Screening for Cancer in Older Women: A Guide to Prudent Prevention

Mitchell T. Heflin, MD, MHS, and Eugene Z. Oddone, MD, MHS

Abstract

• **Objective:** To review the salient issues involved in decision making with regard to screening older women for breast and cervical cancer, including risk of developing cancer, the benefits and risks of specific procedures, and current recommendations of national organizations.

• **Methods:** Qualitative assessment of the literature.

• **Results:** Screening for breast and cervical cancer is widely accepted as a routine part of preventive care for adult women. Among older women, however, more uncertainty exists about the benefit of screening. Comorbid illness and frailty alter the risk-benefit ratios of screening among the elderly. As a result, the decision to offer cancer screening to the older woman presents a significant clinical challenge. Patients and providers need to consider several specific questions in making the decisions, including the individual’s risk of developing the cancer, the potential benefits and harms given her health status and life expectancy, and the value the individual places on preventing death from cancer.

• **Conclusion:** Systematic assessment of an older woman’s candidacy for screening for breast and cervical cancer should lead to shared and rational decisions, maximizing the benefit while minimizing any potential harm.

In the last quarter century, new medical and surgical treatments have led to a decline in the age-specific mortality rates of many malignancies, including breast and cervical cancer. Screening asymptomatic women for these diseases has allowed more effective treatment through early detection. Among older women, however, more uncertainty exists about the benefit of screening. In most cases, the screening tests and available treatments have been less rigorously evaluated in the elderly. Additionally, comorbid illness and frailty alter the risk-benefit ratios of screening in this group. As a result, the decision to offer cancer screening to the older patient presents a significant clinical challenge.

Recently, leaders in preventive medicine and geriatrics have offered guidance for navigating this complicated set of issues. Walter and Covinsky, in their article “Cancer screening in elderly patients: a framework for individualized decision making,” recommend that clinicians individually assess the benefits and risks of screening for older adults and help patients make decisions in the context of the patient’s values and preferences [1]. The Ethics Committee of the American Geriatrics Society recently published a position paper on health screening decisions for older adults [2]. This statement also emphasizes the importance of individualized decision making with older adults and, further, encourages the prioritization of preventive services according to their potential impact on the older adult’s well-being and quality of life. As with many late-life interventions, clinicians need to systematically evaluate the individual patient’s candidacy for screening through shared decision making. This process goes beyond traditional inquiries about the strength of evidence supporting a given screening test.

Expanding on the guides described above, we believe answering the following questions can assist patients and physicians in making these difficult decisions (Table 1):

1. **What is the impact of the disease in older patients?** Sixty percent of persons affected by cancer are over age 65. Age-specific incidence rates for breast and cervical cancer are several-fold higher in older patients when compared with their younger counterparts. Additionally, mortality rates from these cancers rise dramatically as women age into their eighth and ninth decades of life [3].

2. **Is cancer biology different in older patients?** In many cases, the detectable preclinical phase of a cancer changes with aging. For example, breast cancer in older women appears to evolve more slowly than in younger patients. The specific biology of a cancer fundamentally determines its candidacy for screening.

From the Department of Medicine, Duke University Medical Center (Dr. Heflin), and the Center for Health Services Research in Primary Care, VA Medical Center (Dr. Oddone), Durham, NC.
Table 1. Questions Specific to Screening for Cancer in the Elderly

