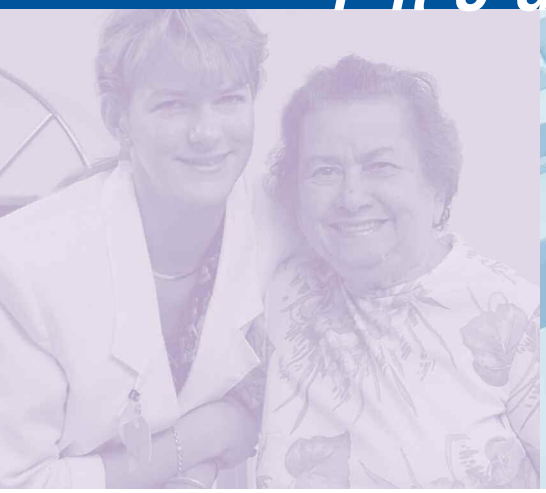
PROGRAM BRIEF



Women's Health Highlights: Recent Findings

The mission of AHRQ is to improve the quality, safety, efficiency, and effectiveness of health care by:

- Using evidence to improve health care.
- Improving health care outcomes through research.
- Transforming research into practice.

Introduction

At the beginning of the 20th century, U.S. women were most likely to die from infectious diseases and complications of pregnancy and childbirth. In 2007, the chronic conditions of heart disease, cancer, and stroke accounted for the majority percent of American women's deaths, and they continue to be the leading causes of death for both women and men.

Women have a longer life expectancy than men, but they do not necessarily live those extra years in good physical and mental health. On average, women experience 3.1 years of reduced physical functioning at the end of life, and in 2010, 13.5 percent of women aged 18 and older who were surveyed said they were in fair or poor health.

The Agency for Healthcare Research and Quality (AHRQ) supports research on all aspects of health care provided to women, including:

- Enhancing the response of the health system to women's needs.
- Understanding differences between the health care needs of women and men.
- Understanding and eliminating disparities in health care.
- Empowering women to make well-informed health care decisions.

This summary presents findings from a cross-section of AHRQ-supported research projects on women's health published January 2008 through December 2011. An asterisk (*) at the end of a summary indicates that reprints of an intramural study or copies of other publications are available from the AHRQ Clearinghouse.

See the last page of this brief to find out how you can get more detailed information on AHRQ's research programs and funding opportunities.

Topics in this brief:

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Cardiovascular Disease

- *Women are more likely than men to experience a meaningful delay in ED care for cardiac symptoms.*

Researchers examined time-to-treatment for 5,887 individuals with suspected cardiac symptoms who made a call to 911 in 2004. They found that women were 52 percent more likely than men to be delayed 15 minutes or more in reaching the hospital after calling 911. A delay of 15 minutes or more in heart attack treatment has been shown to result in measurably increased damage to the heart muscle and poorer clinical outcomes. Factors increasing the likelihood of delay included distance, evening rush hour travel, bypassing a local hospital, and transport from a more densely populated neighborhood. Concannon, Griffith, Kent, et al., *Circ Cardiovasc Qual Outcomes* 2:9-15, 2009 (AHRQ grants HS10282, T32 HS00060).

- *Association found between cardiac illness and prior use of a certain type of breast cancer drug.*

According to this 16-year study of nearly 20,000 women with breast cancer, those who received chemotherapy that included anthracycline had a higher incidence of congestive heart failure, cardiomyopathy, and dysrhythmia than women who received other kinds of chemotherapy or no chemotherapy. For example, the probability of experiencing congestive heart failure in year 10 was 32 percent for women who received anthracycline, compared with 26 percent for women who received other types of chemotherapy and 27 percent for those who received no chemotherapy. Du, Siz, Liu, et al., *Cancer* 115(22):5296-5308, 2009 (AHRQ grant HS16743).

- *Postmenopausal women with metabolic syndrome are at increased risk for a cardiovascular event.*

Researchers used data on 372 postmenopausal women to investigate the effects of using two competing clinical definitions of metabolic syndrome on their usefulness in identifying women at high risk of future heart attacks or stroke. Metabolic syndrome—a combination of high blood pressure, elevated blood glucose, abnormal lipid levels, and increased waist size—is known to be associated with elevated risk for heart attack and stroke. Overall, women who met at least one of the definitions for metabolic syndrome were significantly more likely to experience a cardiovascular event than those who did not, and there was no difference between the two definitions in their predictive ability. Brown, Vaidya, Rogers, et al., *J Womens Health* 17(5):841-847, 2008 (AHRQ grant HS13852).

- *Aspirin therapy to prevent heart attack may have different benefits and harms in men and women.*

The U.S. Preventive Services Task Force reviewed new evidence from NIH's Women's Health Study and other recent research and found good evidence that aspirin decreases first heart attacks in men and first strokes in women. The Task Force recommends that women aged 55 to 70 should use aspirin to reduce their risk for ischemic stroke when the benefits outweigh the harms for potential gastrointestinal bleeding. The recommendation and other materials are available at www.ahrq.gov/clinic/uspstf/uspsasmi.htm. U.S. Preventive Services Task Force, *Ann Intern Med* 150(6):396-404, 2009 (AHRQ supports the Task Force).

- *Female and black stroke patients are less likely than others to receive preventive care for subsequent strokes.*

According to this study of 501 patients hospitalized for stroke, 66 percent of women and 77 percent of blacks received incomplete inpatient evaluations, compared with 54 percent of men and 54 percent of whites. Also, women were more likely than men to receive incomplete discharge regimens (anticoagulants and other stroke prevention medications and outpatient followup). Tuhrim, Cooperman, Rojas, et al., *J Stroke Cerebrovasc Dis* 17(4):226-234, 2008 (AHRQ grant HS10859).

Cancer Screening and Treatment

Breast Cancer

- *No link found between use of chemotherapy for breast cancer in older women and later cognitive impairment.*

Researchers examined data on more than 62,500 women aged 65 and older with breast cancer. They compared data on a subset of 9,752 of the women who received chemotherapy with data on an equal number of women who did not receive chemotherapy. They found no significant increase in risk of cognitive impairment associated with chemotherapy use up to 16 years after treatment. Du, Xia, and Hardy, *Am J Clin Oncol* 33(6):533-543, 2010 (AHRQ HS16743).

- *Researchers examine ways to increase breast cancer screening among Latinas.*

Many immigrant Hispanic women do not get yearly mammograms or perform breast self-exams. This study evaluated two interventions to address the problem: (1) use of focus groups to assess the women's knowledge about breast cancer and identify barriers to screening and (2) participation in discussion groups, including an animated video on breast self-exam plus training in the technique using latex models. Both interventions were cost effective and successful in increasing the women's knowledge and screening behaviors. Calderon, Bazargan, and Sangasubana, *J Health Care Poor Underserved* 21:76-90, 2010 (AHRQ grant HS14022).

- *Physicians often rely on untrained individuals to help them discuss breast cancer treatment options with limited English-proficient women.*

Researchers surveyed 348 physicians about their use and availability of trained interpreters when counseling

limited English-proficient women with breast cancer. Almost all of the physicians had treated patients with limited English proficiency in the preceding 12 months, and fewer than half reported good availability of trained medical interpreters or telephone language interpretation services. Instead, they used bilingual staff not specifically trained in medical interpretation and patients' family members or friends. This was more likely to be the case for physicians in solo practice or single-specialty medical groups than those working in large HMOs. Rose, Tisnado, Malin, et al., *Health Serv Res* 45(1):172-194, 2010 (Interagency agreement AHRQ/NCI).

- *Online support groups for women with metastatic breast cancer appear promising.*

This study reports on the development and implementation of pilot peer-to-peer online support groups for women with metastatic breast cancer (MBC). Thirty women with MBC were assigned to either an immediate online support group or a wait-listed control group and were assessed monthly over a 6-month period. Retention rates, assessment completion rates, and support group participation were high; reported satisfaction was also high. Vilhauer, McClintock, and Matthews, *Psychosoc Oncol* 28:560-586, 2010 (AHRQ grant HS10565).

- *More than half of women do not get regular mammograms.*

This study found that women in their 40s were more likely than women in their 50s to forgo regular mammograms, and those who rated their health as fair or poor also were more likely to skip screening, compared with women who rated their health as good or excellent. Also, dissatisfaction with a previous mammography experience reduced the likelihood of regular screening. Most of the women participating in the study were college educated, in a higher income bracket, and insured; all of the women in the study received regular reminders about scheduling their mammograms. Gierisch, Earp, Brewer, and Rimer, *Cancer Epidemiol Biomark Prevent* 19(4):1103-1111, 2010 (AHRQ grant T32 HS00032). See also Meissner, Klabunde, Han, et al., *Cancer* 117:3101-3111, 2011 (AHRQ interagency agreement with NIH).

- *Radiologists' characteristics and clinical factors influence interpretation of mammograms.*

This study involving 638,947 screening mammograms performed by 134 radiologists in 101 facilities found that women with clinical risk factors for breast cancer were more likely than women without risk factors to be asked to return for additional mammograms and biopsies. Increased recall rates for women with risk factors did not lead to a higher probability of detecting cancer. Recall rates were also higher when the radiologist was younger, had interpreted more mammograms per year, and was affiliated with a teaching institution. Cook, Elmore, Miglioretti, et al., *J Clin Epidemiol* 63(4):441-451, 2010 (AHRQ grant HS10591).

- *Booklet provides helpful information about breast biopsy.*

This guide for women with breast cancer discusses the different kinds of breast biopsies, including their accuracy and side effects. It can help women who need biopsies talk with their doctors and nurses about the procedure and what to expect. *Having a Breast Biopsy: A Guide for Women and Their Families* (AHRQ Publication No. 10-EHC007-A).* See also *Core-Needle Biopsy for Breast Abnormalities: Clinician Guide* (AHRQ Publication No. 10-EHC-007-3)* and *Comparative Effectiveness of Core Needle and Open Surgical Biopsy for the Diagnosis of Breast Lesions,* Comparative Effectiveness Review No. 19, Executive Summary (AHRQ Publication No. 10-EHC007-1)* (AHRQ contract 290-02-0019).

- *Guide for women discusses two drugs used to lower the risk of breast cancer.*

Two drugs—tamoxifen and raloxifene—have been approved for the prevention of primary (first occurrence) breast cancer in women who have a higher than average risk of breast cancer. This guide provides information about the drugs' benefits, side effects, and cost, and can help women talk with their doctors to decide whether one of these drugs would be right for them. *Reducing the Risk of Breast Cancer with Medicine: A Guide for Women* (AHRQ Publication No. 09(10)EHC028-A).* See also *Medications to Reduce the Risk of Primary Breast Cancer in Women: Clinician Guide* (AHRQ Publication No. 09(10)-EHC028-3)* and *Comparative Effectiveness of Medications to Reduce Risk of Primary Breast Cancer in Women*, Executive Summary No. 17 (AHRQ Publication No. 09-EHC028-1)* (AHRQ contract 290-2007-10057-1). (AHRQ contract 290-2007-10057-1).

- *Less than 15 percent of radiologists say they definitely would tell a patient about an error in mammogram interpretation.*

A survey of 243 radiologists at seven geographically dispersed breast cancer surveillance sites found that 9 percent of those surveyed definitely would not disclose an error in mammogram interpretation; 51 percent would disclose the error only if specifically asked by the patient; 26 percent said they probably would disclose the error; and just 14 percent said they definitely would disclose the error. Gallagher, Cook, Brenner, et al., *Radiology* 253(2):443-452, 2009 (AHRQ grant HS10591).

- *Automated telephone reminders lead to increased use of mammography.*

Researchers tested the effectiveness of automated telephone reminders (ATRs), enhanced reminder letters, and standard letters on the likelihood of repeat mammograms in 3,547 women who were randomly assigned to one of the three groups. The ATRs were found to be the least costly but most effective (76 percent) intervention for prompting repeat mammograms compared with the enhanced (72 percent) and standard (74 percent) reminder letters. Overall, 74 percent of women had a repeat mammogram within 10-14 months compared with 57 percent before the reminders. DeFrank, Rimer, Gierisch, et al., *Am J Prevent Med* 36(6):459-467, 2009 (AHRQ grant T32 HS00079).

