

# STREAMLINE® FOR DIALOG

AIRLESS SYSTEM SET

# STREAMLINE<sup>®</sup> BLOODLINES

BETTER DIALYSIS DOESN'T JUST COME FROM A BOX.

## ARTERIAL



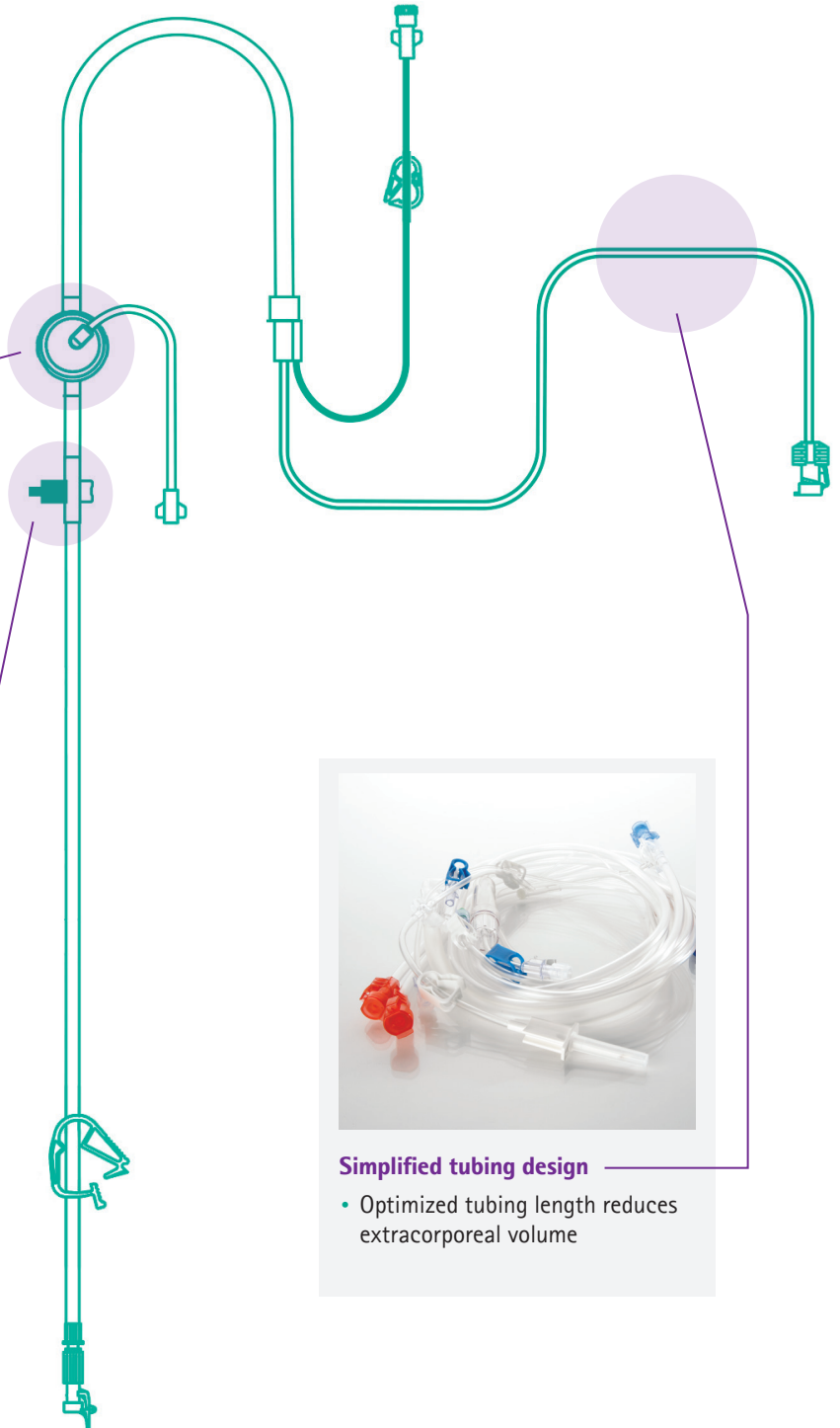
### Arterial pressure POD

- The airless pressure-transmitting assembly is designed to eliminate blood-air interface
- No need for external transducer protector
- Hemodialysis Studies<sup>1,2</sup> show that the elimination of blood-air interface may reduce the risk of clotting which may:
  - Lower heparin needs as compared to conventional bloodlines
  - Decrease the number of blood-side machine alarms