<table>
<thead>
<tr>
<th>Question</th>
<th>Answer</th>
</tr>
</thead>
<tbody>
<tr>
<td>What is the specific impact of the disease in older patients?</td>
<td>Do screening tests perform differently in older patients?</td>
</tr>
<tr>
<td>Is the biology of the cancer different in older patients?</td>
<td>Are the characteristics of the screening tests different in older</td>
</tr>
<tr>
<td>patients?</td>
<td>patients?</td>
</tr>
<tr>
<td>Are the characteristics of the screening tests different in older</td>
<td>Will this patient or group of patients survive long enough to</td>
</tr>
<tr>
<td>patients?</td>
<td>benefit from screening?</td>
</tr>
<tr>
<td>Will this patient or group of patients survive long enough to benefit</td>
<td>What are the potential harms associated with screening for cancer?</td>
</tr>
<tr>
<td>from screening?</td>
<td>What barriers exist to screening for this cancer in the patients?</td>
</tr>
<tr>
<td>What are the potential harms associated with screening for cancer?</td>
<td>How do patient preference and values impact the decision to offer</td>
</tr>
<tr>
<td>What barriers exist to screening for this cancer in the patients?</td>
<td>screening in older patients?</td>
</tr>
<tr>
<td>How do patient preference and values impact the decision to offer</td>
<td><strong>Cervical Cancer</strong></td>
</tr>
<tr>
<td>screening in older patients?</td>
<td>Epidemiology</td>
</tr>
<tr>
<td></td>
<td>Although cervical cancer has a relatively low overall prevalence, it</td>
</tr>
<tr>
<td></td>
<td>remains an important, preventable cause of morbidity and mortality in</td>
</tr>
<tr>
<td></td>
<td>women. The American Cancer Society estimates that in 2003 there will</td>
</tr>
<tr>
<td></td>
<td>be 12,200 new cases of invasive cervical cancer in the United States</td>
</tr>
<tr>
<td></td>
<td>and 4100 deaths from the disease [4]. The incidence and mortality of</td>
</tr>
<tr>
<td></td>
<td>invasive cancer increases with age, with 25% of new cases and 40% of</td>
</tr>
<tr>
<td></td>
<td>deaths occurring in people over age 65 [5]. Death rates from cervical</td>
</tr>
<tr>
<td></td>
<td>cancer in women over age 65 are more than threefold higher than in</td>
</tr>
<tr>
<td></td>
<td>younger women (8.3/100,000 versus 2.4/100,000). This difference is even</td>
</tr>
<tr>
<td></td>
<td>more pronounced in minority populations, in whom death rates among</td>
</tr>
<tr>
<td></td>
<td>older women reach 20.7/100,000 [6]. While these discrepancies are</td>
</tr>
<tr>
<td></td>
<td>striking, it is also important to recognize an older woman’s relatively</td>
</tr>
<tr>
<td></td>
<td>low overall risk of developing invasive cervical cancer. Among</td>
</tr>
<tr>
<td></td>
<td>75-year-old women of average health, approximately 1 to 2 women in</td>
</tr>
<tr>
<td></td>
<td>1000 will die of cervical cancer over their remaining lifetime. Among</td>
</tr>
<tr>
<td></td>
<td>75-year-old women in poor health (ie, the lowest quartile of survival),</td>
</tr>
<tr>
<td></td>
<td>the rate of cervical cancer death is less than half that [1] (Figure 1).</td>
</tr>
</tbody>
</table>

**Risk Factors**

Risk factors for cervical cancer are well recognized. They include early sexual intercourse, multiple sexual partners, and a history of human papilloma virus infection. For elderly patients, clinicians should also consider the risk associated with a lack of previous screening. In one case-control study, investigators found that 55% of women over the age of 65 diagnosed with cervical cancer reported never having a Pap smear versus 15% for cancer-free controls (odds ratio [OR], 14) [7]. A more recent case series found that most of the age-related difference in cervical cancer mortality was attributable to lower rates of screening among older women [8].

**Natural History**

The natural history of squamous cell cancer of the cervix involves the progression of cervical dysplasia or carcinoma in situ to invasive cancer. The detectable preclinical phase associated with this change is estimated to last anywhere from 1 to 20 years, although most agree that the average duration
is approximately 10 years. When discovered prior to invasion, though, local treatment with conization or cryotherapy confers a definite survival advantage. For localized cancer, 5-year survival is 90%, as opposed to 40% for more advanced disease [5]. Successful early intervention also avoids the extensive surgery and radiation employed to treat invasive disease. No specific studies have been performed to compare survival rates among older women found to have earlier stage disease with those with later stage.

