Impact of a Nurse Navigator on Genomic Testing and Timely Treatment Decision Making in Patients With Breast Cancer

Kelly A. McAllister, RN, BSN, OCN®, CBCN®, and Mary L. Schmitt, MS, APRN, FNP-BC, AOCNP®

The purpose of this quality improvement project was to define best practices for identifying appropriate patients for genomic testing and improve timeliness for ordering tests and reporting results. An interdisciplinary team of surgeons, radiologists, medical oncologists, and nurses agreed that the RN navigator would be the key person to facilitate timely access to genomic profiling.

At a Glance
• Genomic profiling has become the standard of care for patients with early-stage breast cancer to assist in developing individualized treatment plans.
• Nurse navigators can play a key role in improving timeliness of care.
• The APN-RN model led to improvements in turnaround time and compliance with the National Comprehensive Cancer Network’s recommendations for genomic testing.

Along with the diagnosis of breast cancer comes many decisions regarding treatment options. At Saint Joseph Hospital in Nashua, New Hampshire, a genomic/gene expression assay, Oncotype DX®, is used to further refine risk stratification and assist with decision making regarding chemotherapy as a treatment option for breast cancer (Paik et al., 2004). Genomic profiling is performed on early-stage, estrogen receptor-positive (ER+), HER2/neu-negative breast cancer to assist in developing individualized treatment plans.

Barriers were found in identifying eligible patients, timely ordering of tests, and distributing test results to the appropriate discipline. Oncotype DX testing was being ordered at the initial medical oncology consultation, about two weeks after surgery. This resulted in delays in initiating treatment, requiring patients to have additional appointments to discuss results and participate in joint decision making regarding treatment (see Figure 1).

The oncology nurse navigator has knowledge of the healthcare system, is a skilled communicator, and provides holistic care. The navigator empowers patients and families with education and knowledge, and facilitates timely access to appropriate healthcare resources (Desimini et al., 2011). Within the interdisciplinary team, the nurse navigator works as an advocate, care provider, educator, counselor, and facilitator to ensure that every patient receives comprehensive, timely, and quality healthcare services (Case, 2011; Swan & Koh, 2010). The role of the navigator can be that of an RN or an APN.

Literature Review

Breast cancer mortality has declined in the past 20 years. Rapid advancements in technology, molecular biology, and genetics have had a great impact on diagnosis and treatment and individualized treatment plans are on the rise (National Cancer Institute, 2015). Attention is now focused on who should not receive chemotherapy rather than who should receive it.

Tumors of the same histologic type may have individual mutations with different treatment responses. Tumor profiling is the evaluation of genomic expression, which is useful in identifying a cancer diagnosis, prognosis, and therapeutics (Dacic, 2011). Oncotype DX provides quantitative assessment of chemotherapy benefit and risk of distant recurrence, which increases confidence in creating individualized treatment plans (Genomic Health, 2015). The Oncotype DX assay gene panel and recurrence score were validated in the National Surgical Adjuvant Breast and Bowel Project B-14, demonstrating that the recurrence score can be used as an accurate estimate of the risk of distant recurrence and overall survival in individual patients (Paik et al., 2004). The National Comprehensive Cancer Network (NCCN, 2015) suggests the use of genomic profiling to further refine risks and benefits for adjuvant chemotherapy for women with early-stage ER+, HER2/neu-negative tumors measuring greater than 0.5 cm.

APN-RN Nurse Navigators

The nurse navigator is a key member of an interdisciplinary team (Freeman &
Rodriguez, 2011). Much of the literature available on navigation references the core vision of improving inconsistencies in the delivery of care by ensuring timely, consistent, high-quality, individualized care to all patients and overcoming barriers in care coordination by improving understanding and facilitating timely access (Freeman & Rodriguez, 2011; Kiely, 2014).

An RN navigator was identified as having a key role in the authors’ process improvement project. The process envisioned that a nurse navigator could access eligibility criteria for testing, ensure results were available at the initial consultation, and communicate pertinent information across departmental lines from the point of diagnosis to the beginning of treatment.

The APN understands and meets the needs of patients across the continuum of care from prevention and early detection to diagnosis, treatment, and survivorship (Institute of Medicine, 2010). APNs improve quality and continuity of care, improve access to services, and play an intricate role in patient navigation (Reid, Tanoue, Detterbeck, Michaud, & McCorkle, 2014).

Timely treatment increases survival and reduces the risk of metastases. Gagliato et al. (2014) found that women who started chemotherapy within 30 days of surgery had better outcomes in regard to survival and remaining disease free. Timely treatment also has a positive impact on the quality of care and the patient’s experience (McAuliffe, Danoff, & Shapiro, 2013). Although not well studied, treatment delays may adversely affect patients psychologically, socially, and economically (McAuliffe et al., 2013).