### Locksite<sup>®</sup> needleless access

- Reduced risk of accidental needlesticks



### Simplified tubing design

- Optimized tubing length reduces extracorporeal volume

## VENOUS



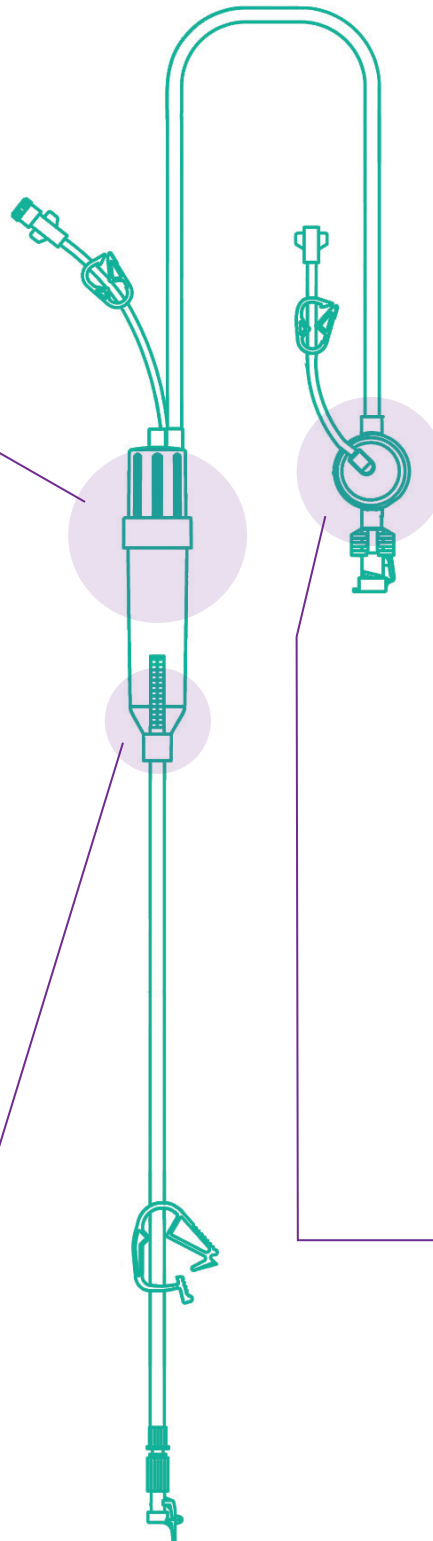
### Airless venous vortex chamber

- No air-gap, Streamline venous chamber runs completely filled with blood
- Horizontal "vortex" flow of blood designed to reduce stagnation, foaming, splashing, and microbubble formation



### Slim venous filter

- Designed to reduce clotting by reducing blood to surface contact



### Venous pressure POD

- The airless pressure-transmitting assembly is designed to eliminate blood-air interface
- Elimination of blood-air interface may reduce the risk of clotting

# RESULTS OF FOUR CLINICAL STUDIES WITH **STREAMLINE®** BLOODLINES AND CONVENTIONAL BLOODLINES

Results summarized below were obtained with Streamline tubing sets used with the Fresenius 2008 series machine.

	Study 1 <sup>3</sup>	Study 2 <sup>4</sup>	Study 3 <sup>5</sup>	Study 4 <sup>6</sup>
Authors	James D. Cooke, RN CNN and John Moran MD	Sharon Haas RN, CDN Manohar Ahuja MD, MBBS, MRCP	Pat Smith R.N., CNN	Joan E. Arslanian Carl M. Lockman Yvette C. Parker Chaim Charytan
Study design	Cross-over	Cross-over	Cross-over	Cross-over
Study sample size (n)	117	67	117	202
<b>Results with Streamline</b>				
Increase in blood flow rate (%)	18%	5%	4%	19%
Change in arterial pressure (%)	Not assessed	-16%	-12%	-4%
Increase in % of patients meeting target Kt/V as compared to conventional bloodline	+20.7% @ target 1.4	+10% @ target 1.4	+4% @ target 1.2	+34% @ target 2.0
Change in heparin dose	-28.0%	-57%	Not assessed	Not assessed
Change in dialysate flow rate	-26.0%	Not assessed	-7%	Not assessed

The summaries in the table above were gathered from public available information and are not intended for comparison purposes.

## References

1. Kitamoto Y, Fukui H, Matsushita K, Sato T, Soejima H, Noguchi Y, Kasama T. Suppression of thrombin formation during hemodialysis with triglyceride. *ASAIO J.* 1993;39(3):M581-M583. 2. Polaschegg HD. The extracorporeal circuit. *Semin Dial.* 1995;8(5):299-304. 3. Cooke JD, Moran J. StreamLine™ air- less system set optimizes dialysis adequacy with reduced costs. Poster presented at American Society of Nephrology Conference, 2007. 4. Haas S, Ahuja M. Improving hemodialysis adequacy, anticoagulation and dialyzer efficiency with Streamline bloodline. Poster presented at American Society Nephrology Conference, 2010. 5. Smith P. Streamline bloodlines improve Kt/V while lowering dialysate usage. Poster presented at Nation Kidney Foundation Conference, 2010. 6. Arslanian JE, Lockman CM, Parker YC, Charytan C. Improved blood flow and adequacy with streamline bloodlines. Abstract presented at American Society of Nephrology Conference, 2010.