Breast and Colorectal Cancer Screening and Sources of Cancer Information Among Older Women in the United States: Results From the 2003 Health Information National Trends Survey

Suggested citation for this article: Coughlin SS, Berkowitz Z, Hawkins NA, Tangka F. Breast and colorectal cancer screening and sources of cancer information among older women in the United States: results from the 2003 Health Information National Trends Survey. Prev Chronic Dis [serial online] 2007 Jul [date cited]. Available from: http://www.cdc.gov/pcd/issues/2007/jul/06_0104.htm.

Abstract

Introduction
The number of people in the United States aged 65 years and older is increasing. Older people have a higher risk of dying from cancer; however, recent information about breast and colorectal cancer screening rates among women aged 65 years and older and about sources of health information consulted by these women is limited.

Methods
We examined data from the Health Information National Trends Survey for women aged 65 years and older who had no personal history of breast or colorectal cancer. Women whose self-reported race and ethnicity was non-Hispanic white, non-Hispanic black, or Hispanic were included in the analysis. The overall response rate for the 2003 survey was 34.5%.

Results
Women aged 75 years and older had lower rates of recent mammography (mammogram in previous 2 years) than did women aged 65 to 74 years. In both age groups, rates were especially low for Hispanic women and women with a household income of less than $15,000 per year. Rates of recent colorectal cancer screening (fecal occult blood test in previous year or endoscopy in previous 5 years) were markedly lower for non-Hispanic black women aged 75 years and older than for other women in this age group, and for Hispanic women aged 65 to 74 years than for non-Hispanic women in this age group. Screening rates were lowest for women with an annual household income of less than $15,000, no family history of cancer, no usual health care provider, or 1 or no provider visits in the previous year.

Differences were found in the groups’ preferred channel for receiving health information. Women who had had a mammogram in the previous 2 years were more likely to pay attention to health information on the radio or in newspapers and magazines than were women who had not received a recent mammogram. Women who had had a recent colorectal cancer screening test were more likely to pay attention to health information in magazines or on the Internet than were those who had not. Personalized print and other publications were the most preferred channel for receiving health information.

Conclusion
The results from this analysis suggest that educational materials about routine breast and colorectal cancer screening appropriate for women aged 65 years and older (especially low-income women, Hispanic women, and those aged 65 to 74 years) may be helpful.
Introduction

People in the oldest age groups are of interest in cancer prevention and control because their numbers are increasing in the general U.S. population and older people have a higher risk of dying from cancer (1). Among women, about 58.3% of deaths from breast cancer and 78.5% of deaths from colorectal cancer occur in the group aged 65 years and older (2).

Nevertheless, medical and scientific authorities continue to debate the value of routine cancer screening for women in the oldest age categories. According to screening guidelines from the United States Preventive Services Task Force (USPSTF), the evidence that supports screening mammography every 1 to 2 years for women aged 40 years and older is generalizable to women aged 70 years and older if their life expectancy is not compromised by comorbid disease (3). However, uncertainty remains about whether the potential benefits of screening mammography outweigh the harms for older women (4-7), including increased anxiety and cost from possible false-positive test results and complications from diagnostic evaluation or biopsy procedures (3).

According to USPSTF guidelines for routine colorectal cancer screening among people aged 50 years and older, the age at which colorectal cancer screening should be discontinued is not known (8). Potential complications from endoscopy (flexible sigmoidoscopy or colonoscopy) include perforation, bleeding, and infection (9).

Little is known about older women’s preferred channels and methods for seeking health information and how these relate to cancer screening practices (10-14). Studies show that women aged 65 years and older are less likely than younger women to undergo cancer screening (10,13). One explanation may be that older women are unaware of the recommendations for screening. Studies show that older people are less likely than younger people to use the Internet as a source of health information (15), but we do not know what information sources older women consult most often.

If lack of knowledge about screening recommendations accounts in part for lower screening rates among subgroups of older women (16,17), learning about their preferred information sources may help to guide future interventions and improve women’s health.

To learn more about cancer screening practices and the use of medical information among older women, we analyzed data from the Health Information National Trends Survey (HINTS). Our objectives were to examine 1) breast and colorectal cancer screening practices among women aged 65 years and older, and 2) the sources of health information on cancer screening practices that these women sought. The research question tested in this study was whether older women who followed breast or colorectal cancer screening recommendations preferred different sources of health information from those who did not.

Methods

Survey sample

We obtained data from 3848 women who were interviewed from October 2002 through April 2003 as part of HINTS (18). The National Cancer Institute developed HINTS to produce data on the American public’s need for, access to, and use of cancer-related information. The survey used a probability sample of telephone numbers in the United States to identify potential respondents. The HINTS interview was administered in either English or Spanish to a representative sample of adults aged 18 years and older of the noninstitutionalized civilian population. Hispanics and African Americans were oversampled. One person from each sampled household was selected for the interview after the household was screened. The response rate at the household-screening level was 55.0%, and the response rate for a completed interview by a sampled person was 62.8%, resulting in an overall response rate of 34.5%. HINTS collected information about the respondents’ use of mass media, news media, and other information channels.

