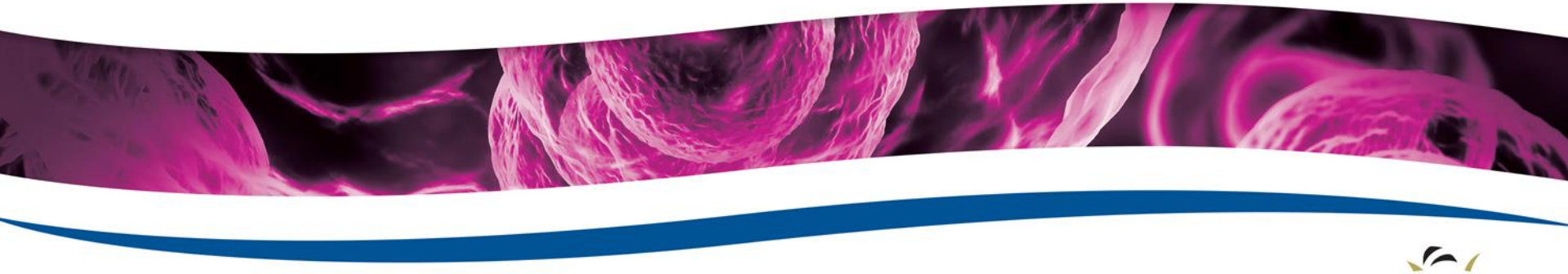
BREASTSCREEN TASMANIA

Population Screening and Cancer Prevention

Breast Cancer Screening

Gail Ward PSM – State Manager, Population Screening and Cancer Prevention



Tasmanian Health Service

Tasmanian Government

Breast Cancer in Tasmania

- 394 breast cancers were diagnosed in Tasmanian women in 2016*
- 5 breast cancers diagnosed in Tasmanian men in 2016*
- * Tasmanian Cancer Registry 2016 report
- Excludes DCIS
- BreastScreen Tasmania diagnoses just over half of these cancers

Breast Cancer in Tasmania

- 394 breast cancers were diagnosed in Tasmanian women in 2016*
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- BreastScreen Tasmania diagnoses over half of these cancers (BST participation rate of women 50-74 is 59.8%)

Breast Screening - Australia

Aims

1. To ensure significant reductions can be achieved in morbidity and mortality attributable to breast cancer.
2. To maximise the early detection of breast cancer in the target population.
3. Screening must be provided in dedicated and accredited Screening and Assessment Services as part of the BreastScreen Australia Program.
4. To ensure equitable access for women aged 50−69 years to the Program.
5. To ensure that services are acceptable and appropriate to the needs of the eligible population.
6. To achieve high standards of program management, service delivery, monitoring and evaluation, and accountability

BreastScreen Tasmania

- Targets asymptomatic women aged 50 – 74 (although all Tasmanian women aged over 40 are eligible)
- Delivers services in accordance with the Principles of BreastScreen Australia (Aims and Objectives)
- Meet the criteria of the Australian *Population Based Screening Framework*
- Based on the World Health Organization (WHO) principles of screening

WHO Principles

WHO Principles of Early Disease Detection

Condition

- The condition should be an **important** health problem.
- There should be a **recognisable latent or early** symptomatic stage.
- The natural history of the condition, including development from latent to declared disease should be **adequately understood**.

Test

Treatment

Screening Program

WHO Principles

WHO Principles of Early Disease Detection

Condition

Test

- There should be a **suitable test or examination.**
- The **test should be acceptable** to the population.

Treatment

Screening Program

WHO Principles

WHO Principles of Early Disease Detection

Condition

Test

Treatment

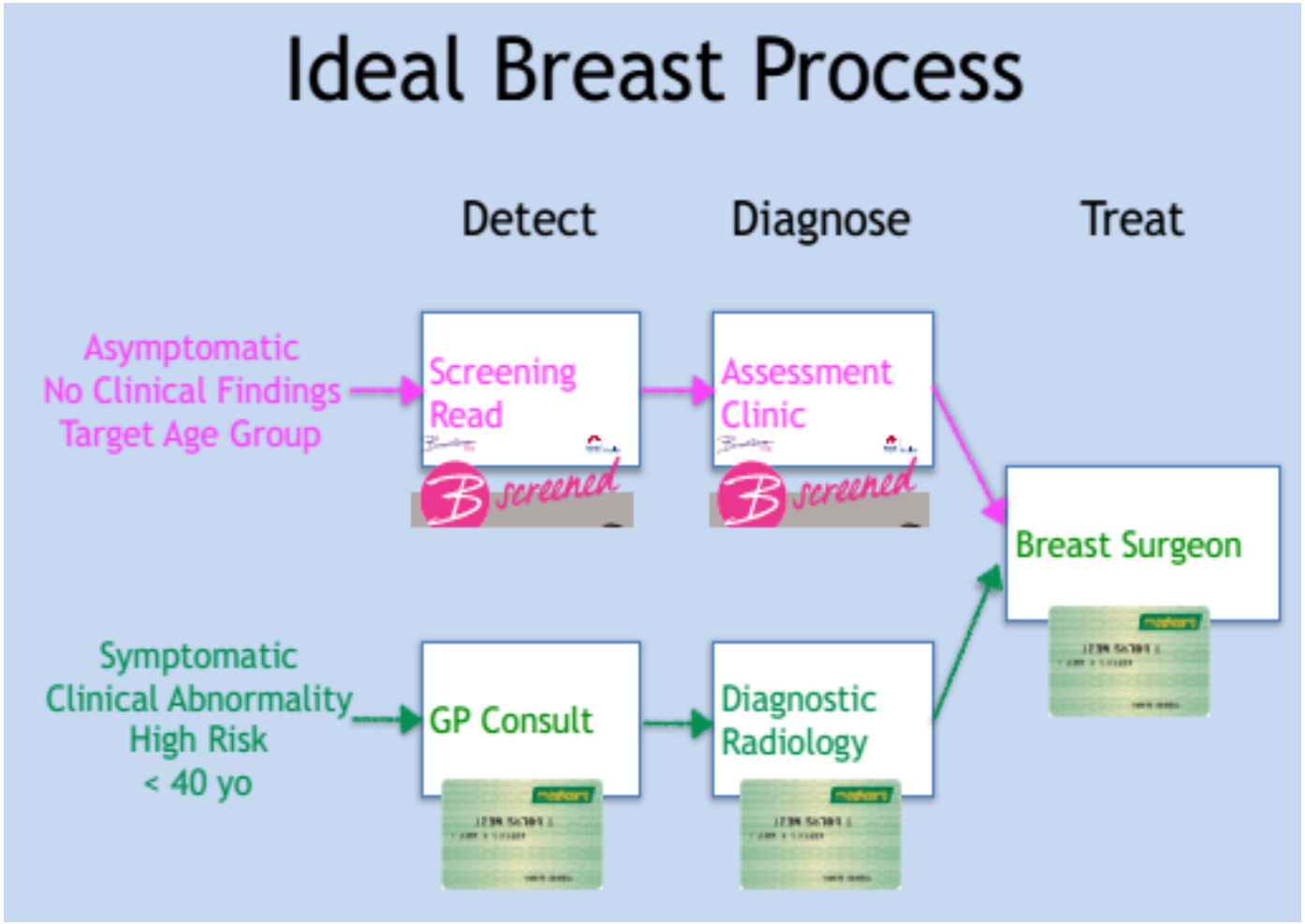
- There should be **an accepted treatment** for patients with recognised disease.

