Eligibility Criteria*

1) Age 50 yrs or older

2) Invasive ductal carcinoma or ductal carcinoma in situ (no lobular cancer)

3) T1 and T2 tumors (<3.5cm in size) for invasive cancer, or <3.0cm for DCIS

4) No more than focal lymphovascular space invasion (LVSI) on core biopsy

5) Estrogen and progesterone receptor positive tumors only

6) No evidence of multicentric disease by clinical examination or imaging that may preclude excision with negative margins with a single lumpectomy

7) No clinical or radiologic evidence of axillary nodal involvement

8) Unilateral breast cancer only at the time of diagnosis (metachronous cancers on the contralateral side are eligible if they meet all other criteria)

9) No history of neoadjuvant systemic therapy to treat the current cancer

10) No prior history of ipsilateral breast cancer or radiation

11) No known BRCA 1 / 2 or other high risk mutation

Criteria for whole breast irradiation after IORT (following final pathology review)*

1) Margins positive or <2mm

2) More than focal LVSI found on final pathology

3) Invasive lobular carcinoma found on final pathology

4) Tumor involving axillary lymph nodes

5) Tumors > 3cm with extensive intraductal component (EIC) i.e. >25% of an invasive ductal cancer consisting of DCIS

*These are guidelines only. Final decisions regarding individual patient care will be guided by consensus following case presentation and group discussion at the Multidisciplinary Breast Tumor Board