



Bridging the Age Gap

Treatment Variation and Outcomes in Older Women with Breast Cancer

Lynda Wyld

Professor of Surgical Oncology

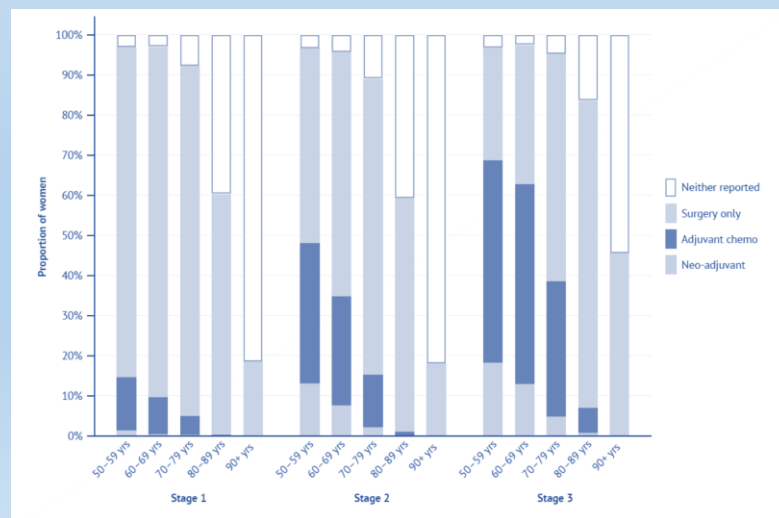
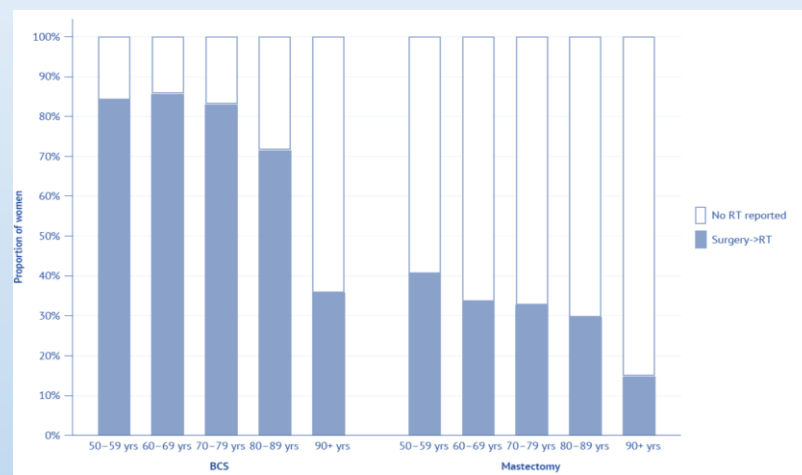
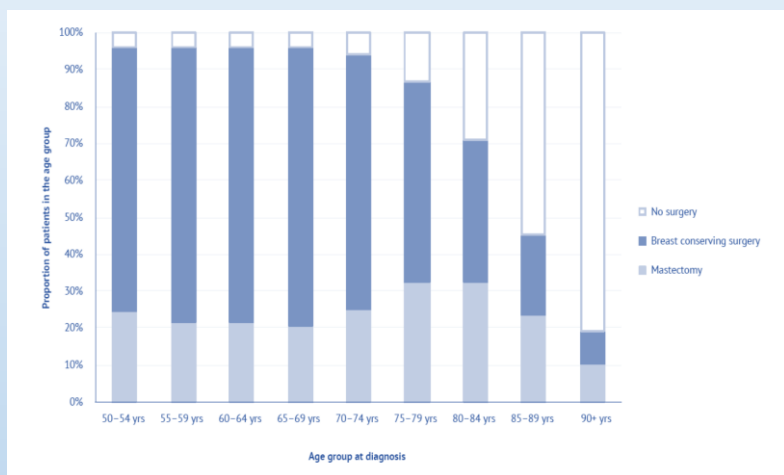
University of Sheffield

Honorary Consultant Oncoplastic

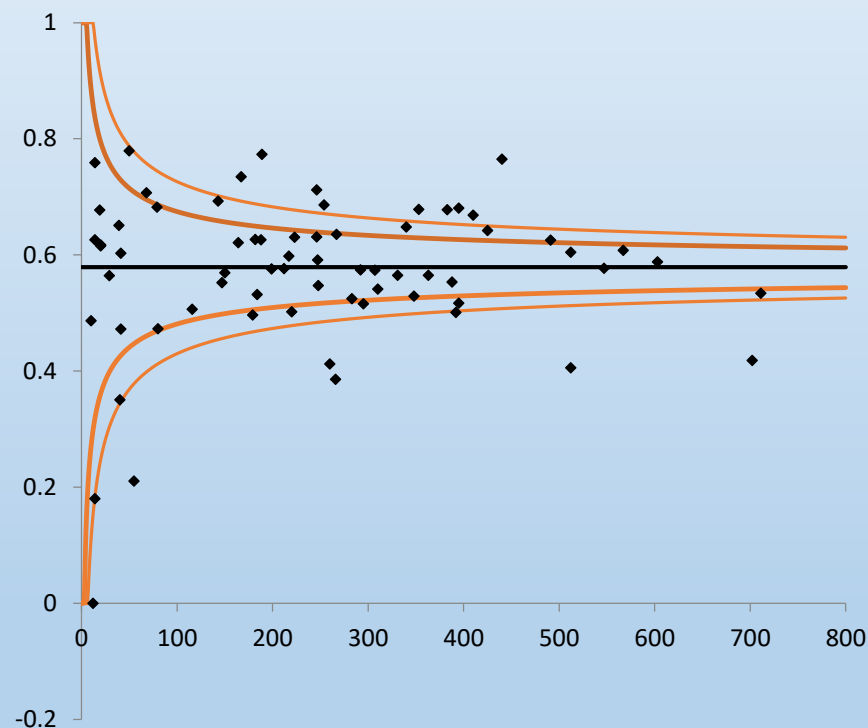
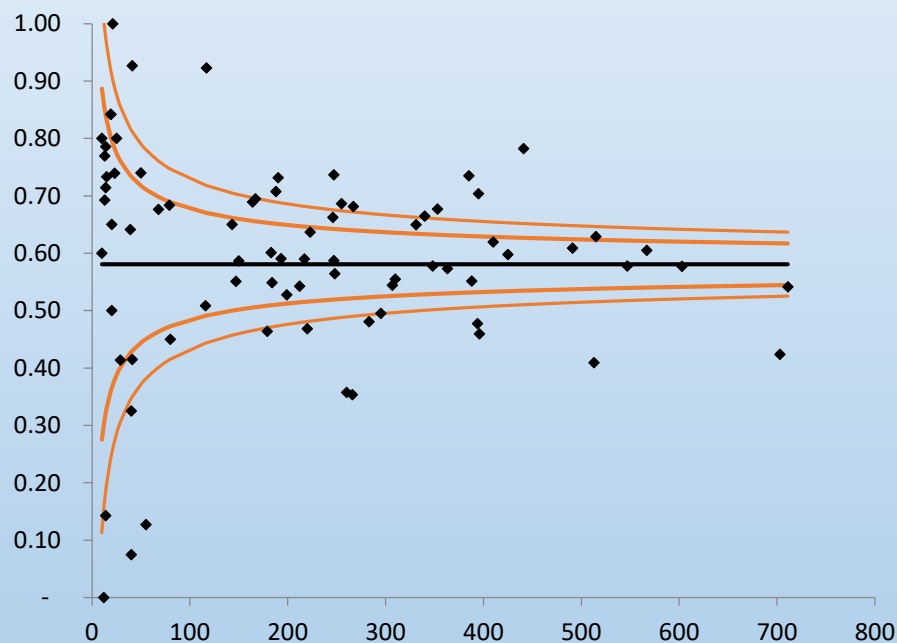
Breast Surgeon, Doncaster and

Bassetlaw NHS FT

NABCOP Audit 2018; Treatment Omission Related to Age



Rate of surgery with/without case mix adjustment by NHS Trust in 2 UK regions



Adjustment for age, deprivation quintile, method of presentation, grade, stage, nodal status and co-morbidity

Original article

BJS 2015

Case-mix analysis and variation in rates of non-surgical treatment of older women with operable breast cancer

J. Morgan¹, P. Richards², S. Ward², M. Francis⁴, G. Lawrence⁴, K. Collins³, M. Reed¹ and L. Wyld¹

Decision Making for Older Women

PATIENT AGE (YEARS)	85+		
CO-MORBIDITY	NONE		
TUMOUR STAGE	SMALL TUMOUR, NODE POSITIVE		
BREAST CANCER BIOLOGY	ER++ / HER2-		
FUNCTIONAL STATUS	MODERATE DEPENDENCE		
COGNITIVE FUNCTION	SEVERE IMPAIRMENT		
For Operation	[]	For PET	[]
Prefer both equally	[]		

61% favour PET, 26 equal
and 12% surgery

Some scenarios gave an
equal 3 way split in
decision

Precision Guess Work!