Our study sample was drawn from women aged 65 years and older who responded to the HINTS survey (n = 822 of 3848 female respondents of all ages). Of these, women whose self-reported race and ethnicity was non-Hispanic white, non-Hispanic black, or Hispanic were included in the analysis. We further refined the sample by excluding non-Hispanic women who reported that their race was neither white nor black (n = 24) because the numbers were too small for separate analysis, women whose race and ethnicity were reported as missing (n = 45), and women who had a personal history of breast or colorectal cancer (n = 78), leaving a study sample of 675 women.
Study variables

The HINTS interview included questions about self-reported health status, demographic and socioeconomic characteristics, screening mammography, fecal occult blood testing (FOBT), and endoscopy. Each respondent was asked whether she had ever had a mammogram; participants who responded positively were then asked when they had received their last mammogram. Similar questions were asked about FOBT and endoscopy.

Other variables examined in the analysis related to media exposure and information seeking (e.g., hours of television or radio attended to per week, days respondents read newspapers or magazines in the previous week), attention paid to information about health or medical topics, whether or not respondents had looked for cancer information, where respondents had looked for cancer information, how much respondents relied on various channels of information, and Internet usage. Personalized print material was defined as reading material targeting specific lifestyles and family histories.

Analysis

We analyzed data with SUDAAN, Version 9.1 (SAS Institute, Inc., Cary, NC), to account for the complex sampling of HINTS and its sampling weights, which were used in calculating population estimates and 95% confidence intervals (CIs). The age groups of interest were women aged 65 to 74 years and those aged 75 years and older. We used the chi-square test of independence to determine the association between adherence to screening and the covariates of media exposure and preferred channels of health information. Multivariate logistic analyses were performed to determine the effects of demographic and health coverage covariates on adherence to screening. We used pair-wise comparisons to test for significant differences between categories within each covariate.

Results

About 85.0% of the women in our analysis were non-Hispanic white, 9.0% were non-Hispanic black, and 6.1% were Hispanic (Table 1). Approximately 16.9% of the women had a household income of less than $15,000 per year, and about 28.5% had less than a high school education. More than two-thirds (69.7%) had a family history of cancer. A large majority (85.9%) of the women had a usual health care provider. Almost all women (99.1%) had some type of health insurance (data not shown in table).

Data on the use of breast and colorectal cancer screening tests (Table 2) revealed that an estimated 89.4% of the women had ever had a mammogram, and 78.8% had had a recent mammogram (mammogram in the previous 2 years). Only 23.6% had had an FOBT in the previous year, and 38.8% had had endoscopy within the previous 5 years. About half (51.6%) had had an FOBT in the previous year or endoscopy in the previous 5 years.

Rates of recent mammography varied by age group, health history, and other demographic and socioeconomic factors (Table 3). Rates of recent mammography were lower for women aged 75 years and older than for those aged 65 to 74 years. Rates were much lower for Hispanic women in both age groups than for non-Hispanic women. Women in both age groups with a household income of less than $15,000 per year had low rates of recent mammography, as did those in both groups who were single (divorced/separated, widowed, or never married) and those who had 1 or no provider visits in the previous year. Older women who had no usual health care provider, especially those who were aged 75 years and older, also had low rates of recent mammography.

We also carried out a multivariate logistic analysis to see whether the associations between having a recent mammogram, income level, and having a usual health provider are confounded by having health insurance (data not shown). In a model for recent mammogram, which included age (65–74 vs 75–95 years), household income (<$15,000 vs >$15,000, or refused/don’t know/missing), and usual provider, three variables — older age, lower income, and lack of a usual provider — were inversely associated with recent mammography (P < .03 in each instance). Health insurance coverage and education were not associated with recent mammography in this multivariate analysis (data not shown). However, almost all of the women had health insurance.

Rates of colorectal cancer screening varied by age group and other demographic factors, socioeconomic factors, and health history (Table 4). Non-Hispanic black women aged 75 years and older had the lowest rate of recent screening, and Hispanic women aged 65 to 74 years had lower rates than similarly aged non-Hispanic women. However, the
numbers of women sampled in the respective categories were small. Rates of recent colorectal cancer testing were also low in each age group for women who had a household income of less than $15,000 per year, who were single, who had no family history of cancer, who had no usual health care provider, or who had 1 or no provider visits in the previous year.

In a multivariate model for colorectal cancer screening, the variables included age, education, household income, health care insurance, and a usual provider. Only lower educational attainment, lack of health insurance, and lack of a usual provider were significantly and inversely associated with colorectal cancer screening ($P < .02$ in each instance; data not shown). Household income was not significantly associated with colorectal screening in multivariate analysis.

Data on media exposure indicate that television was the most common source of medical information for women in our analysis, regardless of whether they had recently had a mammogram or colorectal screening test (Table 5). Newspapers were the second most common source of medical information, and magazines were the third most common. Two percent of these older women did not attend to any type of media, 12% attended to one type, 16% to two types, and 70% to three or more types (data not shown in table). Women who had a recent mammogram were significantly more likely to pay attention to health information on the radio or in newspapers and magazines than were women who had not. Women who had received a recent colorectal cancer screening test were more likely to pay attention to health information in magazines or on the Internet than were women who had not.

Differences were also found between the groups’ preferred channel for receiving health information (Table 5). Women who had a recent mammogram were significantly more likely to report that they wished to receive health information via personalized print, meeting with health care professionals, videocassette, audiocassette, CD-ROM, or other source than were women who had not. Women who had recently had a colorectal cancer screening test were significantly more likely to prefer receiving health information via personalized print materials or other publications (e.g., books, magazines) than were women who had not. Fewer than half of all women wanted to receive information via videocassette or audiocassette, e-mail or the Internet, or CD-ROM.

