable birth trauma to full-term newborns, a 38 percent reduction in preventable neonatal intensive care unit admissions of full-term babies, and a 12 percent reduction in the rate of birth-related maternal complications at term.

Finally, the judge-directed negotiation program of the New York State Unified Court System has begun to shift the dynamic of civil medical malpractice actions from an attorney-driven process to a judge-managed process. The 200 cases that have gone through the program have shown substantial savings in time and money from traditional litigation.

I am very heartened by the progress made by all the demonstration projects. I am also encouraged by the many hospitals that are interested in replicating these innovative programs.



Carolyn Clancy, M.D.

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Patient Safety Initiative. It is one of 7 demonstration grants, 13 1-year planning grants, and an evaluation contract funded by AHRQ.

The goal of the demonstration projects, a few of which are discussed in this article, is to improve the quality of care and patient safety, compensate patients fairly and expeditiously when they are harmed, reduce liability premiums and the costs associated with defensive medicine, and reduce the number of malpractice suits filed in the first place. The projects focus on a number of areas, including improving communication with patients, preventing harm through best practices, and providing alternative methods of dispute resolution.

Improving communication with patients

Improving communication with patients is critical to maintaining patient trust and avoiding lawsuits. In fact, a June 2012 *Health Affairs* article by Dwight Golann, J.D., of Suffolk University Law School, shows that a large percentage of lawsuits get dropped once both parties share all the information. "To me, that's critical," says Dr. McDonald. "That's the biggest point of the Seven Pillars [Program]—to provide immediate sharing of information so people don't feel they have to sue you just to get that information and then drop the suit later after spending lots of money on both sides."

Once an incident occurs, the communication and emotional support for both patients and families and caregivers gets jumpstarted immediately with the UIHHSS crisis management team and its 24-hour/7-day hotline. Recently the head of the hospital's risk management team was out of the hospital and staffing the patient safety hotline via a pager. "We had a patient go into cardiac arrest in a part of our hospital where that almost never happens, and the person helping that patient had never even seen a cardiac arrest," recounts Dr. McDonald. "They called a code, and the team responded appropriately. The hotline call allowed us to get the right people onsite to both support the patient and family through this outcome…, but also help the care professional who was distraught. The whole thing was kicked into play in 15 minutes even though the risk manager was out of the hospital."

The number of hotline calls has soared from 40 calls a year to 500 or 600 calls a year, or about 10 to 15 calls a week, according to Dr. McDonald. "A lot of time they need our help to prevent something from happening, or getting us there may help diffuse a situation or help with conflict management or any clinical situation where they want help right away," he says. "There's no doubt that we're able to prevent errors this way. And importantly, it allows us to provide emotional support."

> *"There's no doubt that we're able to prevent errors this way. And importantly, it allows us to provide emotional support."*

Reports of safety incidents have also risen from 2,000 to nearly 9,000 at UIHHSS over the last several years. "It is a great measure of culture when people are comfortable reporting things that they see and are not as fearful that shame and blame is going to kick in," says Dr. McDonald.

The Seven Pillars Program focuses on rectifying system problems that lead to most errors, rather than judging and blaming individuals. As a result, more health care professionals are reporting safety problems, allowing them to be resolved. And when harm from errors does occur, apologies are accompanied by remediation and a commitment to improve, as well as a waiver of fees for inappropriate care. Once the hospital has determined that a medical error has harmed the patient, the patient is given a card that exempts them from paying all fees at UIHHSS and that can also be used to cover all related costs if they go to a different hospital.

As a result, UIHHSS has shown:

- At least a 40 to 50 percent reduction in claims and lawsuits per quarter compared with 6 or 7 years ago
- The medical malpractice premium for FY 2013 for UIHHSS is 22 percent ($10 million) less than the $42 million high mark 4 years ago before the impact of the Seven Pillars Program
- $3 million in annual savings to payers, including Medicare and Medicaid, from waiver of all hospital and professional fees for inappropriate care cases, and in copay savings to patients
- Substantially reduced costs associated with the practice of defensive medicine compared with other area hospitals not participating in the project

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- Significantly reduced time and costs associated with malpractice litigation
- Identification and resolution of unanticipated outcomes of care, which are not always due to poor care.

Dr. McDonald wants the next generation of health care professionals to have a more realistic approach to medical errors and learn how to cope with them. His team works to educate medical students and resident physicians, who he says are very energized about the Seven Pillars and its "principled approach" to patient harm.

Preventing harm through best practices

A project to reduce preventable birth-related injuries and related malpractice claims at Fairview Health Services, a health system of hospitals and clinics in Minnesota, is led by Stanley Davis, M.D., medical director for simulation and teamwork at Fairview. Birth-related injuries typically result from failure to recognize an infant in distress, initiate a timely cesarean birth, or properly resuscitate a baby in distress, as well as inappropriate use of labor-inducing drugs and inappropriate use of vacuum or forceps during delivery.

The Fairview project uses perinatal best practices, including checklists, techniques to improve communication, teamwork training for health care providers, and use of health care simulation of high-risk clinical situations. With AHRQ funding, Fairview expanded its program from 2 to 6 of its hospitals, with a total of 14 hospitals in several States participating in the demonstration project.

"The biggest problem we see is that people on the labor and delivery unit don't use closed-loop communication," says Dr. Davis. "It's like what fast food restaurants do when they call back your order. You then acknowledge that they got the order right."

> *"The biggest problem we see is that people on the labor and delivery unit don't use closed-loop communication."*

Davis says that often doctors say the order aloud, but nurses or other team members don't always affirm that they heard it. The result is that either no one or several people will carry out the same order. "So communication ends up being a big part of making mistakes. That's where AHRQ's TeamSTEPPS® comes in with its communications techniques," says Dr. Davis.

Simulation of high-risk situations, such as fetal distress, includes communication techniques, identification of each person's role, and course of action. "When you simulate something like that and videotape it, people can see how to correct problems and work better in those situations," notes Dr. Davis.

Fairview's simulation exercises have been effective. For example, benefits of practicing kicked in when a nurse manager's daughter came into the emergency department with a prolapsed umbilical cord, which can be compressed, cutting off the baby's blood supply. An emergency c-section was needed, and the team had done c-sections in the simulations prior to this event. The team went into action quickly, and the baby did well.

Checklists are also important. One example is the checklist for elective induction of labor. The first thing on the checklist is to confirm that the pregnancy is at least 39 weeks, by doing a cervical exam and measuring cervical dilation. This confirmation is needed to prevent harm before starting a medication that starts labor contractions too quickly, which can lead to a baby with slowed respiration. By using the checklist, health care professionals know to monitor the contractions and follow other steps to help ensure that the baby is healthy. Since the project began, Fairview's six hospitals have seen a:

- 74 percent reduction in preventable birth trauma to full-term newborns, preventing 30 cases of trauma over 4 years (birth trauma accounts for the biggest payouts against obstetrician defendants)
- 38 percent reduction in preventable neonatal intensive care unit admissions of full-term babies over 4 years
- 12 percent reduction in the rate of preventable birth-related maternal complications at term, preventing 172 cases of birth-related maternal complications over 4 years.

Alternative resolution of disputes

To reduce the cost of medical malpractice in New York's courts and mediate fair compensation for patients injured due to medical errors, the New York State Unified Court System began a judge-

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directed negotiation program in select areas of New York City in 2004. As part of an AHRQ demonstration grant, the existing program was expanded and coupled with a new hospital early disclosure and settlement model under the direction of Judge Judy Harris Kluger, chief of policy and planning for New York State Courts. Key stakeholders are involved in the program through a consortium of five major teaching hospitals in New York City, the New York State Department of Health, and New York City medical liability insurers.

The intial focus of the project involved the New York Unified Court system. If a lawsuit is filed naming one of the participating grant hospitals as a defendant, the case is sent to a judge with specialized training. The judge supervises the entire process, beginning with the very first appearance before the court. This judge takes an active role in setting regular case conferences, monitoring discovery, and establishing a schedule for pretrial activity. Additionally, while the case is pending, the court will convene the parties to discuss the case and, if appropriate, help to broker a settlement (though the judge does not impose a settlement amount).

The project has trained about 50 judges from around the State to mediate these cases in New York courts. "The judges don't need a medical background, but they do have to have some understanding about the kinds of medical issues that may come up in these cases," says Judge Kluger. "Our training was quite extensive. Lawyers and doctors who are experts in the field addressed medical issues the judges might see, as well as settlement skills and mediation skills."

This program has begun to shift the dynamic of civil medical malpractice actions from an attorney-driven process to a judge-managed process, and does not require any changes in the law. The goal of the program is to reach a fair and expeditious resolution in significantly less time than under the previous system, where resolution could take 4 to 5 years. "We've saved time and money by closely managing these cases from the outset and, whenever possible, limiting the number of costly depositions and the need to retain expert witnesses in preparation for trial," explains Judge Kluger. "That's the goal. The earlier the case is resolved, the lower the litigation costs."

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AHRQ funding connected the court project to a new hospital early disclosure and settlement model. This model is essentially a communication and resolution program says Susan Senecal, R.N., M.B.A., project director for the New York State Patient Safety and Medical Liability Reform Demonstration Project. She manages, directs, and coordinates activities of the project partners. The model uses a checklist that covers three areas: awareness, investigation, and resolution.

