

Ambulatory Surgery Centers Reduce Patient Out-of-Pocket Expenditures for Rotator Cuff Repair, but Patient Expenditures Increase at Higher Rate than Total Healthcare Utilization Reimbursement from Payers

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INTRODUCTION: Rotator cuff repair (RCR) is a commonly performed orthopaedic procedure, and the costs associated with RCR have significantly increased over the past 20 years. Despite this, the drivers of patient out-of-pocket expenditures for RCR have yet to be analyzed. The main objective of this study was to quantify and trend annual out-of-pocket expenditures for RCR patients relative to total healthcare utilization (THU) reimbursement, and compare drivers of patient out-of-pocket expenditures (POPE) via analyses stratified by insurance type and surgical setting.

METHODS: Patients who underwent outpatient arthroscopic RCR in the US from 2013 to 2018 were identified from a large national insurance database. The database was selected due to its large sample size, national representation, and availability of data on patient out-of-pocket expenses. The data collected included patient demographics, insurance plan type, diagnosis and procedure codes, and cost data, which is categorized into patient, insurance, and third-party components. Primary outcome variables were total POPE and THU reimbursement, which were calculated for all claims in the 9-month perioperative period. Trends in outcome variables over time and differences across insurance types were analyzed. Total patient out-of-pocket expenditure was further broken down into the following categories: magnetic resonance imaging (MRI), preoperative office visits, x-ray, immediate patient pay (patient out-of-pocket expenditure for the immediate procedure), and postoperative physical therapy (PT). Multivariable analysis was performed to investigate drivers of POPE.

RESULTS: A total of 52,330 RCR patients were identified. Between 2013 and 2018, median POPE increased by 47.5% (\$917 to \$1,353) and median THU increased by 9.3% (\$11,964 to \$13,076). Patients with high deductible insurance plans paid \$1,910 toward their THU, 52.5% more than patients with preferred provider plans (\$1,253, $p=0.001$) and 280.5% more than patients with managed care plans (\$502, $p=0.001$). All components of POPE increased over the study period with the largest observed increase being POPE for the immediate procedure ($p=0.001$). On multivariable analysis, out-of-network facility, out-of-network surgeon, and high deductible insurance most significantly increased POPE.

DISCUSSION AND CONCLUSION: POPE for RCR increased at a higher rate than THU over the study period, suggesting that payers are expecting patients to pay a larger proportion of RCR costs. A large percentage of this increase may come from increasing POPE for the immediate procedure. Out-of-network facility status increased POPE three times more than out-of-network surgeon status, suggesting that cost optimization strategies should focus on facility reimbursements. Lastly, ASCs significantly reduced POPE, so performing RCRs at ASCs would be beneficial to cost-minimization efforts.

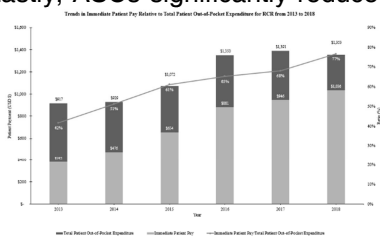


Figure 2. Trends in Immediate Patient Pay Relative to Total Patient Out-of-Pocket Expenditures for Rotator Cuff Repair from 2013 to 2018. Total patient out-of-pocket expenditures (full bar), immediate patient pay (inset bar), and ratio of immediate patient pay (patient out-of-pocket expenditure for the immediate procedure) to total patient out-of-pocket expenditure (trendline) were determined for each procedure year.

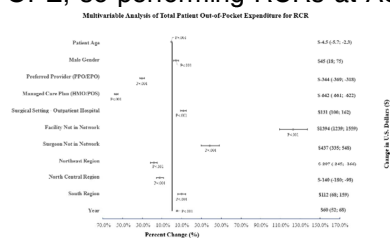


Figure 3. Multivariable Analysis of Total Patient Out-of-Pocket Expenditure for Rotator Cuff Repair. Reference values and exact percentage changes are included in Supplementary Table 1. Abbreviations: rotator cuff repair (RCR), preferred provider organization (PPO), exclusive provider organization (EPO), health maintenance organization (HMO), point of service (POS), consumer driven health plan (CDHP), high deductible health plan (HDHP)

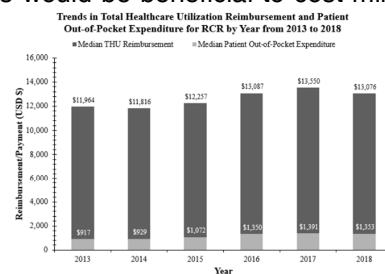


Figure 1. Trends in Total Healthcare Utilization Reimbursement and Patient Out-of-Pocket Expenditure for Rotator Cuff Repair by Year from 2013 to 2018. Median THU reimbursement (full bar) and median patient out-of-pocket expenditure (inset bar) were determined for each procedure year. Abbreviations: Total Healthcare Utilization (THU).