Discussion

The results from this analysis of national survey data confirm and expand on results from prior studies of the use of cancer screening tests among older women (10-14,19-22), similar to the results reported by Kokkinides et al (20) using data from the Behavioral Risk Factor Surveillance System and by O’Malley et al (21) using Medicare data. The breast and colorectal cancer screening rates from the current study are slightly higher than those based on data from the National Health Interview Survey (NHIS) (22). The higher screening rates in HINTS may be explained by the use of household interviews to supplement telephone survey data in NHIS.

Culturally sensitive and appropriate educational materials about the value of screening mammography and colorectal cancer screening in reducing mortality from breast and colorectal cancer and about the potential benefits and harms of cancer screening may be helpful for older women, including low-income or minority women. Such materials should be available in both English and Spanish and should be modified to be relevant for older women from different ethnic and racial backgrounds. Educational materials should also be available for people with different levels of health literacy. Almost 29% of the women in our analysis reported having less than a high school education. Given that most health and medical information available to the public is written at a reading level higher than that of the average adult, this population may face challenges in accessing and understanding available printed health information (23-25).

Our finding that older women pay more attention to information disseminated on television and newspapers than through radio and the Internet is consistent with research suggesting that the Internet may not be the most efficient means for providing educational materials to older women (15). Our analysis also suggests that personalized print materials, other printed media, and telephone calls may be promising avenues for future efforts to disseminate information about cancer screening to older women who do not comply with screening recommendations.

Limitations of the present analysis include the cross-sectional design of the HINTS survey and the reliance on self-reported information about cancer screening and other variables. Questions for assessing cancer-related information on the HINTS questionnaire were, how-

The opinions expressed by authors contributing to this journal do not necessarily reflect the opinions of the U.S. Department of Health and Human Services, the Public Health Service, the Centers for Disease Control and Prevention, or the authors’ affiliated institutions. Use of trade names is for identification only and does not imply endorsement by any of the groups named above.
ever, well-established and could be answered reliably and accurately by the adult population (26). New questions underwent cognitive testing (26). A further issue is that HINTS data did not allow us to distinguish between types of cancer in family histories. Other limitations include the possibility of bias due to nonresponse, given that the overall response rate in the 2003 HINTS was only 34.5%. Furthermore, the generalizability of the results to the overall U.S. population of women aged 65 years and older is unknown because of the low response rate and because noncivilian, institutionalized women and those without a household telephone were not included. Health insurance rates in the current study are higher, and cancer screening rates slightly higher, than those based on data from NHIS (22). The present study lacked information about comorbid health conditions or life expectancy, both of which may influence physician recommendations or decisions by older women about whether to undergo routine cancer screening. Finally, the results for black and Hispanic women are limited by the small number of nonwhite, non-Hispanic respondents. Lack of knowledge about screening recommendations may partly account for lower screening rates among subgroups of older women. Our findings, therefore, that older women who adhere to breast or colorectal cancer screening recommendations and those who do not adhere to them prefer different sources of health information may help improve the health of women in this age group. Interventions designed to convey the potential benefits and risks of cancer screening to this group may benefit from knowledge of the sources of medical information used by older women and the channels of information preferred by them.

Author Information

Corresponding Author: Steven S. Coughlin, PhD, Epidemiology and Applied Research Branch, Division of Cancer Prevention and Control, National Center for Chronic Disease Prevention and Health Promotion, Centers for Disease Control and Prevention, 4770 Buford Hwy NE, Mailstop K-55, Atlanta, GA 30341-3724. Telephone: 770-488-4776. E-mail: sic9@cdc.gov.

Author Affiliations: Zahava Berkowitz, Nikki A. Hawkins, Florence Tangka, Epidemiology and Applied Research Branch, Division of Cancer Prevention and Control, National Center for Chronic Disease Prevention and Health Promotion, Centers for Disease Control and Prevention, Atlanta, Ga.

