

## Breast Cancer Case Study

How integrated diagnostics works across the entire  
care continuum to improve patient outcomes.

Answers for life.

**SIEMENS**

# A Patient's Story

From serial tumor-marker tests to non-invasive imaging, how integrated diagnostics can improve a patient's outcome at every stage of care.

**Meet Linda, a 45-year-old mother of two, who discovered a lump in her breast during a self-exam.**

## Asymptomatic Detection

After completing a careful medical history and physical with her physician, a mammogram showed a suspicious lump. Linda anxiously scheduled a consultation with her physician to immediately arrange future steps.

## Accurate Diagnosis

A biopsy from the lump indicated breast cancer. Linda was devastated.

The tumor was tested for hormone receptors and for a growth-promoting gene and protein called HER-2/neu. The results pointed to a potentially aggressive tumor (HER2 positive). Her physician quickly ordered additional tests to determine if the cancer had spread beyond Linda's breast and to help determine the best treatment.

A PET scan combined with CT confirmed metastasis. To complete her evaluation, laboratory tests, including serum tumor markers (CEA and Serum HER-2/neu), and additional blood tests, including CBC, chemical, and enzyme tests, were needed.

## Personalized Therapy

After examining her entire clinical and diagnostic situation, Linda and her physician decided on a treatment course that included biological therapy

to specifically prevent HER-2/neu cancer cells from growing. Her serum tumor markers were serially monitored to help track treatment efficacy.

With the treatment, the levels of Linda's serum tumor markers dropped. Her initial Serum HER-2/neu test, a specific oncoprotein to HER2, was particularly relevant, providing a benchmark against which her response to the treatment could be measured. Using innovative IT solutions, Linda's physician was able to maintain real-time access to patient data, enabling faster decisions to improve patient care.

## Ongoing Care

Linda's ongoing care includes a combination of serial serum tumor-marker tests and non-invasive imaging studies. Her health is improving: physically because her treatment is working and emotionally because she is better informed about her condition.

Concerned that her daughter might have a genetic predisposition for breast cancer, Linda asked her physician for a referral. A genetic specialist told Linda that genetic test panels, combined with clinical data, could help assess her daughter's risk many years before breast cancer might develop.

The clinical situation presented is a characterization and for illustration purposes only. In addition, this material is not intended to be relied on for instruction as to the practice of medicine.

## Breast Cancer Fast Facts

Second only to skin cancer, breast cancer is the most common cancer among women. One in eight women is at risk for developing the disease.

- **What is the economic impact?** It's estimated that \$8.1 billion is spent annually on breast cancer management in the United States.
- **What is the key trend?** Medical experts attribute the recent decline in breast cancer fatality rates to increased attention toward earlier detection, and more effective treatments.

Sources: National Cancer Institute; National Institutes of Health, USA; American Cancer Society®

“Because of the accuracy of the tests now available, my physician was able to customize my treatment to have the most powerful effect on the specific type of tumor I had.”

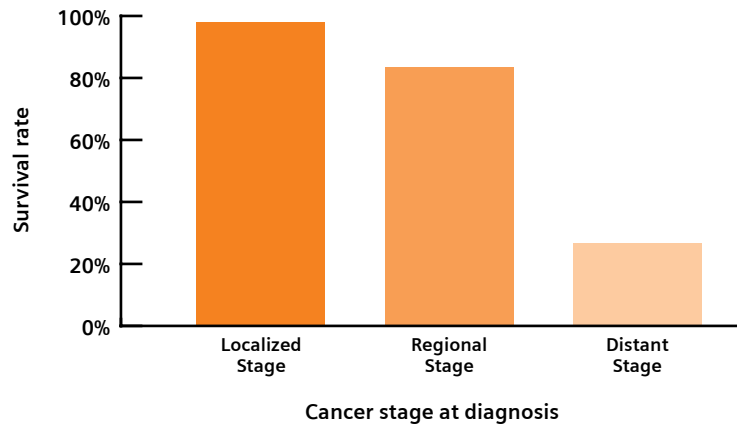
— Nancy Singleton, breast cancer survivor, New Jersey, USA

**The Earlier the Detection, the Lower the Risk**

Detecting breast cancer at a localized stage increases the chances of successful disease management and contributes to increased survival rates.

