Title: If we build it patients will come: A healthcare system's approach to improve identification of at-risk individuals, increase genetic counseling referrals, and build patient management using a digital tool and EMR

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Introduction: There is widespread under-identification of individuals at hereditary cancer risk despite national guidelines calling for screening personal health history (PHx) and family health history (FHx) for individuals who would benefit from genetic counseling/testing. Many health care providers report barriers to addressing risk assessment, including difficulties keeping up with medical guidelines, challenges gathering family history information from patients, and time constraints. Additional barriers are triaging patients to genetic counseling and developing standardized patient management in the EMR. Here we highlight TriHealth hospital's programmatic approach to risk stratification using a digital platform and modules in the EMR to improve at-risk patient management.

Methods: From February 2021 to March 2023, fifteen sites implemented the CARE ProgramTM: a web-based risk-stratification tool is sent to individuals before standard ambulatory appointments to assess their lifetime risk for breast cancer based on the Tyrer-Cuzick (version 8.0) risk algorithm and National Comprehensive Cancer Network (NCCN®) genetic testing criteria. Retrospective data was pulled from patients seen between February 2021 through March 2023. The outcome measures included percentage of individuals who completed the risk-assessment, met genetic testing criteria, pursued germline genetic testing, and referrals to genetic counseling.

Results: A total of 11,537 individuals were invited for risk assessment through the CARE ProgramTM; of which 8,787 (76.16%) individuals completed the assessment. Overall, 1,791 (20.38%) met genetic testing criteria and 1,470 individuals had a ≥20% lifetime risk of breast cancer. A total of 559 (32.18%) patients were referred to genetic counseling, compared to 91 patients from 2018 to 2020 (a more than 500% increase), and 576 (40.2%) were referred to a High-Risk Breast Program. 488 patients completed genetic testing; 326 (18.78%) patients at their gynecology visit and 162 (9.32%) at a genetic counseling appointment. Of all patients that completed testing, 41 had a positive test result and 28 of those results recommend more frequent cancer screenings.

Summary: TriHealth has successfully built an EMR-integrated comprehensive, digital risk stratification program to standardize access to genetic testing/counseling and identify high-risk patients. The precision oncology program allows for tailored patient management and potential to increase early cancer detection.