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# Specimen Payoff

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Researchers point to several cancer treatments and tests that emerged from tissue specimens and predict more will follow.

**Gleevec:** Developed to treat chronic myeloid leukemia, the drug works by interfering with the bcr-abl marker protein in CML cells. In addition to CML, Gleevec has been approved to treat a rare form of cancer called gastrointestinal stromal tumor as well as five other rare diseases. Genetic analysis also helped doctors understand why some CML cases become resistant to Gleevec, which led to the development of new drugs that work against Gleevec-resistant CML.

**Herceptin:** After HER2 (human epidermal growth factor receptor 2) was found to be amplified in about a quarter of breast cancer patients, an antibody to that particular receptor was developed, thus providing a highly effective treatment for HER2-positive breast cancer patients.

**Human papillomavirus vaccine:** To create the HPV vaccine, large numbers of blood and cervical cells were collected and analyzed for various cancer-causing strains of HPV. The Food and Drug Administration approved Gardasil<sup>®</sup> last year, and the agency is currently reviewing Cervarix<sup>™</sup>, another HPV vaccine, for approval. Both vaccines protect against HPV types 16 and 18, which cause the majority of cervical cancers.

**TAILORx:** The National Cancer Institute is sponsoring a trial involving more than 10,000 women in the United States and Canada that incorporates a molecular profiling test called Oncotype DX<sup>™</sup>. Women who, according to the test, face a high rate of breast cancer recurrence will receive chemotherapy followed by hormone therapy. Low-risk women will receive only hormone therapy. Women with a mid-range score will be randomly assigned to hormone therapy alone or chemotherapy followed by hormone therapy.