- *In St. Louis, black women are more likely than white women to receive mammograms.*

St. Louis, MO, is known to have high rates of breast cancer diagnosed at a late-stage, and researchers have been looking at ways to increase mammography use in late-stage diagnosis areas. From March 2004 to June 2006, researchers conducted a survey of women (429 black, 556 white) older than age 40 living in the St. Louis area. Unexpectedly, more black women (75 percent) than white women (68 percent) reported that they had received mammograms. Lian, Jeffe, and Schootman, *J Urban Health* 85(5):677-692, 2008 (AHRQ grant HS14095).

- *Radiologists' perception of malpractice risk appears to be higher than the actual number of lawsuits.*

Researchers mailed a survey in 2002 and again in 2006 to radiologists in three States—Washington, Colorado, and New Hampshire—to determine their perceived risk of facing a lawsuit related to mammogram interpretation. They found that the radiologist's perceived risk of being sued was significantly higher than the actual number of reported malpractice cases involving breast imaging. Those who felt more at risk were more likely to have had a malpractice claim in the past or know of other radiologists who had been sued. Dick, Gallagher, Brenner, et al., *Am J Roentgenol* 192(2):327-333, 2009 (AHRQ grant HS10591).

- *Study finds no correlation between abnormal mammogram interpretation and radiologists' job satisfaction.*

In this study, 131 radiologists were surveyed about their clinical practices and attitudes related to screening mammography. Performance data were used to determine the odds of an abnormal mammogram interpretation. More than half of the radiologists said they enjoyed interpreting screening mammograms; most in this group were female, older, and working part time; affiliated with academic medical centers; and/or on an annual salary. Those who did not enjoy the work reported it as being tedious. There were no significant differences in mammogram interpretation and cancer detection between those who did and did not enjoy their work. Geller, Bowles, Sohng, et al., *Am J Roentgenol* 192(2):361-369, 2009 (AHRQ grant HS10591).

- *Lack of knowledge and mistrust may partly explain women's underuse of adjuvant therapy for breast cancer.*

Adjuvant therapies (chemotherapy, hormone therapy, and radiotherapy) following breast cancer surgery have been proven effective in women with early-stage breast cancer, yet 32 of 258 women in this study who should have received adjuvant therapy did not get it. According to practice guidelines, 64 of the women should have received chemotherapy, 150 should have received hormone therapy, and 174 should have received radiotherapy. The principal factors associated with lack of adjuvant

treatment were age older than 70, coexisting illnesses, and mistrust in the medical delivery system. Bickell, Weidmann, Fei, et al., *J Clin Oncol* 27(31):5160-5167, 2009 (AHRQ grant HS10859).

- *Tracking system helps to ensure women with breast cancer see oncologists and receive followup care.*

Some women diagnosed with breast cancer, especially blacks and Latinos, do not follow through with their referrals to an oncologist. To address this problem, researchers developed a tracking system to facilitate followup with breast cancer patients. They compared the treatment of 639 women with early stage breast cancer who were seen at six New York City hospitals between January 1999 and December 2000 with 300 women who were seen between September 2004 and March 2006, after the tracking system began. Rates of oncology consultations, chemotherapy, and hormone therapy were higher for all women once the system was in place, and the racial disparities in use of care that had existed were eliminated. Bickell, Shastri, Fei, et al., *J Natl Cancer Inst* 100(23):1717-1723, 2008 (AHRQ grant HS10859).

- *Poverty may explain racial disparities in receipt of chemotherapy for breast cancer in older women.*

In this this study of nearly 14,500 older women with stage II or IIIA breast cancer with positive lymph nodes, black women were less likely than white women to receive chemotherapy within 6 months of diagnosis (56 percent vs. 66 percent, respectively). When the results were adjusted to include socioeconomic status for women aged 65 to 69, poverty appeared to be at the root of the disparity. Despite Medicare coverage, out-of-pocket costs—including copayments, transportation, and so on—may be overwhelming for women in the lowest income groups. Bhargava and Du, *Cancer* 115(13):2999-3008, 2009 (AHRQ grant HS16743).

- *Online support groups seem to benefit women with metastatic breast cancer.*

A group of 20 women (all were white) with metastatic breast cancer were assigned to one of three online support groups. The women received a monthly e-mail questionnaire, and after at least 4 months in the support groups, each woman was interviewed for 30 to 90 minutes. Six helpful factors identified in an earlier study were found to be present: group cohesiveness, universality, information exchange, instillation of hope, catharsis, and altruism. Vilhauer, *Women's Health* 49:381-404, 2009 (AHRQ grant HS10565).

- *Behavioral health carve-outs limit access to mental health services for women with breast cancer.*

Up to 40 percent of women with breast cancer suffer significant psychological distress, but only about 30 percent of them receive treatment for it, according to this study. Researchers analyzed insurance claims, enrollment data, and insurance benefit design data from 1998-2002 on women 63 years of age or younger with newly diagnosed breast cancer. They found that women enrolled in insurance plans with behavioral health carve-outs were 32 percent less likely to receive mental health services compared with women in plans that had integrated behavioral health services. Azzone, Frank, Pakes, et al., *J Clin Oncol* 27(5):706-712, 2009 (AHRQ grant HS10803)

- *Journal supplement focuses on guidelines for international implementation of breast health and breast cancer control initiatives.*

This journal supplement presents a series of 15 articles authored by a group of breast cancer experts and advocates and presented at the Global Summit on International Breast Health Implementation held in Budapest, Hungary, in October 2007. The articles focus on guideline implementation for early detection, diagnosis, and treatment; breast cancer prevention; chemotherapy; and other breast health topics. *Cancer* 113, Supplement 8, 2008 (AHRQ grant HS17218).

- *Requirement for cost-sharing reduces use of mammography among some groups of women.*

Researchers examined data on mammography use and cost-sharing from 2002 to 2004 for more than 365,000 women covered by Medicare. Of the 174 Medicare health plans studied, just 3 required copayments of $10 or more or coinsurance of more than 20 percent in 2001; by 2004, 21 plans required cost-sharing of one form or another. The increase in coinsurance requirements correlated with a decrease in screening mammograms. Less than 70 percent of women in cost-sharing plans were screened, compared with nearly 80 percent of fully covered women. Trivedi, Rakowski, and Ayanian, *N Engl J Med* 358(4):375-383, 2008 (AHRQ grant T32 HS00020).

- *Breast desmoid tumors are rare and often mistaken for cancer.*

A review over 25 years (1982-2006) at one institution identified 32 patients with pathologically confirmed breast desmoids. Their median age was 45; eight patients had a prior history of breast cancer, and 14 had undergone breast surgery, with desmoids diagnosed an average of 24 months postoperatively. All patients presented with physical findings; MRI was more accurate in visualizing the mass than mammography or ultrasound. All patients had their tumors surgically removed, and eight patients had recurring tumors at a median of 15 months. Neuman, Brogi, Ebrahim, et al., *Ann Surg Oncol* 15(1):274-280, 2008 (AHRQ grant T32 HS00066).

- *More attention is needed to quality of life for breast cancer survivors.*

Researchers examined quality of life among women with (114 women) and

without (2,527 women) breast cancer. Women with breast cancer reported lower scores on physical function, general health, vitality, and social function compared with women who did not have breast cancer. There was no difference in mental health scores between the two groups of women. Trentham-Dietz, Sprague, Klein, et al., *Breast Cancer Res* 109:379-387, 2008 (AHRQ grant HS06941).

- *Study underway to develop computer-based tools to improve use of genetic breast cancer tests.*

AHRQ has funded a new project to develop, implement, and evaluate four computer-based decision-support tools that will help clinicians and patients better use genetic tests to identify, evaluate, and treat breast cancer. The first pair of tools will assess whether a woman with a family history of cancer should be tested for BRCA1 and BRCA2 gene mutations. The second pair of tools, for women already diagnosed with breast cancer, will help determine which patients are suitable for a gene expression profiling test that can evaluate the risk of cancer recurrence and whether they should have chemotherapy. More information is available online at http://effectivehealthcare.ahrq.gov (AHRQ contract 290-200-50036I).

- *Gene expression profiling tests can inform treatment decisions for breast cancer patients.*

This report discusses the available evidence on three breast cancer gene expression assays: the Oncotype DX™ Breast Cancer Assay, the MammaPrint® Test, and the Breast Cancer Profiling Test. Tests that improve such estimates of risk potentially can affect clinical outcome in breast cancer patients by either avoiding unnecessary chemotherapy or employing it where it otherwise might not have been used. *Impact of Gene Expression Profiling Tests on Breast Cancer Outcomes*, Evidence Report/Technology Assessment No. 160 (AHRQ Publication No. 08-E002)* (AHRQ contract 290-02-0018).

- *Race, age, and other factors affect degree of pain among women with breast cancer.*

Researchers studied 1,124 women with stage IV breast cancer over the course of a year and found that minority women who had advanced breast cancer suffered more pain than white women. In addition, women who were inactive and younger women also reported more severe pain. Castel, Saville, DePuy, et al., *Cancer* 112(1):162-170, 2008 (AHRQ grant T32 HS00032).

- *Task Force revises recommendations for mammography.*

The U.S. Preventive Services Task Force updated its recommendation by calling for screening mammography, with or without clinical breast exam, every 1 to 2 years for women 40 and over. The recommendation acknowledges some risks associated with mammography, which will lessen as women age. The strongest evidence of benefit and reduced mortality from breast cancer is among women ages 50 to 69. The recommendation and materials for clinicians and patients are available at www.ahrq.gov/clinic/uspstf/uspsbrca.htm (Intramural). See also Calvocoressi, Sun, Kasl, et al., *Cancer* 120(3):473-480, 2008 (AHRQ grant HS11603).

Cervical Cancer

- *Some Latinas have higher rates of cervical cancer than white women.*

According to this study, women of Mexican descent born in the United States are at higher risk for contracting the human papilloma virus (HPV) that causes cervical cancer than white women and foreign-born Latinas. Indeed, those who have acculturated—i.e., they think, speak, and read English at home or with friends—are more likely than less acculturated Latinas to contract HPV and cervical cancer. The researchers note that rates of HPV in U.S.-born Mexican women may be a result of increased sexual behavior, since more acculturated U.S.-born Mexican women also had higher rates of chlamydia, gonorrhea, and herpes II. Kepka, Coronado, Rodriguez, and Thompson, *Prev Med* 51(2):182-184, 2010 (AHRQ HS13853).

- *Study identifies barriers to followup of an abnormal Pap test in Latinas.*

This study found four primary barriers to women having colposcopy as a followup to an abnormal Pap smear result: (1) anxiety or fear of the test, (2) difficulty scheduling the test around work or child care commitments, (3) poor doctor-patient communication, and (4) concern about pain. The study involved 40 Latinas, of whom 75 percent spoke only Spanish. Percac-Lima, Aldrich, Gamba, et al., *J Gen Intern Med* 25(11):1198-1204, 2011 (AHRQ grant HS19161).

- *Physicians and patients may not be adhering to recommendations for less frequent Pap testing.*

Increased understanding of cervical cancer has led professional organizations to revise clinical guidelines to allow for Pap test intervals of 2 to 3 years after the age of 30 for women who have had three consecutive normal Pap tests. However, recent reports suggest that many physicians are continuing to screen annually. This study found that only 32 percent of physicians had adopted a 3-year Pap test interval. Women older than age 65 were more willing than younger women to follow a 3-year interval. Meissner, Tiro, Yabroff, et al., *Med Care* 48(3):249-259, 2010. See also Saraiya, Berkowitz, Yabroff, et al., *Arch Intern Med* 170(11):977-986 (Intramural).

