

# SAY HELLO TO THE PrisMax System

**Baxter**  
PrisMax  
ACUTE CARE SYSTEM

BAXTER'S NEXT-GENERATION DEVICE FOR  
CRRT AND ORGAN SUPPORT THERAPIES.





1977





1977

## First CAVH treatment by Patrik Kramer in Göttingen

Kramer P, Wigger W, Rieger J, Matthaei D, Scheler F: [Arteriovenous haemofiltration: a new and simple method for treatment of overhydrated patients resistant to diuretics]. Klin Wochenschr 1977; 55: 1121-1122.

**Baxter**

**PrisMax**

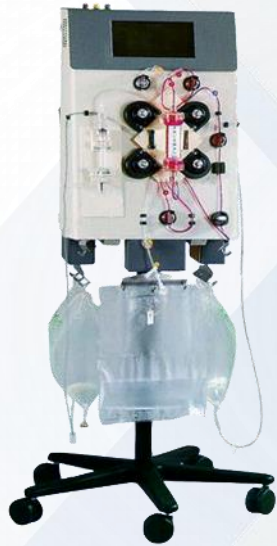
ACUTE CARE SYSTEM

WHAT IF

YOU COULD MAXIMISE YOUR  
CONFIDENCE IN THERAPY DELIVERY?

prisMax

# A COMMITMENT TO ONGOING INNOVATION



1996

**Prisma**

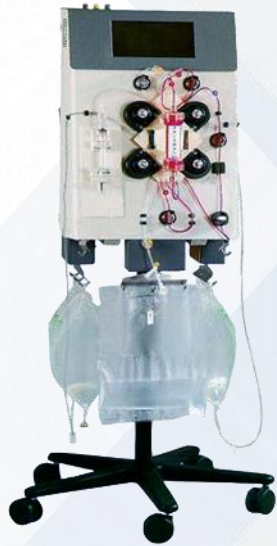


2004

**Prismaflex**

**Building upon 20-plus years expertise,**  
Baxter is committed to the continual  
innovation of products and services to help  
meet the complex needs of the ICU

# A COMMITMENT TO ONGOING INNOVATION



1996

**Prisma**



2004

**Prismaflex**



2018

**PrisMax**

Introducing the **PrisMax** system—the next-generation device for CRRT and organ support

# INNOVATION INSPIRED BY YOUR NEEDS



57 Facilities  
from around  
the world



685 ICU  
Healthcare  
Professionals

## WHAT WE HEARD

**Simplify** set-up and  
delivery of CRRT



Improve treatment **accuracy**  
**and system performance**



Increase **efficiency** by decreasing  
device interactions



*1. Baxter market research studies of ICU behaviour and workflow*

MAXIMISE  
SIMPLICITY

MAXIMISE  
EFFICIENCY

MAXIMISE  
ACCURACY  
& SYSTEM  
PERFORMANCE

MAXIMISE  
TREATMENT  
OPTIONS

SERVICE &  
SUPPORT

BROAD  
PORTFOLIO

TRAINING &  
EDUCATION







# WHAT IF

TECHNOLOGY COULD **SIMPLIFY**  
THERAPY DELIVERY?

# ADVANCED USER INTERFACE



**ADVANCED USER INTERFACE** that helps users intuitively manage various aspects of the treatment from set-up to patient disconnection



**MAXIMISE SIMPLICITY**

**Setup** CVHDF

History Tools System Lock Help 06 Aug 2015 11:37:56 AC Power Cancel

**1 Patient**  
**2 Therapy**  
3 Prescription  
**4 Sets**  
5 Fluids  
6 Prime  
7 Review  
8 Connect Patient

**Connect Components** ?

**Advisory**  
Confirm patient is disconnected before loading the set.

- Avoid pinching lines during loading.
- Verify that pods and monitor line are properly connected.

• Insert **yellow effluent line** into blood leak detector (BLD).

Circles can be pressed at any time for enlarged details.

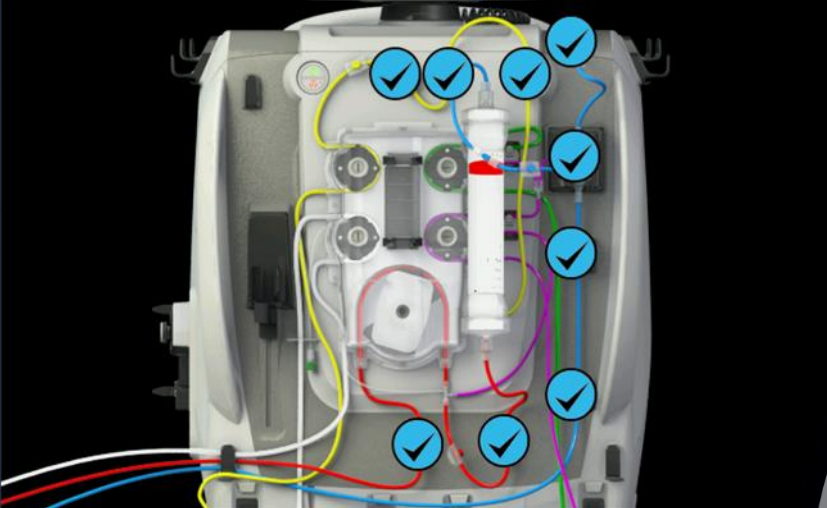
← Back Stop Load Unload Set Load Set Next →

