



# RESEARCH ACTIVITIES

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## New Spanish-language consumer guide compares oral diabetes medications

**P**astillas para la diabetes tipo 2, a new consumer guide for Hispanic adults who have type 2 diabetes and need information to help them compare various oral medications for their illness, has been released by the Agency for Healthcare Research and Quality (AHRQ). Diabetes is one of the most serious health issues facing Hispanics in the United States. AHRQ data show that nearly one in eight Hispanics take a prescription drug for diabetes.

The guide organizes comparative research results according to diabetes patients' concerns and questions and assists them in using research results when talking with health care professionals about their diabetes medicines. It compares 10 generic and 13 brand-name diabetes medications and explains how each works to lower blood sugar, which of them may increase body weight, which may cause side effects such as stomach problems or swelling, and each pill's potential effect on "bad" and "good" cholesterol.

The guide also warns patients to be alert for problems such as

hypoglycemia—too-low blood sugar—which can be caused by certain diabetes pills, as well as other potential side effects. In addition, the guide provides an easy-to-understand comparison of the dose and average cost of each generic and brand-name diabetes medication and the appropriate dose when taken in combination.

Information in the guide is based on the recent AHRQ-funded report, *Comparative Effectiveness and Safety of Oral Diabetes Medications for Adults with Type 2 Diabetes*. That report, based on scientific evidence found in 216 published studies, summarizes the effectiveness, risks, and estimated costs for 10 diabetes medications. It was produced by AHRQ's Effective Health Care Program, an ongoing Federal initiative that compares alternative treatments for health conditions. The program is intended to help patients, doctors, nurses, and others choose the most effective treatments.

*Pastillas para la diabetes tipo 2*, the English-language version, *Pills for Type 2 Diabetes*, and other publications from AHRQ's Effective Health Care Program for

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## Spanish consumer guide

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consumers and clinicians can be found online at <http://effectivehealthcare.ahrq.gov>.

The consumer guides can be ordered free of charge from AHRQ.\*

**Editor's Note:** For information on a new, nationwide campaign in Spanish to encourage more adults

to visit their doctors for preventive health care to help identify and treat diabetes and other conditions, go to [www.ahrq.gov/superheroes](http://www.ahrq.gov/superheroes). ■

## Disparities/Minority Health

### Enhancing the cultural competence of both clinicians and clinics may work synergistically to reduce care disparities

Culturally competent clinicians are more likely to understand and respect the language, values, and beliefs of diverse racial and ethnic groups, and to have the attitude and skills to care for them in a way that communicates that respect and understanding. A new study is the first to link provider cultural competence with the cultural competence of the clinics where they work. Researchers found that culturally competent clinicians are more likely to work in clinics with a higher percentage of nonwhite staff and those offering cultural diversity training and culturally adapted patient education materials. Thus, enhancing the cultural competence of both clinicians and clinics may be a synergistic approach to reducing health care disparities, suggest the Johns Hopkins University researchers.

They surveyed 49 providers from 23 clinics in Baltimore, Maryland, and Wilmington, Delaware. The survey included items assessing provider and clinic cultural competence in the areas of attitudes, self-

reported behavior, and knowledge. Providers were more apt to be very confident in caring for ethnic minorities (55 percent) than in providing care to disadvantaged patients (37 percent).

Providers who reported a higher percentage of staff who were black, Hispanic, Asian, or another racial/ethnic group in their clinics and availability of culturally and linguistically tailored patient education materials had more culturally competent attitudes and increased frequency of self-reported culturally competent behaviors than their counterparts in other clinics. For example, they were more likely to strongly agree that they were motivated to learn about cultures within their practice and society, and were more neutral about statements of white advantage in society or the need for conformity to white customs and values. They also reported seeking culture-related information and feedback about their cross-cultural interaction skills 26 to 50 percent of the time and adapting care to patients'

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

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### Also in this issue:

**Children and drug resistance to antibiotics, see page 6**

**Hospice care in nursing homes, see page 10**

**Use of electronic health records in medical practices, see page 15**

**Addressing patients' unmet concerns, see page 19**

**Improving antibiotic prescribing, see page 22**

## Care disparities

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cultural and social situation 51 to 75 percent of the time. The study was supported in part by the Agency for Healthcare Research and Quality (HS13645).

See “Provider and clinic cultural competence in a primary care setting,” by Kathryn A. Paez, R.N., M.S.N., M.B.A., Jerilyn K. Allen, Sc.D., R.N., F.A.A.N., Kathryn A. Carson, Sc.M., and Lisa A. Cooper, M.D., M.P.H., in the March 2008 *Social Science & Medicine* 66, pp. 1204-1216. ■

## Poorer treatment and lower socioeconomic status may underlie ethnic disparities in breast cancer survival

**D**isparities in early-stage breast cancer survival among elderly black and white women disappear after accounting for black women’s lower socioeconomic status and poorer treatment, according to a new study. Xianglin L. Du, M.D., Ph.D., and colleagues at the University of Texas Health Science Center examined clinical and sociodemographic characteristics of 35,029 elderly Medicare-insured women with early-stage breast cancer, whose outcomes they tracked for up to 11 years.

Black women with breast cancer were more likely than their white counterparts to live in the poorest census tract quartiles (73.7 vs. 20.7 percent). More black women also received breast-conserving surgery (BCS) without radiation therapy (15.7 percent) compared with white (12.4 percent), Hispanic (11

percent), and Asian (7.9 percent) women, and women of other ethnicities (14.6 percent). Since the recommended therapy for early-stage breast cancer is BCS plus radiation, these treatment differences could have affected disparities in survival, suggest the researchers.

The 3-year survival from all causes was 86 percent in whites, 78.6 percent in blacks, and 88.4 percent in others. After adjusting for treatment and socioeconomic status, the risk of all-cause mortality was no longer significant in blacks, whereas the risk of breast cancer-specific mortality was marginally higher (by 21 percent, but with wide confidence intervals, ranging from 1 to 46 percent). For example, after adjusting for primary therapy (mastectomy, BCS plus radiation, or BCS without radiation), risk of dying from any

cause was reduced in blacks by 7 percent compared with whites and risk of dying from breast cancer was reduced by 25 percent—risks that remained unchanged after adding adjuvant chemotherapy. After additionally controlling for socioeconomic status, the risk of black women dying from any cause was reduced by 2 percent and from breast cancer by 21 percent. The study was supported in part by the Agency for Healthcare Research and Quality (HS16743).

See “Impact of treatment and socioeconomic status on racial disparities in survival among older women with breast cancer,” by Dr. Du, Shenying Fang, M.D., M.S., and Tamra E. Meyer, M.P.H., in the April 2008 *American Journal of Clinical Oncology* 31(2), pp. 125-132. ■

## Patient Safety and Quality

### Depression and burnout are problems among pediatric residents

**S**leep deprivation, lack of leisure time, and other stresses of resident training lead to depression and burnout among many medical residents. In fact, a new study finds these to be major problems among residents. It also found that residents with depression made significantly more medical errors than their nondepressed peers. A team of researchers used questionnaires to examine the prevalence of depression and burnout among 123 residents in 3 pediatric residency programs at 3 children’s hospitals.

A total of 20 percent of participating residents met the criteria for depression and 74 percent met the criteria for burnout. Surveillance of medication errors per resident month yielded 45 errors made by residents. Residents with depression made 6.2 times as many medication errors per resident month as residents who were not depressed (1.55 vs. 0.25). Burnt out residents and non-burnt out residents made similar rates of errors per resident month (0.45 vs. 0.53). In addition,

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## Depression and burnout

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residents who were depressed or burnt out reported poorer health than peers who did not have these problems.

The findings indicate that mental health may be a more important contributor to patient safety than previously suspected. Nearly half of the depressed residents seemed unaware of their depression, despite being doctors, and only a small number were receiving treatment. These sobering findings warrant further

investigation as well as regular screening and treatment efforts in medical training programs, suggest the researchers. Their study was funded in part by the Agency for Healthcare Research and Quality (HS13333).

See “Rates of medication errors among depressed and burnt out residents: Prospective cohort study,” by Amy M. Fahrenkopf, M.D., M.P.H., Theodore C. Sectish, M.D., Laura K. Barger, Ph.D., and others, in the March 1, 2008 *British Medical Journal* 336(7642), pp. 488-491. ■

## Part-time doctors report less burnout, greater satisfaction, and more work control than full-time physicians

In the search for greater job flexibility and work-home balance, many physicians, especially women, are choosing to work part-time. These part-time doctors report less burnout, greater satisfaction, and more work control than their full-time colleagues, concludes a new study. Both part- and full-time physicians have comparable perceptions of organizational culture and report similar patient satisfaction and trust. By promoting and enhancing part-time medical careers, organizations may be able to attract and retain a cadre of satisfied, healthy, capable, and connected physicians, suggest the study authors.

They surveyed generalist physicians in the upper Midwest and New York City about their work

stress and satisfaction and surveyed their patients about trust in and satisfaction with their physician. Nearly 1 in 5 of the 422 doctors who responded to the survey reported part-time status (31 percent of women, 8 percent of men). Part-time doctors reported less burnout, higher satisfaction, and greater work control than full-time doctors. Intent to leave and assessments of organizational climate were similar between part- and full-time doctors. Organizational climate included alignment between physician values and leadership, sense of trust or belonging, practice emphasis on information systems and communication, and other factors.

The survey of 1,795 patients revealed no significant differences in satisfaction with and trust in

part-time and full-time physicians. Part-time physicians, who were more likely to be white (94 vs. 74 percent) and female (77 vs. 37 percent), spent proportionately less time than full-time physicians seeing hospitalized patients (10 vs. 14 percent) and more time in teaching and research (10 vs. 6 percent). The study was supported by the Agency for Healthcare Research and Quality (HS11955).

See “Part-time physicians . . . prevalent, connected, and satisfied,” by Hilit F. Mechaber, M.D., Rachel B. Levine, M.D., M.P.H., Linda Baier Manwell, M.S., and others, in the March 2008 *Journal of General Internal Medicine* 23(3), pp. 300-303. ■

## Visit the AHRQ Patient Safety Network Web Site

AHRQ’s national Web site—the AHRQ Patient Safety Network, or AHRQ PSNet—continues to be a valuable gateway to resources for improving patient safety and preventing medical errors and is the first comprehensive effort to help health care providers, administrators, and consumers learn about all aspects of patient safety. The Web site includes summaries of tools and findings related to patient safety research, information on upcoming meetings and conferences, and annotated links to articles, books, and reports. Readers can customize the site around their unique interests and needs through the Web site’s unique “My PSNet” feature. To visit the AHRQ PSNet Web site, go to <http://psnet.ahrq.gov/>.

## Cardiac surgeons are not reluctant to treat high-risk cardiac patients who may tarnish their quality scorecards

In an era of public physician and hospital scorecards, there is growing concern that cardiac surgeons may hesitate to operate on high-risk patients, who might lower physicians' quality rankings due to increased heart surgery mortality rate. However, a new study allays those concerns. It shows that high-risk coronary artery bypass graft surgery (CABG) patients are significantly more likely to receive care from high-quality surgeons compared with lower risk patients, even after adjusting for patient race and ethnicity.

Laurent G. Glance, M.D., of the University of Rochester Medical Center, and colleagues analyzed data from the New York State Cardiac Surgery Reporting System. This database included all patients undergoing CABG surgery in the State who were discharged between 1997 and 1999. The study sample included 57,150 patients treated by 189 surgeons at 33 hospitals, who had an overall 2.2 percent mortality rate. The researchers examined the association between surgeon quality {observed-to-expected (given the

patient's condition) mortality ratio} and patient risk of death (using 30 risk factors such as other coexisting diseases and previous open heart surgery).

They found no evidence that high-quality surgeons selectively avoided high-risk patients. For every 10 percentage point increase in patient risk of death (for example, from 5 to 15 percent) there was a 0.034 reduction in the surgeon observed-to-expected mortality ratio. Even within the same hospital, higher risk patients still tended to be treated by higher quality surgeons. The researchers call for more research to better understand the underlying mechanisms for these findings. Their study was supported by the Agency for Healthcare Research and Quality (HS13617).

More details are in "Are high-quality surgeons less likely to operate on high-risk patients compared to low-quality surgeons? Evidence from New York State," by Dr. Glance, Andrew Dick, Ph.D., Dana B. Mukamel, Ph.D., and others, in the February 2008 *HSR: Health Services Research* 43(1, Part I), pp. 300-312. ■

## More vigilance in disinfecting hospital surfaces is critical for reducing vancomycin-resistant infections

Hospitalized patients can become infected with a type of intestinal bacteria (enterococci) that is resistant to the broad-spectrum antibiotic vancomycin, which kills a broad range of bacteria. Vancomycin-resistant enterococci (VRE) are now the third leading cause of hospital-acquired infection. More vigilance in disinfecting hospital rooms and surfaces is clearly warranted, concludes a new study. A Tufts University team obtained weekly environmental and twice-weekly patient surveillance cultures from two intensive care units (ICUs) during a 14-month period. They defined VRE infection as a positive culture result over 48 hours after hospital admission and determined risk factors for VRE infection.

Of 1,330 ICU admissions, 638 patients were at risk for VRE

infection, and 50 patients (8 percent) became infected with VRE. Colonization pressure (measure of exposure to VRE in the ICU) and use of multiple antibiotic classes increased risk of VRE infection. However, after adjusting for these factors, the strongest predictors of VRE infection were a prior positive room culture for VRE and prior room occupancy by patients infected with VRE (a presumed proxy for room contamination), which increased risk of VRE infection from 2.7 to 4.4 times. This effect persisted for as long as 2 weeks, when at least one and possibly multiple "terminal cleanings" had occurred.

Even if all VRE transmission comes from hospital workers, disinfecting hospital surfaces is likely to reduce transmission, given the frequency of environmental

contamination that can subsequently contaminate health care workers' hands. Environmental cultures may be a useful tool for facilities to monitor the effectiveness of room disinfection procedures or in specific circumstances, such as outbreak control. However, the data do not support routine environmental cultures as an infection control intervention. The study was supported in part by the Agency for Healthcare Research and Quality (T32 HS00060).

