COME HOME Breast Cancer Diagnostic/Therapeutic Pathway – V11, April 2015

**Required Structured Data Fields:**

- ICD9 Code
- Stage
- Staging Components
- Performance Status
- Treatment Type (Neoadjuvant, Adjuvant, Etc.)
- Treatment Intent (Curative, Palliative, Maintenance, Etc.)
- Reason for Discontinuing Therapy
- ER Status
- PR Status
- HER2/neu
- Tumor Size

**Diagnostic workup:**

**Required tests:**

- **Event: History and Physical**
  - **Timing:** At patient’s first visit and once per chemo cycle
  - **Population:** All patients
  - **Required:** Yes
  - **Data elements:** Physical Exam entered into structured field of EHR system (preferred) or progress note indicating history and physical

- **Event: Bilateral diagnostic mammogram**
  - **Timing:** Prior to diagnosis, yearly x 5 years
  - **Population:** All patients
  - **Required:** Yes
  - **Data Elements:** Bilateral mammogram performed as evidenced by procedure codes (if done internally) or the presence of a report

- **Event: Determination of ER/PR status**
  - **Timing:** At diagnosis, recurrence, progression to metastatic disease
  - **Population:** All patients (DCIS: ER only is acceptable)
  - **Required:** Yes
  - **Data Elements:** Procedure code or structured data element present in EHR
Event: Determination of HER2/neu status  
Timing: At diagnosis, recurrence, progression to metastatic disease  
Population: Stage I – IV, optional DCIS  
Required: Yes  
Data Elements: Procedure code or structured data element present in EHR

Event: Genetic counseling  
Timing: Offered within 6 months of first visit  
Population: Those with family history indicating high likelihood of hereditary breast and ovarian cancer (HBOC) (age less than 45, bilateral breast cancer, personal or family history of ovarian cancer, triple negative breast cancer with age of onset ≤ 67, personal or family history of male breast cancer)  
Required: Yes  
Data Elements: Encounter/referral to genetic counselor

Event: CBC, CMP  
Timing: Within 1 month of diagnosis  
Population: All patients  
Required: Yes  
Data Elements: Lab results present in EHR

Event: Liver function tests and alkaline phosphatase  
Timing: Within 6 months of starting therapy, then minimum of yearly  
Population: Stage I-IV, DCIS patients receiving tamoxifen or AI  
Required: Yes  
Data Elements: Lab results present in EHR

Event: Fertility counseling  
Timing: Prior to chemotherapy administration  
Population: Premenopausal women  
Required: Yes  
Data Elements: Evidence of fertility counseling in EHR

Event: Ejection fraction ≥ 50%  
Timing: Before beginning trastuzumab, and every 3 months on treatment  
Population: Patients receiving trastuzumab as part of adjuvant therapy  
Required: Yes  
Note: Ejection fraction should be measured using a consistent technique: either Echo or MUGA
Optional tests:

Event: Ultrasound
Timing: At diagnosis
Population: Those with abnormal mammograms, those receiving neoadjuvant therapy
Required: Optional
Data Elements: Procedure code or results present in EHR

Event: Breast MRI
Timing: At diagnosis
Population: those with known deleterious BRCA mutations, those receiving neoadjuvant treatment, surgeon/radiologist recommendation
Required: Optional
Data Elements: Procedure code or results of MRI present in record

Event: Bone scan
Timing: At diagnosis
Population: Localized bone pain, elevated alkaline phosphatase, or positive nodes. Optional for any stage III/IV patient
Required: Optional
Data Elements: Procedure code or results of bone scan

Event: Abdominal ± pelvic CT and/or MRI
Timing: At diagnosis
Population: Elevated alkaline phosphatase; abnormal liver function tests; abdominal symptoms; abnormal abdominal PE; Stage III - IV
Required: Optional
Data Elements: Procedure code or results of test

Event: Chest CT
Timing: At diagnosis
Population: If pulmonary symptoms present or Stage III – IV
Required: Optional
Data Elements: Procedure code or results of test

Event: Sodium fluoride PET/CT
Timing:
Population: Stage III-IV
Required: Optional
Data Elements: Procedure code or results of test
Event: FDG PET/CT
Timing:
Population: Stage III-IV, in place of bone scan/CT for any stage patient with contraindication to IV contrast dye
Required: Optional
Data Elements: Procedure code or results of test

Event: Oncotype DX
Timing: Prior to adjuvant chemotherapy
Population: N0 and N1micro pre and post-menopausal, N1 postmenopausal only, Her2 negative.
Required: Optional
Data Elements: Procedure code or results of test

Quality Measure(s):

Stage entered as structured data within one month of first visit.