Simple, step-by-step, on-screen instructions with supporting images

Setup CWHDF

History Tools System Lock Help 06 Aug 2018 11:37:56 AC Power Cancel

### Connect Components



**1 Patient** ✓  
**2 Therapy** ✓  
**3 Prescription** ✓  
**4 Sets** ✓  
**5 Fluids**  
**6 Prime**  
**7 Review**  
**8 Connect Patient**

**Advisory**  
Confirm patient is disconnected before loading the set.

- Avoid pinching lines during loading.
- Verify that pods and monitor line are properly connected.

1. Visually verify tubes are properly placed in raceways or pinch valves for all sets.
2. If tubes are pinched press UNLOAD SET button and repeat load process.
3. If you have confirmed no tubes are pinched press the NEXT button.

← Back Stop Load Unload Set Load Set Next →

Completed set-up steps  
are automatically  
confirmed with check  
marks

**Therapy** CWHDF

History Tools System Lock Help 06 Aug 2018 11:37:56 AC Power **Stop**

### Check Syringe Line

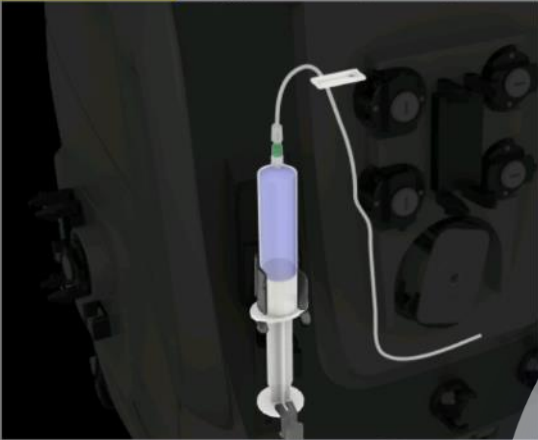
T0587 Dock

- Check Syringe Line
- Clamped or kinked line
- Syringe improperly installed

If needed, press CHANGE SYRINGE button.

Press CONTINUE button if syringe and line are properly installed.

