Objective(s):
As medical payment transitions to quality and value-based incentives, increasing importance is placed on comparative metrics from administrative and clinical databases. This study validates data for open and endovascular abdominal aortic aneurysm (AAA) repair patients within Vizient and Vascular Quality Initiative (VQI) against detailed EMR data in academic clinical practice.

Methods:
Vizient is based on ICD-9 procedure codes whereas VQI includes both CPT and ICD-9 with further exclusionary criteria (mycotic aneurysms, suprarenal anastomoses, fenestrated grafts, and redo open repair). Institutional data was obtained through EMR query of relevant ICD-9 codes, cross-check of reported VQI and Vizient procedures, and retrospective chart review. Study dates (4/1/2011-9/30/2015) matched available data and excluded post ICD-10 reporting. VQI and Vizient datasets were validated by matching patient cohorts to institutional data and comparing across equivalent outcome variables.

Results:
389 AAA patients matched between Vizient and institutional data. Vizient had lower specificity in reporting patient race including White (85.9% vs. 91.3%, P=0.02) and unknown (9.7% vs. 4.1%, P=0.002). There were no significant differences in reported total LOS (P=0.08) or inpatient mortality (P=0.73). ICU LOS (3.3±4.9 vs. 4.1±6.0 days, P=0.04), patient disposition to rehab (4.7% vs. 9.5%, P=0.009), and SNF (13.3% vs. 8.9%, P=0.05) differed significantly. 334 AAA patients matched between VQI and institutional data. There were no significant demographic differences. There were reporting differences in history of CAD (32.7% vs. 44.0%, P=0.003) and prior lower-extremity bypass (8.1% vs. 7.7%, P=0.002). Preoperative cardiac stress testing was underreported in VQI (7.3% vs. 15.2%, P=0.002). There were differences in former (50.3% vs. 60.2%, P=0.01) and current (35.6% vs. 27.7%, P=0.03) tobacco use. VQI underreported patients requiring preoperative assistance with ambulation (6.4% vs. 25.5%, P=0.0001). Institutional EMR underreported preoperative use of aspirin (71.5% vs. 53.3%, P=0.001), antplatelet therapy (20.4% vs. 14.2%, P=0.03), statins (73.0% vs. 59.9%, P=0.001), beta-blockers (59.4% vs. 47.6%, P=0.002), and ACE-inhibitors (40.4% vs. 29.8%, P=0.004). There were also differences in reported rates of ASA Class II (19.5% vs. 6.6%, P=0.001) and Class IV (40.8% vs. 48.8%, P=0.04). There was evidence of VQI underrepresentation of rates of iliac (21.0% vs. 32.4%, P<0.001) and ruptured aneurysms (9.9% vs. 16.5%, P=0.01). Postoperative dysrhythmias (5.4% vs. 12.9%, P=0.001), leg ischemia (1.2% vs. 3.6%, P=0.04) and reoperation (9.3% vs. 23.5%, P<0.001) were underreported in VQI. Discharge with aspirin (85.6% vs. 75.3%, P=0.001), beta-blockers (76.6% vs. 64.5%, P=0.001), and ACE-inhibitors (36.6% vs. 29.5%, P=0.05) were underreported by institutional data. Disposition to SNF (1.5% vs. 7.5%, P<0.001) was underreported by VQI.

Conclusions:
Our study reveals significant reporting differences of demographics and outcomes within a national administrative database (Vizient) and national clinical registry (VQI) at the institutional level. These findings can inform quality improvement efforts. Future studies will use these validated datasets to standardize outcomes measures and evaluate any correction in discrepancies.

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