References

1. Edwards BK, Howe HL, Ries LA, Thun MJ, Rosenberg HM, Yancik R, et al. Annual report to the nation on the status of cancer, 1973-1999, featuring implications of age and aging on the U.S. cancer burden. Cancer 2002;94(10):2766-92.
2. Surveillance, Epidemiology, and End Results (SEER) Stat Database [Internet]. Mortality – all COD, public-use with state, total U.S. (1969-2002). Bethesda (MD): National Cancer Institute;2005 [cited 2005 Oct 26]. Available from: http://www.seer.cancer.gov
3. U.S. Preventive Services Task Force. Screening for breast cancer: recommendations and rationale. Rockville (MD): Agency for Healthcare Research and Quality; 2002 [cited 2005 Oct 26]. Available from: http://www.ahrq.gov/clinic/3rduspstf/breastcancer/brcanrr.htm
4. Smith-Bindman R, Kerlikowske K, Gebretsadik T, Newman J. Is screening mammography effective in elderly women? Am J Med 2000;108(2):112-9.
5. Smith-Bindman R, Kerlikowske K. Is there a downside to elderly women undergoing screening mammography? J Natl Cancer Inst 1998;90(18):1322-3.
6. Kerlikowske K, Salzmann P, Phillips KA, Cauley JA, Cummings SR. Continuing screening mammography in women aged 70-79 years: impact on life expectancy and cost-effectiveness. JAMA 1999;282(22):2156-63.
7. Erbas B, Amos A, Fletcher A, Kavanagh AM, Gertig DM. Incidence of invasive breast cancer and ductal carcinoma in situ in a screening program by age: should older women continue screening? Cancer Epidemiol Biomarkers Prev 2004;13(10):1569-73.
8. U.S. Preventive Services Task Force. Colorectal cancer screening guidelines: recommendations and rationale. Rockville (MD): Agency for Healthcare Research and Quality; 2002 [cited 2005 Oct 26]. Available from: http://www.ahrq.gov/clinic/3rduspstf/colorectal/colorr.htm
9. Pignone M, Rich M, Teutsch SM, et al. Screening for colorectal cancer in adults at average risk: a summary of evidence for the U.S. Preventive Services Task Force. Ann Intern Med 2002;137:132-41.
10. Schonberg MA, McCarthy EP, Davis RB, Phillips RS, Hamel MB. Breast cancer screening in women aged 80 and older: results from a national survey. J Am Geriatr Soc 2004;52(10):1688-95.
11. Ostbye T, Greenberg GN, Taylor DH Jr, Lee AM. Screening mammography and Pap tests among older American women 1996–2000: results from the Health and Retirement Study (HRS) and Asset and Health Dynamics Among the Oldest Old (AHEAD). Ann Fam Med 2003;1(4):209-17.
12. Levy-Storms L, Bastani R, Reuben DB. Predictors of varying levels of nonadherence to mammography screening in older women. J Am Geriatr Soc 2004;52(5):768-73.
13. Walter LC, Lindquist K, Covinsky KE. Relationship between health status and use of screening mammography and Papanicolaou smears among women older than 70 years of age. Ann Intern Med 2004;140(9):681-8.
14. Jerant AF, Franks P, Jackson JE, Doescher MP. Age-related disparities in cancer screening: analysis of 2001 Behavioral Risk Factor Surveillance System data. Ann Fam Med 2004;2(5):481-7.
15. Committee on Communication for Behavior Change in the 21st Century: Improving the Health of Diverse Populations, Board on Neuroscience and Behavioral Health. Speaking of health: assessing health communication strategies for diverse populations. Washington (DC): National Academies Press; 2002.
16. Donovan JM, Syngal S. Colorectal cancer in women: an underappreciated but preventable risk. J Womens Health 1998;7(1):45-8.
17. Stockwell DH, Woo P, Jacobson BC, Remily R, Syngal S, Wolf J, et al. Determinants of colorectal cancer screening in women undergoing mammography. Am J Gastroenterol 2003;98(8):1875-80.
18. Health information national trends survey [Internet]. Bethesda (MD): National Cancer Institute; [cited 2005 Oct 26]. Available from: http://cancercontrol.cancer.gov/hints/
19. Mandelson MT, Curry SJ, Anderson LA, Nadel MR, Lee NC, Rutter CM, et al. Colorectal cancer screening participation by older women. Am J Prev Med 2000;19(3):149-54.
20. Cockkinides VE, Chao A, Smith RA, Vernon SW, Thun MJ. Correlates of underutilization of colorectal cancer screening among U.S. adults, age 50 years and older. Prev Med 2003;36(1):85-91.
21. O’Malley AS, Forrest CB, Feng S, Mandelblatt J. Disparities despite coverage: gaps in colorectal cancer screening among Medicare beneficiaries. Arch Intern Med 2005;165(18):2129-35.
22. Swan J, Breen N, Coates RJ, Rimer BK, Lee NC. Progress in cancer screening practices in the United States: results from the 2000 National Health Interview Survey. Cancer 2003;97(6):1528-40.
23. Gazmararian JA, Curran JW, Parker RM, Bernhardt JM, DeBuono BA. Public health literacy in America: an ethical imperative. Am J Prev Med 2005;28(3):317-22.
24. Flynn KE, Smith MA, Freese J. When do older adults turn to the Internet for health information? Findings from the Wisconsin Longitudinal Study. J Gen Intern Med 2006;21(12):1295-301.
25. Hesse BW, Nelson DE, Kreps GL, Croyte RT, Arora NK, Rimer BK, et al. Trust and sources of health information: the impact of the Internet and its implications for health care providers: findings from the first Health Information National Trends Survey. Arch Intern Med 2005;165(22):2618-24.
26. Nelson DE, Kreps GL, Hesse BW, Croyte RT, Willis G, Arora NK, et al. The Health Information National Trends Survey (HINTS): development, design, and dissemination. J Health Commun 2004;9(5):443-60.
### Table 1. Demographic Characteristics and Health History Among U.S. Women Aged 65 Years and Older With No History of Breast or Colorectal Cancer (N = 675), Health Information National Trend Survey, 2003