Screening Program

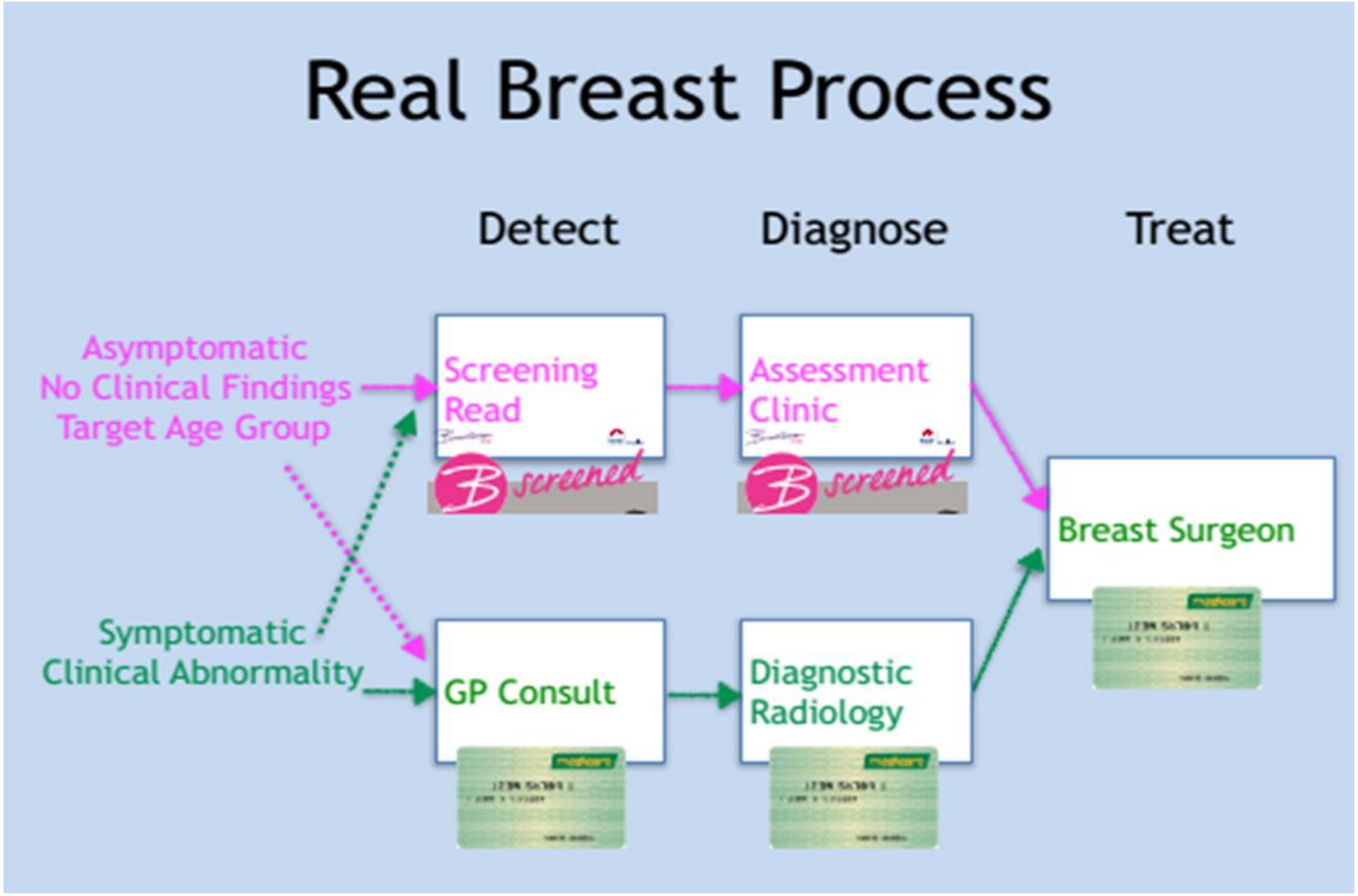
Forms of Health Test

- **Population Based Screening**
- Opportunistic Testing
- Targeted Risk Screening
- Routine Exam or Planned surveillance
- **Diagnostic Testing**

