



RESEARCH ACTIVITIES

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AHRQ's new reports show care quality slowly improving and large disparities in access to care

The quality of health care in the United States improved slowly between 2002 and 2009. Yet, access to health care remained a great challenge for some Americans, according to new reports recently released by AHRQ.

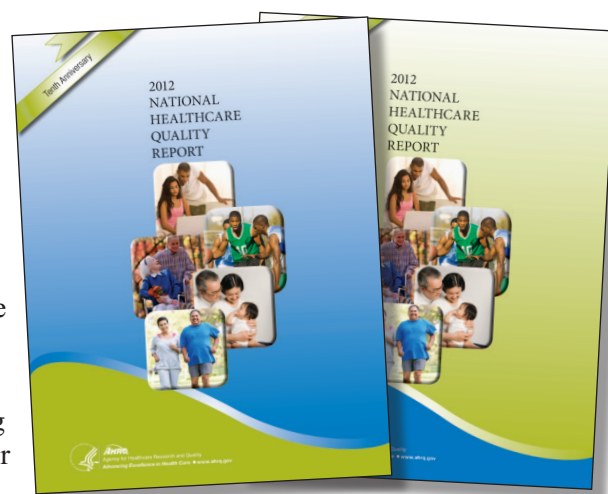
The 2012 *National Healthcare Quality Report* and *National Healthcare Disparities Report* found that, prior to the passage of the Affordable Care Act, Americans received recommended prevention and treatment services

only 70 percent of the time. Access to care in 2009—the latest year for which most data were available—was “far from optimal” for many Americans, especially racial and ethnic minorities and low-income people.

Overall, 26 percent of Americans reported facing barriers that restricted their access to care. Blacks and Hispanics received worse care than whites on about 40 percent of quality measures. Blacks had worse access to care than whites on about 33 percent of access measures and Hispanics had worse access to care than whites on about 70 percent of access measures.

Affordable Care Act addresses barriers to access to care

The reports' quality and access data predate passage of the Affordable Care Act, which addresses many of the barriers people now face when accessing health care. Already, the Affordable Care Act has improved access to health care for more than 3 million additional young adults who can remain enrolled in their parents' health insurance plans until age 26. This includes an estimated 913,000 Latino, 509,000 African American and 121,000 Asian young people.



“These reports underscore the need for improving access to high-quality care,” said AHRQ Director Carolyn M. Clancy, M.D.

“These reports underscore the need for improving access to high-quality care.”

“Fortunately, the Affordable Care Act is helping to address these gaps in coverage. As the Affordable Care Act offers more Americans a

continued on page 3

Highlights

Topics

Disparities/Minority Health	6
Health Care Costs and Financing	11
Patient Safety and Quality	12
Primary Care	20
Mental Health	23
Health Information Technology	24
Comparative Effectiveness Research	26
Women's Health	29
Elderly Health/Long-Term Care	31

Regular Features

From the Director	2
State Spotlight	8
Clinical Cases	19
AHRQ Stats	32
News and Notes	33
Research Briefs	34

From the Director



The nation's overall quality of care is improving about 3 percent each year, and it has improved from 15 to 20 percent over the past decade. However, access to care is getting worse, and disparities in care are barely changing. Those are the conclusions of AHRQ's 2012 *National Healthcare Quality Report* (NHQR) and *National Healthcare Disparities Report* (NHDR). Each year since 2003, AHRQ has used these Congressionally mandated reports to gauge the state of U.S. health care.

This year's reports show that low-income people had worse access to


care for a whopping 80 percent of measures. Blacks had worse access to care than non-Hispanic whites for one-third of access measures, American Indian and Alaska Natives for 40 percent, and Hispanics for 70 percent. Low-income and minority groups also suffered worse quality of care.

For example, blacks and Hispanics received worse care than non-Hispanic whites for about 40 percent of quality measures. Poor and low-income people received worse care than high-income people for about 60 percent of quality measures. Even middle-income people received worse care than high-income people for more than half the measures.

Already, the 2010 Affordable Care Act has improved access to health care for more than 3 million additional young adults who can remain enrolled in their parent's health insurance plans until age

26. The law also creates health insurance exchanges where people who do not have health insurance from an employer can obtain health insurance. I am confident that as the Affordable Care Act affords more Americans important health care services, access to care and the health of Americans will improve.

The ultimate goal of the NHQR, NHDR, and such HHS initiatives as the National Quality Strategy and Disparities Action Plan is to make the lives of patients and families better. Building on data in the NHQR, NHDR, and State Snapshots derived from these data, stakeholders can design and target strategies and clinical interventions to ensure that all patients receive the high-quality care needed to improve their health.


Carolyn Clancy, M.D.

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From the Editor

This redesigned, full-color issue of *Research Activities* debuts new columns that respond to the type of information our readers said they wanted in last summer's survey: State Spotlight, Clinical Cases, and a Question and Answer piece to respond to readers' interest in trends in health care. Our readers are clinicians, health care administrators, policymakers, and researchers. Please let us know how you like the changes and how else we can make *Research Activities* a valuable resource. ■

New reports

continued from page 1

wider variety of critically important services, Americans' health will improve, especially given the law's quality and safety provisions."

"As the Affordable Care Act offers more Americans a wider variety of critically important services, Americans' health will improve."

Some improvements in quality of care were identified, including surgical patients' receipt of appropriate care, appropriate timing of antibiotics for surgical patients, and appropriate timing of pneumonia and influenza screenings or vaccinations among hospital patients.

Reports call for urgent attention to certain areas

However, the reports call for "urgent attention" to ensure continued improvements for diabetes care, maternal and child health care, and treatment for conditions such as

pressure ulcers and blood clots. For example, in 2009, only 23 percent of adults 40 and older with diabetes received all four recommended services (at least two hemoglobin tests, foot exam, dilated eye exam, and flu shot). Black and Hispanic adults with diabetes were less likely than whites to receive that recommended care.

More than 250 measures relating to quality of care and access to health services are factored in and reported by racial, ethnic, and socioeconomic groups. The data are compiled from more than 45 national sources.

New measures included in this year's reports

Included in this year's reports are new measures on early and adequate prenatal care, colorectal cancer screening, national rate of hospital-acquired conditions, standardized infection ratios at the State level for central line-associated bloodstream infections, and patient safety culture hospital survey findings.

This year marks the 10th anniversary that AHRQ has produced the quality and disparities reports, which are mandated by Congress. Since their initial publication in 2003, overall health care quality has improved by about 3 percent annually between 2002 and 2009. Yet access to care and disparities related to racial and socioeconomic factors have remained the same or even worsened during the same period.

To view the 2012 *National Healthcare Quality Report* and *National Healthcare Disparities Report*, visit www.ahrq.gov/research/findings/nhqrdr. In addition, AHRQ's NHQRDRnet is an online query system that provides access to national and State data on the quality of, and access to, health care from scientifically credible measures and data sources. To use the interactive tool, visit <http://nhqrnet.ahrq.gov>. ■

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.



RA: How have care quality and access changed in the past 10 years? For example, the latest report on quality shows that access to care has declined.

Moy: Over the last decade, quality of health care has been the tortoise, progressing slowly, but consistently and inexorably. This reflects the dedication of providers and payers applying AHRQ and HHS data and tools to making care safer and more effective. In contrast, through 2009, access to care deteriorated as more Americans found themselves unable to afford health insurance, and many with insurance delayed care due to high out-of-pocket costs. Expanding public insurance only partially met this increased need, especially as workers lost insurance along with their jobs during the recession.

RA: In your 10 years of working on these reports, what has surprised you the most?

Moy: One thing that surprised me is the extent to which disparities exist. When we started, we knew there were many disparities that had been identified. But when we started looking at disparities systematically, we saw disparities exist everywhere. I did not expect the breadth of the disparities issue.

RA: How will this change?

Moy: It definitely will go away—or at least racial and ethnic disparities will go away. Our society is becoming increasingly diverse. The fastest rising group is persons of multiple race, and there will be some time in the future when this group will be the dominant group. Then you just can't really have these disparities in a very sustainable way. The flip side, unfortunately,

continued on page 5



Ernest Moy, M.D., M.P.H., senior research scientist at AHRQ.

As AHRQ releases the 10th edition of the annual reports on the quality of health care and disparities in health care, *Research Activities* (RA) interviewed the main author of the reports for the past decade, Ernest Moy, M.D., M.P.H., a senior research scientist at AHRQ.

He discusses how the reports have evolved, what surprised him, and goals for the reports, plus why he's okay with being known as nag.

RA: It's been a decade. How have the reports changed?

Moy: When we first started, we were struggling with measuring important topical areas. For example, we had maybe one or two measures related to mental health care and one or two measures related to HIV and AIDS. We had almost no measures that were not ambulatory care and hospital care. We used a narrower measure set.

Over time, we've identified special data sources to give us information about mental health, drug abuse, and HIV/AIDS. We've greatly expanded attention related to long-term care issues. We have sections now that look at rehabilitation, home health care, nursing homes, and hospice care. We've dramatically expanded the scope of the reports. We try to listen to suggestions and we are constantly evolving the reports. We've added things like the LGBT population recently and we've improved our methods in response to different comments.

Q & A

continued from page 4

is socioeconomic status disparities persist. Even in places where they have universal health care systems, like Canada and England, they still have socioeconomic disparities. That's probably the tougher nut to crack.

RA: How do you think these reports will be different in 10 years?

Moy: The first thing I'm looking forward to instead of seeing these shallow lines going nowhere quickly, is seeing a big change in the slope. I'm hoping that the Affordable Care Act will kick in and dramatically change some of the slopes of improvement we're tracking. We're starting to see just the barest glimmer of it as it relates to uninsured patients.

Our preliminary data for the 2013 reports are now just catching the very early pieces of it, where insurance is provided to the young adult population. That's starting to be measurable. Hopefully as other reforms roll out, we'll see a dramatic alteration of insurance status, which for years has been getting worse as people were losing their job-related insurance. We will also see changes in other access-to-care parameters, which in general have been worsening over the last decade.

Then sometime in the future, we'd like to see the quality-of-care lines start to improve more dramatically than they currently are. We'll see how it plays out.

RA: Measurements are also important at the State level. Tell us about the State Snapshots, which are compiled from data from the quality and disparity reports.

Moy: The State Snapshots are our tools to help policymakers see quality in higher definition. They help people drill down geographically to the State level. That's where I see us making dramatic changes from year to year.

In the State Snapshots, we aggressively try to track the same measures for disparities that we have in the quality report. I think we largely achieved that, but we're adding more variations at the State level, such as—Does my State have larger or smaller disparities related to income or insurance compared to other States? I hope that States can learn from each other and that they can get together and make improvements.

RA: What motivated you to get involved in health services research?

Moy: When I was doing a general internal medicine fellowship that combined a master's in public health, what hit me right away was that health problems were all about access.

It was glaringly obvious that the major thing that was causing problems for people in northern Manhattan and in the south Bronx had nothing to do in general with the care that they were receiving, their genetics, or even their backgrounds to a significant degree. A huge chunk of what was happening to them was related to access to care—not having access to good providers, not having insurance, not being able to pay for this, that, or the other thing needed to be healthy.

Since then, much of my research relates to looking at access to care issues and how they affect different populations. I still think that one of the biggest issues is that Americans

continue to have great quality care, but not everyone can get it.

Looking at differences across populations, I think, is one way we can motivate people to try to equalize care a little bit and eliminate disparities, and then everybody will get good quality care.

RA: How do the reports help?

Moy: I think that we are viewed broadly in the policy community as the annual nag. They think another year—they're going to nag us and say that there are quality problems, and there are disparities problems again. I think nagging is one of those things that, to some degree, gets people going at times.

RA: So, are you a nag?

Moy: I guess so. Having that chronic person in the background saying, "Oh, don't forget to do something about quality and disparities" serves an important role. I think we're also part of a bigger chorus that is harping on quality and disparity issues.

Even though we can't point to concrete dramatic changes, my observation over time is that—at least in the last decade working on these issues—quality has evolved significantly. When we first started, we heard, "Measuring quality is really hard, and we can't do it, and we're not sure it really helps." Well, we don't hear that anymore.