Available online at www.sciencedirect.com

ScienceDirect

EJSO xx (2017) 1–6

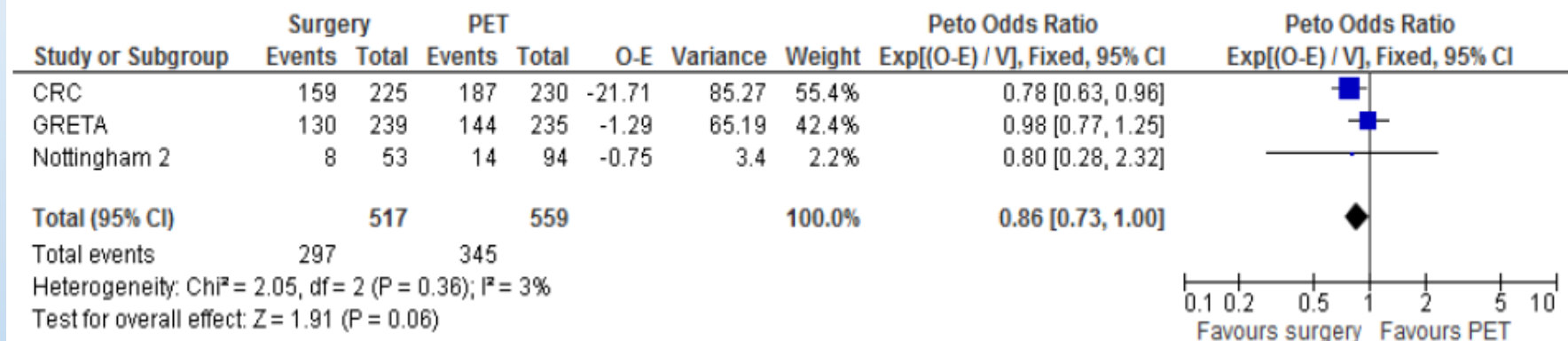
EJSO
The Journal of Cancer Surgery
www.ejso.com

What influences healthcare professionals' treatment
preferences for older women with operable breast cancer?
An application of the discrete choice experiment

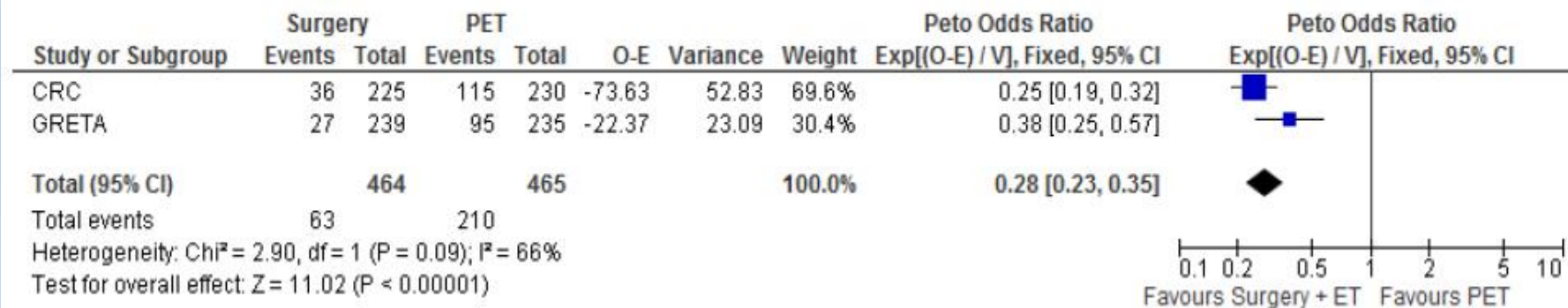
J.L. Morgan ^{a,*}, S.J. Walters ^b, K. Collins ^c, T.G. Robinson ^d,
K.-L. Cheung ^e, R. Audisio ^f, M.W. Reed ^g, L. Wyld ^a

Cochrane Review of Surgery plus Adjuvant Tamoxifen versus Tamoxifen Only

2.1 Survival - overall



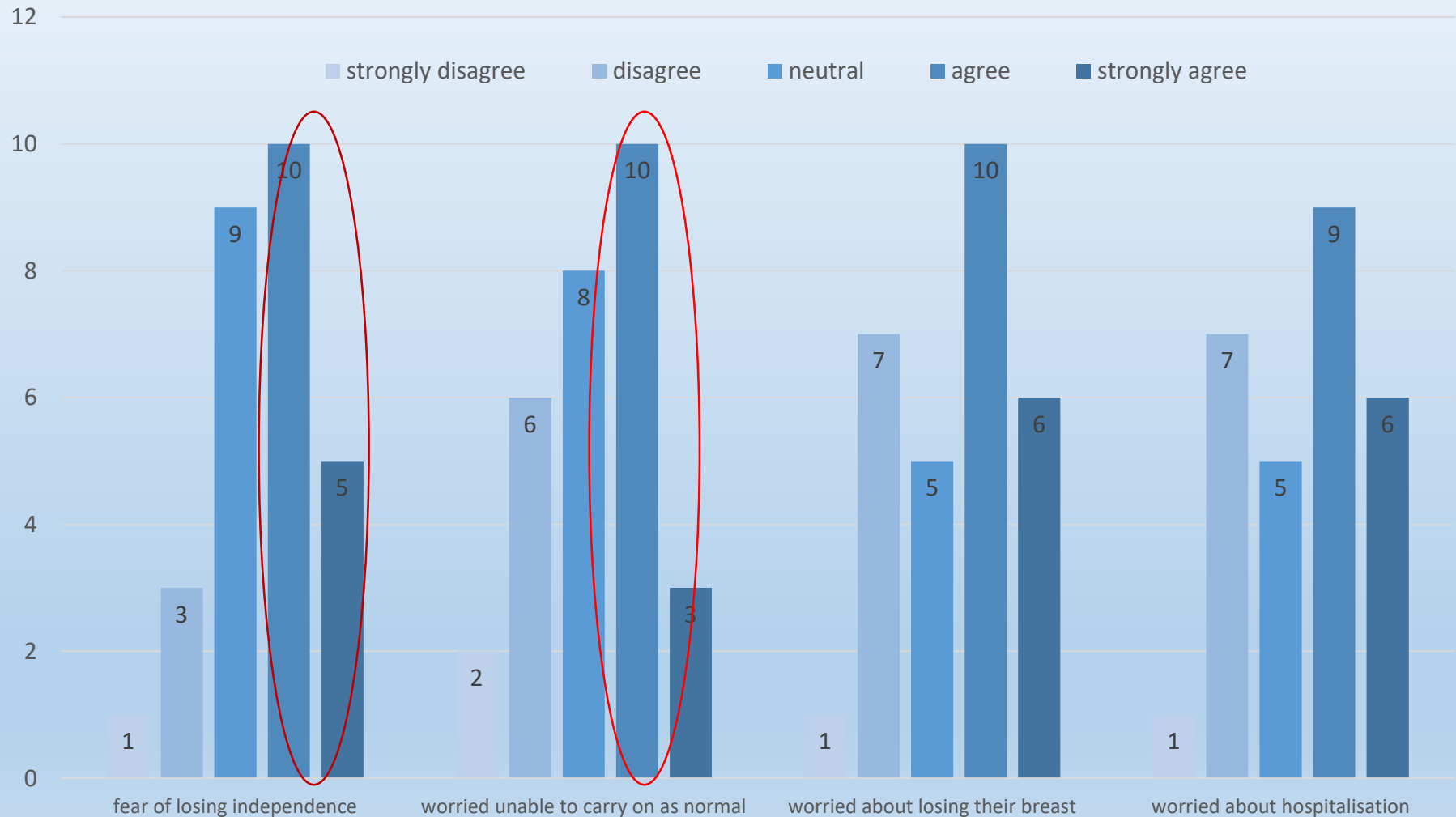
2.2 Local disease control



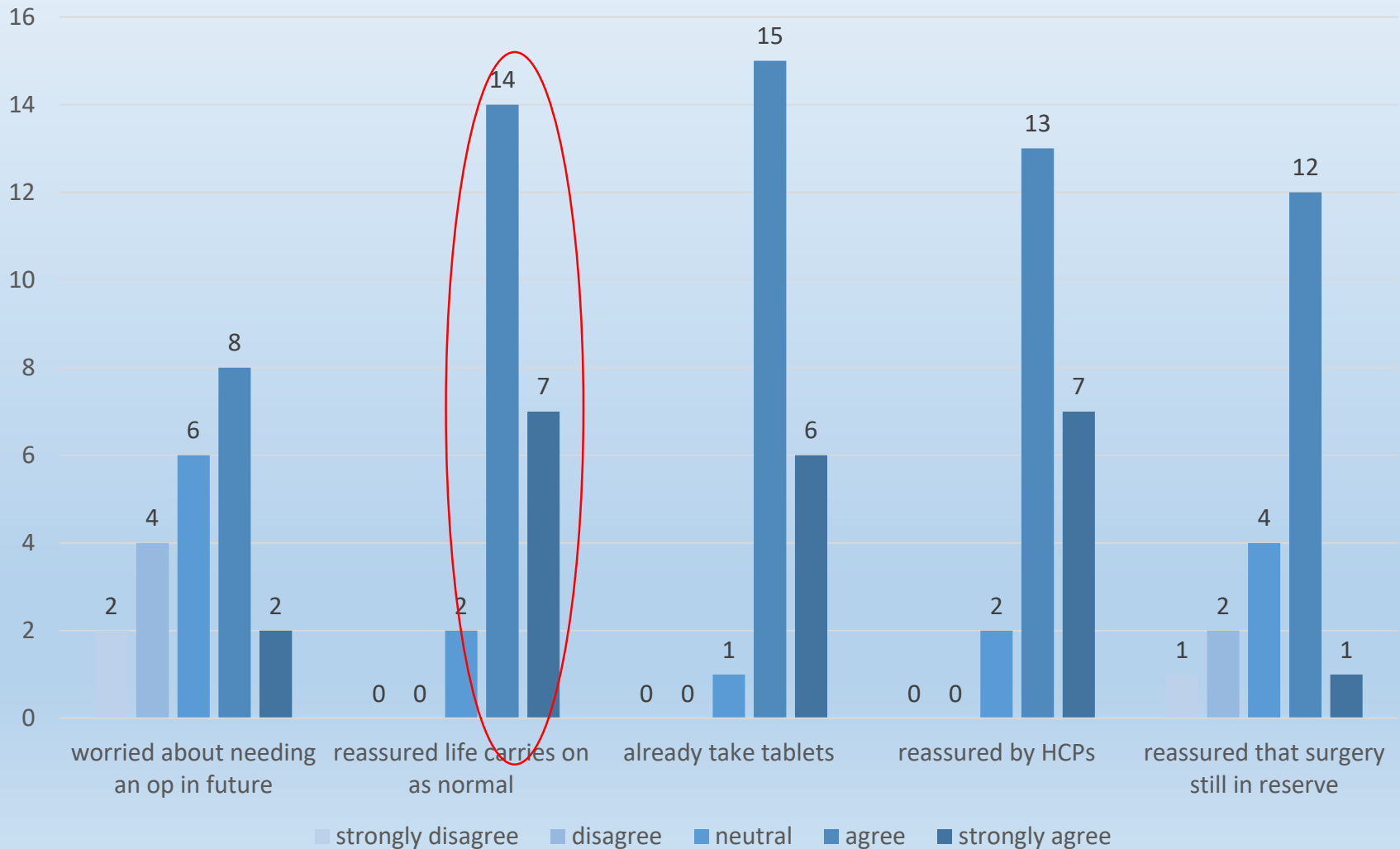
The flip side.....US practice is surgery for all

- **Recent US study of ~6000 nursing home residents in the USA with breast cancer undergoing surgery (Tang et al, JAMA Surgery, 2018)**
- The 30-day mortality rates were 8% after lumpectomy, 4% after mastectomy, and 2% after ALND....compared to 0.1% in the UK for all ages (and 0% out of ~3000 women over 70 in Age Gap)
- The 1-year mortality rates were 41% after lumpectomy, 30% after mastectomy, and 29% after ALND.
- Among 1-year survivors, the functional decline rate was 56% to 60%. The mean MDS-ADL score increased (signifying greater dependency) by 3 points for lumpectomy, 4 points for mastectomy, and 5 points for ALND.