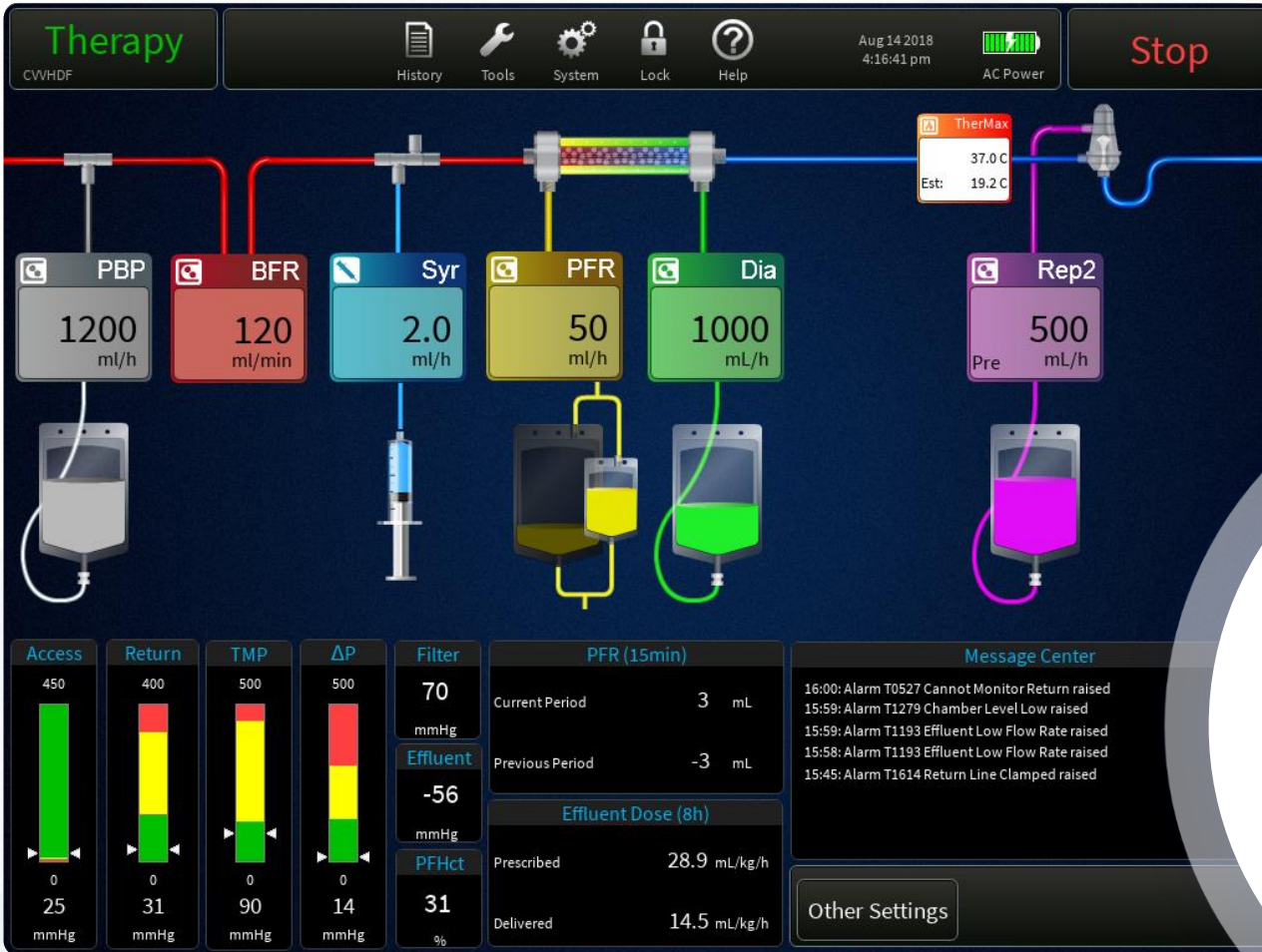
Change Syringe Continue



0 mmHg	0 mmHg	0 mmHg	0 mmHg	70 mmHg	Current Period	3 mL	15:59: Alarm T 1279 Chamber Level Low raised
25 mmHg	31 mmHg	90 mmHg	14 mmHg	-56 mmHg	Previous Period	-3 mL	15:59: Alarm T1193 Effluent Low Flow Rate raised
				-56 mmHg	<b>Effluent Dose (8h)</b>		15:58: Alarm T1193 Effluent Low Flow Rate raised
				PfHct	Prescribed	28.9 mL/kg/h	15:47: Alarm T1571 Check Calcium Syringe Line raised
				31 %	Delivered	14.5 mL/kg/h	15:45: Alarm T1571 Check Calcium Syringe Line raised
							15:45: Alarm T1614 Return Line Clamped raised

Other Settings

Trouble shooting instructions are reinforced with supporting images



Continuously displayed vital information facilitates therapy monitoring

The **PrisMax** system's interactive interface made *“the interplay between the nurses and the machine faster.”*<sup>1</sup>



1 – Broman M., et al. *Blood Purif* 2018;46:220–227.



**MAXIMISE SIMPLICITY**

# SIMPLIFYING SET-UP



**THERAPY PROFILES** save customised prescription settings to facilitate consistency and accelerate setup

- Therapy type, set, anti-coagulation
- Ability to have pre-defined flow rates for Blood, Pre-Blood Pump, Dialysate and Replacement
- Multiple profiles can be stored to accommodate different hospital protocols



**MAXIMISE SIMPLICITY**



**Setup** CWHDF 06 Aug 2018 09:24:45 AC Power Cancel

1 Patient  
 2 Therapy  
 3 Prescription  
 4 Sets  
 5 Fluids  
 6 Prime  
**7 Review**  
 8 Connect Patient

### Current Prescription

**Patient**

Patient ID	Demo	
Secondary ID		
Weight	100.0	kg
Hematocrit	30.0	%
Fluid Status		
Gain/Loss Limit	400	ml/3h
Current Gain/Loss	0	ml/3h
Current Makeup Value	0	ml

**Anticoagulation: Systemic**

Syringe Brand	Codan Luer lock 50 ( 50 ml)	
---------------	-----------------------------	--

**Therapy: CWHDF**

Disposables	M150	
Set	1	
Number of Sets	1	
Auto Effluent Set	Attached	
Auto Effluent Set Time	0:00	h:min
Extracorporeal Bld Volume	193	ml
Set Usage Time	0:00	h:min
Total Treatment Time	0:00	h:min
Dose		
Dose (Eff)	22.0	ml/kg/h
Flow Rates		
Pre Blood Pump	1000	ml/h
Blood	200	ml/min
Syringe Flow Rate	0.0	ml/h
Dialysate	1000	ml/h
Replacement (Post)	200	ml/h
Patient Fluid Removal	0	ml/h
Effluent	2200.0	ml/h
Return Pressure Drop Limit		
User Set Limit	---	mmHg
Enforced Limit	---	mmHg

**Settings Analysis**

Total Predilution	83	%
Post Filter Hematocrit	31	%
Filtration Fraction	13	%

Patient **Save Profile** Close Accept

**Setup** CWHDF 06 Aug 2018 09:35:15 AC Power Cancel

1 Patient  
 2 Therapy  
 3 Prescription  
 4 Sets  
 5 Fluids  
 6 Prime  
**7 Review**  
 8 Connect Patient

### Review Prescription

**Patient**

Patient ID	Demo	
Secondary ID		
Weight	100.0	kg
Hematocrit	30.0	%
Fluid Status		
Gain/Loss Limit	400	ml/3h
Current Gain/Loss	0	ml/3h
Current Makeup Value	0	ml