They now assume that not only does quality need to be measured, it needs to be demonstrated. HMOs, employers, insurers, everybody requires you to do it. Instead of "don't measure," we now hear "use this new measure because it is better than that old measure." The nature and quality of the conversation, I

continued on page 6

Q & A

continued from page 5

think, has shifted dramatically, and I think quality has improved as a consequence.

Disparities have always been a little bit further behind, but I think that it has also evolved along a parallel pathway. We're seeing private organizations and States doing research into quality and disparities. And we have strong initiatives by the Federal Government to try to request that people who receive Federal monies collect information about race, ethnicity, and language so we can target interventions and address this issue more seriously.

RA: You sound optimistic.

Moy: I am. The underlying context for this is that every year we see quality of care improving. Every year, it's up 2 percent, up 2 percent, up 1 percent, up 3 percent. If you

look over a decade, it's a sizeable amount. We've seen improvements of 15 to 20 percent, if you sum them up over a decade. And that's the context. It makes sense that providers want to deliver good quality care and insurers want to purchase good quality care. Therefore, even if we just keep on doing what we're doing, we're heading in the right direction.

RA: And what about disparities? Do you see that same gradual improvement?

Moy: In disparities, we've seen less improvement. Although if you examine our data with a very fine-toothed comb, you start to see that more disparities are reducing than increasing. Most disparities aren't really changing to a significant degree, but if you look at the extremes of what's getting better and what's getting worse, more

of it's getting better than getting worse. One of the big impediments with this disparities issue is that in our society, minorities tend to have lower socioeconomic status and to have more problems getting insurance. Not dealing with the insurance issues in our country has been a major impediment. But with the Affordable Care Act, we hope that that will take away a major barrier at least for many minorities.

RA: How do you view the ultimate goal of the reports?

Moy: I think the goal of these reports is to make them no longer essential. If we can achieve a culture in health care where people always think about how to improve quality and reduce disparities whenever they deliver care, then these reports will no longer be necessary. I think the goal is to nag until we achieve victory, and then we can go away. ■

Disparities/Minority Health

Perceptions of quality and access among the insured are affected by the uninsured in their community

Being without health insurance just doesn't affect individuals. A new study suggests that high numbers of people without insurance in communities can negatively impact the cost, quality, and accessibility of services available to residents who are insured. The researchers asked insured Latina mothers living in two communities with different insurance levels to rate their perceptions of health care quality and access. Women living in the community with a low level of insurance had substantially lower perceptions of quality and access compared to those living in the community with higher numbers of persons with health insurance.

The two communities studied were Minneapolis, MN, and McAllen, TX. In Minneapolis, more than 90 percent of its residents had health insurance coverage. By contrast, only 41 percent of McAllen residents were

insured. Whereas only 10.8 percent of residents in Minneapolis reported being unable to see a physician because of cost, 48.6 percent of those living in McAllen report having this problem. Latina mothers with private health insurance in each city were asked questions about health care accessibility, quality, and affordability in focus groups.

Most of the mothers in both cities agreed that health care costs too much and is unaffordable. Those in McAllen felt the costs of the insurance itself, along with deductibles, were high. Some had trouble paying premiums or deductibles and sometimes delayed care as a result. Many felt travel to Mexico to receive care was a cheaper and better option.

continued on page 7

Lack of insurance

continued from page 6

Whereas the women in McAllen felt the health care system was corrupt, those in Minneapolis did not. Out-of-pocket costs were perceived to be higher by the Minneapolis women. They also cited payment plan arrangements as being helpful. Women in both cities expressed frustration with wait times in clinics and hospitals. However, the McAllen mothers expressed dissatisfaction with their medical encounters, complaining that they were extremely rushed. Minneapolis mothers also admitted frustration with the limited time they had with providers, but attributed this to cultural differences and lack of trust in their providers.

These mothers also commonly reported language barriers, which were not mentioned by the McAllen group. Most participants from both cities said they did not fully understand their health care plans and

provider networks. McAllen mothers reported having trouble with the referral process to a specialist, whereas Minneapolis participants felt they could access a specialist.

However, they did complain about the length of time it took between contacting the specialist and having to wait for the appointment. The researchers conclude that Minneapolis could benefit from policies that advocate culturally and language-appropriate care. In McAllen, doctors could be incentivized to focus more on quality than quantity. The study was supported in part by AHRQ (HS17003).

See “Where would you rather live if you were insured? Assessing community uninsurance spillover effects on the insured,” by Rachel R. Hardeman, M.P.H., Carolyn García, Ph.D., M.P.H., R.N., and José A. Pagán, Ph.D., in the *Journal of Immigrant and Minority Health* 14, pp. 706-714, 2012. ■ KB

Low-income blacks are less likely than high-income whites to receive CPR from a bystander

A person's chances of survival after out-of-hospital cardiac arrest may depend on where they live. For example, a new study found that persons living in low-income black neighborhoods were less likely to receive cardiopulmonary resuscitation (CPR) from a bystander than individuals living in high-income white neighborhoods.

The study included data on 14,225 persons who experienced an out-of-hospital cardiac arrest. Patient characteristics collected included age, sex, race or ethnic group, the location of the cardiac arrest, and if it was witnessed by a bystander. Census data provided the ability to categorize the neighborhoods where the cardiac arrest occurred based on race and income.

A total of 4,068 individuals (28.6 percent) received CPR from a bystander. They were more likely to be male, white, be in a public location, and have their cardiac arrest witnessed at the time it took place. Those less likely to receive bystander CPR had their cardiac arrests in low-income or predominantly black

neighborhoods. Compared to whites, blacks and Hispanics were less likely to receive bystander CPR. The same was true for persons in low-income black neighborhoods compared to those in high-income white neighborhoods.

The odds of getting CPR from a bystander were 50 percent lower in low-income black neighborhoods compared to high-income non-black neighborhoods. When a person had a cardiac arrest in a high-income black neighborhood, they were 23 percent less likely to receive CPR from a bystander compared to someone in a high-income nonblack neighborhood. Regardless of where the neighborhood was where the cardiac arrest took place, blacks and Hispanics were 30 percent less likely than whites to receive bystander CPR. The researchers suggest that more tailored approaches are needed to provide CPR training to residents of low-income black neighborhoods. The study was supported in part by AHRQ (HS17526).

See “Association of neighborhood characteristics with bystander-initiated CPR,” by Comilla Sasson, M.D., David J. Magid, M.D., Paul Chan, M.D., and others in the October 15, 2012 *New England Journal of Medicine* 367(17), pp. 1607-1615. KB





State Spotlight

Iowa

When AHRQ began publishing national reports on health care quality and disparities 10 years ago, the reports were well received. But almost immediately, Ernie Moy, M.D., began hearing, “What’s happening in my State?”

“We understood,” says Moy, one of the main authors of AHRQ’s annual *National Healthcare Quality Report* and *National Healthcare Disparities Report*. “So, we started collecting data more aggressively and in 2005 came out with our first State Snapshots.” Every State and the District of Columbia could compare their own health care statistics with the nation as a whole.

“But then States wanted to know how they compared with their neighbors. Wisconsin wanted to know if they beat Minnesota,” says Moy. “And vice versa. It’s been an evolutionary process.”

As AHRQ collects more specific, sophisticated data, the State Snapshots reflect the new measures. Each State has an online dashboard, complete with a needle gauge ranging from very weak to very strong, which summarizes more than 100 quality measures and provides tables and graphs with specific measures. These performance measures for each State and the District of Columbia

include overall health care quality, types of care, settings of care, common clinical conditions, and special areas, such as diabetes, asthma, disparities, and Healthy People 2020.

Beginning with this issue, *Research Activities* will publish a bimonthly column on how individual States use the information from their AHRQ State Snapshots.

Health in the Hawkeye State

The first State we’re featuring is Iowa, known for its county fairs and presidential caucuses. It has a population of about 3.1 million who live in 99 counties, which were developed in the 1800s to ensure all residents could reach their county seat within a day by horse and buggy. Crops cover about 60 percent of this Midwestern State, recognized as a major supplier of food for the world.

On the online AHRQ State Snapshots dashboard, Iowa earned a strong rating and ranked fifth in overall health care quality compared to other States. Minnesota achieved the highest ranking, followed by Wisconsin, Maine, and Massachusetts.

“Compared with most of the country, our overall quality of care is high,” says Paul M. Pietzsch, president of the Health Policy Corporation of Iowa, the State’s business group on health. “Overall, our geographic and financial access to care is better than most. We have a lower percentage of uninsured people than many States. But there

is wide variation by type of care, setting of care, and care by clinical area.”

Although Pietzsch takes pride in his State’s progress, he says, “We need to leap forward to improve quality and drive down costs. Even though Iowa is doing better than average, it’s still not good enough. Average or even above average is not our goal. Iowa and all States have room for improvement.”

Pietzsch pulled statistics from AHRQ’s State Snapshots, the Institute of Medicine, the Dartmouth Atlas of Health Care, and a dozen other organizations to create the *Chartbook of the Quality and Financial Performance of the Health Industry in the Greater Iowa Area*, which was released in March 2013. “The thing we’re trying to do with the chart book is increase transparency in public reporting on cost and quality. We think it’s essential to drive a health care market towards improvement,” says Pietzsch. “With transparency comes clarity and accountability. In health care, we believe there’s a need for transparency – maybe more than any other industry.”

Pietzsch points out that the book covers the greater Iowa area. “We didn’t just put a fence around Iowa. That’s not how it works. We looked at the market area. People who live in southwest Iowa may go to Omaha for care. Others may go to Illinois, and patients in Des Moines may go to the Mayo Clinic in Rochester

continued on page 9

State spotlight

continued from page 8

(Minnesota).” To illustrate the dynamics of the market area,

Pietzsch told an anecdote about a hospital in Des Moines that competed with the Mayo Clinic for patients. “A few years ago, they gave bumper stickers to their employees that said, ‘Hold the Mayo.’”

In putting together the book, Pietzsch found that the lack of information on cost was larger than he expected. “We knew there was a void, but we didn’t know how much of a void there was,” Pietzsch says. “Consumers and patients are seeking more information on how much they would need to pay for health care and that’s only going to grow.” Pietzsch’s ultimate goal for the book is to help improve the quality, cost, and affordability of health care for Iowans.

Iowa Medicaid focus on medical homes

“This has been a State that keeps its eye on health care,” says Jason Kessler, M.D., FAAP, Iowa Medicaid Medical Director. And AHRQ’s State Snapshots data helps with that. “Compared to the rest of the nation, our quality of health care is pretty high. I think that really speaks to the quality of providers in this State. We’ve got some top notch institutions for medical education that produce quality clinicians.”

As part of his position, Kessler meets with clinicians throughout the State. “I’m really interested to see the changes going on in Iowa,” he says. “Our ability to change and respond depends on what comes up, but I like to think we can take advantage of opportunities.”

These opportunities include patient-centered medical homes (PCMHs). In 2012, Iowa Medicaid launched medical homes for their members with chronic conditions. “This program benefits providers by offering new opportunities to track, coach, and engage patients. The program benefits patients by offering enhanced services and access to care using the PCMH model,” says Kessler.

“We are already hearing stories about how health homes are improving the lives and health care of our members. By the time the program is 1-year-old this summer, we hope to have some data showing cost savings and by 2 years we should have some meaningful quality data.”

Iowa is now starting a health home for people with serious and persistent mental illness. “I really am a big believer in the medical home model as a way to provide more coordinated, person-centered care,” says Kessler. “We have some good experience in this area.”

Kessler also keeps in touch with providers through his monthly column called “Medical Director’s

Minute” about clinical news and policies. “Typically it is about 250 words each month, which should take the average person one minute to read,” says Kessler. “In Iowa, we’re certainly trying to keep up with the changes in health care and promote quality.” *KM*

Editor’s note: See AHRQ’s 2011 State Snapshots (2012 will be out soon) at <http://statesnapshots.ahrq.gov/snapshots>.



