

# PROGRAM BRIEF

## Cancer Screening and Treatment in Women

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.

### Cancer in Women

Breast cancer continues to be the most commonly diagnosed cancer among women in the United States. In 2002, an estimated 203,500 U.S. women were newly diagnosed with breast cancer, and nearly 39,000 women died from the disease.

The good news is that breast cancer deaths have declined in recent years among white women in this country; the bad news is that over the same period, survival has decreased among black women. Although between 12 and 29 percent more white women than black women are stricken with breast cancer, black women are 28 percent more likely to die from the disease. The 5-year breast cancer survival rate is 69 percent for black women, compared with 85 percent for white women.

In 2002, there were an estimated 13,000 newly diagnosed cases of invasive cervical cancer in U.S. women, and about 4,100 women died from the disease. Cervical cancer occurs most

often among minority women, particularly Asian-American (Vietnamese and Korean), Alaska Native, and Hispanic women. Although deaths from cervical cancer have declined substantially over the past 30 years, the cervical cancer death rate for black women continues to be more than twice that of white women. The chance of dying of cervical cancer increases as women get older. Worldwide, cervical cancer is the second or third most common cancer among women, and in some developing countries, it is the most common cancer.

Women who have never had a Pap test or who have not had one for several years have a higher than average risk of developing cervical cancer. Many women still do not have regular Pap tests, particularly older women, uninsured women, minorities, poor women, and women living in rural areas. About half of the women with newly diagnosed invasive cervical



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cancer have not had a Pap test in the previous 5 years.

### AHRQ-Sponsored Research

The Agency for Healthcare Research and Quality (AHRQ) supports a vigorous women's health research program, including research focused on breast and cervical cancer, as well as ovarian and colon cancer. AHRQ-supported projects are addressing women's access to quality health care services, accurate diagnoses, appropriate referrals for procedures, and optimal use of proven therapies.

Following are examples of findings from AHRQ-supported research projects focused on cancer in women. An asterisk (\*) indicates that reprints of an intramural study or copies of other publications are available from AHRQ. See the back cover of this fact sheet to find out how you can get more detailed information on AHRQ's research programs and funding opportunities.

### Breast Cancer

- *Clinicians should discuss use of tamoxifen to prevent breast cancer with women who are likely to benefit from it.*

These researchers surveyed 605 women aged 40 to 69 seen in 10 general internal medicine practices in North Carolina in 2001. They found that 9 percent of white women and 3 percent of black women in their 40s were at high risk of breast cancer, compared with 24 percent of white women and 7 percent of black women in their 50s and 53 percent of white women and 13 percent of black women in their 60s. Tamoxifen has been shown to reduce the incidence of breast cancer, but it is associated with a higher risk of endometrial cancer, blood clots, and

stroke. When these risks were considered, 10 percent or fewer of white women in all age groups were potentially eligible to take the drug. Lewis, Kinsinger, Harris, and Schwartz, *Arch Intern Med* 164:1897-1903, 2004 (AHRQ contract 290-97-0011).

- *Study underscores the importance of involving women in breast cancer treatment decisions.*

According to this study, women who receive the breast cancer treatment they prefer have a better body image 2 years after treatment than women who do not. Figueiredo, Cullen, Hwang, et al., *J Clin Oncol* 22 (19):4002-4009, 2004 (AHRQ grant HS08395).

- *Most women who are diagnosed with early-stage breast cancer can choose either lumpectomy or mastectomy.*

Treatment for early-stage breast cancer usually includes either breast-conserving surgery (lumpectomy) together with radiation or mastectomy (complete removal of the affected breast). This booklet can help women weigh the pros and cons of both options and take a more active role in their breast cancer treatment. The booklet was developed by AHRQ and the National Cancer Institute, along with other government and nongovernment partners. Copies of *Surgery Choices for Early-Stage Breast Cancer* (AHRQ Publication Nos. PHS 04-M053, English; and 05-0031, Spanish) are available from AHRQ.\*

- *Researchers assess quality measures for breast cancer care.*

Researchers at AHRQ's University of Ottawa Evidence-based Practice Center analyzed the scientific literature on quality measures/indicators used to assess the quality of breast cancer care in women. They found few evidence-based formal quality measures for breast

cancer care and concluded that it was not possible to derive a meaningful overview of gaps in breast cancer care. Evidence Report/Technology Assessment No. 105, *Measuring the Quality of Breast Cancer Care in Women* (AHRQ Publication Nos. 04-E030-1, summary; and 04-E030-2, full report) is available from AHRQ.\*

- *Women who have certain breast tumors should not increase their use of soy products to minimize menopausal symptoms.*

Chemotherapy for breast cancer, including tamoxifen, may induce or accelerate ovarian failure, resulting in severe menopausal symptoms. This review of the evidence demonstrates that soy products may stimulate breast cancer growth and interfere with tamoxifen's anti-tumor activity. Duffy and Cyr, *J Women's Health* 12(7):617-631, 2003 (AHRQ grant T32 HS00011).