- *Many homeless women decline the offer of free cervical cancer screening.*

Homeless women have higher rates of cervical cancer than other women, yet even when barriers to cervical screening are removed, many homeless women do not take advantage of free Pap smears. The researchers collected medical and demographic information on 205 homeless women who had been admitted to a medical facility; 129 of the women met the criteria for Pap testing. Only 80 of the women (62 percent) agreed to the testing, and just 56 of the women (70 percent) actually had the test performed. Bharel, Casey, and Wittenberg, *J Women's Health* 18(12):2011-2016, 2010 (AHRQ HS14010).

- *Many young women have not received the HPV vaccine.*

This survey found that more than 60 percent of 1,011 young women aged 13 to 26 years knew about Gardasil®, the vaccine against human pappiloma virus (HPV) that causes cervical cancer. However, only 30 percent of those aged 13 to 17 and 9 percent of those aged 18-26 had received the vaccine. Because the vaccine is most beneficial when given before young women become sexually active, the authors urge practitioners and parents to better educate young women about the vaccine. Caskey, Lindau, and Alexander, *J Adolesc Health* 45(5):453-462, 2009 (AHRQ grant HS15699).

- *Less than 25 percent of physicians report guideline-consistent recommendations for cervical cancer screening.*

Researchers used a large, nationally representative sample of primary care physicians to identify current Pap test screening practices in 2006-2007. They used clinical vignettes to describe women by age and sexual and screening history to elicit physicians' recommendations. Guideline-consistent recommendations varied by physician specialty: obstetrics/gynecology 16.4 percent, internal medicine 27.5 percent, and family/general practice 21.1 percent. Yabroff, Saraiya, Mesisner, et al., *Ann Intern Med* 151(9):602-611, 2009 (AHRQ grant HS10565).

- *A majority of older women think lifelong cervical cancer screening is important.*

Researchers conducted face-to-face interviews with 199 women aged 65 and older to determine their views about continuing to receive Pap tests to screen for cervical cancer. Most of the women were minorities, and about 45 percent were Asian. Despite recent changes in clinical recommendations to stop Pap screening in women older than 65, more than two thirds of the women in this study felt that lifelong screening was either important or very important. Most of the women (77 percent) planned on being screened for the rest of their lives. Sawaya, Iwaoka-Scott, Kim, et al., *Am J Obstet Gynecol* 200(1):40.e1-40.e7, 2009. See also Huang, Perez-Stable, Kim, et al., *J Gen Intern Med* 23(9):1324-1329, 2008 (AHRQ grant HS10856).

- *Instituting new processes can reduce diagnostic errors in Pap smear interpretation.*

Lean methods are used to weigh the expenditure of resources against value received. For this study, researchers compared the diagnostic accuracy of Pap tests procured by five clinicians before (5,384 controls) and after (5,442 cases) implementing a process redesign using Lean methods. Following process redesign, there was a significant improvement in Pap smear quality, and the case group showed a 114 percent increase in newly detected cervical intraepithelial cancer following a previous benign Pap test. Raab, Andrew-Jaja, Grzybicki, et al, *J Low Genit Tract Dis* 12(2):103-110, 2008 (AHRQ grant HS13321).

Ovarian Cancer

- *Study finds racial disparities in receipt of chemotherapy after ovarian cancer surgery.*

Researchers examined 11 years of data for 4,264 women aged 65 or older who were diagnosed with stage IC-IV ovarian cancer (cancer in one or both ovaries with early signs of spreading) to examine receipt of chemotherapy, which is recommended following surgery to remove the cancer. Just over 50 percent of black women received chemotherapy following surgery, compared with nearly 65 percent of white women. Survival rates did not differ between the two groups of women but women in the lowest socioeconomic group were more likely to die than those in the highest group. Du, Sun, Milam, et al., *Int J Gynecol Cancer* 18(4):660-669, 2008 (AHRQ grant HS16743).

- *One type of chemotherapy for ovarian cancer carries an elevated risk for hospitalization.*

Researchers studied 9,361 women aged 65 and older who were diagnosed with stage IC to IV ovarian cancer between 1991 and 2002. Of the 1,694 patients who received nonplatinum chemotherapy, 8 percent were hospitalized because of a gastrointestinal ailment, compared with 6.6 percent of the 1,363 women who received platinum-based chemotherapy and 6.4 percent of the 3,094 women who received platinum-taxane therapy. Receipt of nonplatinum chemotherapy was also associated with a higher risk of hospitalization for infections, hematologic problems (e.g., anemia), and thrombocytopenia (low blood platelet count). Nurgalieva, Liu, and Du, *Int J Gynecol Cancer* 19(8):1314-1321, 2009 (AHRQ grant HS16743).

- *Less access to effective treatment may explain poorer survival of elderly black women with ovarian cancer.*

Researchers studied 5,131 elderly women diagnosed with ovarian cancer between 1992 and 1999 with up to 11

years of followup. Overall, 72 percent of white women and 70 percent of black women were diagnosed with stage III or IV (advanced) disease, however, fewer blacks received chemotherapy than whites (50 vs. 65 percent, respectively). Among those with stage IV disease, those who underwent ovarian surgery and received adjuvant chemotherapy were 50 percent less likely to die during the followup period compared with those who did not, regardless of race. Du, Sun, Milam, et al., *Int J Gynecol Cancer* 18:660-669, 2008 (AHRQ grant HS16743).

Other Cancers

- *Certain chemotherapy drugs used to treat ovarian cancer increase the risk of hospitalization for older women.*

Researchers studied 9,361 women aged 65 or older who were diagnosed with stage I to IV ovarian cancer between 1991 and 2002. Eight percent of the 1,694 women who received nonplatinum chemotherapy were hospitalized for a gastrointestinal ailment while on the chemotherapy, compared with 6.6 percent of the 1,363 women who received platinum-based chemotherapy and 6.4 percent of the 3,094 women who received platinum-taxane therapy. Nurgalieva, Liu, Du, *Int J Gynecol Cancer* 19(8):1314-1321, 2009 (AHRQ grant HS16743).

- *A survey instrument used initially with breast cancer patients is also appropriate for patients with other types of cancer.*

This study found that the 47-item Impact of Cancer, version 2, survey instrument, which was first tested with breast cancer survivors, may also be useful in measuring the effects of other cancers on survivors' quality of life. Researchers gave the survey to 1,188 breast cancer survivors and 652 non-Hodgkins lymphoma survivors and found that the survey measured important and common concerns shared by both groups. Because the survey also pinpointed differences between the two groups, it is also useful for differentiating the impacts specific cancers have on survivors. Crespi, Smith, Petersen, et al., *J Cancer Survivor* 4(1):45-58, 2010 (AHRQ T32 HS00032).

- *A family history of colon cancer does not negatively affect survival for women diagnosed with the same cancer.*

Researchers tracked nearly 1,400 women who were diagnosed with invasive colon cancer and found that women who had two or more relatives with colorectal cancer appeared to have a lower risk of dying from the disease compared with women who had no family history of the cancer. Of the 262 women who had a family history of colorectal cancer, 44 died of the disease; of the 1,129 women who had no family history of the disease, 224 died. Kirchhoff, Newcomb, Trentham-Dietz, et al., *Fam Cancer* 7(4):287-292,2008 (AHRQ grant HS13853).

- *Women's perception of risk affects screening for colon cancer but not cervical or breast cancer.*

Researchers interviewed 1,160 white, black, Hispanic, and Asian women (aged 50 to 80) about their perceived risk for breast, cervical, and colon cancer and compared their perceived risk with screening behavior. The women's perceived lifetime risk of cancer varied by ethnicity, with Asian women generally perceiving the lowest risk and Hispanic women the highest risk for all three types of cancer. Nearly 90 percent of women reported having a mammogram, and about 70 percent of the women reported having a Pap test in the previous 2 years; 70 percent of the women were current with colon cancer screening. There was no relationship between screening and perception of risk for cervical or breast cancer; however, a moderate to very high perception for colon cancer risk was associated with nearly three times higher odds of having undergone colonoscopy within the last 10 years. Kim, Perez-Stable, Wong, et al., *Arch Int Med* 168(7):728-734, 2008 (AHRQ grant HS10856).

Reproductive Health

Pregnancy and Childbirth

- *Prenatal appointments provide an opportunity to screen for depression and other problems.*

This study found that clinicians often fail to screen pregnant women during their first prenatal visit for depression, stress, support, and whether the pregnancy was planned. Such screening allows clinicians to identify women who may be at risk for post-partum depression or need social support once the baby arrives. During 48 prenatal visits with 16 providers in an academic medical center, 35 women indicated their pregnancies were unplanned. Of these, only eight of the women were told about pregnancy options, four received information about birth control options, and just six were referred to counselors or social services. Meiksin, Chang, Bhargava, et al., *Patient Educ Couns* 81(3):462-467, 2010 (AHRQ grant HS13913). See also Manber, Schnyer, Lyell, et al., *Obstet Gynecol* 115(3):511-520, 2010 (AHRQ grant HS09988) and Roman, Gardiner, Lindsay, et al., *Arch Women's Mental Health* 12:379-391, 2009 (AHRQ grant HS14206).

- *Certain women are at increased risk for mental health problems during pregnancy.*

An analysis of data on more than 3,000 pregnant women revealed that levels of social support, general health status, and a woman's mental health history affected her risk for developing mental health problems during pregnancy. Overall, nearly 8 percent of the women reported poor mental health while pregnant. A history of mental health issues prior to pregnancy was strongly predictive of poor mental health during pregnancy. Only 5 percent of women without any mental health problems before

pregnancy developed such problems while pregnant. Witt, DeLeire, Hagen, et al., *Arch Women's Mental Health* 13(5):425-437, 2010 (AHRQ grant T32 HS00083).

- *Pelvic ultrasound in the ER is highly effective in ruling out ectopic pregnancy.*

The chances of a woman having an ectopic pregnancy at the same time as a normal pregnancy is very low—about 1 in 4,000. Thus pelvic ultrasound can be used to confirm a normal pregnancy and at the same time rule out an ectopic pregnancy. Using pooled data from 10 clinical studies of ED pelvic imaging, these researchers concluded that pelvic ultrasound at the bedside in the ER had 99.3 percent sensitivity and a negative predictive value of 99.96 percent. They note that ED physicians can learn to quickly rule out ectopic pregnancy without waiting for radiology consultation with a specialist. Stein, Wang, Adler, et al., *Ann Emerg Med* 56(6):674-683, 2010 (AHRQ grant HS15569).

- *Most American women experience complications during childbirth.*

An analysis of 2008 data from AHRQ's Healthcare Cost and Utilization Project (HCUP) revealed that 94 percent of women hospitalized for pregnancy and delivery had one or more complications, (e.g. premature labor, urinary infection, anemia, diabetes, bleeding, and other problems). Hospital stays for pregnancies with complications were longer (average of 2.9 days) compared with uncomplicated deliveries (average of 1.9 days), cost more ($4,100 vs. $2,600), and accounted for $17.4 billion, or nearly 5 percent of total U.S. hospital costs in 2008. *Complicating Conditions of Pregnancy and Childbirth, 2008*; available at www.hcup-us.ahrq.gov/reports/statbriefs/sb113.pdf (Intramural). See also Toledo, McCarthy, Burke, et al., *Am J Obstet Gynecol* 202(4):400.e1-400.e5, 2010 (AHRQ grant T32 HS00078).

- *Perceived lower social standing is linked to unplanned pregnancies.*

More than 1,000 pregnant women in the San Francisco area responded to a survey, and more than one-third of the women reported that their pregnancies were unplanned. Black women reported the highest rate of unintended pregnancy (62 percent), and white women reported the lowest rate (23 percent). Although just 18 percent of those surveyed were black, they accounted for 33 percent of the unintended pregnancies. The researchers also found that a woman's subjective social standing was associated with unintended pregnancy; the lower the woman's level of self-perceived social standing, the more likely her pregnancy was unplanned. Bryant, Nakagawa, Gregorich, and Kuppermann, *J Women's Health* 19(6):1195-1200, 2010 (AHRQ grant HS10856).