Combination chemotherapy is considered or administered within 4 months (120 days) of diagnosis for women under 70 with AJCC T1c, or Stage II or III hormone receptor negative breast cancer.
DCIS:

- **Good Surgical Candidate** → Surgery +/- Radiation
- **Poor Surgical Candidate**

**ER/PR Status**
- **Positive** → Endocrine Therapy
- **Negative** → Surveillance

**Notes:** Double mastectomy patients are not candidates for endocrine therapy. Endocrine therapy should be discussed with all other patients for chemoprevention.

**Consideration:** Oncotype for radiation
Adjuvant Therapy:

<table>
<thead>
<tr>
<th>Tumor Size</th>
<th>pN0</th>
<th>pN1mi</th>
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<tbody>
<tr>
<td>( \leq 0.5 \text{ cm or micro-invasive} )</td>
<td>Positive</td>
<td>Positive</td>
</tr>
<tr>
<td>( 0.5 - 1.0 \text{ cm} )</td>
<td>Positive</td>
<td>Chemotherapy for HER2 positive disease (optional)</td>
</tr>
<tr>
<td>&gt;1.0 cm</td>
<td>Negative</td>
<td>Chemotherapy for HER2 negative disease (optional - consider Oncotype DX)</td>
</tr>
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<table>
<thead>
<tr>
<th>ER/PR Status</th>
<th>Endocrine Therapy</th>
<th>Surveillance</th>
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<tbody>
<tr>
<td>Positive</td>
<td></td>
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<tr>
<td>Negative</td>
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</tbody>
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**Oncotype DX Score Interpretation:**
- \(< 18\): Low score – No Chemotherapy
- \(18 - 30\): Intermediate Score - Chemotherapy Optional
- \(\geq 31\): High Score - Adjuvant Chemotherapy
Endocrine Therapy

The consensus from the group was to try for at least five years of tamoxifen or AI, with the possibility of extending to ten years, in keeping with developing evidence. Since this far outlasts the grant, the group decided not to offer more specific guidance.

Adjuvant/Neoadjuvant Chemotherapy

Non-trastuzumab containing regimens (HER2 negative cancers):

Preferred Regimens:

CH BR 1: Dose-dense AC with Neulasta (doxorubicin/cyclophosphamide) followed by paclitaxel every two weeks
CH BR 2: Dose-dense AC with Neulasta (doxorubicin/cyclophosphamide) followed by weekly paclitaxel
CH BR 7: AC q3 followed by weekly paclitaxel
CH BR 3: TC (docetaxel and cyclophosphamide)
CH BR 54: Paclitaxel/carboplatin followed by DDAC (neoadjuvant only)

Acceptable Regimens:

CH BR 5: FEC/CEF (cyclophosphamide/epirubicin/fluorouracil)
CH BR 6/CH BR 7: AC (doxorubicin/cyclophosphamide) q 2 or 3 weeks x 4 cycles
CH BR 6/CH BR 7 and CH BR 25: Standard AC followed by docetaxel
CH BR 4: TAC (docetaxel/doxorubicin/cyclophosphamide)

Optional Regimens:

CH BR 8: CMF (cyclophosphamide/methotrexate/fluorouracil)
CH BR 5: FEC/CEF followed by T (FEC/CEF followed by docetaxel or weekly paclitaxel)
CH BR 9: A followed by C followed by T
Trastuzumab containing regimens (HER2 positive cancers):

**Preferred:**
CH BR 10: AC followed by T plus concurrent trastuzumab
CH BR 11: TCH
CH BR 47: AC followed by T plus concurrent trastuzumab + pertuzumab
CH BR 48: TCH + pertuzumab

