Computer-Based Clinical Decision Support Tool for Breast Cancer Gene Testing

Mutations in two genes, BRCA1 and BRCA2, account for 30% to 50% of hereditary breast cancer, and the prevalence of BRCA mutations in the general U.S. population is estimated to be between 1 in 800 (0.1%) and 1 in 300 (0.3%). RTI researchers are working with the Agency for Healthcare Research and Quality (AHRQ) to develop and evaluate a clinical decision support (CDS) tool for gene-based tests on breast cancer susceptibility and treatment.

With funding from AHRQ, researchers at RTI International have developed a Web-based tool with both patient and physician interfaces that

- helps assess a woman's risk for BRCA1 and BRCA2 gene mutations among asymptomatic women in primary care settings
- supports a dialog between patients and providers on appropriate next steps to manage their risk

The tool is designed to facilitate communication between patient and provider at the point of care about patients' preferences for involvement in decision making about genetic risk assessment, counseling, and testing.

The patient portion of the tool is designed to be used by women in their homes before a primary care office visit. This easy-to-use tool guides women through the collection of family cancer history information, which will be used to summarize their risk of carrying the BRCA1 or BRCA2 gene for breast cancer. It also provides guidance on how to talk with their doctors about their risk for BRCA mutations. The tool also provides information on hereditary breast and ovarian cancer, its risks, genetic counseling and testing, and cancer surveillance practices.

For women who are at high risk, the tool will recommend referral to a genetic counselor and testing to confirm their risk status in accordance with U.S. Preventive Services Task Force recommendations.

The provider portion of the tool presents information that doctors can use to familiarize themselves with BRCA mutations and genetic risk, counseling, and testing. The patient's risk assessment results and guidelines for referring patients to a genetic counselor are the central focus of the provider section, but the tool also offers guidance on educating patients about their risk and choice of next steps (e.g., seeing a genetic counselor, regular cancer screenings).

RTI researchers will implement the tool and assess its effectiveness through a 6- to 8-week multisite evaluation in early 2010. We anticipate launching the BRCA tools in two large primary care sites. Patient participants will complete a Web-based pretest, use the tool on their own or in conjunction with a provider, attend a scheduled office visit, and complete a Web-based post-test at the clinical site. Physicians' feedback will be collected through web-based surveys both before and after the evaluation and brief checklists completed by the physicians to document their use of the tool with patients.

Given the limited evaluation period, we anticipate evaluating the tools to determine their effect on short-term outcomes such as patient anxiety, patient knowledge, physician referrals/recommendations, and patient-provider communication.

More Information

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