PROGRAM BRIEF

Breast and Cervical Cancer Research Highlights

Agency for Healthcare Research and Quality

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U.S. Department of Health and Human Services
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Breast Cancer

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.

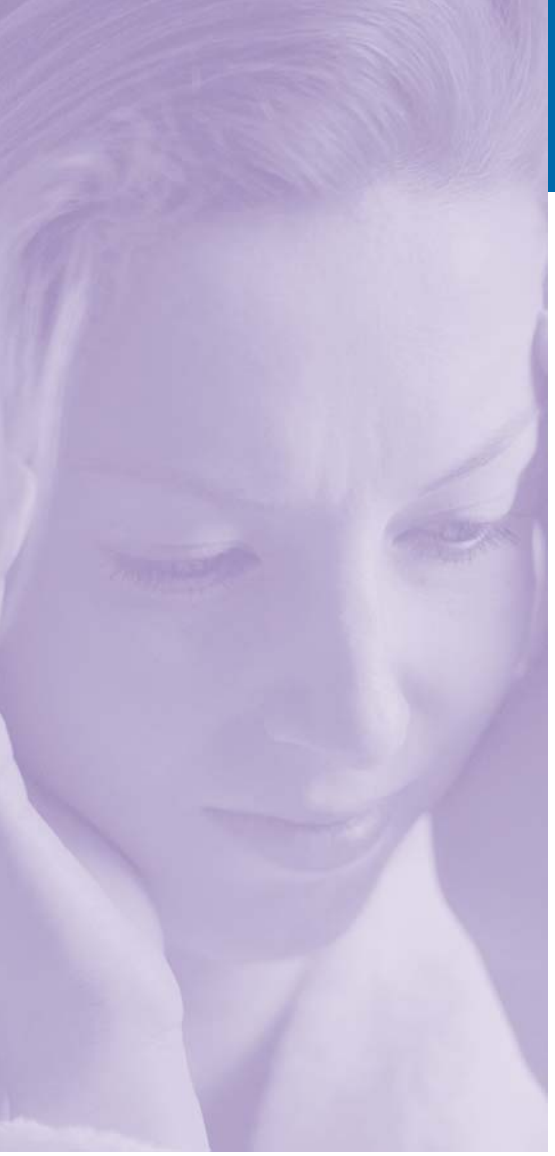
Substantial progress has been made in diagnosing and treating breast cancer. The number of women dying from breast cancer increased slightly in the 1980s, but overall breast cancer deaths have now begun to decline. The 5-year relative survival rate for all women with breast cancer is 85 percent; the 5-year survival rate for women with localized breast cancer is now 96.5 percent.

Nevertheless, breast cancer continues to take a heavy toll, particularly among black women. According to 1996 data, white women have a higher overall lifetime risk of being diagnosed with invasive breast cancer than black women (13.2 percent versus 9.7 percent). Yet black women have a slightly greater risk of dying from breast cancer (3.62 percent versus 3.47 percent). Although breast cancer survival rates rose slightly among white women over the past two decades, they declined for black women during the same period.

Researchers are continuing their efforts to uncover the reasons for such disparities and identify ways to improve breast cancer outcomes for all women. It is known that black women are more likely than white women to be diagnosed with breast cancer at a later stage after it has spread, they often lack access to state-of-the-art care, often they must overcome barriers associated with poverty and cultural differences, and they may encounter provider biases as well. Research continues into whether black women are at greater risk genetically for more aggressive tumors.

Cervical Cancer

In 2002, there were an estimated 13,000 newly diangosed 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.

The majority of cervical cancers develop through a series of gradual, well-defined, precancerous lesions. During this usually lengthy process, the abnormal tissue is easily detected through a Pap test and can be removed before it spreads. Thus, 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 cancer have not had a Pap test in the previous 5 years.

Below are examples of current research projects and recent findings related to breast and cervical cancer research sponsored by the Agency for Healthcare Research and Quality (AHRQ). Each description includes the principal investigator, performing institution, and the AHRQ grant or contract number.

Research in Progress

- *Determining the impact of false-positive mammograms.*

Using the Medical Expenditure Panel Survey and Surveillance Epidemiology and End Results databases, researchers are involved in a three-step study to identify adverse effects of screening mammography. They will identify a population and categorize participants into false-positive or true-negative mammogram status; compare the two groups according to days off work, perceived health status, physician visits, and medical expenditures; and analyze outcomes and their associations with race, age, socioeconomic status, and comorbidities. Geoffrey C. Lamb, Principal Investigator (AHRQ grant HS11755).

