BACKGROUND

**Problem**
- While breast care quality recommendations suggest optimal time to adjuvant radiation and chemotherapy for accountability, there is not a standard time to surgery (TTS) for breast conserving surgery (BCS) or mastectomy (MAST).
- Access to and time to surgical treatment has been proposed as a quality measure since it has an impact on initiation of chemotherapy or radiation.
- Emerging evidence suggests geographic variation in time to and type of surgery performed for early invasive stage breast cancer (ESBCa).

**METHODS**

- IBM® MarketScan® claims data were used to select women who had received primary BCS for non-metastatic invasive breast cancer between 01/01/2012 to 03/31/2016. (Figure 1)
- Patients were excluded if they had received neoadjuvant therapy prior to surgical treatment.
- Univariate and bivariate analysis were conducted along with with a quantile regression model of the median TTS.

**Study Cohort**

- A total of 53,060 women met study criteria, which, 68.3% (36,270) had BCS and 31.64% (16,790) had MAST. Figure 2 shows the national and regional trends in time to primary surgery (BCS or MAST) from 2012 to 2017.

SUMMARY OF KEY FINDINGS

**For Breast Conserving Surgery**

**Trends and Factors associated with Time to BCS**

- The mean TTS increased from 24.1 (median 21) in 2012 to 27.8 (median 26) in 2017
- TTS for BCS was at least 2.3 (p<0.0001) days shorter for all women over 50 compared to the younger group
- Patients in communities with a greater percentage of college educated graduates (9.4, p=0.05) or in urban areas (4.9, p=0.03) had longer TTS for BCS
- Congestive heart failure (2.25, p=0.02), cerebrovascular disease (2.0, p<0.01), chronic obstructive pulmonary disease (1.1, p<0.01) were related to longer TTS for BCS
- A pre-index in situ diagnosis was associated with 8.9 (p<0.01) fewer days in TTS for BCS

**For Mastectomy**

**Trends and Factors associated with Time to MAST:**

- The mean TTS (days) increased from 36.9 (median 31) in 2012 to 38.85 (median 40) in 2017
- Among patients receiving MAST, TTS decreased with age, with individuals ages 70-79 waiting 7.9 (p<0.0001) fewer days compared to those less than age 50
- A pre-index in situ diagnosis was associated with 6.5 (p<0.0001) fewer days TTS for MAST
- Patients in urban areas (13.3, p<0.0001) had a longer TTS
- Relative to the Northeast, residents in all other regions had lower TTS for MAST (-6.1 to -3.0, p<0.0001 - p<0.01)
- Patients residing in areas with a higher density of radiation oncologists had a shorter TTS for MAST (-10.7, p<0.01)

LIMITATIONS

This cross-sectional study utilized privately-insured commercial claims data and results may not be generalizable. We inferred community-level characteristics based on county-level data. Clinical data sources (e.g., biomarker, hormone receptor status) may further explain observed variation in TTS for BCS and mastectomy.

CONCLUSIONS

This study shows TTS for both BCS and MAST is increasing over time. Increased TTS is observed in the Northeast. Women who were older and with in-situ diagnoses had significantly shorter TTS. Longer TTS persisted in urban areas and for patients with 4+ year college degrees. Factors affecting TTS should help inform policy and clinical practice efforts critical for optimizing quality care for patients with ESBCa.