



Original article

Physician Adherence to U.S. Preventive Services Task Force Mammography Guidelines



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ABSTRACT

Background: In 2009, the U.S. Preventive Services Task Force (USPSTF) guidelines for screening mammography changed significantly, and are now in direct conflict with screening guidelines of other major national organizations. The extent to which physicians in different primary care specialties adhere to current USPSTF guidelines is unknown.

Methods: We conducted a cross-sectional web-based survey completed by 316 physicians in internal medicine, family medicine (FM), and gynecology (GYN) from February to April 2012. Survey items assessed respondents' breast cancer screening recommendations in women of different ages at average risk for breast cancer. We used descriptive statistics to generate response distribution for survey items, and logistic regression models to compare responses among specialties.

Findings: The response rate was 55.0% (316/575). A majority of providers in internal medicine (65%), FM (64%), and GYN (92%) recommended breast cancer screening starting at age 40 versus 50. A majority of providers in internal medicine (77%), FM (74%), and GYN (98%) recommended annual versus biennial screening. Gynecologists were significantly more likely than both internists and family physicians to recommend initial mammography at age 40 ($p \leq .0001$) and yearly mammography ($p = .0003$). There were no other differences by respondent demographic.

Conclusions: Primary care providers, especially gynecologists, have not implemented USPSTF guidelines. The extent to which these findings may be driven by patient versus provider preferences should be explored. These findings suggest that patients are likely to receive conflicting breast cancer screening recommendations from different providers.

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In 2009, the U.S. Preventive Services Task Force (USPSTF) changed its guidelines for the use of mammography to screen asymptomatic women at average risk for breast cancer. Contrary

to its 2002 guidelines which recommended initiation of mammography at age 40 and repeating it every 1 to 2 years (Humphrey, Helfand, Chan, & Woolf, 2002), its 2009 guidelines recommend initiation at age 50 and repeat screening biennially (Nelson et al., 2009). The 2009 USPSTF guidelines are now in direct conflict with most other major national guidelines, including those of the American Cancer Society (ACS) and the American College of Obstetricians and Gynecologists (ACOG; Table 1). Specifically, both ACS (Smith, Cokkinides, Brooks, Saslow, & Brawley, 2010) and ACOG (2011) recommend that mammography be initiated at age 40 and continued annually.

The 2009 USPSTF guidelines garnered widespread media coverage (Collins, 2009; Goodman, 2009; Grady, 2009;

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Table 1
Summary of Mammography Guidelines by Organization and Age Group

Organization	Age 40–49	Age ≥ 50
U.S. Preventive Services Task Force	Recommends against routine screening	Biennial screening
American Cancer Society	Yearly screening	Yearly screening
American Congress of Obstetricians and Gynecologists	Yearly screening	Yearly screening

Vennochi, 2009). Its publication in the context of a national debate about health care reform undoubtedly contributed to the exposure. In the political arena and among both physician organizations and the general public, concerns began to arise over health care “rationing” (“Critics See Health Care Rationing Behind New Mammography Recommendations,” 2009; “Special Report’ Panel on Senate Health Care Bill; New Mammogram Guidelines,” 2009; “USPSTF Mammography Recommendations Will Result in Countless Unnecessary Breast Cancer Deaths Each Year,” 2009). Yet USPSTF 2009 guidelines state that recommendations were based not on cost concerns but rather on the risk-benefit profile of mammograms in women of different ages. The USPSTF cites data showing that younger women are at greater risk for false-positive mammography results, and they are therefore more likely to experience stress, anxiety, and inconvenience resulting from these false-positive tests. The USPSTF also compares the number needed to screen with mammography to prevent one breast cancer death, which demonstrates that the benefit of screening increases dramatically with age: 1,904 for women ages 40 to 49, 1,339 for ages 50 to 59, and 377 for women ages 60 to 69 (Elmore et al., 1998; Nelson et al., 2009).

Studies of self-reported mammography rates up to 2011 showed that screening rates for women aged 40 to 74 were not different in the years immediately following new USPSTF guidelines than in preceding years (Howard & Adams, 2012; Pace, He, & Keating, 2013). It is unknown whether this pattern has changed in subsequent years, given existing evidence to show that lag time to implementation of guidelines is common (Cleland et al., 2002; McKee, Leslie, LeMaitre, Webb, & Denvir, 2003). It is likely that mammography rates observed in these prior studies reflected both physician recommendations as well as the many other factors that influence whether patients obtain screening. As health care expenditures become increasingly scrutinized, it becomes more imperative to use medical technologies efficiently, and in a manner that maximizes the benefit-to-risk ratio for individual patients. The primary objective of this study was to examine and compare the extent to which primary care providers in different specialties recommend current USPSTF guidelines for breast cancer screening.

Methods

Design Overview

This study was a cross-sectional, web-based survey design.

Setting and Participants

With approval from the Institutional Review Board at the University of Pittsburgh, we surveyed resident and attending physicians at the University of Pittsburgh, a large, urban, academic center. Internal medicine residents whose continuity

clinic site is located at the Veteran's Affairs Hospital of Pittsburgh were also included. Physicians in four primary care specialties—internal medicine, combined internal medicine/pediatrics, family medicine, and gynecology—were eligible to participate if they were university or community physicians who spent on average at least one half-day per week providing care to outpatients.

Consent from eligible physicians was solicited via an e-mail, which stated that participation was completely voluntary and survey responses were anonymous. There were no penalties for declining to participate. As an incentive, all participants were included in a random selection to win one of two iPads. All physicians who chose to participate accessed the survey via a public survey URL that was included in both invitation and reminder e-mails. Recruitment and data collection took place from February through April 2012.

Study Survey

The survey was adapted, with permission, from the Breast and Cervical Cancer Screening Questionnaire that is part of the National Survey of Primary Care Physicians' Cancer Screening Recommendations and Practices and was originally conducted by the National Cancer Institute, in collaboration with the Agency for Healthcare Research and Quality and the Centers for Disease Control and Prevention (“National Survey of Primary Care Physicians' Recommendations”, 2010). It required approximately 10 minutes to complete and contained no identifying information.

Outcomes

Survey items ascertained respondents' perceived adherence to USPSTF, ACS, and ACOG guidelines for breast cancer screening (“closely adhere, somewhat adhere, unsure, rarely adhere, do not adhere”). To assess providers' actual screening recommendations independent of their perceived guideline adherence or patient preference, we asked the following for women of different ages: “In asymptomatic, average-risk women do you routinely recommend screening mammography?” Respondents received a “yes/no” response option. Screening interval (response options “annually” vs. “every 2 years”) was assessed among women over 50, as we felt that measurement of screening interval in women under age 50 would be confounded by the fact that some providers perform no screening in this age group. We also asked respondents to identify their specialty, years in training, and gender. Furthermore, family physicians and internists were asked if they identify themselves as having a specialized interest in women's health.

Statistical Analysis

Data were collected and managed in July of 2012, using REDCap (Research Electronic Data Capture), a secure, web-based application that is designed to support data capture for research studies (Harris et al., 2009) and is hosted at the University of Pittsburgh Medical Center. We generated descriptive statistics to characterize the participants and their screening practices. Because we have residency programs in internal medicine and combined internal medicine/pediatrics, these specialties were listed separately in our survey. However, for our analyses, we collapsed them into a single group called internal medicine. We performed logistic regression to examine the independent

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