See "Prior environmental contamination increases the risk of acquisition of vancomycin-resistant enterococci," by Marci Drees, David R. Snydman, M.D., Christopher H. Schmid, Ph.D., and others, in the March 1, 2008 *Clinical Infectious Disease Journal* 46, pp. 678-685. ■

## Conference calls, e-mail discussion groups, and targeted Web sites may improve pediatric practice immunization rates

**P**ediatricians who participate in monthly conference calls, Listserv e-mail discussion groups, and have access to a Web site that shares best practices and information focused on improving immunization rates may improve their immunization rates over those who only receive mailed educational materials, finds a new study. This distance-based approach to quality improvement (QI) is more cost-effective than face-to-face education and can reach many pediatric practices, notes Eric J. Slora, Ph.D., of the Pediatric Research in Office Settings (PROS), a practice-based research network (PBRN) supported by the American Academy of Pediatrics.

Dr. Slora and colleagues randomly assigned 29 PROS practices into year-long, paper-based education or distance-based QI groups to examine differences in immunization rates at the end of the year. The practices had similar baseline immunization rates of 88 percent or less for children 8 to 15 months. Pediatricians in the QI group, most of whom were in their 50s, made most use of the conference calls, attending about 75 percent of them. However, the QI

Listserv and Web site were used infrequently, averaging once per practice over the entire year.

Pediatricians' assessments of the helpfulness of each resource mirrored practice use. For example, they rated conference calls (1=very helpful, 2=somewhat helpful, and 3=not helpful at all) an average of 1.38 compared with 1.86 for the Web site and 2.0 for the Listserv. Practices in the QI group boosted their immunization rates by 4.9 percent (from 75.9 to 80.8 percent) compared with 0.8 percent (from 81.6 to 82.4 percent) in the paper-based education group. Also, more QI practices adopted systems identifying children behind in immunizations in their practices. The researchers conclude that a distance-based QI model is feasible and may improve immunization rates. Their study was supported in part by the Agency for Healthcare Research and Quality (HS13512).

More details are in "Improving pediatric practice immunization rates through distance-based quality improvement: A feasibility trial from PROS," by Dr. Slora, Jennifer M. Steffes, M.S.W., Donna Harris, M.A., and others in the January 2008 *Clinical Pediatrics* 47(1), pp. 25-36. ■

## Some children are already experiencing drug resistance to a class of broad-spectrum antibiotics used in adults

**B**acteria have become increasingly resistant to antibiotics in the past six decades. Though children are not generally prescribed the broad-spectrum antibiotics called fluoroquinolones because they cause joint toxicity, two common bacteria are already showing fluoroquinolone resistance in 217 blood cultures taken from children, according to a new study. Researchers from the University of Pennsylvania Center for Education and Research on Therapeutics investigated how fluoroquinolones fared against *Escherichia coli* and

*Klebsiella* in 271 blood cultures containing *E. coli* or *Klebsiella* that were performed from May 1, 1999, to September 30, 2003, at the Children's Hospital of Philadelphia.

Of these cultures, eight (2.9 percent) were resistant to two common fluoroquinolones, ciproflaxin and levofloxacin. These drugs are commonly prescribed to adults in both the hospital and in the community to treat bacterial infections. Ciproflaxin was recently approved for children to treat inhalation anthrax and problematic urinary tract infections.

Thirty-five (12.9 percent) of the cultures produced an enzyme, extended spectrum B-lactamase, which is also linked to drug resistance. Finally, of the eight cultures that were resistant, five also produced an extended spectrum B-lactamase enzyme (four for *E. coli* and one for *Klebsiella pneumoniae*).

Mutations in the bacteria were the likely culprits for the drug resistance. However, researchers were unable to determine specific risk factors for infection with the resistant bacteria in children. This

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## Drug resistance

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study was funded in part by the Agency for Healthcare Research and Quality (HS10399).

See “Fluroquinolone resistance in pediatric bloodstream infections because of *Escherichia coli* and *Klebsiella* species,” by Jason Y. Kim, M.D., Ebbing Lautenbach,

M.D., M.P.H., M.S.C.E, Jaclyn Chu, M.H.S, and others in the February 2008 *American Journal of Infection Control* 36(1), pp. 70-73. ■

## Women's Health

### Women who were abused as children use more health care services than those who weren't abused

**H**ealth care costs are significantly greater for women who were physically or sexually abused as children than for women who left childhood unscathed, finds a new study funded in part by the Agency for Healthcare Research and Quality (HS10909). Researchers from Ohio and Washington interviewed 3,333 women by telephone who received care from a health plan in the Pacific Northwest from January 1, 1992, to December 21, 2002. After placing the women in one of four categories (no abuse, physical and sexual abuse, physical abuse only, and sexual abuse only) the team looked at health care use during the 10-year period. Thirty-four percent (1,128) of women said they were abused as children. These women were more likely to have smoked, used recreational drugs in the past year, have symptoms of depression, and have a higher body mass index than women who had not suffered abuse as children.

Health care costs for women with a history of physical and sexual abuse averaged \$3,203 annually, while costs for women who were not abused averaged

\$2,413, a nearly \$800 difference. Women who endured both types of abuse also used more mental health, hospital outpatient, emergency department, primary care, specialty care, and pharmacy services than the nonabused group.

The authors report that their findings suggest abuse suffered in childhood may be a factor that drives the use of health services in adulthood. They recommend parents be offered parenting classes to reduce the prevalence of abuse and that mental health professionals evaluate children who have been abused, so treatment can be offered. Finally, health professionals should consider screening women who frequently use health services for prior abuse to improve their mental health and reduce their symptoms.

See “Health care utilization and costs associated with childhood abuse,” by Amy E. Bonomi, Ph.D., M.P.H., Melissa L. Anderson, M.S., Frederick P. Rivara, M.D., M.P.H., and others in the March 2008 *Journal of General Internal Medicine* 23(3), pp. 294-299. ■

### Many pregnant women continue to be prescribed a class of antihypertensive medications dangerous to the fetus

**U**se of antihypertensive angiotensin-converting enzyme (ACE) inhibitors is contraindicated during the second and third trimesters of pregnancy due to dangers to the fetus. These dangers range from excessively low blood pressure and scant amniotic

fluid to kidney problems and death. Yet the number of pregnant women prescribed these medications grew steadily between 1986 and 2003, according to a new study. Clearly, better methods are needed to reduce fetal exposure to prescribed medications with potential for fetal

harm, concludes Wayne A. Ray, Ph.D., of the Vanderbilt University Medical Center CERT (Center for Education and Research on Therapeutics), which is supported by the Agency for Healthcare Research and Quality (HS10384).

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

## Antihypertensive medications

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Dr. Ray and fellow researchers retrospectively studied 262,179 women enrolled in the Tennessee Medicaid program during their pregnancy who delivered a live infant or suffered a fetal death between 1986 and 2003. During this period, use of ACE inhibitors increased 4.5-fold from 11.2 to 58.9 per 10,000 pregnancies. Women's exposure to these drugs in the

second and third trimesters nearly tripled and did not decrease following a U.S. Food and Drug Administration black box warning against such use in 1992. Use of these drugs was most common among pregnant women 35 years and older.

A recent study found dangers of first-trimester use of ACE inhibitors as well, further underscoring concerns about these medications for pregnant women. The authors recommend educating physicians

and patients about the dangers of ACE inhibitors to the fetus and counseling women about their risks and benefits when initially prescribing them.

More details are in "Increasing exposure to angiotensin-converting enzyme inhibitors in pregnancy," by Michael E. Bowen, M.D., M.P.H., Dr. Ray, Patrick G. Arbogast, Ph.D., and others, in the March 2008 *American Journal of Obstetrics & Gynecology* 198, pp. 291.e1-291.e5. ■

## Kegel exercises, bladder training, and some medications can resolve women's urinary incontinence

Nearly one in five women up to the age of 44 suffer from urinary incontinence (UI), and as many as 30 percent of elderly women do as well, with many of them suffering from daily incontinence. A systematic review of studies on nonsurgical treatments for UI in women found moderate levels of evidence that pelvic floor muscle training (Kegel exercises) and bladder training resolved women's UI compared with usual care. Kegel exercises require a woman to concentrate on contracting and relaxing certain muscles of the pelvic floor, which control (and contain) the stream of urine. Anticholinergic drugs also resolved UI compared with placebo, with similar effects from oxybutynin or tolterodine. Duloxetine improved, but did not resolve, UI. The effects of electrostimulation, medical devices, injectable bulking agents, and vaginal estrogen therapy were inconsistent.

Studies are needed on the long-term effects of combined behavioral and drug therapies on incontinence, as well as the effectiveness of various UI interventions in various subgroups, note researchers at the Minnesota Evidence-based Practice Center, which is supported by the Agency for Healthcare Research and Quality (Contract No. 290-02-0009). Their findings were based on analysis of 96 randomized controlled trials and 3 systematic reviews published from 1990 through May 2007 on nonsurgical UI treatments in women.

See "Systematic review: Randomized, controlled trials of nonsurgical treatments for urinary incontinence in women," by Tatyana A. Shamliyan, M.D., M.S., Robert L. Kane, M.D., Jean Wyman, Ph.D., and Timothy J. Wilt, M.D., M.P.H., in the March 18, 2008 *Annals of Internal Medicine* 148(6), pp. 459-473. ■

## Men's Health

### Lack of evidence limits comparison of effectiveness of localized prostate cancer treatments

Prostate cancer is being detected earlier than in the past because of the development of the prostate-specific antigen (PSA) assay as a diagnostic test. However, there is little evidence from randomized, clinical trials (RCTs) to indicate which treatments are most effective

or produce the fewest harmful effects in patients with clinically localized disease, especially when detected early using PSA, finds a new study. Although there are a variety of treatments for localized prostate cancer—including surgery, androgen deprivation therapy (to reduce male hormones), and

localized radiation therapy—the lack of information from high-quality randomized trials presents a barrier to well-informed decisionmaking by patients and clinicians.

Timothy J. Wilt, M.D., M.P.H., and colleagues at the Minnesota

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## Prostate cancer treatments

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Evidence-based Practice Center conducted a systematic review of relevant RCTs and observational studies on the treatment of localized prostate cancer. The researchers found that no treatment option had consistent results from at least two high-quality RCTs, which had adequate followup and sufficient patients enrolled to find significant differences in outcomes. In addition, none of the RCTs compared standard therapies with emerging therapies. Two RCTs compared radical prostatectomy (surgical removal of the prostate) with watchful waiting.

A study of 695 men found that surgery (compared with watchful waiting) significantly reduced the risk of death from prostate cancer at 10 years from 15 percent to 10 percent, and the risk of metastases (spread to other organs) at 10 years from 25.4 percent to 15.2 percent. However, very few of the men in this trial had cancer that was detected by PSA testing. Other studies compared variations on surgery (with or without androgen deprivation) or radiation therapy (external-beam radiation therapy or EBRT with or without androgen deprivation), brachytherapy (implanted pellets of radioactive material, with or without EBRT), or other combinations. A number of clinical trials are underway that may

help fill in the gaps in knowledge of the comparative effectiveness of and risk of harms associated with various prostate cancer treatments. The study was funded by the Agency for Healthcare Research and Quality (Contract No. 290-02-0009) as a part of the Agency's Effective Health Care Program. For more information, go to <http://effectivehealthcare.ahrq.gov>.

See "Systematic review: Comparative effectiveness and harms of treatments for clinically localized prostate cancer," by Dr. Wilt, Roderick MacDonald, M.S., Indulis Rutks, B.A., Tatyana A. Shamliyan, M.D., M.S., and others in the March 18, 2008, *Annals of Internal Medicine* 148(6), pp. 435-448. ■

## Prostate cancer screening decision aids lead to greater knowledge and involvement in decisionmaking by patients and lower screening rates

The uncertainty about the ability of prostate-specific antigen (PSA) screening to reduce prostate cancer mortality has led professional organizations to offer guidelines promoting informed decisionmaking about prostate cancer screening. Decision aids help people make choices among options by providing information on the options and outcomes relevant to a patient's health status. The authors of this article systematically reviewed studies evaluating decision aids for PSA screening to determine their impact on men's decisions to be screened.

Of the 357 studies initially selected for review, 18 were considered eligible, and only 12 were rated as good quality studies. The types of decision aids considered were: a videotape, "The PSA Decision: What You Need to Know" (versions of which were used in eight of the studies); discussion sessions; written materials, often with illustrations; written materials combined with education sessions; and Internet-based materials. Decision aids were delivered in one of four contexts: men visiting urology clinics specifically for screening, primary care patients before scheduled visits, primary care patients on clinic rosters without a scheduled visit, and nonpatients in community settings.

The most common outcome measured was knowledge of prostate cancer screening. Men who used

decision aids had significantly higher knowledge scores than men without decision aids. In the 10 studies where actual screening rates were measured, there was a broad range of screening rates. For example, among men using decision aids, the PSA screening rate varied from a low of about 12 percent (among men making scheduled visits) to a high of 98 percent (among men attending a free-screening clinic). The screening rates for men without decision aids ranged from 21 percent to 100 percent. Among patients seeking routine care, prostate cancer screening decision aids appeared to decrease interest in screening, the intention to be screened, and PSA screening rates. However, for patients seeking screening services, the decision aids had no impact on their screening behavior. In light of public enthusiasm for cancer screening, the researchers were surprised that prostate cancer screening decision aids received by the patients led some of them to question the value of screening and decide against it. This study was sponsored in part by the Agency for Healthcare Research and Quality (HS10612).

See "Trials of decision aids for prostate cancer screening: a systematic review," by Robert J. Volk, Ph.D., Sarah T. Hawley, Ph.D., Suzanne Kneuper, M.A., and others in the *American Journal of Preventive Medicine* 33(5), pp. 428-434, 2007. ■

## Treatments for early prostate cancers are often incongruent with previous conditions

When physicians propose one of four treatment approaches for early prostate cancer, many fail to consider how the treatment will affect the patient's ongoing urinary, bowel, or sexual dysfunction, a new study finds. Massachusetts researchers found that 89 percent of 438 men diagnosed with early prostate cancer had preexisting conditions, and one-third of them received treatments that worsened those conditions more than other treatments would have.

For example, brachytherapy delivers radiation to the prostate but can also cause urinary obstructions, making it a poor treatment option for those who have urinary problems. Patients with urinary problems who received this treatment reported a surge in nighttime urination from 78 percent to 90 percent and a rise

in painful urination from 8 percent to 34 percent. External beam radiation, which irradiates the nearby rectum and can cause long-term bowel dysfunction, poses problems for patients with preexisting bowel problems. Patients who underwent this treatment suffered diarrhea and bowel urgency (32 percent pretreatment, 43 percent after), painful bowel movements (7 percent vs. 32 percent), and rectal bleeding (8 percent vs. 32 percent). Radical prostatectomy can cause erectile problems, so two versions are offered: one that spares the nerves and one that doesn't. However, men who already suffer from erectile dysfunction do not regain sexual potency after undergoing the nerve-sparing procedure. Doctors were more likely to perform the nerve-sparing surgery for younger

men (average 58.2 years old) than older men (61.4 years old).