- *Examining race, psychosocial factors, and regular mammography use.*

Yale University researchers are focusing on psychosocial influences of regular use of screening mammography by women of different races. Lisa Calvocoressi, Principal Investigator (AHRQ grant HS11603).

Recent Findings: Breast Cancer

- *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 evidence 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).

- *Physician compassion reduces anxiety in women newly diagnosed with breast cancer.*

Researchers recruited 123 healthy breast cancer survivors and 87 women who had not had cancer and showed half of each group of women a standard videotape of two treatment options for metastatic cancer. The remaining women were shown an "enhanced compassion" videotape depicting a doctor who acknowledged the patient's concerns, expressed partnership and support, validated her emotional state and the difficulty of making a decision, touched her hand, and tried to reassure her. Anxiety scores were significantly lower for women in the enhanced compassion group. Fogarty, Curbow, Wingard, et al., *J Clin Oncol* 17(1):371-379, 1999 (AHRQ grant HS08449).

- *Disadvantages of poverty impede access to appropriate breast care.*

For 24 urban poor and low-income women, the lack of insurance was one factor impeding access to and creating difficulties with receiving appropriate breast cancer care. Additionally, the disadvantages of poverty that preceded and followed a diagnosis of breast cancer created significant delays and compromised the diagnosis, treatment, recovery, and perhaps survival of the women. *Experiences of Low-Income Women with Breast Cancer.* Grant final report, 1999 (NTIS Accession No. PB99-154437),** Anne Kasper, Ph.D., University of Illinois at Chicago (AHRQ grant HS09558).

- *Likelihood of breast cancer survival in black women is linked to missed appointments.*

Investigators reviewed clinical records of 246 black and white women and found race is not nearly as important to breast cancer survival as keeping appointments and the stage of cancer at diagnosis. The subjects were diagnosed with breast cancer, stage 2 or beyond. Nearly four times as many black women as white women missed two or more appointments before the identification of breast cancer symptoms. This nearly tripled the black women's rate of being diagnosed at a later stage. Four times as many black women as white women missed two or more appointments after symptoms were identified, which quadrupled their risk of death. The data show black women had nearly 7 months longer than white women between identification of symptoms and mastectomy. Howard, Penchansky, and Brown, *Fam Med* 30(3):228-235, 1998 (AHRQ grant HS06217).

Recent Findings: Cervical Cancer

- *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 and from the National Guideline Clearinghouse™ at 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., Univesity 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).

- *Pap tests continue to be the best option for cervical cancer screening.*

Researchers at the AHRQ-sponsored Duke University Evidence-based Practice Center compared three new screening technologies with the conventional Pap test for overall effectiveness and accuracy in screening for cervical cancer. They found that the Pap test continues to be the most reliable screening technique available, but that new screening technologies may help strengthen diagnostic accuracy in the detection of cervical cancer. The evidence described in this report can be used by organizations as a foundation for guidelines and other quality improvement tools. A summary of the report, *Evaluation of Cervical Cytology* (AHRQ Publication No. 99-E009), and the full report (AHRQ Publication No. 99-E010) are available from AHRQ.*

Recent Findings: Screening for Breast and Cervical Cancer

- *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).

- *Web site benefits breast and cervical health program.*

The authors describe the development, use, and evaluation of a Web site to enhance the work of outreach staff from a breast and cervical health program in a Seattle community screening program. The authors conclude that public health programs with meager resources can benefit from the use of customized Web sites. Bush, Wooldridge, Foster, et al. *Oncol Nurs Forum* 26(5):857-865, 1999 (AHRQ grant HS09407).

- *Breast and cervical cancer screening varies by age among black and Hispanic women.*

This study found that elderly black and Hispanic women are less likely to be screened for breast and cervical cancer than their younger counterparts. The women, who were 65 years of age and older, were 21 percent less likely than younger women to have ever had a Pap smear. Older age also was an independent but weaker predictor of clinical breast exam. Mandelblatt, Gold, and O'Malley, *Prev Med* 28:418-429, 1999 (AHRQ grant HS08395).

- *Women with chronic diseases are less likely than other women to be screened.*

Researchers reviewed the medical records of 1,764 women aged 43 and over who were followed for about 3 years in two primary care clinics. Chronic stable angina, rheumatoid arthritis, congestive heart failure, and heart attack were significantly and negatively correlated with screening for breast and cervical cancer. Kiefe, Funkhouser, Fouad, et al, *J Gen Intern Med* 13:357-365, 1998 (AHRQ grant HS09446).

More Information

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Rosaly Correa-de-Araujo, M.D., M.Sc., Ph.D.
Senior Advisor for Women's Health
301-427-1550
rcorrea@ahrq.gov

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