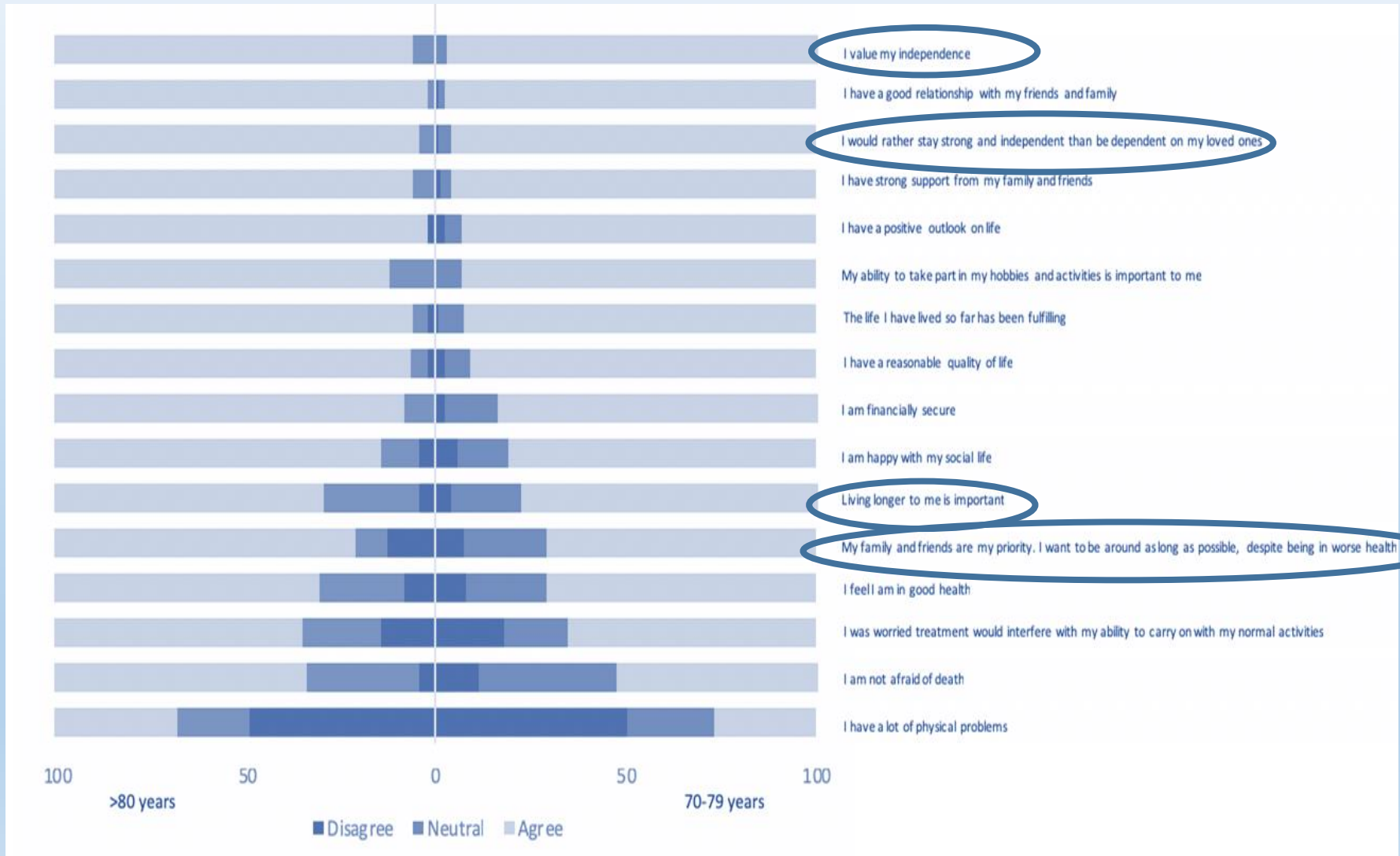
The Patients Voice: Surgical Fears



Views on Primary Endocrine Therapy



Priorities of Older Women Faced with Cancer



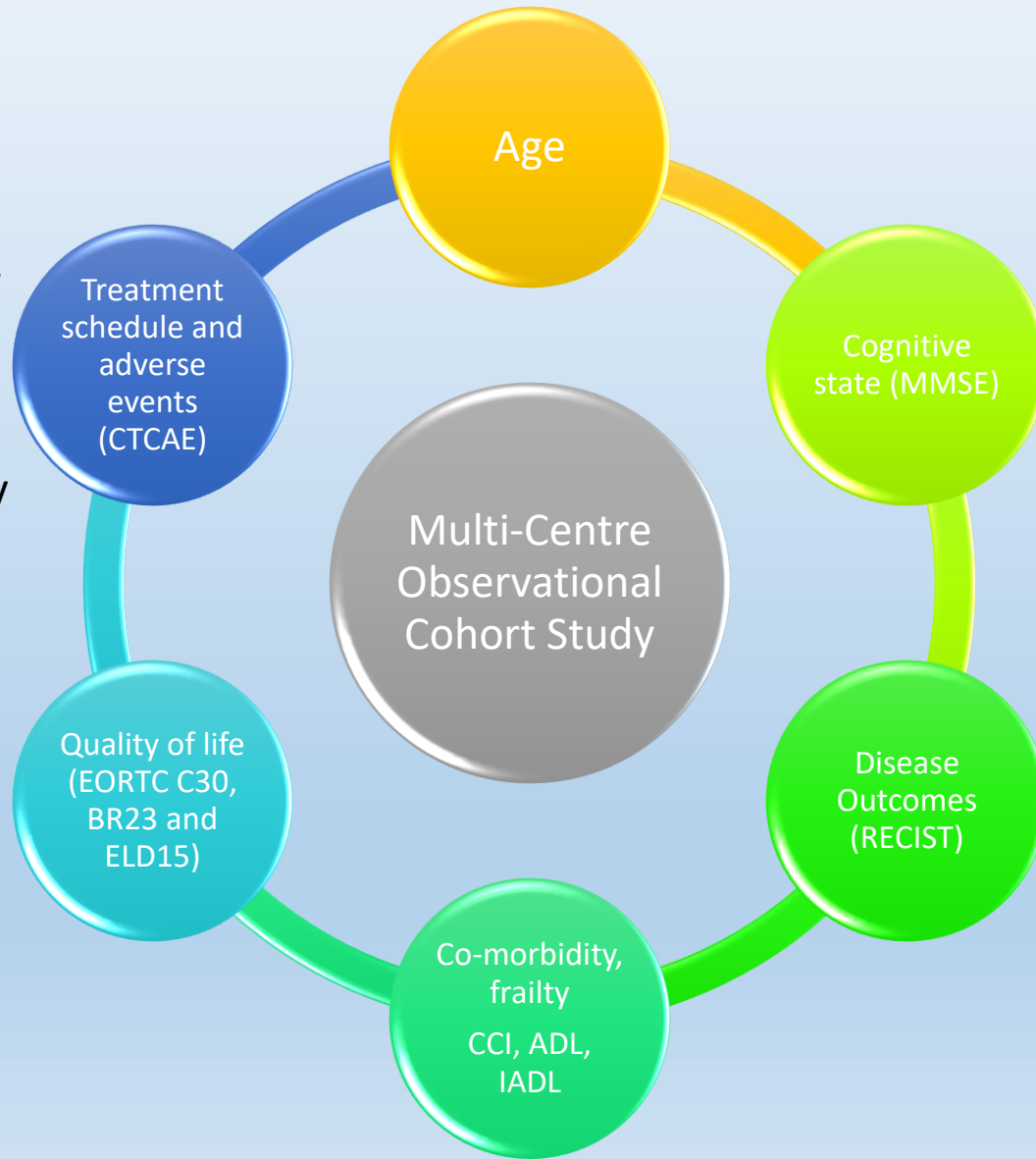
The Key Question

- When is Primary Endocrine Therapy Appropriate?
- Is there an age/fitness/tumour biology composite score that will guide best practice?

The Age Gap Cohort Study

Recruited 3460
women over age
70 across 56 sites.