Once there is an event, whether it is a medical error or a serious known complication of care (for example, return to the operating room or an unanticipated colostomy following surgery), a person is assigned to coordinate the investigation of the patient's care experience. There is an initial discussion with the patient generally within 24 hours of the event by the physician, and the risk manager is notified. Following the investigation, the conclusions are communicated to the patient—whether there was an error or rather a complication related to the underlying disease, and not through fault of the patient's hospital or the practitioner.

These swift investigations can uncover process-of-care areas that need improvement, preventing them from happening again, and thus improving patient safety. They also enable the patient to receive information about what happened to them.

"The communication and closure with the patient in and of itself is the resolution in most of our cases,"

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Note: Only items marked with a single (*) asterisk are available from the AHRQ Clearinghouse. See the back cover of *Research Activities* for ordering information. Consult a reference librarian for information on obtaining copies of articles not marked with an asterisk.

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says Ms. Senecal. "It's not to say, `Okay, here's *x* amount of dollars. Will that prevent you from filing a lawsuit?' The resolution part is identifying what happened and making sure the patient understands that, and ensuring that the patient receives fair and quick compensation where there was medical injury due to an error."

"The resolution part is identifying what happened and making sure the patient understands that, and ensuring that the patients receive fair and quick compensation where there was medical injury due to an error."

She agrees with Dr. McDonald, that often it is the pursuit of information about their care that drives patients to file lawsuits. The hospitals' early disclosure and settlement programs aim to avoid that. But sometimes, says Ms. Senecal, people just shut down when something tragic happens and don't hear what they are being told, so the hospital cannot resolve the situation. That's when the case goes to the courts.

To date, more than 200 cases have gone through the judge-directed negotiations program. This number is expected to increase as more judges are trained, and the initiative is fully implemented in other parts of New York.

What has been the response of hospitals and families to this approach? Says Judge Kluger, "We've had very positive feedback from both sides, especially once hospitals and families understand what is involved—that ultimately the goal is to get to an earlier resolution that is fair to both sides." ■ *GM*

Editor's note: For details on AHRQ's medical malpractice and patient safety initiative, go to www.ahrq.gov/qual/liability.

Patient Safety and Quality

A five-point checklist can help public report sponsors avoid misclassifying the performance of health care providers

A new study concludes that a five-point checklist can help public report sponsors avoid misclassifying the performance of health care providers. This misclassification can lead to lower quality, greater waste, or patient harm in health care, note RAND researchers. They believe that by publicly explaining how they addressed the five points in the checklist, report sponsors can give performance reports greater methodological transparency and improve the chances that such reports will give rise to better, more efficient care. The checklist highlights key methodological options for report sponsors to consider in creating a report and helps report users decide if they trust the information in the report.

The first point includes measuring and addressing systematic misclassification, such as reporting higher mortality rates for patients of providers treating an older population than for patients of providers treating a younger population. Checklist point two focuses on measuring and addressing random misclassification, which can occur when there is little provider-to-provider variation in true performance (e.g., if it is uniformly high) or when there is high measurement error. The third checklist point is to use composite scores appropriately, for example, clarifying that the provider with a high composite rating could have a great spread among the individual scores.

Checklist point four is to perform sensitivity analyses to ensure that choosing alternate methods would not create large changes in the performance scores. The fifth checklist point is to measure the effects of reporting to verify that the goal of the public report is being met, whether to help patients choose better providers or motivate providers to make quality improvements. This study was funded by the Agency for Healthcare Research and Quality (Contract No. 290-07-10022).

More details are in "A five-point checklist to help performance reports incentivize improvement and

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effectively guide patients," by Mark W. Friedberg, M.D., M.P.P., and Cheryl L. Damberg, Ph.D., M.P.H., in the March 2012 *Health Affairs* 31(3), pp.612-618. ■ *DIL*

Editor's Note: Drs. Friedberg and Damberg were funded by AHRQ to develop a more detailed User's Guide on this topic, which is available at www.ahrq.gov/qual/value/perfscoresmethods.

Hospital volume does not predict mortality for patients undergoing lung cancer surgery

Previous studies have linked better outcomes from lung cancer surgery and high hospital volume of such surgeries. However, these findings remain controversial. A new study, using three different methods to measure hospital volume, sheds new light on the topic. It finds that the way hospital volume is defined determines any impact on mortality and that overall, a hospital's volume of lung cancer surgery is not a predictor of patient mortality.

Researchers identified 40,460 lung cancer patients who underwent surgery at 436 hospitals from data in the 2007 Nationwide Inpatient Sample of the Healthcare Cost and Utilization Project. This database is maintained by the Agency for Healthcare Research and Quality (AHRQ) and is the largest, all-payer inpatient database available in the United States. Hospital volume of lung surgery was measured using three different methods, including the most commonly used weighted volume stratified into quintiles.

In two of the three methods, there was no significant association between hospital procedure volume and in-hospital mortality. The researchers did find a significant relationship when using the quintile method. In this case, the lowest-volume quintile was associated with more than a 350 percent increase in mortality compared with the highest-volume quintile. However, this relative contribution of volume was a minimal predictor of mortality compared to a patient's age and coexisting disease. The researchers conclude that hospital lung cancer surgery volume should not be used as a proxy measure for that hospital's quality of surgery. The study was supported in part by AHRQ (HS18049, HS17693).

See "The relationship between hospital lung cancer resection volume and patient mortality risk," by Benjamin D. Kozower, M.D., M.P.H., and George J. Stukenborg, Ph.D., in the December 2011 *Annals of Surgery* 254(6), pp. 1032-1037. ■ *KB*

Distance-based training in spirometry use increases the quality of asthma diagnosis

Spirometry is a common office test used to diagnose asthma and other conditions affecting breathing by measuring how much air you can inhale and exhale, as well as how fast you can exhale. However, lack of training and feedback for diagnostic spirometry are major barriers to its successful incorporation into primary care for asthma patients. The good news is that online spirometry training can improve the quality of spirometry testing and the assessment of asthma severity at primary care pediatric practices. The researchers developed and evaluated a spirometry training and feedback program that they delivered entirely by distance through the use of a CD-ROM and a series of webinars.

The seven practices receiving the intervention had a significantly greater probability of performing acceptable quality spirometry testing sessions than the seven control group practices. Providers participating in the intervention had a 2.9 times greater probability of documenting asthma severity during the intervention period than the control group. The proportion of asthma patients labeled as having persistent asthma increased from 43 percent to 62 percent among

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intervention practices, but it declined from 57 to 50 percent among the control practices.

The training intervention consisted of two parts: a 70-minute 10-module interactive tutorial on a multimedia CD-ROM, and a series of five hour-long webinars delivered over 7 months to a combination of providers and support staff. The study was supported by the Agency for Healthcare Research and Quality (Contract No. 290-06-00022).

See "Learning from a distance: Effectiveness of online spirometry training in improving asthma care," by James W. Stout, M.D., Karen Smith, M.D., Chuan Zhou, Ph.D., and others in *Academic Pediatrics* 12, pp. 88-95, 2012. ■ *MWS*

Chronic Disease

Opioid prescriptions for treating chronic abdominal pain doubled between 1997 and 2008

Although the number of outpatient visits for chronic abdominal pain (CAP) declined by almost a fifth from 1997–1998 to 2006–2008, visits during which an opioid was prescribed more than doubled, according to a new study. CAP is a common reason for outpatient visits, and its management is often a challenge for clinicians. Nevertheless, opioid analgesics have not been proven effective for treating CAP and have been linked to drug misuse and gastrointestinal symptoms, including worsening pain.

Based on two national surveys, each conducted a decade apart (the National Ambulatory Medical Care Survey and the National Hospital Ambulatory Medical Care Survey), the researchers estimated that there were 14.8 million outpatient visits (2,464 per 100,000 population) for CAP from 1997 through 1999, which decreased by 17.6 percent (to 12.2 million outpatients visits, or 1,863 per 100,000 population) for 2006 through 2008. Over the same period, the proportion of visits for CAP in which the patient received at least one opioid prescription increased from 5.9 percent during 1997–1999 to 12.2 percent during 2006–2008.

The likelihood of receiving an opioid prescription was highest for patients 25 to 50 years old (4.8 times more likely than for ages 18 to 24 years). In contrast, opioid prescriptions were least commonly given to uninsured patients (12 percent of the rate for privately insured patients) and blacks (34 percent of the rate for whites). The researchers call for more studies to better understand the reasons for and consequences of these trends. This study was funded in part by the Agency for Healthcare Research and Quality (HS19468).

More details are in "Increasing frequency of opioid prescriptions for CAP in US outpatient clinics," by Spencer D. Dorn, M.D., M.P.H., Patrick D. Meek, D.Pharm., M.S.P.H., and Nilay D. Shah, Ph.D., in the December 2011 *Clinical Gastroenterology and Hepatology* 9(12), pp. 1078-1085. ■ *DIL*

Response to etanercept for rheumatoid arthritis can be predicted by 12 weeks

Decision trees specifically designed for patients with rheumatoid arthritis for whom etanercept with or without methotrexate is newly prescribed now permit researchers to determine in which patients treatment efficacy can be predicted with confidence after only 12 weeks. These classification and regression trees also identify those patients in whom the likelihood of achieving low disease activity (LDA) within 1 year of this therapy is indeterminate after only 12 weeks on that regimen.

