



Value Life

MONITORING & CRITICAL ACCESS

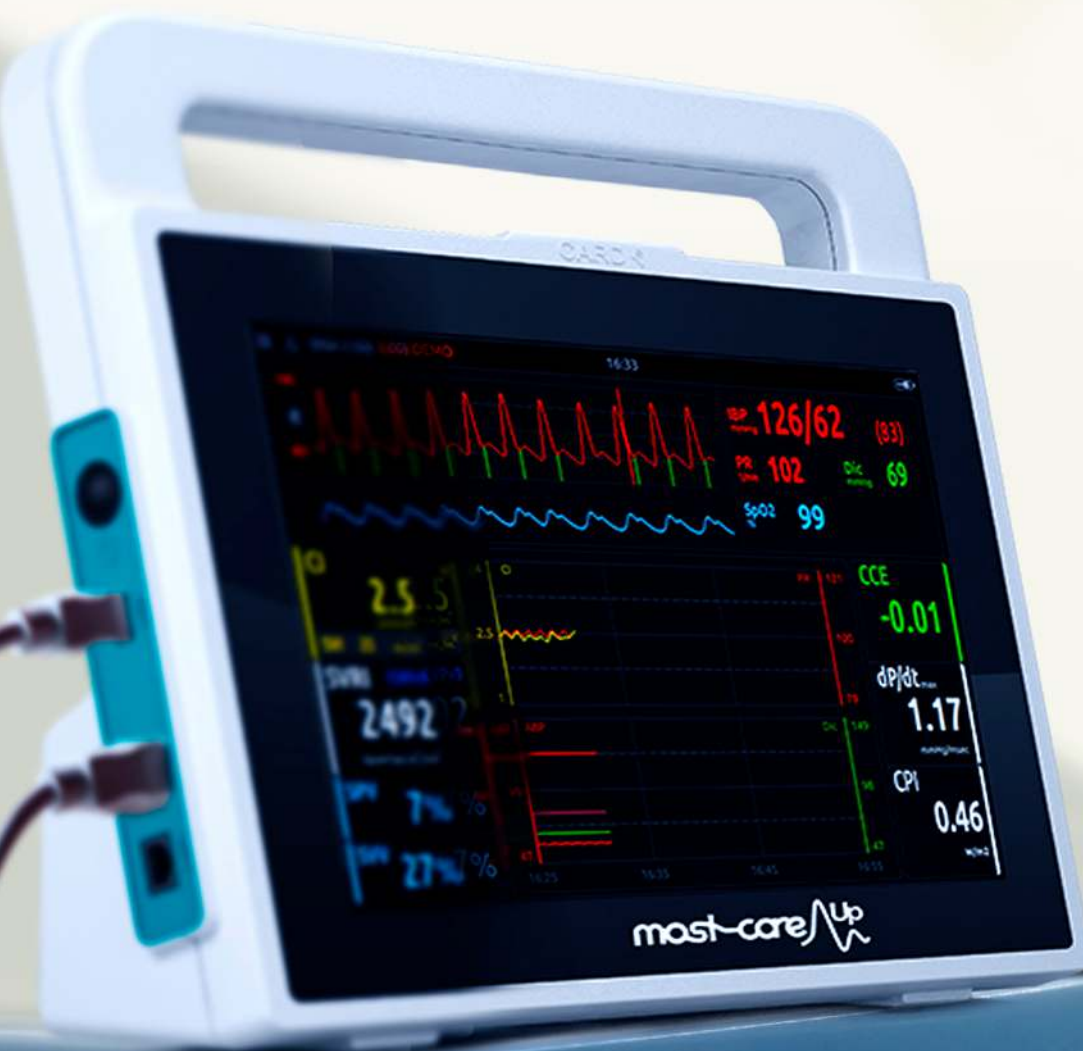
most-care^{Up}
Haemodynamic monitoring



MostCare Up

The only monitor able to follow, in real time and from beat to beat, even the slightest haemodynamic variations in the patient

Based on the patented algorithm PRAM method (Pressure Recording Analytical Method), MostCare Up monitors cardiac output along with many other haemodynamic parameters without prior calibration or pre-determined data



Key benefits

MostCare Up is a reliable and efficient system that suits a wide range of patient types and clinical conditions

Thanks to its rapid set-up, information can be obtained in real time and saved, reviewed and transferred for subsequent analysis.



Simple

- No calibration needed
- Intuitive, customisable interface
- No change in protocols



Convenient

- Can be used on numerous patients without disposable nor added elements
- *On Demand* system suitable for all uses



Versatile

- Can be used on any peripheral or femoral artery
- Suitable for the widest range of patients
- Easily transferred from one patient to another



Innovative

- Exclusive variables (CCE, diastolic pressure, Ea)
- Patented dynamic filter to guarantee the quality of the pressure signal
- Modern connectivity and data transfer systems



Quick

- Constant monitoring with immediate results
- Rapid connection and set-up



Reliable

- Patented and versatile algorithm
- Immediate response to even the smallest haemodynamic variations
- A wide range of clinical papers available.