The authors state that candid discussions between patients and physicians are paramount when treatment options for prostate cancer are discussed. These could be facilitated by using clinic questionnaires that ask questions patients might be uncomfortable answering verbally to ensure patients with preexisting conditions are matched with the appropriate treatment. This study was funded in part by the Agency for Healthcare Research and Quality (HS08208).

See "Treatment 'mismatch' in early prostate cancer: Do treatment choices take patient quality of life into account?" by Ronald C. Chen, M.D., Jack A. Clark, Ph.D., Judith Manola, M.S., and others in the January 1, 2008 *Cancer* 112(1), pp. 61-68. ■

## Elderly/Long-Term Care

### Hospice care saves money for Medicare and Medicaid patients in nursing homes

When terminally ill patients forego treatments and opt instead for the comfort care hospice offers, the government saves money, according to researchers from Brown University and Florida A&M University. The team studied 5,774 short- (fewer than 91 days) and long-stay Florida nursing home residents who were eligible for both Medicare and Medicaid; suffered from cancer, dementia, or other conditions; and died between July and December 1999. Overall, hospice enrollment in the nursing home decreased total government expenditures by 6 percent for the patients' last month of life. When short-stay residents chose hospice care over skilled nursing care, the government saw a 22 percent savings in the

residents' final month. Long-stay and short-stay hospice residents with cancer saved the government an average of \$663 (9 percent) and \$1,453 (13 percent), respectively. However, long-term patients with dementia who received hospice care did not save the government money, and long-term patients with diagnoses other than dementia or cancer had a 14 percent cost increase.

Medicare policies do not permit residents who are eligible for both Medicare and Medicaid to receive both skilled nursing care and hospice care. Thus, when a nursing home patient elects hospice care, Medicaid picks up the daily nursing home bill, which is often

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## Hospice care

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significantly less than what is charged for skilled nursing care. The authors indicate that this situation creates a disincentive for Medicaid and nursing homes to promote hospice care. This study was funded in part

by the Agency for Healthcare Research and Quality (HS10549).

See “Hospice effect on government expenditures among nursing home residents,” by Pedro L. Gozalo, Ph.D., M.Sc., Susan C. Miller, Ph.D., M.B.A., Orna Intrator, Ph.D., and others in the February 2008 *Health Services Research* 43(1), pp. 134-153. ■

## Encouraging nursing home residents to participate in their care helps them maintain function and physical performance

When nursing assistants (NAs) are trained to encourage long stay nursing home residents to participate in their self-care and other activities, the residents improve functioning and feel better about themselves, families feel better about their care, and the NAs are more satisfied and less stressed by their jobs, according to a study supported in part by the Agency for Healthcare Research and Quality (HS13372). Researchers tested the impact of the Res-Care Intervention, which used a self-efficacy based approach to implement a restorative care philosophy to restore and/or maintain the residents' physical function. Implementing a restorative care philosophy means moving beyond simply providing care for a resident. The NAs learn

to set goals for and with residents and help them to perform their daily activities at their highest level. Providing care for residents (bathing or dressing an individual) rather than helping them complete as much of their own care as possible may actually cultivate functional decline and cause further deconditioning and disability.

The researchers analyzed discussions of 12 focus groups including a total of 179 NAs who were trained to provide Res-Care and to motivate residents to participate. The NAs mentioned several resident-related factors that facilitated restorative care. These ranged from encouraging residents to do more, giving them choices, and bonding with them to individualizing motivators and rewards. Facility/team/family-related facilitators ranged from

comprehensive evaluation of underlying ability and integrating restorative care into daily activities to family involvement and education. Resident barriers ranged from learned dependency, cognitive impairment, pain, and fatigue to refusal and some medications. Facility/team/family-related barriers ranged from lack of nursing support and just needing to get the care done to family expectations of total nursing care and doubt that the residents could perform the tasks.

See “Barriers and benefits to implementing a restorative care intervention in nursing homes,” by Barbara Resnick, Ph.D., C.R.N.P., F.A.A.N., Ingrid Petzer-Aboff, Ph.D., Elizabeth Galik, Ph.D., C.R.N.P., and others, in the February 2008 *Journal of the American Medical Directors Association* 9, pp. 102-108. ■

## Health Information Technology

### Studies elaborate on the potential use of health information technology to improve care delivery

Health information technology (HIT) has been promoted as an important vehicle for improving health care quality while also controlling care costs. Yet it remains underused by the health care community. A special issue of the April 2008 *Journal of General Internal*

*Medicine* 23(4) highlights the potential uses of HIT to improve care delivery. The studies included in the issue address various forms of HIT, such as electronic health records, datamarts and electronic disease registries, automated telephone outreach, and patient portals. These efforts may target

multiple components of a health care system or focus on individual patients, clinicians, or other providers. Following are summaries of studies that were supported by the Agency for Healthcare Research and Quality.

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## Care delivery

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**Fischer, M.A., Vogeli, C., Stedman, M.R., and others.**

**“Uptake of electronic prescribing in community-based practices,” pp. 358-363. (AHRQ grant HS15175).**

This study of a large health plan’s Statewide initiative to support physicians’ use of handheld prescribing devices found that less than one-third of clinicians (30 percent) used this technology at the end of one year (an increase from 15 percent before the initiative). Younger clinicians, pediatricians, and clinicians in larger practices all wrote e-prescriptions at a rate higher than the average. This slow adoption of e-prescribing, which can improve medication safety, may be due to problems with unusual doses or compounded medications, technical issues with the e-prescribing system, inability to access e-prescribing at all practice locations, and clinician preference for paper prescribing, note the researchers.

**Crosson, J.C., Isaacson, N., Lancaster, D., and others.**

**“Variation in electronic prescribing implementation among twelve ambulatory practices,” pp. 364-371. (AHRQ grant HS16391).**

Several factors may influence which ambulatory practices implement e-prescribing, suggests this study. The researchers studied 12 practices scheduled to implement an e-prescribing program. Staff of the five practices that implemented the system were more familiar with the capabilities of HIT and had more modest expectations about the benefits likely to accrue from e-prescribing. Staff of the four practices who failed to implement the system had limited understanding of e-

prescribing capacity, expected that the program would increase the speed of clinical care, and had difficulties with the technical aspects of the implementation and insufficient technical support. Three of the practices installed the system, but it was only used by some staff.

**Love, T.E., Cebul, R.D., Einstadter, D., and others.**

**“Electronic medical record-assisted design of a cluster-randomized trial to improve diabetes care and outcomes,” pp. 383-391. (AHRQ grant HS15123).**

Electronic medical records (EMRs) can facilitate rigorous cluster-randomized trial (CRT) design by identifying large numbers of patients with diabetes and enabling fair comparisons through preassignment balancing of practice sites, concludes this study. In designing a trial of clinical decision support to improve diabetes care and outcomes, the researchers used the same vendor’s EMR to identify and balance characteristics of 12,675 patients with diabetes cared for by 147 physicians in 24 practices of 2 systems. By explicitly balancing practice characteristics within study groups before patient assignment, the researchers minimized baseline differences. This substantially reduced the potential for selection bias, need for extensive covariate adjustment in the final models, and the impact on effective sample size.

**Weber, V., White, A., and McIlvried, R.** **“An electronic medical record (EMR)-based intervention to reduce polypharmacy and falls in an ambulatory rural elderly population,” pp. 399-404. (AHRQ grant HS15457).**

This study found that electronic messages targeting physicians of elderly patients who had been prescribed potentially harmful psychoactive medications decreased the use of such medications. However, they did not reduce falls that are often due to dizziness or sedation related to psychoactive drugs. The researchers used an electronic medical record (EMR) to review the medications and fall-related diagnoses (for example, hip fracture) of 620 elderly community-dwelling patients at risk for falls. Based on this information, they sent recommendations to the primary care doctor to reduce polypharmacy and falls. This approach was linked to a smaller number of psychoactive medications, but the impact on falls was mixed.

**Kern, L.M., Barron, Y., Blair, A.J., and others.** **“Electronic result viewing and quality of care in small group practices,” pp. 405-410. (AHRQ grant HS16316).**

Electronic viewing of outpatient laboratory results is associated with higher outpatient care quality, according to this study. The researchers examined use of an electronic portal for laboratory result viewing among 168 physicians in small group practices in New York. They compared use of the portal with performance on 15 quality of care measures reflecting preventive care, chronic disease management, and patient satisfaction. One-third of physicians used the portal at least once over a 6-month period. Use of the portal was linked with higher overall care quality and care quality of those performance measures expected to be impacted by laboratory result viewing (mammography, Pap smears, and colonoscopy). Portal

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## Care delivery

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use was not associated with care quality for measures not expected to be impacted by result viewing.

**Dollarhide, A.W., Rutledge, T., Weinger, M.B., and Dresselhaus, T.R.** “Use of a handheld computer application for voluntary medication event reporting by inpatient nurses and physicians,” pp. 418-422. (AHRQ grant HS14283).

A handheld reporting tool is a feasible method to record adverse medication events in inpatient hospital care units. It may also augment existing hospital reporting systems, concludes this study. The researchers examined the ability of a handheld computer-based Medication Event Reporting Tool (MERT), when used by 185 physicians and 119 nurses on the medical wards of 4 teaching hospitals, to capture self-reported medication events. A total of 76 events were reported over the course of 2,311 days. Nurses had a significantly higher reporting rate compared with physicians (0.045 vs. 0.026 reports per shift). Only 5 percent of MERT medication events were reported to require increased monitoring or treatment.

**Hicks, L.S., Sequist, T.D., Ayanian, J.Z., and others.** “Impact of computerized decision support on blood pressure management and control: A randomized controlled trial,” pp. 429-441. (AHRQ grant HS11046).

Computerized decision support (CDS) can improve appropriate antihypertensive medication prescribing, according to this study. A research team randomized 2,027 adult patients with hypertension in 14 primary care practices providing care for many minority patients. The

team randomized patients to either 18 months of their physicians receiving CDS for each hypertensive patient or to usual care without CDS. There was no difference between groups in blood pressure control 18 months later. However, the use of CDS by providers significantly improved guideline-adherent medication prescribing compared with usual care (7 vs. 5 percent), an effect that did not differ by patients' race and ethnicity.

**Lapane, K.L., Waring, M.E., Schneider, K.L., and others.** “A mixed method study of the merits of e-prescribing drug alerts in primary care,” pp. 442-446. (AHRQ grant HS16394).

More than 40 percent of prescribers override drug interaction alerts, most often citing problems with “oversensitive” alerts, according to this study. The authors surveyed 157 clinicians working in 1 of 64 practices using 1 of 6 e-prescribing technologies and held focus groups with 276 prescribers and staff. The primary care prescribers recognized the value of drug alerts for patient safety, but suggested that alerts be more specific and mentioned the need to reduce alert overload. They recommended that the e-prescribing system run drug alerts on an active medication list and allow prescribers to set the threshold for the severity of alerts.

**Wolfstadt, J.I., Gurwitz, J.H., Field, T.S., and others.** “The effect of computerized physician order entry with clinical decision support on the rates of adverse drug events: A systematic review,” pp. 451-458. (AHRQ grants HS10481 and HS1543).

Few studies have measured the effect of computerized physician

order entry (CPOE) with clinical decision support (CDS) on the rates of adverse drug events (ADEs), reveals this systematic review of studies on the topic. Of 543 citations identified, only 10 studies met inclusion criteria. Some studies examined use of CPOE with CDS in the hospital or ambulatory setting, but none examined use in the long-term care setting. CPOE with CDS contributed to a significant decrease in ADEs in half of the studies. Four studies reported a nonsignificant reduction in ADE rates, and one study demonstrated no change in ADE rates. The authors call for more studies to evaluate the efficacy of CPOE with CDS across various clinical settings.

**Sarkar, U., Handley, M.A., Gupta, R., and others.** “Use of an interactive, telephone-based self-management support program to identify adverse events among ambulatory diabetes patients,” pp. 459-465. (AHRQ grant HS14864).

Between-visit surveillance of 111 outpatients with diabetes using an interactive telephone technology and targeted nurse follow-up detected 111 adverse events and 153 potential adverse events, according to this study. Events were most often detected through health information technology-facilitated triggers (59 percent), followed by nurse elicitation (30 percent), and patient callback requests (11 percent). Primary care providers were often unaware of these adverse events, the majority of which were preventable or ameliorable. These findings suggest that this type of surveillance, with appropriate system-level intervention, can improve patient safety for chronic disease patients. ■

## Patients like Web-based health records that enable them to communicate with their providers about care-specific issues

**W**eb-based electronic health records that allow patients to communicate with their providers about laboratory test results, medications, and care plans may help meet patients' needs, according to a new study. Providing patients with online medical record services that were integrated with clinical care was associated with Web site access, use, and patient satisfaction, notes James D. Ralston, M.D., M.P.H., of the Seattle-based Group Health Cooperative. Dr. Ralston and colleagues retrospectively measured the adoption and use of a patient Web site by Group Health patients from September 2002 through December 2005, and randomly surveyed 2,002 of the patients as well.

As of December 2005, one-fourth of all Group Health members had registered and completed an identification verification process to use the MyGroupHealth Web site. Patients most used the site to review medical test results (54 monthly users per 1,000 adult members), medication refills (44 per

1,000), after-visit summaries (32 per 1,000), and patient-provider clinical messaging (31 per 1,000).

Also, 94 percent of those who responded to the survey were satisfied or very satisfied with the MyGroupHealth Web site overall. Patients were satisfied or very satisfied with medication refills (96 percent), patient-provider messaging (93 percent), and medical test results (86 percent). Tight integration of Web services with clinical information systems and patient-provider relationships may be a useful vehicle for meeting the needs of patients, conclude the researchers. The study was supported in part by the Agency for Healthcare Research and Quality (HS14625).