Data for this study were taken from the Trial of Etanercept and Methotrexate with Radiographic Patient Outcomes (TEMPO). Patients in this trial received 25 mg of etanercept twice a week; methotrexate from 7.5 to 20 mg once a week, depending upon persistence of joint pain or swelling; or both drugs. The researchers developed various decision trees to predict by week 12 whether LDA would be achieved at the end of 1 year of therapy.

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Some 39 percent of patients receiving etanercept alone and 60 percent of patients receiving etanercept plus methotrexate achieved LDA at week 52. At week 12, 53 percent of patients receiving etanercept were predicted to achieve LDA, while another 39 percent were predicted not to do so. Among patients prescribed etanercept plus methotrexate, 63 percent were predicted to achieve LDA and 25 percent were predicted not to respond. As a result, within 12 weeks of initiating etanercept with or without methotrexate, success or failure in achieving an outcome of LDA at 52 weeks could be predicted in 80 to 90 percent of patients. The remaining 10 to 20 percent of patients required more time on therapy to establish whether they would respond adequately or should discontinue this treatment.

The study was supported in part by the Agency for Healthcare Research and Quality (HS18517).

See "Predicting low disease activity and remission using early treatment response to antitumour necrosis factor therapy in patients with rheumatoid arthritis: Exploratory analyses from the TEMPO trial," by Jeffrey R. Curtis, M.D., M.P.H., Shuo Yang, Lang Chen, M.D., and others in the *Annals of Rheumatology Diseases* 71, pp. 206-212, 2012. ■ *KB*

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

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

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

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

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

The financial burden from prescription drugs has declined for the nonelderly, but remains a problem for some groups

Although the cost burden of prescription drugs for nonelderly adults grew substantially from 1999 through 2003, by 2008 the cost burden had fallen back to 1999 levels, according to a new study. This decline demonstrates the success of strategies to lower drug costs for consumers, including increased use of generic drugs, note the researchers. However, they found that the financial burden of prescription drugs is still high among some groups, notably those with public insurance and those with low incomes.

Prescription drug burden is calculated in two ways: (1) as out-of-pocket drug costs compared to family income and (2) as the proportion of all out-of-pocket health care expenses accounted for by prescription drugs. The researchers found that in 1999, 7.1 million people (2.9 percent of the United States population) lived in families that spent more than 10 percent of their family income on prescription drugs. That same year 64.5 million people (26.7 percent of the population) lived in families in which prescription drugs accounted for more than half of all out-of-pocket health care spending. These numbers had risen in 2003 to 10.8 million people (4.3 percent) who had high drug-cost burden and 85.2 million (33.6 percent) who spent more than half of their out-of pocket health care expenses for prescriptions.

By 2008, persons living in families with high drug-cost burden had dropped to 8.3 million people (3.1 percent) and 67.1 million (25.4 percent) lived in families whose prescription drug expenses accounted for more than half of their out-of-pocket health expenses.

Individuals with high drug-cost burden in 2008 varied with insurance type—7.5 percent for those with public insurance (down from 11.1 percent in 1999), 4.5 percent among those with private nongroup (not employer-related) insurance, and 1.2 percent for those with employer-related insurance. The findings were based on data from the 1999–2008 Medical Expenditure Panel Surveys of the Agency for Healthcare Research and Quality (AHRQ). The researchers note that these trends suggest that the affordability of prescription drugs under the future insurance exchanges will need to be monitored, as will efforts by States to boost copayments under Medicaid or otherwise restrict drug use to reduce public spending. Some of the authors were funded in part by AHRQ (HS17695 and HS18657).

More details are in "The financial burden from prescription drugs has declined recently for the nonelderly, although it is still high for many," by Walid F. Gellad, M.D., M.P.H., Julie M. Donohue, Ph.D., Xinhua Zhao, Ph.D., and others in the February 2012 *Health Affairs* 31(2), pp. 408-416. ■ *DIL*

Differences in the costs of drugs prescribed lead to regional variation in Medicare Part D drug spending

Regional differences in Medicare Part D (prescription drug coverage) outlays for three classes of drugs reflect geographic variation in the use of brand-name and generic medications in each category rather than the volume of prescriptions. That's the finding of a new study. Researchers examined variation in costs of angiotensin-converting-enzyme inhibitors (ACEIs) and angiotensin-receptor blockers (ARBs), statins, and selective serotonin reuptake inhibitors (SSRIs) and serotonin–norepinephrine reuptake inhibitors (SNRIs), as well as overall spending for all drugs. They found that differences in the mean adjusted cost for all drugs per beneficiary ranged from $2,413 in the lowest fifth of Medicare hospital referral regions (HRRs) to $3,008 in the highest fifth. Geographic variation in mean costs per prescription ($53 vs. $63)

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Medicare Part D
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accounted for 76 percent of this difference.

Regional differences in per prescription costs explained nearly 88 percent of the differences for ACEIs and ARBs and 56 percent of the differences for statins, but only 36 percent for SSRIs and SNRIs. The ratio of brand-name drugs to total prescriptions (ranging from 0.24 to 0.45 overall, 0.24 to 0.55 for ACEIs and ARBs, 0.29 to 0.60 for statins, and 0.15 to 0.51 for SSRIs and SNRIs) showed high correlation with prescription prices. If all HHRs in the four higher quintiles of drug cost had adopted the branded-to-total prescription ratios of the lowest quintile, the Medicare program and its beneficiaries would have saved $4.5 billion (10 percent of costs) for the year under study. The researchers suggest that reducing branded-drug use in some regions through modification of Part D plan benefits might lower costs without reducing quality of care. Their findings were based on Medicare Part D prescription data for a 40 percent random sample of the 2008 Medicare Denominator files. The study was funded in part by grants from the Agency for Healthcare Research and Quality (HS17695, HS18721, HS19421).

More details are in "Sources of regional variation in Medicare Part D Drug Spending," by Julie M. Donohue, Ph.D., Nancy E. Morden, M.D., M.P.H., Walid F. Gellad, M.D., M.P.H., and others, in the February 9, 2012 *New England Journal of Medicine* 366(6), pp. 530-538. ■ *DIL*

Elderly Health and Long-Term Care

Studies link adverse drug interactions to elevated risk for hospitalization among the elderly

The elderly population consumes a disproportionate share of prescription and over-the-counter drugs relative to younger persons. These factors, combined with age-related changes in the ability of the body to process and respond to drugs, make the elderly population more susceptible to drug interactions. A review of 17 studies that assessed specific drug interactions in elderly patients found that 16 of the studies reported an elevated risk for hospitalization in older adults associated with drug interactions.

These interactions included angiotensin-converting enzyme (ACE) inhibitors and potassium-sparing diuretics; ACE inhibitors or angiotensin receptor blockers and sulfamethoxazole/trimethoprim (SMX/TMP); benzodiapines or zolpidem and other medications; calcium channel blockers and macrolide antibiotics; digoxin and macrolide antibiotics; lithium and loop diuretics or ACE inhibitors; phenytoin and SMX/TMP; sulfonylureas and antimicrobial agents; theophylline and ciprofloxacin; and warfarin and antimicrobial agents or non-steroidal anti-inflammatory drugs.

The researchers conclude that when the elderly receive drug therapy, it should be absolutely necessary for the achievement of well-defined goals. They also recommend that an evidence-based, high-priority list of drug interactions in the elderly be developed and maintained. This study was supported in part by the Agency for Healthcare Research and Quality (HS19220, HS17001).

See "Potentially harmful drug-drug interactions in the elderly: A review," by Lisa E. Hines, Pharm.D. and John E. Murphy, Pharm.D. in the *American Journal of Geriatric Pharmacotherapy* 9, pp. 364-377, 2011. ■ *MWS*

Conventional and atypical antipsychotic drugs show differing safety risks among older nursing home residents

Up to a third of older nursing home residents are treated with antipsychotics to help control behavioral problems. In two studies supported by the Agency for Healthcare Research and Quality (HS17918, HS16097), the researchers found that atypical antipsychotic drugs (such as risperidone) were associated with lower hazard rates than conventional antipsychotic drugs (such as haloperidol) for overall death rates and rates of specific causes of death, excluding cancer.

Similarly, they found that the risk of developing cardiac disease, hip fractures, and infections were lower for treatment with atypical rather than conventional antipsychotic drugs. However, risks of cerebrovascular events were lower for conventional antipsychotic drugs.

In both studies, the researchers analyzed data on new users of antipsychotic drugs (haloperidol, aripiprazole, olanzapine, quetiapine, risperidone, and ziprasidone) among elderly adults, who were eligible for Medicaid and lived in a nursing home in 2001–2005. Both studies are briefly described here.

Huybrechts, K.F., Gerhard, T., Crystal, S., and others. (2012). "Differential risk of death in older residents in nursing homes prescribed specific antipsychotic drugs: Population based cohort study." ***British Medical Journal*** **344:e977, 12 pp.**
This study compared the risk of death in 75,445 elderly nursing home residents. The researchers found that users of haloperidol, a conventional antipsychotic drug, were twice as likely to die within 180 days of beginning treatment (107 percent increased risk) than residents treated with risperidone, an atypical antipsychotic.

