

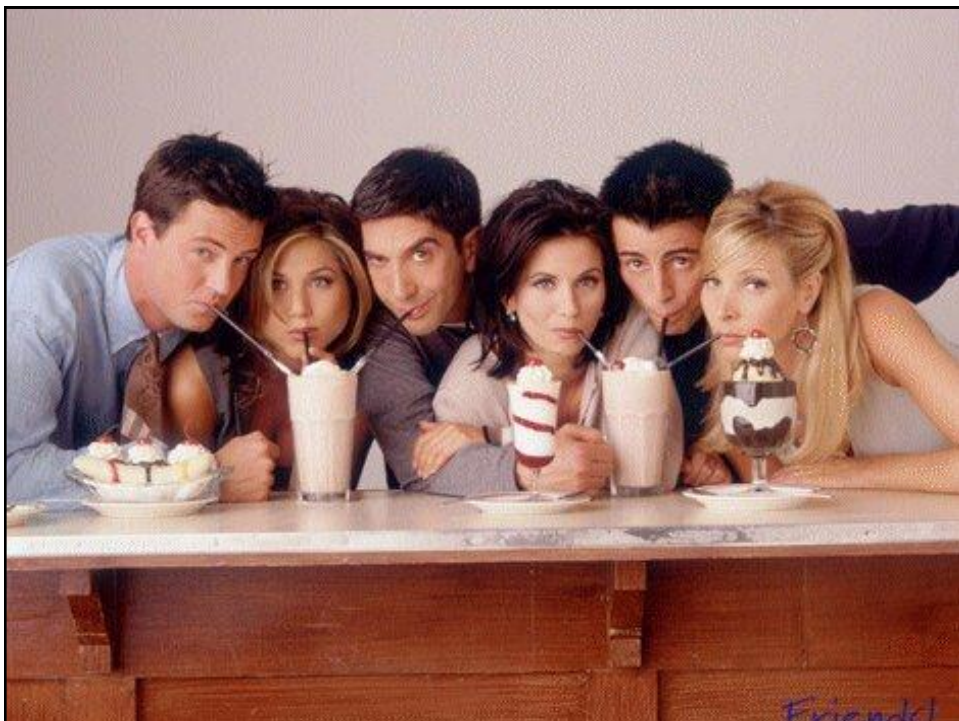
# Regents Park March 2012



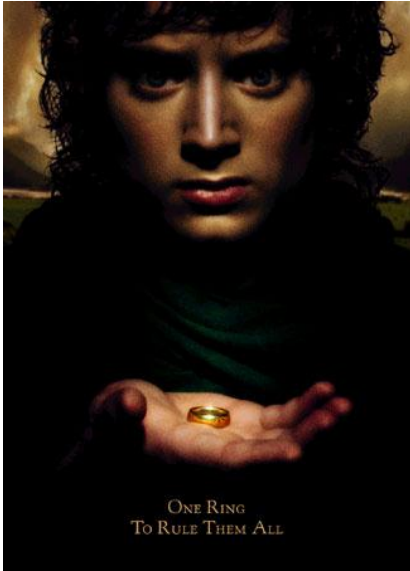


## THE MDT!!!

- Surgeons
- Breast care nurses
- Radiologists
- Pathologists
- Radiographers
- Mdt co-ordinator
- Breast physicians
- Oncologists
- Nuclear medicine
- Research nurses/fellows
- Junior staff
- Users
- Theatre Staff
- Secretaries
- OPD Staff
- Ward Staff
- Gynaecologist, geneticist, Orthopaedic surgeon, physios, palliative care, lymphoedema service
- **Biomedical service**

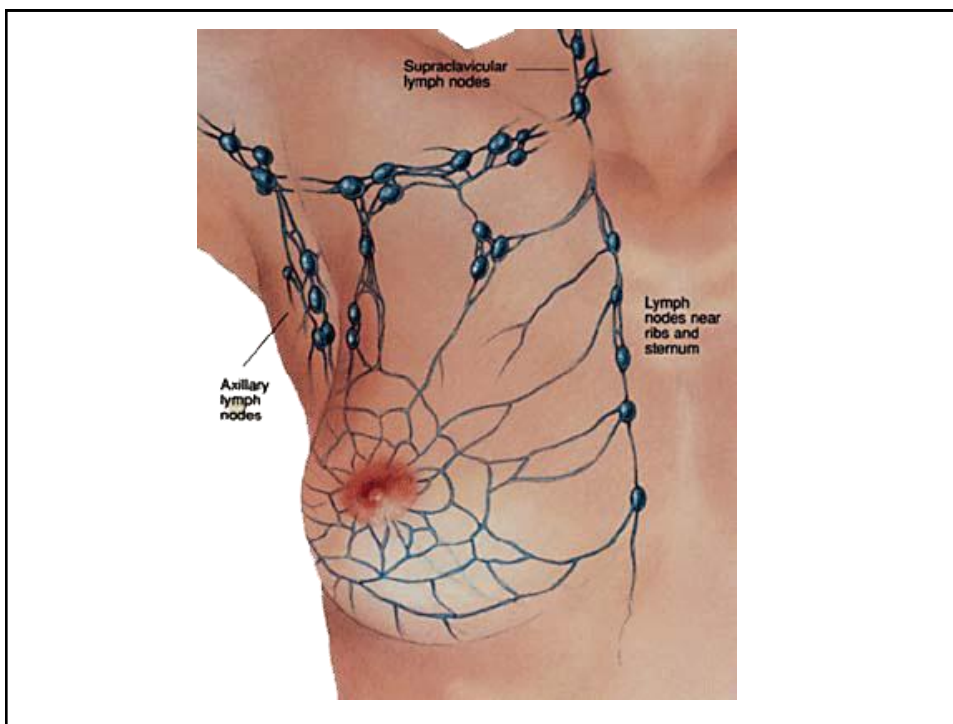


## THE MDT!!!



Lobules  
Chest Wall  
Nipple  
Pectoralis Muscles  
Areola  
Duct  
Fatty Tissue  
Skin





**NHS**  
National Institute for  
Health and Clinical Excellence

## Early and locally advanced breast cancer

Implementing NICE guidance

2009

NICE clinical guideline 80

Clinical Guideline  
Implementation Tools

The cover features a teal and white background with a large, stylized 'C' shape. The NHS logo is in the top right corner. The title 'Early and locally advanced breast cancer' is centered in a large, bold font. Below it, 'Implementing NICE guidance' is centered in a smaller font. The year '2009' is centered below that. At the bottom left, 'NICE clinical guideline 80' is written. At the bottom right, there is a circular logo with the text 'Clinical Guideline Implementation Tools' and three interlocking gears.