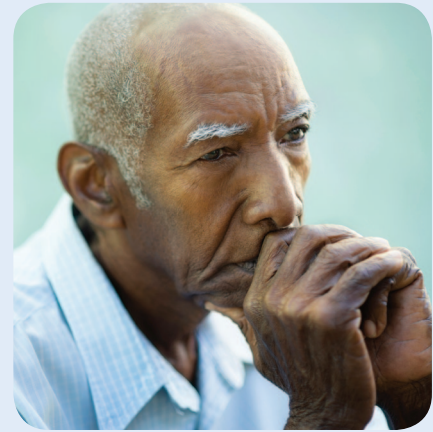
Both patient-centered and standard collaborative care approaches improve depression among black patients

Black patients with depression showed similar improvements in depression severity and mental health functioning when they received either patient-centered, culturally tailored collaborative care (CC) or standard CC, according to a new study. The patients' symptom scores were consistent at 12- and 18-month followups. The researchers compared the standard CC intervention for patients (disease management) and clinicians (review of guidelines and mental health consultation) to a patient-centered and culturally tailored CC intervention for patients (care

management focused on care access barriers, social context, and patient-provider relationships) and clinicians (participatory communications skills training and mental health consultation).

Standard CC resulted in higher rates of treatment, and patient-centered CC resulted in better ratings of care. The study included 27 primary care clinicians and 132 of their black patients with major depressive disorder from 10 community-based primary care clinics in Maryland and Delaware. Patients completed screener and baseline, 6-, 12-, and 18-month interviews so that the investigators could assess their depression severity, mental health functioning, health service use, and ratings of care. The study was supported by AHRQ (HS13645).

See "Comparative effectiveness of standard versus patient-centered collaborative care interventions



for depression among African Americans in primary care settings: The BRIDGE Study," by Lisa A. Cooper, M.D., M.P.H., Bri K. Ghods Dinoso, M.P.H., M.B.A., Daniel E. Ford, M.D., M.P.H., and others in the February 2013 *HSR: Health Services Research* 48(1), pp. 150-174. MWS



Having a patient navigator who spoke Serbo-Croatian helped increase the mammography rate of refugees/immigrants from Bosnia

Having a bilingual (English and Serbo-Croatian) patient navigator to address patient-reported barriers to breast screening significantly increased the mammography rate for women refugees and immigrants from Bosnia and other former Yugoslav states, a new study reports. Patient navigators, who are able to answer questions in the cultural context of a minority group, were introduced in 1990 to improve cancer care among black women in New York's Harlem section.

Subsequently, this concept has been successfully used to improve cancer prevention, diagnosis, and

treatment in other disadvantaged populations. This is particularly true for immigrant populations who often do not speak English, have experienced the trauma of war, and have not had cancer screening before coming to the United States.

The researchers recruited a young, bilingual college-educated woman from former Yugoslavia to be trained as a patient navigator for Serbo-Croatian refugee and immigrant women treated at Massachusetts General Hospital's Chelsea HealthCare Center (MGH Chelsea). These women had a lower mammography rate (44 percent)

than English-speaking (65 percent) and Spanish-speaking (66 percent) women.

MGH Chelsea had 91 women patients who self-identified as speakers of Serbo-Croatian and were eligible for breast cancer screening (ages 40 to 79 years old). At the beginning of the study, 40 of these women had received a mammogram in the past year. After 1 year of followup and intervention by the Serbo-Croatian-speaking patient navigator, 61 patients (67 percent) had been screened within the past year.

continued on page 11

Bilingual patient navigator

continued from page 10

The numbers of those who were 1 year or more overdue, or who had never been screened, declined 29–50 percent by the end of the study. Educational level (high school or beyond) was associated with being up-to-date with mammography by

the end of the study, but age, marital status, religion, insurance status, or number of years receiving care at MGH Chelsea were not. The study was funded in part by AHRQ (HS19161).

More details are in “Patient navigation to improve breast cancer

screening in Bosnian refugees and immigrants,” by Sanja Percac-Lima, M.D., Bosiljka Milosavljevic, M.D., Sarah Abernethy Oo, M.S.W., and others in the August 2012 *Journal of Immigrant and Minority Health* 14(4), pp. 727-730. ■ DIL

Health Care Costs and Financing

Rising health care costs reduce employment-based private insurance availability, especially for middle-class families

As health care costs continue to rise, some are concerned that this will have a negative impact on employment-based private insurance (EBPI). A new study suggests these concerns may be warranted. This study is the first work that uses nationally representative data to show that rising health care costs reduce the availability of and enrollment in EBPI, and the financial protection provided by it, especially for middle-class families.

The study used data on annual growth of health expenditures to generate a cost index. This represented the average annual cost growth for each State as well as the District of Columbia. The cost data were merged with AHRQ’s Medical Expenditure Panel Survey (MEPS) on 72,609 families with different incomes. The unit of analysis was the family. Both bivariate and multivariate logistic analyses were conducted.

A significant negative association was found between the cost index and the likelihood a family would receive an offer for EBPI. This negative relationship was particularly significant for middle class families.

There was also a negative association between the cost index and the proportion of families who had EBPI for

each family member for an entire year. In those families where every member was covered by EBPI for an entire year, a positive relationship existed between the cost index and their likelihood of having out-of-pocket expenses that exceeded 10 percent of income.

According to the researchers, the findings suggest that health care costs may need to be controlled in order to maintain the EBPI system. They note that EBPI continues to be the cornerstone of insurance coverage following implementation of the Patient Protection and Affordable Care Act, which provides new coverage options for both small and large employers. The study was supported in part by AHRQ (HS16742).

See “Impacts of rising health care costs on families with employment-based private insurance: A national analysis with State fixed effects,” by Hao Yu, Ph.D. and Andrew W. Dick, Ph.D., in the October 2012 *HSR: Health Services Research* 47(5), pp. 2012-2030. ■ KB



Study finds substantial variations in health care spending at the local level

Mounting evidence shows wide geographic variations in health care spending not explained by patient characteristics. Some policymakers would like to see high-spending areas subjected to lower Medicare payments and other coverage limitations. A new study illuminates local health care spending patterns. It found substantial variations in health care spending at the local level.

The researchers analyzed data on enrollment, pharmacy claims, and medical claims from a 5 percent random sample of Medicare beneficiaries. Each beneficiary was assigned to 1 of the 306 hospital referral regions (HRRs) in the United States. These are areas served by large tertiary care hospitals. Each beneficiary was further assigned to 1 of 3,436 hospital service areas (HSAs),

which are located within HRRs. HSAs nest within HRRs and HSAs are smaller, local areas where residents use the community hospitals near them to receive most of their care.

The researchers found substantial local variation in the use and spending for drugs and medical services in HRRs, including differences among HSAs within HRRs. Manhattan, NY, an HRR, had the highest drug spending, while Albuquerque, NM, another HRR, had the lowest. However, within Manhattan, the lowest spending HSA had lower spending than 25 percent of the HSAs in Albuquerque. Thus, many of the low-spending HSAs were situated in high-spending HRRs. Conversely, many of the high-spending HSAs were found in low-spending HRRs.

In the case of drug spending, a little over half of the HSAs located within the highest-spending HRR quintile were in the highest-spending quintile of HSAs. Of the HSAs in the lowest-spending HRR quintile, 50.3 percent were in the lowest-spending HSA quintile. A similar pattern was found for non-drug medical spending. According to the researchers, policies aimed at HRRs may be too broad to promote wise health care spending and the best use of resources. The study was supported in part by AHRQ (HS18657).

See “Comparing local and regional variation in health care spending,” by Yuting Zhang, Ph.D., Seo Hyon Baik, Ph.D., A. Mark Fendrick, M.D., and Katherine Baicker, Ph.D., in the November 1, 2012 *New England Journal of Medicine* 367(18), pp. 1724-1731. ■ KB

Patient Safety and Quality

Automated pharmacovigilance system finds higher rates of side effects than those reported on drug package inserts

Safety concerns have been raised about some commonly used prescription drugs such as varenicline (for smoking cessation) and zolpidem (for insomnia). One way to address these concerns is to develop alternative ways of reporting adverse side effects, especially since it is not known how closely the reporting of side effects on the package inserts for these drugs matches patients' actual experience. A team of Boston-based researchers using an automated phone pharmacovigilance system relying on an interactive voice response system (IVRS) found that patients taking varenicline reported significantly greater rates of confusion, depression, hallucination, muscle aches, sexual dysfunction, and fatigue than what is described in the package insert. By contrast, patients taking zolpidem for insomnia reported only one symptom,



fatigue, at a significantly greater rate than the package insert.

The rates of side effects reported on package inserts are based on findings from premarketing trials. There may be several reasons for differences in the rates reported

continued on page 13

Adverse side effects

continued from page 12

in this study compared to those reported in the inserts. Patients in trials are healthier and less diverse than the general population. They are also more carefully monitored than patients in general practice, who may be taking a given drug for an off-label indication that would not have been tested during the premarketing trials. Finally, patients may be more willing to report 'sensitive' symptoms, such as depression and sexual dysfunction, to an automated machine than they would to their physician or during participation in a clinical trial.

The participants in the survey were patients taking varenicline (107) and those taking zolpidem (370) in 11 Boston area primary care practices that are part of a large health system. After the office visit in which the drug was prescribed, patients next received an

informational letter offering an option for 'opting out.' Four weeks after the office visit, patients who did not opt out were contacted by an automated monitoring system using the IVRS. Patients were asked about adherence to their prescriptions and a prespecified list of symptoms. The researchers believe that their data underscore the importance of collecting systematic information about symptoms as a proxy for adverse drug events directly from patients to fully assess the safety of prescription drugs. This study was supported by AHRQ (HS16970).

See "Do package inserts reflect symptoms experienced in practice? Assessment using an automated phone pharmacovigilance system with varenicline and zolpidem in a primary care setting," by Jennifer S. Haas, M.D., Mary Amato, Pharm.D., Lucas Marinacci, B.A., and others in *Drug Safety* 35(8), pp. 624-628, 2012. ■ MWS

Three algorithms are effective in assessing medications likely to have caused adverse drug reactions in intensive care units

Patients in the intensive care unit (ICU) are particularly vulnerable to adverse drug reactions (ADRs), many of which are preventable. Various algorithms can be used to help clinicians determine the likelihood that a medication is responsible for an ADR. A new study compared three pharmacovigilance algorithms to test their accuracy. All three tools were found to produce similar results for retrospectively evaluating ADRs in the ICU. However, some variability was found when they were used to analyze ADRs prospectively while the patient was in the hospital.

The three instruments studied were the modified Kramer, Naranjo, and Jones. Each evaluates similar or different criteria and provides its own scoring system and categorization of ADRs. During the first phase of the study, researchers used the algorithms to evaluate a random sample of 261 administrations of medication antidotes after patients were discharged from the ICU (i.e., retrospectively). During the second phase, they used an active medication monitoring system to prospectively evaluate five abnormal laboratory values while patients were in the ICU to determine the likelihood of an ADR.

All three algorithms displayed moderate to excellent agreement when it came to analyzing ADRs in the ICU following discharge. As a result, any one of them can be used for retrospective analysis of ADRs with confidence, note the

researchers. They did find more variability among the three tools when they were used to evaluate ADRs on the day they occurred during hospitalization. In these cases, the researchers recommend that more than one algorithm be used to achieve a more definitive ADR assessment. The study was supported in part by AHRQ (HS17695).

See "Comparison of three pharmacovigilance algorithms in the ICU setting," by Sandra L. Kane-Gill, Pharm.D., M.S., Elizabeth A. Forsberg, Pharm.D., Margaret M. Verrico, B.S., and Steven M. Handler, M.D., Ph.D., in *Drug Safety* 35(8), pp. 645-653, 2012. KB



Standardized protocol improves the transfer of cardiac surgery patients to intensive care

Handing off a patient after surgery to another unit of the hospital involves exchanges of information and technology between multiple care providers. This is particularly true for adult cardiac surgery patients being transferred to the cardiac surgical intensive care unit (CSICU). Recently, a large teaching hospital developed and implemented a new OR-to-ICU protocol designed to improve the transfer of these high-risk patients. The protocol reduced missed information during patient transfer and improved handoff satisfaction scores among CSICU nurses.

A variety of professionals provided input for the new protocol, including anesthesia and surgical providers, intensivists, and nurses. The protocol specified which team members should be present at the patient's bedside before, during, and after the handoff. Detailed instructions were also given on information and technology transfers, how to complete a handoff report, and the use of checklists. Laminated handoff protocol schematics and checklist tool pocket cards were also developed and distributed.