**Optional:**
CH BR 49: AC followed by docetaxel plus concurrent trastuzumab + pertuzumab
CH BR 50: FEC followed by pertuzumab + trastuzumab + docetaxel
CH BR 51: FEC followed by pertuzumab + trastuzumab + paclitaxel
CH BR 52: Pertuzumab + trastuzumab + docetaxel followed by FEC
CH BR 53: Pertuzumab + trastuzumab + paclitaxel followed by FEC
CH BR 43: Chemotherapy followed by trastuzumab sequentially
CH BR 14: AC followed by docetaxel + trastuzumab
CH BR 15: Taxotere/cytoxen q3 weeks x 4 cycles with trastuzumab

CH BR 40: Weekly taxol x 12 weeks w/ trastuzumab x 1 year for T1b, T1c, N0. (Reference: APT Trial- Published and presented in San Antonio. Dr. Weisberg will provide more information.)

Note: Pertuzumab-containing regimens only have supporting data in the neoadjuvant setting.
Systemic treatment for recurrent or Stage IV disease: ER and/or PR positive; HER2 positive or negative

1. Patients with visceral disease or requiring rapid response to treatment.
   - ER and/or PR Positive; HER2 Positive or Negative
   - Patients with indolent disease.
   - Chemotherapy for advanced disease. (See list)

2. Endocrine therapy for progressive disease.

Systemic treatment for recurrent or Stage IV disease: ER and PR negative or endocrine refractory; HER2 positive or negative

1. HER2 Positive
   - 1st Line Therapy for HER2 Positive Disease
     - Progression/Toxicity
   - Subsequent Therapy for HER2 Positive Disease
     - Progression/Toxicity

2. No Response to 3 Consecutive Regimens or ECOG ≥: Transition to Palliative Care

3. HER2 Negative
   - Chemotherapy for Advanced Disease
     - Progression/Toxicity
Subsequent Endocrine Therapy for Systemic Disease

Premenopausal women: ovary ablation/suppression and then follow postmenopausal guidelines
Postmenopausal women: the following medications, alone or in combination.

- Non-steroidal AI (anastrozole, letrozole)
- Steroidal AI (exemestane)
- Fulvestrant
- Tamoxifen or Toremifene
- Megestrol acetate
- Fluoxymesterone
- Evirolimus (second line or later, in combination with Tamoxifen or AI)

Chemotherapy Options for Recurrent or Stage IV Disease

**Single Agents:**

- CH BR 16: Doxorubicin (NCCN preferred)
- CH BR 17: Pegylated liposomal doxorubicin (NCCN preferred)
- CH BR 18: Paclitaxel (NCCN preferred)
- CH BR 19: Capecitabine (NCCN preferred)
- CH BR 20: Gemcitabine (NCCN preferred)
- CH BR 21: Vinorelbine (NCCN preferred)
- CH BR 22: Eribulin (NCCN preferred)
- CH BR 23: Cyclophosphamide
- CH BR 24: Carboplatin
- CH BR 25: Docetaxel
- CH BR 26: Albumin-bound paclitaxel
- CH BR 27: Cisplatin
- CH BR 28: Epirubicin
- CH BR 29: Ixabepilone
**Chemotherapy Combinations:**

- CH BR 31: CAF/FAC (cyclophosphamide/doxorubicin/fluorouracil)
- CH BR 5: FEC (fluorouracil/epirubicin/cyclophosphamide)
- CH BR 6/CH BR 7: AC (doxorubicin/cyclophosphamide)
- CH BR 32: EC (epirubicin/cyclophosphamide)
- CH BR 8: CMF (cyclophosphamide/methotrexate/fluorouracil)
- CH BR 33: Docetaxel/capecitabine
- CH BR 34: GT (gemcitabine/paclitaxel)
- CH BR 35: Gemcitabine/carboplatin
- CH BR 36: Ixabepilone/capecitabine (not included in NCCN)

Note: Use of bevacizumab is off pathway
**First-line Agents for HER2-positive disease:**