## Background

- Most common cancer in women in England and Wales
- Approximately 40,500 new cases and 10,900 deaths each year in England and Wales
- Two major categories: in situ and invasive cancer
- The guideline follows recent important developments in investigation and management
- Helps to address practice variation across the country

## Policy background

The guideline supports the:

- Cancer Reform Strategy, England (2007)
- Wales Cancer Standards (2005)
- Manual of Cancer Service Standards for England (2004)
- NHS Cancer Plan (2000)

It refers to NICE cancer service guidance:

- Referral guidelines for suspected cancer (2005)
- Improving outcomes in breast cancer (2002)

## Patient-centred care

- Treatment and care should take into account patients' needs and preferences
- Patients should have the opportunity to make informed decisions about their care and treatment, in partnership with their healthcare professionals

## Key priorities for implementation

- **Preoperative assessment of the breast**
- **Staging of the axilla**
- **Surgery to the axilla**
- **Breast reconstruction**
- **Adjuvant therapy planning**
- **Aromatase inhibitors**
- Assessment of bone loss
- Primary systemic therapy
- Follow-up imaging
- Clinical follow-up

## The 7 Minute consultation

W for WAITING TIMES



D for DELAY

K for Kylie

HISTORY & EXAMINATION



W for WAITING TIMES

- TWR
- 31 DAYS
- 62 DAYS
- QUALITY or QUANTITY?
- 2010 **TWR for all**
- 18 weeks for all





## D for DELAY

3 MONTH DELAY  
NEGLIGENT  
CAUSATION



## K for Kylie



Ann R Coll Surg Engl 2007

Royal Gwent Hospital

June 2005 Audit

66% extra referrals  
72 extra mammograms  
79 extra ultrasound  
6 less cancers

## GUIDELINES for REFERRAL

- Urgent referral
  - <30 with discrete lump
  - asymmetrical nodularity persisting after menses
  - abscess
  - refilling cysts
  - intractable pain
  - nipple discharges

## GUIDELINES for REFERRAL

- TWR
  - >30 with discrete lump
  - ulceration
  - skin nodule
  - skin distortion
  - nipple eczema
  - nipple retraction
  - unilateral nipple discharge staining

## TRIPLE ASSESSMENT

- History
- Examination
- Mammogram
- Ultrasound
- Core biopsy
- FNA
- MRI
- One stop versus Two stop

### Evaluation of a one-stop breast lump clinic: a randomized controlled trial **Harcourt D et al The Breast 1998**

- 791 women one-stop versus two-stop
- 10% had cancer
- One-stop more 'effective'
- One-stop had less anxiety at one week
- One-stop with cancer had more distress
- One-stop suits the 'worried well'
- For those with cancer bad news all at once is detrimental
- FNA versus core

## BELIEF in the PATIENT

- Age, children, breast-feeding
- Occupation, handedness,
- GH & PMH
- LMP, OCP, HRT
- Bra Size
- FH
- Smoking, alcohol, size
- And then the STORY

## EXAMINATION

- **Sitting**..raising arms and tensing p.major
- **Lying**
- Breasts
- Axillae,
- Liver, Lungs, Bones
- **Sitting**..supraclav nodes

## As Easy as 1 to 5

### Mammogram

- M1
- M2
- M3
- M4
- M5

### Ultrasound

- U1
- U2
- U3
- U4
- U5

## As Easy as 1 to 5

### Core

- B1
- B2
- B3
- B4
- B5

### FNA

- C1
- C2
- C3
- C4
- C5

## **As Easy as 1 to 5**

### **Clinical**

- P1
- P2
- P3
- P4
- P5

## **TRIAGE IN THE CLINIC and MDT**

### **Happiness**

- Concordance

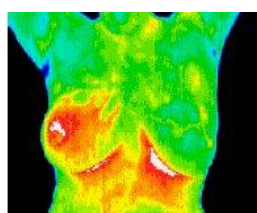
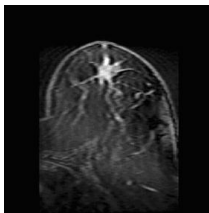
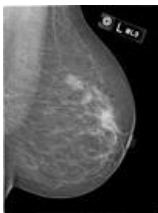
### **Unhappiness**