A total of 238 health care providers participated in the handoff of 30 patients prior to the intervention protocol and 30 patients after the protocol was implemented. Use of the new protocol only increased handoff duration from 11 minutes to 12 minutes. The presence of designated team members at the bedside rose from 0 percent at baseline to 68 percent after the protocol was put into place. Missed information in the surgery report decreased from 26 percent to 16 percent. Handoff satisfaction scores among CSICU nurses increased from 61 percent to 81 percent. Overall, the new protocol improved information sharing and the multidisciplinary strength of the patient handoff without increasing transfer time. The study was supported in part by AHRQ (HS13904).

See "Pilot implementation of a perioperative protocol to guide operating room-to-intensive care unit patient handoffs," by Michelle A. Petrovic, M.D., Hanan Aboumatar, M.P.H., M.D., William A. Baumgartner, M.D., and others in the *Journal of Cardiothoracic and Vascular Anesthesia* 26(1), pp. 11-16, 2012. ■ KB

Hospitals rarely describe urinary tract infections as catheter-associated urinary tract infections when coding claims

Nearly a third (32 percent) of all hospital-acquired infections originate in the urinary tract. Of these, the majority are catheter-associated urinary tract infections (CAUTIs). Yet a new study found that claims data identified a much lower rate of urinary tract infections (UTIs) as CAUTIs than what was expected from surveillance data.

As a very common, expensive, and potentially preventable hospital-acquired infection, hospital-acquired CAUTI was among the first conditions selected for the 2008 implementation of the Hospital-Acquired Conditions Initiative (HACI). This initiative denied hospitals extra payment by Medicare for hospital-acquired CAUTIs and other hospital-acquired conditions. This policy

to not pay additionally for several hospital-acquired conditions rapidly expanded to many other payers beyond Medicare, including Blue Cross Blue Shield nationwide.

The study also found that nonpayment for hospital-acquired CAUTIs was low, resulting in minimal financial impact to hospitals, due to rare application of the catheter-associated diagnosis code to describe UTIs as CAUTIs. What's more, patients also frequently had other coexisting conditions that generated the same additional payment even after removal of CAUTI as a diagnosis for payment.

The researchers examined State-wide claims data to determine how often UTIs were described as

CAUTIs in the claims data, and how often payment was reduced to the hospital because of no additional payment for a hospital-acquired CAUTI diagnosis (that, prior to 2008, was eligible to generate extra payment as a coexisting condition).

The statewide study included 767,531 adult discharges from Michigan hospitals in 2007 before the HACI policy was implemented requiring nonpayment for hospital-acquired conditions and 781,343 adult discharges in 2009 after the ruling went into effect. All had been admitted to 96 hospitals in 1 State.

All of the 96 hospitals frequently requested payment for UTIs (listed as a diagnosis in 10 percent of all

continued on page 15

Urinary tract infections

continued from page 14

adult discharges). However, these UTIs were rarely coded to show that these infections were actually catheter-associated (which required an additional catheter-association diagnosis code) or hospital-acquired conditions (using the mandatory “present-on-admission” variable required since 2008). According to epidemiologic studies, the majority of hospital-acquired UTIs are catheter-associated, with rates ranging from 59 percent to 86 percent. In this study, only 2.6 percent of all hospital-acquired UTIs were coded in claims as being catheter-associated in 2009.

Nonpayment for hospital-acquired CAUTI reduced hospital payment for only 0.003% of all hospitalizations. The researchers recommend improving how hospital-acquired and device-associated events are reported in claims.

They also suggest developing more rigorous data sets to measure these events accurately before using claims data to generate hospital rates of CAUTI events for public reporting (as these CAUTI events from claims data are now reported on Medicare’s Hospital Compare website) or penalizing hospitals with high rates (as expected in

2015 by the Affordable Care Act). Hospitals with high rates in claims data may simply document CAUTI events better in claims data. The study was supported in part by AHRQ (HS18344).

See “Effect of nonpayment for hospital-acquired, catheter-associated urinary tract infection,” by Jennifer A. Meddings, M.D., M.Sc., Heidi Reichert, M.A., Mary A.M. Rogers, Ph.D., M.S., and others, in the September 4, 2012 *Annals of Internal Medicine* 157(5), pp. 305-312, W74-W77. ■ KB

Hospital admission codes are useful for identifying cases of pneumonia

Combining hospitalization dates with diagnostic codes can validate hospital admissions for community-acquired pneumonia, according to a new study. The researchers also compared hospital admission dates recorded into a primary care database with the actual dates patients were admitted. This approach performed well in identifying patients with pneumonia and the timing of their admissions.

The study evaluated hospital admission data in a United Kingdom primary care electronic medical record database. Using diagnosis and hospitalization codes, the researchers identified patients who were admitted for pneumonia within 30 days after an outpatient visit for an acute respiratory infection. Chart reviews of the patients’ primary care medical records were then conducted on 59 randomly selected patients to confirm if they actually had documentation of a

hospital admission with a diagnosis of pneumonia and, if so, their true admission dates.

Of the 59 patients, 52 were confirmed hospitalizations; one admission was not for pneumonia. The positive predictive value of using the hospitalization codes to identify pneumonia admissions was 86 percent. Of the 52 validated hospitalizations, 50 were admitted within 14 days of the admission date recorded in the electronic database. Sixteen of the 52 patients admitted for pneumonia had their true hospital discharge date as the recorded admission date in the database. The researchers suggest that the accuracy of admission dates may be better for patients with shorter hospitalizations. The study was supported in part by AHRQ (HS16946).

See “Accuracy of pneumonia hospital admissions in a primary care electronic medical record database,” by Sharon B. Meropol, M.D., Ph.D. and Joshua P. Metlay, M.D., Ph.D., in *Pharmacoepidemiology and Drug Safety* 21, pp. 659-665, 2012. KB



Patients have a lower risk of dying in level I trauma centers

Both level I and level II trauma centers treat patients with multiple traumas. Level I centers are also required to staff a 24-hour surgical critical care service, train residents, conduct research, and have a minimum case volume. A new study found that injured patients admitted to level I centers had a lower risk of dying than those admitted to level II centers.

The researchers compared mortality and complications for 208,866 patients admitted to 28 level I and level II trauma centers in Pennsylvania between 2000 and 2009. All patients were 16 years of age and older. The researchers took note of any complications that occurred during the initial hospitalization. They also estimated the independent effect of trauma

center designation on in-hospital death.

Level I centers received 72 percent of the patients studied, while level II centers received 28 percent. Patients treated at a level I center were more likely to be younger and male. Patients admitted to level I centers had a 15 percent lower odds of dying than patients admitted to level II centers. This increased survival benefit was strongest for patients with very severe injuries. Similar mortality risk reductions were also seen for level I admissions of patients with blunt injuries or penetrating injuries. However, level I patients had a 37 percent increased odds of major complications compared to level II patients. The study was supported by AHRQ (HS16737).



See “Impact of trauma center designation on outcomes: is there a difference between level I and level II trauma centers?” by Laurent G. Glance, M.D., Turner M. Osler, M.D., FACS., Dana B. Mukamel, Ph.D., and Andrew W. Dick, Ph.D., in the September 2012 *Journal of the American College of Surgeons* 215(3), pp. 372-377. ■ KB

Emergency departments score well on quality of care for joint dislocation

A little over half a million individuals visit the emergency department (ED) each year for a joint dislocation. Putting the dislocation back into place (reduction) is painful, requiring proper sedation and pain relief. EDs are doing an excellent job of caring for these patients, concludes a new study. It found that emergency physicians are able to perform procedural sedation safely without involvement of an anesthesiologist in the vast majority of cases.

The researchers reviewed the medical charts of 1,980 patients with various dislocations treated at 47 EDs across 19 States between 2003 and 2005. All of the EDs had high patient volumes and 83 percent had an emergency medicine residency program. Using pain management standards and recognized sedation procedures, the researchers developed five quality measures for dislocation care in the ED. These measures covered pain assessment and medication, vital sign monitoring, assessment of the limb's neurologic and vascular status, and successful reduction of the dislocation.

Nearly half of all patients (46 percent) received midazolam, fentanyl, or both as sedation, while

21 percent received propofol. Most had shoulder dislocations and stayed in the ED around 4 hours before going home. Overall, dislocation care was excellent. Higher concordance with quality measures was positively associated with better outcomes, including successful reduction. Only 6.3 percent of patients experienced an adverse event. The most common was the administration of a reversal agent (2.3 percent), followed by bag-mask ventilation (2.0 percent), and vomiting (1.3 percent). Being female and having chronic obstructive pulmonary disease predicted a higher frequency of adverse events. Shoulder dislocations were most likely to be reduced successfully compared to hip, knee, and ankle dislocations. The study was supported by AHRQ (HS13099).

See “Quality of care for joint dislocation in 47 US EDs,” by Chu-Lin Tsai, M.D., Sc.D., Ashley F. Sullivan, M.S., M.P.H., James A. Gordon, M.D., M.P.A., and others in the *American Journal of Emergency Medicine* 30, pp. 1105-1113, 2012. ■ KB

Giving flu shots to older emergency department patients is cost-effective

Each year, there are approximately 40,000 deaths from influenza, mostly in the elderly. While vaccination is the main way to prevent cases and reduce complications, only 36 percent of adults 65 and older get a flu shot each year. Offering the flu shot to older patients seeking care from emergency departments (EDs) is a cost-effective strategy, particularly for patients older than 65 years, concludes a new study. Very few EDs currently offer vaccination against influenza, so this finding may help allay their fears over cost outlays, suggest the researchers.

They used a decision model to duplicate a typical flu season. It included a hypothetical population of 100,000 adults 50 years of age and older during a 24-week period of flu outbreak. The costs of vaccination and health outcomes were calculated based on standard parameters. Three strategies were investigated: no vaccination, giving the flu shot to those over 50, and vaccinating patients older than 65.

Vaccinating patients over 50 or over 65 were both cost-effective compared to not vaccinating anyone in the ED. Individuals older than 50 getting the flu shot resulted in an incremental cost of \$34,610 per



life saved compared to no vaccination. By limiting vaccination to those older than 65, the incremental cost was \$13,084 per life saved. This last group benefitted the most from vaccination since they are less likely to get the flu shot in the community and are most at risk for flu complications. The study was supported in part by AHRQ (HS16737).

See “Cost-effectiveness of influenza vaccination of older adults in the ED setting,” by Brian W. Patterson, M.D., M.P.H., Rahul K. Khare, M.D., M.S., D. Mark Courtney, M.D., and others in the *American Journal of Emergency Medicine* 30, pp. 1072-1079, 2012. KB



Certain medical conditions and Medicaid insurance predict hospital readmission for congestive heart failure

Congestive heart failure (CHF) is the most common reason for hospital readmission among beneficiaries of fee-for-service Medicare plans. It is the third most common cause of rehospitalization among all patients regardless of their type of insurance coverage. A new study has identified several coexisting illnesses linked to hospital readmissions. It also found that Medicaid-insured patients had high readmission rates for CHF.

AHRQ researchers Roxanne M. Andrews, Ph.D., Ryan Mutter, Ph.D., Ernest Moy, M.D., M.P.H.

and coinvestigators analyzed AHRQ’s Healthcare Cost and Utilization Project State Inpatient Databases for 14 States to identify patients who had a hospital admission for CHF during 2006. They also looked to see if they had a readmission within 30 days of hospital discharge. They conducted multivariate analyses to look at factors related to readmission, including patient, hospital, and community characteristics, and cost per hospital stay.

Medicaid-insured patients had nearly twice the readmission rate

of privately insured patients and 50 percent higher readmission rates than those insured by Medicare. These differences remained, though were diminished, even after the researchers controlled for clinical and other patient factors, and hospital and community characteristics. Certain medical conditions such as drug abuse, psychoses, and renal failure also predicted a higher likelihood of being readmitted to the hospital for CHF.

continued on page 18

Congestive heart failure

continued from page 17

The odds of readmission for female patients were lower than male patients. There was only a weak negative association between the cost of treatment for the first CHF admission and the likelihood of 30-day readmission. Given the increased risks for readmission

among Medicaid patients and those with drug abuse problems, the researchers suggest more interventions to target these groups that involve better coordination of care for CHF.