**Therapy: CWHDF**

Disposables	M150	
Set	1	
Number of Sets	1	
Auto Effluent Set	Attached	
Auto Effluent Set Time	0:00	h:min
Extracorporeal Bld Volume	193	ml
Set Usage Time	0:00	h:min
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Replacement (Post)	200	ml/h
Patient Fluid Removal	0	ml/h
Effluent	2200.0	ml/h
Return Pressure Drop Limit		
User Set Limit	---	mmHg
Enforced Limit	---	mmHg

**Enter Profile Name**

Enter Profile Name hospital heparin profile

q w e r t y u i o p  
 a s d f g h j k l  
 ↑ z x c v b n m ↵  
 Cancel 123.456 789.012 Accept

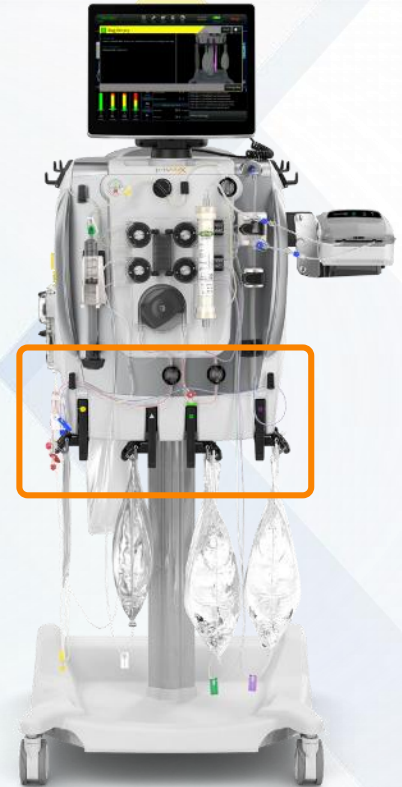
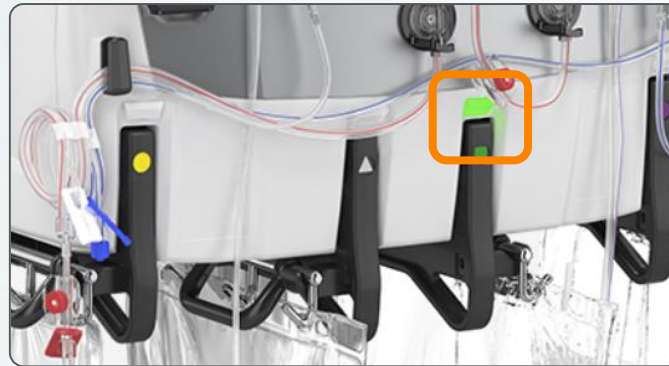
Change Flow Accept

Profiles can be named to reflect hospital protocols for easy reference

# SIMPLIFYING SET-UP



**COLOUR CODING OF SCALES WITH LEDs** helps direct the user toward required interventions and bag changes



**MAXIMISE SIMPLICITY**

# ERGONOMIC DESIGN TO SIMPLIFY USABILITY

The 15" **adjustable touchscreen** rotates and tilts allowing for multidirectional viewing — helping to ensure critical data is more visible from a distance without disturbing the patient

Ergonomic Design, including **handles on front and back**, help users to manoeuvre the **PrisMax** system

Sets and bags can be **front-loaded** while the user is standing upright



**MAXIMISE SIMPLICITY**




# WHAT IF

PRESCRIBED TREATMENTS  
COULD BE DELIVERED WITH  
MORE **ACCURACY?**

# PATIENT FLUID REMOVAL CATCH-UP

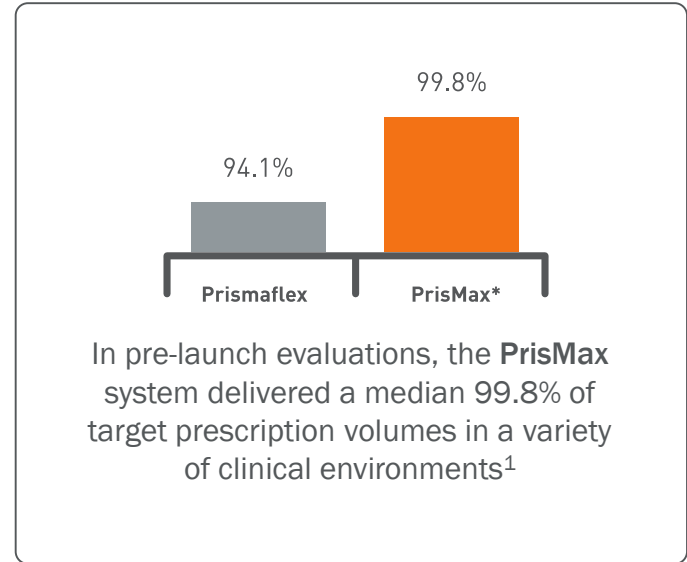


The **PrisMax** system's unique technology includes the **PATIENT FLUID REMOVAL CATCH-UP**, which uses intelligent pump adjustments to help meet prescribed fluid removal targets