Screening vs. Diagnostic

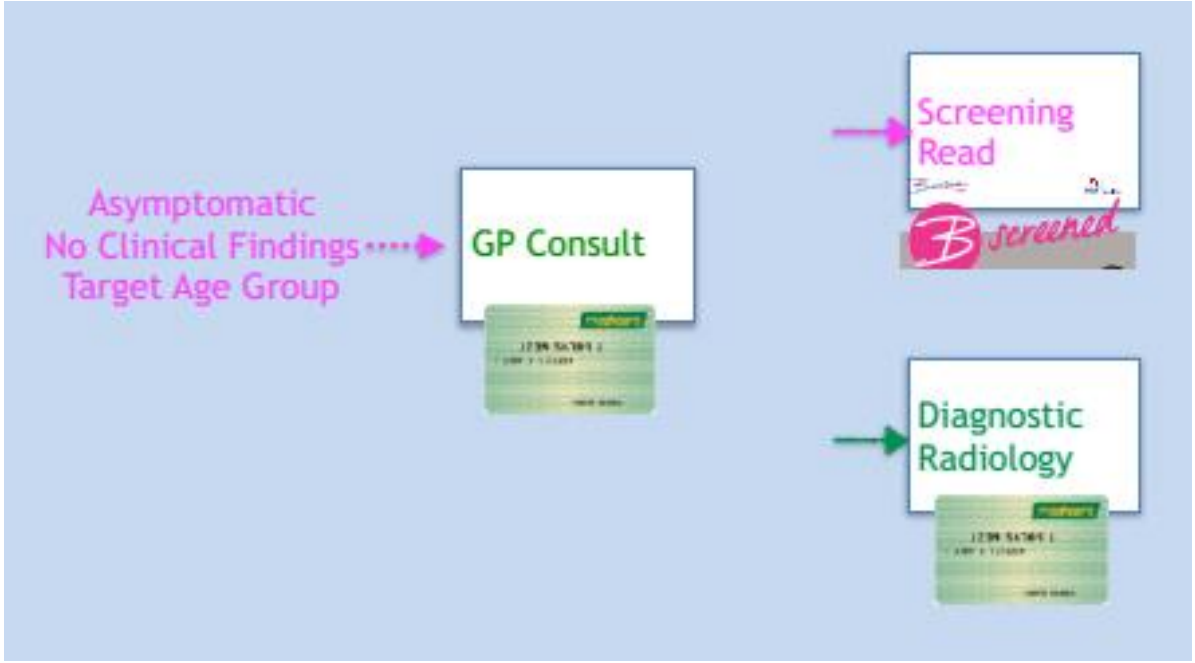


Screening vs. Diagnostic



Screening vs. Diagnostic

What happens when women go in the wrong direction?



Assuming the asymptomatic woman has no clinical findings, the GP has a choice of two paths.

Screening vs. Diagnostic

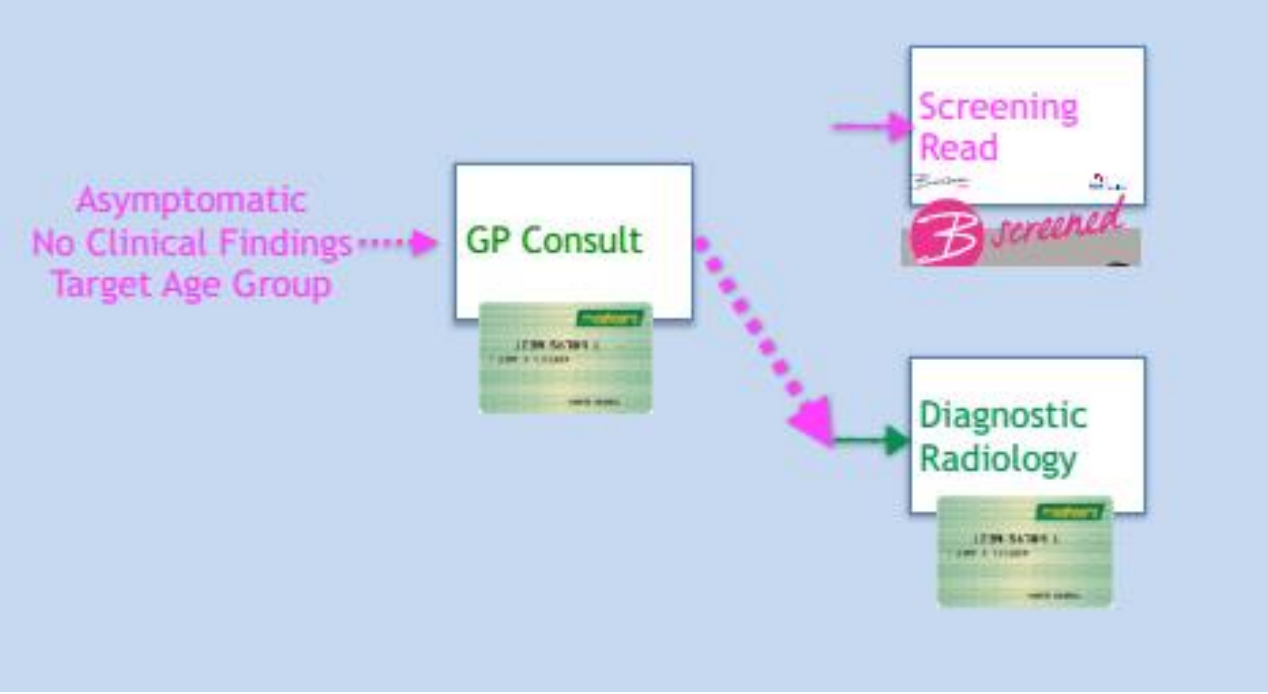
Sending the asymptomatic woman in the eligible age group (40-74) to BreastScreen is the right patient for the right pathway

BreastScreen Benefits

- Free
- Optimised to serve asymptomatic population
  - Formal read process
  - Sensitivity and Specificity tightly controlled
  - Robust continuous QA
- Proven cost/benefit if asymptomatic

Screening vs. Diagnostic

What happens if the asymptomatic woman is sent down the diagnostic pathway?