**Screening Test**

The Papanicolaou test has been the standard method of screening for cervical cancer for over 3 decades. Sensitivity and specificity of the Pap smear have been difficult to gauge due to variability in methods of specimen collection and pathologic analysis. A recent systematic review by Nanda and colleagues showed that Pap smear sensitivities ranged from 30% to 87% and specificities ranged from 86% to 100% [9]. Further complicating matters, test characteristics change with aging. In older women, the target region for cell collection, the squamocolumnar junction, recedes into the cervical canal, making sampling more difficult and less reliable. A study of 50 asymptomatic older women with negative Pap smears found that 11 had positive findings on subsequent colposcopy [10]. Additionally, aging predisposes the cervix to inflammation and injury, conditions that can result in higher false-positive rates. No prospective controlled trials have been performed to demonstrate the effectiveness of the Pap smear on improving survival in any age population. A large body of epidemiologic evidence, however, reveals that women dying of cervical cancer are 8 to 9 times less likely to have received a Pap smear in the past than those without the diagnosis. Few patients over 65 were included in these analyses [11].

Many recommendations from professional organizations disagree with regard to suggested intervals between screening Pap smears. A comprehensive review revealed little decrement in the diagnostic rate of invasive cervical cancer with triennial as compared with annual screening (90.8% reduction in the probability of developing invasive cancer versus 93.5% reduction) [11]. Cost-effectiveness analysis predictably reveals that among women over age 65, triennial screening reduces mortality by 74% at a cost of $2254 per year of life saved. Continuing to screen women over age 65 who have had regular screening in the past (with normal cytologies) is not cost-effective with little additional survival benefit [12]. A recent prospective cohort study further revealed the relative futility of annual screening among average-risk postmenopausal women. Pap smears performed within 1 year of a normal smear had a positive predictive value of 0%, while those performed within 2 years yielded a value of 1% [13]. There appears to be little utility in performing Pap smears more frequently than every 2 years.

In addition to avoiding repeated screening in women over age 65, screening is also unnecessary in women who have undergone total hysterectomy for benign lesions. Sampling the cervical cuff in these patients yields an extremely low number of vaginal dysplasias and exposes the woman to an inordinately high rate of false-positives [14,15]. The clinician must recognize, though, that patients who have undergone partial hysterectomies where the cervical stump has not been removed continue to be at risk for cervical cancer. For this reason, providers should consider performing an initial speculum exam on newly encountered patients to clarify their anatomy.
Barriers
Compliance presents a significant challenge in the prevention of cervical cancer in older women. In most cases, improving adherence involves overcoming socioeconomic and educational barriers. Several epidemiologic studies have established that rates of receipt of Pap smear are adversely impacted by lower income, lower level of education, and urban location. It is unclear if Medicare funding for the procedure has improved rates among older women over the last decade. Additionally, once the procedure is performed, adequate follow-up is impeded by several factors, including older age [16]. Studies demonstrate that most of these barriers may be overcome by provider and patient education and improved social support [17].

Screening Recommendations
Groups issuing recommendations for cervical cancer screening generally agree on the performance of Pap smears at least every 3 years in women who have a uterine cervix. Most also allude to a specific upper age limit at which providers should consider stopping screening if a woman has had “repeatedly normal smears.” The American Cancer Society (ACS) suggests that women 70 years of age or older who have had 3 consecutive normal smears and no abnormal tests in the last decade may choose to stop having cervical cancer screening [18]. The U.S. Preventive Services Task Force (USPSTF) recommends suspending screening at age 65 if the woman has had “repeatedly normal smears” with a reference to the ACS definition of this term. The USPSTF further identifies the significant potential for harm related to the risk of false-positive results and unnecessary testing and treatment [19]. Both guidelines recommend against continued screening among women who have had a total hysterectomy for a benign indication. The American Geriatrics Society (AGS) recently published its own guideline on the subject of cervical cancer screening in older women [20]. The recommendations concur with those offered by the ACS and USPSTF but expand on a number of issues related to aging. Most importantly, they emphasize the importance of offering screening to women with persistent risk, particularly those who have never been screened. They also highlight the importance of accounting for the patient’s life expectancy and related ability to tolerate further testing and treatment [20]. We concur with the recommendations of these groups (most specifically, the AGS) and further remind providers to (1) take a careful history of prior Pap smears and potential risk factors in all women, regardless of age, and (2) perform an initial speculum examination to clarify anatomy before excluding women with a history of hysterectomy from screening (Table 2).