Only quetiapine (another atypical antipsychotic) exhibited significantly lower 180-day mortality (by 19 percent) than risperidone. The effect of haloperidol was strongest during the first 40 days of treatment, and declined during the rest of the 180-day period.

The risperidone–quetiapine difference was also greatest during this initial period. Dose effects were the strongest for haloperidol, with mortality risk 84 percent greater for high-dose than low-dose therapy. Similarly, risperidone risk was 35 percent greater for high-dose than low-dose therapy.

Huybrechts, K.F., Schneeweiss, S., Gerhard, T., and others. (2012, March). "Comparative safety of antipsychotic medications in nursing home residents." ***Journal of the American Geriatrics*** **Society 60(3) pp. 420-429.**
This study examined how the antipsychotic drugs differed in risk of developing major medical events—serious bacterial infection, heart attack, cerebrovascular event (stroke or transient ischemic attack), or hip fracture. Of the 83,959 nursing home residents included in the group, 8.9 percent were prescribed a conventional antipsychotic drug and 91.1 percent were prescribed an atypical antipsychotic.

Based on hospitalizations for the major medical events within 180 days of starting antipsychotic therapy, residents who began taking a conventional antipsychotic (haloperidol) were at 37 percent greater risk of developing a serious bacterial infection, but had 19 percent lower risk of a cerebrovascular event than were residents who initiated taking an atypical antipsychotic (risperidone).

Residents taking a conventional antipsychotic were at greater risk of heart attack (by 23 percent), hip fracture (by 27 percent), and pneumonia (by 28 percent), but these increases were not statistically significant. Both the increased risk of serious bacterial infection and the decreased risk of cerebrovascular events for nursing home residents taking haloperidol were dose-dependent.

Comparison of other atypical antipsychotic drugs with risperidone found only modest significant differences for cerebrovascular event risk for residents who began taking olanzapine or quetiapine, but a significantly reduced risk of serious bacterial infections (by 17 percent) for those starting quetiapine. ■ *DIL*

Several factors influence completion of chemotherapy in elderly patients with stage-III colon cancer

Colon cancer is predominantly a disease of those 65 years and older. For patients with stage-III colon cancer, adjuvant chemotherapy following surgery can reduce cancer recurrence and mortality. A new study found better chemotherapy completion rates among the elderly with this condition than in earlier years, with age the most important predictor of initiation and completion of therapy.

The study included data on 12,265 patients with stage-III colon cancer who were 65 years of age and older. All were diagnosed between 1991 and 2005. Medicare claims were analyzed to determine if and when chemotherapy was initiated and for how long.

Overall, 64.4 percent of patients received chemotherapy within 3 months following surgery. Factors associated with being more likely to receive chemotherapy included being male, white, younger, and married. Younger patients were also more likely to start chemotherapy in a shorter period of time after surgery. Factors associated with completing a full course of chemotherapy included being younger, male, black, and married. Those patients who were older, female, and white were more likely to discontinue chemotherapy than others.

Compared to patients diagnosed from 1991–1993, those diagnosed after 1997 were nearly two times more likely to complete chemotherapy. The study was supported in part by the Agency for Healthcare Research and Quality (HS16743).

See "Assessing the initiation and completion of adjuvant chemotherapy in a large nationwide and population-based cohort of elderly patients with stage-III colon cancer," by Chung-Yuan Hu, Ph.D., George L. Delclos, M.D., M.P.H., Ph.D., Wenyaw Chan, Ph.D., and Xianglin L. Du, M.B., M.S., Ph.D., in *Medical Oncology* 28, pp. 1062-1074, 2011. ■ *KB*

Adolescent/Child Health

No link found between stimulant treatment of youth with ADHD and cardiovascular problems

Stimulants are widely considered the first-line drug treatment for children and adolescents with attention deficit hyperactivity disorder (ADHD), with approximately 3.2 percent of youth in the United States being treated with stimulants each year. Stimulants, which increase heart rate and blood pressure, have labeling required by the Food and Drug Administration that warns of the possibility of sudden death from stimulant use in children and adolescents with structural cardiac abnormalities or other serious heart problems. However, a new study found no association between stimulant treatment of youth with ADHD with no known cardiovascular risk factors.

The researchers reviewed the records of 171,126 patients with ADHD who were 6 to 21 years of age and without known cardiovascular risk factors. They found that clinical diagnoses of cardiovascular events and symptoms were rare and not associated with stimulant use. These findings help to reduce concerns over the cardiovascular safety of stimulant therapy for ADHD in young people without known pre-existing risk factors.

The researchers focused on the treatment of ADHD with methylphenidate and mixed salts of amphetamine in a large privately insured population. Data on service and pharmacy claims came from a commercial research database. This study was supported in part by the Agency for Healthcare Research and Quality (HS16097).

See "Stimulants and cardiovascular events in youth with attention-deficit/hyperactivity disorder," by Mark Olfson, M.D., Cecilia Huang, Ph.D., Tobias Gerhard, Ph.D., and others in the February 2012 *Journal of the American Academy of Child & Adolescent Psychiatry* 51(2), pp. 147-156. ■ *MWS*

Pediatric visits for ADHD have risen and the condition is increasingly being managed by psychiatrists

Attention deficit hyperactivity disorder (ADHD) is common among children and adolescents in the United States. Diagnosis from 2003–2007 increased 21.8 percent among children aged 4–17 years, from 7.6 percent to 9.5 percent, representing 5.4 million children. Changes in clinical practice guidelines, the introduction of new medications such as atomoxetine (Strattera®), as well as growing medication-related concerns, prompted researchers to take a fresh look at the diagnosis and treatment of ADHD from 2000 to 2010.

During this period, ambulatory visits coded with a diagnosis of ADHD increased by two-thirds and management of these cases by psychiatrists increased, according to a team of Chicago- and Boston-based researchers. The number of ADHD-related visits increased from 6.2 million in 2000 to 10.4 million in 2010. As the number of patients being treated increased, the percentage receiving stimulants decreased from 98 percent in 2001 to 87 percent in 2010. The share of those receiving atomoxetine (originally used as an antidepressant) decreased from 15 percent when the drug was introduced to 6 percent in 2010.

In 2000, approximately one fourth (24 percent) of all visits in which ADHD was coded were visits to the psychiatrist. By 2010, more than one-third (36 percent) of ADHD-related visits were to psychiatrists, while the share of ADHD-related visits to pediatricians shrank from 54 to 47 percent. This shift toward greater specialist care was not accompanied by evidence of an increase in illness severity in treated cases.

Several factors may account for this shift, note the researchers. Advocacy efforts and publicity campaigns may have led to greater public awareness. Also, increased provider knowledge of ADHD from the dissemination of clinical guidelines and continuing medical education may have led to parents, children, and providers identifying behavioral and conduct disorders as ADHD. A growing number of medications, as well as marketing and promotion by pharmaceutical firms, may have also contributed to this trend. This study was supported in part by the Agency for Healthcare Research and Quality (HS189960).

See "Trends in attention deficit hyperactivity disorder ambulatory diagnosis and medical treatment in the United States, 2000–2010," by Craig F. Garfield, M.D., E. Ray Dorsey, M.D., Shu Zhu, M.P.H., and others in *Academic Pediatrics* 12, pp. 110-116, 2012. ■ *MWS*

Study fails to find link between guideline-based emergency treatment for pediatric asthma and patient outcomes

Adherence to guideline-based emergency treatment of children with asthma had no significant impact on patient outcome, according to the first multicenter study of the topic. The primary outcome measure was successful discharge, defined as emergency department (ED) discharge without an asthma-related return visit or ongoing symptoms in the subsequent 2 weeks. The researchers analyzed the care for 1,426 patients (58 percent mild, 33 percent moderate, and 9 percent severe asthma acuity), who were seen at one of the 14 study EDs.

They looked at compliance with five process-of-care measures and two timeliness measures. Of this group, 62 percent were successfully discharged from the ED after treatment, 15 percent had either a relapse or ongoing symptoms within 2 weeks, and 24 percent were admitted to the hospital for care. The composite score for compliance with all five receipt/nonreceipt process measures was 84 percent. For the timeliness measures, 58 percent of those children recommended to receive a systemic corticosteroid at the ED did so within the first hour; and 92 percent of those recommended to receive ED treatment with an inhaled beta-agonist did so in the first hour.

However, adherence to the guideline process-of-care and

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timeliness measures was not associated with successful ED discharge in adjusted models. In these models, the one significant finding was that timely use of an inhaled beta-agonist increased the odds of hospitalization 4.4-fold.

The researchers attribute this last finding to insufficient adjusting for severity of asthma acuity, because patients with more severe asthma are both more likely to have timely albuterol medication and more likely to be hospitalized. This study was funded in part by the Agency for Healthcare Research and Quality (HS16418).