More details are in "Patient Web services integrated with a shared medical record: Patient use and satisfaction," by Dr. Ralston, David Carrell, Ph.D., Robert Reid, M.D., Ph.D., and others, in the November/December 2007 *Journal of the American Medical Informatics Association* 14(6), pp. 798-806. ■

## E-prescribing will not greatly disrupt workflow in outpatient practices if carefully implemented

**A** new study may alleviate concerns that electronic prescribing (e-prescribing) systems, which have been shown to reduce medication errors and adverse drug events, will slow workflow at outpatient practices. The University of Washington researchers concluded that use of desktop or laptop computers for e-prescribing for outpatients would not disrupt prescriber or staff workflow, when carefully implemented. Among 27 prescribers studied, the mean time spent to write an e-prescription was a mere 12 seconds longer than written prescriptions. Since the clinicians ordered an average of nine prescriptions during an observation period of 3.5 hours, this amounted to an additional 3 to 5 minutes of clinicians' time for e-

prescribing over written prescribing.

This small increment in time can be justified if e-prescribing improves the safety and quality of patient care. For example, e-prescribing that allows computer-faxing directly to the retail pharmacy may minimize transcription errors and improve the transmission process, note the researchers.

They used time-motion techniques to compare prescribing times at three ambulatory care sites that used paper-based prescribing, desktop, or laptop e-prescribing. An observer timed 27 prescribers and 42 staff (physicians, nurses, and medical assistants) on tasks performed during the observation period. At the sites with optional e-prescribing, more than 75 percent

of prescription-related events were performed electronically. The authors point out that the e-prescribing systems used in the practices studied had not yet integrated decision support functions such as drug safety alerts and diagnosis-based reminders, which may lead to longer e-prescribing times.

See "The impact of e-prescribing on prescriber and staff time in ambulatory care clinics: A time-motion study," by William Hollingworth, Ph.D., Emily Beth Devine, Pharm.D., M.B.A., Ryan N. Hansen, Pharm.D., and others, in the November/December 2007 *Journal of the American Medical Informatics Association* 14(6), pp. 722-730. ■

## Few medical practices have electronic health records, and clinicians don't make full use of them

Less than one in five office-based medical practices have adopted electronic health records (EHRs). To get a better understanding of the factors that are associated with EHR use and with barriers to use in ambulatory practices, researchers surveyed a random sample of office practices in Massachusetts.

Of the 847 practices that responded to the survey, only 18 percent were using EHRs. The researchers found no significant difference in use between primary-care-only and mixed primary/specialty practices (23 percent versus 25 percent). However, the adoption rate for EHR was significantly lower for specialty-only practices (14 percent). Use of EHRs increased with the size of the practice, with fewer small practices adopting the technology. Even among adopters of the technology, the use of various EHR functions differed widely. The researchers found that 74 percent of the EHR practices used electronic visit notes, followed by online lab test results and medication lists (both 64 percent). In contrast, radiology order entry was available via the EHRs of

40 percent of the practices, but used by more than half the physicians in such practices.

The majority of practices without an EHR (52 percent) had no plans to implement one in the foreseeable future, with solo practices being the least likely to implement the technology (70 percent had no plans). Lack of adequate funding was cited as a barrier to implementation by 42 percent of the non-EHR practices, with other barriers ranging from lack of physician support for change (28 percent) to inability to find a system that met the practices' needs (20 percent). The study was funded by a grant from the Agency for Healthcare Research and Quality (HS15397).

For more information, see "Electronic health records: which practices have them, and how are clinicians using them?" by Dr. Simon, Madeline L. McCarthy, M.Sc., of Brigham and Women's Hospital, Rainu Kaushal, M.D., M.P.H., of Cornell University's Weill Medical College in New York City, and others in the February 2008 issue of *Journal of Evaluation in Clinical Practice* 14(1), pp. 43-47. ■

## Preventive Care

### Media coverage has boosted awareness of colorectal cancer screening, but messages need to be more targeted

The surge in media attention heralded by the Centers for Disease Control and Prevention's (CDC) Screen for Life campaign in 1999 has boosted public awareness about certain aspects of colorectal cancer (CRC) screening and dispelled some misconceptions about who is at risk. However, media coverage has been less effective in reaching certain segments of society, notably blacks and people with less education. It has also been less effective in communicating the important role that polyps play as potential precursors to cancer and the fact that early CRC has no

symptoms. Those are the conclusions of a study led by Paul C. Schroy III, M.D., M.P.H., of Boston University School of Medicine, and supported by the Agency for Healthcare Research and Quality (HS13912).

Dr. Schroy and fellow researchers administered a 12-item true/false questionnaire to 356 adults aged 50 to 75 years from 2 urban primary care sites. Most of those surveyed were aware that both men and women are at risk (84 percent of respondents), risk increases after age 50 (71 percent), all racial and ethnic groups are affected (88 percent), the goal of

screening is to find polyps and cancer before the onset of symptoms (82 percent), early-stage cancers may be curable with surgery (72 percent), screening should begin at age 50 (73 percent), and that CRC can occur in the absence of a family history (67 percent).

Fewer patients were aware that both CRC (58 percent) and polyps (49 percent) may be asymptomatic, most CRC arises from polyps (52 percent), removing polyps can prevent CRC (46 percent), and CRC is the most common cause of cancer death among nonsmokers

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## Colorectal cancer screening

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(26 percent). Scores were significantly higher for whites than blacks and for those with more than a high school education.

These findings underscore the need for more effective, targeted media campaigns capable of reaching at-risk less educated and minority groups. Educational campaigns should also focus on several key messages that have been missed.

See “Has the surge in media attention increased public awareness about colorectal cancer and screening?” by Dr. Schroy, Julie T. Glick, M.P.H., Patricia A. Robinson, M.D., and others, in the February 2008 *Journal of Community Health* 33(1), pp. 1-9. ■

## Lack of physician discussion and patient refusal are two main reasons patients aren't screened for colon cancer

Even though 75 percent of colorectal cancer (CRC) cases occur in people who do not have risk factors, less than half of Americans age 50 and older have been screened as recommended. A new study of busy primary care rural doctors uncovered several reasons why many patients remain unscreened for CRC. Researchers at the University of Iowa asked each of 15 randomly chosen Iowa family physicians to verbally describe their reasons for screening or not screening 6 randomly chosen patients aged 55 to 80 years from their practice. The researchers ascertained physicians' reasons for screening a total of 43 patients and their reasons for not screening 40 unscreened patients. Recordings were transcribed verbatim and the data was analyzed using qualitative methods.

The two main reasons patients were not up to date on CRC screening were lack of physician discussion (50 percent) and patient refusal (43 percent). The reasons doctors did not discuss screening included lack of opportunity, belief that the patient could not afford screening, distraction by the patient's other health problems/life issues, simply forgetting to bring

up screening, and expecting the patient to refuse screening.

Patients typically declined CRC screening due to cost, lack of interest, autonomy, other life issues that distracted from screening, fear of screening, and lack of symptoms. Patients who were up to date on their CRC screening received diagnostic testing (for previous colon pathology or symptoms (56 percent) instead of asymptomatic screening (44 percent). Strategies to improve CRC screening might include patient and physician education about the rationale for screening (it should be done before symptoms develop), universal coverage for health maintenance exams, and development of effective patient tracking and reminder systems. The study was supported in part by the Agency for Healthcare Research and Quality (HS13581).

See “Why hasn't this patient been screened for colon cancer? An Iowa research network study,” by Barcey T. Levy, Ph.D., M.D., Terri Nordin, M.D., Suzanne Sinift, M.A., and others, in the September-October 2007 *Journal of the American Board of Family Medicine* 20, pp. 458-468. ■

## Chronic Conditions

### Family medicine physicians suggest ways to improve management of chronic pain in primary care patients

Primary care doctors are typically the ones who see patients suffering from chronic non-malignant pain. Concerns about patient opioid abuse and the threat of criminal charges against physicians for inappropriate opioid prescribing make pain management difficult for

these doctors. In addition, many of them don't feel adequately trained to treat chronic non-malignant pain, note Linda Garufi Clark, M.D., and Carole C. Upshur, Ed.D., of the University of Massachusetts Medical School. They elicited comments from 14 family medicine physicians from 6 practice sites via

group discussions and written feedback. The physicians suggested several changes they thought would benefit them and patients coping with non-malignant chronic pain.

They cited a need for a physician practice guideline tool kit. Some suggested that the kit include a

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## Chronic pain

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screeners for potential addiction problems; model opioid contracts; analgesic flow sheets; treatment guidelines; and contact information for pain clinics, behavioral health services, and other local resources.

Many physicians also called for redesign of the opioid refill process, which currently requires patients to pick up a new refill prescription from their doctor each month. The system caused much anxiety and conflict for both

patients and physicians, who often felt chased and hounded by their patients. Physicians felt that patients suffering with pain would most benefit from improved access to medication refills, reduced barriers to communication with the primary care doctor, and better access to affordable and culturally sensitive treatments other than medication (for example, physical therapy, supervised exercise, massage, and chiropractors). Physicians believed they would benefit from the support of a care

manager to manage prescription refills and patient communication. The study was supported by the Agency for Healthcare Research and Quality (HS13455).

See “Family medicine physicians’ views of how to improve chronic pain management,” by Drs. Clark and Upshur, in the September 2007 *Journal of the American Board of Family Medicine* 20(5), pp. 479-482. ■

## Direct-to-consumer advertising of antidepressants aims to increase pool of users

Does direct-to-consumer advertising (DTCA) for antidepressant medications educate consumers regarding the most appropriate drug for those already under treatment? Or, is its goal to increase the pool of consumers taking antidepressants by prompting new people to try them?

Two research economists, Chad Meyerhoefer, Ph.D., and Samuel Zuvekas, Ph.D., at the Agency for Healthcare Research and Quality (AHRQ), addressed these questions in a recent paper. They conclude that DTCA increases the likelihood that an individual will initiate antidepressant use, but has minimal effect on drug compliance at higher price levels. The researchers indicate that since most people with depression are untreated, bringing more of them into treatment might benefit both the individual and the public.

Using data from the 1996–2003 AHRQ Medical Expenditure Panel Survey (MEPS), the researchers investigated the impact of DTCA and consumer cost-sharing (out-of-pocket costs) on the demand curve for antidepressants. They constructed an econometric model using the number of newer-generation antidepressant prescriptions filled by individuals in a given calendar quarter. Newer-generation antidepressants included citalopram, escitalopram, fluoxetine, fluvoxamine, paroxetine, sertraline, bupropion, mirtazapine, nefazodone, trazodone, and

venlafaxine. This model incorporated the MEPS data on antidepressant use and information on quarterly spending on DTCA (both national and local) during the study period.

The number of antidepressant users increased steadily between 1996 and 2003, while the average number of prescriptions filled per user increased only slightly. Also, refills were influenced by advertising only at very low or no out-of-pocket costs. The researchers conclude that their findings tell more about the pharmaceutical companies’ marketing strategies than the usefulness of DTCA for promoting adherence to treatment. They assert that the effect of DTCA during the period studied was consistent with a mass marketing approach that emphasized product characteristics that appealed to everyone, and that the role of matching patients to appropriate medications rested almost entirely with physicians.

More details are in “The shape of demand: What does it tell us about direct-to-consumer marketing of antidepressants?” by Drs. Meyerhoefer and Zuvekas, in the January 2008 *Berkeley Electronic Journal of Economic Analysis and Policy* 8(2) available at [www.bepress.com/bejeap/vol8/iss2/art4](http://www.bepress.com/bejeap/vol8/iss2/art4). Reprints (AHRQ publication no. 08-R062) are available from AHRQ.\* ■

## Individuals with more depressive symptoms are more likely to benefit from training in chronic illness self-management

Individuals suffering from chronic illnesses such as diabetes and asthma must manage their condition through behaviors ranging from control of diet to monitoring certain physiological signs such as blood-sugar levels or breathing capacity. Those suffering from more depressive symptoms are more likely to feel more effective in managing their illness after self-management training than less depressed individuals, according to a new study. A University of California, Davis School of Medicine team led by Anthony Jerant, M.D., examined the impact of a training program to enhance patient self-efficacy for self-managing chronic illness.

They compared self-efficacy reports 6 weeks after the training with feelings of self-efficacy prior

to the training among 415 adults 40 years and older from one primary care network. The patients suffered from arthritis, asthma, chronic obstructive pulmonary disease, congestive heart failure, depression, and/or diabetes mellitus, as well as impairment in one or more basic activities and/or a score of 4 or more on the 10-item Center for Epidemiologic Studies Depression Scale (CES-D).

Self-management training focused on three core tasks (medical, role, and emotional management) and six fundamental chronic disease self-management skills (problem solving, decisionmaking, resource utilization, formation of patient-provider partnership, action planning, and self-tailoring). Participants were taught to use behavior change “action plans” and

were given extensive opportunities to practice self-management skills and receive feedback on their performance. The training program led to significant increases in self-efficacy in the one-fourth of individuals with the highest depressive symptom burden (score of 15-28 on the CES-D), and only when delivered via in-home visits (not by telephone). The study was supported in part by the Agency for Healthcare Research and Quality (HS13603).

See “Depressive symptoms moderated the effect of chronic illness self-management training on self-efficacy,” by Dr. Jerant, Richard Kravitz, M.D., M.S.P.H., Monique Moore-Hill, M.A., and Peter Franks, M.D., in the May 2008 *Medical Care* 46(5), pp. 523-531. ■

## Low-income adults with physical disabilities face transportation, accessibility, and privacy barriers

The perils of transportation, accessibility, care interruptions, and privacy affect the health of individuals with physical disabilities living in homeless shelters, nursing homes, and private residences in the Washington, D.C., area, a new study finds. Pei-Shu Ho, Ph.D., a senior study director at Westat, Inc., and colleagues conducted 2-hour focus groups with 28 working-age adults with physical disabilities living in a homeless shelter (13 people), nursing home (7), or private residence (8) in the D.C. area. Half of the participants had spinal cord injury and paralysis, and all of them relied on Medicaid or a local public program for health insurance.

For individuals living in shelters and private residences, transportation was a common barrier to obtaining medical services. Both public and private transportation services were perceived unreliable, or inaccessible (despite Title II of the Americans with Disabilities Act requiring accessibility). Participants living in the shelters or nursing homes voiced a

preference for having a regular physician who was familiar with their medical conditions, so that they did not have to explain their health histories at every appointment. Participants also expressed a desire for access to dental care, which is not covered under the D.C. Medicaid plan.

In terms of physical living space, participants who lived at home or in a shelter faced the most accessibility issues. For example, individuals with physical disabilities who lived at shelters that did not offer wheelchair-accessible bathrooms reported having poor hygiene. Also, having to navigate flights of stairs in a wheelchair at private residences put undue stress on those who depend on wheelchairs for mobility.