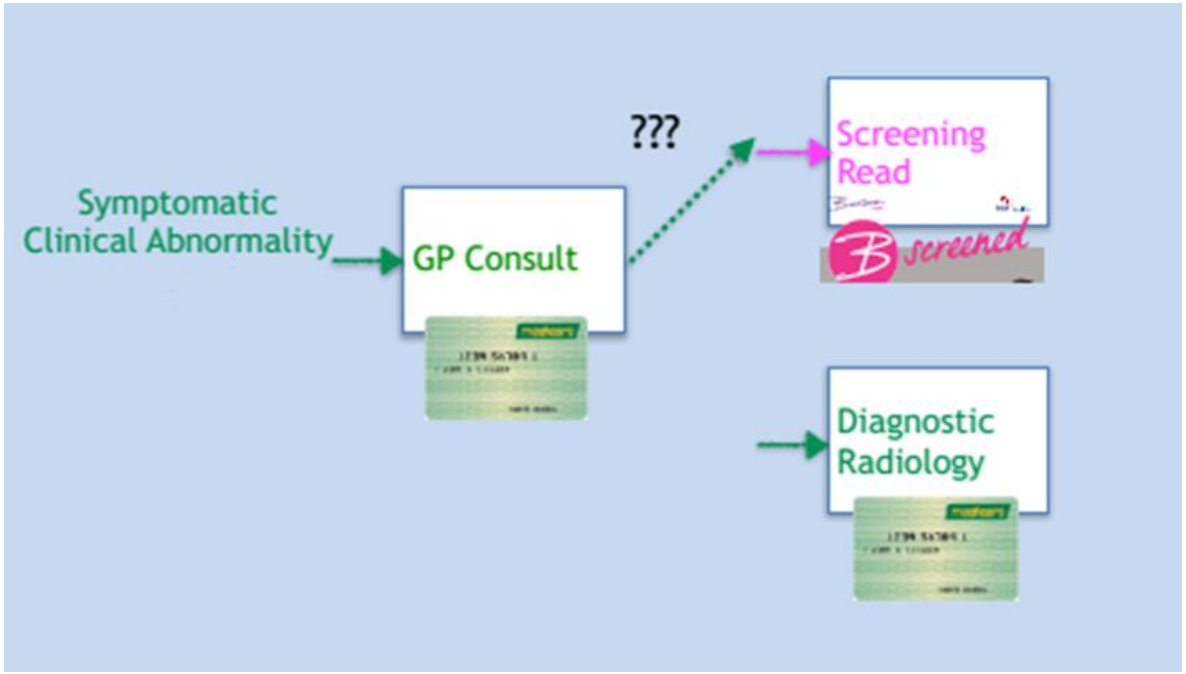


Screening vs. Diagnostic

- Variable cost
- Solves diagnostic problems (symptoms)
- Test is sensitive
- Not as specific as screening mammography
- Variable reading QA processes
- Absolutely right for symptomatic
- Risk of over investigation and over-biopsy in asymptomatic women

Screening vs. Diagnostic

What happens when symptomatic women are sent to BreastScreen?

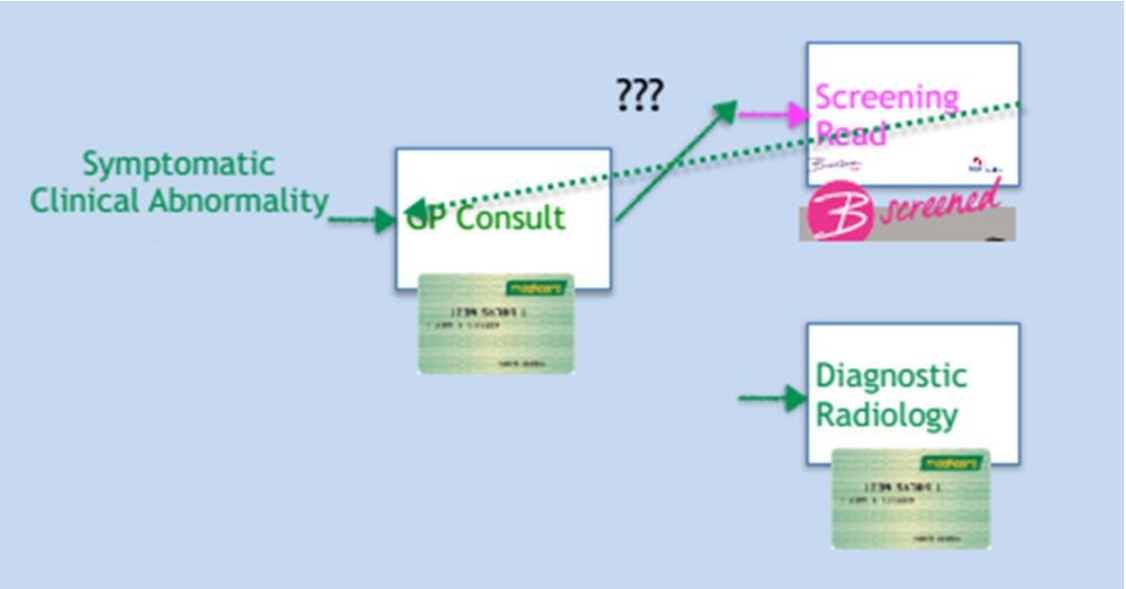


This is usually because of cost or accessibility

Women with symptoms will not be turned away, but…..