- CH BR 37: Pertuzumab + trastuzumab + docetaxel (NCCN preferred)
- CH BR 38: Pertuzumab + trastuzumab + paclitaxel (NCCN preferred)
- CH BR 39: Paclitaxel +/- carboplatin + trastuzumab
- CH 25 and CH BR 43: Docetaxel + trastuzumab
- CH BR 41: Vinorelbine + trastuzumab
- CH BR 42: Capecitabine + trastuzumab
- CH BR 43: Trastuzumab alone

**Agents for trastuzumab-exposed HER2-positive disease:**

- CH BR 44: Ado-trastuzumab emtansine (T-DM1) (NCCN preferred)
- CH BR 45: Lapatinib + capecitabine
- CH BR 42: Trastuzumab + capecitabine
- CH BR 46: Trastuzumab + lapatinib (without cytotoxic therapy)
- CH 25 and CH BR 43: Docetaxel + trastuzumab
- CH BR 41: Vinorelbine + trastuzumab
- CH BR 42: Capecitabine + trastuzumab
- CH BR 43: Trastuzumab alone
CH BR 1: DDAC - T q2w
Doxorubicin 60 mg/m^2 IV day 1
Cyclophosphamide 600 mg/m^2 IV day 1
Cycled every 14 days for 4 cycles
Followed by:
Paclitaxel 175 mg/m^2 IV day 1
Cycled every 14 days for 4 cycles

CH BR 2: DDAC - T q1w
Doxorubicin 60 mg/m^2 IV day 1
Cyclophosphamide 600 mg/m^2 IV day 1
Cycled every 14 days for 4 cycles
Followed by:
Paclitaxel 80 mg/m^2 IV day 1
Cycled weekly for 12 weeks

CH BR 3: TC
Docetaxel 75 mg/m^2 IV day 1
Cyclophosphamide 600 mg/m^2 IV day 1
Cycled every 21 days for 4 cycles

CH BR 4: TAC
Docetaxel 75 mg/m^2 IV day 1
Doxorubicin 50 mg/m^2 IV day 1
Cyclophosphamide 500 mg/m^2 IV day 1
Cycled every 21 days for 6 cycles

CH BR 5: FEC/CEF
Cyclophosphamide 75 mg/m^2 PO days 1-14
Epirubicin 60 mg/m^2 IV days 1 & 8
5-fluorouracil 500 mg/m^2 IV days 1 & 8
Cycled every 38 days for 6 cycles

CH BR 6: AC q2w
Doxorubicin 60 mg/m^2 IV day 1
Cyclophosphamide 600 mg/m^2 day 1
Cycled every 14 days for 4 cycles

CH BR 7: AC q3w
Doxorubicin 60 mg/m^2 IV day 1
Cyclophosphamide 600 mg/m^2 day 1
Cycled every 21 days for 4 cycles

CH BR 8: CMF
Cyclophosphamide 100 mg/m^2 PO days 1-14
Methotrexate 40 mg/m^2 IV days 1 & 8
5-fluorouracil 600 mg/m^2 IV days 1 & 8
Cycled every 28 days for 6 cycles

CH BR 9: A - C - T
Doxorubicin 60 mg/m^2 IV day 1
Cycled every 14 days for 4 cycles
Followed by:
Cyclophosphamide 600 mg/m^2 IV day 1
Cycled every 14 days for 4 cycles
Followed by:
Paclitaxel 175 mg/m^2 IV day 1
Cycled every 14 days for 4 cycles
CH BR 10: AC - T+ H
Doxorubicin 60 mg/m2 IV day 1
Cyclophosphamide 600 mg/m2 IV day 1
Cycled every 21 days for 4 cycles
Followed by:
Paclitaxel 80 mg/m2 IV weekly for 12 weeks
Trastuzumab 4 mg/kg IV with first dose of paclitaxel
Followed by:
Trastuzumab 2 mg/kg IV weekly to complete 1 year of therapy

CH BR 11: TCH
Docetaxel 75 mg/m2 IV day 1
Carboplatin AUC 6 IV day 1
Cycled every 21 days for 6 cycles
With:
Trastuzumab 4 mg/kg IV wk 1
Followed by trastuzumab 2 mg/kg IV for 17 wks
Followed by trastuzumab 6 mg/kg IV every 21 days to complete 1 year of therapy