Shelter and nursing home residents faced privacy and security concerns daily, as neither location offered much of either. For instance, shelter residents with pressure ulcers could not tend to their wounds in a secluded location. Nursing home and shelter residents

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## Adults with disabilities

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typically had no place to store valuables or medication. This study was funded in part by the Agency for Healthcare Research and Quality (HS13977).

See “Health and housing among low-income adults with physical disabilities,” by Dr. Ho, Thilo Kroll, Ph.D., Matthew Kehn, B.A., and others in the November 2007 *Journal of Health Care for the Poor and Underserved* 18(4), pp. 902-915. ■

## Primary Care Research

### Physicians should empathize with patients who are worried that their symptoms may indicate something serious

**P**atients who visit their doctor for common symptoms sometimes express worry that the symptoms could indicate something serious. Patients are more satisfied with their care when doctors empathize with their concerns. Although doctors commonly reassure these patients, they less often express empathy, acknowledge uncertainty about a diagnosis, and explore emotions, reveals a new study. Ronald M. Epstein, M.D., of the University of Rochester, and colleagues surveyed 50 current patients and covertly audiorecorded 2 standardized patient (SP) visits for each of 100 primary care doctors from a large managed care organization. The SPs are actors trained to pose as patients with particular symptoms.

The SPs in 613 SP prompts expressed worry about “something

serious” in 2 scenarios: chest pain characteristic of gastroesophageal reflux disease (GERD) or poorly characterized chest pain with medically unexplained symptoms (MUS). In both scenarios, if physicians expressed empathy, it was most likely to occur at the beginning of the conversation, and tended to facilitate further questions about the patient’s condition. In contrast, physician action, such as proceeding with the physical exam or prescribing a medication tended to close down the discussion, leading to a change of topic.

Overall, physicians responded to the patient’s worry that they may have “something serious” with acknowledgment of their concerns (40 percent), additional clinical questions (17 percent), medical explanation without reassurance (11 percent),

reassurance with or without medical explanation (10 percent), and empathy (6 percent). Empathy was significantly associated with higher patient ratings of interpersonal aspects of care, but only when the standardized patients portrayed the more complex MUS scenarios – situations that tend to be associated with uncertainty and higher patient anxiety. The study was supported by the Agency for Healthcare Research and Quality (HS10610).

More details are in “‘Could this be something serious?’ Reassurance, uncertainty, and empathy in response to patients’ expressions of worry,” by Dr. Epstein, Taj Hadee, M.D., Jennifer Carroll, M.D., M.P.H., and others, in the December 2007 *Journal of General Internal Medicine* 22(12), pp. 1731-1739. ■

### Changing one word in a question from the doctor can dramatically reduce patients’ unmet concerns in primary care

**A**bout 40 percent of patients bring more than one concern to primary acute care visits. Yet, often these concerns are left unaddressed, leading to worsening medical problems, patient anxiety, and costly additional visits. After a patient mentions the chief concern for their visit, doctors should simply ask, “Is there something else you want to address in the visit today?” In a new study, this simple question reduced patients’ unmet concerns by 78 percent.

Textbooks on medical interviewing recommend that doctors ask, “Is there anything else you want to address in the visit today?” Yet, use of this question in the current study did not reduce the incidence of patients’ unmet concerns compared with a control group. The negative polarity of the single word ‘any’ with its subtle communication of an expected ‘no’ response, tends to ruin the opportunity to raise unmet concerns that the

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## Concerns in primary care

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question might otherwise create, explains John Heritage, Ph.D., of the University of California, Los Angeles.

He and coinvestigators asked 20 physicians from 20 community-based family practices to conduct 4 patient visits in normal fashion (control visits). The researchers then randomly assigned the doctors to ask one or the other question in seven additional visits after they watched an educational video on the topic. Over one-third (37 percent) of patients with more than one concern in the control group had unmet concerns that were not trivial. Yet, less than 5 percent of these patients were asked about additional concerns. Patients

with more than one previsit concern gave more affirmative responses to the “something” than the “anything” question (90 vs. 53 percent). The simple “something” question eliminated more than three-fourths of all cases of unmet concerns. In contrast, unmet concerns were similar for the control and the “anything” question group. Visit length was not affected by asking either question. The study was supported by the Agency for Healthcare Research and Quality (HS13343).

See “Reducing patients’ unmet concerns in primary care: The difference one word can make,” by Dr Heritage, Jeffrey D. Robinson, Ph.D., Marc N. Elliott, Ph.D., and others, in the October 2007 *Journal of General Internal Medicine* 22(10), pp. 1429-1433. ■

## Studies examine effectiveness and cost-effectiveness of depression quality improvement programs in primary care

Negative events such as financial strain, job loss, relationship difficulties, and illness can precipitate depression. A depression quality improvement (QI) program, which boosts primary care resources for psychotherapy (QI-Therapy), can reduce the occurrence of such negative life events, further protecting patients from emotional distress, finds a new study. Psychotherapy may help patients improve the quality of social relationships and interpersonal skills that may contribute to some of these problems, notes Kenneth B. Wells, M.D., M.P.H., of the RAND Corporation. A second study of the QI-Therapy and QI-Meds program reveals it to be cost-effective for both primary care patients with minor depression and depressive disorder. Both studies were supported by the Agency for Healthcare Research and Quality (HS08349) and are briefly described here.

**Sherbourne, C.D., Edelen, M.O., Zhou, A., and others. (2008, January). “How a therapy-based quality improvement intervention**

**for depression affected life events and psychological well-being over time.” *Medical Care* 46(1), pp. 78-84.**

This study compared the impact of the 6-12 month QI-Therapy program with usual care among patients diagnosed with depression at 46 primary care clinics in 6 managed care organizations. The patients were randomized to usual care or one of two QI interventions (medication or psychotherapy). This study focused on 1,300 patients in the QI-Therapy groups at any of 4 points: baseline or followup year 1, 5, or 9. The researchers examined the impact of the QI-Therapy program on negative life events at 5-year followup, and modeled the relationship between QI program implementation, life events, and mental health over a 9-year period.

The model showed that QI-Therapy not only improved patients’ psychological well-being at 1 year, but it also reduced negative life events at year 5. Moreover, better mental health and fewer negative life events at year 5 were associated with improved psychological well-being at year 9. The QI-Therapy program provided

resources for patients and their providers for depression treatments, including resources to facilitate access to therapy. This approach set up a chain of events that included improved mental health that endured over 9 years, and had somewhat unexpected long-term and independent effects on reducing the occurrence of negative life events.

These preliminary findings underscore the potential usefulness of focusing on life circumstances unique to the individual when explaining the course of depression. One might speculate that persons with less depression have fewer arguments or losses of relationships or job problems. Also, certain benefits of therapy—improved coping, learning to avoid or manage difficult situations, or making structural changes in one’s life (such as developing new relationships or moving to a new neighborhood)—may be protective in terms of negative life events.

**Wells, K.B., Schoenbaum, M., Duan, N., and others. (2007, October). “Cost-effectiveness of**

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## Depression quality improvement programs

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**quality improvement programs for patients with subthreshold depression or depressive disorder.” *Psychiatric Services* 58(10), pp. 1269-1278.**

A QI program that improves access to psychotherapy (QI-Therapy) and antidepressant medication (QI-Meds) is cost-effective for managing care of primary care patients who suffer from minor (subthreshold) depression or depressive disorder, concludes this study. The cost of the QI programs was \$2,028 per quality-adjusted life year (QALY)

for those with subthreshold depression and \$53,716 per QALY for those with depressive disorder. This is similar to the cost-effectiveness of many widely used medical therapies, note the authors.

They examined the cost-effectiveness of managing care of 746 primary care patients with 12-month depressive disorder and 502 with current depressive symptoms but no disorder (subthreshold depression). The patients were randomly assigned to enhanced usual care or to QI-Meds or QI-Therapy for 6 to 12 months. The QI programs emphasized symptom monitoring and adjusting treatment as symptoms changed, rather than necessarily routing patients with

minor depression directly to use of antidepressants, for example.

The researchers calculated that the costs of the intervention per se—as distinct from intervention effects on use of services and medication—were \$86 per patient in the QI-Meds group and \$79 per patient in the QI-Therapy group. These costs did not vary much by degree of depression. The researchers conclude that implementing QI programs, which emphasize adjusting treatment decisions to changing patient needs over time, is cost-effective relative to usual care among primary care patients with minor depression and depressive disorder. ■

## Pharmaceutical Research

### Long-term use of antibiotics appears safe to treat a large-scale exposure to anthrax in a bioterrorism attack

The intentional release of anthrax bacteria in a bioterrorism attack would require large-scale use of antibiotics to prevent anthrax infection in the affected communities. The U.S. Centers for Disease Control and the Infectious Diseases Society of America recommend 60 days of the antibiotics ciprofloxacin, doxycycline, or amoxicillin to prevent post-exposure anthrax infection. Most antibiotics are typically taken up to 14 days for acute infections, and there are concerns about the safety of taking these antibiotics for 60 days. However, a new study eases those concerns. It found limited evidence of cumulative dose-related adverse events (ADEs) from taking any of these antibiotics for more than 28 days versus taking them for 28 days or less.

Researchers at the University of Pennsylvania Center for Education and Research on Therapeutics and their colleagues estimated risks of ADEs associated with taking these three antibiotics for more than 28 days by examining office visit, hospital admission, and prescription data from an electronic medical record database and two insurance claims databases from January 1999 until July 2001. They were looking in particular for hospitalization for the following serious

ADEs: anaphylactic shock, phototoxicity, liver toxicity, kidney toxicity, seizures, ventricular arrhythmia, or infectious colitis.

A total of 33,183 amoxicillin, 15,250 ciprofloxacin, and 50,171 doxycycline prescriptions continued for 30 or more days. Long-term doxycycline use was associated with 0.9 ADEs per 100,000 antibiotic patient-days in one database only. Long-term amoxicillin use resulted in 1.2 ADEs per 100,000 person-days in only one database. Ciprofloxacin showed the highest risk of ADEs per 100,000 person-days of antibiotic use (3.5 and 5.7 ADEs per 100,000 person-days, found in two databases), but the risk did not appear to increase after 28 days of taking the antibiotic. The study was supported in part by the Agency for Healthcare Research and Quality (HS10399).

More details are in “Adverse events associated with prolonged antibiotic use,” by Sharon B. Meropol, M.D., M.S.C.E., K. Arnold Chan, M.D., Sc.D., Zhen Chen, Ph.D., and others, in the May 2008 *Pharmacoepidemiology and Drug Safety*, 17(5), pp. 523-532. ■

## An antimicrobial stewardship program improves appropriate antimicrobial use among hospitalized children

Half of all antimicrobial therapy prescribed for hospitalized patients is inappropriate, which can lead to longer hospital stays, higher medical costs, and higher mortality rates. Use of an Antimicrobial Stewardship Program (ASP), in which an infectious disease consultant controls use of antimicrobials (antibiotics, antifungals, and antivirals) by hospital staff, can improve the appropriate use of antimicrobials concludes a new study. A team from Children's Hospital of Philadelphia retrospectively reviewed charts of children hospitalized at the hospital for whom clinicians requested antimicrobials. They examined the clinicians' requests and the interventions made by the ASP, as well as children's outcomes.

The ASP oversaw the use of targeted antimicrobial agents

ranging from acyclovir and amikacin to broad-spectrum cephalosporins, ribavirin, and vancomycin. Physicians were prompted by the computerized physician order entry system to contact the ASP for each targeted agent. During the 4-month study period, clinicians placed 652 calls to the ASP. The most frequently requested targeted agents were vancomycin (30 percent), cefotaxime (11 percent), ceftazidime (11 percent), and ampicillin/sulbactam (9 percent) for problems ranging from suspected bloodstream infection to community-acquired pneumonia. Nearly half (45 percent) of the calls required an intervention by the ASP. Specifically, the ASP intervened to resolve drug-bug mismatches (antibiotic was not providing adequate coverage or too broad coverage for the susceptibility pattern of the

identified pathogen), to minimize the unnecessary use of broad-spectrum antibiotics, to reduce duplicate therapy, to reduce duration of therapy, and to improve dosing. It was also often used as a resource by clinicians seeking information on appropriate antimicrobial use. The ASP made recommendations that ultimately avoided potentially unsafe patient conditions. The study was supported in part by the Agency for Healthcare Research and Quality (HS10399).

See "Evaluation of an antimicrobial stewardship program at a pediatric teaching hospital," by Talene A. Metjian, Pharm.D., Priya A. Prasad, M.P.H., Amy Kogon, M.D., and others, in the February 2008 *Pediatric Infectious Disease Journal* 27(2), pp. 106-111. ■

## Education campaign reduces antibiotic prescribing by emergency department physicians for upper respiratory tract infections

Despite the fact that antibiotics have little effect on chest colds and bronchitis, emergency department (ED) physicians still often prescribe them. Researchers at the University of Pennsylvania School of Medicine Center for Education and Research on Therapeutics, along with colleagues from the Philadelphia VA Medical Center and the University of California, San Francisco, created an education campaign for clinicians and patients and evaluated its effectiveness in reducing antibiotic prescribing for upper respiratory tract infections. Similar education campaigns carried out in primary care settings have reduced antibiotic overuse for respiratory infections an average of 12 to 26 percent.

Clinicians at 16 Veterans Administration (VA) and non-VA hospitals received 4-hour education sessions, journal articles, and a slide presentation on appropriate use of antibiotics for respiratory tract infections. To

educate patients on the perils of overusing antibiotics, the researchers provided brochures, posters in treatment and waiting rooms, and computer kiosks with tailored audiovisual educational modules in English and Spanish.

During year one, about half of ED patients with acute respiratory infections and bronchitis were prescribed antibiotics in control sites (47 percent) and intervention sites (52 percent). However, antibiotic prescriptions declined an average of 10 percent at the eight intervention sites between year one and two but did not decline at control sites. For four intervention sites, the decrease was between 10 and 20 percent. This reduced antibiotic prescribing did not increase return visits to the ED or lessen patient satisfaction.

The researchers speculate that patients in the ED may be more prone to be treated with antibiotics

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## Antibiotic prescribing

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because they often lack access to primary care services. This study was funded in part by the Agency for Healthcare Research and Quality (HS13915).