- Discordance





## X-RAYS



## SCREENING PROCESS

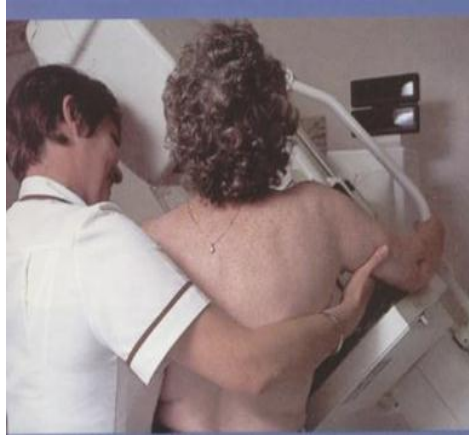


Local screening units  
on mobile vans

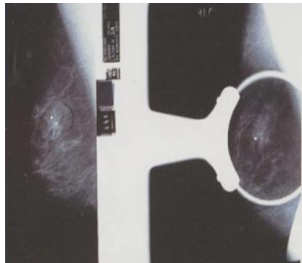
## SCREENING PROCESS

1<sup>st</sup> stage screening

Mammography on  
mobile units



## RECALL for ASSESSMENT



Specialised mammography

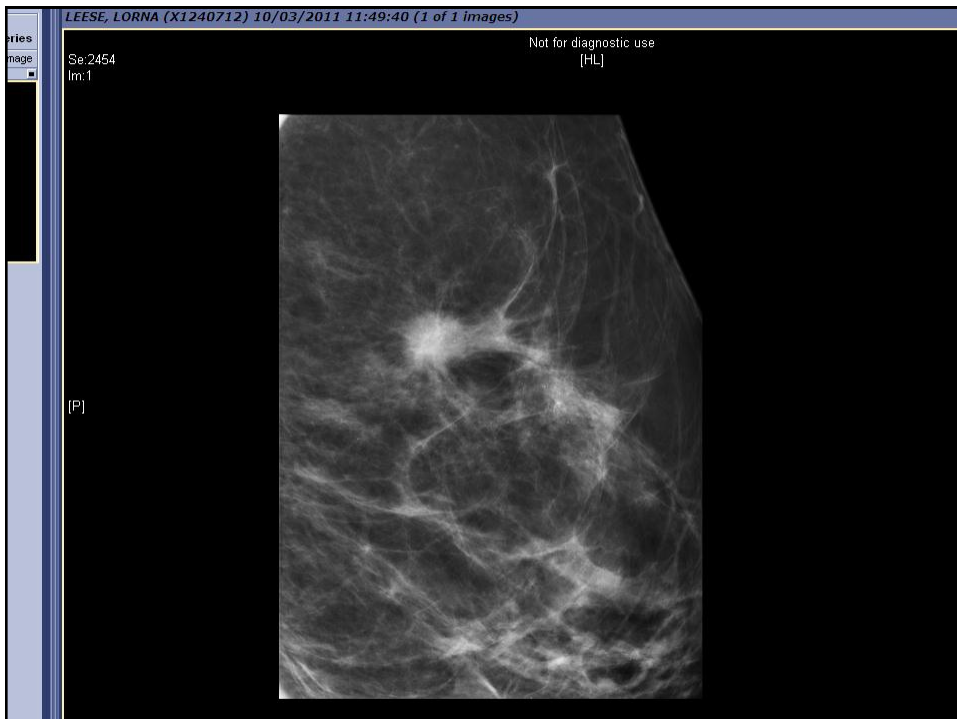
Breast  
ultrasound



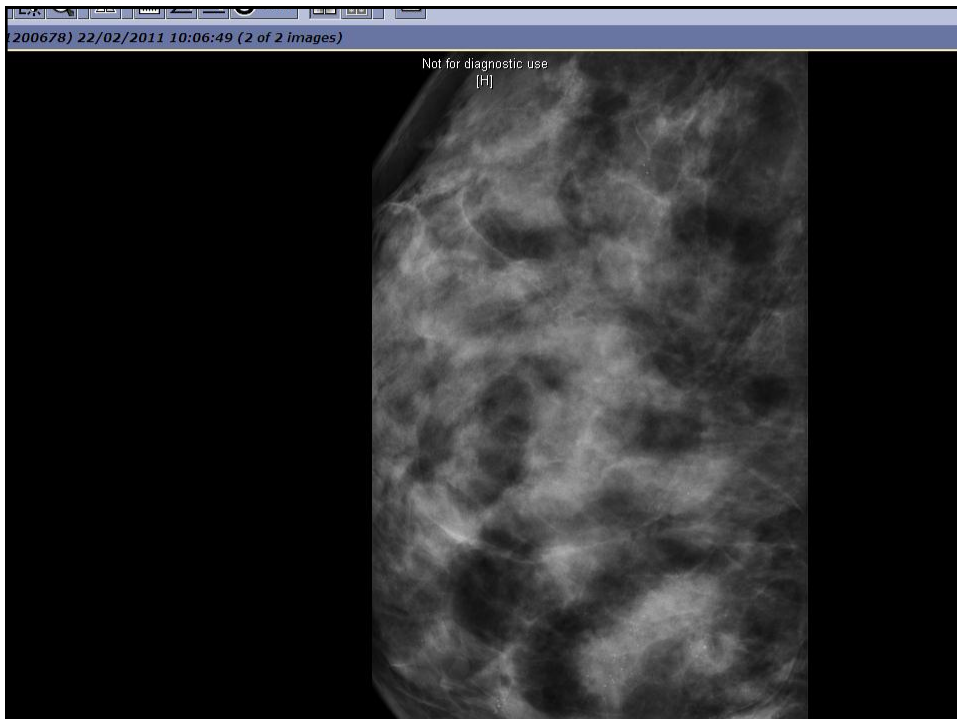
## SCREENING FACTS AND FIGURES (2009-2010)



- 2,133,189 Screens
- 17,013 New cancers
- 96% pre-operative diagnosis
- 92% of women were treated by surgeons with a minimum caseload of 20
- 98% invasive cancers had lymph nodes
- 67% had SNB, 22% Node positive
- survival for 1992/3 cases :
  - 5 yr 93.5%, 10 yr 87.9%, 15 yr 83.0%



LL

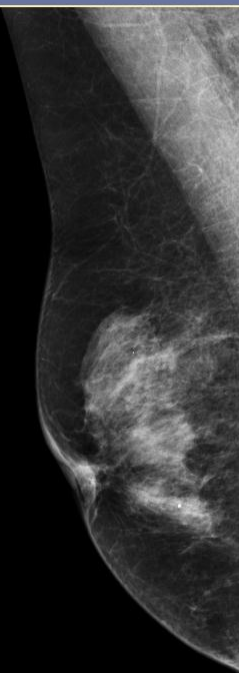




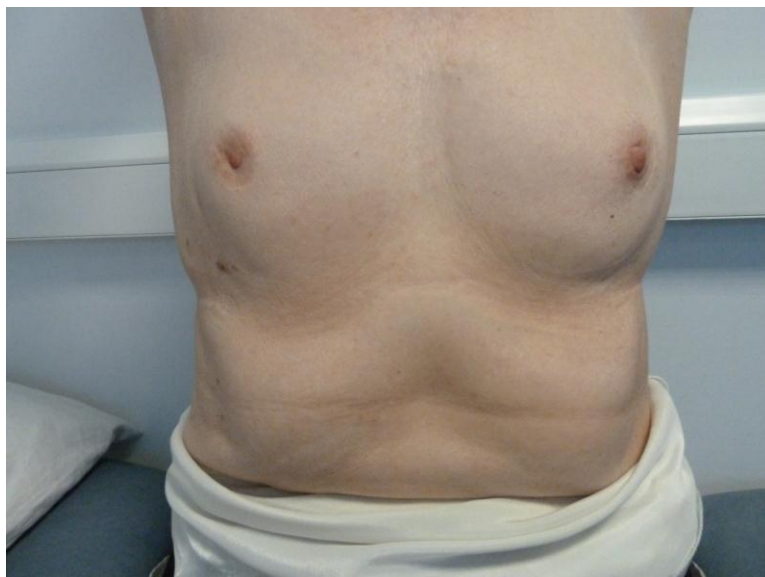
br



Not for diagnostic use  
[HR]



lag





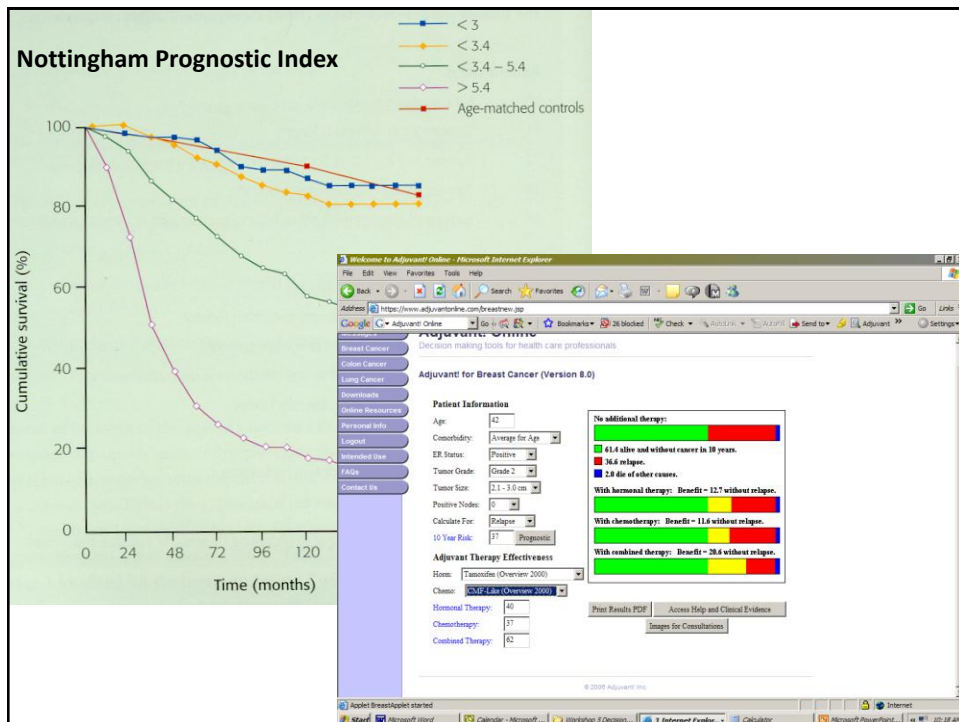
## Preoperative assessment

Offer magnetic resonance imaging (MRI) of the breast to patients with invasive breast cancer:

