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Impact of a Protocol Implementation on Identification and Referral of Women At-Risk for Hereditary Breast Cancer

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Significance of Problem

- Breast cancer is the leading new cancer diagnosis & 2nd highest cause of cancer death in American women (American Cancer Society, 2020)
- Hereditary breast cancer is often caused by mutations in the BRCA 1 or 2 genes, with an associated 5 to 10-fold increase in breast cancer risk (Mayo Clinic, 2019)
- 10% of individuals with a gene mutation are aware of this diagnosis (Drohan et al., 2012)
- The USPSTF issued a Grade B recommendation & advised use of a risk assessment tool for identifying women at high-risk, so appropriate referrals can be provided (Nelson et al., 2019)

PICOT Question

In women cared for in an obstetrical & gynecological practice (**P**) how does utilization of a breast cancer genetics referral screening tool (**I**) as compared to the current standard of care of collecting & reviewing family history in patients' EMR (**C**) allow women at increased risk for hereditary breast cancer to be appropriately identified and referred for genetic counseling (**O**) within a twelve-week time frame (**T**)?

Review of Literature

Search Terms: (1) "breast neoplasm" or "breast cancer" and (2) "family history" or genetic or hereditary or "high risk" or inherited or predisposition and (3) apprais* or "risk assessment" or tool* and (4) refer*
Inclusion Criteria: English, female, published 2012-2019, academic journal, scholarly/peer reviewed
Exclusion Criteria: Only women with history of breast cancer, breast cancer tumor gene testing, breast cancer risk perception, risk tool used during mammography for ordering MRIs, chemoprevention
Accepted: 10 pieces of evidence were appraised (829 yielded from 6 databases, 100 reviewed, 10 duplicates)

Synthesis of Evidence

EVIDENCE SUMMARY			
Level	**Total**	**Quality**	**Design**
I	2	A (1) B (1)	systematic review of RCTs (1), randomized controlled trial (1)
II	1	B (1)	controlled trial without randomization (1)
III	5	A (2) A/B (1) B (2)	pilot exploratory study (1), demonstration project (1), qualitative study (1), systematic review of combination of studies (1), cross-sectional study (1)
IV	2	A (1) B (1)	professional organization clinical practice guideline (1), evidence summary (1)

The Evidence Level and Quality guide from the Johns Hopkins Nursing Evidence-Based Practice was used to appraise the evidence (Dang & Dearholt, 2017)

Decision to Change Practice

- Breast Cancer Genetics Referral Screening Tool (B-RST™) received a high quality rating by USPSTF for assessing hereditary breast cancer risk (Nelson et al., 2019)
- B-RST™ Version 3.1 can be integrated in the EMR, has documented ease of use, & covers 1st & 2nd degree family history of breast & ovarian cancers, male breast cancer, & Ashkenazi Jewish heritage (Belcross et al., 2019)
- Offering medical management options to this at-risk group can promote breast cancer prevention or early detection to positively affect health outcomes (ACOG, 2019; Kiely & Schwartz, 2014)

Implementation

- **Setting:** Ob/Gyn practice with 5 offices in a Midwestern state
- **Providers:** 9 total, included 3 each of CNMs, NPs, and physicians
- **Time Frame:** 12 weeks
- **Inclusion Criteria:** > 18 y/o, routine gyne exam or new patient appt
- **Exclusion Criteria:** < 18 y/o, impaired mental capacity (dementia, mental retardation), appointment type other than those listed above, previously performed
- **Procedure:** B-RST™ assessment performed by medical assistants (MAs) & reviewed by the provider with referrals ordered accordingly
- **EBP Protocol:** Management advised for B-RST™ results:
  (1) NEGATIVE-AVERAGE RISK – monthly breast self examination & mammogram at appropriate age & interval
  (2) NEGATIVE-MODERATE RISK – as above & referral to the High Risk Breast Clinic (HRBC)
  (3) POSITIVE-HIGH RISK – as above & referral to genetics
- **Data Collection:** Entering B-RST™ results in EMR, reviewing EMR populated reports, & performing EMR chart audits
- **Pre-implementation Group:** Demographics & total referrals to HRBC & genetics for patients meeting inclusion criteria as above (N = 880) for the same 12-week time period one year prior were obtained for comparison
- **EBP Model:** Iowa Model's 7 steps guided this EBP project (2017)

