Background: Approximately 80% of hemodialysis patients in the US initiate dialysis with a central venous catheter (CVC) despite their high incidence of infections compared to other vascular access modalities. End-stage renal disease (ESRD) patients with CVCs have a higher rate of sepsis infections of 2.32 per patient year compared to arteriovenous grafts (AVGs) at 0.61 per patient year. Sepsis hospitalizations have been cited as the costliest condition to treat in the US. ESRD patients hospitalized for sepsis related to CVCs cost an average of $27,088 per admission and have an in-hospital mortality rate of 7.6%.

Objective: We compare CVC sepsis costs for patients implanted with the early cannulation GORE® ACUSEAL Vascular Graft to patients with non-early cannulation AVGs (eAVGs).

Methods: An economic cost model was estimated using the GORE® ACUSEAL Vascular Graft clinical study; clinical literature for the non-eAVG; and publicly available cost sources.

The GORE® ACUSEAL Vascular Graft clinical study was a prospective, multi-center, single-arm study to establish the safety and efficacy of the GORE® ACUSEAL Vascular Graft for use in hemodialysis access (Table 1).

Results: Assuming 100 patients in each group, the GORE® ACUSEAL Vascular Graft group was estimated to have 9.9 CVC sepsis episodes compared to 21.6 in the non-eAVG group, with estimated total sepsis hospitalization costs of $268,171 versus $585,101, respectively, due to the extended time with CVC dependence (Table 2).

Conclusions: It is estimated the GORE® ACUSEAL Vascular Graft reduces the overall incidence of CVC sepsis and related costs compared to non-eAVGs due to fewer CVC-dependent days. As clinicians become more accustomed to cannulating the GORE® ACUSEAL Vascular Graft within 24 hours, the cost savings could potentially be higher than what is currently estimated.

References: