



Personalized Medicine: Genomic Test for Breast Cancer Recurrence Found to be Cost-Effective

For Immediate Release

TORONTO, July 15, 2013 – Personalized medicine offers the promise of more effective results through individualized therapy. By tailoring treatments to only those who may benefit, patient outcomes might be improved. However, personalized medicine tests are often expensive.

Breast cancer is a complex disease that affects 1 in 9 Canadian women during their lifetime. Studies have shown that 1 in 29 women in Canada will die from it.

For patients with early breast cancer, it is often difficult for doctors to decide whether to provide chemotherapy following surgery. This decision is based on clinical judgement, often supplemented by Adjuvant! Online, a free online decision aid. A new test, the 21-gene assay (Oncotype DX), allows for more individualized therapy by providing additional information regarding a patient's risk of cancer recurrence. This test quantifies the expression of 21 genes in the cancer to predict the likelihood of recurrence. However, the test costs US \$4,175 per patient.

A team led by researchers at the Toronto Health Economics and Technology Assessment (THETA) Collaborative at the University of Toronto evaluated the cost-effectiveness of using the 21-gene assay, in conjunction with Adjuvant! Online, for patients with early stage breast cancer that is hormone receptor-positive and HER2-negative. The results of this study revealed that this test is cost-effective, with an incremental cost per quality-adjusted life year (QALY) of \$22,440, \$2,526 or \$1,111 for patients at low, intermediate, or high Adjuvant! Online risk respectively.

This was the first study to also consider the cost-effectiveness of providing patients with chemotherapy, conditional upon their risk classification. Chemotherapy appears to be cost-effective for patients at intermediate or high risk using the 21-gene assay, although this finding is uncertain for some patients at intermediate risk.

Due to its high per-test cost, incorporating the 21-gene assay into the health care system will not reduce costs overall. However, for many patients, this test will show that chemotherapy is unnecessary, eliminating unwarranted treatment and its associated costs, and providing better health outcomes. In other patients, the test will better identify the risk of cancer recurrence and ensure that patients receive the timely and effective treatment that best meets their needs.

“Our findings will be of considerable interest to policy makers, health care providers, and clinicians faced with a climate of constrained resources and the difficult decision of whether to provide chemotherapy, particularly to intermediate risk patients,” said Mike Paulden, MSc, a health economist at the THETA Collaborative who led the research. “Despite the high cost of the test, this study suggests that this is a good use of health care dollars. We will continue to refine our analysis as more evidence becomes available on this and other genomic tests.”

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The Toronto Health Economics and Technology Assessment (THETA) Collaborative is a multidisciplinary research collaboration dedicated to providing evidence informed decision support to health technology policy makers and advancing the science of health technology assessment (HTA). With a large team of investigators, collaborators, staff and graduate students, THETA is addressing the need for high quality research that government decision makers and health-care providers require to improve health-care quality while containing the growth of health-care costs. The breadth of our expertise covers the core areas of HTA science: clinical evaluation, economic evaluation, and evaluation of ethical and social implications of health technologies.

THETA is funded by Health Quality Ontario, and was recently awarded additional funding by the Canada Foundation for Innovation through its New Initiatives Fund. It works in partnership with the Leslie Dan Faculty of Pharmacy at the University of Toronto, the Institute of Health Policy, Management and Evaluation (IHPME), Faculty of Medicine, University of Toronto (lead academic partner), University Health Network in Toronto and Cancer Care Ontario.