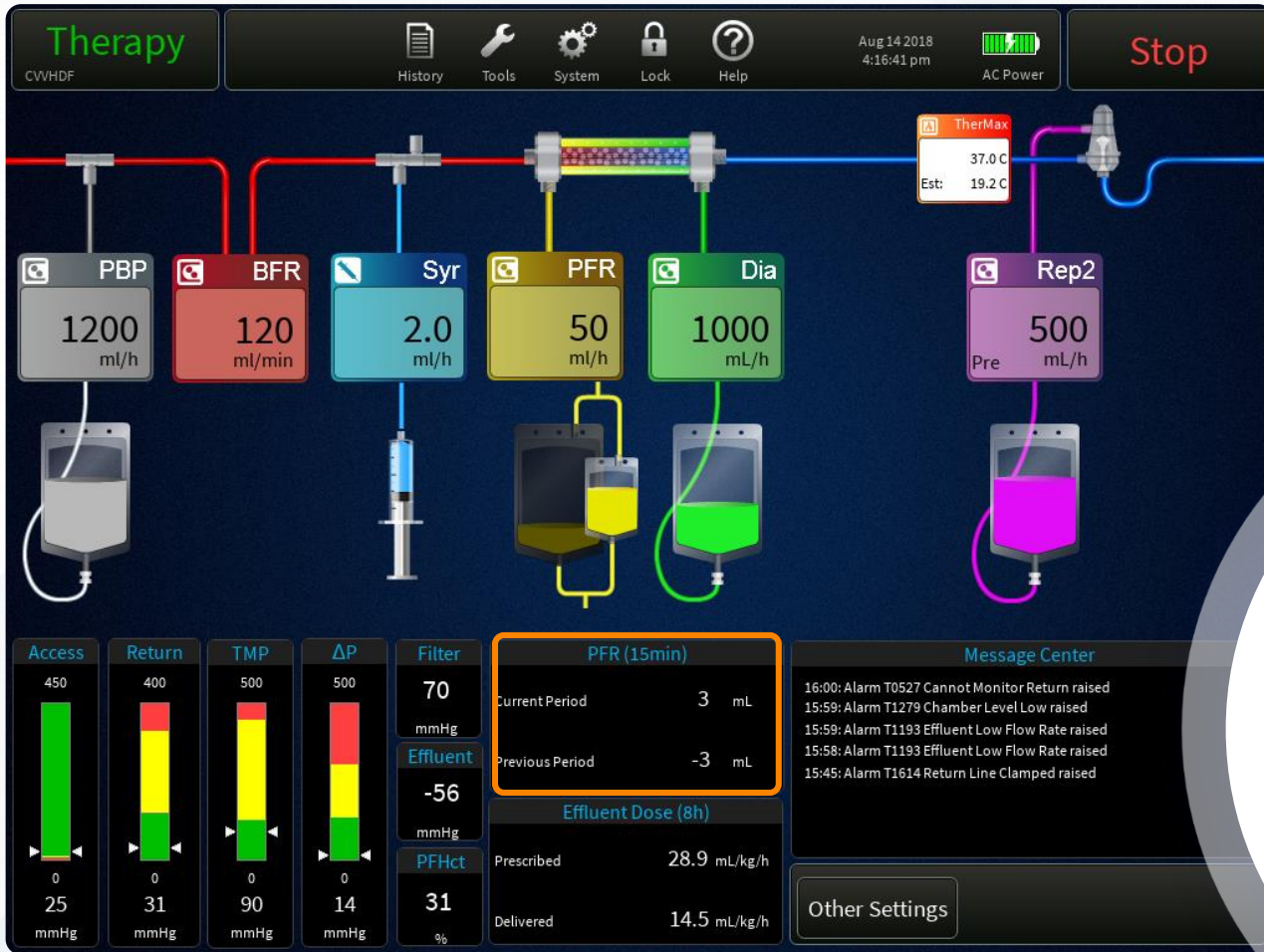
**10**  
minutes  
per instance

**COMPENSATE FOR PATIENT FLUID REMOVAL DOWNTIME** for up to 10 minutes per instance at a time without impacting prescription delivery



**MAXIMISE TREATMENT  
ACCURACY & PERFORMANCE**

1 - Baxter Limited Control Distribution Report #ER6877 Rev A Data on File 2018



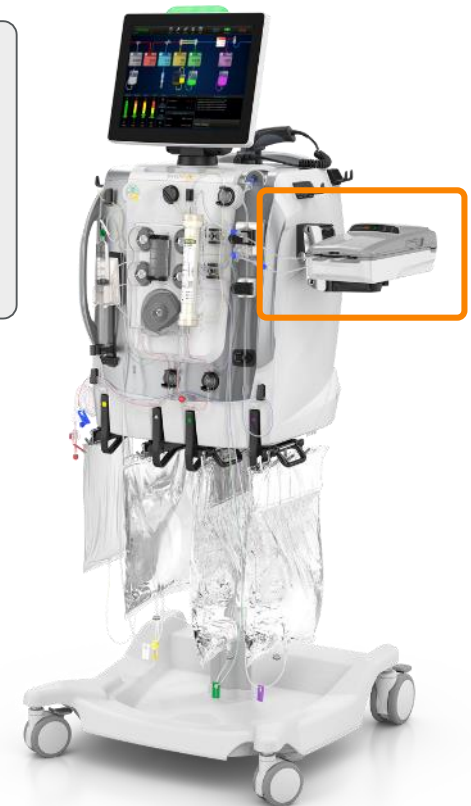
Patient Fluid Removal is continuously displayed on the Operations Screen

