



QUALITY STORYBOARD



Implementation of a Multidisciplinary Quality Improvement Breast Cancer Detection & Diagnosis Program in Abu Dhabi

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Overview

- **Background**
 - Abu Dhabi- UAE
 - Breast Cancer Burden in UAE
 - Quality Improvement Initiatives
- **Purpose**
- **Methods**
- **Results**
- **Conclusion**

Abu Dhabi-United Arab Emirates (UAE)



UAE is outlined in green

- Abu Dhabi is the federal capital of UAE & largest among 7 Emirates extending over 67,000 sq km (87% of country's total area excluding the islands)
- Estimated population in 2009 - 2.1 million out of a total population of 7.5 million in UAE
- Most diverse population in Middle East: 22% are nationals and 78% are expatriates

Health Services in Abu Dhabi

- **SEHA** is the name of Abu Dhabi's governmental health services company founded to manage the public hospitals & clinics
- SEHA overlooks eight health system facilities including multiple ambulatory health clinics throughout Abu Dhabi
- It is mandatory to have national health care insurance for Abu Dhabi residents

Health Authority of Abu Dhabi (HAAD)

- The regulatory body of healthcare sector in Emirate of Abu Dhabi :
 - Defines strategy for the healthcare system
 - Monitors and analyzes the status of the population and the performance of the system
- Cancer prevention & Control plan: ranked 4th as public health priority following Cardiovascular diseases, Road safety and Tobacco control
- Priority cancers: Breast, Colorectal & Cervical

Breast Cancer Burden ¹

- Most common cancer affecting women in UAE:
 - 25% of all cancer cases annually
 - 45% of all female cancers annually
 - 26 new cases of breast cancer per 100,000
- The highest incidence rate occurs in the 45-54 years old
- More women die from breast cancer (44%) than other countries such USA or UK (15-20%)

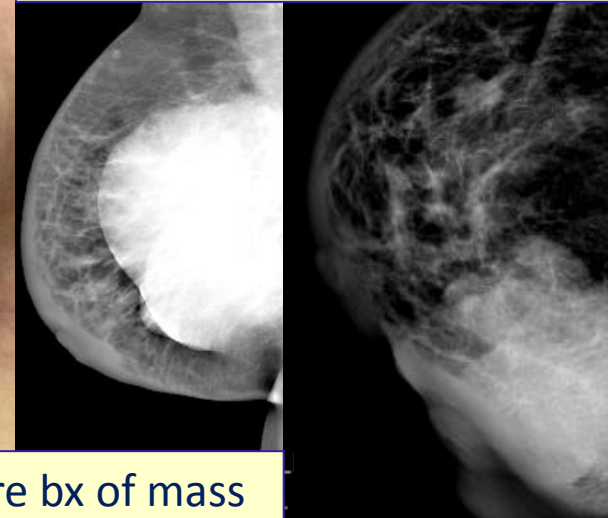
Breast Cancer Burden

- Relative paucity of screening and dedicated diagnostic programs for breast cancer in the UAE
- Consequently, patients often present with advanced-stage cancers with poor prognosis
- Cultural barriers contribute to late presentations

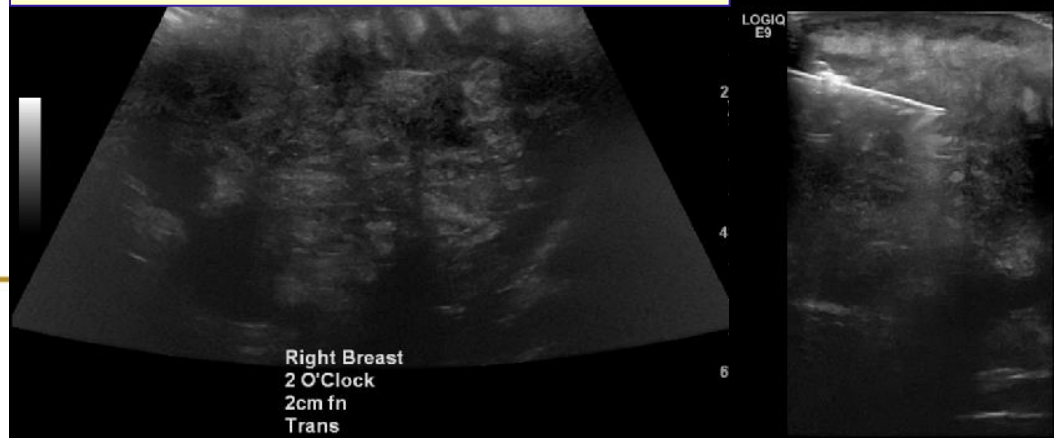
50 year old woman- history of enlarging right breast mass for one year-pathology proven breast cancer



Right MLO & CC mammogram:
solid mass at 2 O'C



Right breast U/S & core bx of mass



Breast Cancer Burden-ACTION

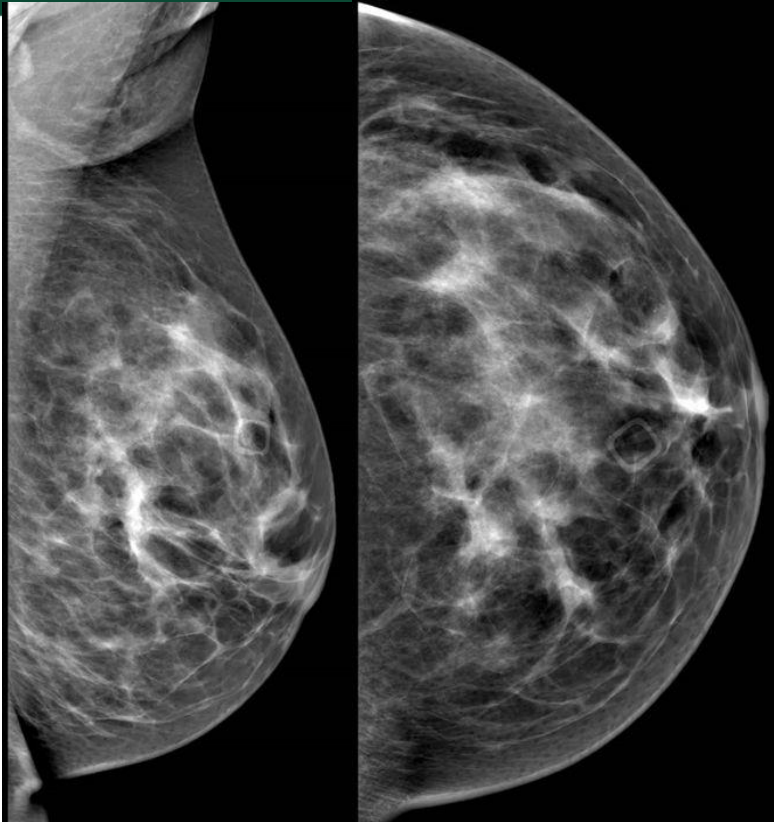
- In early 2012 HAAD developed breast cancer management standards in partnership with national and international experts to match best practices
- Standards address prevention, early detection, diagnosis & treatment, and palliative care - **emphasis on need for percutaneous image-guided core biopsy prior to surgical intervention”**
- HAAD educational/training multidisciplinary workshops conducted for health care providers