Screening vs. Diagnostic

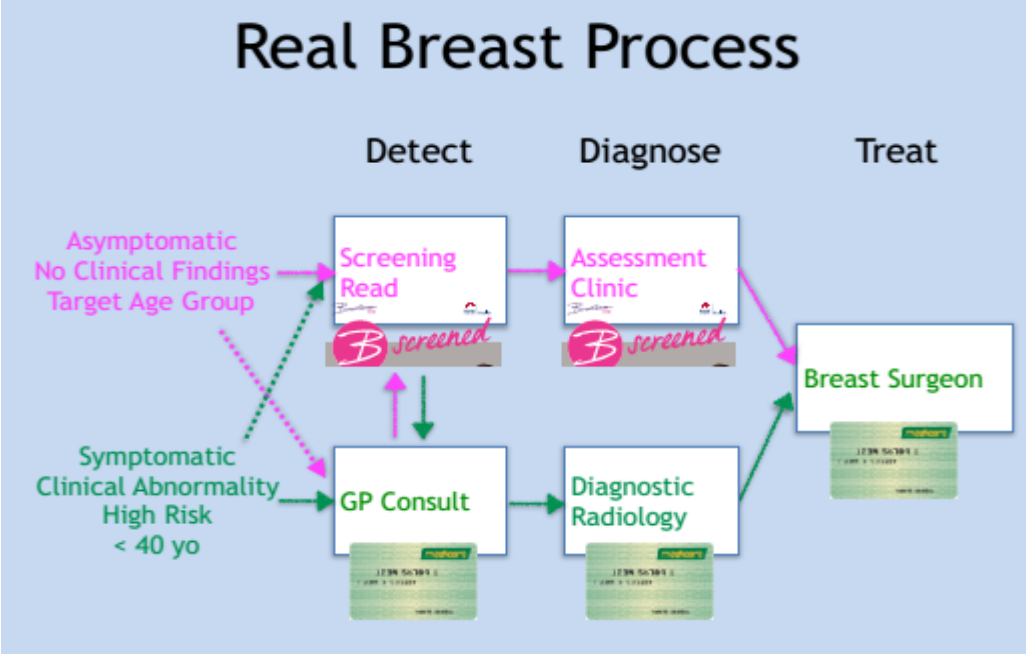
Only a minority will have a screen detected abnormality and go on to assessment



Women who have no abnormality detected (and their GP) receive a letter advising they should consult their GP for a referral to a diagnostic mammography service for their breast symptom, which is the pathway they should have been on initially

Screening vs. Diagnostic

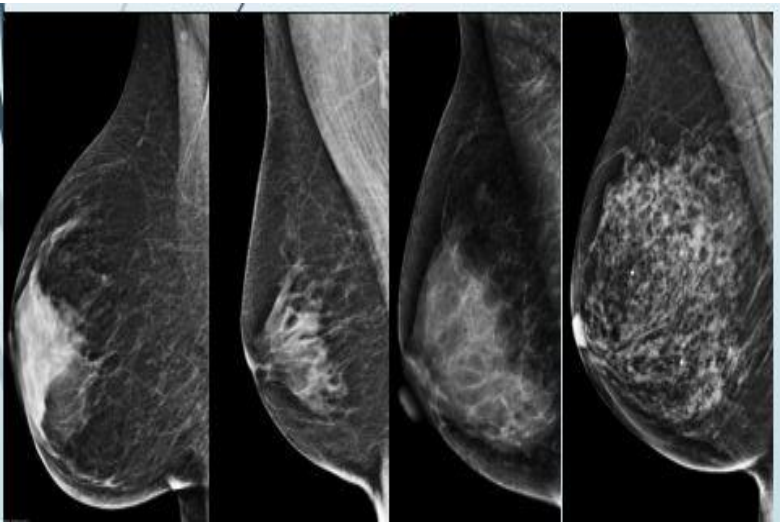
Reality is: many women go down the wrong pathway but eventually find their way to the appropriate assessment

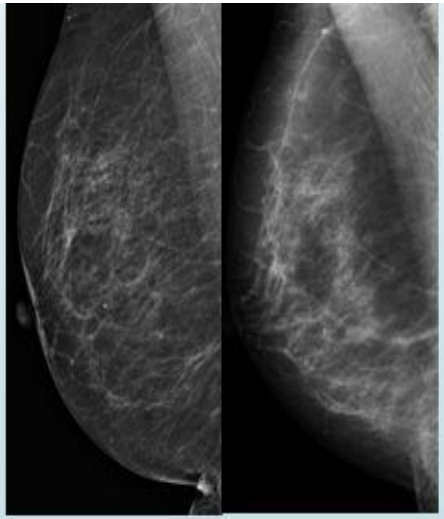


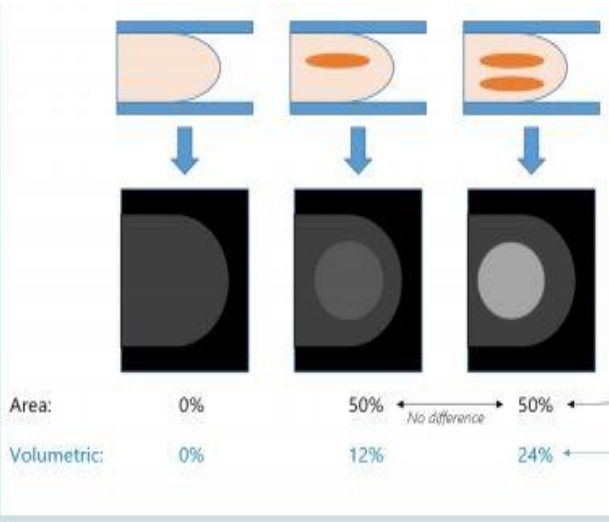
It's about safety and costs to women and the community, and using the right tool for the job!

BreastScreen is specifically designed and quality controlled for screening. Diagnostic radiology is not.

Breast Density







- The breasts are almost entirely fatty BIRADS a
- There are scattered areas of fibro-glandular density BIRADS b
- The breasts are heterogeneously dense, which may obscure small masses BIRADS c
- The breasts are extremely dense, which lowers the sensitivity of mammography BIRADS d
- 0-25, 25-50, 50-75, >75% area

Mammographic Density Measurement

- USA, 18 radiologists, >215,000 screens over 3 years
- Overall 36.9% of mammograms rated as dense (BIRADS c&d), ranging across radiologists from 6.3% to 84.5%
- Among women with consecutive mammograms interpreted by different radiologists, 17.2% had discordant assessments of dense versus nondense status
- **Conclusion:** There is wide variation in density assessment across radiologists that should be carefully considered by providers and policymakers when considering supplemental screening strategies. The likelihood of a woman being told she has dense breasts varies substantially according to which radiologist interprets her mammogram.

