

# THE FUTURE OF HEMODYNAMICS



**USCOM 1A**  
Advanced Hemodynamics  
Non-invasive Doppler Monitor



## THE FLUID SOLUTION

Appropriate fluid balance and SV resuscitation improves patient outcomes, while inadequate or excess fluid increases morbidity and mortality. This is “the fluid dilemma” - when to start and when to stop. The USCOM 1A personalized SV optimization strategy reliably identifies fluid responsiveness. Unlike other technologies, USCOM 1A works in patients with cardiac arrhythmias, high and low CO's, those on vasoactives, those on ventilation or free breathing, those with sepsis, and in children.

## SEPSIS

Sepsis is a medical emergency and is characterized by complex and deranged circulation which may lead to circulatory failure and death. Early identification of hemodynamic changes, and informed intervention with fluid, inotropes and vasoactive therapies is crucial to limit shock, organ failure and improve outcomes.

## SAVING LIVES & REDUCING COST

The USCOM 1A Doppler ultrasound monitor is saving lives worldwide by improving our understanding of the circulation. While patients benefit from improved clinical care, hospital budgets benefit from the absence of costly disposables and shorter lengths of stay.

*“The technique allows for rapid rationalization of fluid and inotrope support at the bedside.”*

**Prof Christopher J. L. Newth, MD**  
Professor of Pediatrics,  
Children's Hospital Los Angeles, USA

**The USCOM 1A non-invasive hemodynamic monitor,  
the safest and most accurate solution**

# The measure of life.

## HYPERTENSION

Accurate measurement of CO and SVR is essential to the effective treatment of hypertension, heart failure and pre-eclampsia. The USCOM 1A provides rapid, accurate and non-invasive measures of these values and is changing the way we treat hypertension.

*“It's part of the initial shock evaluation and monitored regularly thereafter... USCOM 1A has now been established as the standard of care.”*

**Dr Akash Deep**  
Director of Pediatric ICU,  
King's College Hospital, London, UK

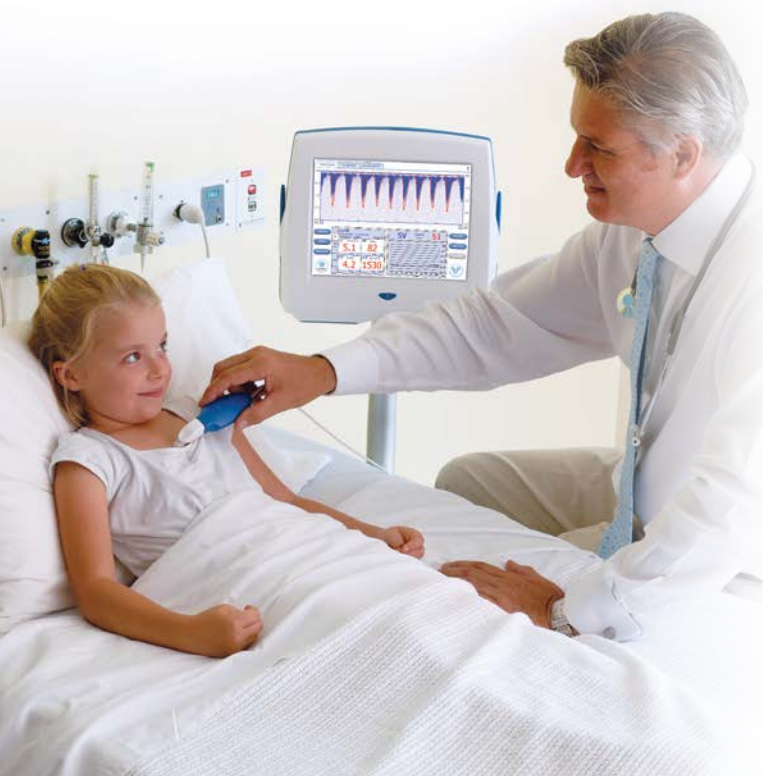


## ADVANCED DOPPLER MONITORING

The USCOM 1A accurately, sensitively and directly measures SV or 'flow at the valve'. The device is safe and non-invasive, with innovative features that simplify operation. The USCOM 1A has a short learning curve with excellent inter and intra-operator reproducibility.

