



# **DIASCAN Monitoring System**

A Quality Assurance Tool<sup>1</sup>

**Plan. Do. Study. Act.**

# Plan.

## Establish Objectives and Processes

In the dialysis world, this is the patient's prescription. The PHOENIX X36 Hemodialysis System and the DIASCAN Monitoring System can help manage a patient's prescription by providing instant feedback on key items that can assist the clinician in making key decisions regarding the patient prescription.

## Clinical Tools

### Blood Flow

By accounting for the negative arterial pressure that is created when pulling blood out of the body, the PHOENIX X36 Hemodialysis System displays the actual blood flow rate next to the pump speed that has an accuracy of +/-10%.<sup>\*1</sup> The negative pressure can create an 8-15% reduction in the actual blood flow rate and the deviation may reduce the treatment efficacy by the same amount.<sup>2</sup> PHOENIX X36 Device is the only machine on the US market to display the actual blood flow rate which can be used by the clinician to monitor and adjust the therapy.

### DIASCAN Monitoring System

Introduced over 15 years ago, the DIASCAN Monitoring System has had worldwide clinical use. It measures conductivity on the dialysate side of the dialyzer and calculates two parameters: Ionic Clearance and Plasma Conductivity.<sup>1</sup>

### Ionic Clearance

The correlation between urea clearance and ionic clearance is roughly equivalent as urea and sodium are of similar molecular weight. The use of ionic clearance can be substituted for urea clearance in this non-invasive tool.<sup>3</sup> The ionic clearance is also used in an Ionic Kt/V calculation that can be trended by treatment.

### Plasma Conductivity

This provides a correlation to the patient's sodium concentration and can be useful in analyzing the patient's sodium level during and after treatment.<sup>1</sup> Plasma conductivity can be helpful in individualizing sodium prescriptions and when using sodium profiling to manage fluid shift and intra-dialytic hypotensive episodes.<sup>3</sup>

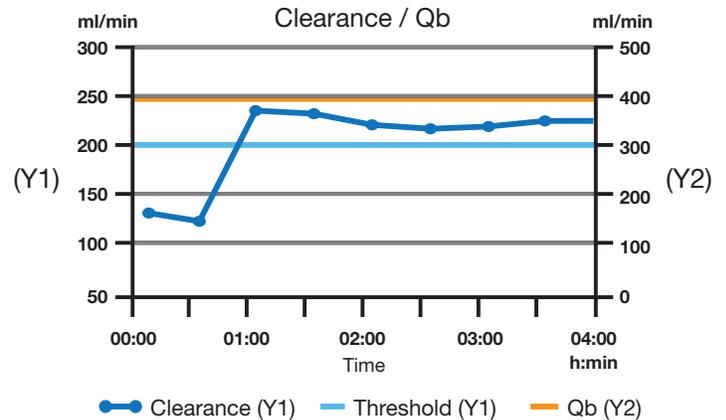
*\*If in double needle mode, and when pressure before the pump, given by the pressure in the arterial chamber of the cartridge, is higher, or less negative than -150 mmHg.*

# Do.

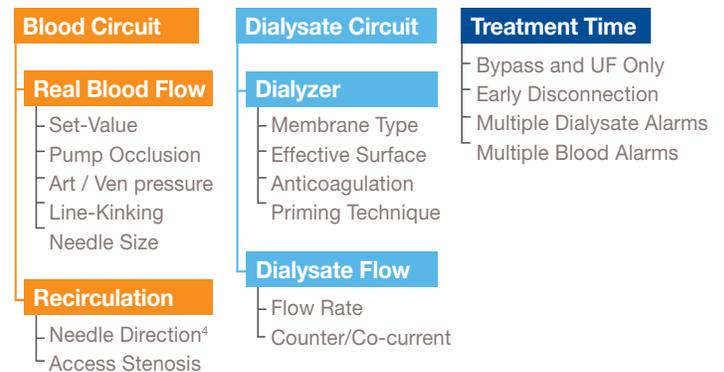
## Treatment Process

### Monitoring Clearance

As clearance can be affected by issues within the blood circuit, dialysate circuit, or treatment time, even a small change in clearance may impact a treatment.<sup>3</sup> Below is an example of induced recirculation due to incorrect needle direction.



Needle Reversal Example<sup>4</sup>



Decision tree helps users identify potential patient and treatment issues<sup>3</sup>

### Monitoring Plasma Conductivity During Sodium Profiling

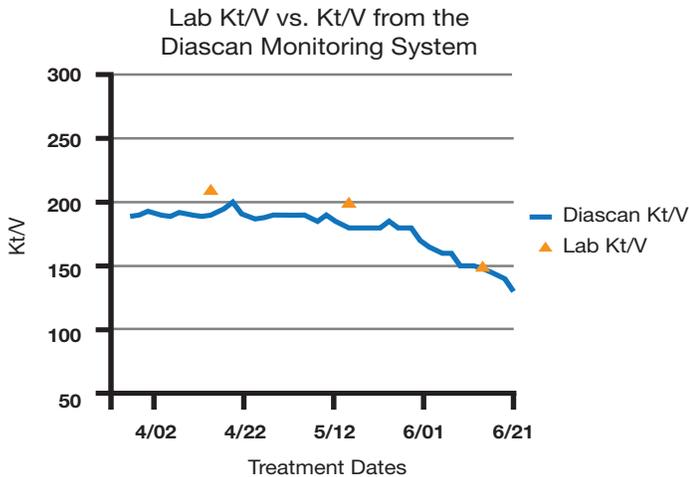
Sodium profiling is one way to manage fluid shift and intra-dialytic hypotensive episodes.<sup>3</sup> The ability to track plasma conductivity throughout the treatment can give immediate information for a sodium profile, providing the opportunity to adjust the sodium prescription if needed.