- *Use of tamoxifen to prevent breast cancer should depend on a woman's potential benefits and risks.*

This meta-analysis of 32 clinical trials of women (average age 55) on tamoxifen for 4.3 years showed that tamoxifen was associated with a significantly increased risk of endometrial and gastrointestinal cancers, stroke, and pulmonary emboli. Conversely, tamoxifen use significantly decreased heart attack deaths and was associated with an insignificant decrease in heart attack incidence. Braithwaite, Chlebowski, Lau, et al., *J Gen Intern Med* 19:937-947, 2003 (AHRQ grant HS09796).

- *Benefits of adding radiation therapy to tamoxifen after lumpectomy diminish with increasing age.*

This study found that a woman aged 50 who is postmenopausal and has localized breast cancer is 54 percent less

likely to die if she receives radiation therapy and tamoxifen after lumpectomy, compared with receipt of tamoxifen alone. The reduced risk for an 80-year-old woman is 42 percent. Punglia, Kuntz, Lee, and Recht, *J Clin Oncol* 21(12):2260-2267, 2003 (AHRQ grant T32 HS00020).

- *Study finds significant differences in survival for three breast cancer treatment alternatives.*

Using Medicare claims data, the researchers found highly significant differences in survival for older women with early-stage breast cancer who underwent one of three treatments: mastectomy, lumpectomy with radiation, and lumpectomy only. These results, which are based on observational data, differ from results of randomized clinical trials. Hadley, Polsky, Mandelblatt, et al., *Health Econ* 12:171-186, 2003 (AHRQ grant HS08395).

- *Two treatments for early-stage breast cancer are equally cost effective.*

Two studies by researchers at Georgetown University examined the cost-effectiveness of surgical treatments for early-stage breast cancer and patients' quality of life after surgery. The first study found that giving older breast cancer patients a choice of either lumpectomy followed by radiation or mastectomy is cost effective. The second study showed that how older women are treated during their care, not the therapy itself, is the most important determinant of long-term quality of life. Polsky, Mandelblatt, Weeks, et al., *J Clin Oncol* 21(5):1139-1146, 2003; and Mandelblatt, Edge, Meropol, et al., *J Clin Oncol* 21(5):855-863, 2003 (AHRQ grant HS08395).



- *Among low-income black women, those most at risk for breast cancer know the least.*

Elderly women are more likely than younger women to die from breast cancer, and black women die of breast cancer more often than white women due to late diagnosis. In this study, low-income black women 65 and older underestimated their risk of getting breast cancer, and those 85 and older were the least likely to have had a mammogram or breast exam in the preceding 2 years. Jones, Thompson, Oster, et al., *J Natl Med Assoc* 95(9):791-805, 2003 (AHRQ grant HS10875).

- *Breast cancer survival is increased in women who perceive high levels of emotional support.*

This study involved 145 black and 177 white women diagnosed with breast cancer in Connecticut between January 1987 and March 1989. Higher levels of perceived emotional support had a significant association with increased survival among the women, who were followed for 10 years. Soler-Vila, Kasl, and Jones, *Cancer* 98:1299-1308, 2003 (AHRQ grant HS06910).

- *Racial disparities found in timely and thorough followup of suspected breast cancer.*

More than one-fourth of black women who have abnormal results from mammography or clinical breast exam have not resolved the diagnosis with followup tests 6 months later. In this study, black women with prior breast abnormalities or higher levels of cancer anxiety were about half as likely as other women to follow up on the abnormal results within 3 to 6 months. Delays of 3 to 6 months have been associated with lower survival rates

compared with more timely followup. Kerner, Yedida, Padgett, et al., *Prev Med* 37:92-101, 2003 (AHRQ grant HS08395).

- *Mammography volume is only one factor affecting radiologists' accuracy.*

Radiologists who examine more than 5,000 mammograms a year are more likely to accurately interpret them than radiologists who read a low volume of mammograms. Other factors affecting radiologists' accuracy in reading mammograms include their fear of medical malpractice, characteristics of individual women in the population being screened (e.g., number of women in the screened population who are taking hormone replacement therapy, variation in the timing of mammography during the women's menstrual cycles), and whether or not women are returning to the same facility each year for their mammograms so that films from prior years are available for comparison. Elmore, Miglioretti, and Carney, *J Natl Cancer Inst* 95(4):250-252, 2003 (AHRQ grant HS10591).

