### Figure 1. Screening for breast cancer using film mammography: clinical summary of USPSTF recommendation.

#### Screening for Breast Cancer Using Film Mammography

**Clinical Summary of U.S. Preventive Services Task Force Recommendation**

<table>
<thead>
<tr>
<th>Population</th>
<th>Women Aged 40–49 Years</th>
<th>Women Aged 50–74 Years</th>
<th>Women Aged ≥75 Years</th>
</tr>
</thead>
<tbody>
<tr>
<td>Recommendation</td>
<td>Do not screen routinely. Individualize decision to begin biennial screening according to the patient's context and values.</td>
<td>Screen every 2 years.</td>
<td>No recommendation.</td>
</tr>
<tr>
<td>Grade:</td>
<td>C</td>
<td>B</td>
<td>I (insufficient evidence)</td>
</tr>
</tbody>
</table>

#### Risk Assessment

This recommendation applies to women aged ≥40 years who are not at increased risk by virtue of a known genetic mutation or history of chest radiation. Increasing age is the most important risk factor for most women.

#### Screening Tests

Standardization of film mammography has led to improved quality. Refer patients to facilities certified under the Mammography Quality Standards Act (MQSA), listed at www.fda.gov/cdrh/mammography/certified.html.

#### Timing of Screening

Evidence indicates that biennial screening is optimal. A biennial schedule preserves most of the benefit of annual screening and cuts the harms nearly in half. A longer interval may reduce the benefit.

#### Balance of Harms and Benefits

There is convincing evidence that screening with film mammography reduces breast cancer mortality, with a greater absolute reduction for women aged 50 to 74 years than for younger women. Harms of screening include psychological harms, additional medical visits, imaging, and biopsies in women without cancer, inconvenience due to false-positive screening results, harms of unnecessary treatment, and radiation exposure. Harms seem moderate for each age group. False-positive results are a greater concern for younger women; treatment of cancer that would not become clinically apparent during a woman's life (overdiagnosis) is an increasing problem as women age.

#### Rationale for No Recommendation (I Statement)

Among women 75 years or older, evidence of benefit is lacking.

#### Relevant USPSTF Recommendations

USPSTF recommendations on screening for genetic susceptibility for breast cancer and chemoprevention of breast cancer are available at www.preventiveservices.ahrq.gov.

For a summary of the evidence systematically reviewed in making these recommendations, the full recommendation statement, and supporting documents, please go to www.preventiveservices.ahrq.gov.
**Figure 2.** Screening for breast cancer using methods other than film mammography: clinical summary of USPSTF recommendation.

### Screening for Breast Cancer Using Methods Other Than Film Mammography

#### Clinical Summary of U.S. Preventive Services Task Force Recommendation

<table>
<thead>
<tr>
<th>Population</th>
<th>Women Aged ≥40 Years</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Screening Method</strong></td>
<td>Digital Mammography</td>
</tr>
<tr>
<td><strong>Recommendation</strong></td>
<td>Grade: I (insufficient evidence)</td>
</tr>
</tbody>
</table>

**Rationale for No Recommendation or Negative Recommendation**
- Evidence is lacking for benefits of digital mammography and MRI of the breast as substitutes for film mammography.
- Evidence of CBE's additional benefit, beyond mammography, is inadequate.
- Adequate evidence suggests that BSE does not reduce breast cancer mortality.

**Considerations for Practice**

#### Potential Preventable Burden
- For younger women and women with dense breast tissue, overall detection is somewhat better with digital mammography.
- Contrast-enhanced MRI has been shown to detect more cases of cancer in very high-risk populations than does mammography.
- Indirect evidence suggests that when CBE is the only test available, it may detect a significant proportion of cancer cases.

#### Potential Harms
- It is not certain whether overdiagnosis occurs more often with digital than with film mammography.
- Contrast-enhanced MRI requires injection of contrast material.
- MRI yields many more false-positive results and potentially more overdiagnosis than mammography.
- Harms of CBE include false-positive results, which lead to anxiety, unnecessary visits, imaging, and biopsies.
- Harms of BSE include the same potential harms as for CBE and may be larger in magnitude.

