

Value Implications of Facility Type in Breast Conservation Surgery: A Comparative Analysis of Tertiary and Community-Based Hospitals

Joseph EA¹, Maxwell C¹, Dwyer J², Aryal B¹, Wagner P³, Bartlett DL³, Barrett TS⁴, Coopey S³, Allen CJ³

1. Allegheny Singer Research Institute

2. Duke/Southern Regional AHEC

3. Institute of Surgery, Division of Surgical Oncology, Allegheny Health Network Cancer Institute

4. Highmark Health

INTRODUCTION

- Breast cancer places a huge clinical and economic burden on health systems.
- Breast conservation surgery (BCS) is commonly performed procedure in the management of early breast cancer.
- BCS is performed at Tertiary hospitals (TH) and Community Hospitals (CH).
- However, the value implication of BCS based of facility of care are unknown.
- We assessed the outcomes and costs of BCS based of treatment facility.

POPULATION STUDIED

- Patients who underwent BCS for clinical stage 0-II breast cancer from April 2015 to September 2021 within a larger integrated cancer network were analyzed.

METHODS

- A regression-based propensity score match based on age, race, clinical stage, and Charlson comorbidity Index.
- 242 TH cases were compared to 242 CH cases.

RESULTS

- Hospital length of stay and readmission rates were similar across facilities (both $p > 0.05$).
- Direct institutional costs were 10% higher ($p = 0.135$) at TH.
- Indirect institutional costs were 28% higher ($p < 0.001$) at TH.
- 30-day HCU was higher at TH ($p = 0.038$).
- 3-year recurrence-free survival rates remained consistent irrespective of facility (97% TH vs 97% CH, $p = 0.764$).

Propensity Matched Comparison				
		TH (n=242)	CH (n=242)	p-value
Age		62.6±11.3	62.6±11.9	0.972
Follow-up		27.79 (18.0-44.0)	30.5 (13.6-41.5)	0.676
Race	White	93.0%	92.2%	0.739
	Non-white	7.0%	7.8%	
CCI	0	80.6%	78.2%	0.786
	1	13.6%	14.4%	
	2	4.1%	7.0%	
	3	1.2%	0.0%	
	4	0.4%	0.4%	
	5	0.0%	0.0%	
Clinical Stage	0	19.0%	20.2%	0.854
	1	71.9%	72.0%	
	2	9.1%	7.8%	
Pathological Stage	0	18.2%	18.5%	0.618
	1	72.7%	74.9%	
	2	8.7%	6.6%	
	3	0.4%	0.0%	
	4	0.0%	0.0%	
SLNB	Yes	83.7%	80.8%	0.404
	No	16.3%	19.2%	
Surgeon	BSO	78.9%	79.0%	0.981
	GS	21.1%	21.0%	
LOS		0.68±0.530	0.005±0.067	0.080
Re-excision rates		5.0%	7.0%	0.448
30-day readmission		0.8%	2.2%	0.352
3-year RFS		96.9%	96.6%	0.764
3-year OS		97.7	99.4	0.288

RESULTS

Propensity Matched Costs Comparison			
	CH	TH	p-value
Direct Costs	REF	↑10%	0.135
Indirect Costs	REF	↑28%	<0.001
30-day HCU	\$14,179 ± \$8,502	\$17,023 ± \$11,981	0.038

CONCLUSIONS

- While maintaining perioperative and oncologic outcomes, BCS provided at community-based hospitals provides cost-efficient care.
- These findings advocate for all institutions to conduct an internal analysis for the decentralization of select breast cancer surgeries within integrated cancer networks.

CONTACT INFORMATION

Casey.allen@ahn.org



Allegheny
Health Network

ACS Cancer Programs
American College of Surgeons