TITLE: The Price is Right? Hourly Pay Disparities in Breast Reconstruction

AUTHORS:
Chanel R. Varney, BA[1]
Andreas Seas, BS[1]
Pranav N. Haravu, MD[2]
Jenny Foster, BS[1]
J. Andres Hernandez, MD, MBA[2]
Alexandria M. Mullikin, MD, MBA[2]
Andrew Atia, MD, MBA[2]
J. Blake Long, MD, MBA[2]
Brett T. Phillips, MD, MBA[2]

[1] Duke University School of Medicine, Durham, North Carolina
[2] Division of Plastic, Maxillofacial, and Oral Surgery, Duke University Medical Center, Durham, North Carolina

ABSTRACT:

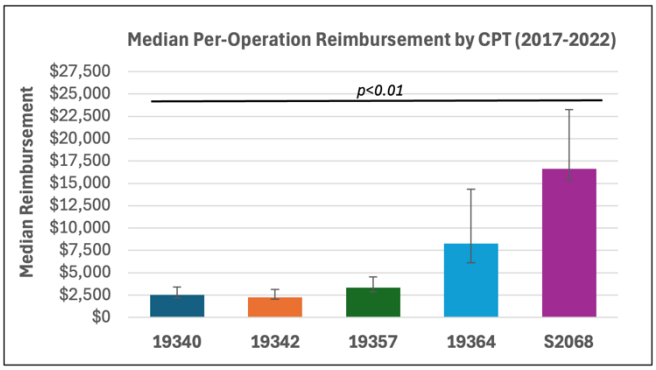
Background: Microvascular breast reconstruction exhibits high levels of patient satisfaction but is performed far less often than implant-based reconstruction. Underpayment of free flap reconstruction is thought to contribute to this trend. This study investigates compensation disparities between reconstruction techniques, using real-world collections and operative times data to calculate an effective hourly reimbursement rate.

Methods: The PearlDiver multi-payer claims database was queried from 2017-2022 for records matching immediate implant (CPT-19340), delayed implant (CPT-19342), tissue expander (CPT-19357), free flap (CPT-19364), or DIEP flap (S2068). Included claims represented plastic surgeon-performed operations, with non-zero reimbursements and no co-listed mastectomy-related codes. The National Surgical Quality Improvement Program (NSQIP) database was queried from 2017-2022 to obtain operative time data. Median reimbursement was divided by median operative time to establish the effective hourly reimbursement rate.

Results: Median per-operation reimbursements ranged from $2,245-$3,316 for implant-based reconstruction and were $8,265 and $16,625 for free flap and DIEP flap reconstruction, respectively. Median operative times were 89.0, 93.0, and 450.0 minutes for delayed implant, tissue expander, and free flap groups, respectively. Median hourly reimbursements ranged from $1,513-$2,139/hour for implant-based reconstruction and were $1,102/hour and $2,218/hour for free flap and DIEP flap reconstruction, respectively, with all groups receiving their greatest hourly reimbursements from non-CMS payers.

Conclusions: The study shows sizable disparities in hourly reimbursements between implant-based and free flap reconstruction groups. These trends may arise from differences in commercial insurance negotiations and variable usages of inpatient versus outpatient settings. Without intervention, reimbursement disparities may insufficiently incentivize the growth of microvascular reconstruction techniques.

FIGURES:

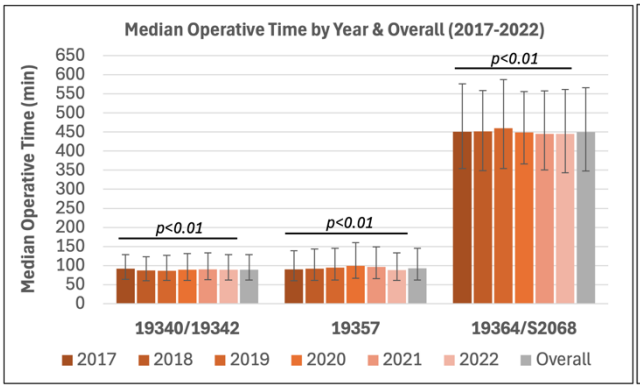


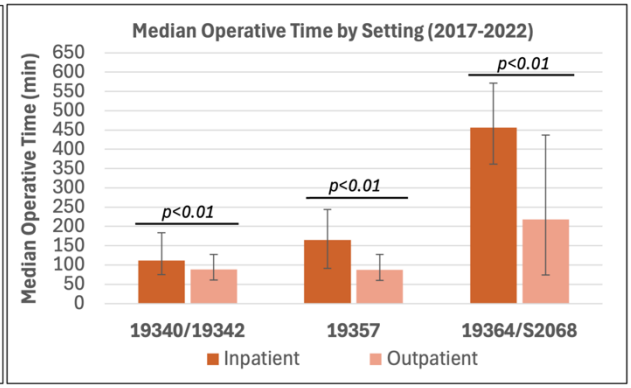
*p<0.01; significant variability in per-operation reimbursement between CPT groups per Kruskal-Wallis test; error bars signify interquartile ranges

Per-Operation Reimbursement, Operative Time, & Hourly Reimbursement by CPT (2017-2022)

CPT	PearlDiver n =	1st Qu.	Median	3rd Qu.	NSQIP n=	Median Op Time (min)	Median $/HR
19340	9286	$2,163	$2,538	$3,414	9195	89.0*	$1,711
19342	12387	$2,040	$2,245	$3,149	9195	89.0	$1,513
19357	25103	$2,844	$3,316	$4,511	4750	93.0	$2,139
19364	4581	$6,112	$8,265	$14,353	6780	450.0	$1,102
S2068	2845	$15,371	$16,636	$23,238	6780	450.0*	$2,218

*Operative times for CPT-19342 and CPT-19364 were considered representative of CPT-19340 and CPT-S2068 operations, respectively





*p<0.01; significant variability between years and significant differences between settings per Kruskal-Wallis and Mann-Whitney tests, respectively; error bars signify interquartile ranges