More details are in “Congestive heart failure: Who is likely to be readmitted?” by Drs. Andrews,

Mutter, and Moy, and others in the October 2012 *Medical Care Research and Review* 69(5), pp. 602-616. Reprints (AHRQ Publication No. 12-R094) are available from AHRQ.* ■ KB

Pharmacy and coded-diagnosis information do not accurately predict tuberculosis cases in patients with rheumatoid arthritis

Certain drugs used to treat rheumatoid arthritis, which suppress the immune system, can boost a person's risk for tuberculosis (TB). Data from diagnostic codes or pharmacy prescription files have had mixed results in their ability to identify TB in individuals taking these drugs. A new study revealed that using administrative data alone results in a high false-positive rate of TB.

Researchers identified 18,094 patients with rheumatoid arthritis who were receiving Medicaid benefits in one State. They used three strategies to identify patients with TB. The first approach was based on ICD-9-CM diagnostic codes for TB. A second strategy used pharmacy claims data to see which patients filled prescriptions for two or more anti-TB medications on the same day. The final approach combined both strategies to identify patients with TB. Cases of TB identified in these ways were compared to actual confirmed cases obtained from a TB registry used by TB control programs.

Within the rheumatoid arthritis study population, 10 persons were confirmed with TB during 61,461 years of followup, resulting in an incidence rate of 16.3 per 100,000 person-years. There was a wide variation in the number of TB cases identified by the 3 strategies, ranging from 6 to 449. All three approaches had low positive predictive values. There were high false-positive rates of TB detection for the diagnostic code (98.7 percent) and pharmacy claims (95.8 percent) strategies. However, when used together, six false-positive cases were identified, dropping the false positive rate to 75 percent. Thus, adding pharmacy claims to diagnosis coding data results in only a slight improvement in detecting cases of TB. Given these findings, the researchers suggest using actual confirmed TB case data when conducting drug-epidemiology research. The study was supported in part by AHRQ (T32 HS13833).

See “Accuracy of pharmacy and coded-diagnosis information in identifying tuberculosis in patients with rheumatoid arthritis,” by Christina T. Fiske, M.D., Marie R. Griffin, M.D., M.P.H., Ed Mitchel, M.S., and others in *Pharmacoepidemiology and Drug Safety* 21, pp. 666-669, 2012. KB



Clinical Cases

Total parenteral nutrition errors in child

The April issue of AHRQ's Web M&M features a Spotlight Case (#296) that describes a medically fragile 3-year-old boy on chronic total parenteral nutrition (TPN) due to multiple intestinal resections, who was admitted to the hospital for anemia and continued on his home TPN regimen. On hospital day 2, the patient's serum sodium was noted to be low at 130 mEq/L (normal 135–145 mEq/L).

The team ordered the amount of sodium in the PN to be increased from 5.2 to 5.5 mEq/kg/day. Overnight the boy complained of worsening abdominal pain and headache, and was irritable and could not be consoled. Morning labs confirmed serum sodium of 158 mEq/L. Check of the TPN bag on morning rounds found a 10-fold increase of the intended sodium concentration of 5.5 mEq/kg/day.

The TPN was immediately stopped and the boy was given free water intravenously to correct the severe hypernatremia, which took more than 48 hours. Fortunately, the boy did not experience any adverse consequences. A commentary written by Joseph I. Boullata, Pharm.D., R.Ph., BCNSP, attributes the error to a breakdown in oversight and system checks. He offers suggestions on how hospitals can avert errors in PN, a high-alert medication that he notes requires safety-focused policies, procedures, and systems.

Wrong diagnosis of central nervous system vasculitis

In this case (#297), a previously healthy 44-year-old man was

admitted to the hospital with a 2-day history of headache and word-finding difficulties. Neurological examination was normal, but computed tomography and magnetic resonance imaging (MRI) of the head revealed parietal and frontal masses concerning for malignancy or infection. Biopsy and consultation led to a provisional diagnosis of primary central nervous system vasculitis.

The patient was started on steroid and cyclophosphamide therapy and discharged after improvement in his symptoms. Over the next month, the patient continued to feel well without recurrence of symptoms. However, serial brain MRI and repeat MRI showed progression of the patient's lesions. Four months after his initial presentation, he arrived at the emergency department after developing receptive and expressive aphasia and disorientation.

Imaging again revealed evidence of worsening lesions and repeat biopsy showed glioblastoma multiforme. The patient underwent surgery and adjuvant chemotherapy followed by rapid clinical decline. A commentary written by Dave E. Newman-Toker, M.D., Ph.D., notes that after treatment of the patient with steroids and cyclophosphamide therapy, the team prematurely closed on the vasculitis diagnosis and anchored, despite mounting

evidence against vasculitis from followup MRIs obtained prior to the patients' second symptomatic decline. He cautions clinicians to take a diagnostic "time out" to reassess the working diagnosis before taking further action in such cases to prevent premature diagnostic closure.

Hospital admission of the behavioral health patient

In this case (#298), a 25-year-old man arrived at the emergency department (ED) with a 3-week history of abdominal pain, nausea and vomiting, and weakness. His medical history included Crohn disease with ileocelectomy and ileostomy; chronic pain; schizophrenia and major depression with prior suicide attempts; and narcotic abuse with hydrocodone.

Medications included mesalamine, clonidine, tramadol, haloperidol, olanzapine, venlafaxine, potassium chloride, and magnesium oxide. The ED workup was consistent with acute pancreatitis and the patient was admitted to the hospital. A gastroenterology consult noted that olanzapine can cause pancreatitis.

The doctor declined the patient's request for a reduced dose of haloperidol and suggested that that decision and the one to discontinue olanzapine should be made by the patient's psychiatrist. Despite this advice, the medical team discontinued the olanzapine without consulting the patient's psychiatrist. The patient's condition improved and he was discharged home, but tragically, committed suicide 2 weeks after discharge.

continued on page 20

Clinical cases

continued from page 19

A commentary written by Anthony P. Weiss, M.D., M.B.A., and Jerrold F. Rosenbaum, M.D., notes that at the heart of the case is the decision to discontinue olanzapine, an atypical antipsychotic medication, in a young man with severe mental illness who presented with acute pancreatitis. They caution clinicians to consider the neuropsychiatric consequences of discontinuing

psychiatric medication and note that expert consultation is generally warranted.

Editor's Note: The Perspectives of Safety section of the April Web M&M features an interview with Christopher P. Landrigan, M.D., M.P.H., Director of the Sleep and Patient Safety Program at Brigham and Women's Hospital on sleep deprivation and residency duty hours. The perspective article by Kathlyn E. Fletcher, M.D., M.A.,

and Darcy A. Reed, M.D., M.P.H., discusses evidence on the impact of resident duty hour limits on safety in health care. Physicians and nurses can receive free CME, CEU, or training certification by taking the Spotlight Quiz. You can view the April issue of AHRQ's Web M&M (Morbidity and Mortality Rounds) at www.webmm.ahrq.gov/home.aspx. ■

Primary Care

Reminder stickers can boost screening for hepatitis C virus in primary care clinics

Affixing a reminder sticker that lists risk factors for hepatitis C virus (HCV) infection onto patients' medical charts can be effective in increasing the number of patients sent for HCV testing by their primary care physicians. It also boosts the number of patients found HCV-positive, according to a new study. HCV is the leading cause of liver failure in the United States, accounting for 15,000 deaths in 2007 and 3.2 million Americans with chronic HCV infection. Although new antiviral treatments promise to greatly reduce the burden of HCV-related disease, a majority of HCV-positive patients (45–85 percent) are unaware that they are infected.

To increase screening, the researchers developed a 2-ply (carbon copy) sticker with a list of 12 HCV infection-related risk factors (with yes and no check boxes) and 2 items about HCV testing (Was patient tested recently? Was an HCV test ordered?). The stickers, affixed to each patient's chart, reminded the physician to ask about HCV risk factors. The top sheet could be detached for later data analysis, while the bottom sheet remained in the patient's chart.

The physicians saw 8,891 patients over the 15-week study period who had not undergone a recent anti-HCV antibody test. Screener pages were completed

for 3,250 (36.2 percent of patients), with significant racial and gender-related differences in screening rates. Overall, 27.8 percent of those screened had at least one risk factor. More than half (55.4 percent) of patients with any risk factors—and 13.7 percent of those with no identified risk—underwent HCV testing, yielding infection rates of 6.8 percent and 2.2 percent, respectively. Seven of the risk factors, including ever use of injected or snorted drugs, accounted for 82.9 percent of the 41 HCV-positive patients, but another 7 HCV-positive patients had no risk factors when screened.

The researchers collected data from three urban clinics that instituted the use of the stickers with all adult patients and HCV testing based primarily on the presence of HCV risk factors as part of the Hepatitis C Assessment and Testing project. The study was funded by AHRQ (Contract No. 290-06-0012).

More details are in "Effectiveness of a risk screener in identifying hepatitis C virus in a primary care setting," by Mari-Lynn Drainoni, Ph.D., Alain H. Litwin, M.D., Bryce D. Smith, Ph.D., and others in the November 2012 *American Journal of Public Health* 102(11), pp. e115-e121. ■ *DIL*

Providers are missing opportunities to show empathy for their patients

Central to the patient-provider relationship is the ability for the provider to show empathy. However, the opportunity for empathetic responses may be missed 70 to 90 percent of the time when the provider is uncomfortable showing emotion, has their mind on other tasks, or doesn't have enough time. A new study found many missed opportunities for primary care providers to display empathy. In many of these cases, the provider's preoccupation with problem solving got in the way of showing empathy for the patient.

The researchers evaluated 47 visits with HIV-infected individuals and their primary care providers, including physicians, nurse practitioners, and physician assistants. Sessions were audiorecorded and transcribed. An empathic opportunity was defined as an instance where the patient expressed a strong negative emotion.

The researchers identified 29 missed opportunities for provider empathy during 21 patient visits. The rate of an empathic statement being said at some point during the response sequence was 45 percent. Five distinct types of provider responses were identified: ignore/change the subject, dismiss/minimize, elicit information, problem-solving, and empathic response.

Eliciting information was the most common response type among providers, followed by problem-solving. When the providers started off the encounter with problem-solving, empathic statements rarely followed afterwards. In half of all instances where there were no empathic responses, the providers engaged in problem solving.

The researchers suggest that providers respond by solving the problem underlying the patient's emotional experience when empathic opportunities are missed. This type of support can still be constructive and helpful to the patient. However, the researchers suggest that providers need to strike a balance between problem solving and giving empathic responses during the clinical encounter. The



study was supported in part by AHRQ (HS13903, Contract No. 290-01-0012).

See "Providing support to patients in emotional encounters: A new perspective on missed empathic opportunities," by Ian Hsu, Somnath Saha, M.D., M.P.H., Phillip Todd Korthuis, M.D., M.P.H., and others in *Patient Education and Counseling* 88, pp. 436-442, 2012. KB



Study finds primary care providers are willing partners in long-term followup care of survivors of pediatric cancer

“If you build it, they will come,” summarizes the results of a new study on methods to help primary care professionals (PCPs) involved in the long-term care of patients who survive childhood cancer. Advances in the treatment of cancer in patients under 21 years old now result in approximately 80 percent long-term survival. This means that health care providers (HCPs) who deal with adults need training to detect and treat the late effects of pediatric cancer therapy.

The researchers developed a Web-based tool, Cancer SurvivorLink™, which allows patients to securely store their health care information and share them with registered HCPs. The tool also includes information for providers on late effects of cancer treatment. Fourteen HCPs from urban and rural areas of Georgia (nine PCPs

and five specialists), who had at least one pediatric cancer survivor among his or her patients, were interviewed by phone.

Overall, they said their familiarity with cancer survivor health care issues was moderate to very low. They expressed interest in brief summaries of evidence-based information on the late effects of cancer therapy that they could access online at the time of a patient’s visit, as well as lectures and online materials for continuing education (CE) credits.

The researchers worked with Georgia chapters of HCP professional organizations, as well as national organizations, local/regional specialty groups, and survivor/parent groups, to present lectures with feedback questionnaires on survivor care. Feedback from lecture attendees (58 nurses, 57 physicians, 51 nurse practitioners, and 21 social workers) led the researchers to develop a series of 10 initial QuickFacts and 3 initial CE modules for the provider portal of SurvivorLink™.

During the portal’s first 12 months, it had 471 unique visitors and 1,129 total visits. The visitors came from 30 States—with the largest number from Georgia, where the researchers conducted an awareness campaign. Of the CE modules available, 21 providers completed an online text module on general survivor care and 18 completed an online video module on that subject; another 10 providers completed a CE module on neurocognitive/behavioral/psychological late effects of childhood cancer treatment. The study was funded in part by AHRQ (HS21251).

