SOUTHERN SURGICAL ASSOCIATION ARTICLE

Early Impact of Medicaid Expansion and Quality of Breast Cancer Care in Kentucky

Nicolas Ajkay, MD, FACS, Neal Bhutiani, MD, Bin Huang, DrPH, Quan Chen, PhD, Jeffrey D Howard, MD, Thomas C Tucker, MPH, Charles R Scoggins, MD, MBA, FACS, Kelly M McMasters, MD, PhD, FACS, Hiram C Polk Jr, MD, FACS

BACKGROUND: In January 2014, Kentucky expanded Medicaid coverage to include all individuals and families with incomes up to 33% above the federal poverty line. This study evaluated the early impact of Medicaid expansion on some aspects of the quality of breast cancer care in Kentucky.

STUDY DESIGN: The Kentucky Cancer Registry was queried for all women aged 20 to 64 years diagnosed with breast cancer between 2011 and 2016. Demographic, tumor, and treatment characteristics were assessed for each year during this interval. To evaluate the association between Medicaid expansion and these parameters, these variables, along with quality metrics deriving from said variables, were compared for the years 2011 to 2013 (pre) and the years 2014 to 2016 (post).

RESULTS: Of 13,625 women with breast cancer, 11,915 (59.5%) were diagnosed and treated from 2011 to 2013, and 8,127 (40.5%) were diagnosed and treated from 2014 to 2016. After Medicaid expansion, fewer patients were uninsured (3.7% post vs 1.0% pre) and more were covered by Medicaid (15.9% post vs 10.9% pre) ($p < 0.001$). There was increased diagnosis of early stage (I and II) breast cancer ($p = 0.002$) and an increasing proportion of women undergoing breast-conservation therapy ($p < 0.001$). Time from diagnosis to operation increased ($p < 0.001$), time from operation to chemotherapy remained unchanged ($p = 0.26$) and time from operation to radiation decreased ($p < 0.001$).

CONCLUSIONS: The expansion of Kentucky Medicaid in 2014 has been associated with earlier diagnosis and somewhat improved quality of breast cancer care, despite a stable disease incidence. Additional improvements in treatment expediency will require improvements in patient outreach and healthcare infrastructure. (J Am Coll Surg 2018;■:1−7. © 2018 by the American College of Surgeons. Published by Elsevier Inc. All rights reserved.)

In the last 20 years in the US, the combination of an aging population with increased life expectancy and more medical comorbidities has contributed to ever-rising healthcare costs that have precluded many lower- and lower-middle-class families from affording private insurance.[1] As a result, many of these individuals have lacked access to healthcare in anything other than an emergent setting. This situation has placed a large burden on healthcare infrastructure, with many patients requiring care for complex, late-stage problems that could possibly have been addressed earlier and more effectively had appropriate medical care been more readily accessible.

The passage of the Patient Protection and Affordable Care Act (ACA) by the US government in March 2010 resulted in the largest overhaul of healthcare since the creation of Medicare and Medicaid in the 1960s.[2] One key component of this legislation involved the option for states to expand Medicaid beginning in 2014 to include all individuals and families with incomes up to 33% above the federal poverty line. As one of the states that elected to expand Medicaid coverage, Kentucky witnessed a drop in the rate of uninsured individuals from approximately 19% to 7%, the largest such drop of any state in the union.[3]

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Drs Ajkay and Bhutiani contributed equally to this work.

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From The Hiram C Polk Jr Department of Surgery, Division of Surgical Oncology, University of Louisville, Louisville (Ajkay, Bhutiani, Howard, Scoggins, McMasters, Polk), Department of Biostatistics, College of Public Health (Huang), Biostatistics and Bioinformatics Shared Resource Facility, Markey Cancer Center (Chen), and Kentucky Cancer Registry, Markey Cancer Center (Tucker), University of Kentucky, Lexington, KY.

