MEDISYSTEMS
A NXSTAGE COMPANY

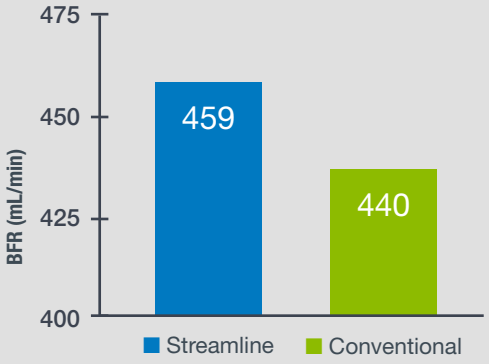
Clinical Evidence

When compared to conventional blood tubing, Streamline® reduced dialysate flow and conserved fresh water while improving average Kt/V.[1]

Streamline Bloodlines Improve Kt/V While Lowering Dialysate Usage
Renal Advantage, Inc.

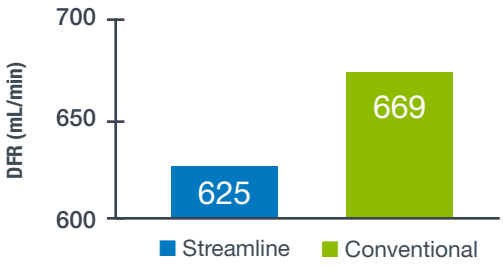
Smith, P. – In this cross-over study of 117 patients at Renal Advantage, Inc., Streamline improved average Kt/V while reducing dialysate and fresh water usage as compared to conventional bloodlines.

With Streamline, average blood flow rates increased by 19 mL/min (p<0.001)



When compared to conventional bloodlines higher blood flow rates were achievable with Streamline due to significantly lower arterial pressure readings. This study recorded a 4% increase in average blood flow rates with Streamline, which increased average blood liters processed by 5% (p<0.001).

With Streamline, dialysate flow rates decreased by 44 mL/min (p<0.001)



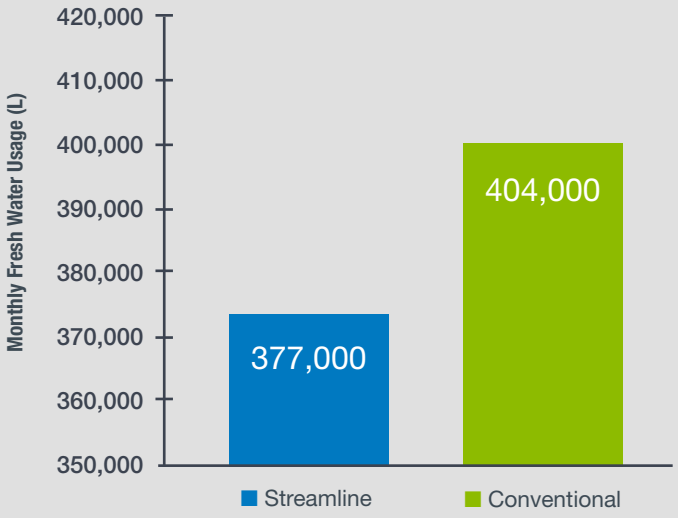
Dialysate flow rates decreased by 7% with Streamline as compared to conventional bloodlines.

With Streamline, average Kt/V increased by 0.09

	Streamline	Conventional	Change	P-value
Avg. Kt/V	1.73	1.64	+5%	<0.001

This study reported a 5% improvement in average Kt/V. 100% of patients achieved Kt/V ≥ 1.2 vs. 96% with conventional bloodlines.

With Streamline, monthly fresh water consumption decreased by 27,000 liters per month*



Monthly fresh water reduced by 7% after reducing dialysate flow rates with Streamline.

* Calculated reduction based on RO Recovery Rate = 50%; 12 treatments per patient per month, 117 patients, 45x Proportioning Ratio (1:44)

Implications of Improved Blood Flow Rates

The study reported a reduction in dialysate usage and fresh water consumption while improving average Kt/V as a result of the higher bloodflow rates enabled by Streamline. By increasing bloodflow rates by an average of 19 mL/min, dialysate flow rates were reduced by an average of 44 mL/min, the provider conserved an average of 27,000 L of fresh water per month, and all patients achieved a Kt/V greater than or equal to 1.2.

Study Design: 3-month, cross-over study evaluation of 117 patients (51% male, mean age of 59, mean weight of 75 kg) to determine the clinical and operational impact of Streamline blood tubing. Outcomes and measurements include average blood flow rate, average arterial pressure, average blood liters processed, average Kt/V, average dialysate flow rate, fresh water usage assumed, and average treatment time.

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. Smith P. Streamline bloodlines improve Kt/V while lowering dialysate usage. Poster presented at National Kidney Foundation Conference, 2010.