CH BR 12: Docetaxel+H – CEF
Regimen removed from NCCN 1/2014

CH BR 13: T+H – CEF
Regimen removed from NCCN 1/2014

CH BR 14: AC then Docetaxel+ H
Doxorubicin 60 mg/m2 IV day 1
Cyclophosphamide 600 mg/m2 IV day 1
Cycled every 21 days for 4 cycles
Followed by:
Docetaxel 100 mg/m2 IV day 1
Cycled every 21 days for 4 cycles
With:
Trastuzumab 4 mg/kg IV wk 1
Followed by trastuzumab 2 mg/kg IV for 11 wks
Followed by trastuzumab 6 mg/kg IV every 21 days to complete 1 year of therapy

CH BR 15: Taxotere/cytoxan+H: Is anyone using this regimen?
Docetaxel 75mg/m2 day 1
Cyclophosphamide 600mg/m2 day 1
Trastuzumab 4mg/kg loading dose day 1 and 2mg/kg day 1, 8 and 15 during chemo
Followed by:
Trastuzumab 6mg/kg, every 21 days for the remainder of the year.
The chemo portion is 4 cycles at 21 days

CH BR 16: Doxorubicin
Doxorubicin 60-75 mg/m2 IV day 1, cycled every 21 days
Or:
Doxorubicin 20 mg/m2 IV weekly

CH BR 17: Peg-Doxorubicin
Peg-Doxorubicin 50 mg/m2 IV day 1, cycled every 28 days
CH BR 18: Paclitaxel
Paclitaxel 175 mg/m2 IV day 1, cycled every 28 days
Or:
Paclitaxel 80 mg/m2 IV day 1 weekly

CH BR 19: Capecitabine
Capecitabine 1000-1250 mg/m2 PO twice daily days 1-14
Cycled every 21 days

CH BR 20: Gemcitabine
Gemcitabine 800-1200 gm/m2 IV days 1, 8 and 15
Cycled every 28 days

CH BR 21: Vinorelbine
Vinorelbine 25 mg/m2 IV weekly

CH BR 22: Eribulin
Eribulin 1.4 mg/m2 IV days 1 and 8, cycled every 21 days

CH BR 23: Cyclophosphamide
Cyclophosphamide 50 mg PO daily on days 1-21
Cycled every 28 days

CH BR 24: Carboplatin
Carboplatin AUC 6 IV on day 1, cycled every 21-28 days

CH BR 25: Docetaxel
Docetaxel 60 – 100 mg/m2 IV day 1, cycled every 21-28 days
Or:
Docetaxel 40 mg/m2 IV weekly for 6 weeks, followed by 2 week rest, then repeat

CH BR 26: nab-Paclitaxel
nab-Paclitaxel 100 mg/m2 or 150 mg/m2 IV days 1, 8 & 15
Cycled every 28 days
Or:
nab-Paclitaxel 260 mg/m2 IV, cycled every 21 days

CH BR 27: Cisplatin
Cisplatin 75 mg/m2 IV on day 1, cycled every 21 days

CH BR 28: Epirubicin
Epirubicin 60-90 mg/m2 IV day 1, cycled every 21 days

CH BR 29: ixabepilone
Ixabepilone 40 mg/m2 IV day 1, cycled every 21 days

CH BR 30: Temozolomide
Removed 2/14/2014

CH BR 31: CAF/FAC
Cyclophosphamide 100 mg/m2 PO days 1-14
Doxorubicin 30 mg/m2 IV days 1 & 8
5-flurouracil 500 mg/m2 IV days 1 & 8
Cycled every 28 days

CH BR 32: EC
Epirubicin 75 mg/m2 IV day 1
Cyclophosphamide 600 mg/m2 IV day 1
Cycled every 21 days
CH BR 33: Docetaxel/Cape
Docetaxel 75 mg/m2 IV day 1
Capecitabine 950 mg/m2 PO twice daily days 1-14
Cycled every 21 days

CH BR 34: GT
Paclitaxel 175 mg/m2 IV day 1
Gemcitabine 1250 mg/m2 IV days 1 & 8
Cycled every 21 days