| Characteristics          | Sample Size | Pop. Est., % (95% CI) |
|--------------------------|-------------|------------------------|
| **Age**                  |             |                        |
| 65-74                    | 368         | 58.3 (54.1-62.3)       |
| 75-95                    | 307         | 41.7 (37.7-45.9)       |
| **Race/ethnicity**       |             |                        |
| Non-Hispanic white       | 68          | 8.0 (7.3-8.7)          |
| Non-Hispanic black       | 60          | 9.0 (7.1-11.2)         |
| Hispanic                 | 47          | 6.1 (4.3-8.5)          |
| **Household income**     |             |                        |
| <$1,000                  | 118         | 16.9 (14.0-20.4)       |
| $1,000-<$2,000           | 177         | 29.3 (25.1-33.9)       |
| ≥$25,000                 | 241         | 33.7 (29.7-37.9)       |
| Refused/NA/DK/missing    | 139         | 20.1 (17.0-23.6)       |
| **Education**            |             |                        |
| <High school graduate    | 128         | 28.5 (25.7-31.5)       |
| High school graduate     | 241         | 40.2 (38.0-42.3)       |
| Some college             | 171         | 18.1 (16.3-20.0)       |
| College graduate         | 133         | 13.2 (12.2-14.3)       |
| **Marital status**       |             |                        |
| Married/unmarried couple | 232         | 47.2 (43.1-51.3)       |
| Divorced/separated       | 82          | 9.6 (7.2-12.6)         |
| Widowed                  | 337         | 40.8 (36.5-45.2)       |
| Never married            | 22          | 2.4 (1.4-4.1)          |
| **Family history of cancer** |         |                        |
| Yes                      | 454         | 69.7 (65.6-73.5)       |
| No                       | 216         | 30.3 (26.5-34.4)       |
| **Self-rated health status** |       |                        |
| Excellent/very good      | 280         | 38.4 (34.5-42.5)       |
| Good                     | 224         | 35.3 (30.9-39.9)       |
| Fair/poor                | 170         | 26.3 (22.3-30.7)       |

CI indicates confidence interval; ref, refused; NA, not available; DK, don’t know.

Numbers may not equal 675 because respondents with “don’t know” responses, refusals, or missing information were excluded.

(continued on next page)
Table 1. (continued) Demographic Characteristics and Health History Among U.S. Women Aged 65 Years and Older With No History of Breast or Colorectal Cancer (N = 675), Health Information National Trend Survey, 2003

| Characteristics                              | Sample Size | Pop. Est., % (95% CI) |
|----------------------------------------------|-------------|-----------------------|
| Usual health provider                        |             |                       |
| Yes                                          | 575         | 85.9 (82.5-88.7)      |
| No                                           | 97          | 14.1 (11.3-17.5)      |
| Provider visits in previous year             |             |                       |
| ≤1                                           | 120         | 17.1 (14.2-20.4)      |
| 2-4                                          | 301         | 44.9 (40.1-49.9)      |
| ≥5                                           | 244         | 37.9 (33.6-42.4)      |

CI indicates confidence interval; ref, refused; NA, not available; DK, don’t know.

Numbers may not equal 675 because respondents with “don’t know” responses, refusals, or missing information were excluded.

Table 2. Screening Test Use by U.S. Women Aged 65 Years and Older With No History of Breast or Colorectal Cancer (N = 675), Health Information National Trend Survey, 2003

| Screening Characteristic                      | Total Sample Size | Adherence | Pop. Est., % (95% CI) |
|----------------------------------------------|-------------------|-----------|-----------------------|
| Ever had mammogram                           | 673               | 608       | 89.4 (85.5-92.4)      |
| Mammogram within previous 2 years           | 669               | 528       | 78.8 (74.5-82.5)      |
| Ever had fecal occult blood test (FOBT)      | 672               | 377       | 53.8 (48.9-58.6)      |
| FOBT within previous year                    | 662               | 166       | 23.6 (19.9-27.6)      |
| Ever had sigmoidoscopy                       | 655               | 194       | 26.2 (22.7-30.0)      |
| Ever had colonoscopy                         | 664               | 275       | 41.0 (36.3-45.9)      |
| Sigmoidoscopy or colonoscopy within previous 5 years | 661           | 272       | 38.8 (34.3-43.5)      |
| FOBT in previous year or endoscopy in previous 5 years | 660         | 350       | 51.6 (46.6-56.6)      |

CI indicates confidence interval.

Numbers do not equal 675 because respondents with “don’t know” responses, refusals, or missing information were excluded.

Adherence is defined as mammography screening within previous 2 years, fecal occult blood test within previous year or sigmoidoscopy or colonoscopy screening within previous 5 years.
Table 3. Recent mammography screening among U.S. women aged 65 years and older with no history of breast or colorectal cancer, by age group, Health Information National Trend Survey, 2003