Breast Cancer
Epidemiology
Breast cancer is the most commonly encountered cancer and the second leading cause of cancer-related deaths among U.S. women. In 2003, while the number of new cases of breast cancer in the United States will increase to approximately 212,600, the number of total deaths will drop to less than 40,200, from over 46,000 in 1994 [4]. Older women continue to experience the majority of morbidity and mortality from breast cancer. The annual incidence among women over age 65 is nearly 6 times that of women under age 65 (80/100,000 versus 457/100,000). Additionally, 60% of breast cancer deaths occur among women over age 60 and 30%
among women with higher levels of comorbidity diagnosed with early-stage cancer, survival seems to be primarily limited by preexisting conditions [25]. Additionally, strong evidence exists that tumors diagnosed in the elderly appear to be more slow growing and therefore more amenable to screen detection and eradication with treatment, particularly hormonal agents [26,27].

### Screening Tests

Screening strategies for the early detection of breast cancer include breast self-examination (BSE), clinical breast examination (CBE), and mammography. BSE has been studied in large, prospective, international trials. Although these trials have demonstrated a higher detection rate of smaller, more localized tumors, none of the studies have documented a mortality benefit for BSE [28,29]. Other studies indicate that BSE has a low sensitivity, between 20% and 30%, which may be even lower among older women [30]. Based on this evidence, BSE appears to have limited utility in screening for breast cancer. Despite this fact, many experts advocate for its regular performance on the grounds that it increases breast cancer awareness.

CBE. Independent test characteristics for CBE are difficult to assess secondary to a lack of direct evidence. Clinical results from breast physical examination are likely to be variable and directly related to the skills of the health care professional performing the breast examination. Overall, the sensitivity of CBE has been estimated to be 50% to 65% [30,31]. As with other screening modalities, specificity is difficult to determine because women with normal examinations do not receive the reference standard test (breast biopsy). CBE may augment screening with mammography or may serve as a suitable substitute among women declining mammography. In fact, a recent cohort study of the accuracy of mammography and CBE among postmenopausal women revealed that CBE has a lower false-positive rate, albeit at the expense of a lower sensitivity [32]. Fewer false-positives may mean fewer extended workups for women without cancer or with in situ lesions with a low likelihood of progression.

Mammography. The mammogram remains the cornerstone of breast cancer screening. It detects smaller, deeper breast masses and thereby allows the discovery of cancer earlier than with physical exam alone. Overall, the sensitivity of mammography alone has been estimated at approximately 75% to 90%, varying with age, breast density, and screening interval [33]. When combined with CBE, estimates have ranged from 75% to 88%. Specificity ranges from 83% to 98.5% [34]. A significant body of evidence exists demonstrating that mammography has excellent test characteristics in elderly patients [35,36]. Researchers attribute the improved performance of mammography to a decrease in overall breast density and

<table>
<thead>
<tr>
<th>Authors</th>
<th>Medicare Reimbursement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biennial screening; continue to offer between age 70-85 if life expectancy greater than 5-7 years. Explain risks, explore barriers. Consider CBE as alternative for those who decline mammography.</td>
<td>Biennial mammography in 1991; changed to annual in 2000</td>
</tr>
<tr>
<td>Biennial or triennial screening; may discontinue at age 65 in women with repeatedly normal smears</td>
<td>Annual Pap smear and pelvic examination (2001)</td>
</tr>
</tbody>
</table>

occur in those over age 80 [21]. Over the course of the 1990s, breast cancer mortality dropped significantly in older women (~1.8% per year). However, this decline was just over half that for women under age 65 (~3.1% per year) [21,22]. Among 75-year-old women of average health, approximately 2 to 3 women in 100 will die of breast cancer over their remaining lifetime. Among 75-year-old women in poor health (ie, the lower quartile of survival), the rate of breast cancer death may be as low as 1 per 100 [1] (Figure 2).