- *Use of episiotomy and forceps during delivery is down, but c-section rates are up.*

An analysis of 1997 and 2008 data from AHRQ's Healthcare Cost and Utilization Project (HCUP) found that the use of episiotomy fell by 60 percent, and the use of forceps declined by 32 percent over that 11-year period. Conversely, the proportion of hospital stays following a c-section increased by 72 percent during the same period. *Hospitalizations Related to Childbirth, 2008*; available at www.hcup-us.ahrq.gov/reports/statbriefs/sb110.pdf (Intramural).

- *An accurate screening tool is needed to identify women most likely to need a repeat c-section.*

These researchers sought to evaluate existing screening tools for vaginal birth after cesarean (VBAC) and to identify additional factors that might predict VBAC or failed trial of labor. They found that none of the models provided consistent ability to identify women at risk for a failed trial of labor. They note the need for a scoring model that incorporates known antepartum factors and labor patterns to allow women and their clinicians to better identify those individuals most likely to require repeat c-section. Eden, McDonagh, Denman, et al., *Obstet Gynecol* 116(4):967-981, 2010. See also Guise, Denman, Emeis, et al., *Obstet Gynecol* 115(6):1267-1278, 2010 (AHRQ contract 290-07-10057).

- *Cesarean delivery rates may not be a useful measure of obstetric quality.*

This study found that 60 percent of 107 hospitals in California and Pennsylvania with risk-adjusted rates of cesarean delivery that were lower than expected also had a higher than expected rate of at least one of six adverse outcomes. This compared with 36.1 percent of the "as expected" group and 19.6 percent of hospitals that had higher than expected risk-adjusted cesarean delivery rates. Currently, there are no uniformly accepted measures of obstetrical quality, and historically, the risk-adjusted cesarean delivery rate has been a proposed measure. The researchers correlated risk-adjusted cesarean delivery rates with important maternal and neonatal outcomes in a study of 845,000 women from 401 hospitals in the two States. Srinivas, Fager, and Lorch, *Obstet Gynecol* 115(5):1007-1013, 2010. See also Edmonds, Fager, Srinivas, and Lorch, *Obstet Gynecol* 118(1):49-56, 2011 (AHRQ grant HS15696).

- *Bariatric surgery before pregnancy reduces the risk of gestational diabetes in obese women.*

According to this study, obese women who have surgery to lose weight before becoming pregnant are 77 percent less likely than those who don't to develop gestational diabetes during pregnancy. Also, obese women who have bariatric surgery before conceiving are much less likely than those who don't to require a c-section. These findings are based on a study involving 700 women who had bariatric surgery, either before (354 women) or after (346 women)

childbirth. Burke, Bennett, Jamshidi, et al., *J Am Coll Surg* 211(2):169-175, 2010 (AHRQ contract 290-05-0034).

- *Novel program offers innovative tools for caring for women with gestational diabetes.*

AHRQ's Health Care Innovations Exchange offers health care professionals practical tools to educate themselves and pregnant women about gestational diabetes and to help them care for women with the condition during and after pregnancy. A number of approaches are described, including telephone case management coupled with periodic home visits from registered nurses and cell phone text messaging to provide monthly educational messages and appointment reminders for glucose testing. For more information, visit www.innovations.ahrq.gov, a searchable database of more than 500 innovations and 1,550 quality tools (Intramural). See also *Hospitalizations Related to Diabetes in Pregnancy, 2008*, available at www.hcup-us.ahrq.gov/reports/statbriefs/sb102.pdf (Intramural).

- *Researchers find a link between race/ethnicity and risk for gestational diabetes.*

According to this analysis of data on nearly 140,000 women who developed gestational diabetes, women who are Asian, Hispanic, or American Indian are more likely than white or black women to develop the condition. Asian women had the highest rate (6.8 percent) of gestational diabetes, followed by American Indian (5.6 percent) and Hispanic (4.9 percent) women; 3.4 percent of white women and 3.2 percent of black women developed gestational diabetes. The rate was even higher when the father was Asian (6.5 percent), Hispanic (4.6 percent), or American Indian (4.5 percent), compared with white (3.9 percent), and black (3.3 percent) fathers. Caughey, Cheng, Stotland, et al., *Am J Obstet Gynecol* 202(6):616.e1-616.e5, 2010, (AHRQ grant HS10856).

- *Uncertainty surrounds use of terbutaline to prevent preterm birth.*

According to this AHRQ research report, there is not enough evidence to determine whether terbutaline administered by a subcutaneous infusion pump can effectively and safely prevent repeat episodes of preterm labor. In addition, the report notes that the adverse effects of terbutaline pump therapy for mothers and their babies have not been fully explored. Terbutaline is FDA-approved for treatment of asthma bronchospasm, but it is sometimes used off-label to prevent uterine contractions and delay preterm labor. See *Terbutaline Pump for the Prevention of Preterm Birth*; available at http://effectivehealthcare.ahrq.gov/ehc/products/157/783/Terbutaline_CER_20111229.pdf (AHRQ contract HHSA 290-07-10059-I).

- *Study identifies ways to enhance prenatal care in underresourced settings.*

Based on a literature review and key informant interviews, these researchers identified 17 innovative strategies involving health information technology that have been or can be used to improve prenatal care in traditionally underresourced settings that serve black, Hispanic, and Asian American patients, as well as low income children. The strategies could be used to improve the content of prenatal care, increase access to timely prenatal care, and enhance the organization and delivery of prenatal care. Lu, Kotelchuck, Hogan, et al., *Med Care Res Rev* 67(5 Suppl):198-230, 2010 (AHRQ contract P233200900421P).

- *Prenatal GBS screening may fall short of CDC-recommended guidelines.*

According to guidelines issued by the Centers for Disease Control and Prevention, pregnant women should be screened for Group B streptococci (GBS) between weeks 35 and 37 of their pregnancies, and those who test positive should be given IV antibiotics 4 or more hours before delivery. This

study of 877 live births in 11 Tennessee counties during 2003 and 2004 found that the test was often performed too early (before week 35) and that not every woman who tested positive for GBS was given antibiotics before delivery. Goins, Talbot, Schaffner, et al., *Obstet Gynecol* 115(6):1217-1224, 2010 (AHRQ grant HS13833).

- *Clinicians vary in the options they offer to women who are experiencing a miscarriage.*

Treatments for miscarriage can include letting it progress naturally, treating it medically with misoprostol, or surgical evacuation; studies have shown that all three options are safe and acceptable to women. According to this study of 976 practitioners (obstetricians [Obs], midwives, and family practitioners [FPs]), a majority of midwives (55 percent) and FPs (65 percent), but just 24 percent of Obs, prefer to let the miscarriage progress naturally. Forty-six percent of Obs prefer surgical evacuation in an operating room; all three groups ranked treatment with misoprostol as the second preferred option. Dalton, Harris, Gold, et al., *Am J Obstet Gynecol* 202(6):531.e1-531.e8, 2010 (AHRQ grant HS15491).

- *Booklet discusses the pros and cons of choosing to have labor induced.*

Labor induction rates more than doubled between 1990 and 2005 to an all-time high of 22 percent. This reflects not only an increase in induction for medical indications but also broader use of elective induction for reasons such as a woman's physical discomfort, scheduling issues, and distance from the hospital. This booklet explains methods used to induce labor and possible complications, as well as what is still not known about elective induction. *Thinking About Having Your Labor Induced? A Guide for Pregnant Women* (AHRQ Publication No. 10-EHC004-A).* See also *Elective Induction of Labor: Safety and Harms; Clinician Guide* (AHRQ Publication No. 10-EHC004-3)* (AHRQ contract 290-02-0019)

- *Home visits by a nurse help low-income pregnant women cope with depressive symptoms.*

Having a nurse-community health worker team make home visits substantially reduces stress and depressive symptoms among low-income pregnant women, according to this study of 613 women in Michigan. Half of the women were assigned to a home visit intervention group and half received usual care. Women who received the home visits had significantly fewer depressive symptoms and lower levels of stress than women in the control group. Roman, Gardiner, Lindsay, et al., *Arch Womens Ment Health* 12:379-391, 2009 (AHRQ grant HS14206).

- *Vaginal birth after a prior cesarean found to be safe for most women.*

According to this AHRQ evidence report, choosing to have a vaginal birth following an earlier c-section—often referred to as VBAC—is a safe and reasonable choice for most women. Evidence shows that compared with a trial of labor, an elective c-section carries a significantly higher risk for maternal death. Also, women who undergo multiple cesarean deliveries are at significant risk of life-threatening conditions. *Vaginal Birth After Cesarean: New Insights*, Evidence Report/Technology Assessment No. 191 (AHRQ Publication No. 10-E001)* (AHRQ contract 290-07-10057-I).

- *Study examines treatment patterns for early pregnancy failure in Michigan.*

Researchers identified 21,311 women enrolled in Michigan's Medicaid program and 1,493 women from a university-affiliated health plan who experienced miscarriages between January 2001 and December 2005 to determine the type of care they received: expectant management, drug therapy, or surgery. They found that Medicaid-enrolled women were more likely to be treated surgically (35 percent) than women in the private plan (18 percent). Among those who had surgery, just 0.5 percent of Medicaid enrollees had surgery in medical offices, compared with nearly 31 percent of the privately insured women. Drug use (misoprostol) was low for both groups. Dalton, Harris, Clark, et al., *J Women's Health* 18(6):787-793, 2009 (AHRQ grant HS15491).

- *Obese women are at risk for pregnancies exceeding 40 weeks.*

In this study of nearly 120,000 women who gave birth between 1995 and 1999 in California, those who were obese before becoming pregnant ran a high risk of having a pregnancy that went 40 weeks or longer. White women, older women (aged 30-39), and women who had never given birth were also more likely to have pregnancies that went 40, 41, or even 42 weeks. Caughey, Stotland, Washington, and Escobar, *Am J Obstet Gynecol* 200(6):683.e1-683.e5, 2009 (AHRQ grant HS10856).

- *Some pregnancy-related complications are minimized for women who have had weight-loss surgery.*

A review of 75 studies revealed that women who undergo weight-loss surgery and later become pregnant after losing weight may be at lower risk than pregnant women who are obese for pregnancy-related diabetes and high blood pressure—complications that can seriously affect the mother and/or her baby. Neonatal outcomes—such as preterm delivery, low birthweight, and high birthweight—also improved in women following weight-loss surgery. Maggard, Yermilov, Li, et al., *JAMA* 300(19):2286-2296, 2008. See also *Bariatric Surgery in Women of Reproductive Age: Special Concerns for Pregnancy*, Evidence Report/Technology Assessment No. 169 (AHRQ

Publication No. 08-E013)* (AHRQ contract 290-02-0003).

- *Numeric tool helps women determine their birthing preferences following a previous cesarean.*

Using a computer-based graphic-numeric decision tool, 96 women who had undergone a previous cesarean delivery made a series of paired comparisons to help them understand their priorities for their next childbirth experience. They used four decision criteria to examine their preferences: avoiding harm to the baby, avoiding side effects for the mother; avoiding risk to future pregnancies, and having a good delivery experience. The women placed the highest priority on avoiding harm to their babies and ranked having a good delivery experience as last. Eden, Dolan, Guise, et al., *J Clin Epidemiol* 62:415-424, 2009 (AHRQ grants HS11338, HS13959, HS15321).

- *Researchers describe use of teamwork in obstetric critical care.*

Crew Resource Management (CRM) is a teamwork approach developed in industry that is being applied today in medical settings to reduce risk to patient safety. At the heart of CRM are communication techniques, situational awareness, and leadership. These authors provide an overview of 11 currently available medical team training programs that use many CRM principles. Guise and Segel, *Obstet Gynecol* 22(5):937-951, 2008 (AHRQ grants HS15800, HS16673).

- *Computerized tool helps women decide about prenatal genetic testing.*

A computerized tool—the Prenatal Testing Decision-Assisting Tool, PT tool—provides personalized estimates of the chances that a woman is carrying a fetus with chromosomal abnormalities, describes prenatal screening and diagnostic tests, and develops a tailored testing strategy. Researchers evaluated the PT tool in a group of pregnant women and found that nearly 80 percent of women who used the tool were able to correctly answer questions on prenatal testing, compared with 65 percent of women in the control group who only read an educational booklet on the topic, and they were more satisfied with the education intervention and more confident about their decision to undergo or forego genetic testing. Kuppermann, Norton, Gates, et al., *Obstet Gynecol* 113(1):53-63 2009 (AHRQ grant HS10856).