| Characteristic                      | Age Group 65-74 years | Age Group ≥75 years |
|------------------------------------|-----------------------|---------------------|
|                                    | Total Sample Size     | Pop. Est., % (95% CI) | Total Sample Size | Pop. Est., % (95% CI) |
| **Race/ethnicity**                 |                       |                     |                   |                       |
| Non-Hispanic white                 | 298                   | 83.1 (77.2-87.7)    | 265               | 72.5 (65.6-78.5)      |
| Non-Hispanic black                 | 38                    | 94.2 (78.9-98.6)    | 21c               | 84.5 (54.2-96.2)      |
| Hispanic                           | 31c                   | 66.4 (37.0-87.0)    | 16c               | 58.6 (24.1-86.3)      |
| **Household income**               |                       |                     |                   |                       |
| <$1,000                            | 52                    | 55.9 (35.3-74.6)    | 66                | 63.9 (47.5-77.6)      |
| $1,000-$2,000                      | 95                    | 81.8 (70.0-89.6)    | 82                | 73.8 (61.1-83.4)      |
| ≥$25,000                           | 151                   | 93.7 (88.6-96.7)    | 90                | 74.8 (62.4-84.1)      |
| Ref/NA/DK/missing                   | 69                    | 81.5 (67.5-90.3)    | 64                | 78.5 (61.9-89.2)      |
| **Education**                      |                       |                     |                   |                       |
| <High school graduate              | 59                    | 72.2 (55.0-84.6)    | 68                | 69.6 (54.8-81.2)      |
| High school graduate               | 141                   | 87.0 (80.1-91.8)    | 99                | 70.3 (58.3-80.0)      |
| Some college                       | 91                    | 85.8 (76.3-91.9)    | 78                | 79.0 (69.2-86.3)      |
| College graduate                   | 76                    | 86.0 (73.0-93.3)    | 55                | 78.2 (60.8-89.2)      |
| **Marital status**                 |                       |                     |                   |                       |
| Married/unmarried couple            | 165                   | 88.4 (79.7-93.6)    | 66                | 79.8 (65.7-89.1)      |
| Divorced/separated                 | 63                    | 67.9 (45.6-84.2)    | 19c               | 66.8 (21.5-93.6)      |
| Widowed                             | 126                   | 79.7 (69.4-87.1)    | 206               | 69.9 (61.1-77.4)      |
| Never married                       | 12c                   | 71.2 (21.4-95.7)    | 10c               | 70.2 (16.2-96.6)      |
| **Family history of cancer**       |                       |                     |                   |                       |
| Yes                                 | 258                   | 85.3 (79.6-89.7)    | 194               | 74.5 (65.8-81.6)      |
| No                                  | 105                   | 75.9 (61.7-86.0)    | 107               | 70.5 (57.3-80.9)      |
| **Self-rated health status**        |                       |                     |                   |                       |
| Excellent/very good                | 155                   | 82.4 (74.2-88.4)    | 125               | 73.7 (61.0-83.4)      |
| Good                                | 121                   | 85.8 (75.0-92.4)    | 101               | 74.7 (65.2-82.2)      |
| Fair/poor                           | 90                    | 79.7 (67.1-88.3)    | 76                | 69.4 (54.7-81.0)      |
| **Usual health provider**           |                       |                     |                   |                       |
| Yes                                 | 314                   | 85.1 (78.7-89.9)    | 258               | 74.5 (66.7-80.9)      |
| No                                  | 51                    | 69.1 (50.7-82.9)    | 43                | 61.4 (41.6-78.1)      |

CI indicates confidence interval; ref, refused; NA, not available; DK, don’t know.
aIn the previous 2 years.
bTotals exclude records with missing data.
cNumbers are too small for precise estimates.

The opinions expressed by authors contributing to this journal do not necessarily reflect the opinions of the U.S. Department of Health and Human Services, the Public Health Service, the Centers for Disease Control and Prevention, or the authors’ affiliated institutions. Use of trade names is for identification only and does not imply endorsement by any of the groups named above.
Table 3. (continued) Recent Mammography Screening Among U.S. Women Aged 65 Years and Older With No History of Breast or Colorectal Cancer, by Age Group, Health Information National Trend Survey, 2003

| Characteristic                  | Age Group 65-74 years |   | Age Group ≥75 years |   |
|--------------------------------|-----------------------|---|---------------------|---|
|                                | Total Sample Size     | Pop. Est., % (95% CI) | Total Sample Size | Pop. Est., % (95% CI) |
| Provider visits in previous year |                       |                           |                     |                           |
| ≤1                              | 72                    | 79.3 (65.5-88.6)          | 44                  | 49.4 (30.6-68.3)          |
| 2-4                             | 162                   | 79.8 (70.4-86.8)          | 138                 | 75.2 (66.2-82.4)          |
| ≥5                              | 132                   | 88.9 (81.2-93.6)          | 112                 | 78.3 (66.4-86.8)          |

CI indicates confidence interval; ref, refused; NA, not available; DK, don’t know.

aWithin the previous 2 years.
bTotals exclude records with missing data.
cNumbers too small for precise estimates.

Table 4. Prevalence of Recent Colorectal Screening Among U.S. Women Aged 65 Years and Older With No History of Breast or Colorectal Cancer, by Age Group, Health Information National Trend Survey, 2003