# MAINTAINING BODY TEMPERATURE



**THERMAX BLOOD WARMER** is designed to maintain the patient's blood temperature during CRRT and other organ support therapies

- Integrates directly with the **PrisMax** system to deliver effective blood warming managed through the user interface
- The **TherMax** blood warmer helps enable precise control of blood return temperature between 35 °C and 38 °C
- Maintains patient body temperature in more than 76% of typical CRRT therapies<sup>1</sup>
- Independent from fluid flow rates and therapy interruptions



MAXIMISE TREATMENT  
ACCURACY & PERFORMANCE

1 - Baxter - Heating coverage from TherMax DPN18.13. 2018

# THERMAX BLOOD WARMER IS INTEGRATED INTO THE PRISMAX SYSTEM



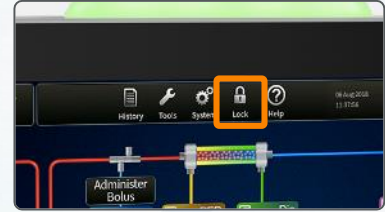
MAXIMISE TREATMENT  
ACCURACY & PERFORMANCE



# INTEGRATED SAFETY FEATURES

The **PrisMax** system's integrated safety features combine preventative measures designed to reduce clinical risk and human error with smart alarms to alert users to respond to critical issues

- Lockable touchscreen
- Pressure measurement system
- Built-in electrostatic discharger
- Bag leak detector
- Protection from fluid imbalance
- Handheld barcode reader



MAXIMISE TREATMENT  
ACCURACY & PERFORMANCE



Handheld barcode reader  
for patient ID, Auto-Effluent  
set and sets



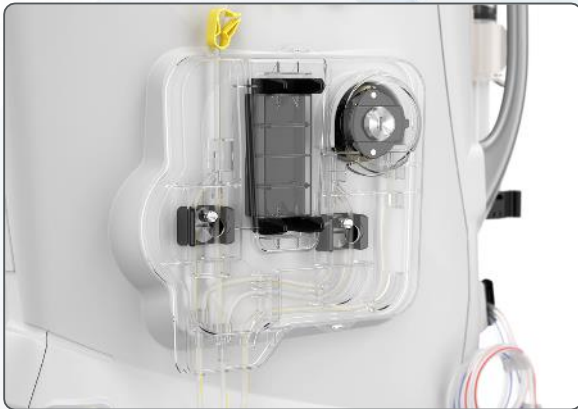
# WHAT IF

INNOVATION COULD MAKE  
TREATMENT DELIVERY  
MORE **EFFICIENT?**

# AUTOMATED TASK TO STREAMLINE CLINICIAN WORKFLOW



Unique **AUTO-EFFLUENT DRAIN ACCESSORY** is designed to reduce treatment interventions, thereby freeing up nursing time and enabling more time for patient care



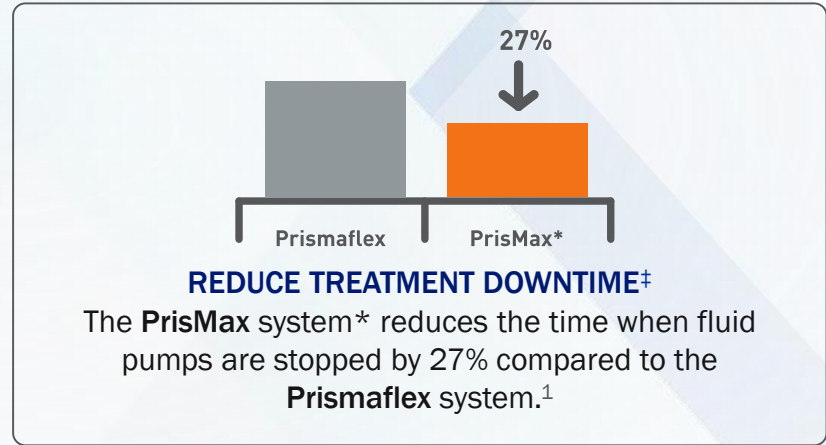
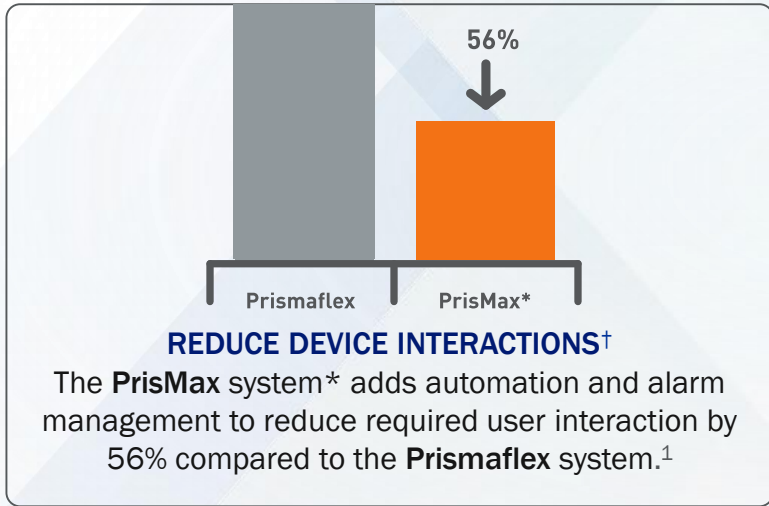
- Automatic dual bag system with pinch valves allows for one bag to be filled while the other bag empties
- Intended for application for a maximum of 6 days