- *Patients' choice of breast cancer treatment affects health.*

A sample of 683 older women with localized breast cancer was surveyed (at 5 months, 1 year, and 2 years) following surgery for breast cancer at 1 of 29 hospitals in Massachusetts, Texas, New York, and Washington, DC. The investigators found that women aged 67 and older who participate with their doctor in choosing which treatment they receive recover faster and have a more positive short-term outlook than women who are not given a choice. Polsky, Keating, Weeks, et al., *Med Care* 40(11):1068-1079, 2002 (AHRQ grant HS08395).

- *Study finds that interpretations of mammograms vary.*

In this study, investigators examined results from 24 community radiologists' interpretations of 8,734 screening mammograms from 2,169 women over an 8-1/2-year period. The investigators found wide variation in how frequently different radiologists noted masses, calcifications, and other suspicious lesions. The rate of false-positive readings among the radiologists ranged from 2.6 to 15.9 percent. After adjustment for differences in patient, radiologist, and testing characteristics, the rate of false-positive readings ranged from 3.5 to 7.9 percent. Elmore, Miglioretti, Reisch, et al., *J Natl Cancer Inst* 94(18):1373-1380, 2002 (AHRQ grant HS10591).

- *Older black women may not receive preferred breast cancer treatment.*

Data from 984 black and 849 white Medicare-insured women aged 67 years or older who were diagnosed with localized breast cancer were analyzed along with data from a subset of 732 surviving women who were interviewed 3 to 4 years after treatment. Elderly black women were 36 percent more likely than elderly white women to receive mastectomy versus breast-conserving surgery (BCS) and radiation, say researchers. Further, when black women received BCS, they were 48 percent more likely than white women to not have radiotherapy. Mandelblatt, Kerner, Hadley, et al., *Cancer* 95:1401-1414, 2002 (AHRQ grant HS08395).

- *Patient age and provider specialty affect the use of axillary dissection.*

Using medical records for 464 elderly women with stage 1-2 breast cancer who underwent breast-conserving surgery (BCS) and 158 surgeon surveys, investigators examined patient, clinical, and surgeon characteristics associated with the non-use of axillary lymph node biopsy. Increasing age was strongly associated with decreasing odds of undergoing node biopsy. Women who were cared for by surgeons with subspecialty training in surgical oncology were 60 percent less likely to undergo node dissection than women who were cared for by other surgeons. Edge, Gold, Gerg, et al., *Cancer* 94:2534-2541, 2002 (AHRQ grant HS08395).

- *Communication of treatment options enhances quality of care.*

Researchers analyzed data from 613 surgeons and their patients who had been diagnosed with localized breast cancer. According to the study results, older women who are told about treatment options by their surgeons are more likely to get breast-conserving surgery with radiation than other types of treatment. These women also are more likely to have a sense of treatment choice and be more satisfied with the care received. Liang, Burnett, Rowland et al., *J Clin Oncol* 20(4):1008-1016, 2002 (AHRQ grant HS08395).

- *Increased use of health care is related to increased screening.*

This study examined mammography use among 2,059 HIV-positive and 569 HIV-negative socioeconomically disadvantaged women enrolled in the Women's Interagency HIV Study.

Mammography use was also compared with U.S. women using data from the National Health Interview Survey. HIV-positive women were 60 percent more likely than HIV-negative women to be screened for the first time while in the study. More HIV-positive than HIV-negative women reported having health insurance (82 vs. 59 percent); a primary care provider (93 vs. 67 percent); and a visit to a doctor in the past 2 months (84 vs. 54 percent). Preston-Martin, Kirstein, Pogoda, et al., *Prev Med* 34:386-392, 2002 (sponsored by AHRQ, NIH, CDC).

- *Mammography improves outcomes of elderly cancer patients.*

To determine the impact of mammography screening on elderly breast cancer patients, data were examined on 718 patients newly diagnosed with stage 1 and 2 disease at 29 hospitals. Researchers found that 96 percent of women with cancer diagnosed with a mammogram had stage 1 lesions compared with 81 percent of women diagnosed by other means. Screening was associated with a higher likelihood of receiving breast-conserving surgery with radiation than other local therapies, even after controlling for stage and histology. Kerner, Mandelblatt, Silliman, et al., *Breast Cancer Res Treat* 69(1):81-91, 2001 (AHRQ grant HS08395).