- if there is discrepancy regarding the extent of disease from clinical examination, mammography and ultrasound assessment for planning treatment
- if breast density precludes accurate mammographic assessment, or
- to assess the tumour size if breast conserving surgery is being considered for invasive lobular cancer

## Staging of the axilla

- Pretreatment ultrasound evaluation of the axilla should be performed for all patients being investigated for early invasive breast cancer
- If morphologically abnormal lymph nodes are identified, ultrasound-guided needle sampling should be offered



## Surgery to the axilla

- Minimal surgery, rather than lymph node clearance, should be performed to stage the axilla for patients with early invasive breast cancer and no evidence of lymph node involvement on ultrasound or a negative ultrasound-guided needle biopsy
- Sentinel lymph node biopsy is the preferred technique

## Morbidity of axillary surgery

- Seroma 50%
- Lymphoedema 10-30%
- Severe ICBN neuralgia 5%
- Shoulder-girdle dysfunction 20%
- Numbness 80%

### Lymphoedema rates:

RT alone:	10%
Sampling:	10%
Level III clearance:	30%
Surgery + RT:	70%



## LNODE TACTICS SCENARIO I (ONE STOP)

- LNode + pre-operative

Clinical +

Ultrasound +

FNA/**Core** +

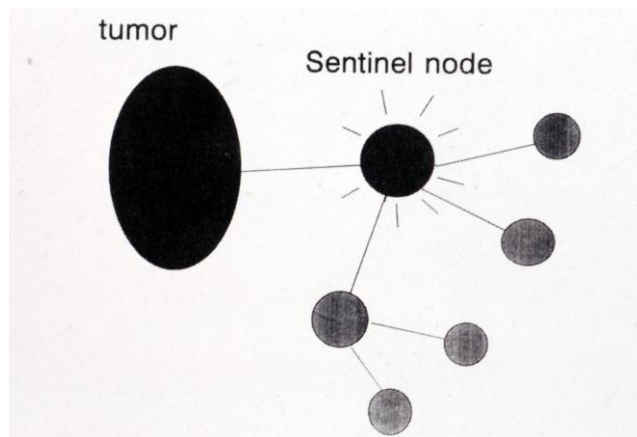


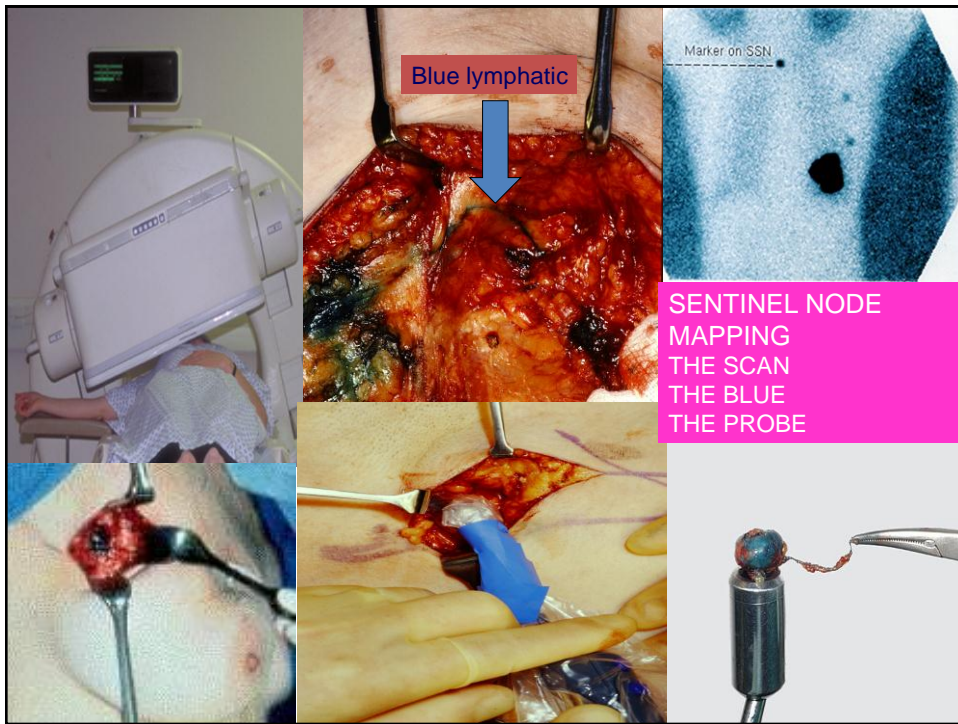
- Perform Definitive Axillary Surgery with breast surgery at first operation

## LNODE TACTICS SCENARIO II (2 STOP)

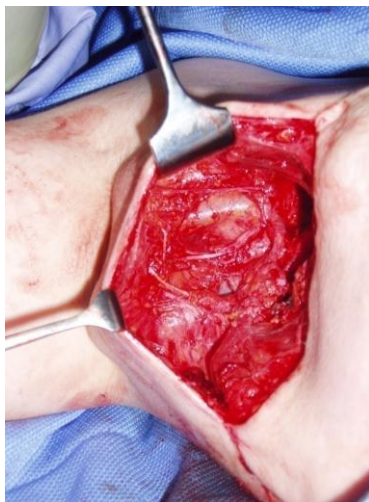
- LNode - pre-operative  
Clinical - Ultrasound - FNA/Core -
- Perform Sentinel Node Biopsy
- If SNB + do definitive axillary surgery as second operation

## SENTINEL NODE





## IMPACT on the SURGEON



## IMPACT on the MEDICAL ONCOLOGIST

- Slower referrals

## LNODE TACTICS SCENARIO III

- LNode - pre-operative  
Clinical - Ultrasound - FNA/Core -
- Do Sentinel Node Biopsy to **STAGE** and perform **PER-OPERATIVE ASSESSMENT**
- If SNB + perform definitive axillary surgery at first operation with breast surgery



## Why examine SN intraoperatively?

- Advantages
  - One axillary procedure
  - One admission
  - One anaesthetic
  - Save money
  - ?Easier operation
  - Less delay in adjuvant therapy
- Disadvantages
  - Planning of operating list
  - Time waiting
  - Prolonged anaesthetic
  - Resources
  - ?pre-op counselling
  - Cost of tests

