Objectives: More than 20% of Medicare patients who undergo endovascular aneurysm repair (EVR) will require reintervention, an important quality metric in vascular surgery. While previous studies have demonstrated the feasibility of surveillance for reintervention using Medicare claims, this method has not been described for patients under 65 who comprise an important subgroup of those undergoing EVR.

Methods: We identified patients who underwent EVR (2003-2015) within the Vascular Quality Initiative (VQI) and the Statewide Planning and Research Cooperative System (SPARCS), the all-payer claims database in New York (n=1,285, 78.6% male, 83.8% elective, mean age 74.3 years). We linked patients in VQI to their respective SPARCS claims file at the patient level (match rate 96%). Our primary exposure was EVR. Our primary outcome was reintervention which was identified using a validated claims algorithm. We conducted a sub-analysis by Medicare eligibility (age >=65 or on dialysis) at the time of EVR. To account for differences between the sub-groups, we created a propensity-matched cohort. We examined our primary outcome with Kaplan-Meier survival estimation and Cox-regression.

Results: Most patients were Medicare eligible (86%, 1,110/1,285), and the remainder were not Medicare eligible (14%, 175/1,285). Medicare eligible patients were less likely to be male (76.5% versus 90.9%, p<0.001), have a history of smoking (78.7% versus 93.1%, p<0.001), and have an urgent or emergent procedure (15.2% versus 22.9%, p=0.013). The 3-year Kaplan-Meier estimated rate of reintervention was 21% for the entire cohort (Figure). We noted no difference in the 3-year rate of reintervention for patients who were Medicare eligible versus those that were not (19% versus 20%, log-rank p=0.199; unadjusted hazard ratio (HR): 0.75, 95% confidence interval (CI): 0.49-1.16). This finding persisted in both the adjusted analysis and the propensity-matched cohort of 167 matched pairs of patients (adjusted HR: 0.76; CI: 0.50-1.19; propensity-matched HR: 0.70; CI: 0.36-1.34).

Conclusions: One in five patients who undergo EVR will require reintervention within three years, and this event can be monitored for quality assessment using claims from both Medicare and non-Medicare payers. This rate does not differ between older, Medicare eligible individuals, and those who have not yet reached Medicare eligibility.