CH BR 35: Gem/Carbo
Gemcitabine 1000 mg/m2 on days 1 & 8
Carboplatin AUC 2 IV on days 1 & 8
Cycled every 21 days

CH BR 36: Ixabepilone/Cape
Ixabepilone 40 mg/m2 IV day 1
Capecitabine 1000 mg/m2 PO twice daily days 1-14
Cycled every 21 days

CH BR 37: Pertuzumab/Docetaxel + H
Pertuzumab 840 mg/m2 IV day 1 followed by 420 mg IV
Trastuzumab 8 mg/kg IV day 1 followed by 6 mg/kg IV
Docetaxel 75-100 mg/m2 IV day 1
Cycled every 21 days

CH BR 38: Pertuzumab/T + H
Pertuzumab 840 mg IV day 1 followed by 420 mg IV
Trastuzumab 8 mg/kg IV day 1 followed by 6 mg/kg IV
Paclitaxel 174 mg/m2 day 1
Cycled every 21 days

CH BR 39: T + Carbo + H
Carboplatin AUC 6 IV day 1
Paclitaxel 175 mg/m2 IV day 1
Cycled every 21 days
Trastuzumab 8 mg/kg IV day 1 followed by 6 mg/kg IV every 21 days

CH BR 40: T + H
Paclitaxel 175 mg/m2 IV day 1
Trastuzumab 8 mg/kg day 1 followed by 6 mg/kg
Cycled every 21 days
Or:
Paclitaxel 80-90 mg/m2 IV day 1 weekly
Trastuzumab 4 mg/kg IV day 1 followed by 2 mg/kg IV weekly

CH BR 41: Vinorelbine + H
Vinorelbine 25 mg/m2 IV day 1
Trastuzumab 4 mg/kg IV day 1 followed by 2 mg/kg IV
Cycled weekly
Or:
Vinorelbine 30-35 mg/m2 IV days 1 and 8
Trastuzumab 8 mg/kg IV day 1 followed by 6 mg/kg IV
Cycled every 21 days

CH BR 42: Cape + H
Capecitabine 1000-1250 mg/m2 PO twice daily days 1-14
Trastuzumab 8 mg/kg IV day 1 followed by 6 mg/kg IV every 21 days
Cycled every 21 days

CH BR 43: Trastuzumab
Trastuzumab 4 mg/kg IV day 1
Followed by 2 mg/kg IV weekly
Or:
Trastuzumab 8 mg/kg IV day 1
Followed by 6 mg/kg IV every 21 days

**CH BR 44: T-DM1**
Ado-trastuzumab emtansine 3.6 mg/kg IV day 1, cycled every 21 days

**CH BR 45: Lapatinib + Cape**
Lapatinib 1250 mg PO daily days 1-21
Capecitabine 1000 mg/m² PO twice daily days 1-14
Cycled every 21 days

**CH BR 46: Lapatinib + H**
Lapatinib 1000 mg daily
Trastuzumab 4 mg/kg IV day 1, followed by 2 mg/kg IV weekly
Or:
Trastuzumab 8 mg/kg IV day 1, followed by 6 mg/kg IV every 21 days

**CH BR 47: AC then T+ H+ Pertuzumab**
Doxorubicin 60 mg/m² IV day 1
Cyclophosphamide 600 mg/m² IV day 1
Cycled every 21 days for 4 cycles
Followed by:
Pertuzumab 840 mg IV day 1, followed by 420 mg IV
Trastuzumab 8 mg/kg IV day 1, followed by 6 mg/kg IV
Paclitaxel 80 mg/m² IV days 1, 8 and 15
Cycled every 21 days for 4 cycles
Followed by Trastuzumab 6 mg/kg IV every 21 days to complete 1 year of Trastuzumab therapy

**CH BR 48: TCH + pertuzumab (neo-adjuvant)**
Trastuzumab 8 mg/kg IV day 1, followed by 6 mg/kg IV
Pertuzumab 840 mg IV day 1, followed by Pertuzumab 420 mg IV
Docetaxel 75 mg/m² IV day 1
Carboplatin AUC 6 IV day 1
Cycled every 21 days for 6 cycles
Followed by:
Trastuzumab 6 mg/kg IV every 21 days to complete 1 year of Trastuzumab therapy