Recruitment
complete and
analysis underway

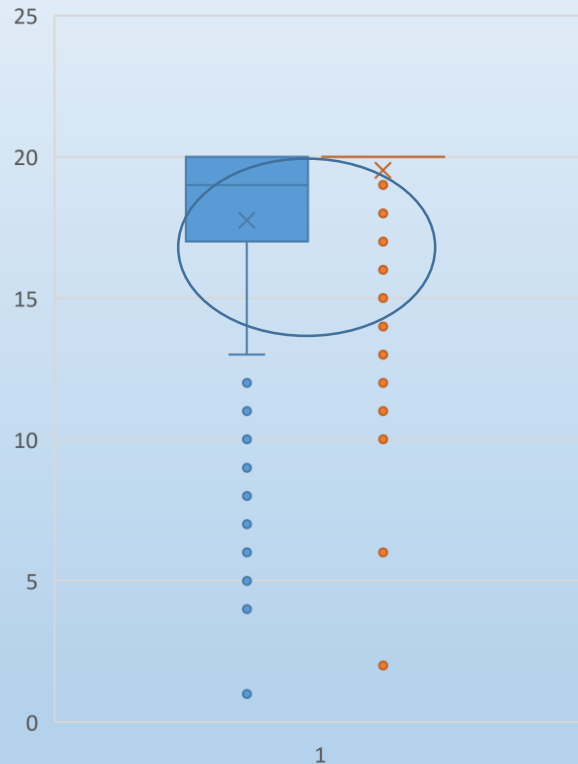


Cohort Demographics

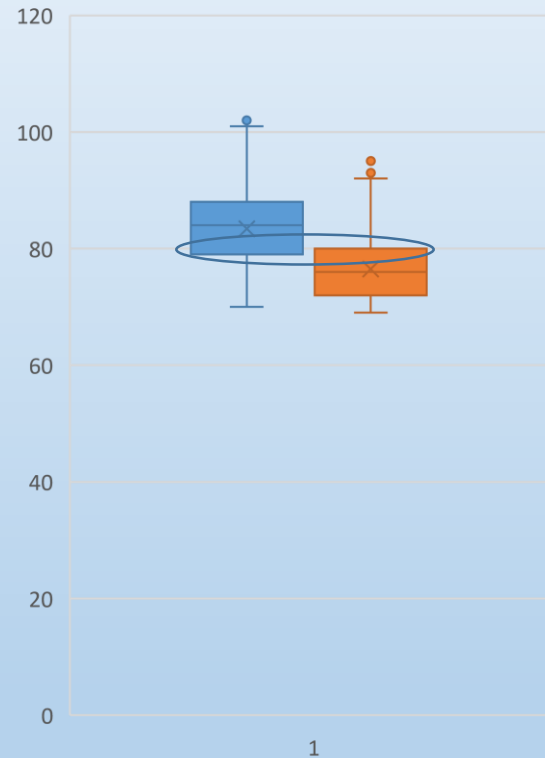
Characteristic	Median	Range
Age:	77	70-102
70-74	1259 (37%)	
75-79	1013 (29%)	
80-84	676 (20%)	
85-90	341 (10%)	
90+	146 (4%)	
Charlson Co-morbidity score	4	Range 3-17
3	1087 (33%)	
4	740 (23%)	
5	697 (21%)	
6	385 (12%)	
7	189 (6%)	
8	94 (3%)	
>8	85 (3%)	
Activities of Daily Living	1	1-20
1-5	6 (<1%)	
6-10	23 (1%)	
11-15	110 (4%)	
16-20	2898 (95%)	
Cognition Status	Normal	Normal to severely impaired
Normal	2970 (86%)	
Mild impairment	340 (10%)	
Moderate impairment	59 (2%)	
Severe impairment	87 (3%)	

Surgery versus Primary Endocrine Therapy

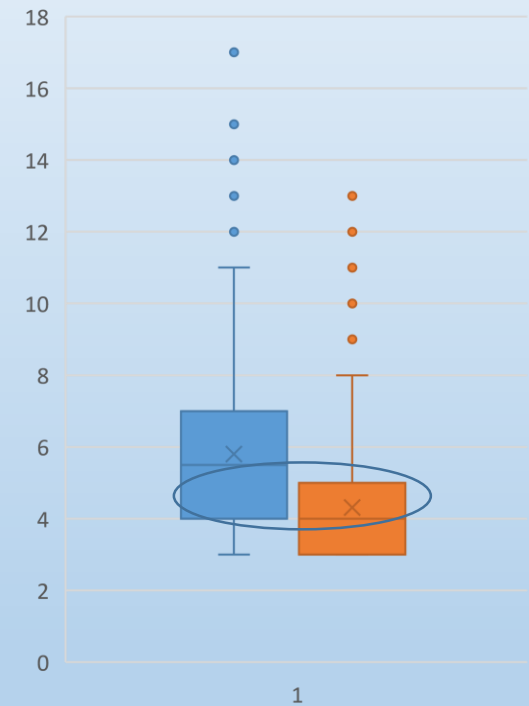
ADL scores between surgery (orange) and PET (blue)



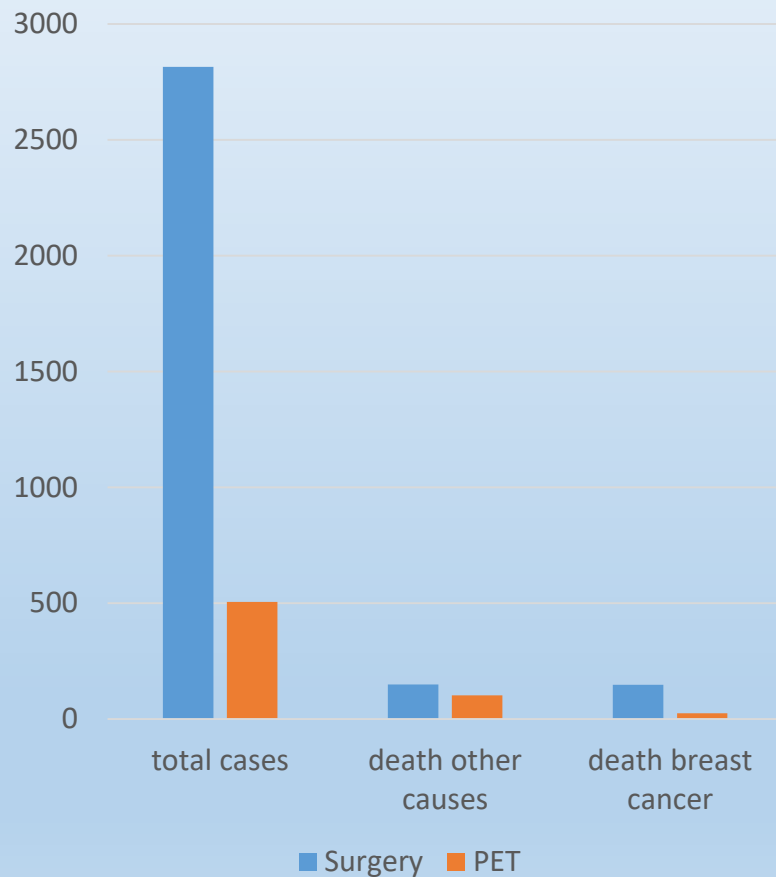
Age between surgery (orange) and PET (blue)



Charlson co morbidity score between surgery (orange) and PET (blue)

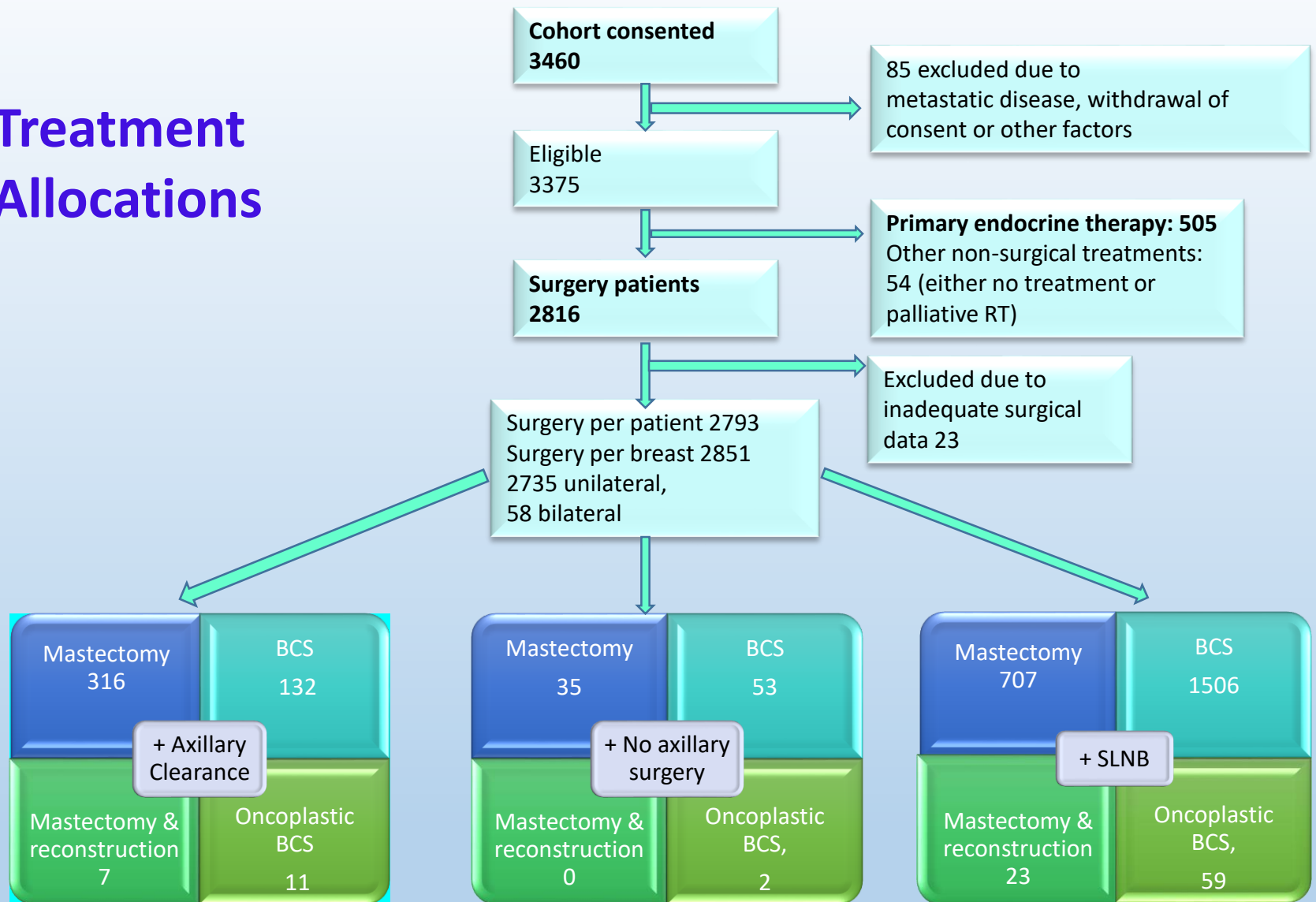


Survival Outcomes: Surgery versus PET



- Mortality rate at 3.5 year median survival is 27% for women treated with PET versus 11% for surgery
- The percentage of deaths due to BC is 19% for PET group versus 48% for surgery.
- Propensity score matching will be used to identify a matched cohort and compare mortality which will also help identify a fitness threshold for PET.