More details are in "Multicenter analysis of quality indicators for children treated in the emergency department for asthma," by Marion R. Sills, M.D., M.P.H., Adit A. Ginde, M.D., M.P.H., Sunday Clark, Sc.D., M.P.H., and others in the February 2012 *Pediatrics* 129(2), pp. e325-e332. ■ *DIL*

Health Information Technology

Parental reports more accurate than electronic health records in documenting child diet and exercise counseling

Thirty-two percent of children and adolescents between the ages of 2 and 19 are either obese or overweight. Since food intake and physical activity are the primary modifiable determinants of obesity, behavior and lifestyle modification are critical to obesity prevention and management. Various authorities recommend that physicians counsel parents during well-child visits on diet and physical activity—a practice that varies. Reports by parents about diet and exercise counseling of their children by pediatricians is somewhat more accurate than documentation of this counseling in the child's electronic health record (EHR), concludes a new study.

A team of researchers led by Ulfat Shaikh, M.D. of the University of California, Davis School of Medicine compared parental reports given immediately after the office visit to EHR documentation of the visit. The sensitivity of parental report was high (63 to 96 percent), but specificity was low (43 to 77 percent) because of parents' tendency to overreport counseling.

The sensitivity of EHR documentation was generally low (40 to 53 percent) except for discussion of screening time (92 percent) and physical activity (88 percent). EHRs also had poor specificity (42 percent and 21 percent, respectively, for screening time and physical activity). EHR documentation may suffer from information bias, suggest the researchers, because it tends to underestimate the discussion of many topics related to weight and nutrition and its potential to significantly overestimate counseling on certain topics specific to the design of local EHR templates.

The findings were based on analysis of audiotapes of the clinical sessions in which 38 physicians and parents of 198 children participated and the EHR documentation of the visits. The study was supported in part by the Agency for Healthcare Research and Quality (HS18567).

See "Accuracy of parental report and electronic health record documentation as measures of diet and physical activity counseling," by Ulfat Shaikh, M.D., Jasmine Nettiksimmons, M.A., Robert A. Bell, Ph.D., and others in *Academic Pediatrics* 12, pp. 81-87, 2012. ■ *MWS*

Telemedicine dermatology consultations change diagnoses and improve outcomes

Telemedicine services continue to mature as a way to provide patient care from a distance, especially for rural areas. Dermatology lends itself well to telemedicine, since skin conditions can be visibly seen on a screen. Recently, researchers compared teledermatology consults at a large academic medical center with diagnoses and treatment made initially by the referring physician. In the majority of instances, the telemedicine consultations resulted in changes in diagnosis and disease management.

The study included 1,490 patients who received a teledermatology consultation from a large academic dermatology clinic. Of these, 313

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had 2 or more telemedicine visits. All were referred by primary care providers from 31 facilities across California. Research assistants reviewed each patient's medical record to see if the teledermatology consultation resulted in a change in diagnosis, disease management, and clinical outcome.

A teledermatology consultation resulted in a change in diagnosis in 69.9 percent of cases. The top change was from a diagnosis of skin infection to diagnosis of a primary inflammatory process. Other leading changes involved an incorrect primary care diagnosis of either a benign or malignant lesion. These telemedicine consultations also led either to the start of or discontinuation of therapy in 67.5 percent of cases. More than a quarter of cases (26.4 percent) resulted in various surgical and other treatment interventions.

Overall 97.7 percent of consultations resulted in changes in disease management. In the group of 313 patients with two or more consultations, 215 of them (68.7 percent) experienced an improvement in clinical status after their teledermatology encounter. Those patients with a change in diagnosis had nearly two times greater odds of clinical improvement compared to those with no change. After the first consultation, each additional followup telemedicine visit was associated with double the odds of improvement in clinical outcomes. The study was supported in part by the Agency for Healthcare Research and Quality (HS18341).

See "Impact of live interactive teledermatology on diagnosis, disease management, and clinical outcomes," by Sonia Lamel, M.D., Cindy J. Chambers, M.D., M.P.H., Mondhipa Ratnarathorn, M.D., and April W. Armstrong, M.D., M.P.H., in the January 2012 *Archives of Dermatology* 148(1), pp. 61-65. ■ *KB*

Drug interaction decision support software has limitations and pharmacists' knowledge of support features is limited

Clinical decision support features of drug information software include drug-drug interaction (DDI), drug-allergy checking, and other advanced features to guide safe medication use. However, a new survey of 61 pharmacists shows that pharmacists have only limited awareness of the many decision support features available in their systems.

Of the 61 pharmacists surveyed by University of Arizona researchers, 60 percent reported that their DDI decision support systems included recommendations for managing drug interactions. Two-thirds of respondents reported that their pharmacy's system permitted the addition of medications from other pharmacies and/or over-the-counter products to a patient's profile. Approximately 40 percent of the pharmacists reported that some drugs entered into the pharmacy computer system were not included in the electronic DDI checking.

Most pharmacists indicated the presence of other decision support features, such as drug-disease precautions (78 percent), drug-age precautions (67 percent), and appropriate dosage alerts (79 percent). Forty percent of pharmacists did not know how often their software was updated. The 61 pharmacists interviewed were employed at community pharmacies, inpatient hospital pharmacies, and "other" pharmacies, including 2 infusion pharmacies, 1 long-term care pharmacy, and 3 Indian Health Service locations.

They reported using a total of 24 different software vendors for their information systems. It was unclear, however, whether pharmacists' limited awareness of their systems was a function of pharmacist training and knowledge or whether there are actual deficiencies associated with various pharmacy information systems. The study was supported by the Agency for Healthcare Research and Quality (HS19220).

See "Pharmacists' awareness of clinical decision support in pharmacy information systems: An exploratory evaluation," by Lisa E. Hines, Pharm.D., Kim R. Saverno, R.Ph., B.S. Pharm., Terri L. Warholak, Ph.D., and others in *Research in Social and Administrative Pharmacy* 7, pp. 359-368, 2011. ■ *MWS*

Despite more widespread prescribing of antiretroviral therapy for HIV infection, disparities remain

Although prescription of antiretroviral therapy (ART) to combat HIV disease became more widespread from 2002 to 2008, patients who were female, black, or younger still had lower ART rates than male, white, or older patients, reveals a new study. John A. Fleishman, Ph.D., of the Agency for Healthcare Research and Quality (AHRQ), and colleagues analyzed data from the medical records at 13 U.S. sites participating in the Human Immunodeficiency Virus Research Network. They assessed ART prescribing for 14,092 patients for each year they were in care. They examined ART use as a function of sex, race/ethnicity, HIV risk group, age, and CD4 history (CD4 cell counts are an indicator of HIV disease progression).

The proportion of HIV-infected patients prescribed ART increased from 60 percent in 2002 to 80 percent in 2008. Among those with two or more CD4 tests of 350 cells/mm^3 or less, the proportion increased from 82 percent in 2002 to 92 percent in 2008. ART rates were higher for those with lower CD4 counts (more advanced disease), but increased over time for all CD4 groups.

While ART prescribing rates rose among all demographic groups, racial/ethnic and sex disparities persisted. For example, ART rates were consistently lower for women than men, and blacks were less likely to be prescribed ART than whites, after adjusting for CD4 history. ART use increased for all age groups, but more slowly for the youngest group (18–29 years vs. 30–39 and 50 and older), and these differences were more pronounced at earlier disease stages. The fact that ART use increased among traditionally disadvantaged groups, such as women and black patients, is encouraging and shows that improvements in care are possible for such groups, note the researchers.

More details are in "Disparities in receipt of antiretroviral therapy among HIV-infected adults (2002–2008)," by Dr. Fleishman, Baligh R. Yehia, M.D., Richard D. Moore, and others in the May 2012 *Medical Care* 50(5), pp. 419-427. Reprints (AHRQ Publication No. 12-R065) are available from AHRQ.* ■ *KB*

Minority-serving hospitals have problems with quality of care and patient satisfaction

Previous studies have shown disparities in the quality of care for blacks, including higher surgical mortality and complication rates. Patients treated in hospitals with high concentrations of black patients reported less satisfaction with their care and experienced several difficulties, reveals a new study. The researchers examined patient discharge data from 568 hospitals in California, Pennsylvania, New Jersey, and Florida. They also surveyed nurses on their work environments, staffing levels, patient/family complaints, and the occurrence of adverse events, such as infections.

Hospitals with the largest percentages of black patients were large, urban, teaching hospitals. Nurses working at these institutions were more likely to report that they were not confident patients would be able to manage their care after discharge. Nurses also reported more frequent complaints and infections at hospitals with the highest percentage of black patients. Nurse staffing was significantly associated with three outcomes: poor confidence in discharge care capabilities, frequent patient/family complaints, and ventilator-associated pneumonia.

Overall, the concentration of black patients in a hospital was a significant predictor of poor satisfaction and nurse-assessed outcomes. The study was supported in part by the Agency for Healthcare Research and Quality (HS18534).

See "Quality of care and patient satisfaction in hospitals with high concentrations of black patients," by J. Margo Brooks-Carthon, Ph.D., R.N., Ann Kutney-Lee, Ph.D., R.N., Douglas M. Sloane, Ph.D., and others in the *Journal of Nursing Scholarship* 43(3), pp. 301-310, 2011. ■ *KB*

Radionovela promotes awareness and knowledge of cervical cancer vaccine among Hispanic parents

A short Spanish-language radionovela, a broadcast short story, can dramatically increase human papillomavirus (HPV) vaccine awareness among rural Hispanic parents of preteen and teenage daughters, concludes a new study. Hispanic women in the United States have a higher incidence of cervical cancer (primarily caused by persistent, high-risk HPV infections) than white women. Following approval of the first anti-HPV vaccine Gardasil® by the U.S. Food and Drug Administration in 2006 for females aged 9–26, it was expected that the majority of cervical cancers could be prevented by vaccination of girls at the age of 11 or 12. Targeted programs are thought to be needed to target high-risk groups like Latino women.

