Critical Appraisal of the Multiple Screening Mammography Guidelines: US

Belinda Ireland, MD, MS
TheEvidenceDoc
Background


- The recommendations endorsed biennial mammography for women between the ages of 50 and 74, but did not recommend routine mammography for other age groups.
Background

- Intense media coverage and controversy immediately ensued

- The release coincided with political concerns and debate around the administration’s health care reform proposal.

- Criticism of the guideline included lack of appropriate experts on the panel, excessive focus by the panel on potential harm from screening, the choice of “evidence”, and favoring cost savings over lives.
Several US societies and medical specialty organizations immediately re-issued or revised their guidelines.

US recommendations for use of screening mammography in average risk women vary around two main issues:
- Age to start screening
- Frequency of screening
Results = Conflicting US Recommendations

Leaving physicians and their patients with questions about when to begin screening and how often to screen

Belinda Ireland, MD, MS
TheEvidenceDoc
Evidence Based Clinical Practice Guidelines - US

1980: ACS publishes evidence based recommendations for early detection of cancer by David Eddy

1981: American College of Physicians establishes evidence based guideline program

1984: USPSTF formed

1989: AHCPR formed; First Guide to Clinical Preventive Services released

1990: IOM Committee on Clinical Practice Guidelines


1996: AHCPR replaces guideline development program with EPCs

1999: AHRQ; National Guideline Clearinghouse

2002: AHRQ sponsors Conference on Guideline Standardization (COGS)

2006: IOM Review Evidence to Identify Highly Effective Clinical Services

2008: IOM Committee on Standards for developing trustworthy clinical practice guidelines

2009: IOM Knowing what works in health care

ACS: American College of Surgeons

AHCPR: Agency for Health Care Policy and Research

USPSTF: U.S. Preventive Services Task Force

IOM: Institute of Medicine

AHRQ: Agency for Healthcare Research and Quality

COGS: Conference on Guideline Standardization

EPCs: Evidence-based Practice Centers

IOM: Institute of Medicine

ACS publishes evidence based recommendations for early detection of cancer by David Eddy

American College of Physicians establishes evidence based guideline program

USPSTF formed

AHCPR formed; First Guide to Clinical Preventive Services released

IOM Committee on Clinical Practice Guidelines

Interim Manual for Clinical Practice Guideline Development AHCPR

AHCPR replaces guideline development program with EPCs

AHRQ; National Guideline Clearinghouse

AHRQ sponsors Conference on Guideline Standardization (COGS)

IOM Review Evidence to Identify Highly Effective Clinical Services

IOM Committee on Standards for developing trustworthy clinical practice guidelines

IOM Knowing what works in health care
The US movement toward development of Evidence Based Guidelines was in part stimulated by observed variations in care.

Now guidelines themselves recommend variation in care.
ACS publishes evidence based recommendations for early detection of breast cancer by David Eddy – annual starting at age 50

USPSTF first mammography screening guidelines recommend mammography every 1-2 years starting at age 50

ACS revises guidelines to recommend annual screen starting at 40

USPSTF mammography guideline update does not recommend routine screening for under age 50 – insufficient evidence

ACS updated guideline keeps annual starting at age 40

USPSTF updated mammography guideline revised, widely interpreted as screen every 1-2 years starting at 40

ACP issues guideline recommending shared decision making for 40-49

ACOG and ACS update - mammogram starting at age 40

USPSTF revised guideline to exclude routine screening for under age 50

ACR/SBI joint guideline recommends annual starting at age 40
## Comparison of Current Recommendations

<table>
<thead>
<tr>
<th>Organization</th>
<th>Age to Start Routine</th>
<th>Screening Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>USPSTF</td>
<td>50</td>
<td>2 years</td>
</tr>
<tr>
<td>ACP</td>
<td>Guideline only addresses age 40-49, does not recommend routine use</td>
<td></td>
</tr>
<tr>
<td>ACS</td>
<td>40</td>
<td>Annual</td>
</tr>
<tr>
<td>ACOG</td>
<td>40</td>
<td>1-2 years</td>
</tr>
<tr>
<td>ACR/SBI</td>
<td>40</td>
<td>1-2 years</td>
</tr>
<tr>
<td></td>
<td>50</td>
<td>Annual</td>
</tr>
</tbody>
</table>
## Critical Review of Current Guidelines Using AGREE II

<table>
<thead>
<tr>
<th>Organization</th>
<th>Scope and Purpose</th>
<th>Stakeholder Involvement</th>
<th>Rigour of Development</th>
<th>Clarity</th>
<th>Applicability</th>
<th>Editorial In</th>
<th>Overall Recommendation</th>
</tr>
</thead>
<tbody>
<tr>
<td>USPSTF</td>
<td>1 2 3 4 5 6</td>
<td>7 8 9 10 11 12 13 14 15 16 17 18 19 20 21</td>
<td>22 23 # Y N</td>
<td>5 7 7 5 5 4 7 7 7 4 7 7 7 6 5 5 7 4 4 6 1 1 1 6 ✓</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ACP</td>
<td>5 7 7 5 5 6</td>
<td>5 5 6 6 6 7 6 4 7 7 7 5 6 1 1 1 3 6 ✓</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ACS</td>
<td>5 2 2 4 1 1</td>
<td>4 2 3 3 3 4 4 4 2 5 1 1 1 1 1 1 3 3 ✓</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ACOG</td>
<td>3 1 2 1 1 2</td>
<td>4 3 2 3 3 2 1 1 4 3 5 1 1 1 1 1 1 3 ✓</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ACR/SBI</td>
<td>4 1 5 2 1 3</td>
<td>1 1 1 2 1 1 1 1 1 4 6 6 1 2 1 1 1 3 2 ✓</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Belinda Ireland, MD, MS
TheEvidenceDoc
Summary

• Guidelines rated high versus low quality differed in all domains
• Guidelines rated high in quality did not find evidence of net benefit for annual mammography starting at age 40, while those of lower quality did
• USPSTF guideline in particular was rated high on categories for which it was criticized – for panel composition (which included methodologists on the panel), for evaluating the quality of evidence, for weighing risk against benefit, and for examining resource implications
Summary

• A major challenge for mammography guideline development is the overall low quality of evidence available to determine net benefit for population or individual – the benefit in relation to the potential harms of screening

• Critical review of methods of each of these guidelines suggests rigor of development alone is responsible for differences in recommendations

• However, critical review of the scope and purpose domain for each guideline shows major differences in the underlying values of guideline developers

Belinda Ireland, MD, MS
TheEvidenceDoc
Thus, the variation in recommendations may also result from differences in baseline assumptions by the panels, which impacts evidence selection and evaluation.

Those differences are:

- A goal to maximize earliest detection of any abnormality in every individual (ACS, ACR/SBI) versus
- A goal to balance the risks and benefits from early detection for each individual (USPSTF, ACP)
What is the impact of values on Guideline Recommendations?

“If I hadn’t believed it, I wouldn’t have seen it.”

Yogi Berra

Belinda Ireland, MD, MS
TheEvidenceDoc