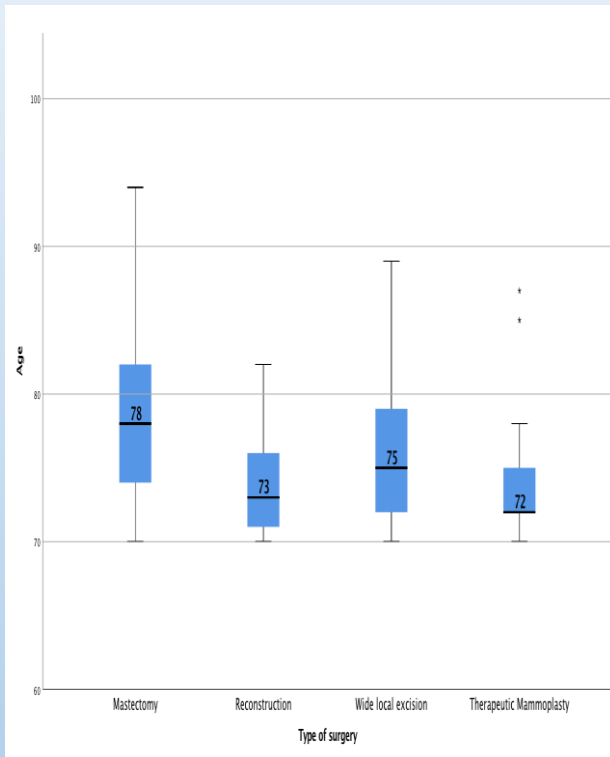
Treatment Allocations



Demographics

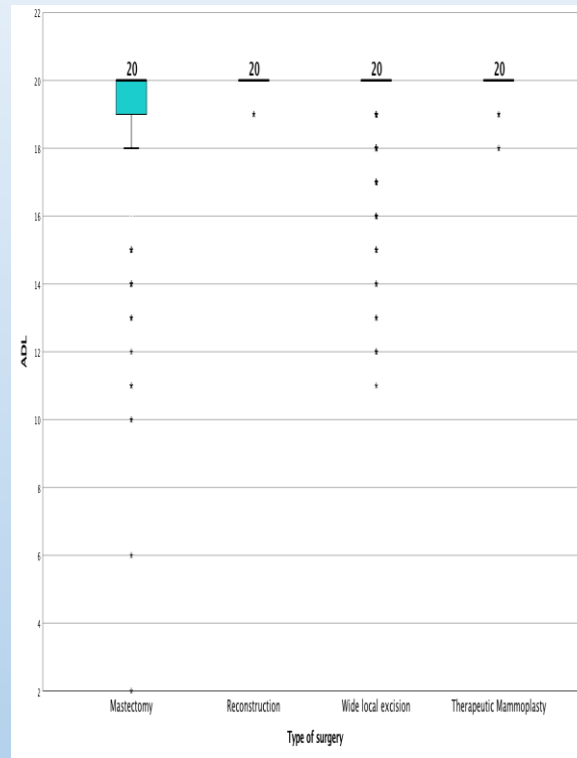
Age

P<0.01



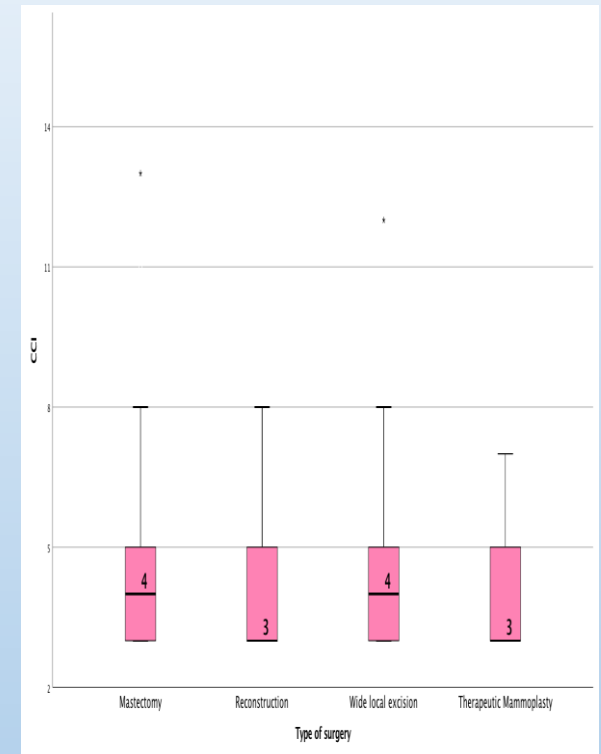
Frailty Activities of Daily Living

P<0.01



Charlson Co Morbidity Score

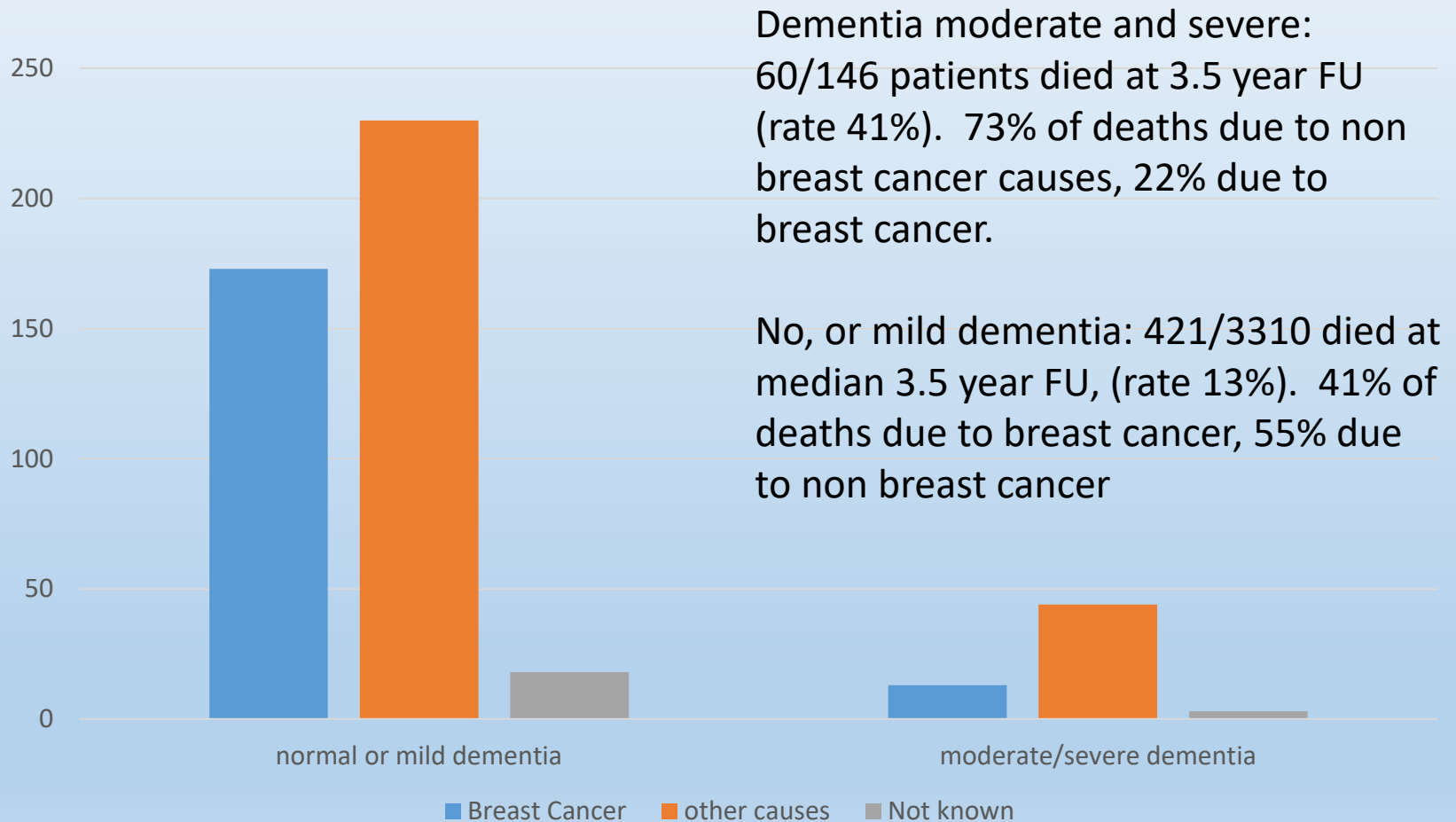
P<0.01



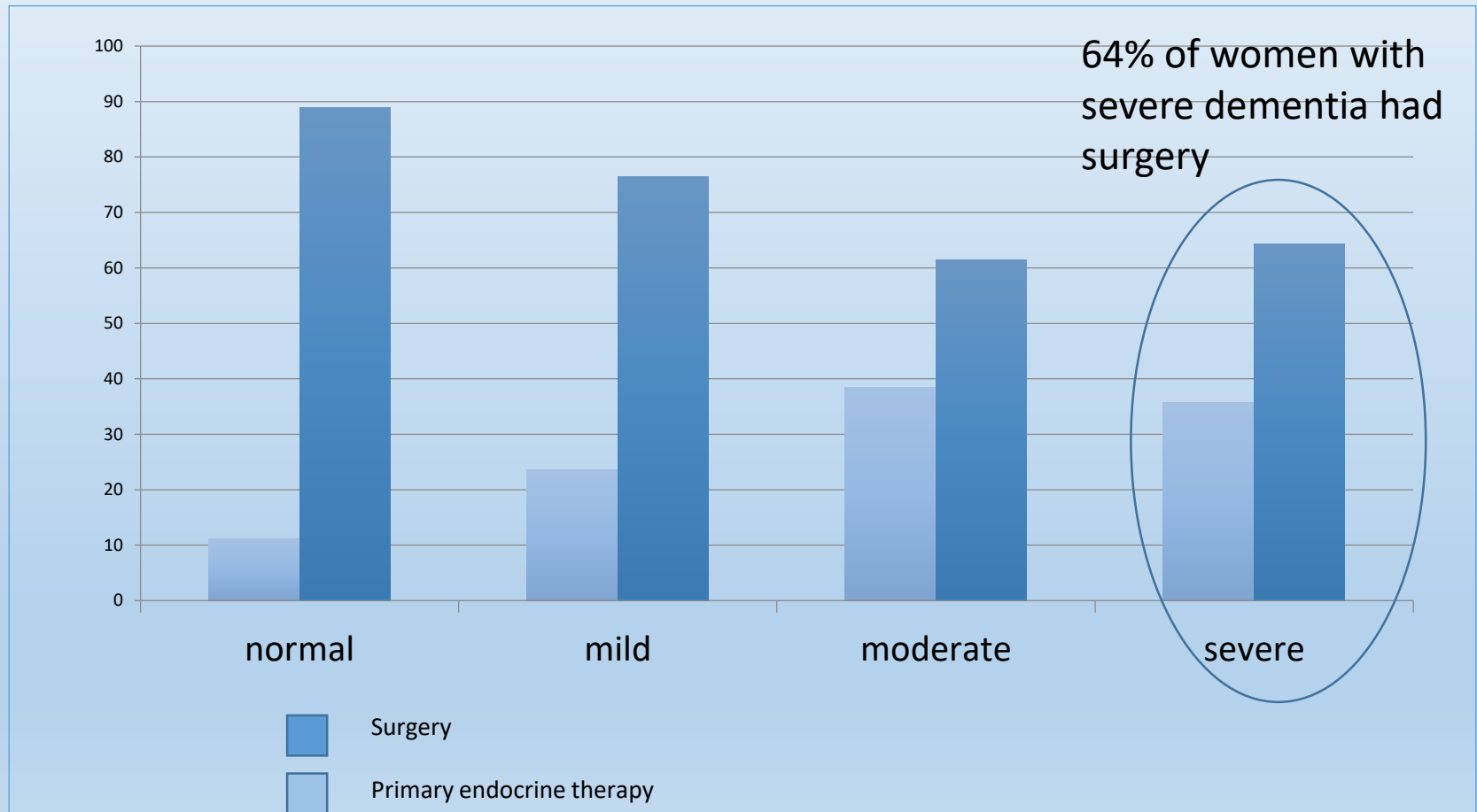
Late or Systemic Complications

Complications	Mastectomy only n=947	Reconstruction n = 34	Wide local excision n=1458	Therapeutic mammoplasty n=43
Wound Pain	26 (2.7%)	2 (5.9%)	24 (1.6%)	2 (4.7%)
Functional difficulty	25 (2.6%)	1 (2.9%)	14 (1%)	1 (2.3%)
Neuropathy	26 (2.7%)	0	15 (1%)	0
Lymphoedema	4 (0.4%)	0	4 (0.3%)	1 (2.3%)
Systemic complications				
Somnolence	18 (1.9%)	0	10 (0.7%)	1 (2.3%)
Allergic reaction	2 (0.2%)	0	0	0
Arrhythmia	4 (0.4%)	0	5 (0.3%)	0
DVT	3 (0.3%)	0	1 (0.07%)	0