Toward that end, the researchers tested a 5-minute Spanish-language radionovela that includes a story about a young girl who learns of the HPV vaccine from a school friend and talks to her mother about it. Her mother talks to a friend who is a nurse, the girl's father, and a doctor about her interest and concerns about the vaccine. After receiving consent from both her parents, the young girl receives the vaccine from a local health clinic.

Rural Hispanic parents of daughters aged 9 to 17 (78 mothers and 10 fathers) were randomized to listen to the HPV vaccine radionovela or to another public service announcement (PSA). The parents who heard the radionovela as part of a 15-minute broadcast of other Spanish-language programming improved greatly in their awareness and knowledge of HPV vaccine between a pretest and a posttest compared with parents who listened to another 5-minute Spanish-language PSA about prostate cancer.

Parents who heard the HPV vaccine radionovela were more likely than the control group to confirm that HPV was a common infection (70 vs. 48 percent), to deny that women are able to detect whether they have HPV infection (53 vs. 31 percent), to know the recommended age range for vaccination (87 vs. 68 percent), and to confirm that the vaccine is given in multiple doses. The study was funded in part by the Agency for Healthcare Research and Quality (T32 HS13853).

More details are in "Evaluation of a radionovela to promote HPV vaccine awareness and knowledge among Hispanic parents," by Deanna Kepka, Gloria D. Coronado, Hector P. Rodriguez, and others in the December 2011 *Journal of Community Health* 36(6), pp. 957-965. ■ *DIL*

Comparative Effectiveness

Increased fluid and supplemental treatments may reduce recurrence of kidney stones

Increased fluid intake, reduced soft drink consumption, thiazide diuretics (which lower urinary calcium excretion and prevent calcium-containing kidney stones), citrate pharmacotherapy (citrate naturally prevents kidney stone formation), and allopurinol (used to treat excess uric acid in blood plasma) each decreased the risk of recurrent calcium kidney stones, according to a new research review by the Agency for Healthcare Research and Quality's (AHRQ's) Effective Health Care Program. While research data on kidney stones remains limited, available research suggests that evidence is mixed on whether dietary intervention effectively reduces the risk of recurrent stones.

Kidney stones may be present at any age, but onset is more common in young and middle-aged adults. Lifetime prevalence is 13 percent for men and 7 percent for women. Following an initial onset of kidney stones, the 5-year recurrence rate in the absence of a specific treatment is between 35 to 50 percent. Direct medical expenditures related to kidney stones may exceed $4.5 billion annually in the United States.

Nephrolithiasis is the clinical term for when hard masses form in the kidneys. The new review, *Recurrent Nephrolithiasis in Adults: A Comparative Effectiveness Review of Preventive Medical Strategies*, summarizes available evidence on the effectiveness and risks of dietary and pharmacological preventive treatments. To access this review and other materials that explore the effectiveness and risks of treatment options for various conditions, visit AHRQ's Effective Health Care Program Web site at www.effectivehealthcare.ahrq.gov. ■

Clinician and patient resources now available on ADHD treatment options

New patient and clinician summaries evaluating the effectiveness of drug and behavioral treatments for attention deficit hyperactivity disorder (ADHD) are now available from the Effective Health Care Program of the Agency for Healthcare Research and Quality (AHRQ). ADHD is a disorder that affects about 5 percent of children worldwide. Among preschool children with disruptive behavior disorder (which includes ADHD), relatively strong evidence supports the effectiveness of several different types of parental behavior training. These low-risk treatments were found to provide benefits for at least 6 months, and up to 2 years. Parents who attend more parental behavior training sessions see more improvement in their child's behavior.

For children older than age 6, the report found low evidence that medications such as methylphenidate (sold under the trade name Ritalin®) and atomoxetine (sold as Strattera®) used to treat ADHD symptoms are generally safe and effective for improving behavior. For both preschoolers and children over the age of 6, long-term effectiveness and adverse effects are not well studied.

The patient summary and clinician summary are accompanied by a continuing medical education/continuing education activity and faculty slide set to further assist clinicians, researchers, and other health professionals in decisionmaking. This set of resources is based on the research review, *Attention Deficit Hyperactivity Disorder: Effectiveness of Treatment in At-Risk Preschoolers; Long-Term Effectiveness in All Ages; and Variability in Prevalence, Diagnosis, and Treatment*.

To access the summary and other materials that explore the effectiveness and risks of treatment options for various conditions, visit AHRQ's Effective Health Care Program Web site at www.effectivehealthcare.ahrq.gov. ■

New AHRQ handbook helps practices implement interactive preventive health records

A new handbook from the Agency for Healthcare Research and Quality (AHRQ) offers practical guidance on the implementation of interactive preventive health records (IPHRs). Based on the lessons learned from implementation of electronic health records (EHRs) from 3 different vendors at 14 different practices, the handbook provides practical steps for health care professionals to follow when integrating IPHRs as components of electronic health records.

The IPHR was developed and studied in three AHRQ-funded projects to better understand how to broadly implement and disseminate patient-centered information systems throughout primary care. These three projects build upon one another to show the development and effect of the IPHR tool on patient outcomes, the ability for it to be successfully adopted into multiple and varied EHRs and health care settings, and its integration into the primary care workflow for an entire practice's patient population.

One AHRQ-supported study, published in the *Annals of Family Medicine*, found that IPHR users were more likely to be up-to-date on all preventive services compared with nonusers, especially in the

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areas of screening tests and immunizations. It also showed that an IPHR and similar systems can improve important patient outcomes, such as the delivery of evidence-based preventive care. The study authors recommended that more attention be paid to ensure future personal health records can deliver higher levels of functionality, similar to the IPHR, and that a greater number of patients and clinicians actively use the systems.

To view the handbook, *An Interactive Preventive Care Record: A Handbook for Using Patient-Centered Personal Health Records To Promote Prevention*, visit healthit.ahrq.gov/KRIST-IPHR-Guide-0612.pdf. Visit www.ncbi.nlm.nih.gov/pubmed/22778119 for the *Annals of Family Medicine* abstract. For more information on AHRQ's IPHR projects, go to http://healthit.ahrq.gov/KristSuccessStory2010.pdf. ■

AHRQ releases training modules to help improve the safety of nursing home residents

The Agency for Healthcare Research and Quality (AHRQ) has released a set of training modules to help educate nursing home staff on key patient safety concepts critical to improving the safety of nursing home residents. The modules, *Improving Patient Safety in Long-Term Care Facilities*, include the following publications:

- Detecting Change in a Resident's Condition
- Communicating Change in a Resident's Condition
- Falls Prevention and Management

Each of the modules has an instructor's guide and a student workbook. Training of nursing home staff, including support for teamwork across specialties, is likely to be effective in reducing medical errors and improving patient safety. This approach can also help reduce the number of falls and fall-related injuries at nursing homes. You can access the modules at www.ahrq.gov/qual/ptsafetyltc. ■

Anesetti-Rothermel, A., and Sambamoorthi, U. (2011). "Physical and mental illness burden: Disability days among working adults." (AHRQ grant HS15390). *Population Health Management* 14(5), pp. 223-230.
Researchers measuring the impact of 25 specific conditions on disability days among working adults found that the average number of disability days varied from 4 days for impulse-control disorders to a maximum of 18 days for stroke. The contribution of coexisting conditions to disability days varied from 0 percent for stroke and 14 percent for cancer to 72 percent for diabetes and 77 percent for asthma.

Chen, A., Schrager, S.M., and Mangione-Smith, R. (2012). "Quality measures for primary care of complex pediatric patients." (AHRQ grant HS18087). *Pediatrics* 129(3), pp. 433-445.
The goal of this study was to assess through expert consensus recommended primary care processes for complex pediatric patients by using the patient-centered medical home approach as a first step toward establishing a candidate set of quality measures. By using a systematic literature review and the RAND/University of California, Los Angeles appropriateness method, a national expert panel was able to select 35 primary care quality measures for complex pediatric patients.

Chen, P.G., Curry, L.A., Nunez-Smith, M., and others. (2012, February). "Career satisfaction in primary care: A comparison of international and U.S. Medical graduates." (AHRQ grant T32 HS17589). *Journal for General Internal Medicine* 27(2), pp. 147-152.
The researchers found that among 1,890 primary care physicians who reported at least 20 hours per week of direct patient care, international medical graduates (IMGs) were significantly less satisfied than U.S. medical graduates (USMGs). Seventy-six percent of IMGs reported satisfaction versus 82 percent of USMGs. Lower satisfaction was noted for IMGs who were solo practitioners (44 percent lower) and those not in a practice that allowed the provision of high-quality care (56 percent lower).