More details are in “Primary care providers as partners in long-term follow-up of pediatric cancer survivors,” by Lillian R. Meacham, M.D., Ann C. Mertens, Ph.D., Paula J. Edwards, Ph.D., Brooke O. Cherven, R.N., M.P.H., and others in the September 2012 *Journal of Cancer Survivorship: Research and Practice* 6(3), pp. 270-277. DIL



Use of second-generation antipsychotics to treat off-label conditions rises significantly among Medicaid-enrolled children

The use of antipsychotic drugs to treat psychiatric disorders of children, adolescents, and young adults continues to increase, along with concern that prescribing is expanding beyond indications supported by evidence about their effectiveness and safety. In fact, a national study reveals that second-generation antipsychotic (SGA) treatment climbed by 62 percent among Medicaid-enrolled children between 2002 and 2007, reaching 354,000 youth (2.4 percent) in the final year of the study.

The highest rates of SGA treatment growth were among school-aged children and adolescents diagnosed with attention deficit hyperactivity disorder (ADHD), intellectual disabilities, and developmental delay and/or learning disabilities.

By 2007, half of all children receiving SGAs had ADHD listed as one of their diagnoses and one in seven (14 percent) had ADHD as their only mental health diagnosis. ADHD was not only the most prevalent diagnosis, but the diagnosis with the highest increase in rates of treatment across all ages. Neither the American Academy of Pediatrics nor the American Academy of Child and Adolescent Psychiatry recommends SGA treatment for the management of ADHD.

Among school-aged children and adolescents, the diagnosis of ADHD grew from 37 to 45 per 1,000 among 6- to 11-year olds and from 24 to 32 per 1,000 among 12- to 18-year olds. Among 6- to 11-year olds, proportional use of SGA was highest among children

with the diagnoses of bipolar disorder and schizophrenia (70 and 61 percent, respectively). In adolescents aged 12 to 18-years, those with a diagnosis of schizophrenia, bipolar disorder, and autism were proportionately the highest SGA users (76, 62, and 43 percent, respectively).

Several SGAs have received U.S. Food and Drug Administration approval for the treatment of schizophrenia and bipolar disorder in older children or adolescents (10 to 17 years). Two SGAs are approved for treating irritability associated with autism in children as young as 5 years of age. Other approvals for children younger than 10 years of age are few and limited to schizophrenia, bipolar disorder, and severe behavioral problems.

Given their study's findings of expanding off-label use of SGAs among children, the researchers recommend further scrutiny of their safety and efficacy in this population. Their findings were based on analysis of Medicaid Analytic Extract files for 50 States and the District of Columbia from 2002 to 2007. The study was supported in part by AHRQ (HS18550).

See "The relationship between mental health diagnosis and treatment with second-generation antipsychotics over time: A national study of U.S. Medicaid-enrolled children," by Meredith Matone, M.H.S., Russell Localio, Ph.D., Yuan-Shung Huang, M.S., and others in the October 2012 *HSR: Health Services Research* 47(5), pp. 1836-1860. ■ MWS

Fluoxetine and venlafaxine are effective treatments for depression

Controversy continues to surround the effectiveness of antidepressants, with some suggesting that their benefits are overstated in patients with major depressive disorder. However, two recent studies found that fluoxetine and venlafaxine are effective treatments for depression. Researchers recently reanalyzed the results from 41 randomized controlled trials of fluoxetine and venlafaxine to determine the short-

term efficacy of these medications. Their first study found both drugs to be effective for treating major depression in all age groups. Their second study found that both medications decreased suicidal thoughts and behaviors in adult and geriatric patients with no evidence of increased suicide risk in youths. Both studies, supported in part by AHRQ, are summarized here.

Gibbons, R.D., Hur, K., Brown, C.H., and others. (2012, June). "Benefits from antidepressants." *Archives of General Psychiatry* 69(6), pp. 572-579.

The researchers obtained patient data from 12 adult, 4 geriatric, and 4 youth randomized controlled trials of fluoxetine. Data were also analyzed from another 21 adult

continued on page 24

Treatments for depression

continued from page 23

trials of venlafaxine (11 for the intermediate-release formulation and 10 for the extended-release formulation). All of the information was received from the drugs' manufacturers and one large National Institute of Mental Health trial. Clinical response rates as well as relapse/remission rates were estimated.

Clinical benefits of treatment were found for both drugs. Youths tended to obtain the greatest treatment effect. Only 5.7 percent of children receiving a placebo responded compared to 29.8 percent of children receiving fluoxetine. The difference in remission rate was 30.1 percent. More than half (55.1 percent) of adult patients experienced a 50 percent reduction in the severity of their depression compared to 33.7 percent for patients in the control groups.

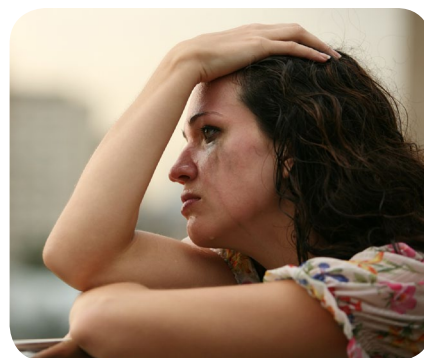
The remission rate for treated adults was 45.8 percent versus 30.2 percent for controls. Differences in

response and remission rates were the weakest for geriatric patients at 9.9 percent and 6.5 percent, respectively. Similar results were also found for venlafaxine, although the intermediate-release formulation had better efficacy than the extended-release formulation.

Gibbons, R.D., Brown, C.H., Hur, K., and others. (2012, June). Suicidal thoughts and behavior with antidepressant treatment." *Archives of General Psychiatry* 69(6), pp. 580-587.

In their second study, the researchers investigated risk of suicidal thoughts and behaviors in patients taking active medication versus placebo. They analyzed the responses to the suicide items listed in two depression rating scales (one for children and one for adults). They also reviewed adverse event reports of suicide attempts and actual suicides.

They found no evidence to suggest an increase in suicide risk from



treatment with either fluoxetine or venlafaxine. At baseline, suicide risk was 3 percent for geriatric patients, 5 percent for adults, and 20 percent for youths. Suicidal thoughts and behaviors decreased over time as treatment continued in adults and geriatric patients compared to patients on placebo. A mediational analysis revealed that this was the result of a decrease in depressive symptoms. However, there were no significant drug effects on suicidal thoughts and behavior in children and adolescents. ■ KB

Health Information Technology

Electronic health record quality strategies may improve outpatient care for patients with coronary artery disease

Quality improvement techniques can be combined with electronic health records (EHRs) to improve care for patients with coronary artery disease (CAD), according to a new study. The researchers found that electronic reminders were not sufficient to improve outpatient care for these patients. Instead, physicians responded more when feedback reports and financial incentives were added.

Four primary care practices using EHRs for 5 years participated in the study. The researchers selected four measures of CAD care quality. The first two were antiplatelet and lipid-lowering drug therapy for all patients with heart disease. The last two were the use

of beta-blockers and the use of either an angiotensin converting enzyme (ACE) inhibitor or an angiotensin receptor blocker (ARB) after a heart attack. In the first half of the study, physicians received electronic reminders prompting them to order the medications or record reasons (exceptions) why they were not prescribed. In the second study phase, physicians received performance reports that included lists of patients where the quality measures were not satisfied. They were also told that 1.5 percent of their total compensation would be tied to their performance on

continued on page 25

Coronary artery disease

continued from page 24

multiple quality measures (of which these 4 measures were a part).

During the first phase where just electronic reminders were used, performance improved slightly for 3 measures: antiplatelet, beta-blocker, and ACE inhibitor/ARB medications. After the second phase, performance improved significantly on all four measures. There was also a significant increase in the number of physicians recording exceptions to prescribing on all four

measures, and a rise in the number of patients for whom antiplatelet use was recorded on their medication lists. The study was supported part by AHRQ (HS17163 and HS15647).

See “Implementation of EHR-based strategies to improve outpatient CAD care,” by Stephen D. Persell, M.D., M.P.H., Janardan Khandekar, M.D., Thomas Gavagan, M.D., and others in the October 2012 *The American Journal of Managed Care* 18(10), pp. 603-610. ■ KB

Over time nurses become more satisfied with computerized provider order entry (CPOE)

Computerized provider order entry (CPOE) allows providers to send medication and other orders directly to the pharmacy and other services. This technology can reduce errors and delays. However, implementing a CPOE system can be met with resistance on the part of providers and nurses. A new study found that nurses’ satisfaction levels increased significantly after months of using the system. Other clinicians, on the other hand, were moderately satisfied initially and remained so after 1 year.

Four intensive care units in one hospital implemented CPOE at the same time. Nurses, physicians, nurse practitioners, and physician

assistants were surveyed about their satisfaction with CPOE at 3 months and then at 1 year. Two open-ended questions asked them to list the three things they liked most about CPOE and three things they would like to change.

During the first 3 months of CPOE, nurses said they were most satisfied when they were able to get help when having problems entering orders. They were dissatisfied with the lack of training and time-consuming nature of CPOE. After 1 year, their satisfaction with the system rose significantly, although they still complained that it did not save them time.

Other clinicians who issued orders had moderate satisfaction with CPOE at 3 months; this level remained the same at 1 year. They were most satisfied with its reliability, the availability of support, and the training received. However, they questioned its

impact on patient care and also felt it slowed them down. After 1 year, clinicians were much more positive about the impact CPOE made on patient care. According to the researchers, assessing end-user satisfaction with CPOE and other health information technologies must be measured at several points over time in order to gain an accurate picture of its success. The study was supported in part by AHRQ (HS15274).

See “Changes in end-user satisfaction with computerized provider order entry over time among nurses and providers in intensive care units,” by Peter LT Hoonakker, Ph.D., Pascale Carayon, Ph.D., Roger L. Brown, Ph.D., and others in the *Journal of the American Medical Informatics Association* 20(2), pp. 252-259, 2012. KB



Urgent need for more research on child maltreatment

A new research review from AHRQ's Effective Health Care Program highlights the urgent need to build the evidence base for interventions promoting child well-being and positive child welfare outcomes (permanency, safety, placement stability) among maltreated children. The research examined parenting interventions, trauma-focused treatments, and enhanced foster care interventions with children 14 years of age and younger. The main finding of the review was that it is too early to make strong recommendations about which interventions best promote positive outcomes for maltreated children.

Two interventions emerged with relatively stronger evidence: a home-visiting approach with maltreating parents called SafeCare and a foster parent training program called Keeping Foster Parents Trained and Supported (KEEP). However, more methodologically

rigorous research is needed to evaluate these and the many other interventions reviewed for which there is as yet only single trials and evidence undermined by methodological limitations.

Child maltreatment is a global public health problem that creates a significant burden in the United States. In 2010, 5.9 million children were involved in 3.3 million referrals to Child Protective Services (CPS). This issue not only puts a heavy burden on CPS and other child welfare programs, but also on criminal justice, health care, and special education systems.

These findings can be found in the research review *Child Exposure to Trauma: Comparative Effectiveness of Interventions Addressing Maltreatment* at <http://go.usa.gov/TzV9>. ■

Some treatments for otitis media with effusion improve hearing in the short term

A new AHRQ research review compares the benefits and potential harms of treatments for otitis media with effusion (OME)—a collection of fluid in the middle ear without signs or symptoms of acute ear infection. The review finds evidence that placement of tympanostomy tubes and removal of the adenoids (adenoidectomy), both alone or in combination, decrease the time with OME and improve hearing in the short term—up to 2 years in relation to OME and up to 1 year in relation to hearing. However, the evidence did not show differences in longer term speech, language, or other functional outcomes.

The review further finds that results were mixed concerning whether there is additional benefit from both placement of tympanostomy tubes and an adenoidectomy, and

there is evidence of potential harms associated with each. Drainage from the ear is common after placement of tympanostomy tubes and can be persistent; post-surgical hemorrhage, although rare, can result from adenoidectomy.

Consistent with current guidelines, newer evidence did not show that nasal or oral steroids provide any benefit.

According to the review, large, well-controlled studies using a common protocol could help resolve the risk-benefit ratio of treating OME by measuring the recurrence of acute otitis media, quality-of-life measures, and functional and other long-term outcomes.

