



PRE-PANDEMIC TRENDS OF INPATIENT RADIOLOGY EVALUATION AND MANAGEMENT CLAIMS: NATIONAL USAGE AND REIMBURSEMENT TRENDS FROM 2010 TO 2018



Suraj S. Parikh¹, Christopher B. Gustafson¹, Will S. Lindquester², Rajoo Dhangana¹

1. University of Pittsburgh Medical Center Department of Radiology, 2. Emory University School of Medicine Division of Interventional Radiology and Image-Guided Medicine

Abstract

Purpose

To evaluate the usage and reimbursement trends of inpatient evaluation and management (E&M) claims filed by radiologists among Medicare beneficiaries from 2010 to 2018.

Methods/Materials

Medicare claims from 2010 to 2018 were extracted from the Medicare Part B Physician/Supplier Procedure Summary Master File for a select amount of inpatient evaluation and management (E&M) services including initial hospital care, consultations, and subsequent encounters. The data was filtered to only include claims from radiologists and interventional radiologists in the inpatient hospital setting. The total volume and reimbursements were analyzed in aggregate and service type.

Results

Aggregate inpatient E&M claims decreased from 2010 to 2018 by 19.5% from 58,598 to 47,198. There was a 10.1% decrease in initial care services from 16,012 to 14,388 and a 23.0% decrease in subsequent encounters from 42,586 to 32,810. All inpatient consultation claims were denied. Subset analysis demonstrated decreased volumes for nearly all services rendered except low-complexity initial hospital care encounters, which showed a 35.9% increase in volume from 3,399 to 4,618.

Aggregate reimbursement from inpatient E&M services decreased by 18.5% from \$4,064,693.67 to \$3,312,089.98. Average reimbursement per service minimally increased from \$69.37 to \$70.18.

Conclusions

Inpatient E&M claims decreased by 19.5% from 58,598 to 47,198 with only low complexity admissions increasing in volume during this period. Given more recent increases in valuation for E&M service proposed by Centers for Medicare and Medicaid Services (CMS) and greater focus on interventional radiology as a clinically-focused specialty, inpatient E&M services represent an opportunity for revenue and clinical growth for interventional radiology practices.

Introduction

- In recent years, there has been a greater focus on interventional radiology as a comprehensive inpatient clinical service¹⁻³.
- Inpatient E&M services such as consultations and inpatient rounding can drive more referrals and increase the volume and complexity of procedural services⁴.
- In the setting of decreasing reimbursement for many image-guided procedures and recent changes in E&M codes resulting in higher reimbursement, a focus on inpatient E&M services can help increase revenue for interventional radiology practices⁵⁻⁷.
- Trends in inpatient E&M services have not been comprehensively studied since 2009⁴.

Materials & Methods

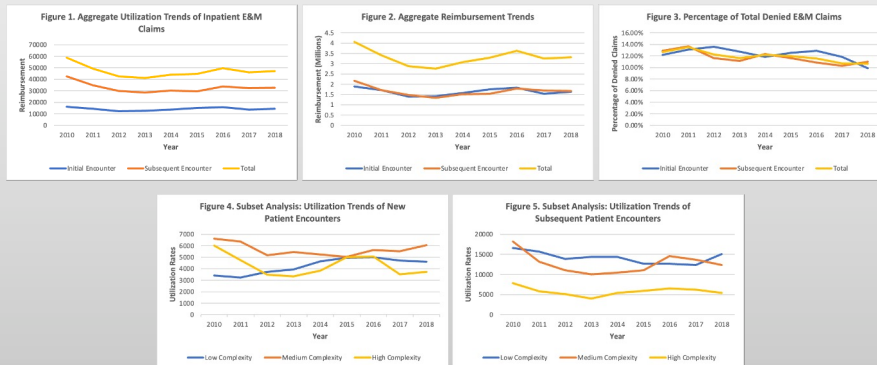
This study was determined to be exempt from review by the institutional review board as only publicly available summary data without identifiable patient elements was used. Medicare Fee For Service claims from 2010 to 2018 were extracted from the Medicare Part B Physician/Supplier Procedure Summary Master File using the CPT codes listed in Table 1 for select inpatient evaluation and management (E&M) services including initial hospital care and subsequent encounters. Patients admitted for observation or evaluated in the emergency department were not included. The data was filtered to only include claims from radiologists and interventional radiologists and only inpatient hospital claims.

The number of paid services was calculated by subtracting the denied services from the submitted services. The Medicare total professional component was collected from the "NCH payment amount" in the PPSMF for each CPT code. Utilization rates and reimbursements were analyzed for the aggregate and by level of complexity. Percentage of denied claims was analyzed for the aggregate.

Table 1. Inpatient CPT Codes

Complexity	Initial Inpatient Encounter CPT Codes	Subsequent Inpatient Encounter CPT Codes
Low	99221	99231
Medium	99222	99232
High	99223	99233

Results



Conclusion

- 19.4% decrease in aggregate inpatient evaluation and management utilization rates from 2010 to 2018 with a concordant 18.5% decrease in aggregate reimbursement.
- Only low complexity initial encounters had increased utilization increasing by 35.8% from 3,404 to 4,623.
- All other inpatient encounters demonstrated decreased utilization most significantly in medium complexity subsequent encounters, which decreased by 32.4% from 18,228 to 12,319 during the study period.
- Aggregate percentage of denied claims marginally decreased by 2.0%.

Limitations

- Medicare dataset so population is confined to elderly patients who may be more likely to be admitted and more comorbid resulting in increased length of stay and more follow up visits.
- This study did not take into account same-day admissions & discharges, observation admissions, or emergency department follow up.

References

- Brunner MC, Durham JD, Lewis CA, McClenny TE. Strategic initiatives in interventional radiology: the clinical imperative. *J Vasc Interv Radiol.* 2003 Sep;14(9 Pt 1):1099-101.
- Duszak R Jr, Mistry MR. Clinical services in interventional radiology: results from the national Medicare database and a Society of Interventional Radiology membership survey. *J Vasc Interv Radiol.* 2003 Jan;14(1):75-81.
- Khan N, Murphy TP, Soares GM, Zahir IS. Clinical services provided by interventional radiologists to Medicare beneficiaries in the United States, 2000-2003. *J Vasc Interv Radiol.* 2005 Dec;16(12):1763-7.
- Kwan SW, Valji K. Interventional radiologists' involvement in evaluation and management services and association with practice characteristics. *J Vasc Interv Radiol.* 2012 Jul;23(7):887-92.
- Lindquester WS, Hawkins CM, Dhangana R. Reductions in Reimbursement and Relative Value Units for Interventional Radiology Procedures: Trends from 2011 to 2021 Compared with Those for Other Physician Specialties. *J Vasc Interv Radiol.* 2022 Aug;33(8):972-977.
- Schartz D, Young E. Medicare Reimbursement Trends for Interventional Radiology Procedures: 2012 to 2020. *J Vasc Interv Radiol.* 2021 Mar;32(3):447-452. doi: 10.1016/j.jvir.2020.12.007. Epub 2021 Jan 14.
- Centers for Medicare & Medicaid Services physician fee schedule look up tool. Available at: <https://www.cms.gov/Medicare/Medicare-Fee-for-Service-Payment/PFSlookup>. Accessed 20th March 2023.