



# Patterns and recent trends in mastectomy and breast conserving surgery for women with early-stage breast tumors in Missouri: An update and further investigation



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## 1. Background

- Most females age 18–64 diagnosed with an early-stage breast tumor in Missouri, 2008–2015, were surgically treated with either total (simple) mastectomy (TM), modified radical mastectomy (MRM), or breast conserving surgery (BCS).
- Last year, the Missouri Cancer Registry examined demographic differences between females receiving these treatments and noted a slight decrease in the % of cases getting BCS since 2008 with an increase in TM (& TM+MRM).

## 2. Purpose

- To continue monitoring trends in the surgical treatment of early-stage breast cancer in Missouri and describe the patterns by demographics & tumor characteristics.

## 3a. Methods: selection

- The “BCS” measure from the NCDB CP3R was adapted to central cancer registry data (consolidated records) along with corresponding measures for mastectomy.
  - Derived AJCC
  - “RX Summ--Surg Prim Site” (item 1290) rather than the facility-specific “RX Hosp--Surg Prim Site” (item 670)
  - Some conditions ignored:
    - Clinical vs pathological stage
    - Surgery “at this facility”
- Of those meeting eligibility selection & received surgical treatment:
  - Who received surgery *other than* BCS (codes 20–24)?
  - Different numerator criteria, categorized into:
    - Total mastectomy (codes 40–49, 75)
    - Modified Radical Mastectomy (codes 50–59, 63)
    - (other)
- Age <65 (since primary payer was of interest).
- White & black only (due to small numbers for other races).

## 3b. Methods: analysis

- Logistic regression was used to analyze surgical trends among females with early-stage breast tumors (AJCC stage 0, I or II) while controlling for selected demographics.

- These surgical treatments were compared in terms of:
  - Survival (all-cause), controlling for selected demographics.
  - Days between diagnosis & treatment.

## 4. Results

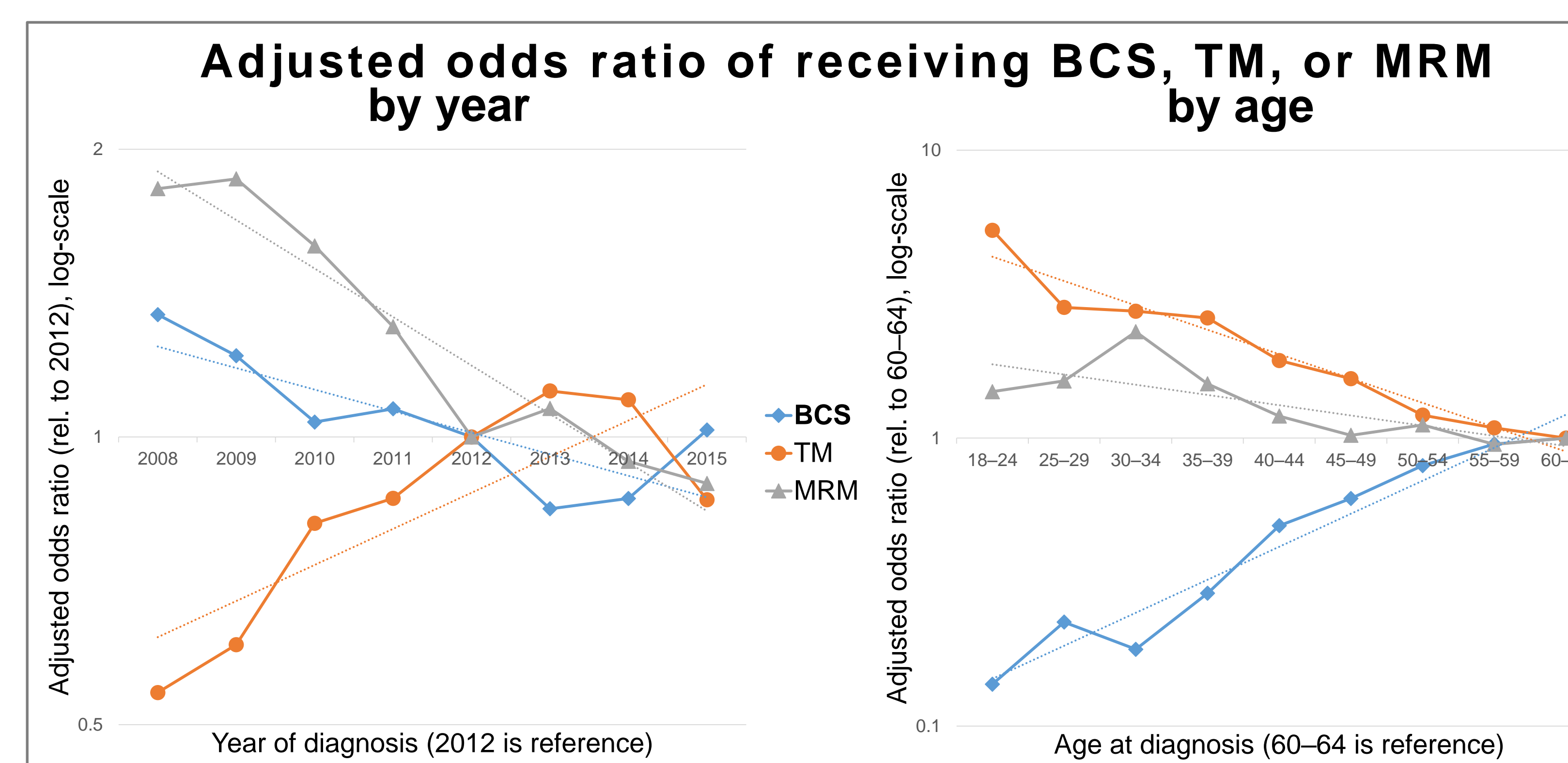
- BCS more likely** among (Odds ratio [95% CI]):

