

Title: Comprehensive Phenotypic and Institutional Variation in Contemporary TAVR Recipients: Insights from a Regional Multicenter Cohort

Background:

TAVR patients present with diverse clinical and sociodemographic profiles, but real-world variation across phenotypes, institutions, and risk factors remains incompletely defined. This study characterizes aortic stenosis subtypes and risk profiles across a three-center cohort in Washington State.

Methods:

We retrospectively analyzed 2,181 patients undergoing TAVR from 2021–2024 across Virginia Mason (VMMC, King County), St. Joseph (SJMC, Pierce County), and St. Michael (SMMC, Kitsap County) medical centers. Patients were stratified into four phenotypes: LFLG EF <50% (n=274), LFLG EF ≥50% (n=640), HFHG EF <50% (n=229), and HFHG EF ≥50% (n=1,038). We examined demographic, echocardiographic, functional (KCCQ-12), insurance, and STS risk profiles by site.

Results:

The cohort was 46.5% female, mean age 78.5±8.9 years, predominantly White (>90%). Insurance: Medicare FFS (60.1%), Medicare Advantage (27.8%), Medicaid (5.6%), private (5.0%). VMMC had the highest STS score (5.72), lowest LVEF (55.1%) and KCCQ-12 (40.3), and more LFLG EF <50% (n=109) and HFHG EF <50% (n=144) patients. It also had the highest Medicaid (7.2%) and Medicare Advantage (31.8%) coverage. SJMC showed intermediate metrics (STS 4.52, LVEF 56.9%, KCCQ-12 46.6), with most patients on Medicare FFS (63.2%). SMMC had the highest LVEF (58.3%), STS 4.69, KCCQ-12 47.1, and largest Medicare FFS proportion (67.6%).

Conclusions:

We observed substantial phenotypic and institutional heterogeneity. VMMC treated higher-risk patients with more Medicaid coverage; SMMC patients had more preserved function and traditional Medicare coverage; SJMC was intermediate. The One Big Beautiful Bill (OB BB, PL 118-92) threatens to cut Medicaid by \$1T over 10 years, with WA projected to lose ≥\$3B annually. An estimated 26% of Medicaid enrollees—over 250,000 people—may lose coverage, disproportionately affecting the most vulnerable high-risk patients at safety-net hospitals. These cuts jeopardize access to advanced therapies like TAVR and underscore the need for urgent policy safeguards.