Regional Variation in Guideline Concordance for Women with Triple-Negative and HER2+ Breast Cancer in Nova Scotia

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INTRODUCTION

- Nova Scotia has the **highest breast cancer specific mortality** in Canada[1].
- Triple-negative (TNBC) and HER2+ breast cancers (BC) are aggressive subtypes of the disease, associated with **poor outcomes**[2-4].
- **Since 2020, neoadjuvant systemic therapy (NAT) has been recommended** for these high-risk BC subtypes when tumor size at diagnosis is over 2 cm[5-9].

AIM

- To **quantify the proportion** of patients with resectable TNBC and HER2+ BC **that received guideline concordant NAT therapy**, while examining current cancer care practices in Nova Scotia (NS) by healthcare zone.

METHODS

Data: Adult women (>18 years) from the NS breast imaging clinical information pathway, diagnosed with non-metastatic TNBC or HER2+ BC; 2021-2023.
Analysis: Descriptive summaries and comparison of proportions (chi-squared) by administrative zones (Figure 1).

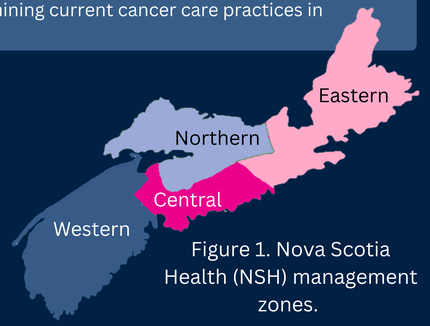


Figure 1. Nova Scotia Health (NSH) management zones.

RESULTS

Table 1. Characteristics of women diagnosed with triple negative or HER2+ breast cancer in Nova Scotia in 2021-2023 by Nova Scotia Health (NSH) management zones.

Characteristics	Total (n=291)	Central (n=130)	Eastern (n=59)	Northern (n=54)	Western (n=48)
Age at diagnosis (yrs), median (IQR)	59 (48-67)	59 (48-67)	60 (52-68)	59 (48-68)	59 (46-64)
Screen detected, n (%)	68 (23.4)	29 (22.3)	13 (22.0)	15 (27.8)	11 (22.9)

- In 2021-2023, **291 individuals** diagnosed with HER2+ (n=147) or TNBC (n=144) were theoretically eligible (tumor size ≥ 2 cm & < 80 years old) for NAT.
- Of those eligible, **188 (65%) received NAT**; 71 (37%) experienced a pathological complete response (pCR) after NAT.
- Overall, guideline concordant care has increased over time (61%, 2021 to 73%, 2023).

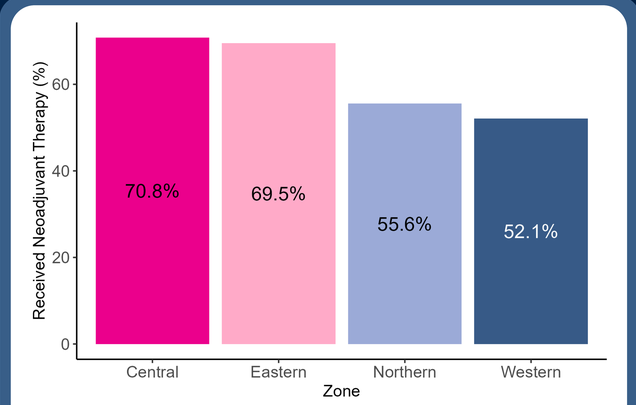


Figure 2. Percentage of theoretically eligible patients that received NAT by zone.

The receipt of **NAT differed across the zones** (p=0.046). Guideline concordance was highest in the central zone, and lowest in the western zone (Figure 2).

Proportions of pCR were consistent across the zones (% range: 34.2%-40.0%).

Stratifying by receptor type, receipt of NAT was lowest in the northern zone for HER2+ BC, but lowest in the western zone for TNBC (Figure 3). Guideline concordant care has not significantly increased over time by either subtype (HER2+: p=0.09; TNBC: 0.83) (Figure 4).

DISCUSSION

- Our findings suggest that system level variables may impact the receipt of NAT in Nova Scotia.
- The **administrative zones with the highest receipt** of NAT (central and eastern) are the two regions in Nova Scotia with a dedicated **cancer center**.
- Dedicated cancer center infrastructure could significantly enhance patient navigation and access to centralized multidisciplinary care, which may improve the likelihood of guideline concordance[10].

CONCLUSION

- There are regional **disparities in the adherence to NAT guidelines** for TNBC and HER2+ breast cancers.
- **Interventions addressing care coordination** and provision, such as nurse navigators, may mitigate future regional care disparities, **where dedicated cancer centers are not feasible**[11].
- Future efforts should focus on strategies to improve NAT guideline concordance, which will improve outcomes for NS breast cancer patients.

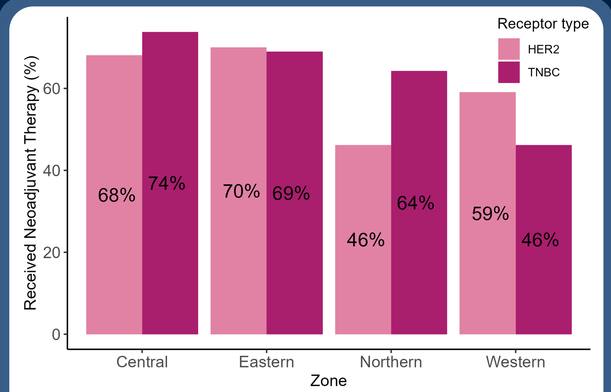


Figure 3. Percentage of theoretically eligible patients that received NAT by tumor receptor type and zone.

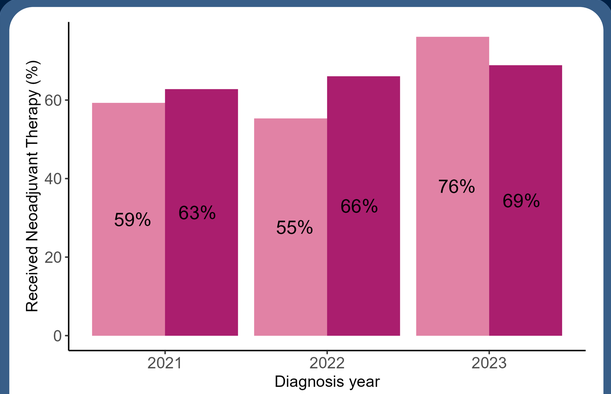


Figure 4. Percentage of theoretically eligible patients that received NAT by tumor receptor type and diagnosis year.

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References