See “Cluster-randomized trial to improve antibiotic use for adults with acute respiratory infections treated

in emergency departments,” by Joshua P. Metlay, M.D., Ph.D., Carlos A. Camargo, Jr., M.D., Dr.P.H., Thomas MacKenzie, M.D., M.S.P.H., and others in the September 2007 *Annals of Emergency Medicine* 50(3), pp. 221-230. ■

## Access to Care

### Breast screenings are lower in counties with high rates of uninsured people

Women, regardless of income, who live in counties that have high rates of uninsured people are less likely to receive clinical breast exams or mammograms, a new study finds. Mario Schootman, Ph.D., of Washington University in Missouri, and colleagues used data collected in the 2000 Behavior Risk Factor Surveillance System and the 1999-2001 Surveillance, Epidemiology, and End Results program to determine if screening for breast cancer varied by the proportion of uninsured in the community.

As community residents who were uninsured increased by 5 percent, women were 5 percent less

likely to be screened. Less screening also seemed to lead to lower diagnosis of breast cancer in its early stages. For example, the rate of early-stage (less than 2 cm diameter) tumors declined with the increasing proportion of uninsured in a county, regardless of poverty rate. Surprisingly, breast cancer screening steeply declined for women with incomes from \$25,000 to \$75,000 living in counties with high rates of uninsured people. This could be due to their difficulty in finding care due to unavailable services or because their incomes preclude them from obtaining public health care. Their findings support the assertion that the health of all residents may be affected

when there are high rates of uninsured people in a community.

Race and ethnicity also seemed to be factors in screening rates. Black women and Hispanic women had higher screening rates than white women when they lived in communities where just 9 to 19 percent of the community was uninsured. This study was funded in part by the Agency for Healthcare Research and Quality (HS14095).

See “Breast cancer screening and incidence in communities with a high proportion of uninsured,” by Dr. Schootman, Mark S. Walker, Ph.D., Donna B. Jeffe, Ph.D., and others in the November 2007 *American Journal of Preventive Medicine* 33(5), pp. 379-386. ■

### University’s open season shows embrace of preferred provider organizations but no backlash against HMOs

Since the late 1990s, nationwide studies indicate a consumer trend of selecting preferred provider organizations (PPOs) over fee-for-service (FFS) plans, point-of-service (POS) plans, and health maintenance organizations (HMOs). A new study of the University of Michigan employees’ health insurance program shows this trend continues, however, without the purported backlash against HMOs. Kyle L. Grazier, Ph.D., and colleagues at the University of Michigan studied 32,183 employees’ health insurance selections in 2005, the first year 2 existing insurers offered PPOs. These plans give their members financial incentives, such as low co-payments, to use the plan’s clinicians.

Before 2005, the university offered employees six health plans. Three plans were HMOs, which offer employees low costs but limit their access to care by having their primary care physician serve as a gatekeeper for services. Two were FFS plans, which give employees flexibility in choosing their providers and services in exchange for high out-of-pocket expenses, paperwork, and high premiums. One was a POS plan, offering similar services to an HMO but allowing employees to seek care outside of the network.

When given the opportunity, 10 percent of the employees switched to the two PPOs, ranking them

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## Preferred provider organizations

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fourth and fifth among the eight plans offered. Those who chose PPOs typically were previously enrolled in FFS and POS plans, which were more expensive than the other plans offered in 2004 and 2005. The researchers suggest that employees were lured to the PPOs not solely by the plans' prices, but because of their desire for larger provider networks and comprehensive but relatively unmanaged coverage.

The availability of the two PPOs did not cause an exodus in enrollment from the three HMOs. Employees who had not previously enrolled in an HMO found the

new PPOs attractive; however, those already enrolled in an HMO did not. The researchers suggest that the national trend against strong forms of managed care could be a regional phenomenon or may be contextual, occurring when an employer offers only few plans or when an HMO is very restrictive. This study was funded in part by the Agency for Healthcare Research and Quality (HS15591).

See "Insurers' competitive strategy and enrollment in newly offered preferred provider organizations," by Richard A. Hirth, Ph.D., Dr. Grazier, Michael E. Chernew, Ph.D., and Edward N. Okeke, M.B.B.S., M.P.H., in the Winter 2007 *Inquiry* 44, pp. 400-411. ■

## HIV/AIDS Research

### Studies reveal wide use of drugs and alcohol and underuse of substance abuse treatment by those with HIV disease

**A**mong patients with HIV disease, alcohol and drug use is linked to lower adherence to antiretroviral drug regimens and worse HIV-related outcomes. Nevertheless, use of drugs and alcohol is prevalent among individuals living with HIV disease, yet few receive substance abuse treatment, according to two studies supported in part by the Agency for Healthcare Research and Quality (Contract 290-01-0012). The two studies are described here.

**Chander, G., Josephs, J., Fleishman, J., and others. (2008, April). "Alcohol use among HIV-infected persons in care: Results of a multi-site survey." *HIV Medicine* 9(4), pp.196-202.**

In this study, the researchers interviewed 951 patients at 14 HIV primary care sites in the United States about their drinking behavior. They defined hazardous drinking as more than 14 drinks per week or 5 or more drinks on 1 occasion for men and more than 7 drinks per week or 4 or more drinks per occasion for women. Anything

less was considered moderate consumption. The authors examined the correlates of any use of alcohol and of hazardous alcohol use.

Overall, 40 percent of those interviewed reported some alcohol use in the 4 weeks prior to the interview; 11 percent reported hazardous use and 29 percent reported moderate drinking levels. After adjusting for other factors, male sex increased the odds of any alcohol use by 52 percent, a college education nearly doubled the odds compared with less than high school education, and current illicit drug use nearly tripled the odds.

A lowest CD4 cell count of 500 cells/uL or more (indicating better immune system function) and current illicit drug use nearly tripled the odds of hazardous alcohol use. In contrast, patients who made more than seven primary care visits had lower odds of hazardous alcohol use.

**Korthuis, P.T., Josephs, J.S., Fleishman, J.A., and others. (2008, March). "Substance abuse treatment in human**

**immunodeficiency virus: The role of patient-provider discussions." *Journal of Substance Abuse Treatment*, available online at [www.sciencedirect.com/science/journal/07405472](http://www.sciencedirect.com/science/journal/07405472).**

The researchers surveyed 951 HIV-infected adults (predominantly minority men) receiving care at 14 HIV Research Network primary care sites about their drug and alcohol use, substance abuse treatment, and provider discussions about substance use issues. Overall, 71 percent of patients reported current or former illicit drug use, and 11 percent of illicit drug users reported hazardous or binge drinking (HBD).

Less than half (46 percent) of current or former substance users reported discussing substance use issues with their HIV care providers. Yet provider discussions of substance use issues doubled the odds that individuals would receive substance abuse treatment. Receipt of transportation assistance and black race also doubled the odds of receiving substance abuse treatment.

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## Alcohol and drug use

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Patients who reported current drug use, more severe drug use, and HBD were more likely to report discussing substance use issues with their provider, as were younger and unemployed patients and those

who made six or seven visits to their primary care provider in the previous 6 months. Although blacks reported substance abuse no more often than whites (72 vs. 75 percent), blacks were 72 percent more likely to have discussions with their provider about substance

use. This finding is similar to profiling of minority patients for substance use discussions documented in emergency room visits. Reprints of both studies (AHRQ publication nos. 08-R067 and 08-R066) are available from AHRQ.\* ■

## Nearly one in five patients with HIV infection continues to be treated by drugs to which their HIV has tested resistant

Testing for HIV resistance to antiretroviral therapy (genotype resistance testing) has become part of the standard of care for patients with HIV infection. Yet, 18 percent of patients, whose doctors found HIV resistance to the antiretroviral medication they were taking, continued to be treated with that medication. Continuing this medication was associated with significantly weakened reduction in the patient's HIV viral load. Thus, the progression of HIV disease was not being slowed as much, indicating reduced medication effectiveness.

The investigators looked at the medical records, including lab test results, of patients with HIV infection seen at 10 HIV specialty clinics in 7 U.S. cities since 1993. They analyzed the frequency with which patients were prescribed any non-nucleoside reverse transcriptase inhibitor after identification of the K103N mutation in reverse transcriptase and the frequency with which they were prescribed nelfinavir after identification of the D30N mutation in HIV protease. They also examined the short-term impact of this action on HIV viral load and CD4 T-cell count (indicators of disease progression).

Among the 441 patients demonstrating either mutation, 18 percent who were taking the resistant antiretroviral at the time of the test were continued on the medication for more than 6 months later. The doctors said that in one third of cases, the continued prescribing of the resistant medication was an erroneous oversight. Patients who stopped the resistant antiretroviral within 6 months of the test fared better. They had greater decreases in viral load and a greater likelihood of achieving an undetectable viral load 9 months later. Patients who discontinued the medications also had an increase in CD4 T-cell count (indicating improved immune system functioning) compared with those who continued use, but the difference was not significant. The study was supported in part by the Agency for Healthcare Research and Quality (HS11800).

More details are in "HIV genotypic resistance testing to optimize antiretroviral prescribing: Is there room for improvement?" by Jonathan Uy, M.D., John T. Brooks, M.D., Rose Baker, M.S., and others, in *Antiviral Therapy* 12, pp. 957-962, 2007. ■

## Agency News and Notes

### New AHRQ report examines health care efficiency measurement

The Agency for Healthcare Research and Quality (AHRQ) has released a new report showing wide variation in how payers, providers, and others define and evaluate the efficiency with which hospitals and physicians provide medical care. With no uniform agreement on the definition of efficiency, the results

of these analyses depend largely on the perspective of the evaluator. For example, when health plans evaluate physicians or hospitals they often use measures such as the cost per episode or discharge; employers may use cost per covered life when evaluating health plans; and hospitals analyzing physician staff practice may use the number

of physician hours employed in patient care or number of patients within a specific time period.

The report also shows that efficiency measures and methods published in peer-reviewed journals have not been incorporated into measures currently used for public reporting or pay for performance.

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## Health care efficiency measurement

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In addition, the report found that efficiency measures, peer-reviewed or elsewhere, generally have not been validated and evaluated for

such uses. Moreover, almost none include a quality dimension.

The report was based on a research review led by Elizabeth A. McGlynn, Ph.D., at the AHRQ-supported Southern California-RAND Corporation Evidence-based Practice Center in Santa

Monica, California. Copies of *Identifying, Categorizing, and Evaluating Health Care Efficiency Measures* (AHRQ publication no. 08-0030) are available online at [www.ahrq.gov/qual/efficiency](http://www.ahrq.gov/qual/efficiency) or from AHRQ.\* ■

## Asthma rates soaring among adult hospital patients

Hospitals are finding that increasing numbers of adults who are admitted to the hospital for other conditions also have asthma, according to a new report from the Agency for Healthcare Research and Quality (AHRQ). Asthma is a chronic disease that causes wheezing, coughing, chest tightness, and difficulty breathing. Causes of the disease are unclear, but the number of Americans diagnosed with asthma is rising. Between 2000 and 2005, the number of adults who were hospitalized and found to have asthma as a secondary condition increased from about 753,800 to 1,609,200—an increase of 113 percent.

During the same period, hospitalizations specifically for treatment of asthma increased only 18 percent, rising from 247,200 to 290,600. AHRQ also found that in 2005:

- Roughly 123,000 adult patients with pneumonia also had asthma, as did 62,000 treated for

congestive heart failure, 59,000 for chest pain, 54,000 for osteoarthritis, and 53,500 for depression or bipolar disorder.

- Adults from poor communities were 63 percent more likely to be hospitalized for treatment of asthma than those from wealthier communities.

For more information, see *Hospital Stays Related to Asthma for Adults, 2005*, Statistical Brief #54, at [www.hcup-us.ahrq.gov/reports/statbriefs/sb54.pdf](http://www.hcup-us.ahrq.gov/reports/statbriefs/sb54.pdf). The report uses statistics from the 2005 Nationwide Inpatient Sample, a database of hospital inpatient stays that is nationally representative of inpatient stays in all short-term, non-Federal hospitals. The data are drawn from hospitals that comprise 90 percent of all discharges in the United States and include all patients, regardless of insurance type, as well as the uninsured. ■

## Treatment costs nearly double for hay fever and other allergies

Americans spent \$11 billion on doctors' bills, prescription drugs, and other medical care to relieve allergy symptoms such as itchy or watery eyes, stuffy noses, wheezing, coughing, and headaches in 2005, according to data from the Agency for Healthcare Research and Quality (AHRQ). The cost is nearly double the \$6 billion spent in 2000.

AHRQ's analysis looked at spending on allergies, such as hay fever and other allergies caused by plant pollens, dust, or dander such

as animal hair. AHRQ's data indicated that:

- In 2005, about 22 million Americans reported visiting a doctor, obtaining a prescription drug, being hospitalized, getting home care, or experiencing allergy symptoms.
- Visits to doctors' offices and hospital outpatient departments for allergy care accounted for \$4 billion. The remaining roughly \$7 billion was spent mostly on prescription drugs.

- Between 2000 and 2005, average annual spending on treatment of allergies jumped from \$350 per person to \$520 per person.

The data were taken from the Medical Expenditure Panel Survey, a detailed source of information on the health services used by Americans, the frequency with which they are used, the cost of those services, and how they are paid. For more information, go to *Allergic Rhinitis: Trends in Use and Expenditures, 2000 and 2005*, MEPS Statistical Brief #204, at [www.meps.ahrq.gov](http://www.meps.ahrq.gov). ■

## Spending on cholesterol-reducing statins more than doubles in just five years

Spending on statins, drugs used to reduce artery-clogging cholesterol, increased 156 percent between 2000 and 2005, according to data from the Agency for Healthcare Research and Quality (AHRQ). Statins can reduce a person's risk of heart attack or stroke by lowering "bad" cholesterol and triglycerides, another fatty substance in the blood, and raising "good" cholesterol levels.

AHRQ found that spending on statins jumped from approximately \$8 billion to almost \$20 billion during the five-year period. Statins include drugs such as Lipitor, Lescol, Pravachol, and Zocor. AHRQ's analysis of statin use between 2000 and 2005 also found:

- The number of people who bought at least 1 statin increased from about 16 million to 30 million.
- The total number of outpatient prescriptions for statins rose from about 90 million to 174 million.
- Average annual spending by individual statin users – whether costs were absorbed by the user, an insurer or both – increased from \$484 to \$661.

