



There is substantial surgeon-level variation in AVF placements and AVF maturation. Surgeons' prior volume of AVF placements is strongly associated with AVF maturation" Shahinian et al (2019).

Abstract:

RATIONALE & OBJECTIVE: An arteriovenous fistula (AVF) is the preferred access for most patients receiving maintenance hemodialysis, but maturation failure remains a challenge. Surgeon characteristics have been proposed as contributors to AVF success. We examined variation in AVF placement and AVF outcomes by surgeon and surgeon characteristics.

STUDY DESIGN: Retrospective cohort study.

SETTING & PARTICIPANTS: National Medicare claims and web-based data submitted by dialysis facilities on maintenance hemodialysis patients from 2009 through 2015.

EXPOSURES: Patient characteristics, including demographics and comorbid conditions; surgeon characteristics, including specialty, prior volume of AVF placements, and years since medical school graduation.

OUTCOMES: Percent of access placements that were an AVF from 2009 to 2015 (designated AVF placement), and percent of AVFs with successful use within 6 months of placement (maturation) from 2013 to 2014.

ANALYTICAL APPROACH: Multilevel logistic regression models examining the association of surgeon characteristics with the outcomes, adjusted for patient characteristics and dialysis facilities as random effects.

RESULTS: Among 4,959 surgeons placing 467,827 accesses, median AVF placement was 71% (IQR, 59%-84%). More recent year of medical school graduation and general surgery specialty (vs vascular, cardiothoracic, or transplantation surgery) were associated with higher odds of AVF placement. Among 2,770 surgeons placing 49,826 AVFs, the median AVF maturation rate was 59% (IQR, 44%-71%). More recent year of medical school graduation, but not surgical specialty, was associated with higher odds of AVF maturation. Greater prior volume of AVF placement was associated with higher odds of AVF maturation: OR of 1.46 (95% CI, 1.37-1.57) for highest (>84 AVF placements in 2years) versus lowest (<14) volume quintile. **LIMITATIONS:** The study relied on administrative data, limiting capture of some factors affecting access outcomes. **CONCLUSIONS:** There is substantial surgeon-level variation in AVF placements and AVF maturation. Surgeons' prior volume of AVF placements is strongly associated with AVF maturation.

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Reference:

Shahinian, V.B., Zhang, X., Tilea, A.M., He, K., Schaubel, D.E., Wu, W., Pisoni, R., Robinson, B., Saran, R. and Woodside, K.J. (2019) Surgeon Characteristics and Dialysis Vascular Access Outcomes in the United States: A Retrospective Cohort Study. *American Journal of Kidney Diseases*. October 1st. doi: 10.1053/j.ajkd.2019.08.001. .

