

**When change
is the only constant.**





CCO/CCI
SV/SVI
SW
SVR/SVRI*



The FloTrac System Algorithm

Formula for Cardiac Output = Heart Rate x **Stroke Volume**

FloTrac System Cardiac Output = **Pulse Rate** x [**std(BP)** * χ]

Pulse rate [PR]

- Measured as beats per minute
- Beats identified by upslope of waveforms
- Advanced beat detection differentiates fully perfused beats
- Computed from 20-second time period of beats

Standard deviation of arterial blood pressure [std(BP)]

- Pulse pressure \propto SV \propto std(BP)
- Measured as mm Hg
- Computed on a beat-by-beat basis

The χ factor compensates for differences in vascular compliance and resistance

- Patient-to-patient differences estimated from biometric data
- Dynamic changes estimated by waveform analysis (skewness, kurtosis, of the waveform)
- Measured as mL per beat/mm Hg
- 20-second average updates

The FloTrac System – A practical fluid management solution that adapts to your changing patient conditions.

A lot can change in a moment. With the FloTrac system from Edwards Lifesciences, you'll have access to automatic, up-to-the-minute cardiac output, stroke volume, stroke volume variation and systemic vascular resistance – under more patient conditions. The FloTrac sensor easily connects to any existing arterial catheter, and requires no manual calibration, making it the easy and reliable solution for fluid management.

The latest enhancement evolves the algorithm using an expanded patient database. This database informs the algorithm's Automatic Vascular Tone Adjustment to recognize and adjust for more patient conditions – including hyperdynamic conditions.

Now, through continuous beat detection and analysis, the FloTrac system allows the use of continuous SVV as a reliable indicator of preload responsiveness, even in patients with multiple premature atrial or ventricular contractions (PACs and PVCs, respectively).

Additionally, the FloTrac system updates in 20-second intervals, reflecting rapid physical changes in high risk surgery (HRS) more accurately.

With the easy and reliable FloTrac sensor, you have continuous insight under more conditions, to choose the correct fluid optimization therapy and deliver it at the right time and in the right magnitude. Delivering clarity in every moment.

- Less invasive and easy to use, to enable nurse-driven care
- Automatically calculates key flow parameters every 20 seconds
- Recognizes and adjusts for hyperdynamic patient conditions
- Broader patient monitoring through expanded patient algorithm database
- Enables you to make a differential diagnosis leading to either a volume or cardiovascular intervention (preload, afterload and contractility)
- Provides CO/CI, SV/SVI, SVV and SVR/SVRI[†]
- Used on over 1 million patients and globally trusted by more clinicians than any other fluid management solution

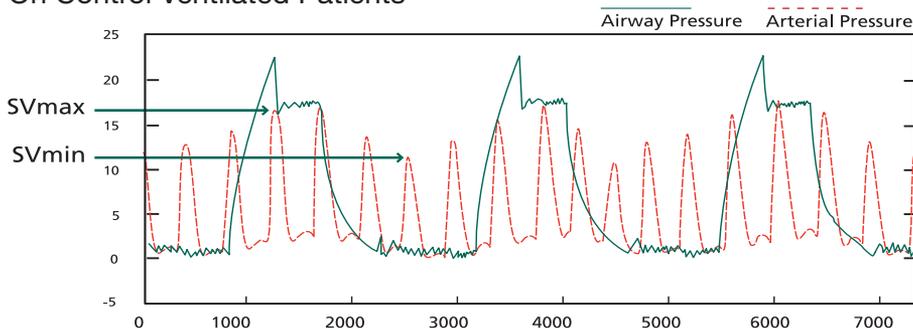
Next Generation FloTrac System Algorithm

- Delivers continuous SVV, even in patients with PACs and PVCs
- Reflects physical changes during use in HRS more accurately
- Automatic Vascular Tone Adjustment recognizes and adjusts for more patient conditions – including hyperdynamic conditions

Implementation of an intraoperative, goal-directed, hemodynamic optimization protocol using the FloTrac system was associated with a lower incidence of complications compared to a standard management protocol in high risk surgery!¹

Stroke Volume Variation and Fluid Optimization

On Control Ventilated Patients²



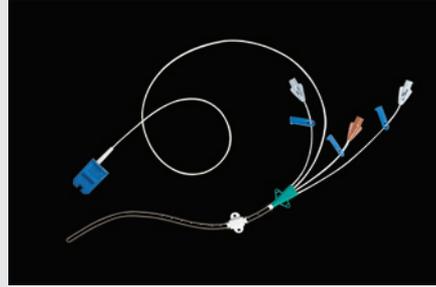
Advanced Hemodynamic Monitoring

From Edwards Lifesciences, the creator of the gold standard Swan-Ganz pulmonary artery catheter



EV1000 clinical platform and Vigileo monitor

The FloTrac sensor may be used with the EV1000 clinical platform or Vigileo monitor to continuously measure and display key flow parameters. The Vigileo and EV1000 monitors have been developed, optimized and validated as integrated systems with the FloTrac sensor. Edwards has taken this integrated sensor-monitor systems approach to protect the accuracy of the clinical information and corresponding quality of patient care.



PreSep oximetry catheter

The PreSep oximetry catheter continuously monitors central venous oxygen saturation (ScvO₂) and is an integral part of the Early Goal-Directed Therapy (EGDT) protocol for the treatment of sepsis. When used with the FloTrac sensor, you'll find a clear path to choosing an intervention. Both may be used with the Vigileo monitor or EV1000 clinical platform.



TruWave transducer and VAMP system

The FloTrac sensor, when used with the TruWave disposable transducer and VAMP closed blood sampling system, provides an integrated hemodynamic monitoring system and is the solution trusted by more clinicians worldwide.

Helping to advance the care of the acutely ill for over 40 years, Edwards Lifesciences seeks to provide the valuable information you need, the moment you need it. Through continuing collaboration with you, ongoing education and our never-ending quest for advancement, our goal is to deliver clarity in every moment.

Visit www.Edwards.com/CriticalCare to learn more

Reference:

1. Benes J, Chytra I, Altmann P, et al. Intraoperative fluid optimization using stroke volume variation in high risk surgical patients: results of prospective randomized study. *Critical Care*. 2010;14:1-15.
 2. McGee, W., A Simple Physiologic Algorithm for Managing Hemodynamics Using Stroke Volume and Stroke Volume Variation: Physiologic Optimization Program. *J Intensive Care Med*. 2009; 24; 352 originally published online Sep 6, 2009
- † Derived with CVP.

For professional use. CAUTION: Federal (United States) law restricts this device to sale by or on the order of a physician. See instructions for use for full prescribing information, including indications, contraindications, warnings, precautions and adverse events.

Edwards Lifesciences devices placed on the European market meeting the essential requirements referred to in Article 3 of the Medical Device Directive 93/42/EEC bear the CE marking of conformity.

Edwards, Edwards Lifesciences, the stylized E logo, Clarity in Every Moment, EV1000, FloTrac, PreSep, Swan-Ganz, TruWave, VAMP, and Vigileo are trademarks of Edwards Lifesciences Corporation. All other trademarks are the property of their respective owners.

© 2014 Edwards Lifesciences Corporation.
All rights reserved. AR11442

Edwards Lifesciences | edwards.com
One Edwards Way | Irvine, California 92614 USA
Switzerland | Japan | China | Brazil | Australia | India