- *Bariatric surgery results in improved fertility in formerly obese women.*

This review of the evidence indicates that fertility improves after bariatric surgical procedures, nutritional deficiencies for mother and child are minimal, and maternal and neonatal outcomes are acceptable with laparoscopic band and gastric bypass, as long as adequate nutrition and supplemental vitamins are maintained. There was no evidence that delivery complications are higher in post-surgery pregnancies. *Bariatric Surgery in Women of Reproductive Age: Special Concerns for Pregnancy*, Evidence Report/Technology Assessment No. 169 (AHRQ Publication No. 08-E013)* (AHRQ contract 290-02-0003).

- *Researchers find little high-quality evidence to support the choice of assisted reproductive technology.*

Researchers reviewed the available evidence on the outcomes of interventions used in ovulation induction, superovulation, and in vitro fertilization (IVF) for the treatment of infertility. They found that the majority of studies (80 percent) were conducted outside the United States, and there was little high-quality evidence on which to base a choice among the various interventions for infertility. They were able to substantiate improved pregnancy or live birth rates for several of the therapies. *Effectiveness of Assisted Reproductive Technology*, Evidence Report/Technology Assessment No. 167 (AHRQ Publication No. 08-E012)* (AHRQ contract 290-02-0025).

- *Study examines factors related to infertility in women who have had pelvic inflammatory disease.*

Women who have been exposed to *Chlamydia trachomatis*, as evidenced by the presence of *C. trachomatis* elementary bodies (EBs), have lower rates of pregnancy and higher rates of recurrence of pelvic inflammatory disease (PID) after an initial episode of mild to moderate PID, according to this study. The researchers examined *Chlamydia* antibodies and adverse sequelae after PID among 443 women with mild to moderate PID; they followed the women for a mean of 84 months. Ness, Soper, Richter, et al., *Sex Transm Dis* 35(2):129-135, 2008 (AHRQ grant HS08383).

- *Several factors affect women's perceived risk of prenatal diagnostic screening procedures.*

Invasive prenatal diagnostic tests—such as chorionic villus sampling and amniocentesis—are used to detect Down syndrome and other fetal chromosomal abnormalities, and they entail some risk, principally to the fetus. According to this study, women's perceived risk of adverse procedure-related outcomes varies based on factors that have little to do with risk. For example, among women younger than age 35, the perceived risk of carrying a fetus with Down syndrome was higher in women who had not attended college or had poor health status. Hispanic women, women with incomes less than $35,000, and those who had difficulty conceiving perceived a higher procedure-related risk of miscarriage. Caughey, Washington, and Kuppermann, *Am J Obstet Gynecol* 198:333.e1-333.e8, 2008 (AHRQ grant HS07373).

- *One-third of homeless women are at risk for unintended pregnancy.*

This survey of 974 homeless women in Los Angeles County in 1997 showed that one-third of the women rarely or never used contraception. Women who had a partner, were monogamous, and did not engage in the sex trade were 2.4 times as likely as other women to not use or rarely use contraception. Gelberg, Lu, Leake, et al., *Matern Child Health* 12:52-60, 2008 (AHRQ grant HS08323).

Birth Outcomes

- *One-fifth of mothers do not receive recommended corticosteroids before delivery of premature infants.*

Strong evidence shows that administration of antenatal corticosteroids during preterm labor reduces the incidence of respiratory distress syndrome and other complications associated with prematurity. This study of premature births at three New York City hospitals found that 20 percent of eligible mothers did not receive indicated antenatal corticosteroid therapy. The failure to administer recommended steroids was related strongly to how long after admission the delivery took place, as well as lack of prenatal care, longer gestation, advanced cervical exam, and intact membranes at admission. The study included 515 women eligible for corticosteroid therapy; 70 percent of the women were black or Hispanic, and most were insured through Medicaid or a Medicaid HMO. Howell, Stone, Kleinman, et al., *Matern Child Health J* 14:430-436, 2010 (AHRQ grant HS10859).

- *Birth defects may be linked to high blood pressure itself and not the drugs used to treat it in early pregnancy.*

According to this analysis of data on 465,000 babies born over 13 years in Northern California, a woman's use of medications to lower blood pressure early in pregnancy does not increase the risk of having a baby with a birth defect. The study suggests that the underlying high blood pressure itself—and not the use of angiotensin-converting enzyme inhibitors or other blood pressure medications--may increase the risk of birth defects. Although the FDA warns against the use of ACE inhibitors during the second and third trimesters of pregnancy, this study found no correlation between the occurrence of birth defects and the use of the drugs during the first trimester. Li, Yang, Andrade, et al., *BMJ* 18:343, online, 2011 (AHRQ contract 290-050033-1) See also Davis, Eastman, McPhillips, et al., *Pharmacoepidemiol Drug Saf* 20:138-145, 2011 (AHRQ grant HS10391)..

- *Chronic stress during pregnancy may be associated with less than ideal birth outcomes.*

Pregnant women who are stressed are at risk for early delivery and/or low birthweight babies. To test whether self-reports of stress coincide with the presence of stress biomarkers, researchers used blood samples and questionnaires from 205 reproductive-age women who were receiving welfare in the Chicago area. After determining the women's levels of two common stress biomarkers—Epstein-Barr virus (EBV) and C-reactive protein (CRP)—they compared the results with the women's responses about their levels of actual or perceived stress. Women who reported elevated levels of stress or discrimination had higher levels of EBV than other women, while CRP levels were not strongly associated with self-reported stress. Borders, Grobman, Holl, et al., *Am J Obstet Gynecol* 203(6):577e1-577e8, 2010 (AHRQ grant T32 HS00078).

- *Extreme distress in pregnant women appears to disproportionately affect male fetuses.*

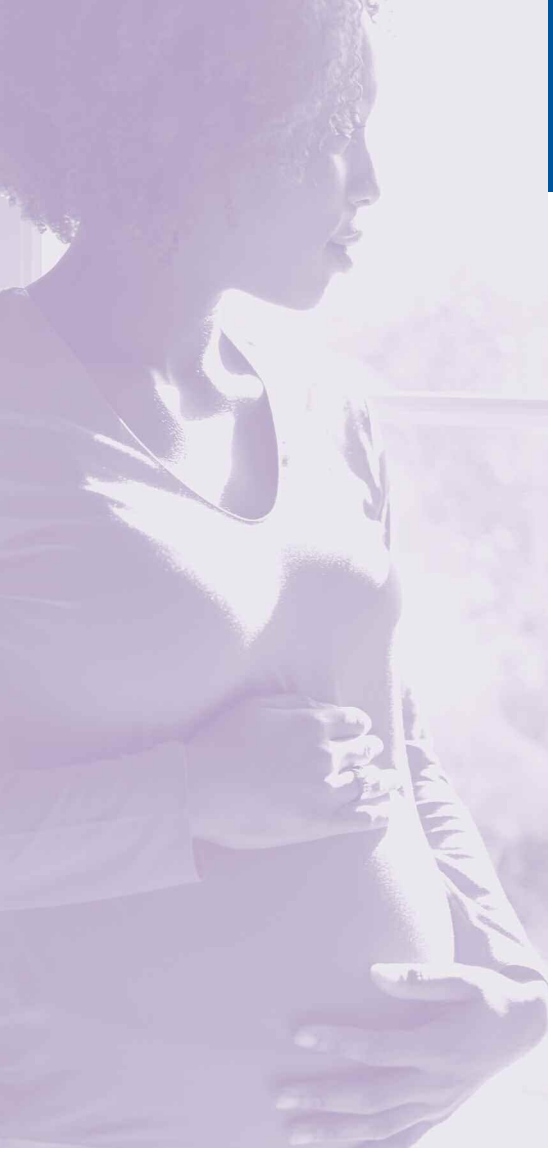
For pregnant women, the stress associated with a natural or social disaster can lead to production of corticosteroids that adversely affect male more than female fetuses. This study found that the events of September 11, 2001 led to a rise in miscarriages of male fetuses at 20 weeks or more gestation. Using 1996 to 2002 data on fetal deaths and birth certificate data, the researchers found that the odds of male fetal death increased unexpectedly in the United States in September 2001. In addition, the ratio of males expected to be born in December 2001 fell below expected values. Bruckner, Catalano, and Ahern, *BMC Public Health* 10:273, 2010 (AHRQ grant T32 HS00086).

- *Mothers' anxiety and history of abuse contribute to risk for low birthweight babies.*

According to this study of 554 pregnant women, abuse and anxiety are linked to low birthweight, possibly due to their effects on a woman's hormone levels. The women were seen at obstetric clinics in Memphis, TN, from 1990 to 1991, and most were black, poor, and unmarried. Those who experienced either verbal or physical abuse during pregnancy delivered babies that averaged 3.5 ounces lighter than women who did not suffer abuse, anxious mothers delivered babies that were 2.50 ounces lighter than average. The researchers also found a link between high-crime neighborhoods and low birthweight infants; mothers who experienced neighborhood stress delivered babies 2.28 ounces lighter than average. Witt, Keller, Gottlieb, et al., *J Behav Health Serv Res*, online at http://jbhsr.fmhi.usf.edu/toc/36.html, 2009 (AHRQ grants T32 HS00063, T32 HS00083). See also Fried, Cabral, Amaro, and Aschengrau, *J Midwifery Womens Health* 53(6):522-528, 2008 (AHRQ grant HS08008).

- *No clear association found between inherited thrombophilia and small-for-gestational-age fetuses.*

Pregnant women who suffer from blood disorders that cause excessive clotting (thrombophilia) are sometimes given blood thinning drugs to prevent intrauterine growth restriction (IUGR) or small-for-gestational-age fetuses



(below the 10th percentile for a given gestational age). A meta-analysis of 19 studies found no clear association between inherited thrombophilia and IUGR. Facco, You, and Grobman, *Obstet Gynecol* 113(6):1206-1216, 2009 (AHRQ grant T32 HS00078).

- *Primary care doctors blame lack of time for failing to counsel women about drugs that cause birth defects.*

Eight focus groups were held with 48 primary care physicians in Pittsburgh, PA, to discuss counseling women about drugs that cause birth defects (teratogens). The doctors reported several barriers to providing such counseling, including short appointment times, lack of reimbursement for counseling, limited resources for finding up-do-date drug information, problems in determining a woman's reproductive plans, and concerns that such counseling may cause the woman to refuse a needed drug. Schwarz, Santucci, Borrero, et al., *Birth Defects Res A Clin Mol Teratol* 85(10):858-863, 2009 (AHRQ grant HS17093).

- *Maternal weight gain is associated with some outcomes for mothers and babies.*

According to this review of the scientific evidence, there is a strong association between a pregnant woman's weight gain and the following outcomes: preterm birth, total birthweight, low birthweight, large- and small-for-gestational-age infants, and very large infants. The researchers found a moderate association between maternal weight gain and two additional outcomes: cesarean delivery and postpartum weight retention for up to 3 years following childbirth. *Outcomes of Maternal Weight Gain*, Evidence Report/Technology Assessment No. 168 (AHRQ Publication No. 08-E009)* (AHRQ Contract 290-02-0016).

- *Race and ethnicity appear not to have an effect on c-section delivery outcomes.*

The researchers tested two risk-adjustment models for primary c-section rates to determine whether adding race and ethnicity to an otherwise identical model would improve the predictive impact of the model. They found that the two models did not differ substantially in predictive discrimination or in model calibration. They conclude that race and ethnicity can safely be left out of cesarean rate risk-adjustment models. Bailit and Love, *Am J Obstet Gynecol* 69:e1-e5, 2008 (AHRQ grant HS14352).

