This study has several strengths. The study was conducted in Canada where there is a universal access health care system, thus enabling the effects of insurance type on treatment choice. Comprehensive individual patient characteristics including the Charlson comorbidity index generally not used in prior studies were incorporated.

Mastectomy rates for 64 pre-defined health status areas (HSAs) were calculated after adjusting for patient and system factors. Variations in mastectomy rates among the HSAs were quantified using weighted coefficient of variation (CV). Multivariable logistic regressions were performed to determine associations between driving time and mastectomy use in the entire cohort and subgroups.

**RESULTS**

- Of the 21,872 patients, the proportion of patients who lived ≤60 minutes’ drive from the nearest RT center significantly increased from 68.8% (95% CI: 67.7%-69.9%) to 80.7% (95% CI: 79.5%-81.9%) over time.
- Concurrently, the crude provincial mastectomy rate decreased from 56.2% (95% CI: 55.3%-57.1%) to 45.3% (95% CI: 44.1%-46.5%). Differences in rates between HSAs increased, showing greater variation in use of mastectomy.
- Factors associated with mastectomy included age, larger tumor size, lymph node involvement, higher tumor grade, molecular subtype, lobular histology type, more comorbidities, academic institution, region, earlier period of diagnosis and longer driving time to the nearest RT center.

**DISCUSSION & CONCLUSION**

- New RT centers reduced driving times to the nearest cancer center, which was associated with decreasing mastectomy rates over time.
- Concurrent increases in CPM were also observed.
- Overall mastectomy rates decreased provincially, however, mastectomy rates between the 64 HSAs increased, suggesting the opening of RT centers affected areas differently instead of a consistent decrease across all HSAs.
- Strengths of this study include:
  - Universal access health care context, thus negating the effects of insurance type on treatment choice.
  - Incorporation of comprehensive individual patient characteristics including the Charlson comorbidity index.
  - The effects of new RT centers were quantified by driving times and measurements of geographic variation in mastectomy rates over time.
  - Treatment with mastectomy is multifactorial, thus we were unable to measure factors such as patient preference.
  - The impact of increased access to RT on mastectomy use may amplify over longer time periods.
  - Opening of new RT centers was associated with decreased mastectomy rates but greater variation between HSAs.

**METHODS**

- All breast cancer patients having surgery from 2004 - 2015 were identified from the Alberta Cancer Registry.
- Mastectomy rates for 64 pre-defined health status areas (HSAs) were calculated after adjusting for patient and system factors.
- Variations in mastectomy rates among the HSAs were quantified using weighted coefficient of variation (CV).
- Multivariable logistic regressions were performed to determine associations between driving time and mastectomy use in the entire cohort and subgroups.

**BACKGROUND**

- Two new centers providing radiation therapy opened in Alberta, Canada in 2010 and 2013.
- We aimed to assess whether opening new RT centers influenced mastectomy rates for breast cancer.

**RESULTS**

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