These data are taken from the Medical Expenditure Panel Survey, a detailed source of information on the health services used by Americans, the frequency with which they are used, the cost of those services, and how they are paid. For more information, see *Trends in Statins Utilization and Expenditures for the U.S. Civilian Noninstitutionalized Population, 2000 and 2005*, MEPS Statistical Brief #205, at [www.meps.ahrq.gov/mepsweb/](http://www.meps.ahrq.gov/mepsweb/). ■

## Announcements

### HCUP and MEPS Data Users Workshop

The Agency for Healthcare Research and Quality (AHRQ) will conduct its third annual workshop to facilitate use of two of its important data resources: the Medical Expenditure Panel Survey (MEPS) and the Healthcare Cost and Utilization Project (HCUP). The two-day, hands-on workshop will be held at AHRQ headquarters in Rockville, MD on September 24-25, 2008. Registration is available through the MEPS website at <http://www.meps.ahrq.gov/mepsweb/> under "Workshops & Events."

The workshop will provide health services researchers with information on the components and capabilities of the two databases. Participants will be taught how to extract data for research projects from their choice of either MEPS or HCUP. For MEPS, a working knowledge of SAS is required. For HCUP, familiarity with SAS is recommended but not required. There is no fee for the workshop. Registration is required.

Day 1 of the workshop will consist of lectures designed to provide a general overview of MEPS and HCUP. Day 2 will be the participant's choice of in-depth hands-on training on either MEPS or HCUP. The MEPS and HCUP sessions will be separate, but both will have instructor-lead training on computers that are provided. In both workshops, participants will have the opportunity to pose specific research questions.

In the MEPS session, participants will apply the knowledge gained from the first day's lectures to formulate a research plan that utilizes the various MEPS-HC files and linkage capabilities. Each participant will construct an analytic file and begin to conduct analyses. Participants may bring a CD with their active MEPS project and get expert help on their research questions. The HCUP session will show participants how to use several HCUP databases, e.g., Nationwide Inpatient Sample (NIS), and software tools, e.g., HCUPnet.

For additional information or questions, e-mail [workshopinfo@ahrq.hhs.gov](mailto:workshopinfo@ahrq.hhs.gov).

**Editor's note:** MEPS collects data on the specific health services that Americans use, how frequently they use them, the cost of these services, and how they are paid for, as well as data on the cost, scope, and breadth of private health insurance held by and available to the U.S. population. For more information about MEPS, please visit: <http://www.meps.ahrq.gov>. HCUP is a family of powerful health care databases, software tools, and products. HCUP data enable research on a broad range of topics related to health care, including cost and quality of health services, medical practice patterns, access to health care programs, and outcomes of treatment at the national, State, and local market levels. For more information about HCUP, please visit <http://www.hcup-us.ahrq.gov>. ■

**Caughey, A.B., Washington, A.E., and Kuppermann, M. (2008, March).** “Perceived risk of prenatal diagnostic procedure-related miscarriage and Down syndrome among pregnant women.” (AHRQ grant HSD07373). *American Journal of Obstetrics & Gynecology* 198, pp. 333.e1-333.e8.

Invasive prenatal diagnostic tests, such as chorionic villus sampling (CVS) and amniocentesis are used to detect Down syndrome and other fetal chromosomal abnormalities. This study suggests that women’s perceived risk of outcomes of these procedures (such as procedure-related miscarriage) may vary based on factors not necessarily related to their actual risk. For example, among women younger than age 35, the perceived risk of carrying a Down syndrome-affected fetus was higher in women who had not attended college, or had poor self-perceived health status. Latinas, women with an annual income less than \$35,000, and those who had difficulty conceiving had higher perceived procedure-related miscarriage risk. The findings were based on a survey of 1,081 English-, Spanish-, or Chinese-speaking women receiving prenatal care in San Francisco.

**Clancy, C. (2008, March).** “Forging a new path to medication safety with emergency pharmacists.” *Journal of Patient Safety* 4(1), pp. 1-2.

To help reduce the risk of adverse drug events in hospital emergency departments (EDs), a small but growing number (79 in 2006, up from 49 in 2004) of hospitals are employing a pharmacist in their ED. In addition to traditional pharmacist

responsibilities, an ED clinical pharmacy specialist actively participates in clinical consultations before drugs are ordered and administered. Two new initiatives are underway to assist pharmacists and hospitals in getting support for and implementing emergency pharmacist programs, according to Carolyn M. Clancy, M.D., director of the Agency for Healthcare Research and Quality (AHRQ). The first, based on research conducted by Rollin Fairbanks, M.D., will connect teams of ED pharmacists with pharmacists interested in developing these programs. The second initiative, found at [www.emergencypharmacist.org](http://www.emergencypharmacist.org), contains a tool kit to help hospitals implement an ED pharmacist program. The tool kit was created by Dr. Fairbanks, whose work was supported by AHRQ. It includes a job description for an ED pharmacist, downloadable slide presentations describing the position, the role of the ED pharmacist, its justification and implementation, and other relevant literature.

**Clancy, C.M. (2008, March).** “SCIP: Making complications of surgery the exception rather than the rule.” *AORN Journal* 87(3), pp. 621-624.

Deaths due to postoperative complications are not simply a hazard of surgery. Rather, they often are due to health care providers not following basic steps that have been proven to eliminate infections and other major postoperative complications, notes Carolyn M. Clancy, M.D., director of the Agency for Healthcare Research and Quality (AHRQ). In a recent paper, she describes the

Surgical Care Improvement Project (SCIP), a multiyear national campaign, whose goal is to use collaborative efforts by private and public players in the surgical care arena to reduce surgical complications 25 percent by the year 2010.

SCIP focuses on areas in which the incidence and cost of complications are particularly high. These include surgical site infections (SSIs), adverse cardiac events, and venous thromboembolism (VTE, blood clots in the veins). For example, each of the 780,000 cases of SSIs per year increases hospital charges by \$4,768. The SCIP partnership of 10 national organizations, including AHRQ and the Centers for Disease Control and Prevention, has prompted preventive interventions to reduce SSIs, but there is limited adherence to these practices. Reprints (AHRQ Publication No. 08-R060) are available from AHRQ.\*

**Clement, J.P., Valdmanis, V.G., Bazzoli, G.J., and others. (2008).** “Is more better? An analysis of hospital outcomes and efficiency with a DEA model of output congestion.” (AHRQ grant HSI3049). *Health Care Management Science* 11, pp. 67-77.

Technical inefficiency is associated with poorer quality of patient outcomes, concludes this study. It also found that the majority of study hospitals could improve both their technical efficiency and patient care outcomes.

Using hospital data from the Agency for Healthcare Research and Quality’s Healthcare Cost and

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Utilization Project State Inpatient Database (HCUP SID) and the American Hospital Association Annual Survey for 2000, the researchers sought to determine the relationship between hospital technical efficiency and quality of patient outcomes. Technical efficiency was measured by numbers of staffed beds, full-time equivalent (FTE) registered nurses and licensed practical nurses, as well as other FTEs. Quality of patient outcomes was measured by desirable patient care outputs (patient stays) and undesirable outputs (five risk-adjusted mortality inpatient quality indicators for heart attack, congestive heart failure, stroke, gastrointestinal hemorrhage, and pneumonia). The analytic method selected for the study was data envelopment analysis (DEA) under assumptions of strong and weak disposability of outputs.

**Cohen, S.B., Makuc, D.M., and Ezzati-Rice, T.M. (2007).** “Health insurance coverage during a 24-month period: A comparison of estimates from two national health surveys.” *Health Services Outcomes Research Methodology* 7, pp. 125-144.

National estimates of health insurance status are essential inputs to inform policymakers’ assessments of the population’s access to medical care. While these estimates are generally annually based, the authors of this study compared estimates over a 2-year period from the Medical Expenditure Panel Survey (MEPS) and from the National Health Interview Survey (NHIS) linked to the MEPS files. They found that the two approaches did not differ significantly on national estimates of the percentage of persons

continuously insured; however, the MEPS longitudinal estimate of the percentage continuously uninsured was higher than the NHIS-MEPS linked estimate. In addition, the MEPS longitudinal estimate of the discontinuously insured was lower than that derived from the NHIS-MEPS linked data. These differences are partly due to the two surveys using different time periods, different lengths of time, and different lengths of recall. The authors conclude that the estimates from these two sources provide a relatively consistent picture of health coverage rates over time in the United States. Reprints (AHRQ publication no. 08-R029) are available from AHRQ.\*

**Col, N.F., Ngo, L., Fortin, J.M., and others. (2007, September-October).** “Can computerized decision support help patients make complex treatment decisions? A randomized controlled trial of an individualized menopause decision aid.” (AHRQ grant HS13329). *Medical Decision Making* 27, pp. 585-598.

A computerized decision aid (DA), which conveys individualized information about the risks and benefits of menopause treatments based on women’s individual symptoms, lifestyle, medical history, and clinical variables (such as bone density and cholesterol level) reduced women’s conflicts about their treatment decisions and enhanced their care satisfaction. The summary report generated by the computer for the patient and individual clinician listed the patient’s menopausal symptoms and quantified her risks for coronary heart disease, breast cancer, and hip fracture (with and without hormone treatment). The DA reduced decisional conflict 2 weeks after the

clinic appointment by 0.70 points on a 1 to 5 point scale and 0.09 for the control group. Women in the DA group were also significantly more satisfied with their care than women in the control group.

**Cosby, K.S., Roberts, R., Palivos, L., and others. (2008, March).** “Characteristics of patient care management problems identified in emergency department morbidity and mortality investigations during 15 years.” (AHRQ grant HS11552). *Annals of Emergency Medicine* 51(3), pp. 251-261.

The authors of this paper characterized the types of cases referred to a physician review committee of an urban hospital’s emergency department (ED) and identified the phase of work in which problems were detected and specific factors that affected the quality of patient care. Overall, they retrospectively reviewed 636 cases and classified problems into 1 of 4 major categories depending on the phase of work in which each occurred. In descending order of frequency, 71 percent of problems were identified in diagnosis, 44 percent in disposition, 42 percent in treatment, and 4 percent in public health. More than half the cases fell into at least two categories. Problems in specific clinical tasks were the most common contributing factor (99 percent), with patient factors (61 percent) and teamwork factors (61 percent) of equal weight. The data demonstrate that these cases are often complex and not the result of the failure of any single individual or process at any one moment in time.

**Dougherty, D. and Conway, P.H. (2008, May).** “The ‘3 T’s’ road

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**map to transform US health care: The ‘how’ of high-quality care.”** *Journal of the American Medical Association* 299(19), pp. 2319-2321.

This article describes the “3T’s” roadmap to translate research into quality care delivery in many settings for many types of patients. The authors point out that basic science and its translation into clinical research (translation 1 or T1) are only the beginning of the journey toward high-quality, effective, and safe care delivery along the road map. Next, translation 2 (T2) activities focus on creating more patient-specific evidence of clinical effectiveness to identify the right treatment for the right patient in the right way at the right time, and to translate practice guidelines into practice. Translation 3 (T3) activities address the “how” of health care delivery so that evidence-based treatment, prevention, and other interventions are delivered reliably to all patients in all settings of care and improve health care for individuals and populations. Reprints of the article (AHRQ Publication No. 08-R054) are available from AHRQ.\*

**Elmore, J.G. and Brenner, R.J. (2007, August). “The more eyes, the better to see? From double to quadruple reading of screening mammograms.”** (AHRQ grant HS10591). *Journal of the National Cancer Institute* 99(15), pp. 1141-1143.

From 10 to 20 percent of women diagnosed with breast cancer had lesions that were visible but overlooked on their most recent mammogram and another 10 to 20 percent had lesions that were misinterpreted. These missed cancers represent lost opportunities for an early diagnosis. This, in turn,

may have legal ramifications for the radiologists who miss them. A delay in breast cancer diagnosis is one of the most common reasons for malpractice lawsuits against American physicians. Double reading of mammograms by radiologists has been advocated to reduce the proportion of missed cancers and to at least partly offset the wide variations in radiologists’ interpretations of mammograms. Computer-aided detection (CAD) has also been advocated as a digital “second reader,” but its high recall rates have not prompted widespread support.

The push for an improved cancer detection rate by double or quadruple reading needs to be balanced against the potential for higher recall and false-positive rates. To increase recall rates beyond 5 percent will result in many more biopsy referrals and false positives, with only modest improvement in cancer detection, caution the researchers. They also point out that the pool of U.S. radiologists interested in breast imaging is shrinking, while the demand for it continues to grow as women age.

**Hohenhaus, M.H., McGarry, K.A., and Col, N.F. (2007). “Hormone therapy for the prevention of bone loss in menopausal women with osteopenia: Is it a viable option?”** (ARHQ grant HS13329). *Drugs* 67(16) pp. 2311-2321.

Researchers examined various treatment standards from national medical organizations and found inconsistent guidance on when osteopenia should be treated. They found little data supporting treating osteopenia to forestall its progression into osteoporosis. Thus, women with osteopenia and their doctors do not have clear evidence to answer the clinical questions of

what the risk factor is for a fracture, how often bone scans should be done if watchful waiting is elected, and what therapy is the best if the risk for fracture is high. Hormone therapy was a popular choice for preventing fragility fractures for women with osteoporosis, but it also increases the risk of blood clots, breast cancer, and cardiovascular disease. The authors state that evidence is insufficient to recommend using osteoporosis treatments for women with osteopenia unless they have suffered a fracture due to fragile bones. They suggest that treatment decisions should be based on weighing net benefits against anticipated risks, taking into account the woman’s age, risk profile, and the presence of estrogen-responsive menopausal symptoms.

**Kao, L.S. and Thomas, E.J. (2008). “Navigating towards improved surgical safety using aviation-based strategies.”** (AHRQ grant HS115440). *Journal of Surgical Research* 145, pp. 327-335.

To reduce medical errors and patient harm, health care has increasingly adapted safety practices from the aviation industry. The authors reviewed research on a number of strategies adapted from aviation to improve surgical safety, including behavioral marker systems, crew resource management (CRM), and training and competency assessment using simulators. The existing behavioral marker systems were considered to be early in development, incomplete, and not psychometrically validated. CRM encompasses team building, briefing strategies, situation awareness, and stress management. However, given the difficulties in

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the rigorous evaluation of these programs, novel trial designs and research methodologies may need to be developed. With the development of a variety of simulators, simulation has shown usefulness in the training and assessment of technical skills and teamwork in critical situations. The authors also discussed the strategies of incident reporting and human factors analysis. They concluded that challenges remain in establishing the validity of aviation-based strategies for surgical care, given differences between the two industries and a lack of rigorous research linking practices to outcomes.