Correspondence address: Hiram C Polk Jr, MD, FACS, Department of Surgery, University of Louisville, 550 S Jackson St, 2nd Floor ACB, Louisville, KY 40202. email: Hcpolk01@louisville.edu

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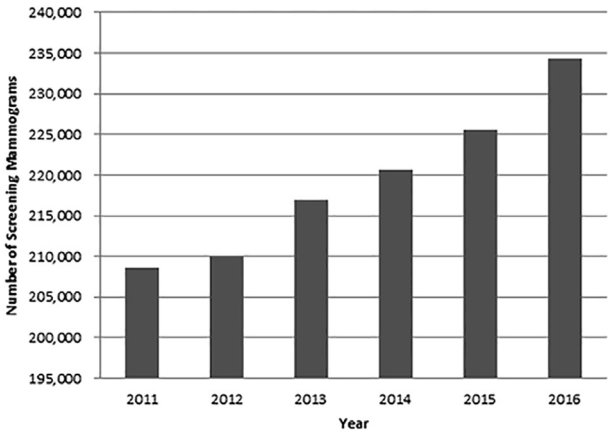

Figure 1. Screening mammograms performed in Kentucky by year (2011 to 2016). The number of screening mammograms performed in women younger than age 65 years increased in a relatively linear fashion over time.

The decision to expand Medicaid in Kentucky, as in many other states, ostensibly aimed to improve access to quality healthcare for many of the commonwealth's citizens. Although defining what constitutes quality healthcare in general has proven challenging in the US, evidence-based guidelines have been developed for the purposes of quality assessment for treatment of specific diseases. Breast cancer represents one such disease with specific treatment guidelines[4] and published metrics for measuring quality of care in women.[5] This, coupled with its high incidence and the availability of high-quality population-level data, renders breast cancer in women an ideal mechanism to evaluate the efficacy of Medicaid expansion with respect to improving the quality of breast cancer care. This study aimed to evaluate the impact of Medicaid expansion on the quality of breast cancer care in Kentucky.

METHODS

Patient cohort and data acquisition

Screening mammography data for women younger than age 65 years was obtained from the Kentucky Cabinet for Health and Family Services, Office of Health Policy. These data are provided to the cabinet by all hospitals in Kentucky. Number of screening mammograms performed per year between 2011 and 2016 were tabulated along with insurance status of patients undergoing screening mammography.

The Kentucky Cancer Registry, the state-designated population-based central cancer registry for Kentucky, was queried for all women aged 20 to 64 years diagnosed with breast cancer between 2011 and 2016. Breast cancer incidence, demographic information (including age, race, region of residence [urban vs rural, Appalachia vs non-Appalachia]), socioeconomic information (including degree of poverty, education level, and insurance status), and stage at diagnosis were included in the data analysis. Degree of poverty was defined at the county level based on percentage of the population below the poverty line in the 2008 to 2012 American Community Survey. Quartile definitions are as follows: low = 0 to 15.83%, moderate = 15.84% to 16.45%, high = 16.46% to 20.42%, and very high $\geq$20.42%. Education level was defined by county based on the percent of the population with at least a high school education in the 2008 to 2012 American Community Survey. Quartile definitions are as follows: very low = 0% to 78.48%, low = 78.49% to 85.61%, moderate = 85.62% to 88.07%, and high $\geq$88.07%. First course treatment data, including information about receipt and timing of operation, radiation, and chemotherapy, were all assessed in the same fashion.

Evaluation of quality of breast cancer care

Quality of breast cancer care was evaluated based on the proportion of patients undergoing breast conservation therapy who received postoperative radiation therapy, time from diagnosis to operation (among patients undergoing operations as initial therapy and not receiving preoperative chemotherapy), time from operation to radiation, and time from operation to chemotherapy. Metrics were chosen based on previously published work by AHRQ, National Quality Measures for Breast Centers, and a recent National Cancer Database analysis by Polverini and colleagues.[5-7] To assess for an association between Medicaid expansion and these parameters, these variables from the years 2011 to 2013 (pre) and the years 2014 to 2016 (post) were compared.

Statistical analysis

Spearman correlation was used to assess for significance in trends in screening mammography rates over time. Descriptive analysis was performed for demographics and clinical factors. Chi-square tests and two-sample *t*-tests were used in the bivariate analysis to examine associations between the pre/post Medicaid expansion status and other variables. Multiple generalized linear regression analyses were performed to evaluate the association between continuous quality of care measures and pre/post Medicaid expansion status. For binary quality of care measures, multiple logistic regression analyses were performed to assess for the impact of pre/post Medicaid expansion status on these variables, while controlling for other demographics and clinical factors. All analyses were performed using SAS Statistical software, version 9.4 (SAS Institute). All statistical tests were 2-sided with a p value <0.05 used to identify statistical significance.