



# A radiologist's perspective of breast density

Ethical & Legal Considerations Workshop 2018

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# Presentation

## Radiologist's perspective

- ▶ How to measure accurately
- ▶ What to report – density category & ? risks & ? recommendations (DBT, HHUS, ABUS, CEM)

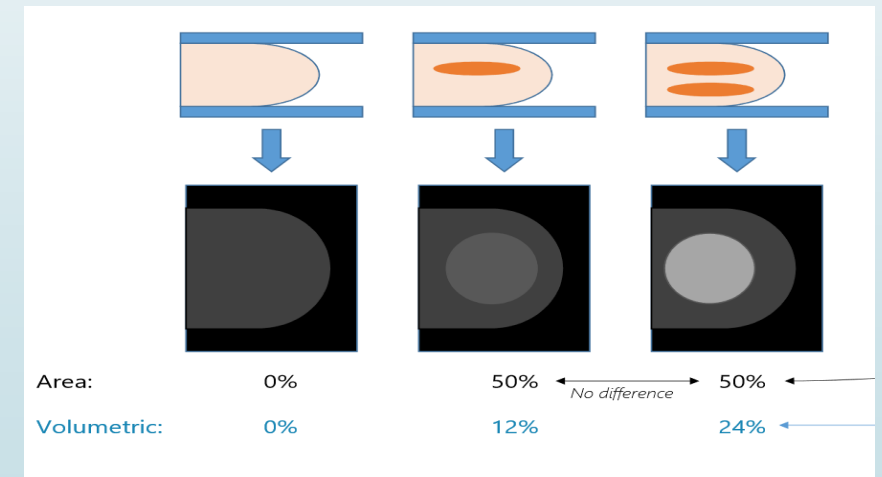
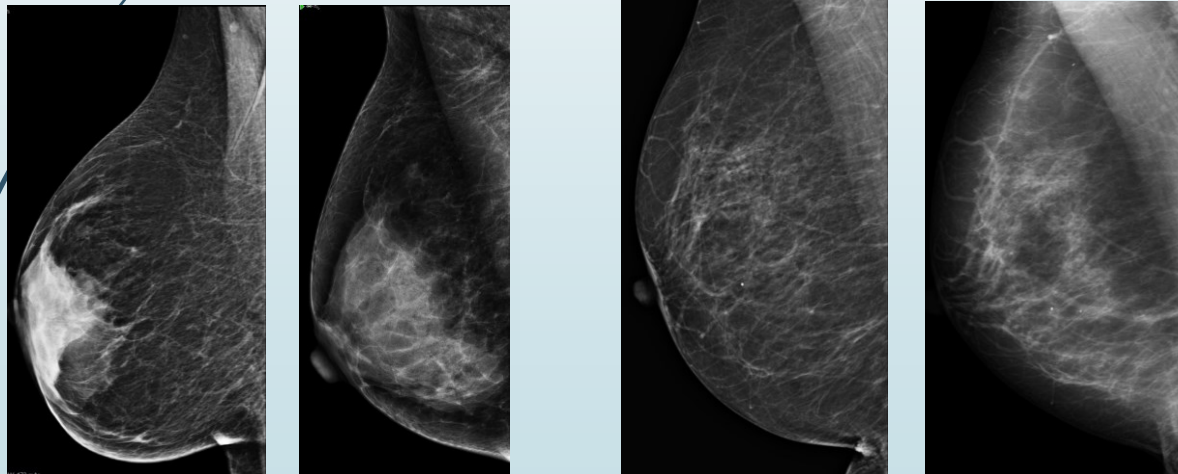
# How to measure accurately

- ▶ Qualitative pattern description such as Wolfe, Tabar & ACR BIRADS
  - ▶ Quantitative f-g proportion estimation – area % or volume %
  - ▶ 4 area % categories (25-50-75-100%) recommended for routine inclusion in report in NBOCC-RANZCR breast imaging guidelines 2002
  - ▶ Commonest method used is ACR BIRADS – latest version uses descriptor only
  - ▶ ACR BIRADS A-D: pattern only 5<sup>th</sup> edition
- |          |                                     |                  |
|----------|-------------------------------------|------------------|
| BIRADS A | predominantly fatty                 | (% area density) |
| BIRADS B | scattered fibro-glandular densities | (25%)            |
| BIRADS C | heterogeneously dense               | (25-50%)         |
| BIRADS D | extremely dense                     | (50-75%)         |
|          |                                     | (>75%)           |
- ▶ Visual – semi-automated – fully automated