Variation in Mammographic Breast Density Assessments Among Radiologists in Clinical Practice: A Multicenter Observational Study

B Sprague et al Annals of Internal Medicine October 2016

BSA Breast Density Research

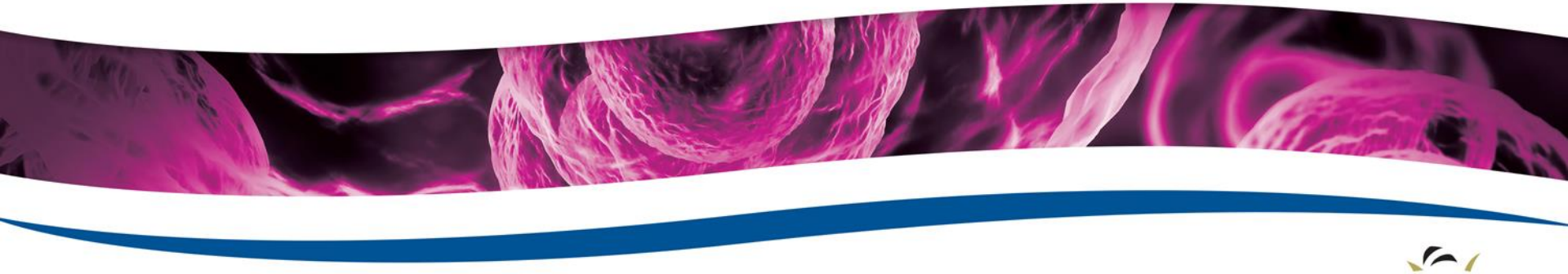
- http://www.cancerscreening.gov.au/internet/screening/publishing.nsf/Content/breast-density-literature-review

BREASTSCREEN TASMANIA

Population Screening and Cancer Prevention

Early Detection of Breast Cancer – The Role of the GP

Mr David Finkelde



Tasmanian Health Service

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Outline

- Facts about Breast Cancer
- GP Breast Assessment
- Pathways for your patient
  - Asymptomatic
  - Symptomatic
- What I do in Practice
- Newly diagnosed cancer
- Decisions, decisions.
- Breast density
- New Breast Imaging techniques
- Psychosocial support
- Cases for discussion

Facts About Breast Cancer

- Heterogeneous group of malignancies arising from breast tissue
- Now estimated to be the most commonly diagnosed cancer across all sexes and in females
- Likelihood of being diagnosed with breast cancer before age 85 is 1 in 8 for females
- Second most common cause of cancer death in females (behind lung) and fourth most common cause of cancer death in the community

Facts About Breast Cancer

- 2009 – 2013 5yr relative survival 90% c.f general population
- 1984 – 1988 5yr relative survival 72%
- Figures are worse for younger women and specific subtypes of breast cancer

Facts About Breast Cancer

- Age <40; 5% of all breast cancers
- Survival worse than for >40
- Leading cause of cancer death in women aged 20 – 39
- Most common cancer in women 20 – 39
- Higher grade / hormone receptor negative / HER2 positive
- Worse outcome for hormone receptor positive tumours

Facts About Breast Cancer

- Increasing life expectancy in the community
- Elderly also get hormone receptor negative tumours
- No reason to compromise standard treatment in the era of breast conservation surgery and sentinel node biopsy

GP Breast Assessment

- History (including BSE)
- Inspection
  - Symmetry
  - Contour
- Examine both sides
- Physical examination is the starting point
  - Symptomatic assessment
  - Surveillance

Early Detection – Advice to Women

- Perspective on risks (especially family history)
- Symptoms
- Breast Awareness (Self Examination)
- Surveillance
  - Screening
  - Higher risk groups
- Lifestyle factors

Pathway for Asymptomatic Women

- No increased risk
  - BreastScreen Tasmania (if aged ≥40)
  - Breast Awareness
  - Annual clinical check
- Increased/High Risk
  - Seek Advice

Pathway for Symptomatic Women

1. Suspect Everyone
2. Imaging points the way but is not diagnostic
3. Pathology rules
4. The Triple Test
5. What I do in Practice

Imaging (Symptomatic Women)

- Mammography
- Mammography and tomosynthesis, contrast mammography
- Ultrasound
- MRI
- Screening
- Influenced by age, family history, personal history, previous imaging

Pathology Rules (Symptomatic Women)

- Pathology can explain imaging, but not vice versa
- We treat pathology, not images
- Surgery in the absence of a pathological diagnosis cannot be considered to automatically be therapeutic

The "Triple Test"

- Strictly applies only to assessment of a lump
- Original study was only 234 patients
  - Clinical Examination, mammography, FNA
- Combined triad had negative predictive value of 100%
  - These patients could be safely observed

What I do in Practice

- If there is an imaging abnormality, get a pathological diagnosis
- Try to get a core biopsy rather than a FNA
- The aim of assessment of a breast symptom is to exclude cancer, no matter how trivial the symptom
- Don't observe a lump without making a diagnosis
- If you and the patient are happy to leave the lump *in situ*, follow it up

Rules to Live By

- The only breast lump diagnosable by imaging alone is a simple cyst
- Breast tissue is living and changes – any assessment is only valid at the time it was made.
- A benign diagnosis does NOT mean that it cannot become malignant
- The patient has the last word in deciding whether to excise a non-malignant lump
- Be Paranoid – it's what they came to you for

A New Diagnosis of a Cancer

- Assume that the starting point will be surgery
- <1% will have evidence of secondary spread at diagnosis
  - Beware recent onset of site specific pain

Decisions, Decisions

- What we know at diagnosis
- Major changes in recent practice
- What we do now and why

What We Know at Diagnosis

- Size
- Nodal status (clinical)
- Histology

Major Changes in Recent Practice

- Management of the Axilla
- Guidelines on margins for breast conservation surgery
- Mastectomy and reconstruction