Myocardial infarction	2 (0.2%)	0	2 (0.1%)	0
Stroke	0	0	1 (0.07%)	0
Atelectasis	1 (0.1%)	0	0	0

Mortality According to Dementia Category



Impact of Dementia on Treatment Choice



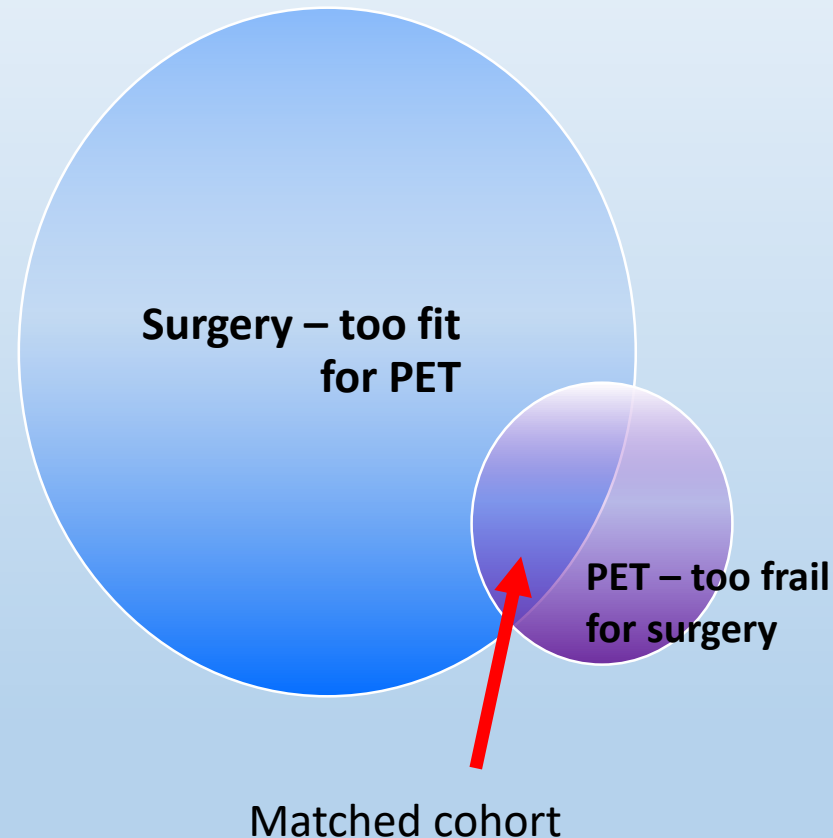
Quality of Life Impact of Surgery or PET

- Age Gap has collected QoL data at baseline, 1.5, 6, 12, 18 and 24 months
- EORTC validated tools for generic (C30), breast cancer specific (BR23) and elderly specific (ELD14) at all time points
- Data therefore adjusted for baseline variance and propensity score matched to adjust for fitness variation

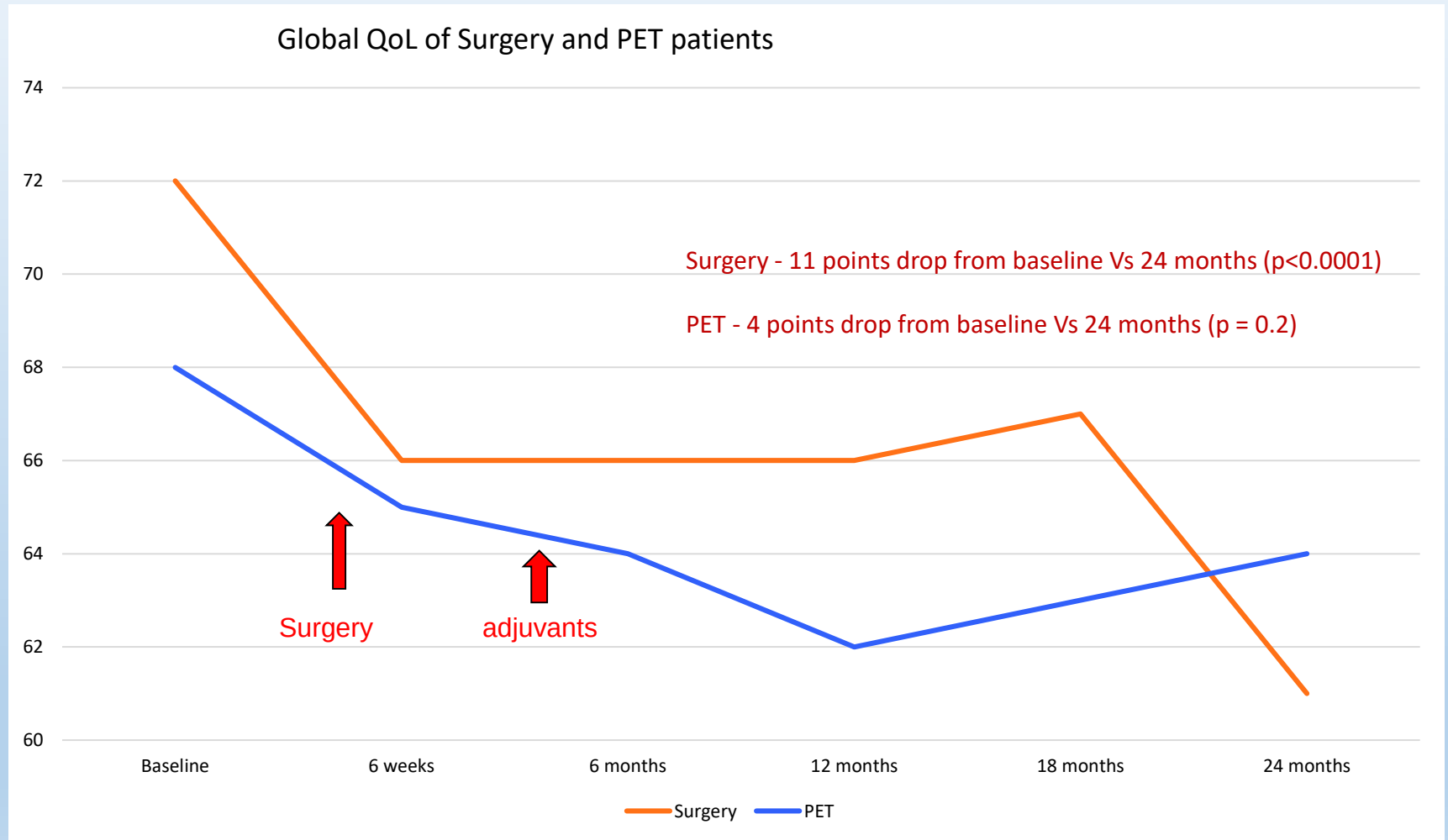
Propensity Matching

- Surgical and PET patients assigned propensity score
- 1:1 matching
 - Age
 - Co-morbidities
 - Frailty (Activities of Daily Living Score (ADL))
 - Pre-operative tumour size, grade and nodal status
 - Oestrogen receptor +ve