| Characteristic                  | Age Group 65-74 years |   | Age Group ≥75 years |   |
|--------------------------------|-----------------------|---|---------------------|---|
|                                | No. (Total Sample Size) | Pop. Est., % (95% CI) | No. (Total Sample Size) | Pop. Est., % (95% CI) |
| Total                          | 362                   | 52.4 (45.7-59.0)        | 298                  | 50.5 (42.9-58.1)        |
| Race/ethnicity                 |                       |                           |                     |                           |
| Non-Hispanic white             | 295                   | 53.2 (45.8-60.4)         | 261                  | 52.0 (43.9-60.1)         |
| Non-Hispanic black             | 38                    | 58.9 (36.1-78.4)         | 21c                  | 38.3 (15.8-67.2)         |
| Hispanic                       | 29c                   | 33.3 (12.6-63.3)         | 16c                  | 43.9 (16.0-76.2)         |
| Household income               |                       |                           |                     |                           |
| <$15,000                       | 50                    | 38.2 (19.8-60.8)         | 66                   | 45.7 (30.0-62.4)         |
| $15,000-$25,000                | 93                    | 46.1 (33.6-59.1)         | 80                   | 48.6 (34.0-63.5)         |
| ≥$25,000                       | 151                   | 59.1 (48.1-69.2)         | 88                   | 54.2 (42.3-65.6)         |
| Ref/NA/DK/missing              | 68                    | 58.3 (43.1-72.1)         | 64                   | 53.5 (38.6-67.9)         |
| Education                      |                       |                           |                     |                           |
| <High school graduate          | 58                    | 44.2 (28.5-61.2)         | 66                   | 36.4 (23.4-51.7)         |
| High school graduate           | 140                   | 52.9 (44.2-61.5)         | 97                   | 54.4 (43.4-64.9)         |
| Some college                   | 89                    | 58.2 (44.6-70.7)         | 78                   | 51.6 (39.2-63.8)         |
| College graduate               | 75                    | 58.0 (44.4-70.5)         | 55                   | 75.5 (58.1-87.3)         |
| Marital status                 |                       |                           |                     |                           |
| Married/unmarried couple       | 164                   | 59.5 (49.6-68.7)         | 66                   | 59.4 (46.1-71.5)         |
| Divorced/separated             | 62                    | 47.7 (30.0-66.1)         | 19c                  | 43.8 (19.9-71.0)         |
| Widowed                        | 123                   | 41.3 (31.6-51.9)         | 202                  | 47.6 (38.0-57.4)         |
| Never married                  | 12c                   | 29.0 (6.7-69.8)          | 10c                  | 23.7 (3.1-75.2)          |

CI indicates confidence interval; ref, refused; NA, not available; DK, don’t know.
aFecal occult blood test within the previous year or sigmoidoscopy or colonoscopy within the previous 5 years.
bTotals exclude records with missing data.
cNumbers too small for precise estimates.
### Table 4. (continued) Prevalence of Recent Colorectal Screening<sup>a</sup> Among U.S. Women Aged 65 Years and Older With No History of Breast or Colorectal Cancer, by Age Group, Health Information National Trend Survey, 2003

| Characteristic                  | Age Group 65-74 years |  | Age Group ≥75 years |  |
|--------------------------------|-----------------------|---|---------------------|---|
|                                | No. (Total Sample Size)<sup>b</sup> | Pop. Est., % (95% CI) | No. (Total Sample Size)<sup>b</sup> | Pop. Est., % (95% CI) |
| **Family history of cancer**   |                       |                           |                       |                           |
| Yes                            | 255                   | 54.5 (46.2-62.5)          | 190                   | 53.5 (46.2-60.6)          |
| No                             | 104                   | 47.4 (37.9-57.2)          | 107                   | 45.8 (30.9-61.4)          |
| **Self-rated health status**   |                       |                           |                       |                           |
| Excellent/Very good            | 153                   | 45.9 (38.3-53.8)          | 122                   | 47.0 (34.4-60.1)          |
| Good                           | 120                   | 60.8 (47.1-73.0)          | 100                   | 55.0 (43.2-66.3)          |
| Fair/poor                      | 89                    | 49.7 (37.5-61.9)          | 76                    | 50.1 (37.0-63.3)          |
| **Usual health provider**      |                       |                           |                       |                           |
| Yes                            | 309                   | 54.7 (47.4-61.9)          | 255                   | 52.6 (44.3-60.7)          |
| No                             | 51                    | 38.2 (21.6-58.0)          | 42                    | 35.9 (20.4-55.0)          |
| **Provider visits in previous year** |                   |                           |                       |                           |
| ≤1                             | 71                    | 42.9 (27.8-59.5)          | 43                    | 43.4 (24.5-64.4)          |
| 2-4                            | 158                   | 51.9 (40.3-63.4)          | 136                   | 46.0 (35.1-57.2)          |
| ≥5                             | 132                   | 57.5 (47.7-66.7)          | 111                   | 58.9 (47.9-69.1)          |

CI indicates confidence interval; ref, refused; NA, not available; DK, don’t know.
<sup>a</sup>Fecal occult blood test within the previous year or sigmoidoscopy or colonoscopy within the previous 5 years.
<sup>b</sup>Totals exclude records with missing data.
<sup>c</sup>Numbers too small for precise estimates.

### Table 5. History of Media Exposure and Preferred Channel of Information, by Adherence<sup>a</sup> to Cancer Screening Guidelines Among U.S. Women Aged 65 Years and Older With No History of Breast or Colorectal Cancer (N = 675), Health Information National Trend Survey, 2003

| Characteristic                  | Mammography Screening |  | Colorectal Screening |  |
|--------------------------------|-----------------------|---|----------------------|---|
|                                | Adhered               | Did Not Adhere | P value<sup>b</sup> | Adhered               | Did Not Adhere | P value<sup>b</sup> |
|                                | No. | Est. Pop., % (95% CI) | No. | Est. Pop., % (95% CI) | No. | Est. Pop., % (95% CI) | No. | Est. Pop., % (95% CI) |
| **Media exposure**             |                |                        |                |                        |                |                        |
| On TV                          | 526 | 93.4 (90.3-95.6) | 140 | 91.8 (85.2-95.6) | .57 | 348 | 94.1 (90.5-96.4) | 309 | 91.6 (7.2-94.6) | .28 |
| In newspaper                   | 526 | 81.5 (77.5-85.0) | 139 | 66.4 (57.6-74.1) | .002 | 348 | 81.8 (75.6-86.7) | 307 | 75.3 (69.7-80.3) | .11 |
| In magazines                   | 527 | 74.3 (68.9-79.1) | 140 | 53.5 (42.0-64.6) | .002 | 349 | 75.9 (68.2-82.2) | 308 | 64.0 (57.2-70.4) | .02 |
| On radio                       | 524 | 46.6 (40.6-52.7) | 141 | 35.4 (27.3-44.4) | .02 | 346 | 48.5 (41.3-55.7) | 310 | 39.8 (31.7-48.5) | .11 |