Source: Adapted from American Cancer Society, Surveillance Research 2007

Five-Year Breast Cancer Survival Rates by Diagnosis Stage (US 1996–2003)



Seek	Find	Act	Follow
<b>Early Detection</b> <ul style="list-style-type: none"> <li>• Mammography               <ul style="list-style-type: none"> <li>– MAMMOMAT Novation®</li> </ul> </li> <li>• CAD               <ul style="list-style-type: none"> <li>– syngo® MammoCAD*</li> </ul> </li> <li>• Ultrasound               <ul style="list-style-type: none"> <li>– Automated Breast Scanning (ABS)</li> <li>– Advanced SieClear® Spatial Compounding</li> </ul> </li> <li>• Magnetic Resonance               <ul style="list-style-type: none"> <li>– syngo VIEWS</li> <li>– TIm™ Technology</li> <li>– syngo BRACE</li> <li>– syngo Chorus</li> </ul> </li> </ul>	<b>Diagnostics</b> <ul style="list-style-type: none"> <li>• Mammography               <ul style="list-style-type: none"> <li>– MAMMOMAT Novation</li> <li>– syngo Opdima</li> <li>– MammoTest</li> </ul> </li> <li>• Ultrasound               <ul style="list-style-type: none"> <li>– eSie Touch™</li> <li>– Elasticity Imaging</li> <li>– Fatty Tissue Imaging</li> <li>– Cadence Contrast Pulse Sequencing Technology (CPS)</li> <li>– Native TEQ Tissue Equalization Technology</li> </ul> </li> <li>• Molecular Imaging               <ul style="list-style-type: none"> <li>– Biograph®</li> <li>– TruePoint™ PET•CT</li> <li>– TruePoint™ SPECT•CT</li> </ul> </li> <li>• Magnetic Resonance               <ul style="list-style-type: none"> <li>– syngo VIEWS</li> <li>– syngo GRACE</li> <li>– TIm Technology</li> <li>– syngo Chorus</li> </ul> </li> <li>• Computed Tomography               <ul style="list-style-type: none"> <li>– SOMATOM®</li> <li>– Definition AS</li> <li>– syngo CT Oncology</li> </ul> </li> </ul>	<b>Therapy</b> <ul style="list-style-type: none"> <li>• In-vitro Solutions               <ul style="list-style-type: none"> <li>– CEA</li> <li>– CA 15-3®</li> <li>– BR 27.29</li> <li>– Serum HER-2/neu</li> </ul> </li> <li>• Molecular Imaging               <ul style="list-style-type: none"> <li>– Biograph TruePoint PET•CT</li> <li>– TruePoint SPECT•CT</li> </ul> </li> <li>• Ultrasound               <ul style="list-style-type: none"> <li>– High-frequency Imaging</li> <li>– 2D Beam Steering</li> </ul> </li> <li>• Oncology Care Solutions               <ul style="list-style-type: none"> <li>– ARISTE™</li> <li>– syngo Suite for Oncology</li> </ul> </li> <li>• Magnetic Resonance               <ul style="list-style-type: none"> <li>– syngo VIEWS</li> <li>– syngo GRACE</li> <li>– TIm Technology</li> <li>– syngo Chorus</li> </ul> </li> <li>• Computed Tomography               <ul style="list-style-type: none"> <li>– SOMATOM</li> <li>– Definition AS</li> <li>– syngo CT Oncology</li> </ul> </li> </ul>	<b>Aftercare</b> <ul style="list-style-type: none"> <li>• In-vitro Solutions               <ul style="list-style-type: none"> <li>– CEA</li> <li>– CA 15-3</li> <li>– BR 27.29</li> <li>– Serum HER-2/neu</li> </ul> </li> <li>• Mammography               <ul style="list-style-type: none"> <li>– MAMMOMAT Novation</li> </ul> </li> <li>• Ultrasound               <ul style="list-style-type: none"> <li>– Cadence Contrast Pulse Sequencing Technology (CPS)</li> <li>– Automated Breast Scanning (ABS)</li> </ul> </li> <li>• Magnetic Resonance               <ul style="list-style-type: none"> <li>– syngo VIEWS</li> <li>– syngo GRACE</li> <li>– TIm Technology</li> <li>– syngo Chorus</li> </ul> </li> <li>• Computed Tomography               <ul style="list-style-type: none"> <li>– SOMATOM</li> <li>– Definition AS</li> <li>– syngo CT Oncology</li> </ul> </li> <li>• Molecular Imaging               <ul style="list-style-type: none"> <li>– Biograph TruePoint PET•CT</li> <li>– TruePoint SPECT•CT</li> </ul> </li> </ul>

**The Siemens Breast Cancer Portfolio**

By combining laboratory diagnostics, advanced imaging, and information technologies, Siemens Healthcare helps physicians detect and diagnose breast cancer in its earliest, most treatable stages. These new technologies mean shorter exams, streamlined workflow, and improved patient throughput.

**It All Starts Here**

Contact your Siemens representative or visit our website: [www.siemens.com/integrated-diagnostics](http://www.siemens.com/integrated-diagnostics).

\*Not available for sale in the US

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