MAXIMISE EFFICIENCY

# AUTO-EFFLUENT DRAIN ACCESSORY ELIMINATES THE NEED FOR EFFLUENT BAG CHANGES

- May reduce total bag changes by 60% compared to similar CRRT systems<sup>1</sup>
- Increases dose delivery by 30 minutes per patient per day by decreasing therapy downtime<sup>1</sup>
- Improves efficiency by allowing healthcare professionals to focus on other activities<sup>2</sup>



 **MAXIMISE EFFICIENCY**

\* when Auto-Effluent Drain Accessory in use

† number of events per hour

‡ percentage of treatment time when pumps are stopped

1 - Baxter Limited Control Distribution Report #ER6877 Rev A Data on File 2018.

2 - Broman M., et al. *Blood Purif* 2018;46:220–227.

“The benefit goes beyond the actual number of minutes saved because the **nurse** can focus on more important things in a complex patient scenario.”<sup>1</sup>



1 - Broman M., et al. *Blood Purif* 2018;46:220–227.



**MAXIMISE EFFICIENCY**

# DESIGNED TO PREVENT ALARM FATIGUE



**SMART ALARMS** reduce device interactions and treatment interruptions helping to prevent alarm fatigue<sup>1</sup>

- Self-clearing pressure alarms are shown for information only
- Advanced pressure management minimises alarms due to sudden pressure spikes caused by moving the patient



**MAXIMISE EFFICIENCY**

1 – Broman M., et al. *Blood Purif* 2018;46:220–227.

# ALARMS ARE ORGANISED BY PRIORITY



<4%  
high  
priority

In pre-launch evaluations, “less than 4% [of alarms] were of high priority, launching when the system announced a possible threat to patient safety with immediate action demanded from the bedside operator.”<sup>1</sup>



MAXIMISE EFFICIENCY

1 – Broman M., et al. *Blood Purif*  
2018;46:220–227.

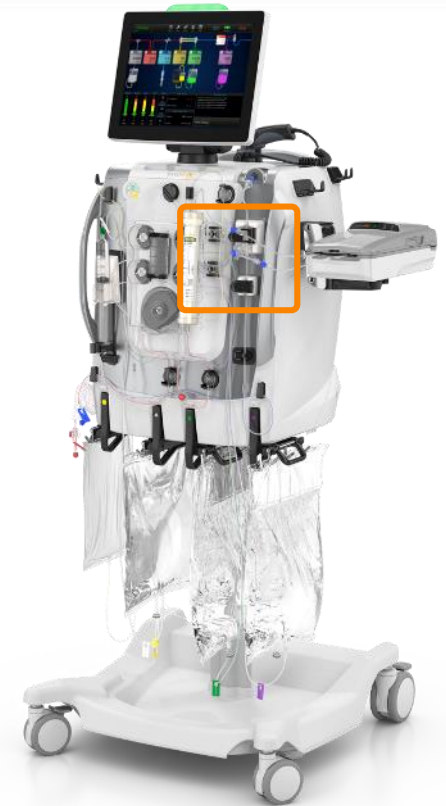


# DESIGNED TO REDUCE MANUAL INTERVENTIONS



The **PrisMax** system incorporates a **LIQUID LEVEL SENSOR** that automatically maintains fluid height in the deaeration chamber

- Reducing the need for nurses to perform this function manually
- Helps to reduce the number of air-in-blood alarms