The studies reviewed were limited largely to children without other medical problems.

Additional research is needed to support treatment decisions in subpopulations, including adults, children with coexisting conditions such as craniofacial abnormalities or Down syndrome, and children who have received pneumococcal vaccination, which is associated with a reduced risk of acute otitis media.

OME occurs commonly during childhood, with as many as 90 percent of children (80% of individual ears) having at least one episode of OME by age 10. In the United States, treatment for OME is estimated to total approximately \$4 billion per year.

These findings are available in the research review *Otitis Media With Effusion: Comparative Effectiveness of Treatments*. You can access the review at: <http://go.usa.gov/TzpQ>. ■

Migraine drugs generally effective, but carry side effects

Approved drug treatments for chronic and episodic migraine are mostly effective. However, treatments boost the risk of adverse effects and treatment discontinuation due to those effects, according to a new research review by AHRQ's Effective Health Care Program.

Episodic migraine is characterized by less than 15 migraine days per month and chronic migraine by 15 or more headache days per month. For episodic migraine, all approved drugs—such as topiramate, opiramate, divalproex, timolol, and propranolol—are effective in reducing monthly migraine frequency, but similarly increase risk of adverse effects and treatment discontinuation. For chronic migraine, the medicine onabotulinumtoxinA reduces migraine attacks by more than 50 percent, but increases the risk of adverse effects and treatment discontinuation due to those effects.

Compared with approved migraine drugs, some off-label beta blockers and angiotensin inhibiting drugs are more effective and safer for preventing adult migraine. The long-term preventive benefits and adherence with all drugs cannot be determined from available research.



All migraine types significantly affect the physical, psychological, and social well-being of patients, and can impose serious lifestyle restrictions. It is estimated that migraines cost American employers \$225.8 billion annually in lost work time and diminished productivity. Future research is needed on the comparative effectiveness of approved migraine drugs and in identifying potential treatment-modifying effects of patient age, sex, race, migraine family history, comorbidities, and prior treatment with migraine preventive drugs. These findings and others can be found in the research review *Migraine in Adults: Preventive Pharmacologic Treatments* at <http://go.usa.gov/Tzd5>.



Epoetin and darbepoetin reduce need for transfusions in cancer patients with anemia, but boost risk of blood clots

An updated research review by AHRQ evaluated epoetin and darbepoetin—types of erythropoiesis-stimulating agents (ESAs)—in cancer patients with anemia who were receiving chemotherapy and/or radiotherapy treatment. The review finds that both epoetin and darbepoetin reduce the need for blood transfusions. These findings are consistent with a previous review on this topic completed in 2006.

The review also finds that epoetin and darbepoetin are associated with an increased risk of thromboembolism (blood clots), and

the use of these ESAs also increases the risk of death during and shortly after treatment. However, there is not enough available evidence to draw conclusions about the long-term effects of ESA treatment on survival. Meanwhile, the quality-of-life benefits from treatments with ESAs (i.e., reduced fatigue from baseline levels) are small and are not considered clinically meaningful.

Additional research is needed to determine whether dosing practices (immediate treatment at the start of chemotherapy or radiotherapy versus delaying treatment until

hemoglobin falls below a certain level) and overall ESA exposure may influence treatment outcomes.

Anemia, a deficiency in the concentration of hemoglobin-containing red blood cells, is prevalent among cancer patients, depending on the type of malignancy and treatment. Erythropoietin, a hormone produced in the kidney, is the major regulator of red blood cell production. Commercially produced recombinant human erythropoietins have been extensively studied

continued on page 28

Epoetin and darbepoetin

continued from page 27

and used clinically for more than a decade to treat anemia in association with various diseases, reducing the need for transfusion.

All ESAs increase the number of red blood cells within about 2 to 3 weeks when given to individuals with functioning erythropoiesis.

These findings are available in the research review, *Comparative*

Effectiveness of Epoetin and Darbepoetin for Managing Anemia in Patients Undergoing Cancer Treatment—Update at <http://go.usa.gov/TzfJ>. ■

New report examines interventions to improve cardiovascular disease risk factors among those with serious mental illness

A new research review from AHRQ evaluates interventions to improve cardiovascular disease (CVD) risk factors in patients with serious mental illness (SMI). Individuals with SMI have excess mortality from CVD and high rates of CVD risk factors such as diabetes, obesity, and hyperlipidemia.

The review finds that only 35 randomized trials evaluated an intervention to address one or more CVD risk factors in patients with SMI. Most of these trials targeted weight control; few targeted other CVD risk factors. Most studies reported effects on isolated CVD risk factors rather than effects on overall CVD risk.

The review finds moderate strength of evidence that behavioral interventions are associated with small decreases in weight (about 3 kg). There was low strength of evidence that switching antipsychotic

medication to aripiprazole or adding metformin or the anticonvulsants, topiramate or zonisamide, are associated with small to moderate decreases in weight.

No interventions were found to be effective for glucose control (e.g., metformin) and hyperlipidemia (e.g., statins) in patients with SMI. There was low strength of evidence that a switch to aripiprazole from another antipsychotic improved lipid values.

Additional studies are needed to test multimodal strategies, agents known to be effective in populations without SMI (such as statins), and antipsychotic management strategies. These findings can be found in the research review *Interventions To Improve Cardiovascular Risk Factors in People With Serious Mental Illness* at <http://go.usa.gov/Tz7j>. ■

More research needed for pulmonary arterial hypertension screening, management, and treatment

More research is needed to determine the comparative validity, reliability, and feasibility of various screening, diagnostic, management, and treatment strategies for pulmonary arterial hypertension (PAH), concludes a new research review from AHRQ. This disease is rare and progressive and, if left untreated, can lead to heart failure and premature death.

Specifically, the review finds that additional research is needed to determine if the combination of echocardiography and the biomarker N-terminal pro-B-

type natriuretic peptide—two investigational diagnostic strategies for PAH—is sufficiently accurate to rule out the disease when testing patients with symptoms of PAH. Similarly, more research is needed to determine their effectiveness for screening asymptomatic patients who are at risk for PAH.

In patients with PAH, the biomarkers B-type natriuretic peptide and uric acid, as well as the size of the right atrium of the heart and the presence of pericardial effusion (fluid around the heart) correlate with disease prognosis.

However, other parameters and biomarkers either show no correlation or have insufficient data.

Although the studies were not designed to detect a mortality reduction from treatment, all drug classes and combination therapy regimens improve the distance covered during the 6-minute walk test and reduce hospitalization rates when compared with placebo. However, because of the diversity of treatment regimens and the small number of combination therapy trials, comparisons between

continued on page 29

Pulmonary arterial hypertension

continued from page 28

specific treatment regimens are inconclusive.

PAH, a subcategory of pulmonary hypertension, has an estimated prevalence of between 15 and 50 cases per million adults. While the pathophysiology is not well understood, both genetic and environmental factors have been

found to contribute to changes in the pulmonary vasculature, causing increased pulmonary vascular resistance.

This increased resistance, if unrelieved, progresses to right ventricular pressure overload, dysfunction, and ultimately right heart failure and premature death. The causes of PAH are numerous,

and before the availability of disease-specific therapy in the mid-1980s, the median life expectancy at the time of diagnosis was 2.8 years.

These findings are available in the research review *Pulmonary Arterial Hypertension: Screening, Management, and Treatment* at <http://go.usa.gov/Tz75>. ■

Women's Health

Two simple questions can help avoid prescribing of teratogenic drugs to pregnant or soon-to-be pregnant women

Asking female patients about their pregnancy intentions and their contraceptive practices can help provide primary care physicians with information needed to prescribe potentially teratogenic medicines safely, according to a new study. The two questions constitute a contraceptive vital sign (CVS).

Half of all pregnancies in the United States are unplanned because of failure to use effective family planning. Nonusers of family planning techniques risk being pregnant without knowing it, and run an increased risk of bearing a deformed infant when taking teratogenic prescription drugs that can interfere with normal embryonic or fetal development.

The researchers randomly assigned 26 physicians from a large academic internal medicine practice to an intervention group that added the CVS to the intake questionnaire. They randomly assigned another 27 physicians from the practice to a control group that used an intake form with standard questions. During the study period, there were 816 visits to intervention physicians during which they asked the CVS

questions, with answers provided by 93 percent of the women; 58 (7 percent) of the women either did not answer the CVS questions or did not finish the questionnaire.

Intervention physicians were notified by the electronic health record's decision support software to "consider chance of pregnancy when prescribing" in 110 visits (13.5 percent). For visits involving a potentially teratogenic prescription, documentation of contraception for women visiting intervention-cluster physicians rose from 14.1 percent at baseline to 72.9 percent during the study period. In contrast, 26.6 percent of women visiting control physicians had medical record documentation of contraception at baseline versus 25.5 percent during the study period. The study was funded in part by AHRQ (HS17093).

More details are in "Promoting safe prescribing in primary care with a contraceptive vital sign: A cluster-randomized controlled trial," by Eleanor Bimla Schwarz, M.D., M.S., Sara M. Parisi, M.S., M.P.H., Sanitha L. Williams, B.S., and others in the November/December 2012 *Annals of Family Medicine* 10(6), pp. 516-522. *DIL*



Pregnant women identify benefits of combining computerized and in-person screening for domestic violence

When pregnant women were asked about intimate partner violence (IPV) at their initial obstetrics visit using both a computerized screening tool and in-person provider assessments, more women disclosed IPV in the response to the computer than to the provider. However, in semi-structured interviews, women IPV victims described benefits for both screening approaches and advised using both together.

The researchers found that the 52 providers in the study asked about IPV in 244 (97.6 percent) of 250 audiotaped patient visits. Overall, 36 percent of patients disclosed some form of IPV either via six questions on a tablet computer or in person. Of these women, 66 percent (60 women) disclosed via both methods, and 34 percent (31 women) disclosed IPV via only one of the methods, primarily via computer. Examining the disclosure discrepancies in more detail revealed that 22 of the women who only disclosed IPV via computer reported experiencing psychological IPV. Twenty three of the women who had been IPV victims returned for a followup interview.

While women described comfort with the anonymity and lack of immediate judgment when disclosing IPV to a computer, they also indicated that the dynamic

interaction with a provider allowed them to sense their provider's concern and empathy and allowed more flexibility in wording and communication styles. They also suggested providers use both type of methods to address IPV.

A 2010 national survey by the Centers for Disease Control and Prevention found that 35.6 percent of women in the United States have experienced rape, physical violence, or stalking by an intimate partner in their lifetime. Other studies estimate the prevalence of IPV during pregnancy to be between 4–8 percent, which is linked to delayed entry into prenatal care and postpartum depression. The findings from the current study involved audiotaping the women's first obstetric visit and collecting data from tablet computers offered to the patients that presented six questions covering physical, psychological, and sexual IPV. The study was funded by AHRQ (HS13913).

More details are in “In person versus computer screening for intimate partner violence among pregnant patients,” by Judy C. Chang, M.D., M.P.H., Diane Dado, M.S.W., Sara Schussler, and others in the September 2012 *Patient Education and Counseling* 88(3), pp. 443-448. ■ *DIL*

Postpartum depression screening improves some maternal outcomes

Screening for postpartum depression improves some maternal outcomes compared with no screening, but the overall improvement in long-term maternal and child outcomes is unclear, concludes a new research review from AHRQ's Effective Health Care Program. The potential effectiveness of screening for postpartum depression appears to be related to the availability of systems to ensure adequate followup of women who screen positive. The evidence reviewed for this report does little to resolve uncertainties from a 2005 AHRQ report on this subject. However, findings support

the current U.S. Preventive Services Task Force recommendation of screening for depression in adults when adequate resources are available to ensure appropriate diagnostic and therapeutic services.

Maternal postpartum depression has been associated with an increased risk of infant mortality, adverse effects on some measures of infant development, and increased health care resource use. A history of mood disorder, poor relationship quality, and poor social support were all associated with a woman's greater risk of postpartum depression. Much greater attention needs to be paid to

an explicit definition of the goals of a postpartum depression screening strategy. The ideal characteristics of a screening test for postpartum depression, including sensitivity, specificity, timing, and frequency have not been defined. Because the balance of benefits and harms, at both the individual level and health system level, is highly dependent on these characteristics, broad consensus on these characteristics is needed.