Multi-faceted Quality Improvement Program

- March 2012 –Mafraq Hospital-SEHA implements HAAD breast imaging standards
 - Screening mammograms- starting at 40 every two years
 - triple assessment of suspicious breast findings: Physical examination, breast imaging evaluation (Mammo & U/S) Biopsy in one setting
- Multidisciplinary breast care approach- radiological-pathological correlation conferences and tumor boards
- Visiting professors grand rounds



Radiological- Pathological Correlation



Left breast mammogram of 42 year with new left palpable lump (square marker) shows inconclusive mammogram. Targeted ultrasound for the palpable lump in the left breast showed vague hypoechoic area between 11-12 o'clock – case continue on next slide

Radiological- Pathological Correlation

- Pathology from U/S guided core biopsy showed usual ductal hyperplasia
- Rad-Path correlation conference found pathology result discordant with imaging
- Breast MRI shows multiple confluent enhancing, spiculated mass in upper-central to slightly inner breast
- Confirmed to be invasive ductal carcinoma on excisional biopsy (No MRI bx services available in Abu Dhabi at the time)



Ana Rosa Campaign

- Year round at Mafraq- Sept 2012 “I am a rose” in Arabic
- Improving women’s health with focus on breast and cervical cancers
- Offers of screening mammograms
- Educational events for caregivers and public



Ana Rosa Campaign



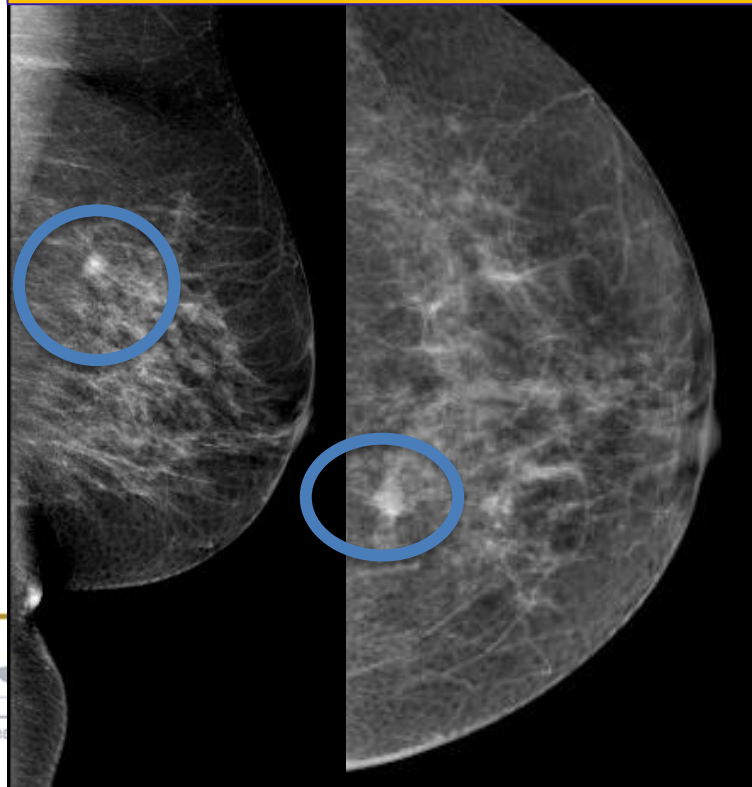
Examples of late & early stage breast cancers detected at our breast imaging center following launch of awareness campaign at Mafrag hospital

Late stage

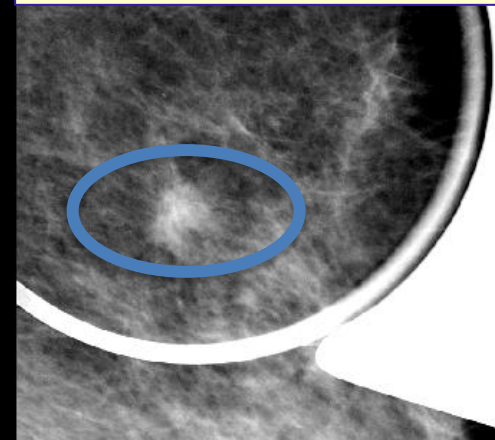


44 year old with ulcerating breast cancer, who felt a lump for one year & tried to treat it with herbal therapy in Philippines. Patient was started on Chemotherapy at Mafrag

Early stage



Free screening mammogram performed at our center detected a 1 cm non-palpable breast cancer in a 53 year old



Global Breast Health Lecture Series

مستشفى المفرق
Mafraq Hospital



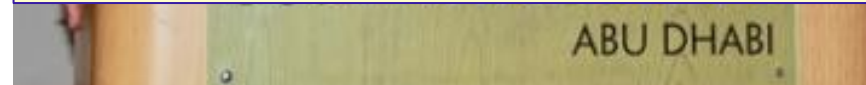
The Harvard Global Equity Initiative

SEHA شركة أبوظبي للخدمات الصحية
Abu Dhabi Health Services Company

- A biannual CME conference started in May 2012 by Mafraq Breast Imaging Center in partnership with Harvard Global Equity Initiative in Boston- USA
- Targeting UAE and regional healthcare providers
- Different themes led by international experts to enhance multidisciplinary breast care



Dr. Julie Gralow- breast oncologist speaking at First event in May 2012



Dr. Jessica Leung- breast imaging radiologist speaking at Second Global Breast Health Lecture Series in Dec 2012

مستشفى المفرق
Mafraq Hospital

Global Breast Health Lecture Series

The third lecture series in June 2013 brought together 15 multidisciplinary speakers (2 international and 13 local including health policy makers) and audience of 120 healthcare providers to enhance screening and early treatment of breast cancer in UAE



Third Global Breast Health Lecture Series

Enhance Early Detection & Treatment of Breast Cancer

Organizer: Dr. Rola Shaheen, MD FRCPC, Mafraaq Hospital- SEHA
Date: June 23rd 2013, Time: 17:00-22:00 pm
Venue: Al Maqta Hotel Abu Dhabi (Rocco Forty Hotel)
RSVP: Mrs Normy Acosta nacosta@mafraqhospital.ae Tel: 025011745
CME: HAAD Category 1, 3 credit hours.



Dr Rola Shaheen speaking at the Global Breast Health Lecture Series

Purpose of our study

- To report results and impact of implementing a multi-faceted quality improvement program aimed toward both community and healthcare providers to promote screening awareness and to provide high-quality subspecialized breast imaging care

Methods

- Data from 12 month period (March 2012-Feb 2013), following implementation of quality improvement program in the breast imaging center is compared to data from a historical control period in the preceding one year (March 2011-Feb 2012)

Methods

- The following parameters were measured to determine interval change as a result of the quality improvement program:
 - number of screening and diagnostic mammography exams
 - number of breast ultrasounds exams
 - number of breast cancers (defined as invasive carcinoma of either ductal, lobular, or mixed histology and/or ductal carcinoma in-situ)
 - number of percutaneous image-guided core biopsies

Results

Year	Screening Mammograms	Diagnostic Mammograms	Breast Ultrasounds	Breast Biopsies
Control period 2011-2012	901	153	782	53
Study period 2012-2013	967	393	760	182

Results

Year	Ultrasound guided breast biopsies	Stereotactic breast biopsies	Number of breast cancers	Number of screen-detected cancers
Control period 2011-2012	33	20	5/53 (9%)	1
Study period 2012-2013	175	9	34/184 (18%)	2

Results

Year	Ultrasound guided breast biopsies	Number of cancers (positive biopsies)	Stereotactic breast biopsies	Number of cancers (positive biopsies)
Control period 2011-2012	33	4 (12%)	20	1 (5%)
Study period 2012-2013	175	32 (18%)	7	2 (29%)

Results: Increased utilization of breast imaging exams however...

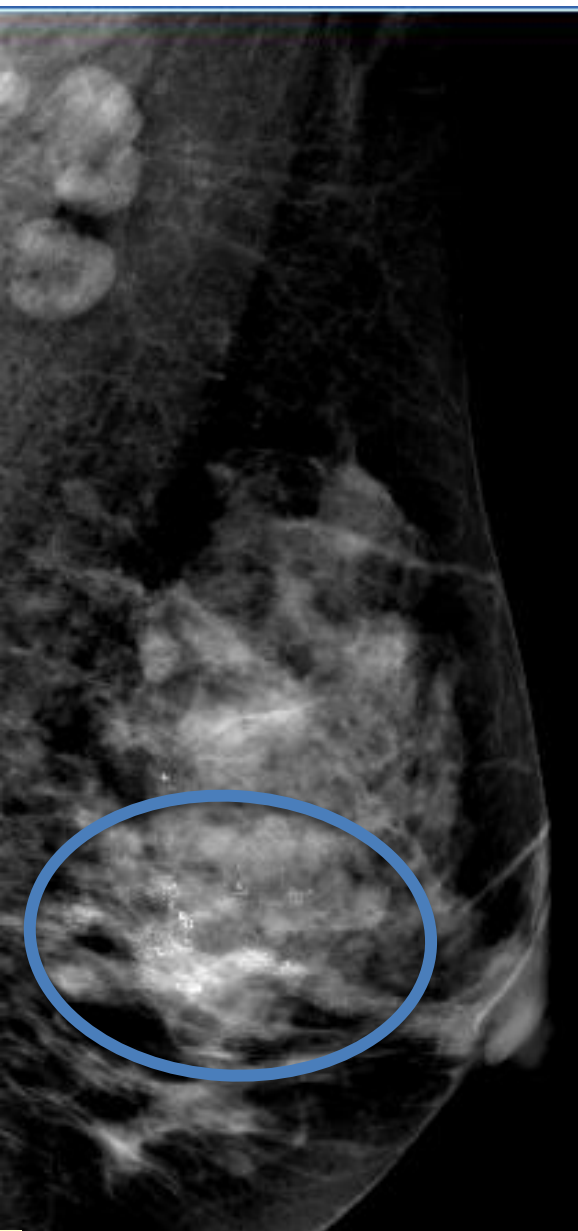
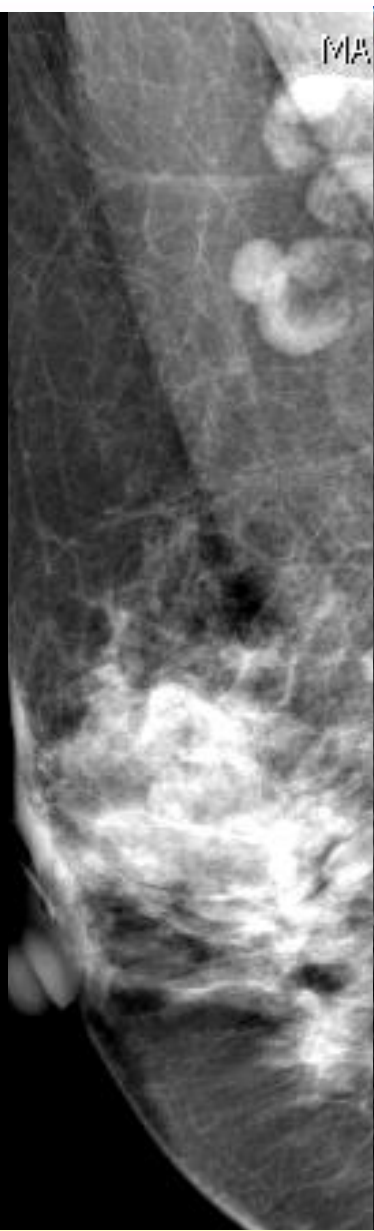
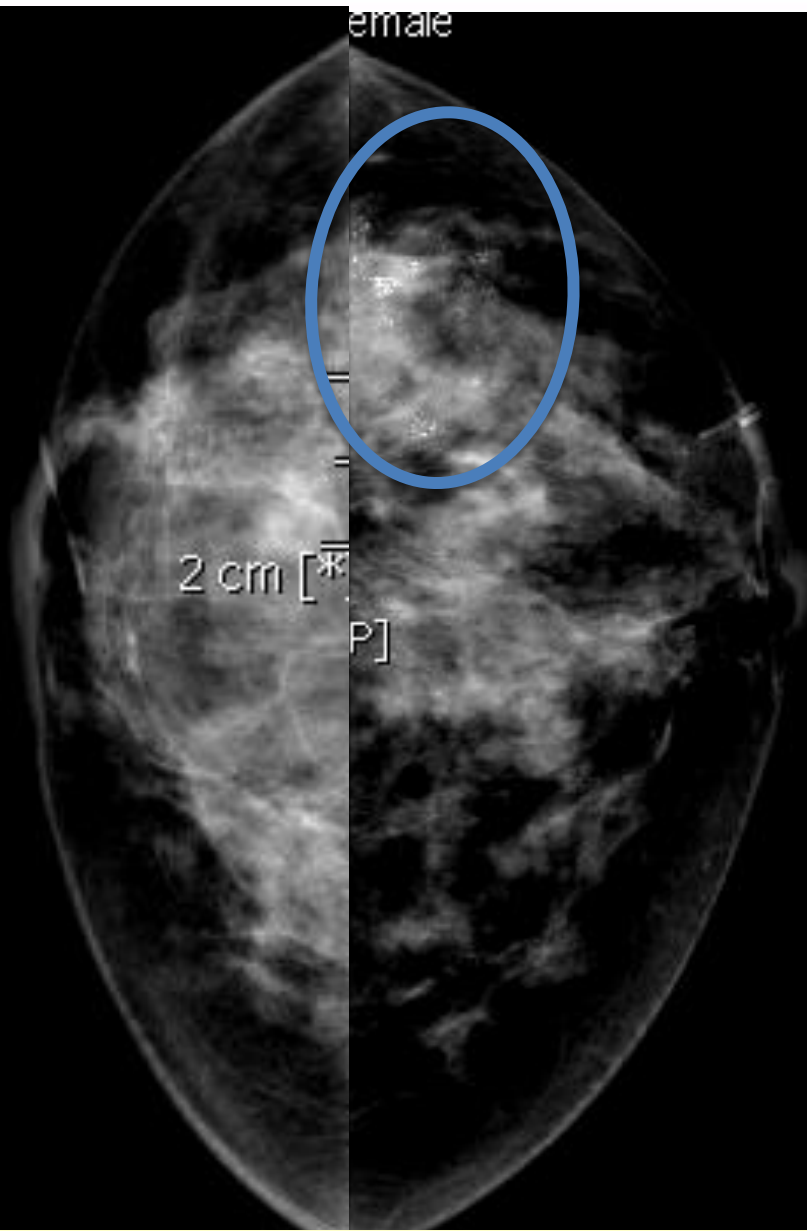
- 12% overall increase in number of breast imaging studies (mammograms & U/S)- 2120 versus 1836
- Despite the increase in diagnostic mammography (256%) exams and core biopsies performed (343%), there was no observable increase in screening utilization- See discussion
- The overall positive biopsy rate improved from 9% to 18%

Results: Shift from stereotactic to U/S guided biopsies

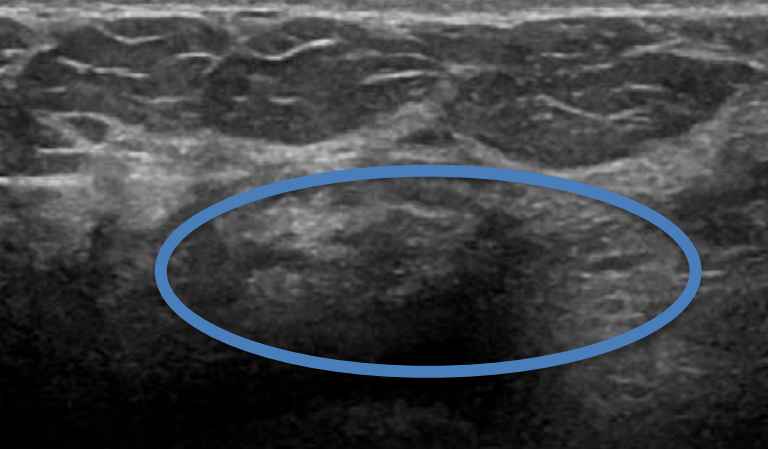
- Shift from stereotactic guidance toward U/S guided core biopsy- generally better tolerated by patients
- Proper selection of patients for stereotactic biopsies resulted in improved biopsy yield
- Clusters of microcalcifications extending $> 2\text{cm}$ or associated with mass were successfully biopsied under ultrasound guidance-often with vacuum device
- Specimen radiograph - to confirm sampling of microcalcifications-followed by post biopsy clip deployment

Female

MA

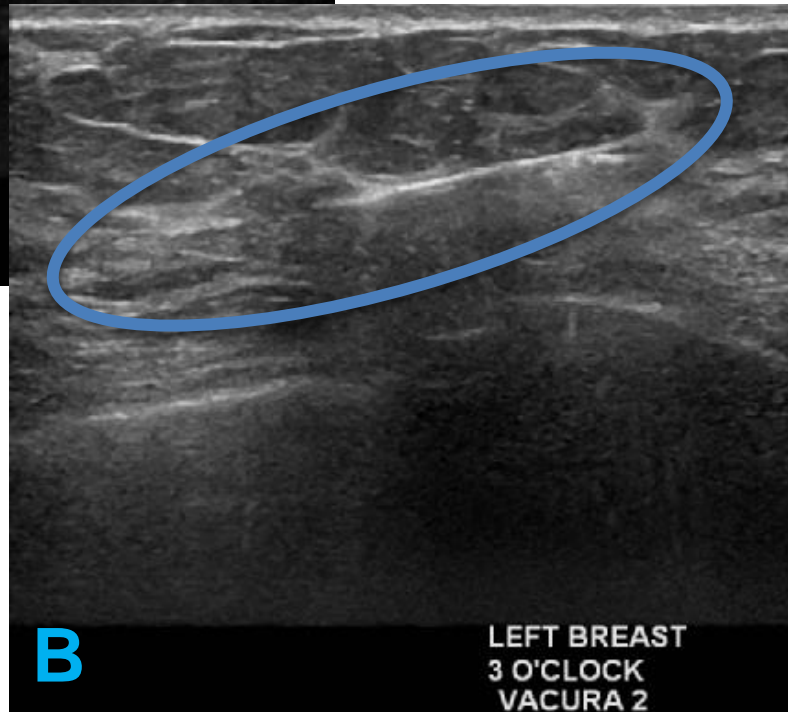


42 year old woman with suspicious segmental pleomorphic microcalcifications in the left breast BI-RADS 4C



A: Left breast targeted U/S at 3 o'clock showed microcalcifications (echogenic foci) with some shadowing but no discrete mass

A



B: Vacuum assisted U/S guided core biopsy of the microcalcifications

B

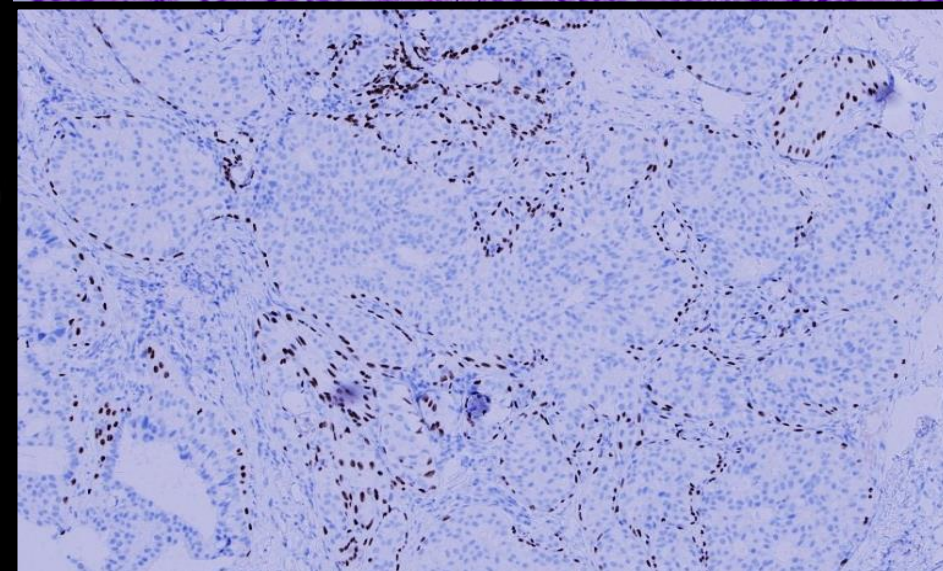
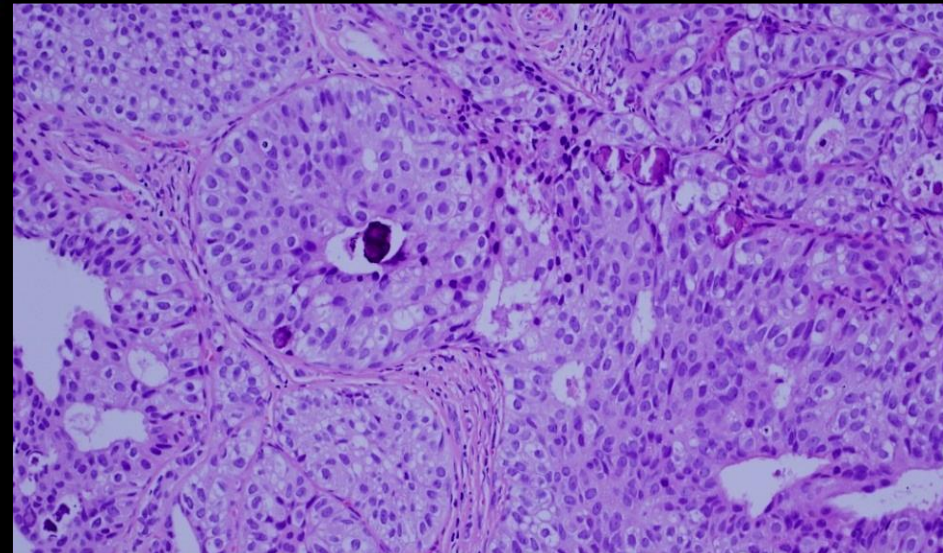
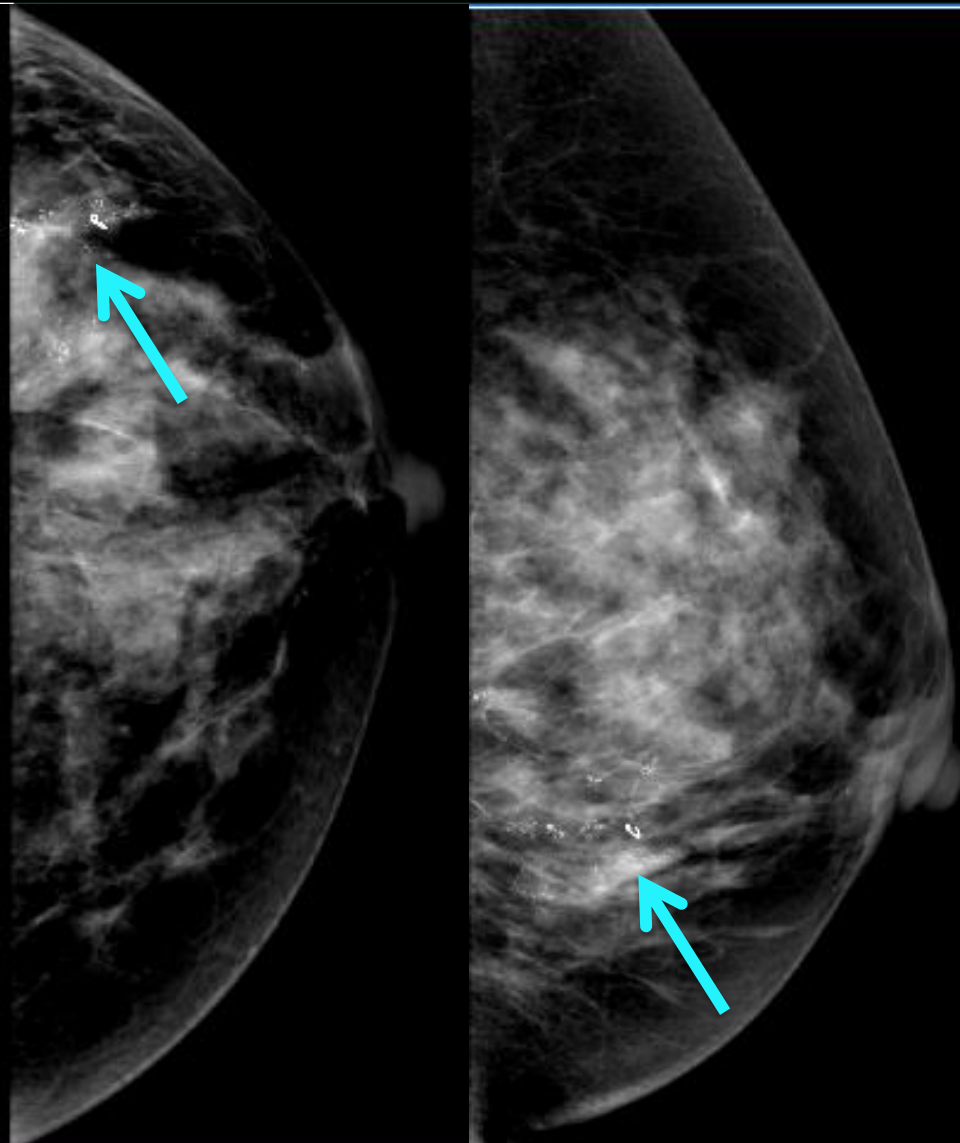
LEFT BREAST
3 O'CLOCK
VACURA 2



C: Biopsy specimen radiograph shows microcalcifications within some of the cores

C

Post biopsy mammogram shows a clip in the left central outer left breast (arrows) with many residual segmental microcalcifications. Pathology: DCIS

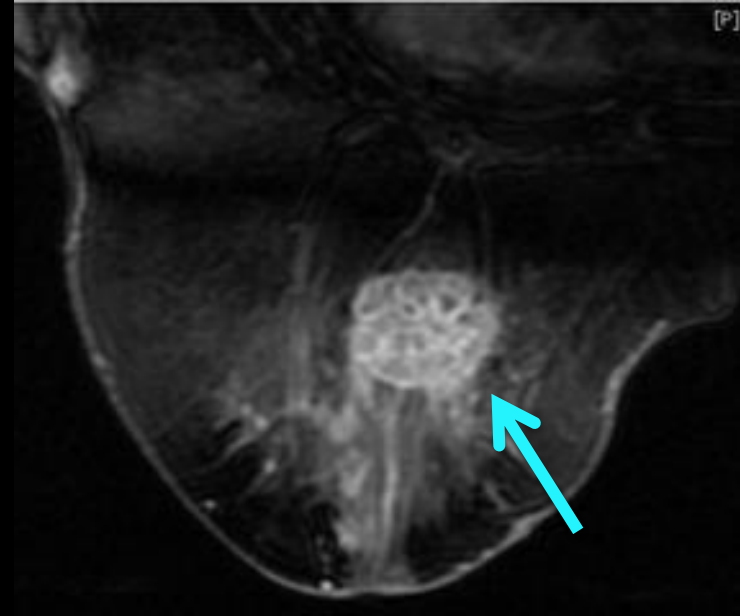
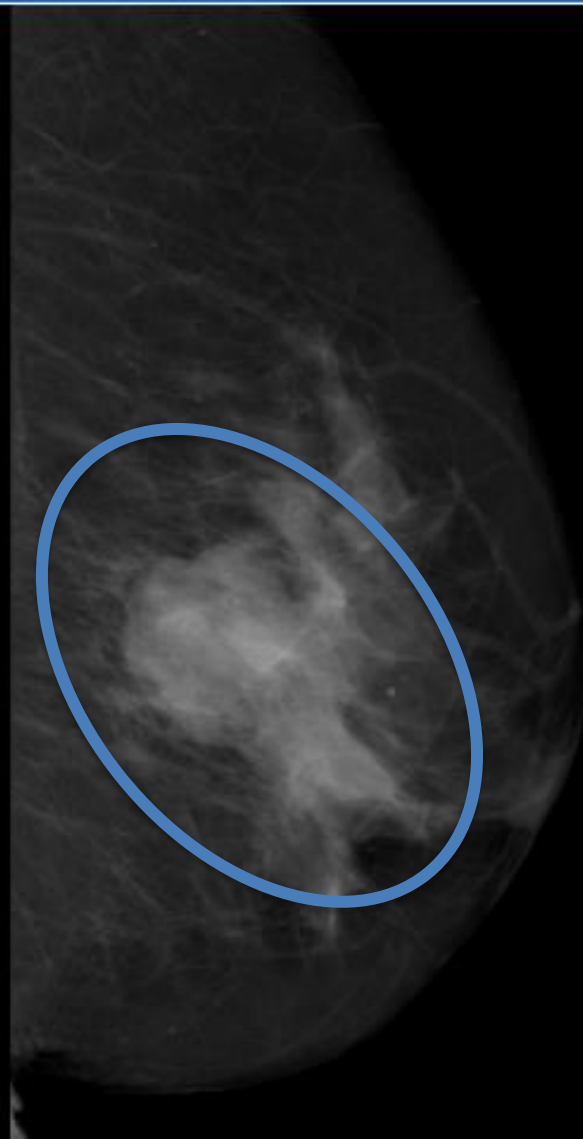
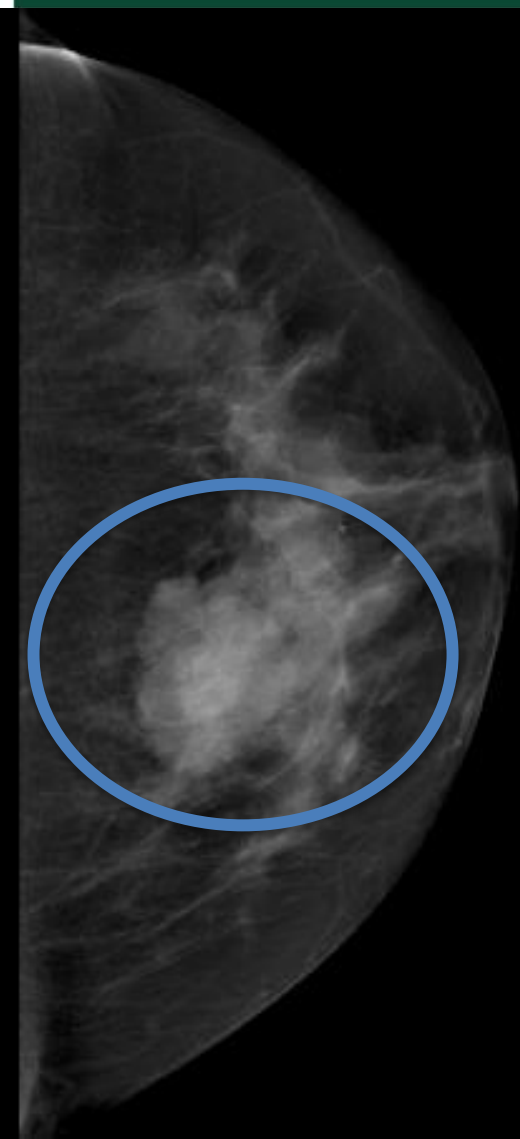