- *Illness burden and breast cancer therapy are not correlated.*

Investigators assessed the correlations between five measures of illness burden, global health, and physical function and evaluated how each measure correlated with breast cancer treatment patterns in a group of 718 older

women with early-stage breast cancer. All of the measures were significantly correlated with each other and with physical function and self-rated health. Although several measures were associated with breast cancer therapy, each measure accounted for only a small amount of variance in treatment patterns. Mandelblatt, Bierman, Gold, et al., *Health Serv Res* 36(6):1085-1107, 2001 (AHRQ grant HS08395).

- *Two interventions prevent psychosocial declines.*

Women with metastatic breast cancer were randomly assigned to a control or intervention group (expressive-supportive group psychotherapy or an online support group) to examine the impact of these two interventions on psychosocial well-being. Despite differences (in the use of specific therapeutic methods, the presence of a skilled professional, and the physical proximity of group members), both interventions prevented psychosocial declines in social connection, activity, and coping. *Psychosocial Interventions for Metastatic Breast Cancer*. Grant final report (NTIS Accession No. PB2002-10140), Ruvanee M. Pietersz, Ph.D., University of Chicago (AHRQ HS10565).\*\*

- *A previous mammogram may reduce the risk of a false-positive reading.*

This project examined the incidence of false-positive mammography using detection controlled estimation on an extensive database from a hospital-based mammography program. Results imply that access to a previous mammogram reduces the incidence of false-positive readings by 50 to 80 percent. *False-Positive Mammograms*



*and Detection-Controlled Estimation.* Grant final report (NTIS Accession No. PB2002-101464), Andrew N. Kleit, Ph.D., Pennsylvania State University (AHRQ grant HS10068).\*\*

- *Hospitals should implement care coordination mechanisms for early-stage breast cancer patients.*

Researchers interviewed 67 physicians, nurses, and support staff practicing at six hospitals about hospital- and office-based approaches to coordinating care for breast cancer patients. At high-coordination hospitals, 88 percent of women with breast-conserving surgery received recommended radiotherapy, and 84 percent of those with tumors larger than 1 cm received recommended systemic chemotherapy compared with 76 and 73 percent of women, respectively, at low-coordination hospitals. Bickell and Young, *J Gen Intern Med* 16:737-742, 2001 (AHRQ grant HS09844).

- *Task Force issues updated recommendation for mammography.*

The U.S. Preventive Services Task Force has updated its recommendation on screening mammography and now calls for screening mammography, with or without clinical breast exam, every 1 to 2 years for women ages 40 and over. The recommendation acknowledges some risks associated with mammography, which will lessen as women age, and that the strongest evidence of benefit and reduced mortality from breast cancer is among women ages 50 to 69. The breast cancer screening recommendation and materials for clinicians and patients are available at <http://www.ahrq.gov/clinic/3rdupstf/breastcancer/>.

- *Outpatient mastectomies have increased over the past decade.*

This study revealed that two key factors influence whether a woman gets a complete mastectomy in the hospital or in an outpatient setting: the State where she lives and who is paying for the surgery. The researchers examined hospital inpatient and outpatient discharge records for all women who were treated for cancer with a breast procedure in five States: Colorado, Maryland, New Jersey, New York (1990-1996 data for these States), and Connecticut (1993-1996 data). They found dramatic increases in outpatient complete mastectomies in these States. For example, outpatient complete mastectomies in Colorado jumped from under 1 percent in 1990 to 22 percent in 1996. Nearly all women who were Medicare or Medicaid beneficiaries were kept in the hospital after surgery, as were 89 percent of women enrolled in HMOs. Case, Johantgen, and Steiner, *Health Serv Res* 36(5):869-884, 2001 (Reprints, AHRQ Publication No. 01-R008) (Intramural).\*

- *Physicians' preferences help determine treatment for older women with breast cancer.*

Researchers at the Georgetown University School of Medicine queried a random sample of 1,000 surgeons. Respondents were given three scenarios involving older women with localized breast cancer and asked whether they would use breast-conserving surgery (BCS) or mastectomy and whether they would use radiation therapy after BCS. Surgeons' preferences were significantly associated with self-reported practices and treatments and explained some of the variations in breast cancer treatment

patterns among older women. Mandelblatt, Berg, Meropol, et al., *Med Care* 39(3):228-242, 2001 (AHRQ grant HS08395).

- *Hormone replacement therapy does not appear to increase risk of breast cancer recurrence.*

Hormone replacement therapy (HRT) that can relieve symptoms of menopause usually is withheld from women who have had breast cancer because of concern that it might increase the risk of recurrence. These researchers conducted a systematic review of research studies through May 1999. They compared the findings from 11 studies of breast cancer recurrence in women taking and not taking HRT. Over a 30-month followup period, 4.2 percent of HRT users and 5.4 percent of nonusers per year had a recurrence of breast cancer. Col, Hirota, Orr, et al., *J Clin Oncol* 19:2357-2363, 2001 (AHRQ grant HS09796).