CI indicates confidence interval.
<sup>a</sup>Adherence is defined as mammography screening within previous 2 years, fecal occult blood test within previous year or sigmoidoscopy or colonoscopy screening within previous 5 years.
<sup>b</sup>P values for chi-square test of independence (analogous to the standard Pearson chi-square test for non-survey data).
<sup>c</sup>Responses to “another source” included the following: talking to people who had cancer; talking to family members, friends and other people; receiving information from cancer centers or societies; attending seminars and presentations; and watching television or listening to the radio.
<sup>d</sup>Number is too small for precise estimation.

(continued on next page)
Table 5. (continued) History of Media Exposure and Preferred Channel of Information, by Adherence\textsuperscript{a} to Cancer Screening Guidelines Among U.S. Women Aged 65 Years and Older With No History of Breast or Colorectal Cancer (N = 675), Health Information National Trend Survey, 2003

| Characteristic                  | Mammography Screening | Colorectal Screening |
|--------------------------------|-----------------------|----------------------|
|                                | Adhered               | Did Not Adhere       |
|                                | No. | Est. Pop., % (95% CI) | No. | Est. Pop., % (95% CI) | P value\textsuperscript{b} | No. | Est. Pop., % (95% CI) | No. | Est. Pop., % (95% CI) | P value\textsuperscript{b} |
| Media exposure (continued)     |     |                       |     |                       |                            |     |                       |     |                       |                            |
| On Internet                    | 525 | 13.2 (10.5-16.5)      | 141 | 11.2 (6.4-18.9)       | .57                        | 350 | 16.3 (12.1-21.6)     | 307 | 9.3 (6.0-14.3)       | .05                        |
| Preferred channel of information |     |                       |     |                       |                            |     |                       |     |                       |                            |
| Personalized print             | 518 | 80.1 (75.0-84.3)      | 136 | 65.8 (56.0-74.3)      | .003                       | 345 | 80.5 (74.8-85.1)     | 300 | 73.1 (65.8-79.2)     | .05                       |
| Other publication              | 525 | 76.4 (71.4-80.9)      | 138 | 69.5 (60.9-76.9)      | .12                        | 346 | 78.5 (72.7-83.4)     | 308 | 71.2 (64.8-76.8)     | .06                       |
| Meeting with health care pro-  | 518 | 68.7 (64.8-72.5)      | 137 | 48.6 (38.6-58.6)      | .000                       | 343 | 63.8 (57.5-69.6)     | 303 | 64.9 (58.4-70.8)     | .80                       |
| fessional                     |     |                       |     |                       |                            |     |                       |     |                       |                            |
| Telephone call                 | 515 | 57.1 (51.1-62.8)      | 138 | 53.4 (42.6-63.9)      | .49                        | 340 | 55.4 (48.4-62.1)     | 305 | 56.9 (49.7-63.7)     | .70                       |
| Videocassette                  | 517 | 49.1 (43.4-54.7)      | 137 | 35.0 (24.8-46.7)      | .02                        | 342 | 46.5 (39.6-53.5)     | 303 | 45.9 (38.8-53.2)     | .91                       |
| Audiocassette                  | 521 | 41.5 (36.3-46.9)      | 141 | 31.0 (23.8-39.2)      | .03                        | 345 | 40.4 (33.8-47.2)     | 307 | 37.9 (31.1-45.3)     | .64                       |
| E-mail/Internet                | 522 | 23.5 (19.6-28.0)      | 136 | 23.6 (15.6-34.1)      | .99                        | 347 | 24.4 (18.9-30.9)     | 302 | 23.0 (17.6-29.3)     | .74                       |
| CD-ROM                         | 520 | 23.2 (18.8-28.2)      | 140 | 11.6 (6.2-20.6)       | .01                        | 345 | 21.0 (16.5-27.7)     | 306 | 20.0 (14.7-26.5)     | .70                       |
| Another source\textsuperscript{c} | 521 | 8.6 (5.9-12.4)        | 140 | 4.3 (1.8-10.1)        | .1                         | 345 | 9.4 (6.4-13.4)       | 307 | 5.4 (2.5-11.5)       | .16                       |

CI indicates confidence interval.
\textsuperscript{a}Adherence is defined as mammography screening within previous 2 years, Fecal occult blood test within previous year or sigmoidoscopy or colonoscopy screening within previous 5 years.
\textsuperscript{b}P values for chi-square test of independence (analogous to the standard Pearson chi-square test for non-survey data).
\textsuperscript{c}Responses to “another source” included the following: talking to people who had cancer; talking to family members, friends and other people; receiving information from cancer centers or societies; attending seminars and presentations; and watching television or listening to the radio.
\textsuperscript{d}Number is too small for precise estimation.