

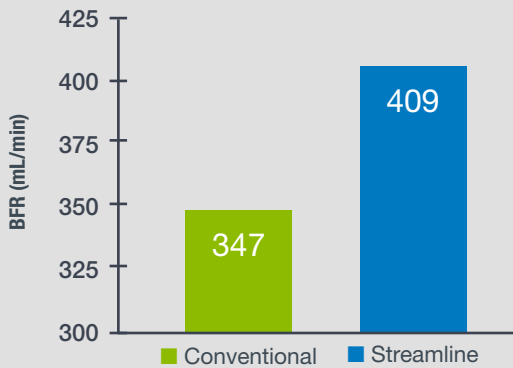
Compared to conventional bloodlines, Streamline® provided significantly lower costs per treatment and reductions in heparin usage and medical waste<sup>1</sup>

**Streamline™ Airless System Optimizes Dialysis Adequacy with Reduced Costs**

Poster presented at American Society of Nephrology Conference, 2007.

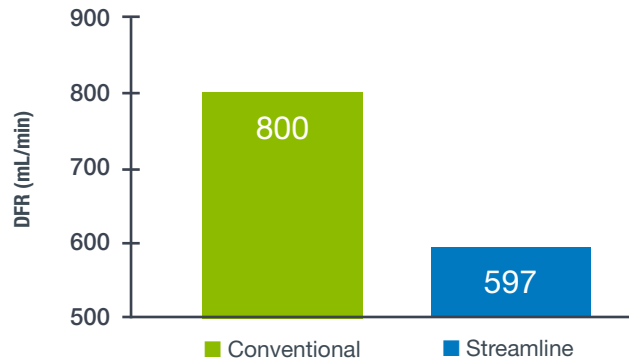
Cooke JD, Moran J. – In this cross-over study of 117 patients at Satellite Healthcare in Mountain View, California, Streamline maintained or improved patient Kt/Vs while reducing per-treatment costs in dialysate, heparin, biohazard waste, and transducer protectors as compared to conventional bloodlines.

**With Streamline, average blood flow rate (BFR) significantly increased by 62 mL/min ( $p < 0.0002$ )**



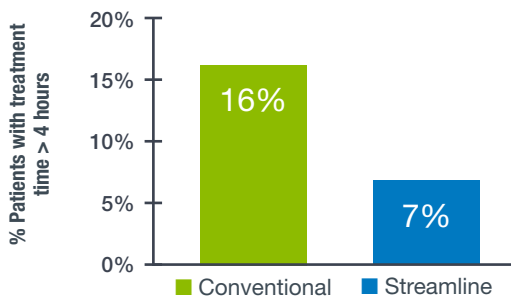
Streamline enabled higher blood flow rates in comparison to conventional bloodlines.

**With Streamline, average dialysate flow rate (DFR) significantly decreased by 203 mL/min ( $p < 0.0001$ )**



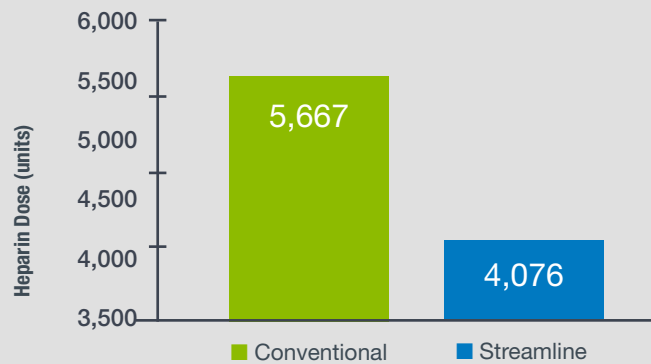
Increased blood flow rates enabled more efficient dialysate usage while maintaining or improving Kt/V. The study reported per-treatment dialysate savings of \$1.39 with Streamline.

**With Streamline, % of patients with treatment time > 4 hours reduced by 56%**



Increased blood flow rates enabled shorter treatment times for some patients while maintaining or improving Kt/V.

**With Streamline, average heparin dose significantly decreased by 28.1% ( $p < 0.0001$ )**



Heparin dose was reduced in 85% of patients. The study reported per-treatment heparin savings of \$0.07.

## Cost Reductions

The study reported savings in dialysate usage and staff overtime of \$1.39 and \$1.32 respectively per treatment. In addition, savings of \$0.19, \$0.07, and \$0.03 per treatment were seen for biohazardous waste, heparin, and transducer protectors respectively. In total, the study showed cost savings of \$3.00 per treatment when using Streamline compared to conventional bloodlines.

## Reduction in Treatment Alarms

The study reported a 53% reduction ( $p=0.002$ ) in alarms per treatment. On average, 0.72 and 0.34 alarms per treatment were seen for conventional bloodlines and Streamline respectively. Most of the difference was attributable to fewer pressure alarms.

**Study Design:** Cross-over study of 117 patients to determine the clinical and economic benefits of Streamline bloodlines in the outpatient setting. Outcomes and measurements include: average blood flow rate, average arterial pressure, average venous pressure, average Kt/V, average URR, total machine alarms, saline usage, acid/bicarb concentrate usage, potable and RO water usage, TP/syringe/needle usage, heparin usage, storage, waste removal, treatment time, and nursing hours.

**Study Limitations:** This was a cross-over study. Limitations of cross-over studies may include confounding due to issues of order, carry-over and learning.

**Important Information:** The Streamline blood tubing sets are prescription devices and, like all medical devices, involve some risks. Failure to observe all warnings and precautions noted in the Streamline Instructions for Use may result in serious complications, including blood loss due to clotting or air entering the bloodstream. Each patient's care plan should be determined by the physician, based on the individual facts and circumstances of the patient. The use of anticoagulation is at the discretion of the prescribing physician.

### References:

1. Cooke JD, Moran J. Streamline™ airless system optimizes dialysis adequacy with reduced costs. Poster presented at American Society of Nephrology Conference, 2007.