Management of the Axilla

- Sentinel Node Biopsy
  - First node or nodes in the regional basin that receive lymph from the primary site
  - Accurately predicts status of regional node basin
- ACOSOG Z0011 Trial
  - T1-2 node negative tumours with positive SN (H&E) randomised to ALND or no further surgery
  - Equivalent results (1 or 2+ SN) for LR relapse and survival

Margins for Breast Conserving Surgery

- Negative margins reduce odds of LR
- Increasing distance for defining negative margins is not associated with reduced odds for LR
- Positive margin is defined as ink on invasive cancer or DCIS
- A negative margin is no ink on tumour

Mastectomy and Reconstruction

- Increasing rates in US and Australia
- Increasing numbers of reconstructions
- BCS offers equivalent long term survival
- Definite role in the management of high risk genetic mutations

Molecular Diagnosis

- Receptors
- Gene mutations
- New treatments

What We Do Now and Why

- Work-up is everything – the planned operation should be what is performed
- The surgical options and proposed treatment, as well as the potential for further surgery and other treatments, should all have been discussed with the patient before the operation
- Mastectomy is equivalent to lumpectomy and radiotherapy and both operations should be explained
- In general, the default operation for a palpable lump with a clinically negative axilla is wide local excision of the lump and sentinel node biopsy

What We Do Now and Why

- Is it operable? Is it suitable for breast conservation?
- If a mastectomy is needed, does the lady want a reconstruction?
- If the plan is eventually a mastectomy and reconstruction, then what type of mastectomy?
- How will surgery fit in with the timeline and priorities of the other treatments? Is there a role for neo-adjuvant therapy?

What We Do Now and Why

- Lumpectomy and SNB
  - 2x small incisions, 2-3 cm long, no drains
  - Think about cosmesis and potential for mastectomy
- Axillary dissection
  - Level 2-3 clearance, single drain
  - Lymphoedema rate 12%
- Simple mastectomy
  - Removal of breast, NAC and redundant skin, single drain

What We Do Now and Why

- Absorbable sutures, lots of local anaesthetic, waterproof dressings, padded support
- Aim for early discharge; outpatient support
- Not usually painful compared to muscle cutting procedures
- 4-5 working days for useful pathology results

Breast Density

- Definition
- Risk
- Management

Breast Density – Definition

- What we are talking about is mammographic breast density
- It is an assessment of the mammographic appearance of the breast
- MBD is defined in the relative amount of radiopaque elements to radiolucent fat in the breast image
- There is no consistently agreed method for describing breast density and determining the value at which the breast is ‘dense’

Breast Density – Risk

- Multiple issues with defining 'dense' breasts
- Multiple methods of assessing breast density
- Variability with results both between differing measuring systems and within the same system
- Generally accepted that increased breast density correlates with an increased relative risk of 1.2 - 2.1 c.f. average population
- Level of risk is equivalent to that of having a post-menopausal first degree relative diagnosed with breast cancer

Breast Density – Risk

- This is not new!
- Two potential avenues of increased risk
  - Masking
  - More rapid growth in dense tissue
- Limitations of cancer detection based on mammographic images with large amounts of radiopaque tissue have always been recognised
- This underpins selection of screening age ranges

Breast Density – Management

- Supplemental imaging
  - Whole breast ultrasound
  - Molecular breast imaging (ultrasound, isotopes)
  - Digital Breast Tomography
  - MRI
  - Contrast Enhanced Mammography
- Public awareness
  - Breast density reporting mandatory in >30 US States

Breast Density – Management

- Is it necessary?
  - Small increase in cancer detection
  - False positives, cost
  - No evidence for improved survival
- Individual risk management

New Breast Imaging

- Tomosynthesis
- Ultrasound
- MRI
- Contrast Enhanced Mammography
- Selective OSR
- Screening vs. Diagnosis
- Pathology still rules

Psychosocial Support

- GP
- Breast Care Nurse
- Oncologist
- Cancer Council/Support Groups
- Social Worker
- Psychologist

Psychosocial Support

- Age-related needs
- Diagnosis
- Impact of treatment
  - Surgical
  - Adjuvant

Cases for Discussion - 1

- 2014
- 29 y.o. 6/52 lump in breast
- No children, no FHx, only med OCP
- Palpable mass LUOQ, palpable L axillary LN
- Mammogram and U/S – 35 mm mass with microcalc and multiple abnormal LN
- Core and FNA – Grade 2 IDC, positive LN on cytology
- Elected mastectomy (with AD)
- D/w Med Onc post-op chemotherapy
- Fertility referral – embryo preservation

