Impact of Breast Imaging Nurse Navigation on Care Timeliness, Compliance and Retention

Melissa F. Tannenbaum, MD
Tejas S. Mehta, MD MPH
Alexander Brook, PhD
Jordana Phillips, MD
Rashmi Mehta, MD MBA
Linda Du, DO MPH

mftannen@bidmc.harvard.edu
@MelissaTannMD
linkedin.com/in/MelissaTannMD
Background

- First patient navigation program at Harlem Hospital (1990) started in response to disproportionate late-stage cancer presentation among African Americans with the goal to assist with cancer screening, diagnosis, follow-up, and treatment.¹

- Studies have looked at different metrics evaluating patient navigation programs for breast cancer (timeliness of care, treatment adherence, satisfaction). Most showed some benefit to having a navigation program.²-⁵

- **Initial practice at our institution:**
  - Radiologist communicates breast biopsy pathology results to PCP and PCP communicates results to patients.
  - PCP coordinates referral to breast care center if needed.

- **Challenges to initial practice:**
  - Time constraints for PCPs to coordinate results and PCPs referring outside our system.
  - Patient requests to transfer care for treatment to local competitors after receiving breast cancer diagnosis.
  - Two QA cases regarding patient miscommunication/ misunderstanding biopsy results.

- **Proposal for role of imaging Nurse Navigator to hospital leadership.**

The Journey of a Breast Biopsy Patient & Role of Nurse Navigator

Imaging

Biopsy

Pathology

Result Communication

Start by having mammogram, US, or MRI

Abnormality detected -> biopsy performed

Tissue is sent to pathology for diagnosis

Biopsy results are communicated to either:
1. Patient
2. Referrer in the Breast care center
3. Non-breast care referrer (PCP)

Role of Nurse Navigator

- Call patient day after biopsy (patient experience)
- Call patients with biopsy pathology results (timeliness and accuracy)
- Communicate biopsy results to referring provider
- Facilitate appointment at breast care center (longitudinal care, care retention)
- Communicate other recommendations - need for follow up, additional imaging (close loop)

A treatment plan is decided, and patient may ultimately go onto surgery

Breast care appt/ Initiation of care

The radiologist recommends referral to our institution’s Breast care center as needed (e.g. cancer/ atypia on core)
The purpose of our study was to determine the impact of breast imaging nurse navigation (NN) on patient care time metrics, compliance, and care retention at Beth Israel Deaconess Medical Center (BIDMC) after breast biopsy.
Methods: Retrospective Review of Image-Guided Core Needle Biopsies

GROUP 1: Pre- NN
498 patients

GROUP 2: Post- NN
526 patients

5/1/2017 10/31/2017 5/1/2019 10/31/2019

Imaging Nurse Navigator (NN) at BIDMC

Data Collected

- Demographic data: age, race, language, insurance, zip code
- Breast pathology: benign, atypia, cancer
- Time points for care: time of path results, communication of results, breast care clinic visit, surgery, other procedure
- Primary contact point with results: patient, referrer, other
- Follow-up recommendations and compliance with recs
- Retention in BIDMC system, transfer of care, lost to follow up

Exclusions: Patients with cancer diagnosis who transferred care to our institution; axillary LN biopsies for staging; cyst aspirations; abscesses. For patients with multiple biopsies, timeline starts with first biopsy.
Results: Demographics (n=1,024 patients)

- Mean Age = 54 years old (19.6-102 years)
- No significant difference in Race and Language between pre- and post- NN groups
- Significantly less Medicaid patients in the post- NN group (p=0.03). No difference in rates of private insurance.
Results: Result Communication and Compliance

- Shift in radiology communicating the biopsy results to the PCP pre-NN to communicating the results directly to the Patient post-NN (p<.0001)

- No significant difference and good compliance in both pre-NN and post-NN groups (p=1) (excluding cases where compliance was unable to be determined, NA)
## Results: Time Metrics

### Time Metrics for Breast Biopsy Patients

<table>
<thead>
<tr>
<th>Time Points</th>
<th>Pre NN (median days)</th>
<th>Post NN (median days)</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Path report to Result Communication</td>
<td>1</td>
<td>1</td>
<td>0.08</td>
</tr>
<tr>
<td>Result Communication to Initiation of Care</td>
<td>7</td>
<td>13</td>
<td>&lt;0.0001</td>
</tr>
<tr>
<td>Biopsy to Surgery</td>
<td>44</td>
<td>67</td>
<td>&lt;0.0001</td>
</tr>
</tbody>
</table>

- Median number of days from result communication to initiation of care and from biopsy to surgery in the post-NN group was significantly longer than in the pre-NN group
- No significant difference based on race, insurance, or language

### Core Biopsy to Surgery by Pathology Type

<table>
<thead>
<tr>
<th>Path</th>
<th>Pre NN (median days)</th>
<th>Post NN (median days)</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cancer</td>
<td>42</td>
<td>63</td>
<td>&lt;0.0001</td>
</tr>
<tr>
<td>No Cancer</td>
<td>50</td>
<td>84</td>
<td>&lt;0.0001</td>
</tr>
</tbody>
</table>

- Significantly longer time from biopsy to surgery in non-cancer vs. cancer cases
- Significantly longer time from biopsy to surgery in post-NN group than pre-NN group

**Incidence of Cancer:**
- Pre NN: 25%   Post NN: 23%
Results: Care Retention and Lost to follow up

No significant difference in retention of breast cancer patients in our institution pre- NN and post- NN (p=0.2)

- There were fewer patients lost to follow-up post-NN (p=0.10)
- Fewer cancer patients lost to follow up vs. non-cancer (p=0.03)

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### Care Retention of Breast Cancer Patients

<table>
<thead>
<tr>
<th></th>
<th>Pre- NN (n=27)</th>
<th>Post- NN (n=28)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transferred care</td>
<td>81% (22)</td>
<td>96% (27)</td>
</tr>
<tr>
<td>Lost to follow-up</td>
<td>19% (5)</td>
<td>4% (1)</td>
</tr>
</tbody>
</table>

### Cancer patients who left our system

<table>
<thead>
<tr>
<th></th>
<th>Cancer (n=55)</th>
<th>No Cancer (n=35)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transferred care</td>
<td>89% (49)</td>
<td>69% (24)</td>
</tr>
<tr>
<td>Lost to follow-up</td>
<td>11% (6)</td>
<td>31% (11)</td>
</tr>
</tbody>
</table>

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### All patients who left our system (Pre- and Post- NN)

- No significant difference in retention of breast cancer patients in our institution pre- NN and post- NN (p=0.2)
## Conclusions and Future Direction

### Conclusions

- Imaging Nurse Navigator shifted the communication of biopsy results to one in which radiology directly communicated with the **patient** (patient centered care).
- Longer times to next point of care and to surgery was unexpected and may be due to changes within the surgery/pathology departments and/or discontinuation of multidisciplinary clinics.
- No significant difference in care retention or compliance.

### Future Direction

- Evaluate factors contributing to increase in time from biopsy to next point of care and to surgery in post-NN group, such as surgeon availability.
- Survey patients regarding experience with Nurse Navigator and impact on choices.
- Survey radiologists and referrers regarding experience with the Nurse Navigator.