Chin, C.T., Wang, T.Y., Shuang, L., and others. (2012). "Comparison of the prognostic value of peak creatine kinase-MB and troponin levels among patients with acute myocardial infarction: A report from the Acute Coronary Treatment and Intervention Outcomes Network Registry—Get With The Guidelines." (AHRQ grant HS16964). *Clinical Cardiology* 35(7), pp. 424-429.
In patients with acute myocardial infarction (AMI), serial measurements of both cardiac troponin and creatine kinase MB isoenzyme (CK-MB) levels are commonly performed. Yet the independent prognostic implications of these markers have not been previously compared by AMI classification. The results of this study indicate that both peak CK-MB and peak troponin have independent incremental or additive prognostic value among patients treated for ST-segment elevation myocardial infarction and non-ST-segment elevation myocardial infarction.

Clancy, C.M. (2012). "Progress on a national patient safety imperative to eliminate CLABSI." *American Journal of Medical Quality* 27(2), pp. 170-171. Reprints (AHRQ Publication No. 12-R068) are available from the Agency for Healthcare Research and Quality.*
The author, director of the Agency for Healthcare Research and Quality, discusses a program to eliminate central line-associated bloodstream infections (CLABSIs). The Comprehensive Unit-based Safety Program, originally started in Michigan intensive care units (ICUs), was extended to hospitals in 10 States. It has since been expanded to hospitals nationwide, and to settings other than ICUs. Other types of healthcare-associated infections, besides CLABSIs, are also included. Reports thus far have found considerable success in the reduction of infections.

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Crews, K.R., Gaedigk, A., Dunnenberger, H.M., and others. (2012, February). "Clinical pharmacogenetics implementation consortium (CPPIC) guidelines for codeine therapy in the context of cytochrome P4502D6 (CYP2D6) genotype." (AHRQ grant HS19818). *Clinical Pharmacology & Therapeutics* 91(2), pp. 321-326.
The efficacy and safety of codeine as an analgesic are governed by CYP2D6 polymorphisms. In order to develop a guideline in this area, the authors conducted a systematic literature review focusing on CYP2D6 and its relevance in codeine use. The guideline provides information relating to the interpretation of CYP2D6 genotype test results to guide the dosing of codeine.

Dorn, S.D., Morris, C.B., Schneck, S.E., and others. (2011). "Development and validation of the irritable bowel syndrome satisfaction with care scale." (AHRQ grant HS19468). *Clinical Gastroenterology and Hepatology* 9, pp. 1065-1071.
The authors used standard scale development methods to develop the Irritable Bowel Syndrome Satisfaction with Care Scale (IBS-SAT). They report the results of a study to develop and assess the psychometric properties of the IBS-SAT, including a conceptual and measurement model (subscale structure), reliability (internal consistency), and validity (content, convergent and discriminant construct validity, and known-groups validity).

Elbardissi, A.W., and Sundt, T.M. (2012). "Human factors and operating room safety." (AHRQ grant HS19190). *Surgical Clinics of North America* 92, pp. 21-35.
This article reviews previous research on the impact of work system factors on surgical care. Specifically, the discussion highlights research pertaining to the following components of surgical care: (1) the physical operating room environment, (2) teamwork and communication, (3) tools and technology, (4) tasks and workload, and (5) organizational processes.

Gartlehner, G., Poole, C., West, S.L., and others. (2012). "Clinical heterogeneity in systematic reviews and health technology assessments: Synthesis of guidance documents and the literature." (AHRQ Contract No. 290-02-0016). *International Journal of Technology Assessments in Health Care* 28(1), pp. 36-43.
This study summarizes a project to identify, discuss, and synthesize best practices for addressing clinical heterogeneity in systematic reviews and health technology assessments. Recognizing clinical heterogeneity and clarifying its implications helps decisionmakers to identify patients who benefit from an intervention or are at greatest risk of an adverse outcome from that intervention.

Gellad, W.F., Grenard, J.L., and Marcum, Z.A. (2011). "A systematic review of barriers to medication adherence in the elderly: Looking beyond cost and regimen complexity." (AHRQ grant T32 HS00046). American *Journal of Geriatric Pharmacotherapy* 9(1), pp. 11-23.
The authors conducted a systematic review of the published literature describing potential nonfinancial barriers to medication adherence among the elderly. They found that the topic is not well described in the literature, despite being a major cause of morbidity. Thus, it is difficult to draw a systematic conclusion on potential barriers to medication adherence among the elderly.

Glascock, J.J., Shababi, M., Wetz, M.J., and others. (2012). "Direct central nervous system delivery provides enhanced protection following vector-mediated gene replacement in a severe model of spinal muscular atrophy." (AHRQ grant HS41584). *Biochemical and Biophysical Research Communications* 417, pp. 376-381.
This study was performed on mice to directly compare the influence of the injection route on the spinal muscular atrophy (SMA) phenotype. The researchers compared the two injection techniques that have been used in viral gene therapy of SMA: intracerebroventricular and intravenous injections. Both routes resulted in a significant increase in lifespan and weight compared to untreated mice.

Halpern, S.D. (2011). "ICU capacity strain and the quality and allocation of critical care." (AHRQ grant HS18406). *Current Opinions on Critical Care* 17, pp. 648-657.
The author presents a conceptual framework for intensive care unit capacity strain, considers what data elements may contribute to it, and

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suggests methods for determining the optimal metric. He also outlines the range of potential consequences of increased capacity strain, in terms of both the quality and ethics of care delivered.

Haukoos, J.S. (2012, January). "The impact of nontargeted HIV screening in emergency departments and the ongoing need for targeted strategies." (AHRQ grant HS17526). *Archives of Internal Medicine* 172(1), pp. 20-22.

The author examines this question by analyzing 11 studies that have systematically evaluated nontargeted HIV screening in an emergency department (ED) setting. He also discusses the debate over targeted versus nontargeted HIV screening in the ED. He argues that targeted HIV screening most likely fails because of poor implementation, not because targeting does not work.

Kramer, D.B., Xu, S., and Kesselheim, A.S. (2012, March). "Regulation of medical devices in the United States and European Union." (AHRQ grant HS18465). *New England Journal of Medicine* 366(9), pp. 848-855.

Some policymakers and device manufacturers have characterized U.S. device regulation as slow, risk-averse, and expensive, while others have suggested that current procedures may not be comprehensive enough. The authors compare the European Union and U.S. systems and consider what evidence exists on the performance of each device-approval system.

Kwon, S., Florence, M., Grigas, P, and others. (2012). "Creating a learning healthcare system in surgery: Washington State's Surgical Care and Outcomes Assessment Program (SCOAP) at 5 years." (AHRQ grant HS20025). *Surgery* 151(2), pp. 146-151.

SCOAP is a peer-to-peer collaborative that engages surgeons to determine the many process-of-care metrics that go into a "perfect" operation, track risk-adjusted outcomes that are specific in a given operation, and create interventions to correct underperformance in both the use of process measures and outcomes. The authors discuss the progress of the SCOAP initiative and highlight its achievements and challenges.

Luft, H.S. (2012). "Advancing public reporting through a new 'aggregator' to standardize data collection on providers' cost and quality." (AHRQ Contract No. 290-07-10022). *Health Affairs* 31(3), pp. 619-626.

The author proposes creating a public-private data aggregator that would receive patient and provider data from payers that are deidentified in such a way as to remain useful for consumer reporting and research purposes. It could be funded through fees charged to commercial users while registered researchers could access the data aggregator for free. Such an approach could allay privacy considerations as well as concerns about how such an effort would be funded.

Meyers, D. (2012, March). "Introduction from the Agency for Healthcare Research and Quality." *Journal of the American Board of Family Medicine* 25 Suppl 1, p. S1. Reprints (AHRQ Publication No. 12-R070) are available from the Agency for Healthcare Research and Quality.*

This article introduces a series of reports from an international conference on primary care. Health policy, health system researchers, and primary care leaders from seven countries, including the United States, participated. Topics included payment reform, team-based care, and the use of health information technology to support population management.

Needleman, J., Buerhaus, P., Pankratz, S., and others. (2011). "Nurse staffing and inpatient hospital mortality." AHRQ grant HS15508. *The New England Journal of Medicine* 364(11), pp. 1037-1045.

Patients cared for by understaffed shifts of registered nurses are slightly, but significantly, more likely to die while in the hospital than patients on fully staffed shifts, found this study. Specifically, patients on understaffed shifts were 2 percent more likely and patients on high-turnover shifts were 4 percent more likely to die during their hospital stay; both findings were significant.

Neily, J., Mills, P.D., Eldridge, N., and others. (2011). "Incorrect surgical procedures within and outside of the operating room," *Archives of Surgery* [Epub ahead of print]. Reprints (AHRQ Publication No. 11-R076) are available from AHRQ.*

To improve communication and patient safety and reduce adverse

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events in the operating room, the Veterans Health Administration implemented a mandatory medical team training program between 2006 and 2009. This training includes preoperative briefings and postoperative debriefings, both guided by a checklist. Researchers found the rate of reported adverse events declined from 3.21 per month from 2001 to mid-2006 to 2.4 per month from mid-2006 to 2009.

Noël, P.H., Lanham, H.J., Parchman, M.L., and others. (2012, March). "The importance of relational coordination and reciprocal learning for chronic illness care within primary care teams." ***Health Care Management Review*** **[Epub ahead of print]. Reprints (AHRQ Publication No. 12-R053) are available from AHRQ.***

Researchers recently explored how primary care team members perceive their relationships and learning as they relate to Chronic Care Model (CCM) success. They found that high levels of relational coordination were significantly and positively associated with the delivery of care as described by the CCM model. Reciprocal learning was also found to be independently and significantly associated with fulfilling all six elements of the CCM.

