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Outcomes for PJI Treatment are Superior at Centers of Excellence

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Faculty Disclosure Information

- Authors have no relevant disclosures

Background

- Periprosthetic joint infection (PJI) is the leading cause of total joint arthroplasty (TJA) failure.
- Centers of Excellence (COE) with fellowship-trained arthroplasty surgeons offer specialized care.
- This study compares outcomes between COE and Non-COE hospitals within the same healthcare system.

Methods

- A retrospective cohort study between 2016-2024 was conducted using data from 504 patients treated at COE and 390 patients treated at Non-COE* for total hip and knee PJI.
- The COE group comprises three hospitals, while the Non-COE group includes thirteen hospitals within the same healthcare system.
- We analyzed demographic variables, complications, readmissions, discharge dispositions, and patient-reported outcomes.
- Statistical analyses, including chi-square tests and T-tests, were used to compare proportions and mean values between the two groups.

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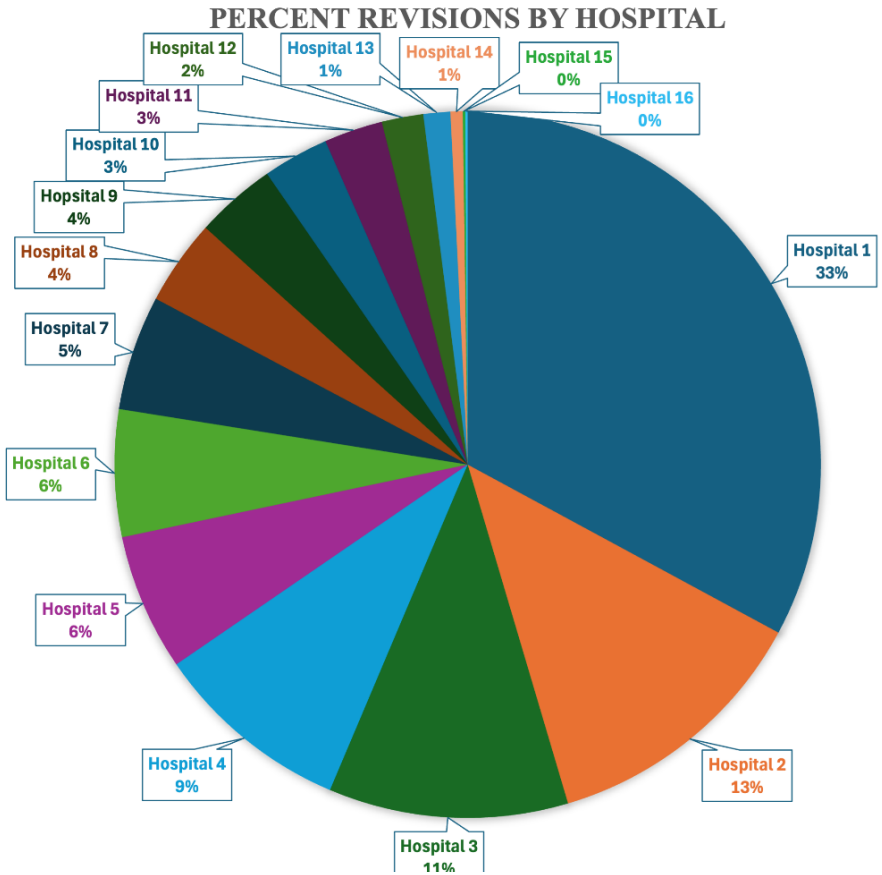
COE classification

- 3 Hospitals with highest percentage of revisions are classified as COEs
- These hospitals also have fellowship trained arthroplasty surgeons



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Results: Demographic Information

	COE (n=504)	NCOE (n=390)	*P*-value
Age (mean)	66	67	0.31
BMI (mean)	36.9	37.3	0.50
White (N(%))	474 (94.0)	370 (94.8)	0.900
Black (N(%))	23 (4.5)	16 (4.1)	0.743
Female (N(%))	233 (46.2)	181 (48.9)	0.50
THA (N(%))	235 (46.6)	162 (41.5)	0.147
TKA (N(%))	267 (53)	228 (58.5)	0.117
Risk of Mortality Score	1.63	1.86	0.001*
Severity of Illness Score	2.16	2.40	0.001*