For Neonates, Children and Adults

- CW Doppler Ultrasound
- Real Time Stroke Volume
- FlowTracer Automated Tracking
- Multiple Beat Averaging
- USCOM Flow Area Algorithm
- Smith-Madigan Inotropy Index
- MAP, Hb and SpO<sub>2</sub> Input
- Advanced Parametric Trend Graphs
- Configurable Reports
- Disposable Free





*“ I will not attempt to manage a seriously ill patient now without knowing the Stroke Volume Index, Cardiac Index, Smith-Madigan Inotropy Index, Potential Kinetic Ratio and Systemic Vascular Resistance. ”*

**Dr Howard Wakeling**

Anesthesia and Intensive Care

Western Sussex Hospitals NHS Foundation Trust, Worthing Hospital, UK

**ADVANCED HEMODYNAMIC PARAMETERS**

Includes:

<b>SV</b> (cm <sup>3</sup> )	Stroke Volume
<b>SVI</b> (ml/m <sup>2</sup> )	Stroke Volume Index
<b>SVV</b> (%)	Stroke Volume Variation
<b>FTc</b> (ms)	Flow Time Corrected
<b>CO</b> (l/min)	Cardiac Output
<b>CI</b> (l/min/m <sup>2</sup> )	Cardiac Index
<b>HR</b> (bpm)	Heart Rate
<b>SMII</b> (W/m <sup>2</sup> )	Smith Madigan Inotropy Index
<b>CPO</b> (W)	Cardiac Power
<b>SVR</b> (d.s.cm <sup>-5</sup> )	Systemic Vascular Resistance
<b>SVRI</b> (d.s.cm <sup>-5</sup> m <sup>2</sup> )	Systemic Vascular Resistance Index

**OXYCOMe** (optional)

<b>DO<sub>2</sub></b> (ml/min)	Oxygen Delivery
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**FEATURES**

- Touch screen operation
- Durable ergonomic transducer
- Exportable patient database
- Rechargeable battery
- Portable



**Uscom – devices the experts use**

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 www.uscom.com.au





# The premium tool for hypertension and cardiovascular care

## SupraSystolic Oscillometry

- central BP and brachial BP in less than 60s
- central pulse pressure wave analysis
- accurate, non-invasive and operator independent
- direct physics based algorithm
- easy to use, familiar with no training required
- affordable standalone device

Central blood pressure (cBP) is a more accurate marker of cardiovascular risk and outcomes, and a more appropriate target for interventions.

**A better way to measure blood pressure**



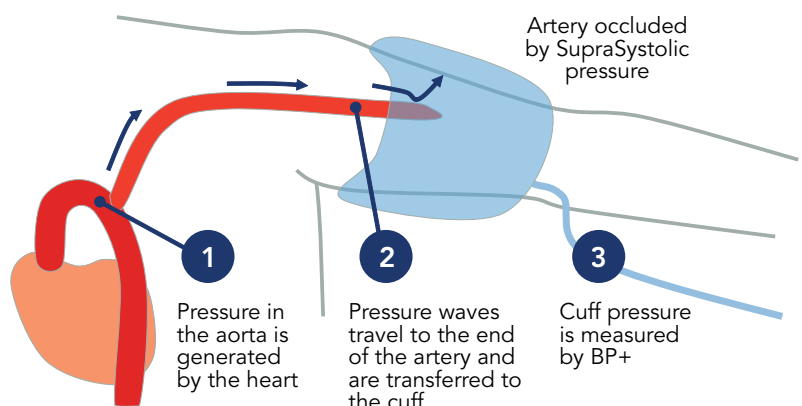
## Raising the standard of care to personalized assessment and treatment