### Risk Factors

In addition to advancing age, other well-established risk factors include personal or family history of breast cancer, a history of benign breast disease with atypical hyperplasia, and a longer duration of estrogen exposure, either endogenous or exogenous. The specific impact of these risk factors in older as compared with younger women is not clear. Recent analyses of large populations of older women enrolled in studies of osteoporotic fractures have revealed marked decreases in breast cancer risk among those with the lowest bone mineral densities. Researchers speculate that bone mineral density may be a marker of lifetime estrogen exposure and, thereby, an indirect indicator of breast cancer risk [23,24].

### Natural History

Breast cancer qualifies for screening due to its more favorable prognosis with early detection. For localized disease, 5-year survival rates in patients over 50 are 97.6%. With spread to regional lymph nodes at diagnosis, the 5-year survival in this group drops to 77.5% and with distant metastases to 20.1% [21]. These rates do not appear to change with advancing age, particularly for early-stage disease. In fact,
increased content of radiolucent fat with aging. A recent study suggests that age has an independent positive effect on the accuracy of mammography, even after controlling for breast density [36]. Of more clinical relevance, mammography appears to find cancers at an earlier stage, presumably allowing more effective treatment [37,38]. While on the surface, this represents an enhancement of its benefit, identification of very early or preinvasive cancers may increase the rate of diagnosis of malignancy that may not have otherwise affected the lifespan or quality of life of an older woman.

Several experimental trials have demonstrated that screening for breast cancer with mammography reduces disease-specific mortality. The trial establishing the efficacy of the combination of mammography and CBE was the Health Insurance Plan of Greater New York study that documented a 23% reduction in mortality at 18 years of follow-up [39]. Survival analysis in this trial and others revealed that significant benefits did not appear in the screened group until 5 or more years after initial screening. Most trials, however, excluded older women. Only the Swedish Two County trial and the Malmö trial included women over age 65 years at the time of randomization. The Two County Trial reported a relative risk reduction of death from breast cancer of between 25% and 44% for patients aged 50 to 74 years [34]. A subgroup analysis of patients aged 70 to 74 among all the Swedish trials, though, revealed an insignificant survival advantage with screening, with a relative risk of 0.94 (95% CI, 0.63–1.35) at 12 years’ follow-up [40]. This analysis cast some doubt on the resilience of the mortality benefit from breast cancer screening in the elderly population. More recently, in a systematic review for the Cochrane Collaboration, authors identified a number of potentially important methodologic flaws in several of the large breast cancer screening trials [41]. These assertions sparked a renewed debate within the medical community and the lay press about the quality of evidence supporting breast cancer screening with mammography [42,43]. In the last few months, a new round of guidelines supporting screening with mammography has further fueled the debate. Nonetheless, the widely accepted but controversial screening test remains largely “untested” in elderly women.

Providers may find evidence for benefit in observational studies, including a large case-control study from the Netherlands comparing patients responding to invitation to screen with those not responding. Among those aged 65 to 74, relative risk of death from breast cancer was 0.34 at 13 years follow-up and 0.45 at 18 years for biennial screening. Although this study demonstrated a strong effect, its validity is weakened by the bias inherent in its design [44]. A more recent retrospective cohort study of 4412 Medicare beneficiaries using cancer-specific data from the SEER program found that women over age 65 who had not had a recent mammogram at the time of their diagnosis with breast cancer were more likely to have advanced stage disease than older women who had been screened within the last 2 years (≥ stage II; OR, 3.12). The women without recent screening were also significantly more likely to die of breast cancer (OR, 2.28). Stage and mortality differences remained significant in subgroup analyses of women aged 75 to 84 in this study [45].