Other

- *Satisfaction after hysterectomy is linked to quality-of-life improvements.*

Women with persistent pelvic problems—such as fibroids and heavy bleeding—often choose to have a hysterectomy when other treatments don't work. These researchers analyzed data on 208 women who participated in an 8-year study and found that nearly 64 percent of the women were satisfied and 21 percent were somewhat satisfied in the year after their hysterectomy. Not surprisingly, women were more likely to be satisfied if their symptoms had improved. Kuppermann, Learman, Schembri, et al., *Obstet Gynecol* 115(3):543-551, 2010 (AHRQ grant HS11657).

- *Mothers' medical visits may provide an opportunity to administer HPV vaccine to their adolescent daughters.*

Two vaccines are available to prevent human papilloma virus (HPV) infection, which causes cervical cancer, yet most young women in the United States are not vaccinated. Approaching young women's mothers during routine medical visits may be a possible route for increasing awareness about HPV and vaccination. Researchers mailed surveys to 3,000 urban and suburban women who had received Pap tests or

mammograms; 937 women responded. Of these, 232 women had daughters aged 9 to 17 years, the age range recommended for vaccination. Carlos, Dempsey, Resnicow, et al., *J Women's Health* 19(12):2271-2275, 2010 (AHRQ grant HS15491).

- *Two widely used data sources differ in estimates of rates of exclusive breastfeeding.*

Researchers compared estimates of "any" breastfeeding and "exclusive" breastfeeding through 3 and 6 months using data from two different sources: the Centers for Disease Control and Prevention and the California Department of Public Health. They found that the rates for "any" breastfeeding for the State as a whole were similar for most racial/ethnic groups and geographic areas, but the two sources differed significantly on rates of "exclusive" breastfeeding, suggesting that either or both sources may be flawed measures of "exclusive" breastfeeding. Flaherman, Chien, McCulloch, Dudley, *Breastfeed Med* 6(1):31-35, 2011 (AHRQ grant HS17146). See also Ip, Chung, Raman, et al., *Breastfeed Med* 4(suppl):S17-S30, 2009 (AHRQ contract 290-02-0022).

- *Some women with vaginal symptoms can be safely treated without exams and lab tests.*

Treating women suffering from uncomfortable vaginal conditions—such as bacterial vaginosis, trichomoniasis, and candidiasis—based on their symptoms and without speculum examination and lab tests appears to be appropriate for some women, according to this study. The 23 women who received treatment for their vaginal symptoms without an exam had outcomes and satisfaction ratings similar to the 21 women who underwent traditional examination and lab testing. Symptoms for 93 percent of all 44 women improved in the 2-week followup period, and both physicians and patients were comfortable with the approach. Anderson, Cohrssen, Klink, and Brahver, *J Am Board Fam Med* 22(6):617-624, 2009 (AHRQ grant HS16050).

- *Rural and community hospitals can use mobile simulators to gain hands-on experience with childbirth emergencies.*

A simulator training initiative was developed to address a crisis in obstetric care in Oregon, where a 2002 survey indicated that one-third of obstetric providers (66 percent rural) planned to stop delivering babies within 1-5 years. Although there were a number of permanent simulation centers, smaller community and rural hospitals lacked the resources to travel for training. This study showed that mobile simulators could do the job, while allowing team members to work in a familiar setting and improve teamwork skills. Guise, Lowe, Deering, et al., *Joint Comm J Qual Patient Saf* 36(10):443-453, 2010 (AHRQ grant HS15800).

- *IVF may be an option for prospective parents when both carry the cystic fibrosis gene.*

In vitro fertilization (IVF) combined with preimplantation genetic diagnosis (PGD) holds an advantage over natural conception and genetic testing for couples when both carry the cystic fibrosis gene, according to this study. Children with two copies of the CF allele have an average life expectancy of 37 years, so genetic screening for CF is now offered to all couples actively planning to have children. When two-carrier couples use IVF and PGD, affected embryos can be discarded before implantation, while a couple using natural conception and prenatal testing would face a decision about terminating a pregnancy. Davis, Champion, Fair, et al., *Fertil Steril* 93(6):1793-1804, 2010 (AHRQ grant T32 HS00028).

- *Settlement of an obstetrical malpractice claim has minimal impact on access to care.*

This study focused on whether the timing of malpractice claims and/or the size of awards had any impact on obstetrical practice patterns in Florida during the study period (1992-2000). The researcher found a small decrease (six fewer per year) in the number of inpatient deliveries performed by physicians 3 years after the closing of a malpractice claim. When the malpractice award was $250,000 or higher, the physician performed 14 fewer deliveries on average. There was no effect on C-section rates or access to obstetrical services. Grimm, *Health Serv Res* 45(1):195-211, 2010 (AHRQ grant HS14515).

- *Breastfeeding benefits both mothers and infants.*

According to a 2007 AHRQ evidence report, breastfeeding is beneficial for both mother and infant. In this question-and-answer article, the authors discuss the report and the role of clinicians in promoting breastfeeding, the particular advantages of breastfeeding for premature infants, lifestyle factors that affect nursing mothers, and ways to overcome societal barriers to breastfeeding. Godfrey and Meyers, *J Women's Health* 18(9):1307-1310, 2009 (AHRQ Publication No. 10-R034).* See also Meyers, *Breastfeed Med* 4(Suppl 1):S-13-S-15, 2009 (AHRQ Publication No. 10-R024)* (Intramural).

- *Treatment without exams and lab texts appears effective for some women with vaginal symptoms.*

Offering women treatment for uncomfortable symptoms of bacterial vaginosis, trichomoniasis, or vaginal candidiasis based on their symptoms—while skipping speculum examination and lab tests—may be appropriate in some cases, according to this study of

44 women. The 23 women who received treatment for their vaginal symptoms without examination had outcomes and satisfaction ratings similar to those of the 21 women who underwent a traditional exam and lab tests. Anderson, Cohrssen, Klink, and Brahver, *J Am Board Fam Med* 22(6):617-624, 2009 (AHRQ grant HS16050).

- *Researchers examine associations among various pathogens and bacterial vaginosis.*

Bacterial vaginosis (BV) is a common lower genital tract infection that may lead to pelvic inflammatory disease (PID) and other conditions. Researchers analyzed stored specimens from 50 randomly selected women with confirmed endometritis to determine the associations among various pathogens and BV. They found several types of bacteria known to be associated with BV among women with confirmed PID. Haggerty, Totten, Ferris, et al., *Sex Transm Infect* 85:242-248, 2009 (AHRQ grant HS08358)

- *Despite CDC-recommended treatment, the pathogen that causes PID may persist.*

Pelvic inflammatory disease (PID) is associated with the pathogen *Mycoplasma genitalium*, and it appears to be very resistant to commonly used treatments. The PID Evaluation and Clinical Health Study (PEACH) examined stored cervical and endometrial specimens from 682 women treated with ceftoxin and doxycycline and found that the pathogen persisted among nearly half of the women after 30 days of treatment. Haggerty, Totten, Astete, et al., *Sex Transmit Dis* 84(5):338-342, 2008. See also Short, Totten, Ness, et al., *Clin Infect Dis* 48(1):41-47, 2009 (AHRQ grant HS08358).

- *Symptoms of menopause may persist for as long as 4 years.*

Researchers reviewed 410 studies to determine the duration of vasomotor symptoms (hot flashes and night sweats) in menopausal women. They found that these symptoms tend to peak 1 year after a woman's last menstrual period, but 50 percent of women continue to experience vasomotor symptoms for up to 4 years. The researchers note that clinical guidelines may need to be modified so that women's quality of life is balanced against the risks of hormone therapy. Politi, Schleinitz, and Col, *J Gen Intern Med* 23(9):1507-1513, 2008 (AHRQ grant HS13329).

- *Abnormally heavy uterine bleeding has both quality of life and financial effects.*

This study of 237 women who had surgery for dysfunctional uterine bleeding (DUB) between 1997 and 2001 found that women with the condition experience both decreased quality of life (cramps, pain, fatigue, and limited physical activity) and financial burdens, including out-of-pocket costs for drugs and sanitary products (average of $333/year) and lost productivity due to missed work and/or the inability to function at home (average of $2,625/year). Frick, Clark, Steinwachs, et al., *Womens Health Issues* 19(1):70-78, 2009 (AHRQ grant HS09506).

- *Both behavioral and drug therapies can help women with urinary incontinence.*

Researchers analyzed existing evidence on nonsurgical treatment for urinary incontinence (UI) in women and found that pelvic floor muscle training (Kegel exercises) and bladder training resolved women's UI compared with usual care. Certain medications also resolved UI compared with placebo, while the effects of electrostimulation, medical devices, injectable bulking agents, and vaginal estrogen therapy were inconsistent. Shamliyan, Kane, Wyman, and Wilt, *Ann Intern Med* 148(6):459-473, 2008 (AHRQ contract 290-02-0009).

- *Task Force recommends screening at-risk women for certain sexually transmitted infections.*

The U.S. Preventive Services Task Force recommends that women at increased risk of infection be screened for *Chlamydia*, gonorrhea, HIV, and syphilis. The Task Force also recommends that pregnant women be screened for hepatitis B, HIV, and syphilis. Those pregnant women at high risk for STIs should be additionally screened for *Chlamydia* and gonorrhea, and sexually active women younger than age 25 should be considered at increased risk for *Chlamydia* and gonorrhea. Meyers, Wolff, Gregory, et al., *Am Fam Physician* 77(6):819-824, 2008 (AHRQ Publication No. 08-R056)* (Intramural).

Chronic Illness and Care

Diabetes

- *Report describes quality of care and outcomes for women with diabetes.*

This report, prepared by AHRQ and the Centers for Disease Control and Prevention, presents measures for quality of care and outcomes for women with diabetes. It highlights where the American health care system excels with regard to diabetes care and where the greatest opportunities for improvement lie. For example, women with diabetes were less likely than women without diabetes to have their blood pressure controlled or to have had a dental visit in the preceding 12 months. Among younger women (64 or younger), women with diabetes were significantly more likely than women without diabetes to have only public health insurance. On the other hand, women with diabetes were much more likely than women without diabetes to have received an annual flu vaccination and

to have ever received a vaccination for pneumonia. *Women with Diabetes: Quality of Health Care, 2004-2005* (AHRQ Publication No. 08-0099)* (Intramural). See also *Women at High Risk for Diabetes: Access and Quality of Health Care, 2003-2006* (AHRQ Publication No. 11-0002)* Available at www.ahrq.gov/populations/womendiab2010 (Intramural).

- *Having a chronic disease like diabetes may be a barrier to receipt of recommended preventive care among women.*

Researchers used data from three nationally representative surveys to examine the quality of care received by women with diabetes and the impact of socioeconomic factors on receipt of clinical preventive services and screening for diabetes-related conditions. They found that use of diabetes-specific preventive care among women is low, and that women aged 45 and younger and those with low educational levels were the least likely to receive recommended services. Also, women with diabetes were less likely than other women to receive a Pap smear, and those who were poor and minority were less likely than more affluent and white women to receive the pneumonia vaccine. Owens, Beckles, Ho, et al., *J Women's Health* 17(9):1415-1423, 2008 (AHRQ Publication No. 09-R018)* (Intramural).

Mental/Behavioral Health

- *Psychological distress may cause women to delay getting regular medical care.*

The stress of juggling work and family roles may lead some women to delay or skip regular preventive care, such as routine physicals, mammograms, and other screening tests. In this study of 9,166 women aged 18-49, over 13 percent of them reported experiencing signs of psychological distress, including feeling nervous, hopeless, restless, fidgety, or depressed. These distressed women were more likely to delay getting health care than women who did not have distress symptoms (27 percent vs. 22 percent, respectively). Bonomi, Anderson, Reid, et al., *Arch Intern Med* 169(18):1692-1697, 2009 (AHRQ grant HS10909).

- *Nearly two-thirds of mothers with depression do not receive adequate treatment for their condition.*

Nearly 10 percent of the 2,130 mothers in this study reported experiencing depression. More than one-third of those with depression did not receive any treatment for their condition, 27.3 percent received some treatment, and just 35 percent received adequate treatment for depression. Mothers who received treatment were more likely than other mothers to be age 35 or older, white, and have some college education, and they were less likely to be in the paid workforce. Witt, Keller, Gottlieb, et al., *J Behav Health Serv Res* online at http://jbhsr.fmhi.usf.edu/toc/36.html, 2009 (AHRQ grants T32 HS00063, T32 HS00083).