- *AHRQ publishes report on management of breast abnormalities.*

Researchers conducted an extensive review of the literature and reported findings such as the evidence for performing an excisional biopsy following a stereotactic core needle biopsy, use of tamoxifen therapy, and sentinel lymph node biopsy. They suggest future research should examine breast disease risk factors, breast symptoms, and how these relate to cancer diagnoses. The full evidence report, *Management of Specific Breast Abnormalities*, Evidence Report/Technology Assessment No. 33 (AHRQ Publication No. 01-E046), and a summary (AHRQ Publication No. 01-E045) are available from AHRQ (contract 290-97-0016).\*

- *Community programs are an effective way to reach poor and minority women with health messages.*

Researchers who examined the cost and cost-effectiveness of the Los Angeles Mammography Program (LAMP) recommend that careful consideration be given to community-based and other approaches outside of the traditional purview of medicine to enhance use of mammography among poor and minority women. Additionally, community and church-based programs should be compared with a range of alternative programs targeting poor and minority women who have limited access to mammography. LAMP, which involved 45 churches and 2 interventions to improve rates of mammography screening, generated 3.24 additional screenings among 56 women. Siegel and Clancy, *Health Serv Res* 35(5):905-909, 2000 (Reprints, AHRQ Publication No. 01-R032) (Intramural).\*

- *Attitudes about mammography affect appointment-keeping.*

This study found that negative attitudes about mammography may play a role in the disproportionate number of breast cancer deaths among black women compared with white women. Knowledge of screening recommendations and access to free mammograms were not enough to get some low-income black women to keep their mammography appointments. Most of the women who skipped their appointments said they were embarrassed or believed that a mammogram was unnecessary if they did not have symptoms. Crump, Mayberry, Taylor, et al., *J Nat Med Assoc* 92:237-246, 2000 (AHRQ grant HS07400).



## Cervical Cancer

- *Despite new guidelines, most ob-gyns continue to overscreen low-risk women for cervical cancer.*

The American Cancer Society suggests that cervical cancer screening with Pap tests begin within 3 years after a woman becomes sexually active or by age 21, whichever comes first. The ACS no longer recommends annual screening in women over 30 who have had three or more previous normal Pap tests. The American College of Obstetricians and Gynecologists has made similar recommendations. Yet 185 randomly selected ob-gyns said that they would begin screening girls who were not yet sexually active at age 18. Also, 60 percent of respondents said that they would continue annual screening in a 35-year-old woman with three or more normal tests. Saint, Gildengorin, and Sawaya, *Am J Obstet Gynecol* 192:414-421, 2005; see also Sawaya, McConnell, Kulasingam, et al., *New Engl J Med* 349(16):1501-1509, 2003 (AHRQ grant HS07373).

- *Rural women report satisfaction with telecolposcopy.*

Women living in rural Georgia felt that telecolposcopy saved them time and money and said they would recommend the procedure to a friend. The women believed that telecolposcopy improved the quality of their care, and they felt better about their health after the exam. Ferris, Litaker, and Lopez, *J Am Board Fam Pract* 16:405-411, 2003; see also Bishai, Ferris, and Litaker, *Med Decision Making* 23:463-470, 2003 (AHRQ grant HS08814).

- *Cervical cancer rates among younger women have decreased.*

According to this study, the rate of cervical cancer detected among women younger than 30 and the incidence rates of cervical cancer overall (and squamous cell cancer specifically) declined by nearly 1 percent per year from 1973 to 1999. Chan, Sung, and Sawaya, *Obstet Gynecol* 102(4):765-773, 2003 (AHRQ grant HS07373).

- *Task Force issues recommendation on cervical cancer screening.*

The U.S. Preventive Services Task Force issued a strong recommendation that women should be screened for cervical cancer 3 years after they begin sexual activity or at the age of 21, whichever comes first. The Task Force concluded that screening should be performed at least every 3 years but noted that annual screening is appropriate until a woman has had at least two to three consecutive normal Pap test results. The Task Force also recommends against screening women 65 and older who have had adequate recent screenings with normal results and are not otherwise at increased risk for cervical cancer. More information is available on the AHRQ Web site at [www.ahrq.gov/clinic/3rduspstf](http://www.ahrq.gov/clinic/3rduspstf) and from the National Guideline Clearinghouse™ at [www.guideline.gov](http://www.guideline.gov).