**CH BR 49: AC then Docetaxel+ H +Pertuzumab**
Doxorubicin 60 mg/m² IV day 1
Cyclophosphamide 600 mg/m² IV day 1
Cycled every 21 days for 4 cycles
Followed by:
Pertuzumab 840 mg IV day 1, followed by 420 mg IV
Trastuzumab 8 mg/kg IV day 1, followed by 6 mg/kg IV
Docetaxel 75-100 mg/m² IV day 1
Cycled every 21 days for 4 cycles
Followed by:
Trastuzumab 6 mg/kg IV every 21 days to complete 1 year of Trastuzumab therapy

**CH BR 50: FEC then Pertuzumab+ H+ Docetaxel**
Fluorouracil 500 mg/m2 IV day 1  
Epirubicin 100 mg/m2 IV day 1  
Cyclophosphamide 600 mg/m2 IV day 1  
Cycled every 21 days for 3 cycles  
Followed by:  
Pertuzumab 840 mg IV day 1, followed by 420 mg IV  
Trastuzumab 8 mg/kg IV day 1, followed by 6 mg/kg IV  
Docetaxel 75-100 mg/m2 IV day 1  
Cycled every 21 days for 4 cycles  
Followed by:  
Trastuzumab 6 mg/kg IV every 21 days to complete 1 year of trastuzumab therapy

CH BR 51: FEC then Pertuzumab+H+T  
Fluorouracil 500 mg/m2 IV day 1  
Epirubicin 100 mg/m2 IV day 1  
Cyclophosphamide 600 mg/m2 IV day 1  
Cycled every 21 days for 3 cycles  
Followed by:  
Pertuzumab 840 mg IV day 1 followed by 420 mg IV  
Trastuzumab 8 mg/kg IV day 1 followed by 6 mg/kg IV  
Docetaxel 75-100 mg/m2 IV day 1  
Cycled every 21 days for 4 cycles  
Followed by:  
Trastuzumab 6 mg/kg IV every 21 days to complete 1 year of trastuzumab therapy

CH BR 52: Pertuzumab+ H+ Docetaxel then FEC  
Neoadjuvant:  
Petuzumab 840 mg IV day 1 followed by 420 mg IV  
Trastuzumab 8 mg/kg IV day 1 followed by 6 mg/kg IV  
Docetaxel 75-100 mg/m2 IV day 1  
Cycled every 21 days for 4 cycles  
Followed by adjuvant:  
Fluorouracil 600 mg/m2 IV day 1  
Epirubicin 90 mg/m2 IV day 1  
Cyclophosphamide 600 mg/m2 IV day 1  
Cycled every 21 days for 3 cycles  
Followed by:  
Trastuzumab 6 mg/kg IV every 21 days to complete 1 year of trastuzumab therapy  

CH BR 53: Pertuzumab+ H+ T then FEC  
Neoadjuvant:  
Petuzumab 840 mg IV day 1 followed by 420 mg IV  
Trastuzumab 8 mg/kg IV day 1 followed by 6 mg/kg IV  
Paclitaxel 80 mg/m2 IV days 1, 8 and 15  
Cycled every 21 days for 4 cycles  
Followed by adjuvant:  
Fluorouracil 600 mg/m2 IV day 1  
Epirubicin 90 mg/m2 IV day 1  
Cyclophosphamide 600 mg/m2 IV day 1  
Cycled every 21 days for 3 cycles  
Followed by:  
Trastuzumab 6 mg/kg IV every 21 days to complete 1 year of trastuzumab therapy  

CH BR 54: Paclitaxil/Carbo then DDAC
Paclitaxel 80 mg/m2 IV weekly x 12 weeks  
Carboplatin AUC 6 IV every 3 weeks x 4 doses beginning with paclitaxel on week 1  
Followed by (1-3 weeks later):  
Doxorubicin 60 mg/m2 IV and cyclophosphamide 600 mg/m2 IV  
Cycled every 2 weeks for 4 cycles