Emergency Department Visit Within One Year Prior to Elective Total Hip Arthroplasty is Predictive of Post-Operative Return to Emergency Department within 90 Days

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EMERGENCY DEPARTMENT VISIT WITHIN ONE YEAR PRIOR TO ELECTIVE TOTAL HIP ARTHROPLASTY IS PREDICTIVE OF POSTOPERATIVE RETURN TO EMERGENCY DEPARTMENT WITHIN 90 DAYS

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BACKGROUND

• Bundled payment models, such as the Comprehensive Care for Joint Replacement Model (CJR), developed by Centers for Medicare and Medicaid Services (CMS), aim to improve the quality and cost efficiency of joint replacement care.

• Among the metrics tracked, Emergency Department (ED) visit rates after Primary Total Hip Arthroplasty (THA) are of particular interest.
Purpose

- Determine if preoperative ED visits are predictive of postoperative ED visits among patients undergoing elective primary THA
METHODS

• Michigan Arthroplasty Registry Collaborative Quality Initiative (MARCQI) database was utilized to identify all patients who underwent elective primary THA at all hospitals within our healthcare system between January 1, 2014 and December 31, 2017

• 2453 THA patients were identified

• These patients were cross-referenced with institutional data to determine which patients had an ED visit from up to one year prior to their surgical date to 90 days after

• We assessed if preoperative visit frequency or temporality are predictive of a return ED visit within 90 days

• Total charges of each postoperative ED visit were recorded
RESULTS

• 466/2453 (19.0%) of patients had a preoperative ED visit within 365 days of their surgical date

• 370/2453 (15.1%) of patients had a postoperative ED visit within 90 days of their surgical date

• Of the 466 patients with a preoperative ED visit, 123/466 (26.4%) also had a post-op ED visit

• Both increasing frequency and proximity of preoperative ED visits were associated with postoperative ED visits

• The average billable charges per postoperative ED visit after THA were $9,669.96
Return to ED within 90 days postoperative after elective THA

Total number pre-operative ED visits within one year of surgical date

- 1 visit: 17.7%
- 3 visits: 42.4%
- 5+ visits: 64.3%
Return to ED within 90 days postoperative after elective THA

Odds Ratio

Total number pre-operative ED visits within one year of surgical date

- 2.0* (1)
- 6.8* (3)
- 16.7* (5+)

*P < .001
Return to ED within 90 days postoperative after elective THA

Percent Return to ED

- 33.3% <30 days
- 30.6% <60 days
- 28.4% <90 days
- 25.3% 90-365 days

Closest pre-operative ED visit in proximity to surgical date

THA
Return to ED within 90 days postoperative after elective THA

![Graph showing odds ratios for return to ED within 90 days postoperative after elective THA.](image)

- THA

*P<.001

- Odds Ratio
- Closest pre-operative ED visit in proximity to surgical date:
  - <30 days: 4.6*
  - <60 days: 4.1*
  - <90 days: 3.7*
  - 90-365 days: 3.1*
**Discussion**

- Bundled payment models are designed to improve overall efficiencies within joint replacement care

- **Performance in metrics tracked, including emergency room visits** and readmission rates after elective THA, are utilized as a measures of hospital quality

- **These measures will dictate compensation to hospitals and providers alike**
DISCUSSION

• Our study identifies that, within a large healthcare system, previous ED visits are predictive of patients returning to the ED in the 90 day postop period.

• Identification of these at risk patients allows potential opportunity for intervention to improve performance on these metrics, and more importantly, patient care.

• A 10% reduction in postoperative ED visits, at $10K per visit, could result in an annual savings to the hospital system of $284K annually.
CONCLUSION

• Patient utilization of the ED is common prior to Total Hip Arthroplasty and is a risk factor for post-operative ED visit within 90 days

• Increasing pre-operative visit frequency and proximity prior to surgery further increase a patients’ risk of a post-operative visit within 90 days
CONCLUSION

• There is a significant cost-saving potential by reducing the number of these postoperative ED visits

• Interventions aimed at reducing the frequency of postoperative ED visits, particularly in at risk patients, may provide value to overall joint replacement care