NONINVASIVE HEMODYNAMIC MONITORING

ONE

PATIENT MONITOR PATHWAY

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Starling™ SV is:
• 100% noninvasive
• Patient friendly
• Accurate
• Quick and easy

PRE-OP
Nurses start the monitoring while preparing patient. Sensor placement is easy and noninvasive. Assessing fluid responsiveness and initiating IV fluid maintains adequate tissue perfusion and fluid homeostasis before surgery.

INTRA-OP
Cardiac output, stroke volume, peripheral resistance and oxygen delivery are continuously monitored during surgery. Accurate monitoring is unaffected by arterial compliance changes occurring with anesthesia induction or vasopressor administration. Fluid responsiveness is assessed and the appropriate fluid is administered for any operation, patient position, cardiac rhythm or anesthesia level.

POST-OP
Monitoring continues post surgery and into the ICU or PACU. Dynamic assessments indicate when the appropriate amount of fluids has been given and the IV line can be removed. Cardiac contractility and afterload status can guide inotropes and vasoactive agent management.

CONTINUUM OF CARE
FOR FLUID & DRUG TITRATION

Studies show that only ~50% of your patients respond positively to fluid. Starling SV provides a precise continuous assessment of cardiac contractility, and afterload. No need to upgrade or change the monitor when changing care area.

Reference:

**STARLING™ SV**

Customize your own screen and select specific display parameters.

**MONITOR ONE**

**OUTPUT**
Cardiac Output (Index)
Stroke Volume (Index)

**PRELOAD VOLUME**
Stroke Volume Variation

**AFTERLOAD**
Total Peripheral Resistance

**OXYGENATION**
Oxygen Delivery (Index)

**ORGAN FUNCTION**
Thoracic Fluid Content
Cardiac Power Output (Index)

**PRESSURE**
Mean Arterial Pressure
Arterial Blood Pressure

**DYNAMIC STARLING CURVE**
Passive Leg Raise or fluid bolus tests are performed automatically without interruption of patient monitoring.

Baseline measurement is obtained PLR and/or fluid bolus performed Results displayed: % change in SVI, position on Starling curve.

**ONE M ONITOR**

**REACTANCE**

A new advanced technology for continuous dynamic central measurements.

**PHASE SHIFT OR BIO REACTANCE**

The Thorax consists of resistance and reactance components. An AC current is induced in the thorax. A delay/phase shift is recorded between the voltage and the applied current.

**VOLUME**

Phase shifts are mainly a result of changes in aortic blood volume. During systole, there is a rapid build up of phase shifts to the peak representing an increase in aortic blood volume. During diastole, a decrease in phase shift representing a reduction in blood volume.

**FLOW**

The derivative of the signal represents mainly the aortic flow. The stroke volume is derived by computing the area under the positive part of the curve, representing systole.
**FRIENDLY & GENTLE SENSORS**

- The patient is ready for monitoring immediately!
- Ideal for triage in emergency
- Very gentle for the skin

**BIBLIOGRAPHY**

**GOAL DIRECTED THERAPY**


**TECHNOLOGY COMPARISON**


**OBSTETRICS**


**EMERGENCY**


**PRODUCT**

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<th>PRODUCT</th>
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<tbody>
<tr>
<td>Starling SV Monitoring System</td>
<td>CMA-ST5</td>
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<td>CMA NIBP</td>
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<td>Starling SV SpO₂ Module</td>
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<td>Cheetah Sensors (Box of 10)</td>
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**QUICK TO SET UP**

- An electric current is applied across the thorax between the outer pair of sensors.
- The voltage is recorded between the inner pair of sensors.
- Two sensors above the heart
- Two sensor below the heart

Sensors can be placed on patient front or back, to accomodate body habitus or surgical requirements.

**HELP SCREEN HIGHLIGHTS**

Sensors in Green to Go!

- Two sensors above the heart
- Two sensor below the heart

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