- *Conferees explore cost-effectiveness lessons of Pap smears.*

Conference participants explored public policy implications of cost-effectiveness analyses of cervical cancer screening and the challenges encountered when moving research results into the policy arena. Presentations focused on cost-effectiveness analysis and practice, the

role of evidence in cost-effectiveness analysis, and the role of cost-effectiveness in a managed care organization. *Does Cost-Effectiveness Make a Difference? Lessons from Pap Smears* (NTIS Accession No. PB2002-108739), Michael Hagen, M.D., University of Kentucky (AHRQ grant HS10931).\*\*

- *Telecolposcopy can maintain diagnostic accuracy.*

Reviewers examined the efficacy of telecolposcopy for women with abnormal Pap smears or other indications for colposcopy who were examined by local colposcopists at rural clinics. Images of colposcopic examinations were transmitted to a tertiary care center for interpretation by an expert colposcopist, and another colposcopist (site expert) examined the same patients, but did not share findings with the other colposcopists. Agreement ranged from 60, 56, and 53 percent for the local colposcopists, distant experts, and site experts, respectively. Ferris, Macfee, Miller, et al., *Obstet Gynecol* 99(2):248-254, 2002 (AHRQ grant HS08814).

- *Cervical smears of previously screened postmenopausal women are poor predictors of cervical cancer.*

Researchers collected cervical smears during the Heart and Estrogen/Progestin Replacement Study of postmenopausal women who still had a uterus and were suffering from coronary artery disease. The researchers identified 2,561 women who had normal cervical smears at study entry and an abnormal smear at the first or second annual visit. Within 2 years of a normal smear, 110 women in the trial



had a cytologic abnormality. Of these, all but one yielded false-positive results. Sawaya, Grady, Kerlikowski, et al., *Ann Intern Med* 133(12):942-950, 2000 (AHRQ grant HS07373).

## Cancer Screening

- *Noninvasive tests may miss breast cancer.*

Four common noninvasive tests for breast cancer are not accurate enough to replace biopsies for women who receive abnormal findings from mammography or a clinical breast exam, according to a new report from AHRQ. The four tests are: magnetic resonance imaging (MRI); ultrasonography, or ultrasound; positron emission tomography scanning (PET scan); and scintimammography (nuclear medicine scan). The report is from AHRQ's new Effective Health Care Program, which compares the effectiveness of different treatments for health conditions. Researchers found that each of the four tests would miss a significant number of cases of cancer, compared with immediate biopsy for women at high enough risk to warrant evaluation for breast cancer. Bruening, Launders, Pinkney, et al., online at [www.effectivehealthcare.ahrq.gov/report/s/final.cfm](http://www.effectivehealthcare.ahrq.gov/report/s/final.cfm). Copies of an executive summary are also available (AHRQ Publication No. 06-EHC005-1).\*

- *Task Force recommends against routine testing for genetic risk of breast or ovarian cancer.*

According to the U.S. Preventive Services Task Force, primary care physicians should only refer certain women for genetic counseling and DNA testing to detect the presence of specific BRCA1 and BRCA2 gene mutations that may be associated with breast and ovarian cancer. Physicians

should suggest counseling and DNA testing only for women who have specific family history patterns which put them at risk for these gene mutations. Nelson, Huffman, Fu, and Harris, *Ann Intern Med* 132(5):362-379, 2005; see also pages 355-361 in the same journal (AHRQ contract 290-97-0011).

- *Women may not agree with clinicians about genetic testing for breast cancer risk.*

In this study, five focus groups that included both black and white women ages 30 to 79 discussed their opinions and knowledge about genetic testing for breast cancer risk. The women's understanding of risk, genetics, and genetic testing were affected by personal experience and beliefs and differed considerably from clinical definitions and interpretations. The women gave more emphasis to the emotional and social consequences of positive test results than to physical outcomes. Vuckovic, Harris, Valanis, and Stewart, *Am J Obstet Gynecol* 189:S48-S53, 2003 (AHRQ grant T32 HS00069).