- *Nearly half of homeless women are in need of mental health services.*

Researchers conducted face-to-face interviews with 821 homeless women in the Los Angeles area, and found that nearly half of the women had a mental distress score indicating the need for further evaluation and possible clinical intervention. Sixty-seven percent of the women were black, 17 percent were Hispanic, and 16 percent were white. Black women reported the lowest overall mental distress scores; nearly twice as many white women as Hispanic or black women reported childhood or recent physical or sexual assault. Austin, Andersen, and Gelberg, *Women's Health Issues* 18:26-34, 2008 (AHRQ grant HS08323).

Other

- *Routine osteoporosis screening recommended for all women over age 65.*

In an update to its 2002 recommendation, the AHRQ-supported U.S. Preventive Services Task Force now recommends that all women age 65 and older be routinely screened for osteoporosis. The Task Force also recommends that younger women who are at increased risk for osteoporosis be screened if their fracture risk is equal to or greater than that of a 65-year-old white woman who has no additional risk factors. Risk factors for osteoporosis include tobacco use, alcohol use, low body mass, and parental history of fractures. U.S. Preventive Services Task Force, *Ann Intern Med* 154(5):356-364, 2011 (AHRQ contract 290-02-0024).

- *Medicare reimbursement for bone density scans varies by diagnosis codes and Medicare carrier.*

Researchers analyzed Medicare claims data from 1999 to 2005 for a 5 percent national sample of enrollees with part A and part B coverage who were not in HMOs to analyze denial of Medicare coverage for bone density (DXA) scans. They found that although Medicare reimbursement for DXA is covered as part of the "Welcome to Medicare" exam and for certain indications (e.g., screening for estrogen-deficient women and conditions that lead to bone loss), DXA claims were denied from 5 to 43 percent of the time. Variations in reimbursement were related to diagnosis code submitted, place of service, local Medicare carrier, and several other factors. Curtis, Laster, Becker, et al., *J Clin Densitom* 11(4):568-574, 2008 (AHRQ grant HS16956).

- *Osteoporosis and low bone density affect many postmenopausal women.*

Osteoporosis increases bone fragility and susceptibility to fracture; each year in the United States, about 1.5 million people experience a fracture related to osteoporosis. These three documents present information about osteoporosis and low bone density. *Comparative Effectiveness of Treatments to Prevent Fractures in Men and Women with Low Bone Density or Osteoporosis* presents a review of the evidence comparing the efficacy and safety of agents used to treat low bone density (AHRQ Publication No. 08-EHC008-1). *Fracture Prevention Treatments for Postmenopausal Women with Osteoporosis: Clinician's Guide* presents information for doctors and other providers on the effectiveness and safety of various treatments for preventing fractures in postmenopausal women (AHRQ Publication No. 08-EHC008-3). *Osteoporosis Treatments that Help Prevent Broken Bones: A Guide for Women After Menopause* describes the effectiveness, side effects, and costs of the various treatments for low bone density (AHRQ Publication 08-EHC008-2A).* These publications are also available on the AHRQ Web site at http://effectivehealthcare.ahrq.gov/.

- *Preventive care for patients with lupus could be improved.*

Infections and cancer are two of the leading cause of death in patients with lupus, making it particularly important for women with lupus to get cancer screening and immunizations to prevent infections. According to this study, women with lupus do get key tests and vaccinations at rates similar to the general population, but patients who are younger or have less education are not as likely to receive preventive services. Yazdany, Tonner, Trupin, et al., *Arthritis Res Ther* 12:R84, 2010 (AHRQ grant HS13893).

- *Lupus involves higher health care costs and leads to lower work productivity.*

In this study of 812 individuals diagnosed with systemic lupus erythematosus (SLE), researchers found that direct health care costs for each person were $12,643, and their employment rate dropped from 76.8 percent of individuals at the time of diagnosis to 48.7 percent at study enrollment. The majority of study participants (92.6 percent) were female, since lupus mostly affects women. Panopalis, Yazdany, Gillis, et al., *Arthritis Rheum* 59(12):1788-1795, 2008 (AHRQ grant HS13893).

- *Socioeconomic status is related to physical and mental health outcomes of women with lupus.*

Researchers examined data on 957 patients with lupus to assess symptoms, physical functioning, and signs of depression, as well as neighborhood and socioeconomic status (SES). The majority of patients were female (91 percent) and white (66 percent). Three factors were associated with increased disease activity: lower education level, lower income level, and poverty status. There was a significant association between lower SES, worse functioning, and increased depressive symptoms. Patients who were poor and lived in high poverty neighborhoods had a depression rate of 76 percent, compared with 32 percent for patients who were not poor and did not live in high poverty areas. Trupin, Tonner, Yazdany, et al., *J Rheumatol* 35(9):1782-1788, 2008 (AHRQ grant HS13893).

- *Women are more likely than men to be affected by mycobacterial pulmonary disease.*

Nontuberculosis mycobacteria (NTM) disease is an important cause of disease and death, most often in the form of progressive lung disease. According to this study, the prevalence of pulmonary NTM disease in women was 6.4 per 100,000 vs. 4.7 per 100,000 for men in 2005-2006. The researchers also found higher rates of NTM disease in those aged 51 and older and in residents of the Western, more urban part of Oregon. Cassidy, Hedberg, Saulson, et al., *Clin Infect Dis* 49(12):e124-e129, 2009 (AHRQ grant HS19552).

- *Childhood sexual abuse is one of several factors associated with obesity in women.*

Researchers analyzed information collected between 2003-2006 from 867 women (392 heterosexual, 475 lesbian), aged 35 to 64 to identify factors associated with obesity. They found increased odds of obesity among lesbians (58 percent greater) and women who reported childhood sexual abuse by a family member (42 percent greater), compared with women who were not obese; women who had a history of a mental health diagnosis were also more likely to be obese. Reduced odds for obesity were found in those having a household income greater than $75,000 per year or a bachelor's degree. Smith, Markovic, Danielson, et al., *J Women's Health* 19(8):1525-1532, 2010 (AHRQ grant HS17587).

- *Weight-loss surgery can lead to dramatic weight loss, but it remains a high-risk procedure.*

In this commentary, AHRQ director Carolyn Clancy, MD, discusses the pros and cons of bariatric surgery for women, including the necessary lifestyle changes that must be made. She also examines the important role of nurses in helping women achieve success with bariatric surgery. Clancy, *Women's Health* 12(1):21-24, 2008 (AHRQ Publication No. 08-R061)* (Intramural).

- *Booklets help women know which medical tests are needed to stay healthy at any age.*

Two booklets from AHRQ show at a glance what the U.S. Preventive Services Task Force recommends for screening tests and preventive services, as well as what constitutes a healthy lifestyle and healthy behaviors. *Women: Stay Healthy at Any Age* is available in English (AHRQ Publication No. 10-IP002-A) and Spanish (AHRQ Publication No. 10-IP002-B). *Women: Stay Healthy at 50+* is also available in English (AHRQ Publication No. 11-IP001-A) and Spanish (AHRQ Publication No. 08-IP001-B).* These publications are also available online at www.ahrq.gov/clinic/prevenix.htm (Intramural).

Health Impact of Violence Against Women

- *Intimate partner violence is associated with higher health care costs.*

This study examined total health care costs for a group of women over an 11 year period and compared costs for women who experienced intimate partner violence (IPV) with those who did not. IPV resulted in $585 higher annual health care costs during the period of abuse, and these costs remained significantly higher for 3 years after the abuse ended. By the 4th year, differences were not statistically significant, and by the 5th year, costs for the IPV and non-IPV groups were similar. Fishman, Bonomi, Anderson, et al., *J Gen Intern Med* 25(9):920-925, 2010 (AHRQ grant HS10909).

- *Awareness of decision points shared by abused women informs counseling sessions.*

Focus groups were held with 41 women, and an additional 20 women were interviewed; all of the women were undergoing counseling for domestic violence. Researchers identified five turning points that could be used by counselors to motivate women to leave their abusers. The turning points were when (1) they realized that the violence might spill over onto children or other family members; (2) the abuse intensified so they feared for their lives; (3) they realized that support and assistance were available to them; (4) they became fatigued from continually losing hope that their situation would change; and (5) they discovered their abuser was unfaithful. Chang, Dado, Hawker, et al., *J Women's Health* 19(2):251-259, 2010 (AHRQ grant HS13913).

- *Young women are at highest risk for domestic violence.*

According to this study, overall rates of domestic violence are declining, but women in their mid-20s to early 30s are most vulnerable to becoming victims of abuse. Given these findings, the researchers suggest that women in this vulnerable age group who use college health clinics, family planning services, or obstetrical services be screened for domestic violence. Rivara, Anderson, Fishman, et al., *Violence Vict* 24(5):627-638, 2009 (AHRQ grant HS10909).

- *Study documents the intergenerational nature of intimate partner violence.*

In this analysis of telephone interviews of 1,288 abused women in Seattle, WA, researchers found that children whose mothers saw domestic abuse during their childhoods were also at risk for witnessing abuse. Just over 56 percent of the women reported that their children had never seen domestic violence firsthand. However, because mothers were answering questions on their children's behalf, they could have been mistaken about what their child had or had not seen. The researchers note that mothers who witnessed abuse as children may view violence as normal and thus may not shield their children from it. Cannon, Bonomi, Anderson, and Rivara, *Arch Pediatr Adolesc Med* 163(8):706-708, 2009 (AHRQ HS10909).

- *Violence and sexual abuse in childhood are linked to a higher risk for sexually transmitted infections in women.*

These researchers investigated how different forms of violence experienced by women across the lifespan are associated with sexually transmitted infections (STI). They found that having an STI was associated with experiencing both childhood sexual abuse and intimate partner violence. Women who experienced both types of violence were much more likely to have been diagnosed with an STI during

their current relationship than women who had not suffered abuse. Williams, Larsen, McCloskey, *Violence Vict* 35(6):787-798, 2011 (AHRQ grant HS11088).

- *Women who suffer abuse are more likely than those who have never been abused to use mental health services.*

Researchers surveyed 3,333 women aged 18 to 64 in the Pacific Northwest and found that mental health service use was highest when the physical or emotional abuse was ongoing. However, women who had experienced abuse recently (within 5 years) or remotely (more than 5 years ago) still accessed mental health services at higher rates than women who were never abused. Women who were physically abused also used more emergency, outpatient, pharmacy, and specialty services. Women who were experiencing ongoing physical abuse had annual health care costs that were 42 percent higher than women who never suffered abuse. Bonomi, Anderson, Rivara, and Thompson, *Health Serv Res* 44(3):1-16, 2009. See also Bonomi, Anderson, Rivara, et al., *J Gen Intern Med* 23(3):294-299, 2008 (AHRQ grant HS10909).

- *Abused women are more likely to rely on condoms than pills for birth control.*

A survey of 25 women in the Boston, MA, area found that a high rate of women who were victims of domestic violence did not use any form of birth control. Of the 115 women who reported being abused in the past year, 17 percent did not use birth control, compared with 11 percent of the women who were not abused. Abused women most often used condoms (33 percent) to prevent pregnancy, while women who were not abused most often used birth control pills (46 percent). Williams, Larsen, and McCloskey, *Violence Against Women* 14(12):1382-1396, 2008 (AHRQ grant HS11088).

- *Duration and severity of domestic abuse predict whether women will seek medical and legal help.*

Researchers in Seattle conducted phone interviews with 1,509 women who said they had experienced physical, sexual, or psychological abuse since reaching the age of 18. Those who were sexually or physically abused were more likely to seek medical care and legal assistance than those who reported only psychological abuse. The longer the abuse had continued, the more likely the woman was to seek help. Duterte, Bonomi, Kernic, et al., *J Womens Health* 17(1):85-95, 2008 (AHRQ grant HS10909).