These findings can be found in the research review *Efficacy and Safety of Screening for Postpartum Depression* at <http://go.usa.gov/TzAG>. ■

Study traces effects of patent expiration on infused chemotherapy use in the elderly

The use of physician-administered specialty drugs is central to contemporary cancer treatment among the elderly. For the elderly insured under Medicare, physician-administered and some oral anticancer drugs are covered and reimbursed under the Medicare part B program. To generate cost savings, recent policies have aimed to speed up the generic entry of chemotherapy drugs after patent expiration. Yet, the generic entry of irinotecan in February 2008 resulted in a significant 17 to 19 percent decrease in use among the elderly with metastatic colorectal cancer compared with oxaliplatin, a close therapeutic substitute that was still on-patent at the time of irinotecan's patent expiration, according to a new study.

The researchers believe that declines in the use of irinotecan after patent expiration and generic entry among the elderly may in part be due to how oncologists are reimbursed for the administration of

infused chemotherapies. Oncologists make money by acquiring infused or injected chemotherapy at discounted prices, using them to treat patients in the outpatient setting and then billing insurers and patients at a price that is higher than their acquisition price. Following patent expiration and generic entry, reimbursement by commercial insurers declines immediately and Medicare reimbursement declines with a lag of 6 months. After accounting for other potential reasons for the documented decline in irinotecan use (changes in scientific evidence and drug promotion), the authors suggest estimates by the Centers for Medicare & Medicaid Services Office of Inspector General of the monthly cost savings derived from the generic entry on irinotecan were likely inflated. This study was supported by AHRQ (HS18535).

See "Infused chemotherapy use in the elderly after patent expiration," by Rena M. Conti, Ph.D., Meredith B. Rosenthal, Ph.D., Blasé N. Polite, M.D., and others in the *American Journal of Managed Care* 18, Special Issue 2, pp. e173-e178, 2012. *MWS*



Combination chemotherapy increases the risk for adverse events in elderly patients with colorectal cancer

About 70 percent of colorectal cancers (CRC) develops in patients over the age of 65. Treatment options in these elderly patients include the use of single-agent or combination-based chemotherapies. However, elderly patients are particularly vulnerable to side effects, especially when drugs are used in combination, according to a new study.

Researchers used a large population-based database with Medicare-linked information to identify 46,692 patients 65 years of age or older with CRC. Medicare data were used to determine what types of chemotherapy, if any, these patients received. There were 5 categories of patients: no intravenous chemotherapy (77.4

percent), fluorouracil (5-FU) alone (11.7 percent), oxaliplatin-based (4.9 percent), bevacizumab-containing chemotherapy (2.8 percent), and other chemotherapy (3.2 percent). Adverse events and toxicities, including abnormal laboratory profiles, were identified.

Patients who received chemotherapy tended to be younger, had more advanced cancers, and were more likely to be married compared to patients who did not get chemotherapy. All patients, whether receiving chemotherapy or not, had a high incidence of symptoms and laboratory test abnormalities, which increased after patients began receiving chemotherapy.

Compared to patients on 5-FU alone, those on an oxaliplatin-based regimen had higher rates of adverse events, including nausea and neuropathy. Those 70 years of age and older were more likely to experience certain adverse events such as infection, anemia, delirium, and heart disease. The study was supported in part by AHRQ (HS16743).

See "comparison of toxicity profiles of fluorouracil versus oxaliplatin regimens in a large population-based cohort of elderly patients with colorectal cancer," by Putao Cen, M.D., Chih-Chin Liu, Ph.D., and Xianglin L. Du, M.B., M.S., Ph.D., in the June 2012 *Annals of Oncology* 23(6), pp. 1503-1511. ■ *KB*

AHRQ Stats

Medical Expenditure Panel Survey (MEPS) Statistical Brief #404: *Expenditures for Hypertension Among Adults Age 18 and Older, 2010: Estimates for the U.S. Civilian Noninstitutionalized Population.*) You can access the brief at <http://go.usa.gov/TzsR>.

Fewer Hispanics than blacks and whites received care for high blood pressure in 2010

Fifteen percent of Hispanics received medical care for high blood pressure in 2010 compared with 30 percent of blacks and 27 percent of whites. Spending averaged \$981 for every Hispanic patient treated for blood pressure compared with \$679 for white non-Hispanic patients. (Source: Agency for Healthcare Research and Quality,

Nearly 59 million U.S. adults treated for high blood pressure in 2010

Nearly 59 million U.S. adults age 18 and older were treated for high blood pressure in 2010. That total included 62 percent of seniors age 65 and older, 32 percent of adults age 45 to 64, and 6 percent of people age 18 to 44. (Source: Agency for Healthcare Research and Quality, MEPS Statistical Brief #404: *Expenditures for Hypertension Among Adults*

Age 18 and Older, 2010: Estimates for the U.S. Civilian Noninstitutionalized Population.) You can access the brief at <http://go.usa.gov/TzsR>.

Medical care spending for high blood pressure neared \$43 billion in 2012

In 2010, spending on medical care for high blood pressure totaled nearly \$43 billion, almost half of which—\$20 billion—went to purchase prescription medicines. (Source: Agency for Healthcare Research and Quality, MEPS Statistical Brief #404, *Expenditures for Hypertension Among Adults Age 18 and Older, 2010: Estimates for the U.S. Civilian Noninstitutionalized Population.*) You can access the brief at <http://go.usa.gov/TzsR>.



News and Notes

Patient-centered medical home research methods papers available

The AHRQ Patient-Centered Medical Home (PCMH) Research Methods Series is now available. The series of briefs is designed to expand the toolbox of methods used to evaluate and refine PCMH models and other health care interventions. This toolbox of novel and underused methods can equip evaluators and implementers to better assess and refine PCMH models and to meet the evidence needs of PCMH stakeholders more effectively. Each of the briefs describes a method and how PCMH researchers have used it or could do so, discusses advantages and limitations of the methods, and provides resources for researchers to learn more about the methods. The series was commissioned by AHRQ and developed with input from nationally recognized thought leaders in research methods and PCMH models. To view the papers, select <http://go.usa.gov/TzHm>.

New AHRQ funding opportunity for Patient-Centered Outcomes Research Institutional Mentored Career Development Program

AHRQ is soliciting applications for a new multiyear, large-scale funding opportunity to support the development of scientists studying patient-centered outcomes research (PCOR). PCOR seeks to integrate evidence into practice and decisionmaking in the U.S. health care system.

AHRQ seeks applications from academic and applied settings, including health care delivery systems, State and local governments, health plans, and research networks that propose a mentored career development program. Such programs will maximize available research, educational and partnership resources, curriculum, and qualified research faculty as mentors. The program design also must monitor

and provide well-defined policies and a structure to ensure progress for the candidate. The deadline for applications is July 17. You can obtain more information at <http://go.usa.gov/TzHT>.

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Research Briefs

Cannon, C.P., Brindis, R.G., Chaitman, B.R., and others. (2013, March 5). "2013 ACCF/AHA Key Data Elements and Definitions for Measuring the Clinical Management and Outcomes of Patients With Acute Coronary Syndromes and Coronary Artery Disease." *Circulation* 127(9), pp. 1052-1089. Reprints (AHRQ Publication No. 13-R045) are available from AHRQ.*

The authors, on behalf of the American College of Cardiology Foundation and the American Heart Association, have undertaken to define and disseminate clinical data standards—sets of standardized data elements and corresponding definitions. The specific goals of clinical data standards are: (1) to establish a consistent, interoperable, and universal clinical vocabulary, (2) to promote the ubiquitous use of electronic health records and facilitate the exchange of data across systems, and (3) to facilitate the further development of clinical registries and quality- and performance-improvement programs.

Eckrich, M.J., Wang, W.C., Yang, E., and others. (2013). "Adherence to transcranial Doppler screening guidelines among children with sickle cell disease." (AHRQ grant

HS10384). *Pediatric Blood Cancer* 60, pp. 270-274.

The goal of this study was to assess adherence to transcranial Doppler (TCD) screening guidelines in a group of at-risk children the year before and the years following the original National Heart, Lung, and Blood Institute's recommendations. It found that the yearly cumulative incidence of annual TCDs rose from 2.5 percent in 1997 to 68.3 percent in 2008.

El-Kassar, N., Flomerfelt, F.A., Choudhury, B., and others. (2013). "High levels of IL-7 cause dysregulation of thymocyte development." *International Immunology* 24(10), pp. 661-671. Reprints (AHRQ Publication No. 13-R046) are available from AHRQ.*

Given the importance of IL-7 on thymopoeisis (process in the thymus by which thymocytes differentiate into mature T lymphocytes) and the recent clinical use of super-physiological levels to enhance T-cell reconstitution following bone marrow transplant, the researchers sought to determine the effect of chronic high-level IL-7 exposure on thymus function. They provide the first demonstration that high levels of IL-7 antagonize Notch-1 signaling, and suggest that IL-7 may affect T- versus B-lineage choice in the thymus.

Fisher, C.E., Spaeth-Ruble, B., and Pincus, H.A. (2013). "Developing mental health-care quality indicators: Toward a common framework." (AHRQ grant HS16097). *International Journal for Quality in Health Care* 25(1), pp. 75-80.

This paper describes an initial component of a project to develop a set of mental health quality indicators that would be a reasonably comprehensive and compatible scheme for international comparisons. By collecting and organizing measures through an inductive compilation of existing programs, the study has generated a maximally inclusive basis for the creation of a common framework of international mental health quality indicators.

Keenan, G.M., Yakel, E., Yao, Y., and others. (2012, October). "Maintaining a consistent big picture: Meaningful use of a Web-based POC EHR system." (AHRQ grant HS16097). *International Journal of Nursing Knowledge* 23(3), pp. 119-133.

The focus of this study is on the feasibility and utility in real practice conditions of implementing a technology-supported standardized method, Hands-on Automated Nursing Data System (HANDS), and collecting and presenting plan-of-care information as a succinct summary of care goals, interventions, and outcomes. It is designed to keep clinicians caring for a patient on the same page.

Linder, J. (2013, February). "Antibiotic prescribing for acute respiratory infections—success that's way off the mark." (AHRQ grant HS18419). *JAMA Internal Medicine* 173(4), pp. 273-275.

The author discusses the need for reducing current levels of antibiotic prescribing for acute respiratory infections (over 70 percent)

continued on page 35

Research briefs

continued from page 34

and various efforts to achieve a reduction in such prescribing. He recommends several steps to effectively reduce current overprescribing, such as using continuous quality improvement techniques instead of controlled trials, and being clearer with patients about the individual benefits and risks associated with antibiotic prescribing.

Strasberg, H.R., Del Fiol, G., and Cimino, J.J. (2013). "Terminology challenges implementing the HL7 context-aware knowledge retrieval ('Infobutton') standard." (AHRQ grant HS18352). *Journal of the American Medical Informatics Association* 20, pp. 218-223.

Infobuttons are context-sensitive links from electronic health records to knowledge resources, sometimes involving an intermediate broker known as an InfoButton Manager.

This paper describes some of the challenges faced by knowledge resources in trying to locate the most relevant content based on the attribute values for a given Infobutton request.

Taylor, E.F., Machta, R.M., Meyers, D.S., and others. (2013, January/February). "Enhancing the primary care team to provide redesigned care: The roles of practice facilitators and care managers." *Annals of Family Medicine* 11(1), pp. 80-83. Reprints (AHRQ Publication No. 13-R040) are available from AHRQ.*

The authors explain the function of two new types of staff (practice facilitators and care managers), who will help primary care practices successfully undergo redesign to improve the patient experience, achieve better health, and reduce costs. In addition to comparing and contrasting the functions of

these new positions, the authors discuss how each might be funded (for example, through government programs or as paid employees of the practice).

Wachter, R.M., Pronovost, P.J., and Shekelle, P.G. (2013, March). "Strategies to improve patient safety: The evidence base matures." (AHRQ Contract No. 290-07-10062). *Annals of Internal Medicine* 158(5) Part 1, pp. 350-353.

This editorial introduces evidence reviews underpinning 10 patient safety strategies that are published in this supplement. The supplement also includes an overview article that describes the entire reexamination process and identifies 10 strongly encouraged and 12 encouraged patient safety strategies that are ready for adoption now. ■

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