# Study.

## Trending

### Patient & Treatment Trending

Trending the patient's Kt/V each treatment can assist in identifying trends sooner than in monthly labs. These additional points of reference can help the clinician make an informed decision about every patient.



Example of how to trend DIASCAN Kt/V data and Lab Kt/V data

### Vascular Access Surveillance

As blood flow is one of the many reasons for a decreased clearance, one can compare blood flow and clearance for an indication of access recirculation. If the ionic clearance blood flow ratio is less than 50%, it can be an indication of significant access recirculation in patients with an arteriovenous fistulae.<sup>5</sup> Trending the patient's ionic clearance blood flow ratio can help identify potential access stenoses. Use this ratio during every treatment for non-invasive access surveillance with no need for additional disposables or equipment.

The PHOENIX X36 Hemodialysis Delivery System is intended to be used to provide high-flux and low-flux hemodialysis, hemofiltration, and ultrafiltration on patients weighing 15 kg or more. With features such as real-time Kt/V monitoring through the DIASCAN Monitoring System, compensated blood flow, full-color touch screen, and sodium and UF profiling, the PHOENIX X36 Hemodialysis System is designed to help provide effective hemodialysis therapy.

# Act.

## Manage

Analyze the differences to determine the root cause of insufficient dialysis dose and help reduce the treatment variability.

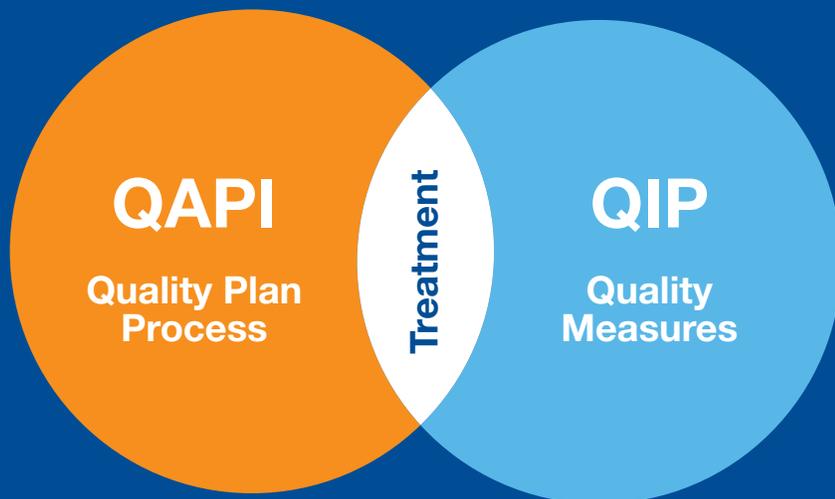
- Determine optimal blood flow
- Determine optimal dialysate flow
- Monitor patient reaction to prescription
- Monitor and trend Kt/V each treatment
- Monitor clearance for treatment issues or vascular access issues
- Monitor patient reaction to sodium profile
- Monitor patient sodium level and determine optimal sodium prescription



DIASCAN Monitoring System

# Be proactive with your patient care, not reactive.

Contact your sales representative to learn how the DIASCAN Monitoring System can help manage the treatment data and quality plan processes.



## Customer Experiences

“We started with our DIASCAN in December of 2010 and had about a three-month window there where we just wanted to make sure that we were doing everything that we were supposed to be doing. We didn’t put everything in place at one time, we did it by steps and that was very helpful to the staff....We educated our patients, we educated our doctors, we educated the staff before we actually went out and got started. Not very difficult to implement, it was just a little bit of a process...”

- Judy, RN; Good Samaritan, Lebanon, PA

“The DIASCAN [sic] has allowed us to very quickly intervene with access problems. The staff will identify a decrease in the online Kt/V and they will report it to the physician or the nurse practitioner quickly and have interventions done within a very short period of time.”

- Marianne, RN; Good Samaritan, Lebanon, PA

**Contact your local Baxter sales representative to learn more about the product.**  
**For Customer Support, call 800-525-2623.**

### References:

1. Phoenix Hemodialysis System Operator's Manual, Rev B, SW 3.40. 2. Ward, Blood Flow Rate: An Important Determination of Urea Clearance and Dialysis Kt/V, *Adv Renal Replace Ther.* Jan, 1999. 3. Henrich W. Principles and Practice of Dialysis, 2009. 4. Daugirdas J, Blake P, Ing T. Handbook of Dialysis, Fourth Ed., p.113. 5. Mohan S, et al. Effective Ionic Dialysance/Blood Flow Rate Ratio: An Indicator of Access recirculation in Ateriovenous Fistuale. *ASAIO Journal*, September 2010.

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