Results: Increase in Cancer Detection- Mostly BIRADS 5 lesions

- Number of detected breast cancers has significantly increased by seven fold compared to the prior year
- Over two thirds (68%) of the cancer cases were BIRADS 5- suggestive of late stage presentations (see example on next slide)
- Total number of cancers detected by screening mammography remain low (3 total, 1 in control period and 2 in study period)

Need strategy to break barriers of screening in asymptomatic patients and encourage diagnostics in symptomatic ones

A 50 year old woman presenting with a palpable left breast lump corresponding to a highly suspicious mass on multiple modalities: pathology proven invasive ductal carcinoma

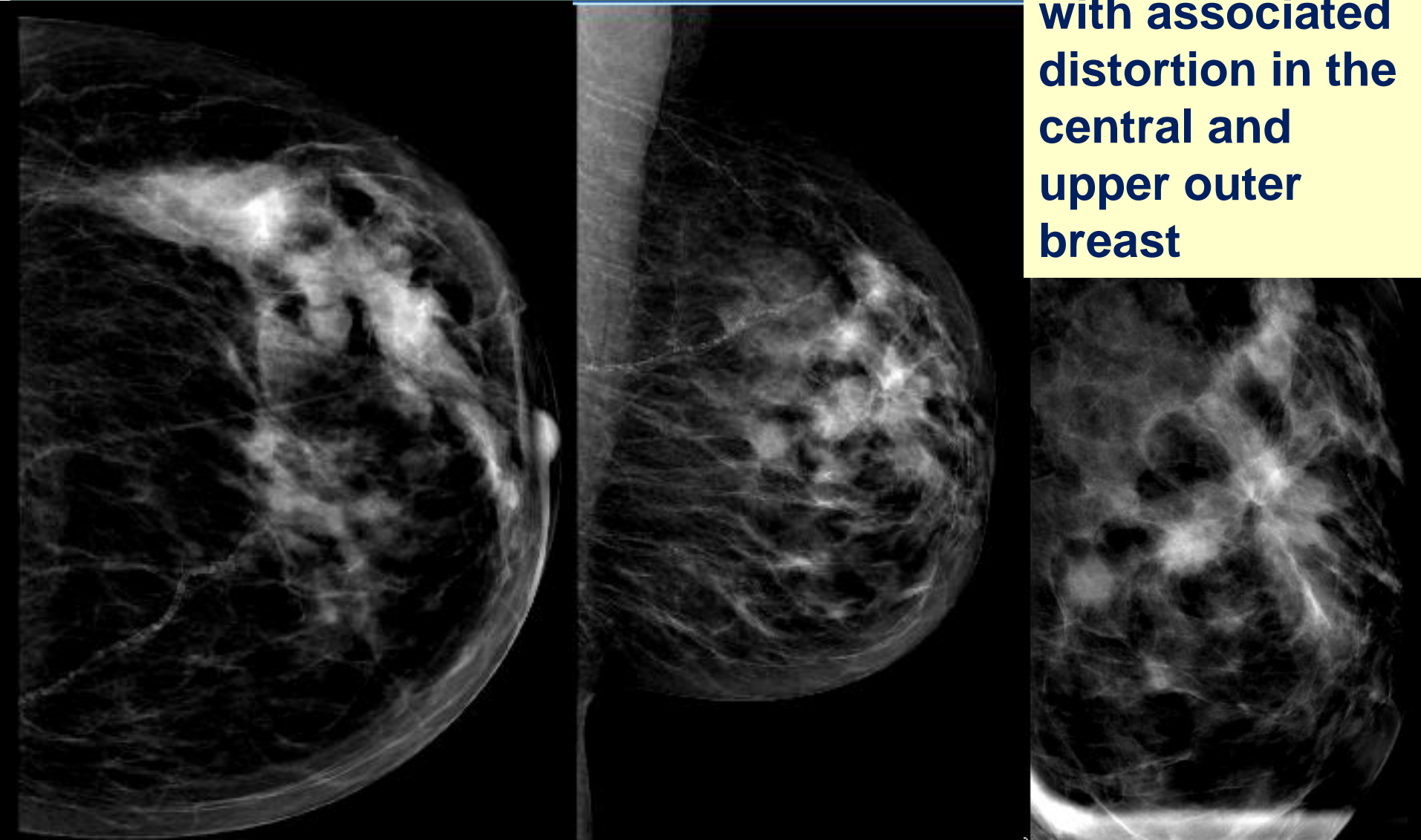


Discussion: Cultural Factors & Educational Investments

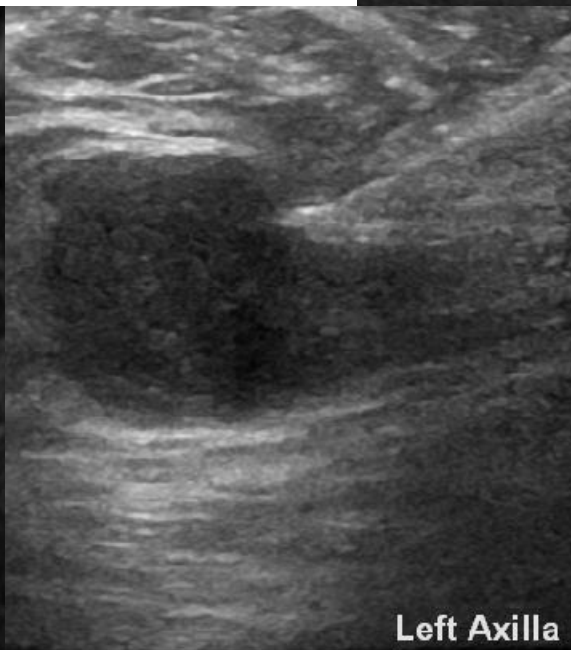
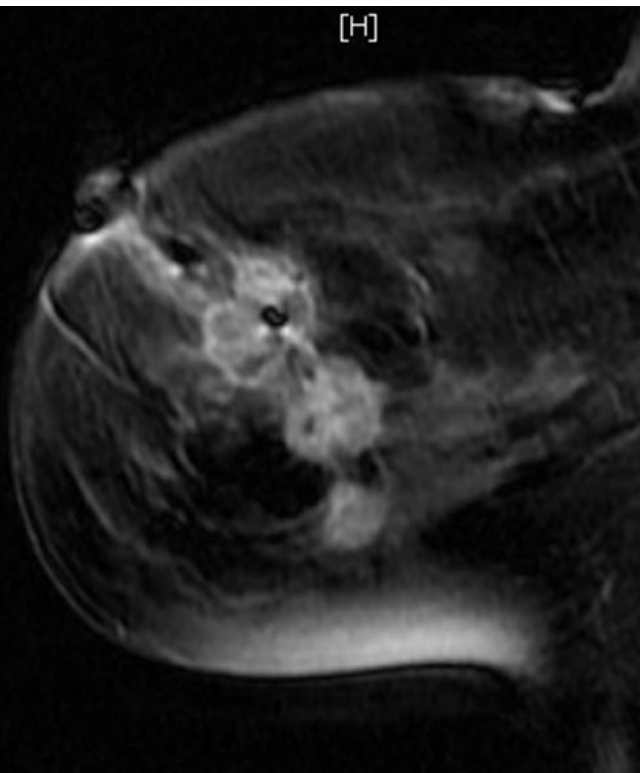
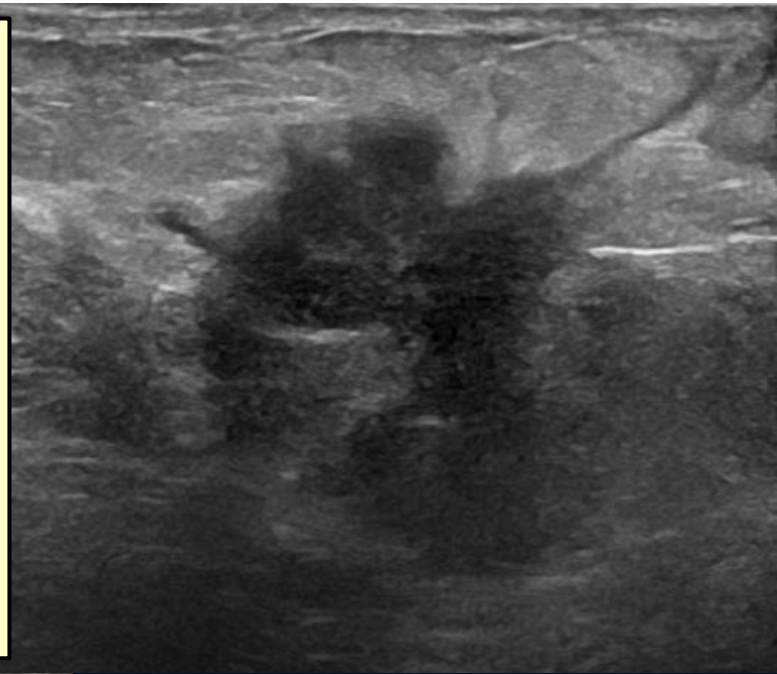
- Increased utilization of diagnostic services and biopsies maybe related to appointing a female radiologist who is fellowship trained in women's imaging to lead the breast imaging center
- Careful selection of patients for breast biopsies along with discussion of cases at multidisciplinary breast care conferences have certainly contributed to the improved positivity rate
- Education of referring physicians can help in better utilization of breast imaging services and guidance for ordering appropriate exams and interventions

A 55 year old woman referred from an outside hospital for stereotactic biopsy for a mass on the left. Additional imaging at our center revealed multiple confluent spiculated masses

with associated distortion in the central and upper outer breast