## OSNA® 'One Step Nucleic Acid Amplification'

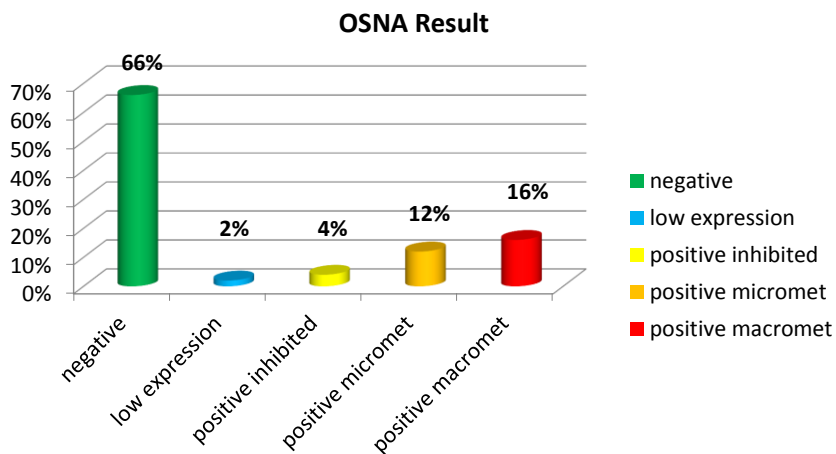
- Rapid molecular diagnosis of lymph nodes
- Detection of CK19 mRNA expressed by breast cancer cells in lymph nodes indicative of metastatic disease
- Identifies metastatic disease (>0.2mm) according to a threshold level of mRNA expression.
- 30-40 mins for 2 nodes



## The Workload of 'negative' nodes

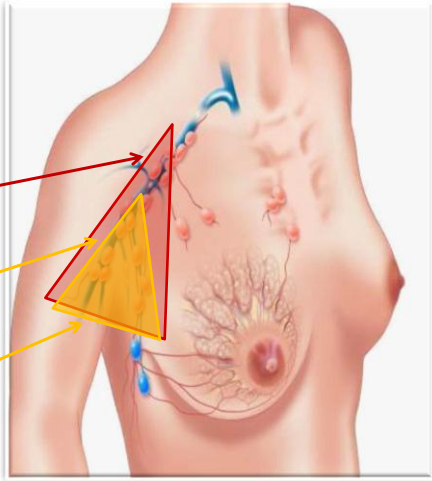
	2009	2010	2011	TOTAL
Number of Patients	229	263	208	700
Number of Nodes	460	564	389	1413
Number of Samples	545	611	475	1631
Number of nodes per Patient	2.0	2.1	1.9	2.0

## OSNA RESULT



## OSNA results protocol dependent on copy numbers CK-19 mRNA

- OSNA negative:
  - 0-250 copy numbers/ul
  - no further surgery
- OSNA positive:
  - >5000 copy numbers/ul
  - ++ macro-metastasis
  - level 3 AND
- OSNA positive:
  - 250-5000 copy numbers/ul
  - + micro-metastasis
  - level 1 AND
- OSNA positive:
  - + inhibited
  - pragmatic level 1



UK OSNA Implementation Meeting

57

## INDICATIONS for MASTECTOMY

- Patient choice
- Multifocal Cancer
- Large cancer in small Breast
- Recurrent cancer
- Prophylaxis

## SPECIALISTS v GENERALISTS



DOES  
TECHNIQUE  
MATTER?



for BREAST  
CONSERVATION

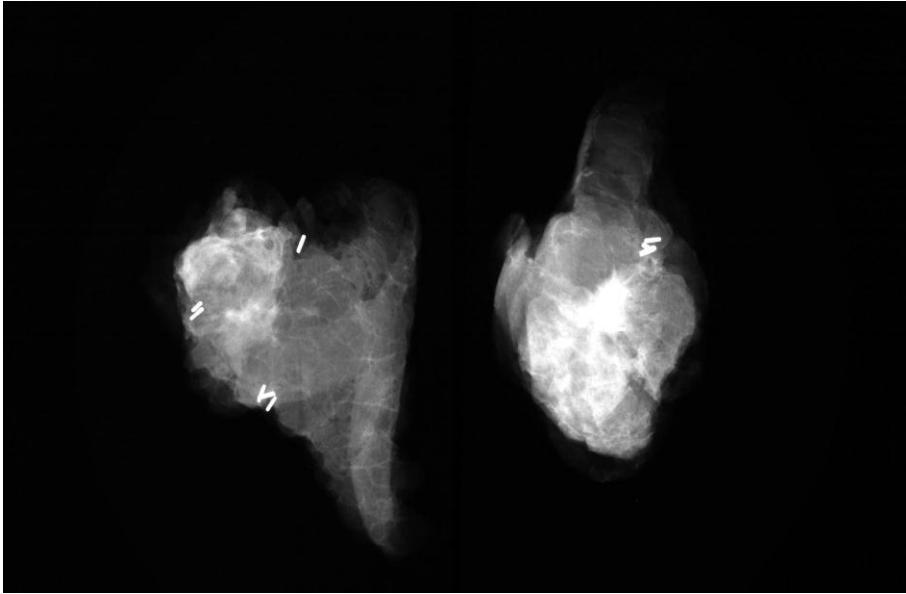
MUST BE SAFE  
MUST LOOK GOOD





## Re-excision rates for different clearance margins for invasive cancer

- <1mm 52% YES, 35% yes, 7% no, 4% NO
- 1-2mm 30% YES, 28% yes, 20% no, 18% NO
- 2-5mm 10% YES, 28% yes, 23% no, 37% NO
- 5-10mm 5% yes, 15% no, 79% NO



## Breast reconstruction

- Discuss immediate breast reconstruction with all patients who are being advised to have a mastectomy, and
- Offer it except where significant comorbidity or (the need for) adjuvant therapy may preclude this option
- All appropriate breast reconstruction options should be offered and discussed with patients, irrespective of whether they are all available locally