- *Researchers evaluate the costs and benefits of breast cancer screening of older women.*

The optimal age to stop breast cancer screening has not been determined. This study found that lifetime screening is not cost effective at \$151,434 per life year saved if women receive idealized treatment (treatment and survival that are comparable to clinical trials). The researchers used a model to simulate the life history of women to evaluate the incremental societal costs and benefits of biennial screening from age 50 to age 70, to age 79, and for lifetime. The researchers concluded that if all women received idealized treatment, the benefits of

mammography beyond age 79 would be too low relative to cost to justify continued screening. Mandelblatt, Schechter, Yabroff, et al., *J Gen Intern Med* 20:487-496, 2005 (AHRQ Publication No. 05-R072) (Intramural).\*

- *Study reveals shortage of radiologists at community mammography facilities.*

In a 2000-2001 survey of mammography facilities in three States, nearly half of the 45 facilities reported radiologist staffing shortages. Almost two-thirds (60 percent) of not-for-profit facilities reported shortages, compared with less than one-third (28 percent) of for-profit facilities. Waiting times for diagnostic mammography ranged from less than 1 week to 4 weeks. Forty-seven percent of facilities had a waiting time of 2 or more weeks for screening mammography, and some had waiting times of 1 to 2 months. Orsi, Tu, Nakano, et al., *Radiology* 235:391-395, 2005 (AHRQ grant HS10591).

- *Accuracy in reading mammograms is not associated with volume or years of experience.*

For this study, researchers linked nearly 500,000 screening mammograms interpreted by 124 radiologists with breast cancer outcomes data. Within 1 year of mammography, 2,402 breast cancers were identified, a rate of 5.12 per 1,000 screening mammograms. There was no significant association between accuracy and radiologists' years of interpreting mammograms or volume of reading mammograms. The researchers suggest that training prior to practice may be the most important determinant of accuracy in mammogram interpretation. Barlow, Chi, Carney, et al., *J Natl Cancer Inst*



96(24):1840-1850, 2004 (AHRQ grant HS10591).

- *Radiologists' access to previous mammograms improves the accuracy of mammography readings.*

When radiologists have access to women's previous mammograms, the incidence of false-positive mammogram readings is reduced by at least half. The researchers examined 1999 medical data on screening and diagnostic mammograms for 5,000 patients at a single Southern hospital. Kleit and Ruiz, *Health Serv Res* 38(4):1207-1228, 2003 (AHRQ grant HS10068).

- *Researchers find international variations in mammography accuracy.*

Compared with community-based mammography screening programs around the world, North American screening programs appear to interpret a higher percentage of mammograms as abnormal. However, they do not appear to detect more cancers per 1,000 screens. The variations found in this study are likely due to many factors, including characteristics of the women screened, features of the mammography exam, characteristics of physicians interpreting the mammograms, and features of each country's health care system. Elmore, Nakano, Koepsell, et al., *J Natl Cancer Inst* 95(18):1384-1393, 2003 (AHRQ grant HS10591).

- *Obesity affects breast cancer screening rates.*

Obesity is associated with a higher risk of cancer death, yet according to this study, white women who are obese are less likely than non-obese white women to obtain a mammogram, a relationship not seen in black women. Among the 5,277 eligible women aged 50 to 75, 72 percent reported mammography use. White women who were obese were more likely than those who were not to report feelings of worthlessness in the

preceding 30 days. Black women did not report these feelings. Wee, McCarthy, Davis, and Phillips, *J Gen Intern Med* 19:324-331, 2004 (AHRQ grant HS11683).

- *Screening mammography is less accurate in overweight and obese women.*

In this study, overweight women had a 14 percent increased risk and obese women had more than 20 percent increased risk of having a false-positive mammogram, compared with underweight and normal-weight women. A false-positive rate increase of 2 percent would lead to about 200,000 additional women with false-positive mammography results entailing an additional \$20 million to evaluate the results, or about \$600 per false-positive result. These costs are over and above the anxiety involved for the women. Elmore, Carney, Abraham, et al., *Arch Intern Med* 164:1140-1147, 2004 (AHRQ grant HS10591).

- *Screening relatively healthy elderly women for breast cancer every 2 years is cost effective.*

This review conducted for the U.S. Preventive Services Task Force shows that for women aged 65 and older who do not have significant health problems, breast cancer screening every 2 years reduces mortality at reasonable costs. Mandelblatt, Saha, Teutsch, et al., *Ann Intern Med* 139(10):835-842, 2003 (AHRQ contract 290-97-0011).

- *Physician specialty influences use of screening mammography and Pap smears in gatekeeper plans.*

The impact of gatekeeper plans—which require that patients have a referral before seeing a specialist—on cancer screening varies by the specialty of a woman's primary care physician, according to this study. For example, the use of mammography to screen for

breast cancer and Pap smears to screen for cervical cancer among patients of internal medicine physicians were unaffected by enrollment in a gatekeeper plan. On the other hand, screening rates were increased if family practice physicians were in gatekeeper plans. The researchers note that different cultures of practice may explain the study findings. Haggstrom, Phillips, Liang, et al., *Cancer Causes Control* 15:883-892, 2004 (AHRQ grants HS10771 and HS10856).