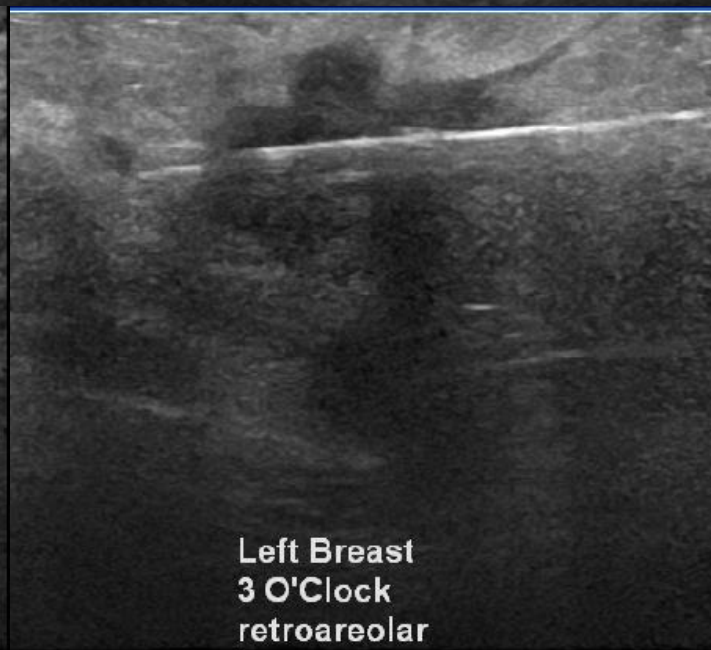


Targeted ultrasound for the left breast confirmed solid irregular mass and suspicious left axillary lymph node- both sampled under ultrasound guidance- MRI showed evidence of multi-centric breast cancer-underwent mastectomy and node dissection



Left Axilla
Trans

pre bx



Left Breast
3 O'Clock
retroareolar
Trans

bx2

Discussion: Multidisciplinary approach is the *WAY TO GO*

- Multidisciplinary breast care approach is the key for delivering high quality care for patients
- Fostering collaborative work of breast experts is the corner stone of quality care of breast patients- improves patient's confidence in the system
- Creating a virtual breast care center can be a viable and practical alternative if an “under one roof” breast center is not feasible

Conclusion

- Implementation of a quality improvement breast program resulted in increased utilization of diagnostic breast imaging services by patients with breast symptoms, as well as improvement in breast cancer detection and diagnosis with positive biopsy rates increasing from 9 to 18%
- Careful selection of appropriate modality and candidates for image-guided core biopsy has improved the outcome of breast interventions

Conclusion

- No significant change was seen in patient utilization of screening mammography, suggesting that women in this region remain relatively unaware of the benefits of screening
- Future efforts need to be devoted to identify and address these barriers to early detection of breast cancer in our community
- Multidisciplinary approach is the *WAY TO GO*



For any questions or comments:
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Thank You