Benefits of Screening

The older patient and provider making the decision to perform breast cancer screening face a clinical dilemma. On the one hand, the disease is highly prevalent and deadly in elderly
women. On the other hand, little direct evidence exists to support screening in this group. High rates of comorbid illness and lower life expectancy among elderly women further complicate the matter. Researchers have attempted to model such decisions. Mandelblatt and colleagues used a Markov decision model to evaluate screening for breast cancer in elderly women with common medical conditions. Assuming that women aged 65 to 85 would be screened with CBE and mammography, the model produced favorable but modest improvements in survival for all groups [46]. Another model using a clinical database from the Netherlands compared the benefit of screening in terms of quality-adjusted life years gained with the “excess burden” incurred by increased lead time in diagnosis without impact on survival. The authors concluded that the benefit from screening might extend to patients up to ages 75 to 80 [47]. In a more recent study, Kerlikowske modeled a strategy of continued screening in women aged 69 to 79 with high bone mineral density. The method of risk stratification resulted in a substantially lower number of women needed to screen (NNS) to avert 1 death from invasive breast cancer when compared with screening all women in this age range (NNS = 1064 versus 7143) [48].

In regard to the optimal frequency of screening with mammography, analyses indicate that no significant decrease in survival occurs with increasing the interval from 1 to 2 years [47]. Biennial screening is deemed appropriate for older women as the preclinical detectable phase in this group appears to exceed 2 years. A recent cohort study estimated that over 50% of women will experience a false-positive study (defined as a suspicious lesion requiring follow-up imaging and possibly biopsy) by the time they have had 10 screening mammograms [32]. Biennial screening would reduce the overall rate of false-positivity while sacrificing little in terms of benefit.

**Risks of Screening**

High rates of false-positivity also translate into substantial stress and real harm to thousands of women undergoing regular screening. Recall that for each woman diagnosed with breast cancer via screening mammography, approximately 8 to 10 women will experience a workup for a false-positive study. Studies of women undergoing extended evaluations for suspicious lesions reveal significant levels of anxiety that persist even after they have learned that they did not have cancer [49]. Additionally, among older women with cognitive or physical disabilities, the test itself can present significant discomfort and distress. Walter and colleagues prospectively followed a cohort of frail elderly women for outcomes from screening mammography. Among women with positive mammograms in this study, over 40% experienced significant (chart documented) physical discomfort or psychological distress as a result of the procedure [50].

Even among those diagnosed with breast cancer through mammography, the potential for harm exists. Screening mammograms can detect both invasive disease and ductal carcinoma in situ (DCIS). Approximately 0.1% to 0.5% of older women undergoing mammography will have DCIS identified. Although the minority of these cases actually progress to cancer (7% to 25% over 5 to 10 years), DCIS is usually considered a preinvasive form of malignancy and is treated by surgical resection and, in some cases, with adjuvant hormonal or radiation therapy [51]. Many older women with DCIS would have never discovered their cancer without screening and would likely have lived to die of other causes. For those diagnosed with invasive disease, the possibility of having a clinically insignificant cancer still exists.

Satariano found that older women with 3 or more comorbidities diagnosed with early-stage breast cancer were more likely to die of preexisting comorbid conditions than from breast cancer [52]. In Walter’s cohort of frail elders, among 4 women ultimately diagnosed with breast cancer, one woman had DCIS and 3 had invasive disease. All 4 were treated, but 2 died of other causes soon after initiation of therapy [50]. In the absence of prospective randomized trials of older adults to accurately predict who will benefit from the diagnosis and treatment of breast cancer, patients and their clinicians may extrapolate from trials of younger patients that any benefit from screening will not appear until at least 5 years after initial screening.