## Surgical Methods (a) (Skin Sparing)

### Implants/Expanders

3 – 4 hrs

A – B size

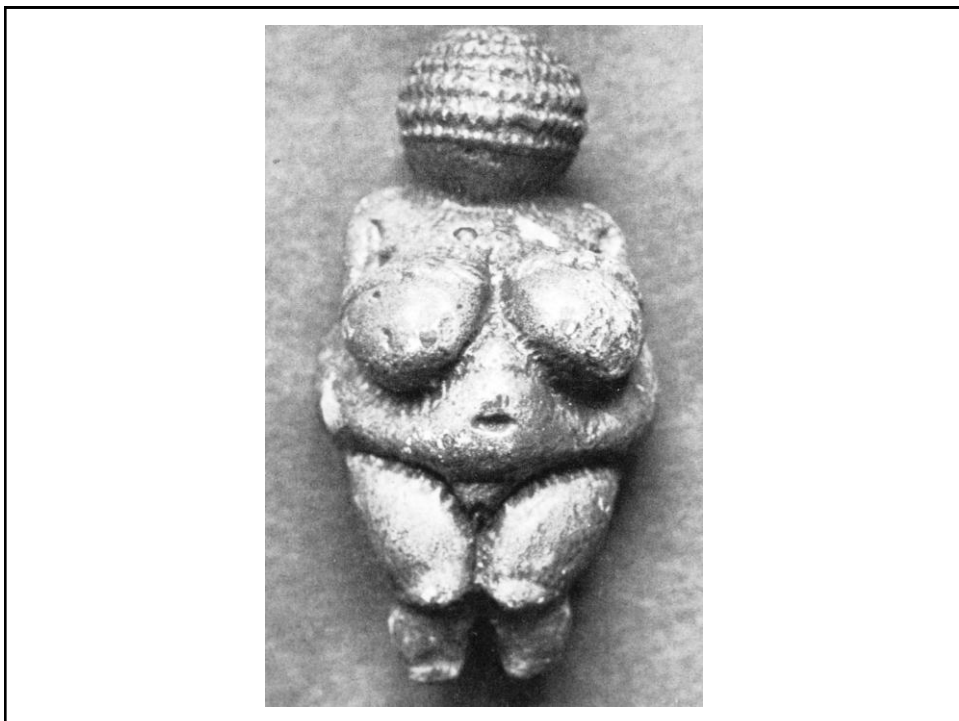
Nipples

Simple

Results OK

Capsules, pain







## Surgical Methods (b)

### LDFlaps

3-4 hours

any size  $\pm$  Implant

Nipples

Results can be very good

Reliable

20% revisions

previous DXT



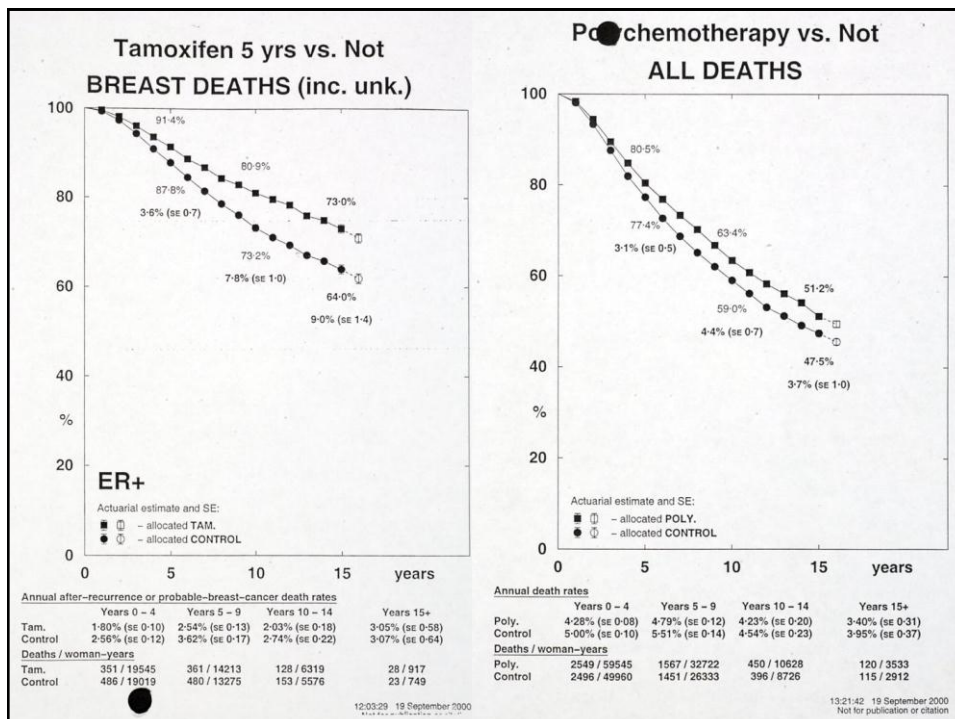
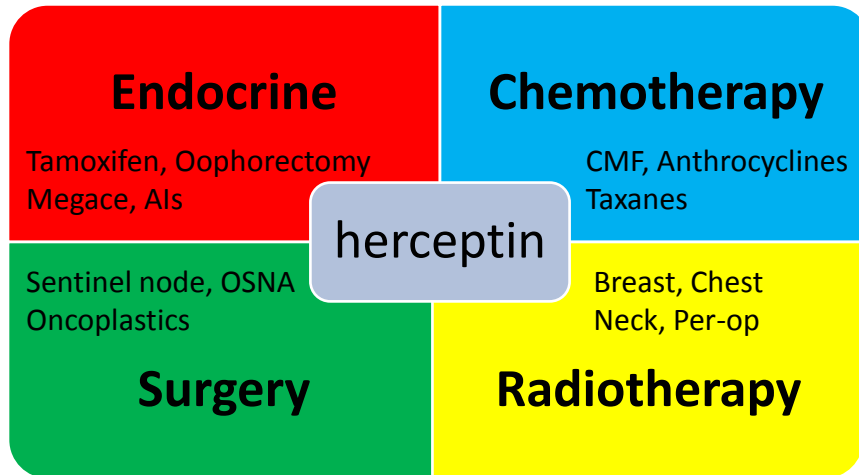
## Surgical Methods (c)

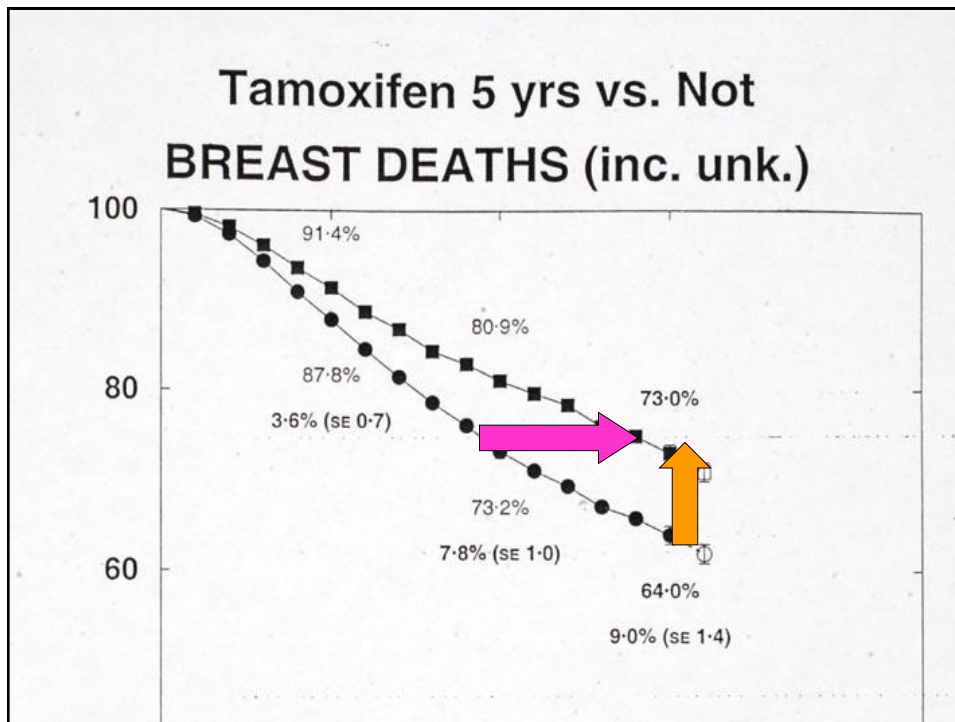


## Adjuvant therapy planning

- Start adjuvant chemotherapy or radiotherapy as soon as clinically possible within **31** days of completion of surgery in patients with early breast cancer having these treatments.

