Moving at Quantum Speed into the Future, Come for the Ride!

Current Challenges:

- Perfusionist Shortage
- Complexity of Cardiac Surgery and ICU Care
- Victims of your own success
- Value Based Healthcare

Goal of Quantum Safety System

Reduce risk by improving safety, workflow, compliance and enhance the quality, repeatability of patient care through cutting edge technology.

Who is Spectrum Medical?
What is **Quantum**?

12" Quantum Workstation  15" Quantum Workstation

- App Store
- Quantum Sub Systems
- Third Party Devices
- Patient Ventilation, Gas Blending and Vacuum Management
- Vitals Management and Diagnostic Alarm Settings
- VIPER Data Management and Quantum Patient Safety Systems

--

What is **Quantum**?

- Plus: Flow, Temperature, Pressure

---

What is **Quantum**?

---

What is **Quantum**?
What is **Quantum**? 

*Pending regulatory approval*

- High-precision, closed-loop flow control
- Initiating and Weaning modes
- 2 Flows/Bubble, 2 Pressures and Level detection Integration

Who is **Spectrum Medical**? 

- Quantum Informatics
- Quantum PureFlow

The Quantum Pure Flow range of sterile disposable heat exchangers have been designed by Spectrum Medical to provide the safest solution for minimizing the growth environment for the *Mycobacterium Chimaera* bacteria. Specifically developed to operate exclusively with the Quantum heater cooler technology.
Who is Spectrum Medical?

What is Quantu Informatics?

What is Quantu PureFlow?

What is Quantu Perfusion?
What is QuantuM? 

Patient & Clinician Safety, and Improved Outcomes

Real-Time Surveillance Strategies and Workflow Enhancements:

- Implement Evidence-Based Protocols
- Implement Evidence-Based Checklist
- Complications (Decision Support/Predictive Analytics)
- Workflow Improvement by integrating First and Third party data; as well as full integration into HIS

Perfusionist Scan

- Arterial Blood pressure
- Pulmonary artery blood pressure
- Central Venous Line pressure
- EKG
- Nasopharyngeal Temperature
- Bladder Temperature
- Urine output
- Left and Right Cerebral oximetry

Best Practice App

- Profiles
- Level
- Critical High / Low
- Sustained
- Rate of Change
Best Practice App

- % Below AUC
- Time-Dose Response

What is QuantuM™?

CPB/ECMO Wisdom built into logical algorithms (Events, critical values etc.)

“IF”, “OR”, “AND” can create predictive analytics with built in Decision Trees based on Policy & Procedure.

Examples: Oxygenator failure, cannula misplacement, Cardiac Tamponade, cannula reconfiguration, Transfusion, Shunting, etc.

Select the # icon to create a new Complications tab.

Complications can be aligned with certain timers or events, like Best Practices.

Delaying Complications can be set in seconds and this will delay triggered complications.

Select the white field to edit the Complications Name.
What is **Quantum** Information?

- When triggered
- Checklist Options
- Notification Options
- Repeating Options
What is Malignant Hyperthermia?
- Set Point: Induction
- Measurements: K+ (High limit) or pH (Low limit) and Temperature (Rate of Change or Sustained limit high) or Heart rate (Sustained limit high)
- Checklist: Check temp, Check muscle rigidity and if correlates Dantrolene Protocol.

What is Oxygen Source Failure?
- Set Point: CPB On Timer
- Measurements: Sweep (low limit) or Gas outlet pressure (High) and Arterial Saturation (Low limit)
- Checklist: Adjust sweep, check for kinks, blockage in vaporizer, connected to oxygenator.

What is Cerebral Congestion?
- Set Point: CPB On Timer
- Measurements: Cerebral Oximeter (Rate of Change low) and CVP (Rate of Change high) and Venous Flow (Rate of Change low)
- Checklist: Check for venous air lock, venous line occlusion, cannula misplacement, need for VAVD.

What is Increased chance of AKI?
- Set Point: CPB On Timer, delay 60 seconds
- Measurements: DO2i (sustained less than 260ml/120 seconds) or ECPR (less than 5.3/120 seconds) and Urine output (low limit less than .5ml/kg)
- Checklist: Adjust CI, Transfuse if HCT below 21, check anesthetic level.

Thank you!