



National Accreditation Program for Breast Centers Demonstrates Improved Compliance with Post-Mastectomy Radiation Therapy Quality Measure

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- BACKGROUND:** The National Accreditation Program for Breast Centers (NAPBC) was established in 2008 by the American College of Surgeons as a quality-improvement program for patients with breast disease. An NAPBC quality measure states post-mastectomy patients with ≥ 4 positive lymph nodes should receive lymph node radiation therapy (PMRT). Our objective was to examine how NAPBC accreditation has affected compliance with this quality measure.
- STUDY DESIGN:** Women who underwent mastectomy at either an NAPBC-accredited center or a Commission on Cancer-only accredited hospital were identified (2006 to 2013) in the National Cancer Data Base. The NAPBC centers accredited from 2009 to 2011 were included in the analysis. Patients were nested within centers using a mixed effects model to identify PMRT rates at each center before and after accreditation, adjusting for patient and tumor characteristics.
- RESULTS:** Of 34,752 patients from 477 NAPBC-accredited centers and 958 Commission on Cancer-only accredited hospitals who underwent mastectomy with ≥ 4 positive lymph nodes, 21,638 patients received PMRT during the study period (62.3%). The NAPBC centers yielded a significantly higher rate of PMRT than Commission on Cancer hospitals (66.0% vs 59.2%; $p < 0.001$). For each year of accreditation (2009 to 2011), centers had significantly higher rates of radiation in the accreditation year compared with the year before accreditation ($p < 0.001$). Within those centers, the rate of radiation increased post-accreditation in each accreditation year (2009: 62.1% to 71.9%; 2010: 65.5% to 73.2%; 2011: 67.5% to 70.4%).
- CONCLUSIONS:** The NAPBC accreditation is associated with higher PMRT rates and better adherence to the PMRT quality measure. Future studies with more centers and longer follow-up are needed to determine whether this trend continues. (J Am Coll Surg 2017;224:236–244. © 2016 Published by Elsevier Inc. on behalf of the American College of Surgeons.)

The quality of healthcare received by breast cancer patients varies significantly across the US.¹ The concept of a comprehensive breast center developed in response

to this inconsistent, fragmented, and inefficient system to evaluate and manage patients with disease of the breast.² The first free-standing breast center in the US

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Abbreviations and Acronyms

CoC	= Commission on Cancer
NAPBC	= National Accreditation Program for Breast Centers
NCDB	= National Cancer Data Base
OR	= odds ratio
PMRT	= post-mastectomy radiation therapy

was established almost 4 decades ago by Dr Silverstein and was called the Van Nuys Breast Center.³ This was the beginning of a major paradigm shift in the delivery of breast cancer care to address the multidisciplinary needs of breast cancer patients, ideally in a breast center setting. Now, despite the abundance of breast centers throughout the US, there have been few studies to address the quality of care delivered at these centers through evaluation of compliance with standards.¹

The Commission on Cancer (CoC) of the American College of Surgeons, a multidisciplinary consortium of professional organizations, was established with the goal of improving cancer care through setting standards; through prevention, research, and education; and through monitoring of comprehensive cancer care.^{4,5} The CoC accredits hospitals as cancer centers on the basis of 36 standards and requires approved hospitals to report their entire cancer occurrence annually to the National Cancer Data Base (NCDB).^{6,7} There are currently more than 1,500 CoC-accredited hospitals. The National Accreditation Program for Breast Centers (NAPBC) originated in 2008 through the cancer programs at the American College of Surgeons with the mission to improve the quality of care and monitoring of outcomes of patients with disease of the breast.⁸ More than 90% of the NAPBC centers are also CoC-accredited hospitals. However, there is a paucity of data demonstrating how NAPBC accreditation enhances breast cancer care at CoC-accredited hospitals.

The US healthcare system has undergone a dramatic transformation centered on quality measurement, improvement, and documentation of adherence to broadly accepted standards of care. The NAPBC is one of a very few organizations that has established standards for the evaluation and management of patients with diseases of the breast or a survey process to monitor compliance. One of these patient care standards is that every post-mastectomy patient with ≥ 4 positive lymph nodes should receive chest wall radiotherapy within 1 year of diagnosis, which is consistent with recommendations from the National Comprehensive Cancer Network standard and the American Society of Clinical Oncology. We used the NCDB to evaluate whether accreditation by the

NAPBC helped increase compliance with the post-mastectomy radiation therapy (PMRT) quality standard within the network of CoC-accredited hospitals and to compare compliance rates of PMRT between NAPBC centers and CoC-accredited only hospitals.

METHODS

Data source

The NCDB is a nationwide, oncology outcomes registry capturing approximately 70% of newly diagnosed breast malignancies in the US from more than 1,500 American College of Surgeons CoC-accredited hospitals.⁹ It is a joint project of the American Cancer Society and the CoC of the American College of Surgeons. The NAPBC centers are part of CoC-accredited hospitals and the NCDB also captures data from these centers. Data are abstracted by certified tumor registrars who are audited for accuracy.¹⁰ Data abstraction processes and definitions are similar to other state and national cancer registries, including the National Cancer Institute's Surveillance, Epidemiology, and End Results database. All data within the NCDB are compliant with the privacy requirements of the Health Insurance Portability and Accountability Act. The study was deemed exempt by the Northwestern University and NorthShore University HealthSystem IRBs.

Patient selection

From the NCDB, women older than 18 years of age diagnosed with T1 to T4 non-metastatic primary cancer from January 1, 2006 to December 31, 2013 were identified based on site and histology codes as defined by the ICD for Oncology, 3rd edition. All patients who underwent a mastectomy and had ≥ 4 positive lymph nodes were included in the study. Patients with multiple primary cancers, in situ or stage IV disease, or who had neoadjuvant chemotherapy were excluded. There were a total of 34,752 patients who met the inclusion criteria (Table 1).

The NAPBC-accredited centers were identified based on a unique site identification number within the NCDB. The CoC-only accredited hospitals were identified with the CoC random facility identification. There were a total of 477 centers that were accredited by the NAPBC between 2009 and 2011 and 958 CoC-only accredited hospitals included in the analysis. For clarity, the centers accredited by the NAPBC and the CoC are designated as "NAPBC centers" and the hospitals accredited by the CoC only are designated as "CoC hospitals."

Analytic variables

Patient-level risk adjustment included patient characteristics: age, race (white, black, Hispanic, Asian, and other),

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