# How to measure accurately

## Visual technique

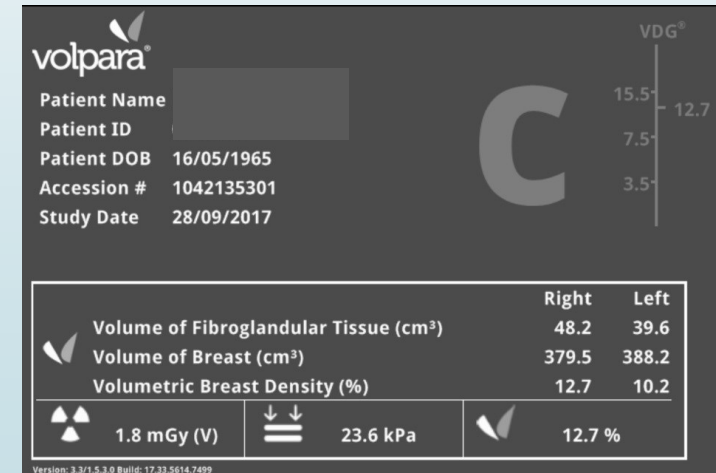
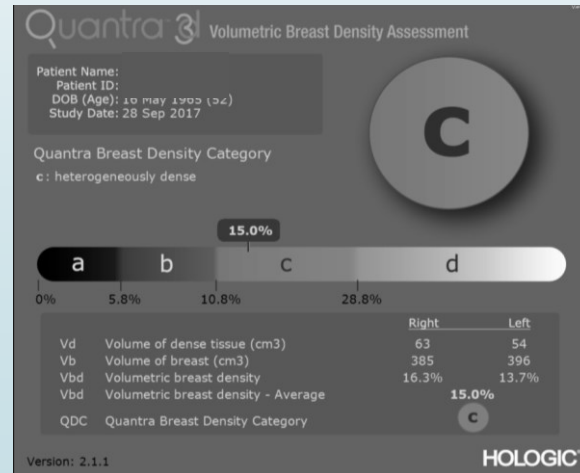
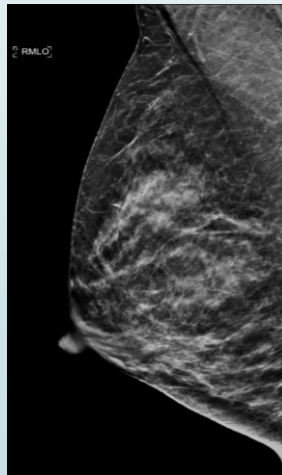
- Reader: subjectivity - intra and inter reader reliability
- Tissue: Variations in pattern and distribution of tissue
- Technology: Variations in vendor image processing, exposure factors ...
- Limitations of % area estimation vs automated % volume softwares



# How to measure accurately

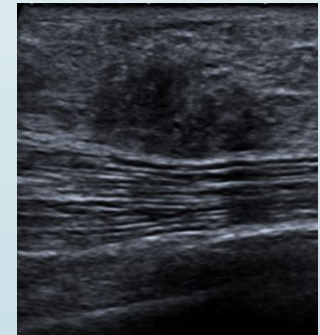
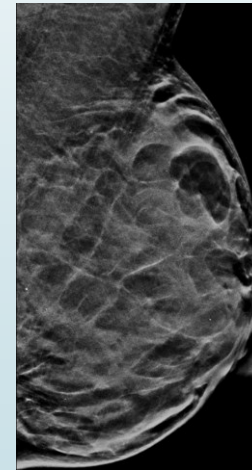
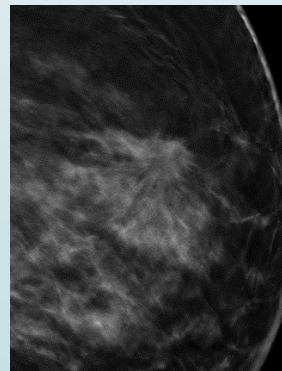
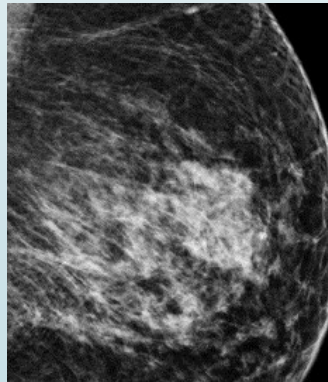
## Software for % Volume

- ▶ % Volume values less than % Area
- ▶ Converted to area %/BIRADS but cut points vary & categories may also
- ▶ Digital and tomographic raw (not processed) data
- ▶ Some are vendor neutral (all mammography units)
- ▶ Repeatable and usually reliable



# What to report – density category & ? risks & ? recommendations

- ▶ Include a BIRADS or % area category in report or?
- ▶ Mention risks – radiologist confidence in risk levels for Ca and missed Ca
- ▶ Make recommendation – further imaging with DBT, HHUS, ABUS, CEM etc
- ▶ Comment on screening frequency?
- ▶ Recommend comprehensive risk assessment??



Thank you