Expanding the reach of germline genetic testing: Use of web-based risk assessment to inform medical management amongst patients at breast and imaging centers

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BACKGROUND

Patient Risk Stratification Challenges

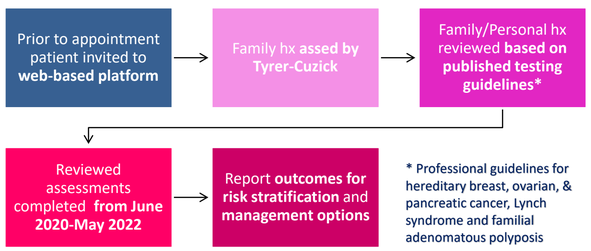
- Identification of individuals at increased breast cancer risk is key for:
  - Reducing risk of cancer
  - Providing early diagnosis of cancer
- Under identification of individuals with increased breast cancer risk is well recognized
- Common roadblocks to an effective program include
  - Complexity of germline genetic testing criteria
  - Lack of systematic framework within key healthcare settings
  - Difficulty performing robust risk assessment on all patients.

Digital Platform Solution

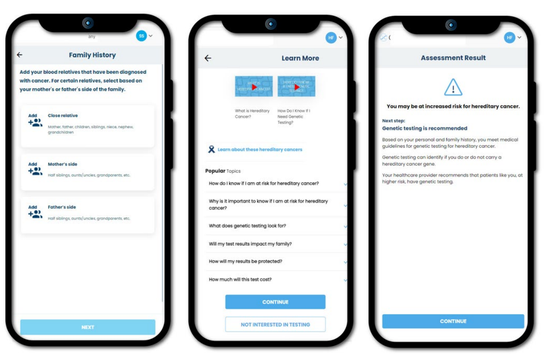
- Breast and imaging centers are ideal sites for patient identification
  - Positioned to maximize breast cancer risk management
  - Immediate availability of surveillance and diagnostic tools
- Data from centers using a patient-facing digital platform
  - Offered universally to all patients presenting for initial consult or annual mammogram
  - Framework to collect personal and family health information
  - Assess breast cancer risk using Tyrer-Cuzick (version 8.0) risk algorithm
  - Report genetic testing eligibility based on current professional guidelines.

METHODS

Figure 1: Retrospective Study

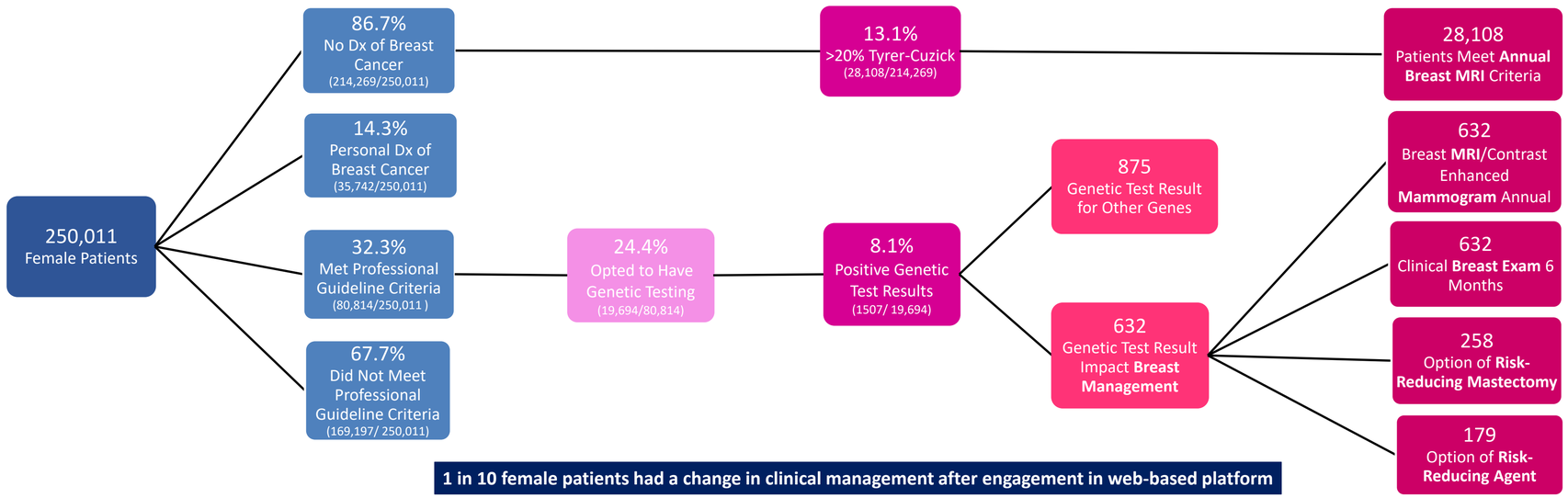


Web-Based Platform: Patient Assessment



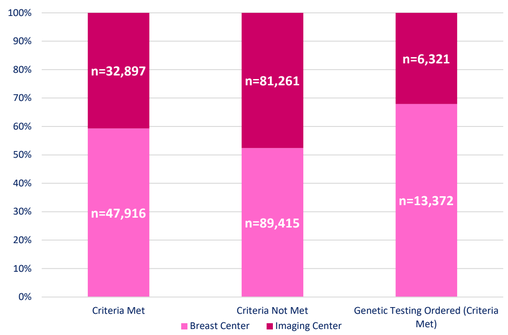
RESULTS

Figure 2: Clinical Impact on Management of Patient in Breast and Imaging Centers



1 in 10 female patients had a change in clinical management after engagement in web-based platform

Figure 3: Assessment Completion & Genetic Testing Follow Through



BC had 27.9% of patients pursue genetic testing vs 19.2% of patients at IC

Figure 4a: Breakdown of Positive Genetic Testing Results

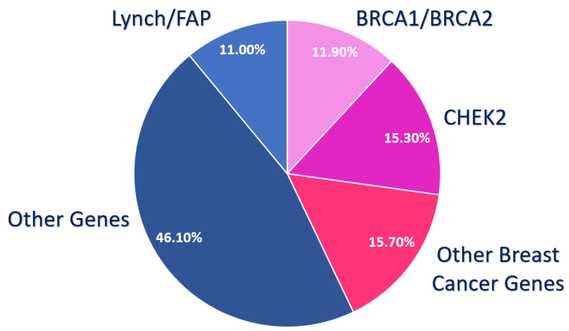
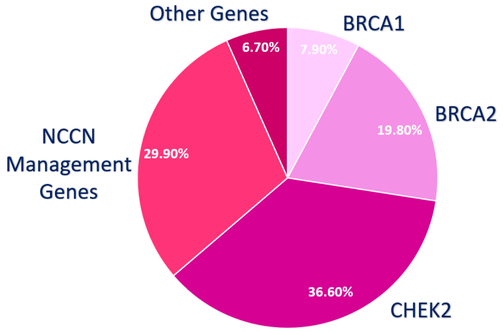


Figure 4b: Breakdown of Positive Genetic Testing Results for Breast Cancer Genes



41.9% of positive results had an impact on breast cancer risk management options

TAKE-HOME POINTS

- **Universally offered web-based assessment tool provided a standardized workflow** to enable all patients an opportunity for breast cancer risk assessment and germline genetic testing
- Roughly, **1 in 10 female patients will have an updated cancer management plan** after risk stratification based on Tyrer-Cuzick risk algorithm and genetic testing results
- Breast cancer and imaging centers can use **digital platforms as a scalable opportunity to identify individuals to lead to improved prevention and early treatmen**t of individuals with cancer predisposition