Disclosure
The speakers and planning committee have no relevant financial relationships to disclose.

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How dense are you?
Are YOU Dense?

Dense breast tissue can impede the ability of a mammogram to detect cancer or abnormalities.

Women with dense breast tissue are four to six times more likely to develop breast cancer compared to other women of the same age and health.

Learn more at: http://bit.ly/1hG36li

April 1, 2014 is Are You Dense Day in Santa Clara County

The phrase “Are You Dense” is a registered trademark of the 501(c)(3) public charity Are You Dense, Inc. For more information, please visit the website www.areyoudense.org.
Pink: Enacted Law
Blue/Red: Working on Bill
White: No Action
If a facility determines that a patient has heterogeneously dense or extremely dense breast tissue, the summary of the mammography report shall also include a notice substantially similar to the following:
Your mammogram indicates that you have dense breast tissue. Dense breast tissue is a normal finding that is present in about forty percent of women. Dense breast tissue can make it more difficult to detect cancer on a mammogram and may be associated with a slightly increased risk for breast cancer.

This information is provided to raise your awareness of the impact of breast density on cancer detection and to encourage you to discuss this issue, as well as other breast cancer risk factors, with your health care provider as you decide together which screening options may be right for you.
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Mammographic Density

Radiographically opaque

Epithelial glandular components, ductal lobular units

Stromal components including the supportive fibrous connective tissue
Mammographic Density

*NOT detectable by PHYSICAL EXAM*
Associated Breast Cancer Risk

Risk of false-negative mammogram due to “masking”

Extremely Dense: 4-6x risk of cancer
Breast Density Categories

Almost Entirely Fatty (10% of women)

Scattered Fibro glandular Densities (40%)

Heterogeneously Dense (40%)

Extremely Dense (10%)
Supplemental Screening for Dense Breasts

- Digital mammography
- Tomosynthesis
- Breast MRI
- Ultrasound
DIGITAL BREAST TOMOSYNTHESIS
Digital Breast Tomosynthesis

“DBT”

“3D Mammogram”
Breast Tomosynthesis

Uses radiation like mammogram

Images 1mm layer at a time

More sensitive
• X-ray tube moves in an arc across the breast
• A series of low dose images acquired from different angles
False Positives

Superimposed tissue

False Negatives

Cancer masked by overlying tissue
Supporting Data

STORM

Integration of 3D digital mammography with tomosynthesis for population breast-cancer screening (STORM): a prospective comparison study
Stefano Ciatto, Nehmat Houssami, Daniela Bernardi, Francesca Caumo, Marco Pellegri, Silvia Brunelli, Paola Tuttobene, Paola Bricolo, Carmine Fantò, Marvi Valentini, Stefania Montemezzi, Petra Macaskill

Oslo

Comparison of Digital Mammography Alone and Digital Mammography Plus Tomosynthesis in a Population-based Screening Program
Per Skaane, MD, PhD
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Friedewald

Breast Cancer Screening Using Tomosynthesis in Combination With Digital Mammography
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Storm Trial

Integration of 3D digital mammography with tomosynthesis for population breast-cancer screening (STORM): a prospective comparison study

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The Lancet Oncology 2013; 14:583-589

- 7292 women in two institutions
- 50% increase in cancer detection rates
- 17% decrease in false positive rates
Oslo Trial

Comparison of Digital Mammography Alone and Digital Mammography Plus Tomosynthesis in a Population-based Screening Program

- 12,621 exams
- 13% decrease in false positives
- 31% increase in cancer detection
454,850 screening exams were included

41% increase in invasive cancer detection

18% decrease in recall rates
Cost of 3D Mammograms

Covered by Medicare

Covered by *most* private insurance companies

If no coverage, currently $220 out of pocket
BREAST MRI
Technique of Breast MRI

Prone position for ~30 minutes

Breast placed in specially designed breast coil

I.V. Contrast injected

Subtraction technique
Benefits of Breast MRI

Extremely high sensitivity

Greater than 90% in most studies
American Cancer Society (ACS) & National Comprehensive Cancer Network (NCCN) 
- Developed guidelines for screening MRI in patients at an increased risk of breast cancer

Adjunct to mammography screening 
- Should not be used to replace mammography

Performed on a yearly basis 
- Often performed 6 months after screening mammogram
Who will benefit?

- Genetic Mutation Carriers

- Patients with a first-degree relative of a BRCA mutation – patient untested
MRI Breast Cancer Screening

- Who will benefit?
  - History of chest radiation between 10 – 30 years of age
  - Calculated lifetime cancer risk of > 20% based on acceptable estimation models
    - Tyrer-Cuzick
MRI Breast Cancer Screening

- Who will benefit?
  - Personal history of breast cancer
    - Cancer mammographically occult at time of diagnosis
    - Extremely dense breasts
    - Received non-standard cancer therapy – local cancer recurrence risk after lumpectomy > 20%
    - Age < 50 years at time of diagnosis
Other Indications for Breast MRI

Newly Diagnosed Breast Cancer
Extent of disease
Contralateral breast

Assess Treatment Response

Breast Implants
Response to Therapy
Response to Therapy
Response to Therapy
Response to Therapy
Ultrasound not ideal for screening entire breast
Ultrasound

Evaluation of focal clinical symptoms

Characterize lesions – cystic versus solid

Preferred method for biopsy – Patient comfort and real-time imaging
Density limits sensitivity of mammography

Toolbox for dense breasts

Digital mammography
Tomosynthesis
Breast MRI – if high-risk for breast cancer
Summary

Patient notification of density begins in Nebraska August 24, 2017**

Reassurance, additional tools

Tyrer-Cuzik model for MRI
IT'S TIME
SCHEDULE YOUR ANNUAL MAMMOGRAM

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Thank you!