• 169 patients
matched



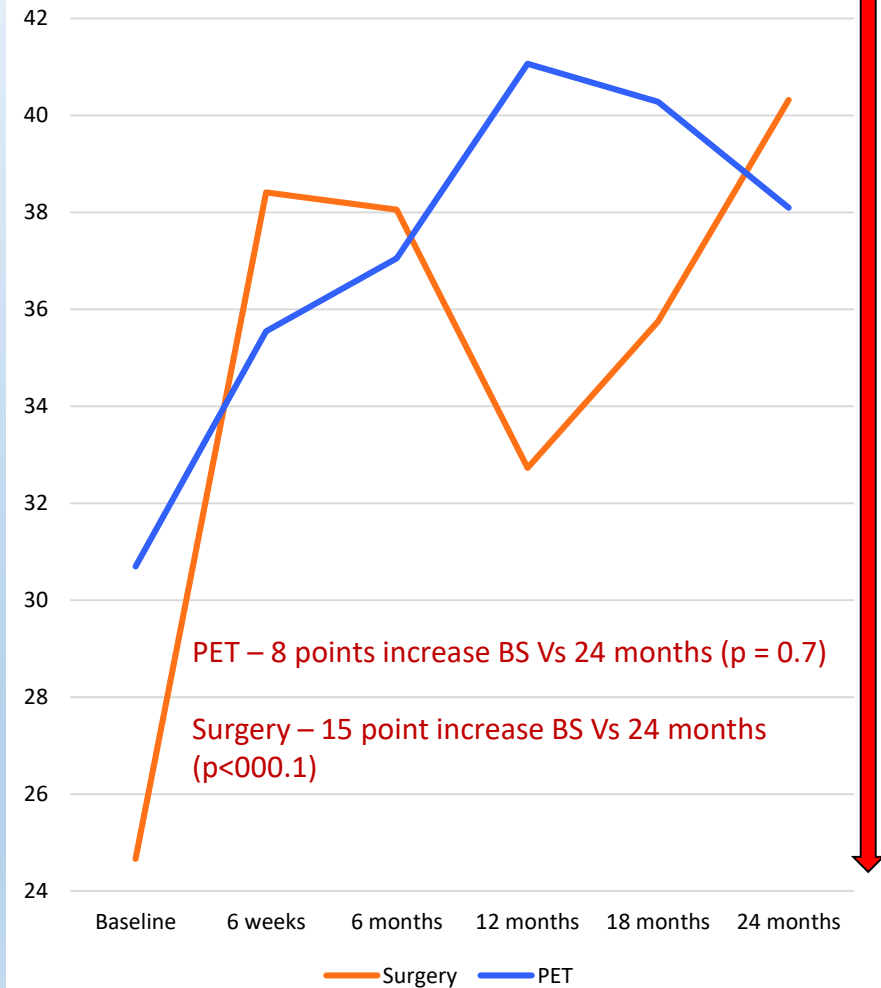
Comparative Analysis – Global QoL



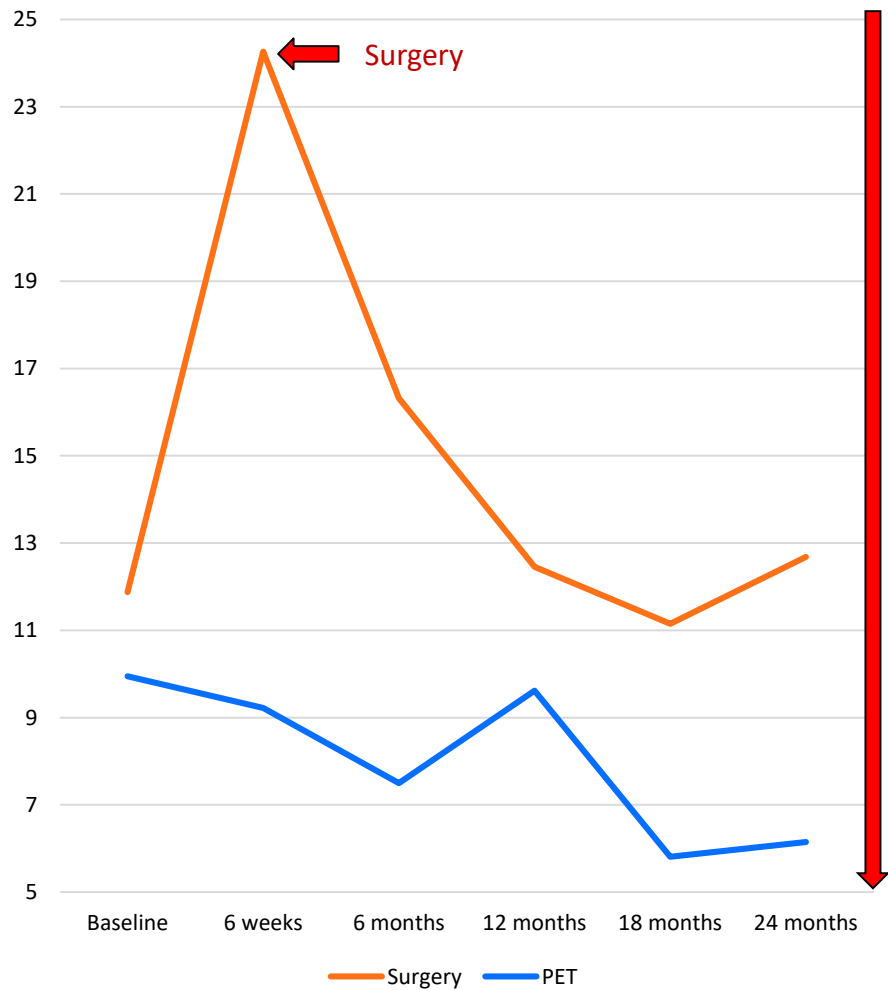
EORTC-QLQ-C30 - Pain



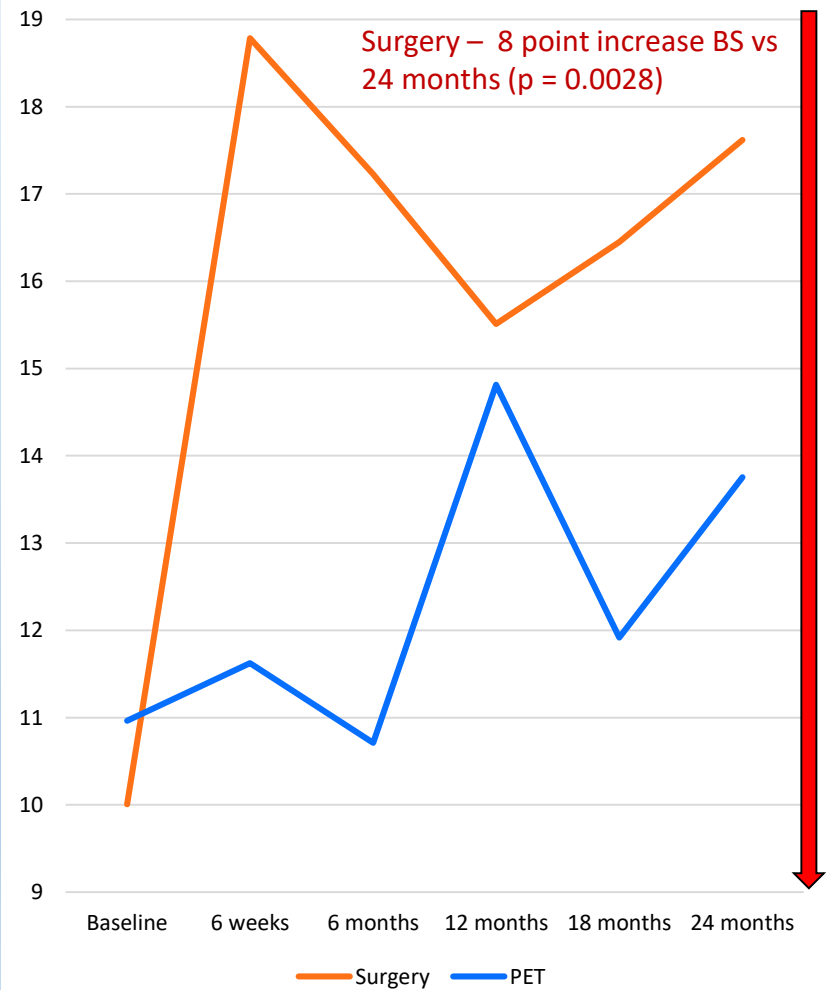
EORTC-QLQ-C30 - Fatigue



EORTC-QLQ-BR23 – Breast Symptoms



EORTC-QLQ-BR23 – Arm Symptoms



Mortality in the Matched Cohort at 2 Years

PET → 11

- Breast Cancer – 1
- Other – 5
- Unknown - 5

Surgery → 10

- Breast Cancer – 5
- Other - 5

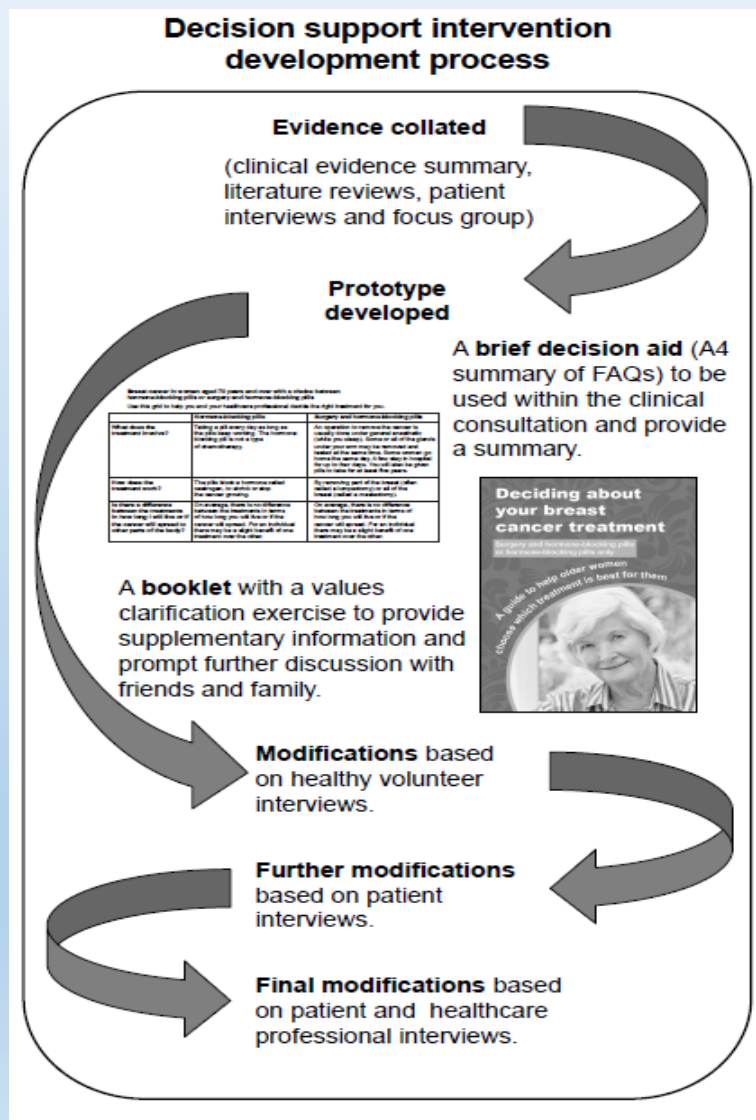
Conclusions

- In older frailer women, PET may have minimal detrimental effect on survival.
- In fit older women surgery enhances survival and is well tolerated in women selected for it
- This may be at the expense of Quality of Life in women of borderline fitness
- **For this borderline group, a decision support tool was developed and trialled as part of the project**