Evaluation

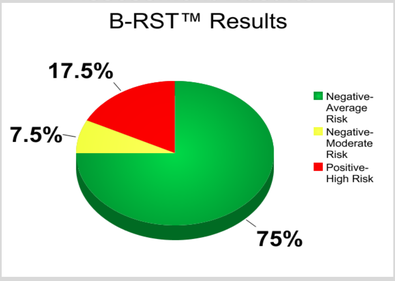
Primary Outcomes:
1. Identify women at-risk
2. Refer women at-risk

Secondary Outcomes:
1. HRBC referral performance
2. Genetics referral performance

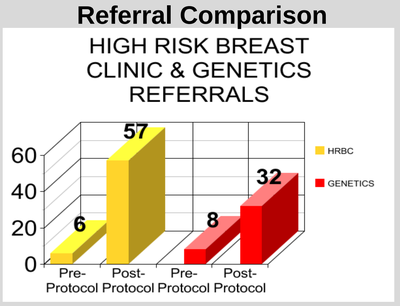
- **Eligible:** *N* = 1253
- **Screened:** *n* = 994
- **Overall Protocol Adherence:** 79.3% - achieved goal of ≥ 75%
- **HRBC Candidates:** *n* = 249
- **Genetics Candidates:** *n* = 174
- **HRBC Referrals Provided:** *n* = 57, 22.9%
- **Genetics Referrals Provided:** *n* = 32, 8.4%
- **HRBC Consultation Completed:** *n* = 8 (14.0%)
- **Genetic Consultation Completed:** *n* = 7 (21.9%)
- **HRBC Total Referrals Pre- to Post-Implementation:↑** 51
- **Genetics Total Referrals Pre- to Post-Implementation:** ↑ 24

Evaluation

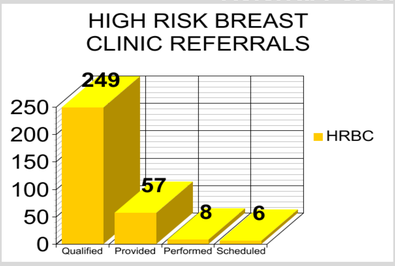
Assessment Results

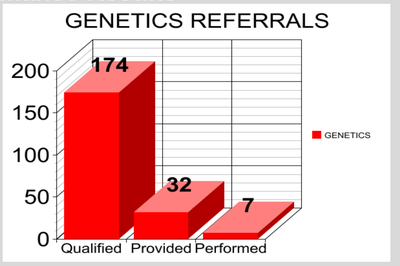


Referral Comparison



Referral Performance Results





Statistical Analyses

- **Chi-Square Test for Independence:** Pre- & post-implementation group demographic variables were independent, indicating sampling representative of office population for age, appt type, insurance, race, & religion
- **Factorial ANOVA:** Significant effects with increases in referrals to HRBC & genetics with providers using the B-RST™ to guide decision-making

ANOVA RESULTS	df (effect, error)	*F* value	*p* value
HRBC Referral			
Provider	6, 1860	9.24	<.001
Group	1, 1860	22.01	<.001
Provider & Group	6, 1860	9.23	<.001
Genetics Referral			
Provider	6, 1860	5.36	<.001
Group	1, 1860	10.14	<.001
Provider & Group	6, 1860	6.46	<.001

Group = Pre- or Post-Implementation
Statistical significance at $p < .05$

Conclusion

- Use of the B-RST™ was an effective method at an Ob/Gyn office setting for identifying & providing referrals to women at-risk for hereditary breast cancer
- Continued B-RST™ use & improved participant referral performance necessary to support overall goal of medical management for promoting optimal health outcomes

Recommendations

- **EBP Project Site:** (1) Perform B-RST™ once yearly for all patients, (2) Improve referral provision rates & document if HRBC &/or genetics referrals were offered, accepted, &/or declined, & (3) Provide patient reported reasons for a referral being declined to aid in improving participation rates
- **Health Care Community:** (1) Educate nursing/APRN/PA/medical students & health care providers about hereditary breast cancer risk & use of the B-RST™ & (2) Recognize & address barriers for providers ordering referrals & patients performing these consultations

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