**Lapane, K.L., Dube, C.E., Schneider, K.L., and Quilliam, B.J. (2007, November). “Misperceptions of patients vs providers regarding medication-related communication issues.” (AHRQ grant HS16394). *American Journal of Managed Care* 13(11), pp. 613-618.**

Use of computers to electronically prescribe medications in the exam room enables clinicians to verify a patient’s current medications, drug allergies, and other safety-related issues. However, e-prescribing may not change the extent to which patients and their doctors discuss medication issues. Doctors think they discuss medication issues more often than patients do, according to a new study. Researchers analyzed data from a sample of 96 providers practicing in 6 States and 1,100 of their mostly long-term patients. Patients who received electronic prescriptions were more likely than patients with paper prescriptions (54 vs. 43 percent) to report that their provider

always checked the accuracy of their medication list during visits. However, a greater proportion of patients than their e-prescribing doctors reported never having discussions about medication use. For example, 83 percent of patients reported that they would never tell their physician if they did not plan on picking up a prescription, while physicians believed most patients would tell them this. Physician and patient perceptions diverged on safety issues as well. For example, one in four patients said their physicians always discussed the potential adverse effects of medications (regardless of physician e-prescribing experience) while doctors believed that they discussed this problem often or most of the time.

**Lipowski, E.E. (2008, March/April). “Pharmacy practice-based research networks: Why, what, who, and how.” (AHRQ grant HS16844). *Journal of the American Pharmacists Association* 48(2), pp. 142-152.**

Pharmacy practice research that leads to improvements in the medication use process is needed, conclude the authors of this article. They reviewed proceedings from a national conference and the medical literature on pharmacy practice innovations that can lead to widely adopted advances in the safe and effective use of medication. The data suggest that only those interventions that can be reliably implemented by typical practitioners in a wide range of practice settings can produce lasting benefits for considerable numbers of patients. Teamwork between and among disciplines is needed for new insight and novel approaches to delivering pharmaceutical products and services. The authors conclude that

practice-based research networks provide a model for building a synergy among pharmacists and other stakeholders to devise improvements that provide sustainable and system-wide improvements in medication use.

**Lockley, S.W., Barger, L.K., Ayas, N.T., and others. (2007, November). “Effects of health care provider work hours and sleep deprivation on safety and performance.” (AHRQ grants HS15906 and HS12032). *Joint Commission Journal on Quality and Patient Safety* 33(11), pp. 7-18.**

The long hours and shifts routinely worked by hospital medical staff in the United States jeopardize worker and patient safety, as well as quality of care, concludes a comprehensive review of studies on the topic. Compared with residents working 16-hour shifts, on-call residents had twice as many attention failures when working overnight and committed 36 percent more serious medical errors. They also reported making 300 percent more fatigue-related medical errors that led to a patient’s death. A resident was also more than twice as likely to crash on the commute home after an extended shift (more than 24 hours) compared with residents on 14-hour or shorter shifts. Similarly, 39 percent of all nursing shifts were longer than 12.5 hours and were associated with a threefold increased risk of making a medical error. These longer shifts also boosted the nurses’ likelihood of decreased vigilance on the job, making a medical error, and suffering a potentially devastating occupational injury (such as sticking themselves with a needle full of blood infected with HIV).

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**Lorch, S.A., Millman, A.M., Zhang, X., and others. (2008).**

**“Impact of admission-day crowding on the length of stay of pediatric hospitalization.” (AHRQ grant HS09983). *Pediatrics* 121, pp. e718-e730.**

High hospital occupancy rates can affect the care that children receive, according to this study. The researchers investigated the association between hospital occupancy on admission workload and hospital length of stay (LOS) for common pediatric diagnoses. They studied claims data (1996-1998) on over 69,000 respiratory and 49,000 nonrespiratory pediatric admissions (ages 1-17) in Pennsylvania and New York. The effect of admission-day occupancy on LOS was only apparent for children with respiratory conditions, and was greatest when the occupancy rate was greater than 60 percent. When the admission-day occupancy rate increased from 60 percent to 100 percent, the models used by the researchers predicted an extra 25 hospital days per 100 typical children admitted with respiratory conditions and a 16 percent increase in the likelihood of a prolonged hospital stay. The researchers offered the explanation that medical professionals treat the more acutely ill patients first, thus delaying treatment of children with less complex problems. This explanation was supported by their finding that the increased likelihood of a prolonged stay was focused on children with less complicated diagnoses who nevertheless required complex management and treatment.

**McCloskey, L.A., Williams, C.M., Lichter, E., and others. (2007, August).** “Abused women disclose partner interference with health

care: An unrecognized form of battering.” (AHRQ grant HS11088). *Journal of General Internal Medicine* 22, pp. 1067-1072.

Intimate partner violence (IPV) includes not only physical and sexual assault and psychological battering, but also a pattern of coercive behaviors, such as interfering with a woman’s health care. Researchers found that among women surveyed at 8 Boston area clinics, of 276 women who had been physically abused in the past year, 17 percent reported that a partner interfered with their health care. Women who had less than a high school education were three times more likely to be victimized in this way. Also, women who were born outside the United States and those who visited the clinic with a man were twice as likely to have their partner interfere with their health care. In addition, partner interference nearly doubled the odds of women having poor health.

**Ness, R.B., Soper, D.E., Richter, H.E., and others. (2008, February).** “Chlamydia antibodies, Chlamydia heat shock protein, and adverse sequelae after pelvic inflammatory disease: The PID evaluation and clinical health (PEACH) study.” (AHRQ grant HS08383). *Sexually Transmitted Diseases* 35(2), pp. 129-135.

Women who have been exposed to *Chlamydia trachomatis*, evidenced by *C. trachomatis* elementary bodies (EB), have lower rates of pregnancy and higher rates of recurrence of pelvic inflammatory disease (PID) after an initial episode of mild to moderate PID, concludes this study. In models including both EB and Chlamydia heat shock protein 60 (Chsp60), a high EB titer continued to be significantly related to a

reduced rate of pregnancy and higher rates of recurrent PID. In contrast, associations between Chsp60 and pregnancy or PID recurrence were all insignificant.

Some think that Chlamydia induces post-PID infertility and other problems due to immune reactions to Chsp60. However, this study’s findings suggest that the role of Chsp60 antibodies in the etiology of PID sequelae remains unclear. The researchers examined Chlamydia antibodies, Chsp60, and adverse sequelae after PID among 443 women with mild to moderate PID, whom they followed for a mean of 84 months.

**Resnick, B., Galik, E., Pretzer-Aboff, I., and others. (2008).** “Testing the reliability and validity of self-efficacy and outcome expectations of restorative care performed by nursing assistants.” (AHRQ grant HS13372). *Journal of Nursing Care Quality* 23(2), pp. 162-169.

The researchers sought to determine the reliability and validity of two measures, the Nursing Assistant Self-efficacy for Restorative Care (NASERC) Scale and the Nursing Assistant Outcome Expectations for Restorative Care (NAOERC) Scale. They anticipated that self-efficacy-based interventions with nursing assistants (NAs) can increase their confidence and time spent in restorative care activities and thereby improve their job attitude and retention. The 386 NAs recruited from Maryland nursing homes filled out the two scale questionnaires as well as others on knowledge of restorative care, job satisfaction, and self-esteem. Each of the participants was also observed for 15 minutes to measure their actual performance of

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restorative care. The hypothesized relationships between self-efficacy and outcome expectations with performance of restorative care activities were not supported by the study results. The researchers believe that self-efficacy expectations were inflated, given that the mean score on knowledge of restorative activities was 55 percent. Successful implementation of restorative activities may not take place until the NAs understand what is meant by restorative care and can accurately evaluate their self-efficacy and outcome expectations.

**Schneider, E.S., Nadel, M.R., Zaslavsky, A.M., and McGlynn, E.A. (2008, April). "Assessment of the scientific soundness of clinical performance measures." (AHRQ grant HS09473). *Archives of Internal Medicine* 108(8), pp. 876-882.**

Performance measures used to assess both health care plans and ambulatory care performance of physician groups remain controversial because of concerns that measures with poor validity will lead physicians to provide inappropriate care, especially when incentives are attached to the measures. Few evaluations of the scientific soundness of measure specifications have been published. The researchers decided to assess the soundness of a clinical performance measure of colorectal cancer screening introduced in 2004 by the National Committee for Quality Assurance by comparing results from three different data sources: administrative data, a hybrid of administrative and medical records data, and survey data. They conducted a field test of 5 health plans that enrolled 189,193

individuals eligible for colorectal cancer screening. The percentage of enrollees screened varied by data source across the five health plans, with administrative data ranging from 27.3 percent to 47.1 percent, hybrid data varying from 38.6 percent to 53.5 percent, and survey data ranging from 53.2 percent to 69.7 percent. The researchers determined that administrative data underestimated colorectal cancer screening because of its between-plan bias and survey data overestimated screening because of nonresponse bias. They concluded that the hybrid data approach was the most accurate.

**Setoguchi, S., Stevenson, L.W., and Schneeweiss, S. (2007, August). "Repeated hospitalizations predict mortality in the community population with heart failure." (AHRQ grant HS10881). *American Heart Journal* 154(2), pp. 260-266.**

From 30 to 50 percent of patients diagnosed with heart failure die within a year after they are first hospitalized for the problem. Researchers found that each hospitalization for heart failure progressively boosts the risk of dying from the condition. For example, median survival after the first, second, third, and fourth hospitalization was 2.4, 1.4, 1.0, and 0.6 years. Advanced age, renal disease, and history of cardiac arrest weakened the impact of the number of heart failure hospitalizations on death. Researchers followed 14,374 patients hospitalized for heart failure for nearly 2 years. A total of 7,401 died during the study period. After adjusting for age, sex, and major coexisting medical conditions, the number of heart failure hospitalizations clearly was a strong predictor of death.

**Shahinian, V.B., Kuo, Y-f., Freeman, J.L., and others. (2007, December). "Characteristics of urologists predict the use of androgen deprivation therapy for prostate cancer." (AHRQ grant HS11618). *Journal of Clinical Oncology* 25(34), pp. 5359-5365.**

Androgen deprivation therapy, which reduces testosterone levels, was previously used to relieve the discomfort of metastatic prostate cancer. Now, it is being widely used for localized prostate cancer, despite lack of evidence for its benefit in this situation. At present, whether a man receives androgen deprivation therapy depends on who his urologist is, not the state of the cancer or his characteristics, concludes a new study. Researchers examined the treatment of 82,375 men with prostate cancer, who were diagnosed from January 1, 1992, through December 31, 2002, and the 2,080 urologists who cared for them. Overall, 34.4 percent of men received androgen deprivation therapy, 5.2 percent underwent surgery to remove one or both testicles, and 29.2 percent received gonadotropin-releasing hormone agonists. Patients of urologists who were not academically affiliated, who had a larger patient panel size, or who had graduated less recently, were significantly more likely to receive androgen deprivation therapy, regardless of their cancer stage. Also, patients of nonacademically affiliated urologists were significantly more likely to receive primary androgen deprivation therapy for localized prostate cancer.

**Tang, Z., Weavind, L., Mazabob, J., and others. (2007, September). "Workflow in intensive care unit remote monitoring: A time-and-motion study." (AHRQ grant**

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### **HS15234). *Critical Care Medicine* 35(9), pp. 2057-2063.**

One approach to the national shortage of critical care specialists to care for patients in the intensive care unit (ICU) is remote monitoring of ICU patients by these specialists. Three factors may affect the quality and efficiency of remote clinicians' work: workflow interruption of remote clinicians, usability of the clinical information system (CIS), and collaboration with bedside caregivers.

Researchers examined the characteristics of remote clinicians' workflow by observing 6 physicians for 47 hours and 7 registered nurses for 39 hours in a facility that remotely monitored 132 beds in 9 ICUs. Clinicians had access to a CIS that integrated real-time physiologic, laboratory, and imaging data of ICU patients with current medications and interventions. Physicians spent 70 percent, 3 percent, 3 percent, and 24 percent of their time on patient monitoring, collaboration, system maintenance, and administrative/social/personal tasks, respectively. For nurses, the time allocations were 46 percent, 3 percent, 4 percent, and 17 percent, respectively. Nurses spent another 30 percent of their time maintaining health records. Physicians' workflows were interrupted 2.2

times per hour and nurses' workflows were interrupted 7.5 times per hour.

### **Trivedi, A.N., Rakowski, W., and Ayanian, J.Z. (2008, January). "Effect of cost sharing on screening mammography in Medicare health plans." (AHRQ grant T32 HS000020). *New England Journal of Medicine* 358(4), pp. 375-383.**

Researchers reviewed data from the Medicare Health Plan Employer Data and Information Set to look at the relationship between cost sharing and screening mammograms from 2002 to 2004. They found that while just 3 of the 174 Medicare health plans studied required co-payments of \$10 or more or coinsurance of more than 10 percent in 2001, 21 did so in 2004. Along with the increase in co-payments and coinsurance requirements came a decrease in screening mammograms. For 366,475 Medicare enrollees, 69.2 percent of women whose plans required cost sharing received breast-cancer screenings, while 77.5 percent of fully covered women were screened. Although every demographic group studied was negatively affected by cost sharing, black women and women with lower incomes and educational levels often were insured by plans that required cost sharing for mammography.

### **Yorita, K.L., Holman, R.C., Sejvar, J.J., and others. (2008, February). "Infectious disease hospitalizations among infants in the United States." *Pediatrics* 121(2), pp. 244-252.**

Agency for Healthcare Research and Quality researcher Claudia A. Steiner, M.D., M.P.H., and colleagues from the Centers for Disease Control and Prevention examined 2003 data from the Kids' Inpatient Database (produced by the Healthcare Cost and Utilization Project) and found that more than 40 percent of infant hospitalizations are caused by infectious diseases. Lower respiratory tract infections account for nearly 60 percent of those hospital stays with a hospitalization rate of 4,135 per 100,000 live births. Infections of the kidney, urinary tract, and bladder placed a distant second for causing hospital stays with a rate of 533.4 hospitalizations per 100,000 live births. Hospitalization rates for infectious diseases were higher for boys than girls, black and Hispanic infants, and lowest for Asian/Pacific Islander infants. These hospital stays commonly last 3 days and cost \$2,235. In 2003, infants with infectious diseases in the United States spent more than 1 million days in the hospital at a cost of more than \$3 billion. Reprints (AHRQ Publication No. 08-R049) are available from AHRQ.\* ■

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