

# Study finds significant cost differences between breast cancer chemotherapy regimens

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Micrograph showing a lymph node invaded by ductal breast carcinoma, with extension of the tumour beyond the lymph node. Credit: Nephron/Wikipedia

Costs associated with different breast cancer chemotherapy regimens can vary significantly, regardless of effectiveness, according to new research from The University of Texas MD Anderson Cancer Center. Understanding cost differences can help guide informed discussions between patients and physicians when considering chemotherapy options.

The findings, published today online in *Cancer*, were first presented in a poster discussion session at the 2016 American Society of Clinical Oncology Annual Meeting in Chicago.

"The costs of cancer care have been increasing dramatically, both for the health care system and for patients. As physicians, we increasingly recognize the financial burden on our patients," said lead author Sharon Giordano, M.D., chair of Health Services Research and professor of Breast Medical Oncology "Both physicians and patients need greater access to information about the treatment costs so this critical issue can be discussed during a patient's decision-making process."

The American Cancer Society estimates 246,660 new cases of invasive breast cancer will be diagnosed this year in the United States. At least 35 percent of patients with breast cancer receive chemotherapy in addition to surgery or radiation. Therefore, choosing equally effective but less costly regimens could impact costs of breast cancer care nationally by \$1 billion every year, Giordano explained.

To calculate cost of care, the researchers analyzed claims from the MarketScan database of 14,643 adult women diagnosed with breast cancer between 2008 and 2012 in the U.S. To qualify for the study, women must have had full insurance coverage from six months prior to 18 months after diagnosis, received chemotherapy within three months of diagnosis, and had no secondary malignancy within one year of diagnosis.

The researchers calculated adjusted average total and out-of-pocket cost using all claims within 18 months of diagnoses, normalized to 2013 dollars, with separate analyses conducted for regimens that did and did not include trastuzumab.

"In this study, we found substantial variation in the costs of breast cancer treatment for different chemotherapy regimens, even when comparing treatments of similar efficacy," said Giordano.

The largest variations were seen when comparing insurer costs. For patients who did not receive trastuzumab, median insurance payments were \$82,260 and varied by as much as \$20,354 relative to the most common regimen. Median out-of-pocket costs were \$2,727 but 25 percent of patients paid more than \$4,712 and 10 percent paid more than \$7,041.

For those patients receiving trastuzumab-based therapies, median insurance payments were \$160,590, with a difference of as much as \$46,936 relative to the most common regimen. Median out-of-pocket costs were \$3,381, with 25 percent of patients paying more than \$5,604 and 10 percent paying greater than \$8,384.

According to Giordano, this study was limited by its focus on a younger population with private health insurance. Patients lacking private insurance may face significantly higher costs of care. Additionally, researchers were unable to include the costs of newer therapies in the current study. Finally, the study relied on insurance claims, which may include some misclassifications, and was not able to use cancer registry data to analyze cancer stage, patient race or ethnicity, or tumor characteristics.

The researchers plan to continue working with available and future data to better understand the relative value of cancer care options.

"Oncology providers need to continue to move toward the goal of providing high-value care that is aligned with our patients' goals and preferences," said Giordano. "I hope this study will make providers more aware of the substantial financial burden associated with chemotherapy treatments so they may work with their patients to identify the best options available."

**More information:** "Estimating Regimen-Specific Costs of Chemotherapy for Breast Cancer: Observational Cohort Study." Sharon H. Giordano, Jiangong Niu, Mariana Chavez-MacGregor, Hui Zhao, Daria Zorzi, Ya-Chen Tina Shih, Benjamin Smith, and Chan Shen. *Cancer*; Published Online: October 10, 2016. [DOI: 10.1002/cncr.30274](https://doi.org/10.1002/cncr.30274)

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