- *Hispanic women who are abused while pregnant report high levels of stress.*

Researchers surveyed 210 pregnant Latinas in Los Angeles in 2003-2004 to assess intimate partner violence, adverse social behavior, post-traumatic stress disorder (PTSD), depression, and other life situations. Nearly half (44 percent) of the women reported abuse and high levels of social undermining by their partners (criticism, anger, insults) and stress. Women who were abused were more likely to be depressed (41.3 percent) or to have PTSD (16.3 percent) compared with women who were not abused (18.6 percent and 7.6 percent, respectively). Rodriguez, Heilemann, Fielder, et al., *Ann Fam Med* 6(1):44-52, 2008 (AHRQ grant HS11104).

Health Care Costs and Access to Care

Costs

- *Heart disease, cancer, and mental illness are among the most costly conditions for women.*

In 2008, the cost of treating women for heart disease was $43.6 billion, putting it at the top of the list of the most expensive conditions for women. Cancer came in second at $37.7 billion, followed by mental disorders at $37.3 billion. Other costly conditions included osteoarthritis, high blood pressure, and high cholesterol. These statistics were derived from an analysis of data from AHRQ's Medical Expenditure Panel Survey (www.meps.ahrq.gov/mepsweb). (Intramural)

- *Women who receive food stamps spend more on health care and are more likely to be overweight or obese.*

Researchers analyzed State-level data on food stamp program (FSP) characteristics and Medical Expenditure Panel Survey data to estimate the link between FSP participation and weight and health care expenditures of nonelderly adults. They found that women who receive food stamps are nearly 6 percent less likely to be normal weight and nearly 7 percent more likely to be obese as women who do not receive food stamps. Also, participation in the FSP leads women to devote $94 extra per year to health care. Meyerhoefer and Pylypchuk, *Am J Agric Econ* 90(2):287-305, 2008 (AHRQ Publication No. 08-R072)* (Intramural).

Access to Care

- *Researchers examine health care disparities among homeless women.*

This study found that white, non-Hispanic women are more likely than black or Hispanic women to report unmet health care needs and that women suffering from drug abuse, violence, or depression were most in need of care. Teruya, Longshore, Andersen, et al., *Women's Health* 50(8):719-736, 2011 (AHRQ grant HS08323).

- *Women are more likely than men to seek emergency department care.*

Americans aged 18 and older made more than 98 million trips to hospital emergency departments (EDs) in 2008 for problems including broken bones and heart attacks. This represents 78 percent of the nearly 125 million ED visits that year. Women were more likely than men to use the ED in 2008 (26 percent higher use, 476 visits vs. 378 visits per 1,000 people, respectively). Low income, older, and rural Americans also were

more likely than others to seek care in a hospital ED. See *Emergency Department Visits for Adults in Community Hospitals, 2008*, available at www.hcup-us.ahrq.gov/reports/stat/briefs/sb100.pdf (Intramural).

- *Women are vulnerable to coverage and care gaps when their husbands transition to Medicare.*

Some near-elderly women (aged 62 to 64) experience disruptions in their insurance coverage as their husbands turn 65 and transition to Medicare, according to this study. Women whose coverage was interrupted had a 71 percent increased probability of changing their normal care provider or clinic, and they were much more likely to delay filling a prescription or take less medication than prescribed because of cost. Many women in this age group have one or more chronic conditions, and disjointed care could lead to adverse consequences in this group. Schumacher, Smith, Liou, and Pandhi, *Health Serv Res* 44(3):946-964, 2009 (AHRQ grant T32 HS00083).

Health Care Quality and Safety

- *Many black mothers are skeptical about the relationship between infant sleep position and SIDS.*

Black infants are twice as likely as white infants to die from SIDS, and they are also twice as likely to be put to sleep on their stomachs, despite American Academy of Pediatrics recommendations that infants sleep on their backs to reduce the risk of sudden infant death syndrome. Researchers conducted 13 focus groups with 73 black mothers of infants, as well as 10 individual interviews, to examine perceptions about SIDS among black parents. They found that the mothers perceived the link between sleep position and SIDS to be implausible, SIDS to be random and unpreventable, and parental vigilance to be the key to SIDS prevention. Moon, Oden, Joyner, and Ajao, *J Pediatr* 157:92-97, 2010 (AHRQ grant HS16892).

- *Having a strong social network plays a critical role in health status.*

Researchers administered a 22-item survey to 1,074 women to examine whether a multidimensional, social support instrument originally developed for older Chinese and Koreans could be used for meaningful comparisons across four ethnic groups of women (black, white, Hispanic, and Chinese). Social support items in the survey were divided among three categories: tangible support, informational support, and financial support. Using the survey results, the researchers derived a valid and reliable eight-item social support instrument that is available in English, Spanish, and Chinese. Wong, Mordstokke, Gregorich, and Perez-Stable, *J Cross Cult Gerontol* 25:45-58, 2010 (AHRQ grant HS10856).

- *Case study sets the stage for a discussion of error disclosure in U.S. hospitals.*

A case of wrong-site surgery for skin cancer serves as a framework for discussion of medical error and its disclosure to the patient by the surgeon and the hospital. The author reviews the state of error disclosure in U.S. hospitals, summarizes the barriers to disclosure and some possible solutions, and discusses recent developments in disclosure undertaken by Federal agencies, universities, and national quality organizations. Gallagher, *Acad Med* 84(8):1135-1143, 2009 (AHRQ grant HS16097).

- *Use of electronic health records in labor and delivery units can improve the quality and safety of care.*

Researchers examined 250 paper-based and 250 electronic health record (EHR) labor and delivery notes in a busy university hospital labor and delivery unit. They found that the paper-based notes were substantially more likely to be missing key clinical information compared with the EHR. Information most likely to be missing included data on contractions (10 percent for paper vs. 2 percent for EHR), membrane

status (64 vs. 5 percent), bleeding (35 vs. 2 percent), and fetal movement (20 vs. 3 percent). When workflow was examined, both computer-related and direct patient care activities increased significantly after EHR implementation. Eden, Messina, Li, et al., *Am J Obstet Gynecol* 199:307.e1-307.e9, 2008 (AHRQ grant HS15321).

- *Male-female disparities found in risk for workplace injury.*

In this study of male-female and racial disparities in individual workplace injury and illness risk over time, white men had the highest risk of injury relative to other groups. But, among women, black women had the highest risk of injury. Environmental hazards were associated with elevated injury risk, but no association was found between the level of physical demand and risk of physical injury. Berdahl, *Am J Public Health* (12):2258-2263, 2008 (AHRQ Publication No. 09-R020)* (Intramural).

Women and Medications

- *Women's use of complementary and alternative medicine varies according to sexual orientation.*

According to this study, lesbians are more likely than heterosexual women to use complementary and alternative medicine (CAM). Of the 479 self-identified lesbians who participated in a 2003-2006 survey, 57 percent reported having used CAM compared with 41 percent of heterosexual women. Other predictors of CAM use included white race, having more years of education, experiencing discrimination in a health care setting, living in a large city, being very spiritual, and having a history of a mental health disorder. Smith, Matthews, Markovic, et al., *J Altern Complement Med* 16(11):1161-1170, 2010 (AHRQ grant HS17587).

- *Women want information about the risk medications pose to an unborn child.*

Researchers conducted focus groups with 36 women aged 18 to 45 to ascertain their views on counseling about risks for medication-induced birth defects. Many of the women taking medications for chronic conditions said their providers skirted the issue when prescribing a new medication by advising them to use a backup method of birth control, and in some cases, the risk for birth defects was not discussed at all. All of the women said they wanted to receive such information from their health care providers, even if they did not plan to become pregnant. Santucci, Gold, Akers, et al., *Birth Defects Res* 88(1):64-69, 2010 (AHRQ grant HS17093).

- *Drug treatment for overactive bladder symptoms produces modest results.*

About 11 million U.S. women have overactive bladder syndrome and have symptoms such as strong urges to urinate, difficulty waiting to go, and involuntary loss of urine when they have an urge to urinate. A review of available evidence found that drug therapy and behavioral interventions produce modest results in reducing overactive bladder symptoms in women, while complementary and alternative therapies appeared to be ineffective. Surgical and procedural interventions were effective in some women, but more information is needed on their safety and effectiveness. *Treatment of Overactive Bladder in Women*, Evidence Report/Technology Assessment No. 187 (AHRQ Publication No. 09-E017)* (AHRQ contract 290-2007-10065-I).

- *Women are prescribed more drugs than men during their reproductive years.*

According to this study, women in their reproductive years received more prescriptions than same-age men in 48

of 53 drug classes. These included drugs commonly used to treat urinary tract and vaginal infections, migraine headaches, mental health conditions, pain, and gastrointestinal ailments. As they aged, the prescribing patterns changed; men received more drugs than women for angina, heart failure, high blood pressure, elevated cholesterol, and risk of blood clots, even though older women suffer from these conditions at the same rate as men. Anthony, Lee, Bertram, et al., *J Women's Health* 17(5):735-743, 2008 (AHRQ grant HS17001).

- *Pregnant women continue to receive a class of high blood pressure medications dangerous to the fetus.*

Use of angiotensin-converting enzyme (ACE) inhibitors during the second and third trimesters of pregnancy to treat high blood pressure is dangerous to the fetus, yet the number of pregnant women prescribed these medications increased steadily between 1986 and 2003, according to this study. This increase was despite an FDA black box warning against such use issued in 1992. The researchers examined data on 262,179 Medicaid-enrolled pregnant women and found that the use of ACE inhibitors increased 4.5-fold (from 11.2 to 58.9 per 10,000 pregnancies) during the study period. Bowen, Ray, Arbogast, et al., *Am J Obstet Gynecol* 198:291,e1-291,e5, 2008 (AHRQ grant HS10384).

- *Use of oral diabetes agents or insulin to treat gestational diabetes appears beneficial, and the likelihood of harm is low.*

This review of the evidence focused on the risks and benefits associated with use of an oral diabetes agent compared with all types of insulin for gestational diabetes. Other areas reviewed include any risk factors that might be associated with the development of type 2 diabetes after gestational diabetes; the reliability of diagnostic tests for type 2 diabetes in women with gestational diabetes; and whethet there is evidence that elective labor induction, cesarean delivery, or timing of induction is associated with risks and benefits for mother and neonate. *Therapeutic Management, Delivery, and Postpartum Risk Assessment and Screening in Gestational Diabetes*, Evidence Report/Technology Assessment No. 162 (AHRQ Publication No. 08-E004)* (AHRQ contract 290-02-0018).

Data Sources for Gender Research

Medical Expenditure Panel Survey

In 1996, AHRQ launched the Medical Expenditure Panel Survey (MEPS), a nationally representative survey to collect detailed information on health status, health care use and expenses, and health insurance coverage for individuals and families in the United States, including nursing home residents. MEPS is helping the Agency to address many questions important to women, including how health insurance coverage, access to care, use of preventive care, the growth of managed care, changes in private health insurance, and other changes in the health care system are affecting the kinds, amounts, and costs of health care services used by women. For more information related to MEPS, go to www.meps.ahrq.gov.

Healthcare Cost and Utilization Project

The Healthcare Cost and Utilization Project (HCUP) is a family of health care databases and related software tools and products sponsored by AHRQ and developed through a Federal-State-industry partnership. HCUP includes the largest collection of longitudinal hospital care data in the United States, with all-payer, encounter-level information beginning in 1988. These databases enable research on a broad range of health policy issues that are pertinent to women, including the cost and quality of health services, access to care, and patient outcomes at the national, State, and local levels. HCUP comprises the following databases:

- Nationwide Inpatient Sample (NIS), with inpatient data from a national sample of over 1,000 hospitals.
- Kids' Inpatient Database (KID), a nationwide sample of pediatric inpatient discharges.
- State Inpatient Databases (SID), which contain the universe of inpatient discharge abstracts from participating States.
- State Ambulatory Surgery Databases (SASD), which contain outpatient data on surgical encounters.
- State Emergency Department Databases (SEDD), which contain data from hospital-affiliated emergency departments.

For more information about HCUP, go to www.hcup-us.ahrq.gov

More Information

For more information on AHRQ initiatives related to women's health, please contact:

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