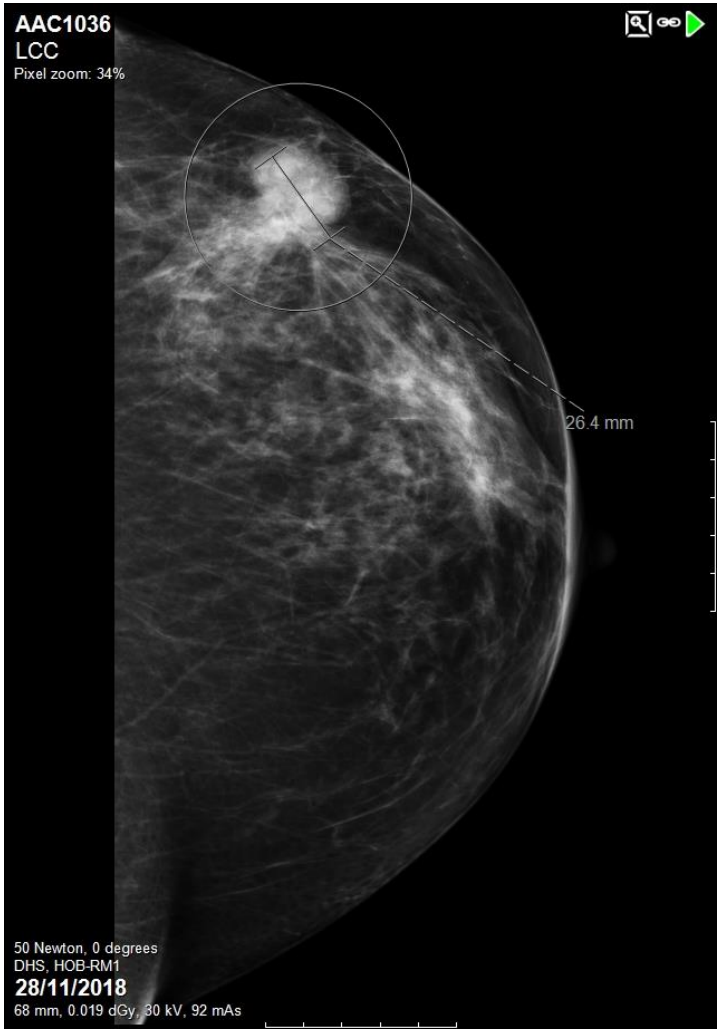
Cases for Discussion - 1

- Pathology
  - 30mm Gr3 IDC (focal lobular differentiation)
  - Additional DCIS to 50mm
  - ER/PR negative (focal ER+ in lobular)
  - HER2 Positive
  - 11/20 LN involved
  - Staging OK

Cases for Discussion - 1

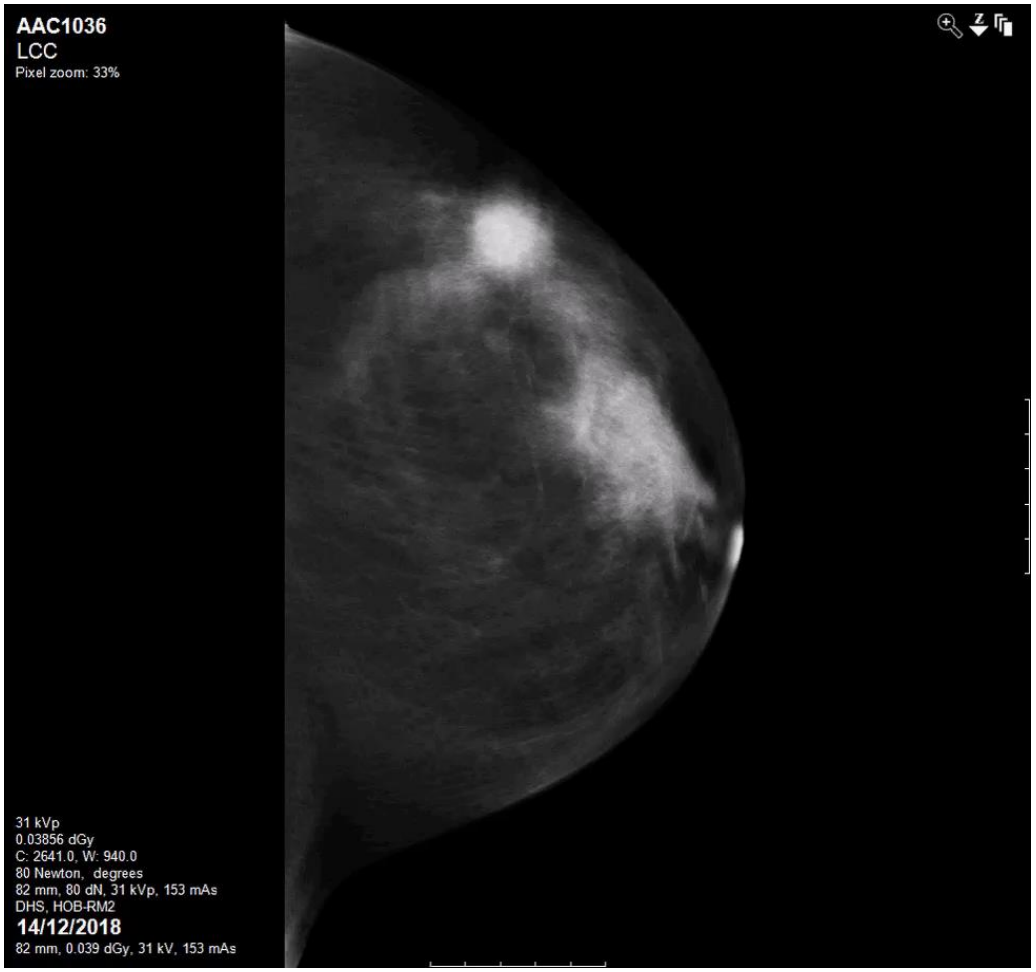
- Post-operative treatment
  - TC and Herceptin, Zoladex for ovarian protection
  - DXRT to chest wall and SCF
  - Tamoxifen (LN ER+)
- Outcome
  - 2018 left reconstruction with flap and implant
  - Alive and well with no evidence of recurrence, no immediate plans for a family.

Screening Images



Tomosynthesis Image

- The breast lesion is clearly visible on the screening images and using tomosynthesis



Cases for Discussion - 2

- 52 y.o. 6/12 intermittent swelling (L) arm and 'change' in (L) breast
- No family history
- TBSS 28/11/18
- Recalled for assessment 14/12/18
  - 35mm stellate lesion
  - Abnormal mass left axilla
- Biopsy results 18/12/18
  - Grade 3 ductal carcinoma (+) cytology (L) axillary LN
  - ER/PR (+) HER29 (-) on core

Cases for Discussion - 2

- Consideration of neo-adjuvant therapy
- Staging
- Elected Breast Conservation Surgery
  - ChG and AD

Screening Images

Tomosynthesis Image

- The breast lesion (close to chest wall) and masses in axilla become clearly visible

Cases for Discussion - 3

- 74 y.o.
- Screen detected mass left breast
- 13mm – Provisional Grade 3 cancer
- Wire localised excision + SN Bx
- Pathology
  - 10mm Grade 3 triple negative
  - Basal phenotype
  - SN neg

Cases for Discussion - 3

- Referred for adjuvant treatment
  - Chemotherapy
  - Radiotherapy