# Management Options



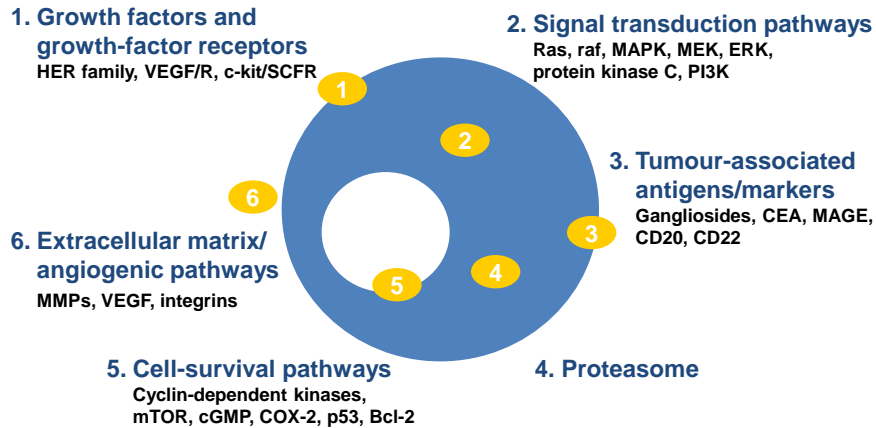


## Aromatase inhibitors

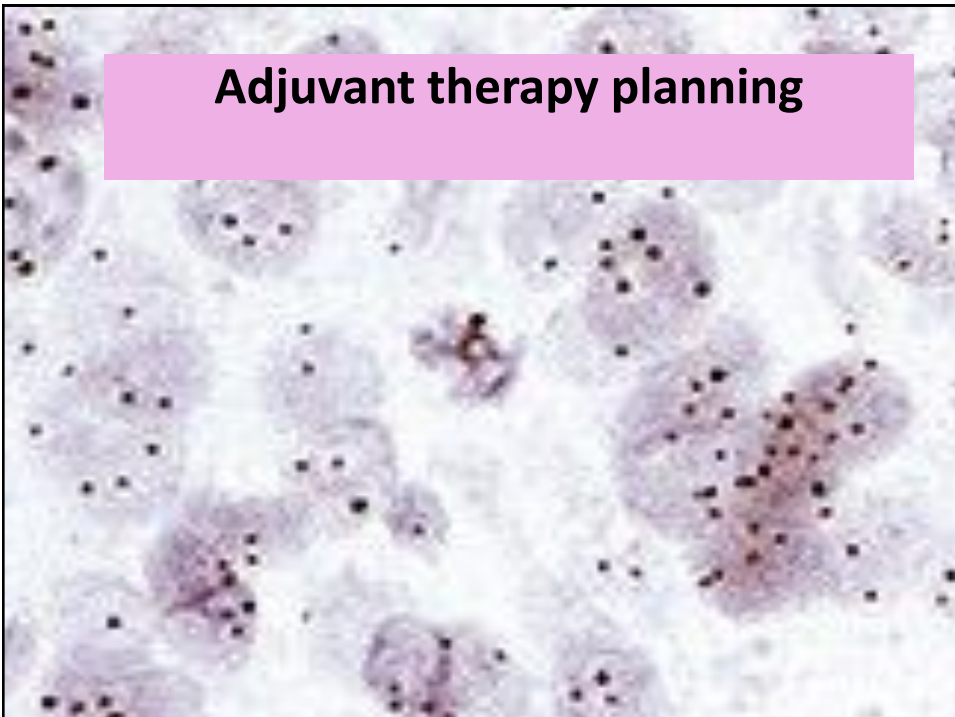
- Postmenopausal women with ER-positive early invasive breast cancer who are not considered to be at low risk should be offered an aromatase inhibitor, either anastrozole or letrozole, as their initial adjuvant therapy. Offer tamoxifen if an aromatase inhibitor is contraindicated or not tolerated

# Biological targets for cancer therapy

## Tumour cell



## Adjuvant therapy planning



## Adjuvant therapy: the costs so far

Hazard for George Osborne Hazard Ratio			
ChemoRx x 6 courses	CMF	+ Anthra	+ Taxoids
	0.7 £900	0.6 £3,000	0.5 £9,000
Hormone Rx (HR +ve) 5yrs	Tamoxifen	Als	
	0.6 £<500	0.5 £4,200	
Biological Rx (HER2 +ve) 1yr	Herceptin		
	0.5 £35,000		

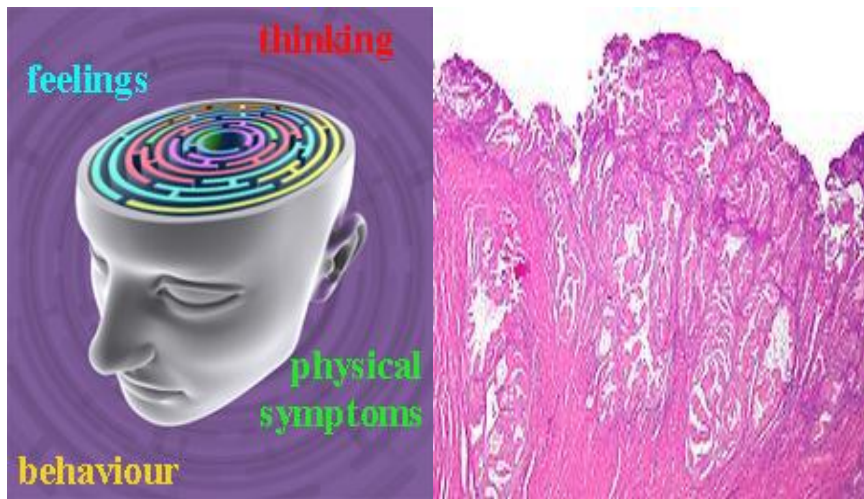
## SURGERY



20% RISK 75% NO NEED 10% RISK



## ENDOCRINE BLOCKADE



REDUCTION of RISK 25% - ABSOLUTE BENEFIT 10%

## RADIOTHERAPY



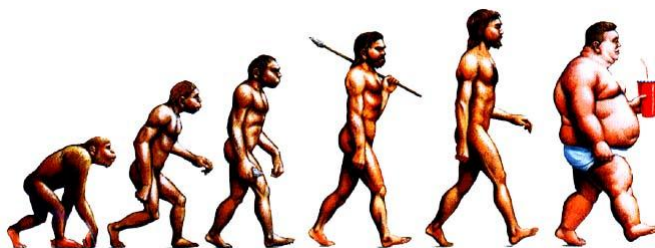
REDUCTION of LOCAL RECURRENCE 2/3 – 75% NO NEED