**Aim of the Project**

The aim of this project was to develop a timely, evidence-based process for the use of Oncotype DX test results to enhance decision making for women with early-stage, ER+, HER2/neu-negative breast cancer. The measures of success of this project were to (a) improve the turnaround time for ordering Oncotype DX, (b) improve the turnaround time for reporting results, and (c) comply with the NCCN recommendations to test eligible patients.

Ordering turnaround time was defined as the average number of days from surgery to the date the test is ordered. Reporting turnaround time was defined as the average number of days from surgery to the date the test result was reported.

**Interventions**

The authors implemented the APN-RN navigator practice model to improve practice. The RN navigator developed a tracking tool to screen and identify all patients appropriate for testing. The team was expanded to include an oncology APN to collaborate with the RN navigator. The APN was responsible for submitting the order when the final surgical pathology was available. The RN navigator scheduled the medical oncology appointments to occur after the test results were available and also was responsible for educating each patient about the test and the implications of results. The APN was responsible for ensuring the test results were in place for the medical oncology appointments.

**Evaluation and Limitations**

The RN navigator tracked all turnaround times and provider compliance with NCCN guidelines. The information was reported quarterly at the institution’s cancer committee meetings and annually during the Commission on Cancer accreditation review.

Limitations included the inability to bill for these navigation services; however, the benefits to patients outweighed this limitation. The patient identification and tracking process was manual and time consuming; however, the implementation of a new electronic medical record may be an opportunity to improve efficiency.

**Outcomes**

The implementation of the APN-RN navigator practice model has led to improvements in timeliness of care (ordering and reporting turnaround times), and better compliance with the NCCN (2015) recommendations for genomic testing. With the implementation of the new practice model, ordering turnaround time was reduced from 26.3 days to 11 days. Reporting turnaround time was reduced from 38 days to 20 days. Compliance with NCCN’s (2015) recommendations to perform Oncotype DX tests for eligible patients improved from 26% to 88% (see Figure 2). These outcomes show the impact an RN navigator can have in expediting testing to ensure timely initiation of treatment.

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**FIGURE 1. Comparison of the Genomic Testing Ordering Process**

<table>
<thead>
<tr>
<th>Old Process</th>
<th>New Process</th>
</tr>
</thead>
<tbody>
<tr>
<td>• A biopsy is positive for malignancy.</td>
<td>• A biopsy is positive for malignancy.</td>
</tr>
<tr>
<td>• The radiologist notifies patient of result.</td>
<td>• The radiologist notifies patient of result.</td>
</tr>
<tr>
<td>• A surgical consult is scheduled within seven days.</td>
<td>• A surgical consult is scheduled within seven days.</td>
</tr>
<tr>
<td>• Surgery is performed within two weeks.</td>
<td>• Surgery is performed within two weeks.</td>
</tr>
<tr>
<td>• Final pathology is available in 5–7 days.</td>
<td>• Final pathology is available in 5–7 days.</td>
</tr>
<tr>
<td>• Postoperative appointment is 7–10 days after surgery.</td>
<td>• The patient is evaluated for Oncotype DX by the breast cancer center navigator.</td>
</tr>
<tr>
<td>• The patient is referred to medical oncology.</td>
<td>• Oncotype DX is ordered by the breast cancer center advanced practice nurse.</td>
</tr>
<tr>
<td>• The patient is seen by medical oncology within 1–2 weeks.</td>
<td>• Patient is referred to medical oncology.</td>
</tr>
<tr>
<td>• Oncotype DX® is ordered by medical oncology.</td>
<td>• The patient is seen by medical oncology within 1–2 weeks.</td>
</tr>
<tr>
<td>• The turnaround time for reporting results is 38 days.</td>
<td>• The Oncotype DX score is available for treatment planning.</td>
</tr>
<tr>
<td>• A follow-up appointment is needed for treatment planning.</td>
<td>• The turnaround time for reporting results is 20 days.</td>
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*Note: The need for a follow-up appointment is eliminated in the new process, decreasing the time to treatment.*
and demonstrate the importance of this role within the team.

The role of the navigator was that of a bachelor’s-prepared RN. Through a team effort, the RN navigator and APN improved the care of their patients. Throughout this experience, the team concluded that the navigator should be an APN. The success of this project has led to a proposal to redesign the current RN Breast Care Center Navigator role to that of an APN. The APN can order the test and communicate the results to the patient and the medical oncologist.

Conclusion

This initiative clearly demonstrates the impact of the APN-RN Navigator model on increasing the timeliness of breast cancer care in the authors’ setting. Although the model used a bachelor’s-prepared RN and an APN, the role could be performed solely by an APN who has navigation competencies. The integration of genomics into the care of patients with cancer is rapidly changing the way healthcare providers identify, screen, diagnose, and treat disease. Oncology nurses need to advance their knowledge of genomics and maintain competence with the continuing advancements in this field because they often are in the position of educating patients and families on the impact genomics has on their cancer care.

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References


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