Nuckols, T.K., Aledort, J.E., Adams, J., and others. (2011). "Cost implications of improving blood pressure management among U.S. adults." (AHRQ grant HS17954.) ***HSR: Health Services Research*** **46(4), pp. 1124-1157.**

Improved hypertension care, that is, consistently providing the basic elements of blood pressure management to U.S. adults, would cost $170 more per person with hypertension each year, estimates this study. These costs are affected by the cost of medication per day, the optimal number of visits for recommended care, the blood pressure elevation, and the complexity of the hypertension care.

Nuckols, T.K., McGlynn, E.A., Adams, J., and others. (2011). "Cost implications to health care payers of improving glucose management among adults with type 2 diabetes" (AHRQ grant HS17954). ***HSR: Health Services Research*** **46(4), pp. 1158-1179.**

This study reveals that the cost of providing improved glucose management, relative to current care, would be $327 per person annually, with the increased cost largely due to antihyperglycemic medication. Researchers found that the cost-effectiveness to payers, defined as the incremental annual costs per patient newly attaining any one of three care goals, would be $1,128; including glycemic crises reduced this to $555.

Nunez-Smith, M., Bradley, E.H., Herrin, J., and others. (2011). "Quality of care in U.S. Territories." ***Archives of Internal Medicine*****, pp. E1-E13. [Epub ahead of print].**

A comparison of hospitals in U.S. Territories to hospitals in U.S. States finds that patients in territorial hospitals experience significantly higher 30-day readmission rates and higher mortality rates for acute myocardial infarction, heart failure, and pneumonia. The study compared the experience of Medicare fee-for-service patients in 57 territorial hospitals and 4,799 stateside hospitals.

Olfson, M., Crystal, S., Gerhard, T., and others. (2011). "Patterns and correlates of tic disorder diagnoses in privately and publicly insured youth. (AHRQ grant HS16097). ***Journal of the American Academy of Child and Adolescent Psychiatry*** **50(2), pp. 119-131.**

Medicaid-insured children diagnosed with Tourette disorder (often characterized by severe vocal and physical tics) tend to have more psychiatric and behavioral problems than similar children with private insurance. This study finds that they also appear to be diagnosed at a later stage and receive more antipsychotic medications and less mental health assessments or psychotherapy than their privately insured counterparts.

Pakyz, A., Carroll, N.V., Harpe, S.E., and others. (2011). "Economic impact of ***Clostridium difficile*** **infection in a multihospital cohort of academic health centers." (AHRQ grant HS18578).** ***Pharmacotherapy*** **31(6), pp. 546-551.**

Patients with healthcare-associated *Clostridium difficile* infections (CDIs) have an adjusted mean cost of hospital care nearly double that for matched patients without CDI ($55,769 vs. $28,609), found this study of administrative data. The researchers also found in their case–control study that the adjusted mean length of hospital stay was more than twice as long (21.1 days) for patients with healthcare-

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associated CDI than for those without the infection (10.0 days).

Peron, E.P., Marcum, Z.A., Boyce, R., and others. (2012, February). "Year in review: Medication mishaps in the elderly." (AHRQ grants HS17695, HS18271, HS19461). *American Journal of Geriatric Pharmacotherapy* 9(1), pp. 1-10.

This paper reviewed 5 articles from 2010 that examined medication mishaps in the elderly. Three studies focused on types of medication errors, including underuse due to prescribing and potentially inappropriate prescribing. The other studies focused on medication-related adverse patient events related to the use of skeletal muscle relaxants and high-risk medications.

Phillips, R.L. (2012). "International learning on increasing the value and effectiveness of primary care (I LIVE PC)." (AHRQ Contract No. 290-07-10008). *Journal of the American Board of Family Medicine* 25 Suppl 1, pp. S2-S5.

This article provides a brief introduction to eight papers from an international conference on primary care funded in part by the Agency for Healthcare Research and Quality. The countries represented were Australia, Canada, Denmark, The Netherlands, New Zealand, the United Kingdom, and the United States. Topics discussed include new models of care, accountability and population health, practice support and change facilitation, and care quality and safety.

Pitzer, V.E., Burgner, D., Viboud, and others. (2012, March). "Modeling seasonal variations in the age and incidence of Kawasaki disease to explore possible infectious etiologies." *Proceedings of the Royal Society of Biological Sciences* [Epub ahead of print]. Reprints (AHRQ Publication No. 12-R071) are available from AHRQ*.

The average age of Kawasaki disease infection is expected to vary during seasonal epidemics in a way that is predictable from the epidemiological features. To determine whether examining the relationship between seasonal variation in the number and average age of cases can lend insight into the number of infectious triggers, the researchers sought to extend and validate previous work on age-incidence patterns, then apply this theory to Kawasaki disease.

Quattromani, E., Powell, E.S., Khare, R.K., and others. (2011). "Hospital-reported data on the pneumonia quality measure 'time to first antibiotic dose' are not associated with inpatient mortality: Results of a nationwide cross-sectional analysis." (AHRQ grant T32 HS00078). *Academic Emergency Medicine* 18(5), pp. 496-503.

Hospitals are required to publicly report on their quality measures for treating pneumonia, including the time to first antibiotic dose (TFAD). This means that hospitals must give the first antibiotic dose within 6 hours after a patient arrives at the hospital. In fact, a new study finds no association between this TFAD quality measure and inpatient mortality for these patients.

Rosolowsky, E.T., Skupien, J., Smiles, A.M., and others. (2011). "Risk for ESRD in Type 1 diabetes remains high despite renoprotection." (AHRQ grant T32 HS00063) *Journal of the American Society of Nephrology* 22(3), pp. 545-553.

Treating patients who have type-1 diabetes and high urine albumin levels with kidney-protective medications and blood-pressure lowering medications does not reduce the risk of their developing end-stage renal disease (ESRD), concludes a new study. Despite treatments meant to prevent the condition's development, 172 of 423 study patients developed ESRD, 62 of whom died during dialysis.

Ruhnke, G.W., Coca-Perraillon, M., Kitch, B.T., and Cutler, D.M. (2011) "Marked reduction in 30-day mortality among elderly patients with community-acquired pneumonia," (AHRQ grant HS16948). *American Journal of Medicine* 124, pp. 171-178.

Deaths from community-acquired pneumonia, the most common infectious cause of death in the United States, dropped 28 percent from 1987 to 2005, according to this study. It found that 30-day mortality from this condition dropped from 13.5 percent to 9.7 percent. The researchers believe that increased pneumococcal and influenza vaccination rates, as well as a wider use of antibiotics, may explain a large portion of the downward trend in mortality.

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Research briefs

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Sarkar, U., Karter, A.J., Lieu, J.Y., and others. (2011). "Social disparities in internet patient portal use in diabetes: Evidence that the digital divide extends beyond access." (AHRQ grants HS17594 and HS17261). *Journal of the American Medical Informatics Association* 18, pp. 318-321.

Internet portals allow patients to conduct a variety of tasks normally associated with an office visit, such as refilling prescriptions and communicating with providers. Studies have shown poor outcomes among minority and less educated patients. This study finds that these groups also experience a "digital divide," making them less likely to have access to these Web portals and their disease-management benefits.

Spindler, K.P., Huston, L.J., Wright, R.W., and others. (2011). "The prognosis and predictors of sports function and activity at minimum 6 years after anterior cruciate ligament reconstruction. A population cohort study." (AHRQ grant HS16075). *American Journal of Sports Medicine* 39(2), pp. 348-359.

Tears in the ACL (anterior cruciate ligament), a major ligament of the knee, are common, especially among athletes. This study identifies factors that help predict better or worse functional outcomes following ACL reconstruction. Use of the patient's own tissue (autograft) rather than tissue from another person (allograft), not smoking, and having normal body mass index were correlated with better long-term outcomes.

Steinman, M.A., Hanlon, J.T., Sloane, R.J., and others. (2011). "Do geriatric conditions increase risk of adverse drug reactions in ambulatory elders? Results from the VA GEM Drug Study." (AHRQ grant HS17695 and HS18721). *Journal of Gerontology. Series A. Biological Sciences and Medical Sciences* 66A(4), pp. 444-451.

Common geriatric conditions do not significantly increase the risk of adverse drug reactions (ADRs), according to a new study by researchers at three Veterans Affairs (VA) medical centers. Using data from an ongoing VA study, the researchers found only weak associations between either mobility impairment or dependency in activities of daily living and ADRs. ■

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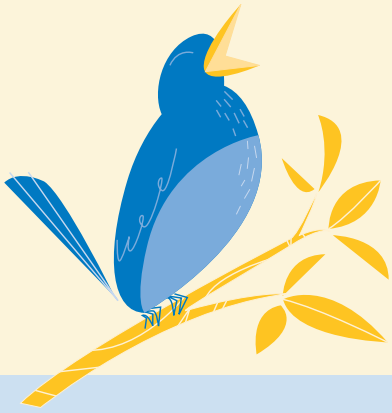

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