Age Gap Cluster Randomised Trial

- 50% of existing cohort sites trained in use of the tools and given access
- 50% usual care
- Outcome: Quality of life, treatment allocation and measures of decision regret.
- Study just closed. Recruited 1330 of 1328 cases. Analysis ongoing

Age Gap study Decision Support Development



2 booklets and 2 brief decision aids
(frequently asked questions)
developed using rigorous
methodology

Patient Preference and Adherence

Dovepress

open access to scientific and medical research

Open Access Full Text Article

ORIGINAL RESEARCH

Efficient development and usability testing of
decision support interventions for older women
with breast cancer

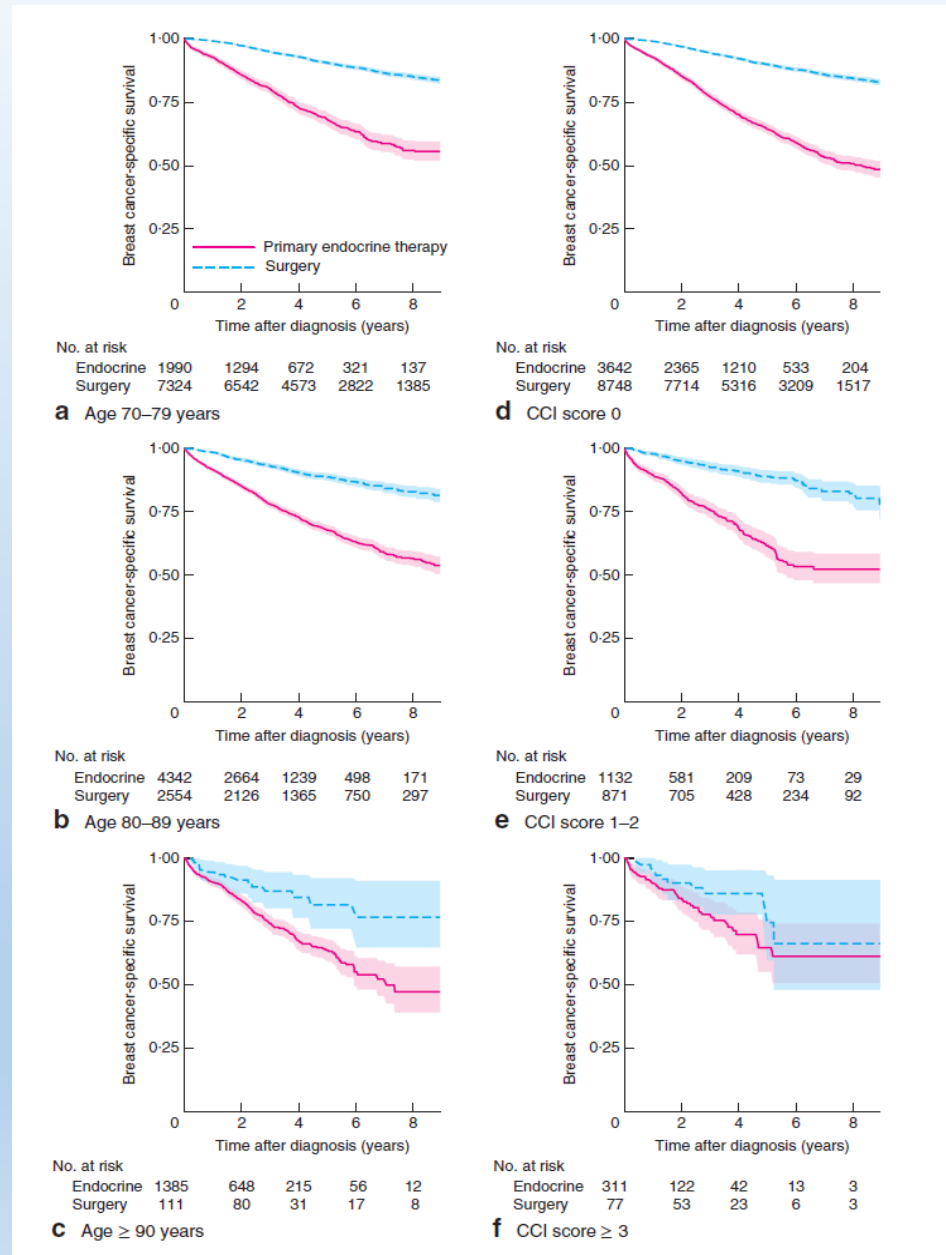
Primary Endocrine Therapy:

Outcomes by age and fitness cohort

Omission of surgery in older women with early breast cancer has an adverse impact on breast cancer-specific survival

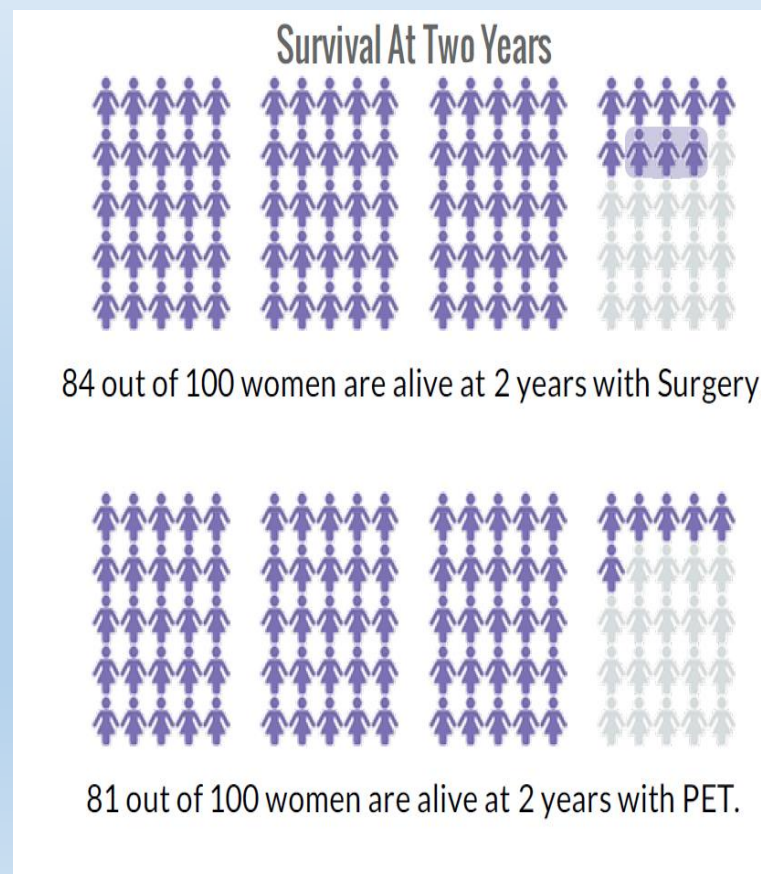
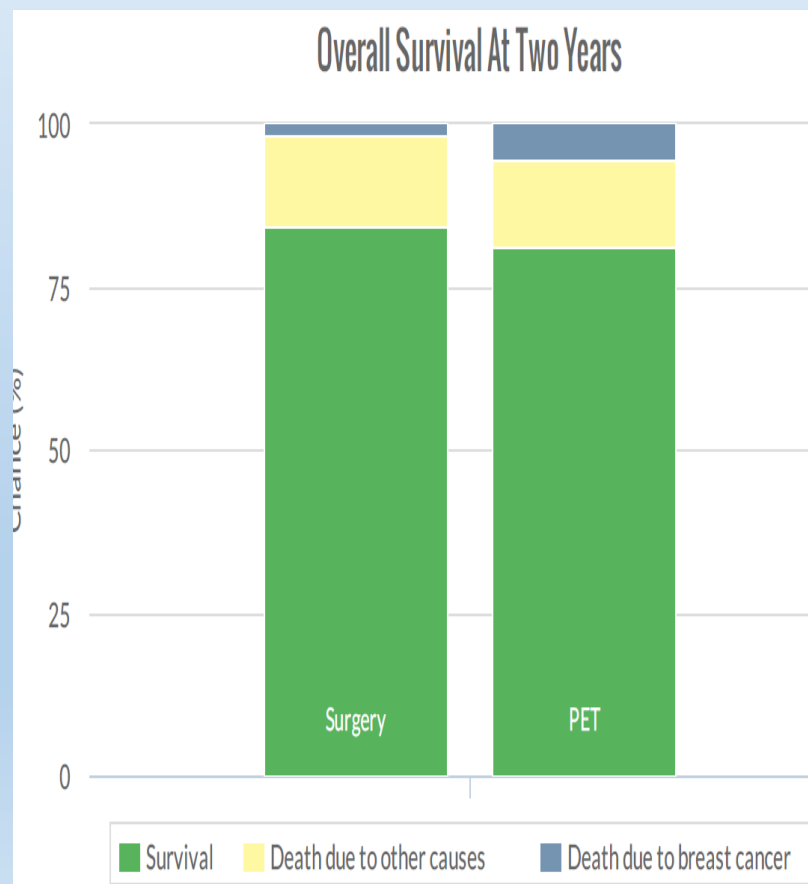
S. E. Ward¹, P. D. Richards¹, J. L. Morgan², G. R. Holmes¹, J. W. Broggio^{4,5}, K. Collins³, M. W. R. Reed⁶ and L. Wyld²

BJS 2018



Age Gap Decision Tool: Surgery vs PET

Age	Tumour grade	Tumour size	Disease node positive?	Comorbidities	Frailty
86	2	15mm	No	None	ADL Stage 0



Conclusions

- The Age Gap study has shown that recruiting older women to trials can be very successful
- Should give us evidence based guidelines on who to offer PET or surgery to and who to offer chemotherapy to.
- Data will be used to validate/calibrate the on line tool which will be made open access on the internet

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Acknowledgements

The Team

Lynda Wyld – University of Sheffield, Chief Investigator
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- The Age Gap team would like to thank
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