- Blacks** vs whites: 1.5 (1.3, 1.7)
- Earlier** stages:
  - Stage 0 vs II: 2.4 (2.2, 2.7)
  - Stage I vs II: 2.4 (2.2, 2.5)
- PR+ tumors vs PR-( & borderline): 1.3 (1.2, 1.4)
  - (ER status insig.)
- Private insurance** vs Medicaid: 1.2 (1.1, 1.4)
- Earlier years** of diagnosis (see left plot below)
- Older** females (see right plot below)

- Survival higher** among (Hazard ratio [95% CI]):

*(smaller hazard is better)*

- BCS** vs MRM: 0.75 (0.61, 0.93)
  - (BCS vs TM & BCS vs TM+MRM had similar survival)
- Earlier** stages:
  - Stage 0 vs II: 0.31 (0.23, 0.43)
  - Stage I vs II: 0.47 (0.39, 0.57)
- ER+/PR+ tumors (borderline grouped with negative):
  - ... vs ER+/PR-: 0.54 (0.42, 0.69)
  - ... vs ER-/PR+: 0.43 (0.25, 0.74)
  - ... vs ER-/PR-: 0.44 (0.37, 0.53)
- Shorter** time to surgery :
  - HR for a 30-day decrease: 0.96 (0.92, 0.998)
- Females with **private insurance**:
  - ... vs uninsured: 0.4 (0.26, 0.61)
  - ... vs Medicaid: 0.4 (0.32, 0.49)
  - ... vs other insurance: 0.36 (0.27, 0.47)
  - ... vs insured, no specifics: 0.58 (0.43, 0.77)
- Older** females generally had higher survival (but survival was very high among all selected patients who have early-stage tumors).



Logistic model also adjusted for geographical region & histologic group; Cox PH regression model also adjusted for geographical region, histologic group, & year of diagnosis.

## 5. Discussion

- These data provide quantitative population-based data on the surgical treatment for females diagnosed with early-stage breast tumors in Missouri.
- Trends and sociodemographic patterns may help inform patients & health professionals in Missouri by providing broad information on treatment options being utilized.

## 6. Contact

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# Revisions since presenting

- rev09, 2018-06-28:
  - Corrected the horizontal axes on the plots, had been mislabeled as 1, 2, 3, ....
- rev08:
  - Presented at the 2018 NAACCR conference in Pittsburgh, PA in June 2018.