## CHEMOTHERAPY



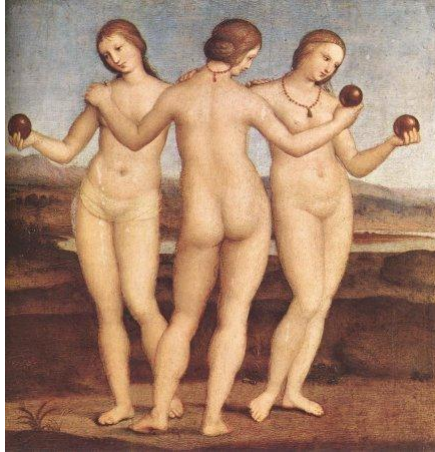
REDUCTION of RISK 25% - ABSOLUTE BENEFIT 10%

## EVOLUTION ?





## Evolution of the service: Mrs A; Mrs B; Mrs C.



### Mrs A: 1993

- 44 year old
- 2 children, breast fed, FH breast/ovarian
- 2 weeks thickening R breast
- Referred to Jarvis
- Mammogram (A) asymmetric density R UOQ
- Ultrasound solid suspicious mass
- Clinical 2cm area of thickening
- **FNA gritty C5 Score 11 Grade 1**

## **Mrs A: 1993**

- Seen by surgeon 1 day
- Surgery 19 days
- Pre-operative Tamoxifen
- WLE
- Axillary Clearance Level II
- Re-excision of Margins
- Radiotherapy
- Tamoxifen 2 years

## **Mrs A: 1993**

- Invasive Lobular Ca
- Not graded
- 15 mm
- LCIS 3mm beyond
- Lower margin 1mm
- N0/6
- No ER or PR or Her2 or VI
- Re-excision of margin clear

## Mrs B: 2002

- 38 year old, R handed, 34B
- 2 children, breast fed, FH breast x 2
- 3/12 lump, 5/52 discomfort
- Referred to Jarvis
- Mammogram (A) 35 mm mass with calcs M5
- Ultrasound 37 mm solid mass U5
- Ultrasound Axilla 13mm node suspicious
- Clinical 4 cm mass and enlarged nodes
- **FNA breast C5 Score 16 Grade 3**
- **FNA axilla +**

## Mrs B: 2002

- Seen by surgeon 1 day
- Declined primary chemotherapy
- Surgery 2 days
- WLE 76 gms
- Axillary Clearance Level III
- Re-excision of margins 23 gms
- Chemotherapy (TACT Trial)
- Mastectomy and LD Flap 264 gms
- Tamoxifen 5 years

## Mrs B: 2002

- Invasive Ductal Ca
- Grade 3 Score 9
- 23 mm
- DCIS 6mm beyond
- Upper margin < 1 mm
- VI +
- N 4/25
- ER – PR wk + Her2 (IHC) 1+
- Re-excision More DCIS and microinvasion close
- Mastectomy clear

## Mrs C : 2010

- 45 year old, R handed, 32A
- 3 children, breast fed, no FH
- Lump in L breast
- Referred to Jarvis
- Mammogram (D) 11 mm mass, 20mm calcs M5
- Ultrasound breast 17 mm lesion U5
- Ultrasound axilla 10 mm node with 0.34 hilum
- **Core Biopsy Inv ductal B5b Grade 2 (6) ER ++ PR ++**
- **FNA Axilla suspicious C4, Repeat negative**

## **Mrs C: 2010**

- Seen by Surgeon (a) 13 days
- Surgery 16 days after seeing surgeon (b)
- Pre-operative Tamoxifen
- Skin and Nipple Sparing Mastectomy 102 gms
- Immediate autologous LD Flap
- Sentinel node biopsy (scan, Probe)
- OSNA 2/3 nodes ++/+
- Level III clearance
- Chemotherapy
- Tamoxifen

## **Mrs C: 2010**

- Invasive ductal Ca
- 16 mm
- Grade 3 score 8
- DCIS +16 mm
- VI +
- ER 7, PR 8, Her2 – (SISH)
- SNB by OSNA 2/3 positive (1 x ++, 1 x +)
- NSN 1/16 micromet

# Indications for needle biopsy

## Core

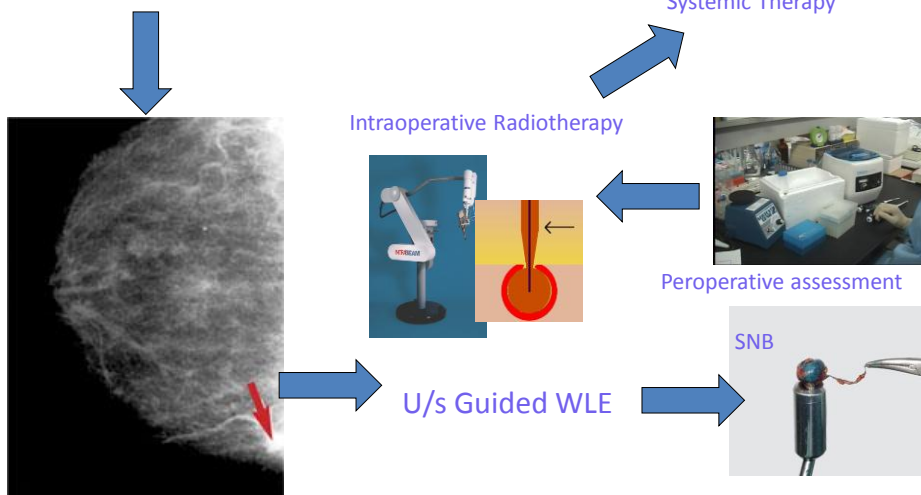
- Microcalcifications  
? Invasion
- Suspicion of lobular cancer
- Radial scar v cancer
- Surgical scarring
- Imaging & cytology mismatch
- Inadequate FNA
- Previous radiotherapy

## FNA

- Tiny lesions
- Superficial lesions
- Peripheral lesions
- Large ill-defined area
- Lymph nodes
- Nipple smear
- ? Fluid or pus
- Avoid de-skilling

# The Breast Surgery of Tomorrow

## Diagnosis



## TAILOR-MADE TREATMENT