### SupraSystolic Oscillometric Technology

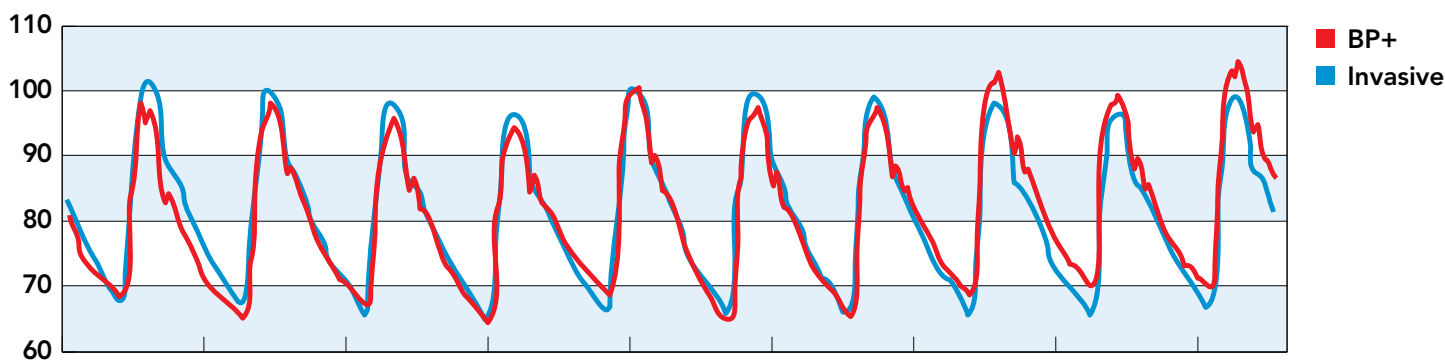
High quality signal acquisition and detailed analysis of the pulse pressure waveform

- + BP+ measures cBP by briefly holding the cuff 30mmHg above the measured systolic pressure, eliminating sub systolic noise to achieve excellent reproducibility and accuracy
- + BP+ uses a 1st principles model of the arterial system to reconstruct the entire central BP waveform and calculate the systolic and diastolic central BP



# Direct central pressure waveform

Accurate central BP waveform measurement without invasive catheters



## What to look for in a premium central BP and pulse wave analysis tool

### SupraSystolic technology

Pulse wave analysis is most accurate when the measurement is unaffected by radial-ulnar and peripheral circulatory variations

### Direct assessment

BP+ uses physics-based models, not cohort average transfer functions, or empirical statistical regressions that only apply to an "average" patient

### Realistic entire waveforms

BP+ waveforms show clear dicrotic notches and other morphologic features

### Aortic systolic, diastolic and mean pressures

Central systolic alone isn't the complete story

### Quality control

Automatic motion artefact and ectopic rejection, and a signal to noise ratio with physically meaningful units

### On-device calculations

No computer needed to measure

### Easy to use

With BP+ there is no specific operator training. Put on the cuff, press the button. It's that simple!

## BP+ features

- **Central Systolic and Diastolic Pressures**  
a better BP measure
- **Brachial Blood Pressure**  
an integral part of a BP+
- **Central Pulse Pressure Waveform**  
visual rhythm assessment
- **Pulse Wave Analysis<sup>1</sup>**
- **Augmentation index<sup>1</sup>**  
arterial stiffening and vascular age
- **Rhythm strip**  
easy identification of arrhythmias, ectopics and pulse pressure variations
- **Cardiac performance**  
early changes in shock and vasoconstriction
- **Invasive Validation**  
accurate and reproducible comparison against catheters
- **Internal Measurement Storage and Data Export Facilities**
- **Reimbursable Measure**  
1. Not available in the USA



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Hypertension. Outcomes. Innovation.