**Use of Screening Services**

Utilization of breast cancer screening declines steadily as patients age. Several population studies in the mid-1990s in women over age 75 reported screening rates of 30% to 40%, values well short of national standards and goals [53,54]. According to the Centers for Disease Control, the rate of recent receipt of breast cancer screening in Americans over age 65 had reached 64% in 1998, up from 48% in the same population in 1991 [55]. Participation appears to be mediated by a number of patient and physician-related factors. Family history of breast cancer and a personal history of benign breast disease both increase the likelihood of screening [56]. Age, comorbid illness, and functional decline may decrease the likelihood of receiving screening [53,57]. However, we recently published an analysis that demonstrated a positive association between the number of comorbid conditions and receipt of screening, which has led us to conclude that receipt of screening is mediated more by exposure to the health care system than a consideration of physical health [58]. A number of socioeconomic factors, including low income, knowledge deficits, low perceived benefit or susceptibility, lack of private insurance, and lack of access to a regular source of health care, negatively impact breast cancer screening [59]. With respect to race, older African American women undergo screening less frequently.
Several analyses have demonstrated that this disparity is mediated by socioeconomic factors [60]. For the provider, knowledge of current evidence and effective direct communication of recommendations have a strong positive impact on rates of receipt of screening among older women [61].

Screening Recommendations

Most groups recommend screening with CBE and mammography or mammography alone every 1 to 2 years beginning at age 40 or 50. The ACS also recommends monthly BSE over age 40. They do not set a specific upper age limit but state that screening should continue to be offered “as long as the woman is in good health”[18]. The USPSTF recently expanded their recommendations for screening to include women 40 years of age and older. They still note that the highest level of evidence exists to support screening for breast cancer between ages 50 and 69 but endorse offering screening to women 70 and over whose life expectancy is not “compromised by comorbid disease”[62]. As with cervical cancer screening, the AGS has published a position paper to guide clinicians in making decisions to screen older women [63]. They recommend offering annual or biennial screening with CBE and mammography up to age 75. For women older than 75, they recommend biennial or triennial screening for those with a life expectancy of 4 or more years. They also support monthly BSE in women with preserved cognition and dexterity. The paper further emphasizes the importance of accounting for (1) risk factors for breast cancer, particularly long-term hormone replacement therapy, and (2) specific comorbid conditions and functional disability that shorten life expectancy [63]. We agree with the general consensus of continuing to offer biennial screening mammography to women over 70 if they have sufficient life expectancy. In our estimation, an expected survival of 5 or more years with reasonable quality of life would warrant an offer of screening (Table 2). Annual CBE is a reasonable complementary or alternative screening test, and may be more acceptable to many women given its convenience and lower rate of false positivity. Careful discussions to elicit an individual patient’s preferences for screening should include explanations of the magnitude of potential benefit and harm and should precede the ordering or performance of any screening test. Routine exploration of potential barriers to screening should accompany each declined offer or missed appointment. These might include addressing misperceptions, economic concerns, transportation issues, or simply fear and uncertainty.

Summary

In assessing the candidacy of an asymptomatic older woman for screening for occult breast or cervical cancer, several disease- and patient-specific factors need to be considered. The provider must gauge the impact of aging on cancer biology and screening test characteristics. She or he also must estimate the patient’s life expectancy and candidacy for further diagnostic testing and available therapies. Discussions should include clear descriptions of both the benefits and risks of screening, including the rate of false positives and the likelihood of identifying a potentially “inconsequential” cancer. Potential barriers to compliance with screening should be identified and addressed. Finally, the patient’s values and preferences should be elicited in counseling about cancer screening. Systematic assessment of these components should lead to a shared and rational decision, maximizing the benefit of screening the elderly while minimizing any potential harm.

Corresponding author: Mitchell T. Heflin, MD, MHS, Box 3003, Duke University Medical Center, Durham, NC 27710, hefli001mc.duke.edu.

Financial disclosures: None.

Author contributions: conception and design, MTH, EZO; drafting of the article, MTH; critical revision of the article, EZO.

References

12. Fahs MC, Mandelblatt J, Schechter C, Muller C. Cost

Copyright 2003 by Turner White Communications Inc., Wayne, PA. All rights reserved.