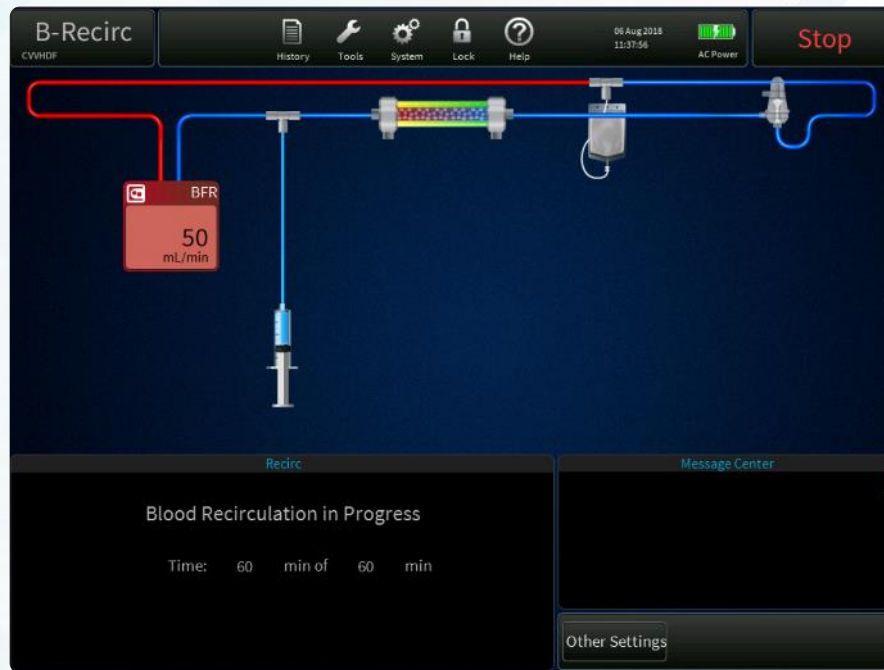
MAXIMISE EFFICIENCY

# RECIRCULATION MODE ENABLES TREATMENT FLEXIBILITY

Blood or saline recirculation may be necessary if the patient needs to be temporarily disconnected from the set.



The **PrisMax** system can recirculate blood in the set for up to 60 minutes before reconnecting the patient.



MAXIMISE EFFICIENCY



# WHAT IF

DEVICE TRAINING  
WAS EASIER AND  
MORE ACCESSIBLE?

# FLEXIBLE OPTIONS FOR LEARNING



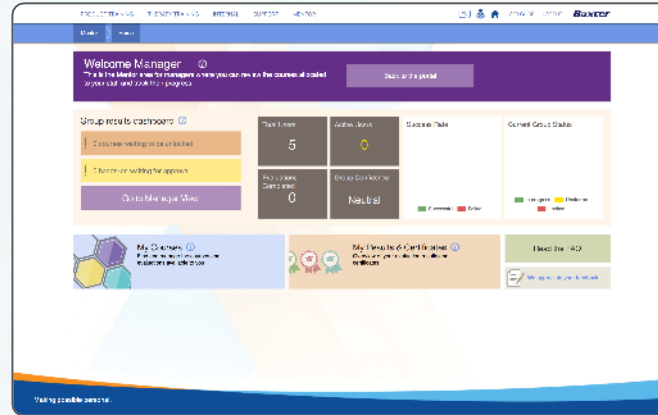
The **INTERACTIVE ON-DEVICE AND ONLINE TRAINING** allows clinicians to take control of their own learning—expanding knowledge and building confidence in treatment delivery

- Structured, scenario-based training
- On-device training simulation can be done with and without solutions
- On-device training program accessed through the Baxter Acute Education Portal



# BAXTER ACUTE EDUCATION PORTAL

The Acute Education Portal has delivered more than 17,000 educational sessions per annum<sup>1</sup>



**KNOWLEDGE CENTRE** consists of a tool-kit of product tutorials and therapy education modules

- 24/7 offline and online learning
- Tailored to different knowledge levels
- Presentation mode

**MENTOR ASSESSMENT CENTRE** is a resource to assess training levels and competencies

- Managers can allocate learning modules
- Helps maintain consistent, quality education



# WHAT IF

A DEVICE COULD ENABLE  
THE THERAPIES OF BOTH  
TODAY AND TOMORROW?

# MAXIMISE TREATMENT POSSIBILITIES

- Delivers the major modalities and anti-coagulation modes
  - SCUF, CVVH, CVVHD, CVVHDF
  - TPE
  - Citrate anticoagulation
- Low blood volume HF20 set allows the treatment of low body weight patients (minimum 8kg)
- Enabled for use with the **oXiris** set—the latest innovation in CRRT management

The **PrisMax** system is designed to adopt future CRRT and other organ support therapies—all through the convenience of one platform.





WHAT IF

YOU COULD **MAXIMISE YOUR**  
**CONFIDENCE** IN THERAPY DELIVERY?



**MAXIMISE  
SIMPLICITY**

**MAXIMISE  
EFFICIENCY**

**MAXIMISE  
ACCURACY  
& SYSTEM  
PERFORMANCE**

**MAXIMISE  
TREATMENT  
OPTIONS**

**SERVICE &  
SUPPORT**

**BROAD  
PORTFOLIO**

**TRAINING &  
EDUCATION**



# REFERENCES

- The Novel PrisMax Continuous Renal Replacement Therapy System in a Multinational, Multicentre Pilot Setting: Broman, Bell, Joannes-Boya, Ronco, *Blood Purif* 2018;46:220–227.
- Baxter Limited Control Distribution Report/ ER6877 Rev A Data on File 2018.
- Baxter – Preliminary TherMax Performance Comparison Data DPN17.10. 2017.

***Baxter***