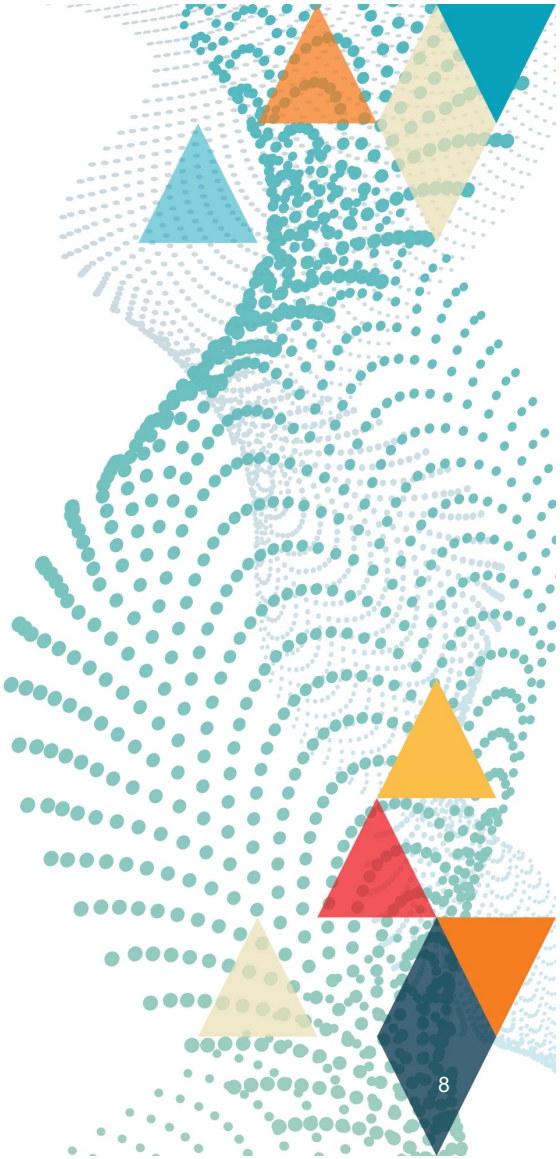
Results: Complications at COE vs

Post-operative Complications	COE (504) N (%)	NCOE (390) N (%)	*P*-value
90 Day Any Complication	112 (22.2)	116 (29.7)	0.027*
90 Day Myocardial Infarction	1 (0.2)	0 (0.0)	0.37
90 Day Mechanical Complication	33 (6.5)	13 (3.3)	0.033*
90 Day Pulmonary Embolism	6 (1.2)	5 (1.3)	0.90
90 Day Pneumonia	3 (0.6)	5 (1.3)	0.28
90 Day Sepsis	52 (10.3)	71 (18.2)	<.001*
90 Day Wound Infection	34 (6.8)	37 (9.5)	0.13
90 Day Surgical Site Bleed	0 (0.0)	1 (0.3)	0.25
90 Day Surgical Site Infection	10 (2.0)	13 (3.3)	0.21
30 Day Mortality	2 (0.4)	4 (1.0)	0.25
90 Day Mortality	3 (0.6)	7 (1.8)	0.09
1 Year Mortality	23 (4.6)	19 (4.9)	0.82
1 Year Unplanned Revision	123 (24.4)	94 (24.1)	0.98
7 Day Readmission	20 (4.0)	16 (4.1)	0.91
30 Day Readmission	68 (13.5)	53 (13.6)	0.96
90 Day Readmission	112 (22.2)	91 (23.3)	0.69

- The comparison of postoperative complications between groups showed a significantly lower overall all-cause NQF 1550 complication rate (22.2 versus 29.7%; P = 0.027) and sepsis (10.3 versus 8.2%; P <0.001 in the COE.

Conclusion

- Using a volume-based definition of COE, we demonstrate that high-volume COEs are associated with reduced complications following revision total joint arthroplasty.
- The study highlights the importance of specialized regional centers in managing complex PJI cases.
- Further research is necessary to better understand this trend



Citations

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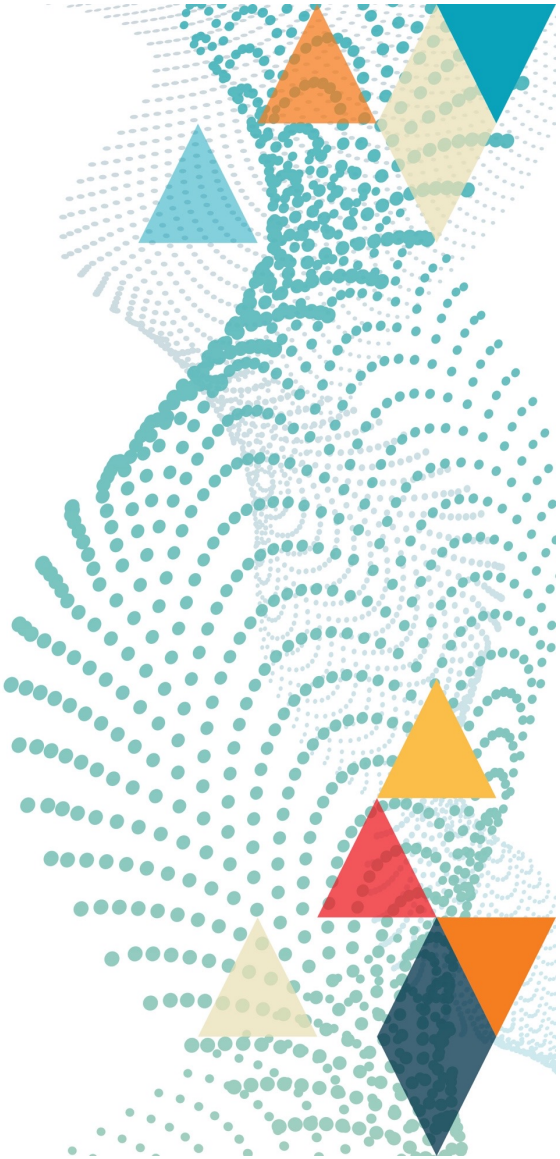

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