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effectiveness of breast cancer treatment The test, named HERTEST, was created by scientists at Martell Diagnostic, a Rosevillebased med-tech company.

Minnesota-developed test aims to measure

By **Andy Steiner** | MinnPost contributing writer



May 12, 2021 A new test developed by a Minnesota company promises to give women undergoing breast cancer treatment and their physicians a noninvasive way to monitor disease progression.

course has been completed.

REUTERS/Jim Bourg

Diagnostic, a Roseville-based med-tech company. It is a blood test that can monitor the effectiveness of cancer medications and detect recurrences of tumors, reducing the need for

The test, named HERTEST, was created by scientists at Martell

invasive procedures like biopsies. In the regular course of breast cancer treatment, patients typically undergo chemotherapy, radiation and surgery, said

For many patients, this liminal time is difficult, Edwards said. ARTICLE CONTINUES AFTER ADVERTISEMENT

loved one going through breast cancer treatment right now." With HERTEST, Edwards explained,

Michelle Edwards

relationship to disease activity, in the patient's blood. Finding that a patient's cancer is not responding to treatment midcourse could give physicians a chance to reevaluate their approach without losing valuable time, she

patient and their physician would want."

Potential for distanced monitoring

patients and their physicians can

working by following the level of

HER2, a protein that rises in direct

measure whether therapies are

Mark Greene, M.D., Ph.D., the John Eckman Professor of Medical Science at the University of Pennsylvania, is Martell Diagnostic's scientific adviser. He said that the HERTEST provides physicians with a more distanced way to keep tabs on tumor progression. "Once you've had surgery, once you've removed the tumor,

there's no really good way to find out if the cancer has

Herceptin: "This test provides a way to monitor these

reoccurred," Greene said, explaining that in 1981, he was the

first to describe the HER2 protein, eventually developing the

antibody antagonists needed to make the cancer-fighting drug

her breast, Greene explained,

"Typically there are two ways to define

what it is. One way is to cut into the

lesion and do a biopsy and check for

the presence of the gene. That is what

is done for most women in America."

said. "Learning if something is working in real time is what a

progressions." When a woman develops a mass in

After the mass is removed, Greene Mark Greene said, "There is not a good way to see if a patient still has cancer, because you've taken out the tumor." Because it can measure HER2 levels in a patient's blood, he added, "The HERTEST allows you to do just that."

Edwards said that with HERTEST readings, it may be possible

of reoccurring breast cancer similar to the way they monitor

Because it tends to be a more aggressive disease, patients with

breast cancer would need to be monitored more closely than

men for prostate cancer using a PSA test in an approach

commonly known as "watchful waiting."

their treatment.

this."

one day for oncologists to monitor and observe women for signs

those with prostate cancer, Edwards cautioned, but the HERTEST could be taken on a regular basis to determine if the patient needed more assertive treatment. ARTICLE CONTINUES AFTER ADVERTISEMENT

With a blood-based test like this, the patient and physician could quickly see if the cancer was reoccurring and respond appropriately." Because the test can be performed mid-cancer treatment, Edwards said, physicians can use it to measure the efficacy of

With HERTEST, Edwards said, "These biomarkers can give you

a clue whether your treatment is working real time. If it is not

working, your physician can take a closer look at your therapy

and try something else. This is a significant advancement in

cancer care that could change lives."

Potential uses worldwide

For a woman with managed breast cancer, Edwards said, "We

hope that HERTEST could be used, say quarterly or monthly, to

monitor and make sure that everything is staying under control.

Today, when a patient takes a HERTEST, their blood sample is sent to Martell Diagnostic's lab for processing. Results are read and returned to the patient and physician. Looking for a test that delivers rapid results without requiring lab work, the company is developing a new way to interpret the tests.

"We got involved with a company that develops lateral flow

test," Edwards said. In a lateral flow test, test results from a

display results, in an approach similar to a commercial

finger-stick blood test wick across specially prepped paper to

pregnancy test. "We've now got a really basic version of HERTEST that does that," Edwards explained. While she said that this approach to

laboratories, it will be helpful in the developing world, where

access to testing sites is often limited: "Around the world there

are many cases where a patient's HER2-positive breast cancer

could be treated if there was a cheap and easy-to-use test like

In some countries in the developing world, she said, breast

reporting results "doesn't have that much use in the U.S.,"

where patients have ready access to blood draws and

cancer patients and their physicians have less access to diagnostic tools like scanning equipment and labs that can accurately report the results of biopsies. ARTICLE CONTINUES AFTER ADVERTISEMENT The potential created by a finger-stick blood test that can

accurately measure HER2 protein levels would be enormous,

Greene said. "You have to think beyond America to countries

With a goal of making HERTEST available to women fighting

with a cancer clinic in Tanzania to test the use of the lateral-

flow results. "This is an important collaboration," she said.

technology, Edwards said that Martell has formed a partnership

breast cancer in countries with limited access to medical

where it is very difficult to do biopsies."

"This test could be a good tool for them. In the clinic setting in Tanzania, they'd to a finger stick and have a drop of blood would be applied to the end of the test." Often, she said, patients in Tanzania who are diagnosed with breast cancer have little information about their kind of cancer or the best approach to treat it. "They don't have enough pathologists or labs or money to do more sophisticated testing. With this collaboration, physicians there could give someone a

HERTEST. If the bar was dark enough, that tells the physician if

the patient is a good candidate for targeted therapy."

Patients or physicians can now order HERTEST on Martell

Diagnostic's website and have it delivered. If a patient is

interested in using HERTEST, Edwards said, "They should talk

own, to do the test, they'd need to go to a lab facility and have a

to their doctor about it first." Though the company has had

cancer patients approach them to purchase the test on their

technician draw a vial of blood: "Our lab would then do the

testing and we'd mail the results back."

Available to the public

good tool for that."

While she supports the idea that women with breast cancer have the authority to take their therapy into their own hands, Edwards insists that the best route would be to work in close collaboration with a physician. "With something like cancer, you can and should work with your oncologist," Edwards said. "They have to be intensely involved in your therapy." With the knowledge gained from

HERTEST, individual women, in partnership with their

physicians, can take control of their cancer treatment: "My

hope is that all women with breast cancer will get a more live

look at how their therapy is going. We believe that HERTEST is a

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Greene and Edwards believe that HERTEST will eventually gain

acceptance among oncologists, but the test is still so new that

company are aware of it. In the process of reporting this story,

MinnPost reached out to several Twin Cities cancer researchers

and oncologists, including the University of Minnesota Medical

School, Virginia Piper Breast Center and Hennepin Healthcare,

few besides those who have directly consulted with the

but none felt qualified to comment.

Andy Steiner

Edwards said that she's confident that the test will soon gain acceptance in the larger medical community. "All oncologists want better information on how to treat their patients' cancer," she said. "This test can give them that."

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Michelle Edwards, Martell Diagnostic's CEO. Patients generally do not know if their cancer is responding to interventions until they undergo imaging or a surgical biopsy after the treatment "Waiting to see the results until the end of a course of therapy is a really stressful," she said. "I know this well because I have a

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