#### Costs
- Digital mammography is more expensive than film.
- MRI is much more expensive than mammography.
- Costs of CBE are primarily opportunity costs to clinicians.
- Costs of BSE are primarily opportunity costs to clinicians.

#### Current Practice
- Some clinical practices are now switching to digital equipment.
- MRI is not currently used to screen women of average risk.
- No standard approach or reporting standards are in place.
- The number of clinicians who teach BSE to patients is unknown; it is likely that few clinicians teach BSE to all women.

For a summary of the evidence systematically reviewed in making these recommendations, the full recommendation statement, and supporting documents, please go to www.preventiveservices.ahrq.gov.
### Table 1. What the USPSTF Grades Mean and Suggestions for Practice

<table>
<thead>
<tr>
<th>Grade</th>
<th>Definition</th>
<th>Suggestions for Practice</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>The USPSTF recommends the service. There is high certainty that the net benefit is substantial.</td>
<td>Offer/provide this service.</td>
</tr>
<tr>
<td>B</td>
<td>The USPSTF recommends the service. There is high certainty that the net benefit is moderate or there is moderate certainty that the net benefit is moderate to substantial.</td>
<td>Offer/provide this service.</td>
</tr>
<tr>
<td>C</td>
<td>The USPSTF recommends against routinely providing the service. There may be considerations that support providing the service in an individual patient. There is moderate or high certainty that the net benefit is small.</td>
<td>Offer/provide this service only if other considerations support offering or providing the service in an individual patient.</td>
</tr>
<tr>
<td>D</td>
<td>The USPSTF recommends against the service. There is moderate or high certainty that the service has no net benefit or that the harms outweigh the benefits.</td>
<td>Discourage the use of this service.</td>
</tr>
<tr>
<td>I statement</td>
<td>The USPSTF concludes that the current evidence is insufficient to assess the balance of benefits and harms of the service. Evidence is lacking, of poor quality, or conflicting, and the balance of benefits and harms cannot be determined.</td>
<td>Read the clinical considerations section of the USPSTF Recommendation Statement. If the service is offered, patients should understand the uncertainty about the balance of benefits and harms.</td>
</tr>
</tbody>
</table>

### Table 2. USPSTF Levels of Certainty Regarding Net Benefit

<table>
<thead>
<tr>
<th>Level of Certainty*</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>High</td>
<td>The available evidence usually includes consistent results from well-designed, well-conducted studies in representative primary care populations. These studies assess the effects of the preventive service on health outcomes. This conclusion is therefore unlikely to be strongly affected by the results of future studies.</td>
</tr>
<tr>
<td>Moderate</td>
<td>The available evidence is sufficient to determine the effects of the preventive service on health outcomes, but confidence in the estimate is constrained by such factors as: the number, size, or quality of individual studies; inconsistency of findings across individual studies; limited generalizability of findings to routine primary care practice; lack of coherence in the chain of evidence. As more information becomes available, the magnitude or direction of the observed effect could change, and this change may be large enough to alter the conclusion.</td>
</tr>
<tr>
<td>Low</td>
<td>The available evidence is insufficient to assess effects on health outcomes. Evidence is insufficient because of: the limited number or size of studies; important flaws in study design or methods; inconsistency of findings across individual studies; gaps in the chain of evidence; findings that are not generalizable to routine primary care practice; a lack of information on important health outcomes. More information may allow an estimation of effects on health outcomes.</td>
</tr>
</tbody>
</table>

* The USPSTF defines certainty as “likelihood that the USPSTF assessment of the net benefit of a preventive service is correct.” The net benefit is defined as benefit minus harm of the preventive service as implemented in a general primary care population. The USPSTF assigns a certainty level based on the nature of the overall evidence available to assess the net benefit of a preventive service.