- *Breast and cervical cancer screening rates are higher in areas with greater HMO market share.*

After taking into account individual and area factors, women in high HMO market share areas were nearly twice as likely as women in other areas to have recently had a mammogram or Pap smear, according to this study. Also, these women were 58 percent more likely to have had a recent clinical breast exam. The study revealed a spillover effect to nearby women not enrolled in managed care. The researchers linked data on cancer screening from the 1996 Medical Expenditure Panel Survey with data on HMO market share and HMO competition in metropolitan statistical areas. Baker, Phillips, Haas, et al., *Health Serv Res* 39(6, part I):1751-1772, 2004 (AHRQ grants HS10771, HS10856, and HS10925).

- *Personalized form letters may improve breast and cervical cancer screening among some women.*

According to this study of more than 1,500 urban low-income and minority women, sending them a personalized form letter with general cancer information increases the likelihood that they will be screened for cervical and breast cancer. Jibaja-Weiss, Volk, Kingery, et al., *Patient Educ Couns*

50:123-132, 2003 (AHRQ grant HS08581).

- *White women who are obese may avoid having Pap tests.*

This study found that white women who are obese are more likely than normal-weight white women to delay Pap testing and to find Pap tests to be painful, uncomfortable, and/or embarrassing. The researchers examined Pap testing in the preceding 3 years for 6,419 white women, 1,715 black women, and 1,859 Hispanic women aged 18 to 75 years. Overall, 86 percent of white, 88 percent of black, and 78 percent of Hispanic women reported Pap testing in the previous 3 years. After accounting for other factors, white women who were extremely obese (BMI greater than 40) were 9 percent less likely to have a Pap test compared with white women who were normal weight. BMI was not associated with screening in black or Hispanic women. Wee, Phillips, and McCarthy, *Obes Res* 13(7):1275-1280, 2005 (AHRQ grant HS11683).

- *South Asian women should be targeted to receive cervical cancer screening.*

Despite the high socioeconomic status of Indian and other South Asian women living in the United States, this study found that one-fourth of them had not had a Pap smear in more than 3 years. Regions with large South Asian populations should be targeted with messages promoting cervical cancer screening. The messages should be aimed particularly at unmarried South Asian women of low socioeconomic status who have been in America for only a short time. Chaudhry, Fink, Gelberg, and Brook, *J Gen Intern Med* 18:377-384, 2003 (AHRQ grant HS10597).



- *Screening sigmoidoscopy may be less effective for detecting colorectal cancer in women and older people.*

This study found that screening for colorectal cancer with a 60-cm flexible sigmoidoscope resulted in inadequate exams for 18 percent of patients of all ages. The percentage of inadequate exams increased progressively with age, from 10 percent for ages 50 to 59 to 22 percent for ages 80 and older. Inadequate exams were more common in women of all ages, ranging from 19 percent (ages 50-59) to 32 percent (ages 80 and older). Women are more likely than men to experience pain during the exam, and they have longer colons in a smaller abdominal cavity. Walter, deGarmo, and Covinsky, *Am J Med* 116:174-178, 2004 (AHRQ grant K02 HS00006).

- *Up to 12 percent of tissues examined by pathologists for cancer result in diagnostic errors.*

Researchers examined pathology errors over a 1-year period in patients at four hospitals who underwent laboratory tests to determine the presence or absence of cancer or precancerous lesions. Cancer diagnosis errors were dependent on the hospital and ranged from approximately 2 to 20 percent of gynecologic cases and from approximately 5 to 12 percent of

nongynecologic cases. Errors due to pathologic misinterpretation ranged from 5 to 51 percent. The remaining errors were due to clinical sampling problems. Overall, 45 percent of gynecologic pathology errors and 39 percent of nongynecologic errors were associated with harm. The researchers estimate that nearly 128,000 patients per year in the United States will suffer harm as a result of cancer diagnosis errors. Raab, Grzybicki, Janosky, et al., *Cancer* 104(10):2205-2213, 2005 (AHRQ grant HS13321).

- *Disabled women who have trouble walking are less likely than other women to receive Pap tests and mammograms.*

Women who have difficulty walking are significantly less likely than other women to receive Pap tests, mammograms, and clinician inquiries about smoking habits. Inaccessible examination tables and physician concerns about positioning the women on exam tables may account for some of the disparity, but inadequate knowledge, biased attitudes of clinicians, and time pressures in busy practices also may be involved. Iezzoni, McCarthy, Davis, et al., *Am J Med Qual* 16(4):135-144, 2001 (AHRQ grant HS10223).

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