Flexibility of use

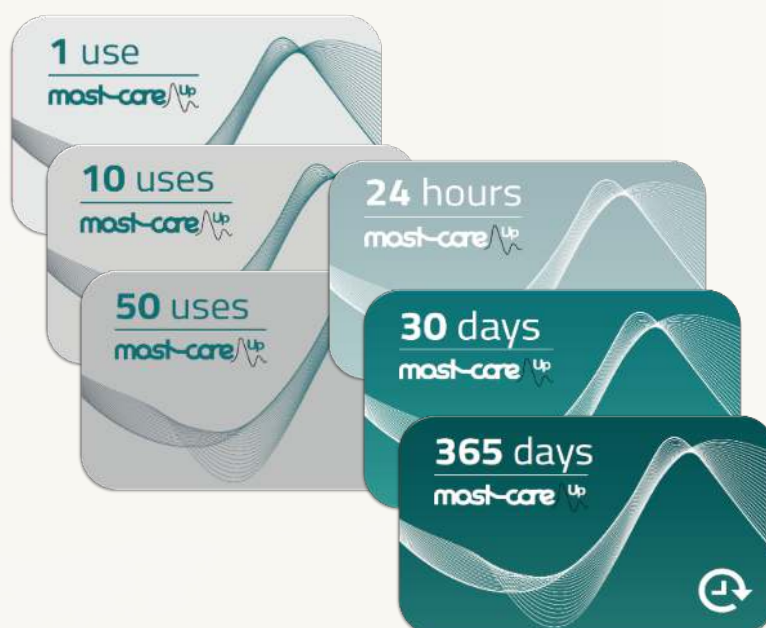
MostCare Up guarantees the maximum flexibility and cost efficiency thanks to the various ways in which it can be used. With no disposables attributed to it, this innovative product becomes more cost-effective with each patient use, meaning you no longer have to think cost, only best practice.

On Demand

The monitor can be activated via a card for a single use or for periods of time to meet specific application needs.

Endless

Allows an unlimited use of the system without additional cost. This is beneficial for hospitals with a large number of patients who need continually monitoring.

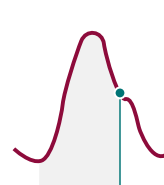
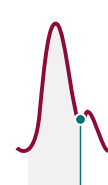
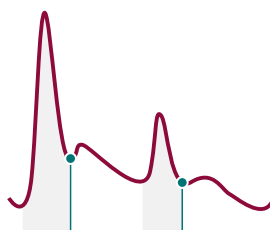
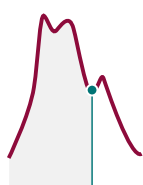
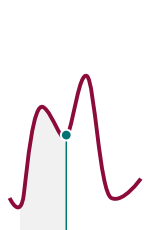
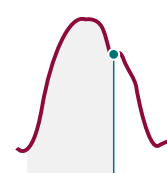
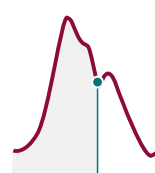
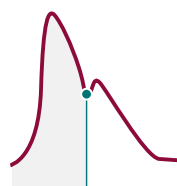
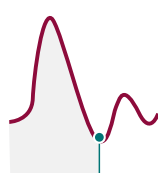
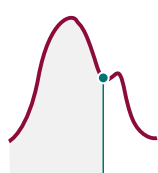
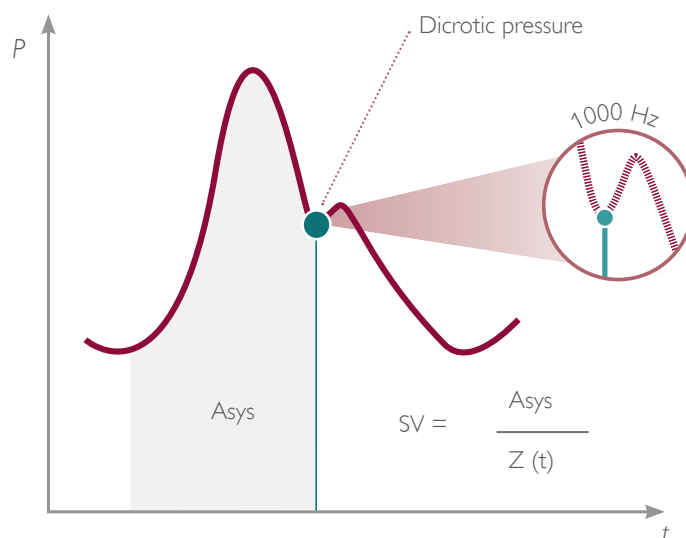


PRAM method

A patented algorithm

PRAM (Pressure Recording Analytical Method) is an innovative method to analyse the pressure wave used in MostCare Up¹. It allows for constant and sensitive monitoring in real time of the slightest haemodynamic variations because it is based, heartbeat by heartbeat, only on the morphology of the arterial pressure wave.

- Sampling at 1000 Hz
- Beat-by-beat analysis of the wave form
- Does not depend on pre-estimates
- No external calibration required.



**Atrial
fibrillation**

**Aortic
counterpulsation**

**Fluid
responsiveness**

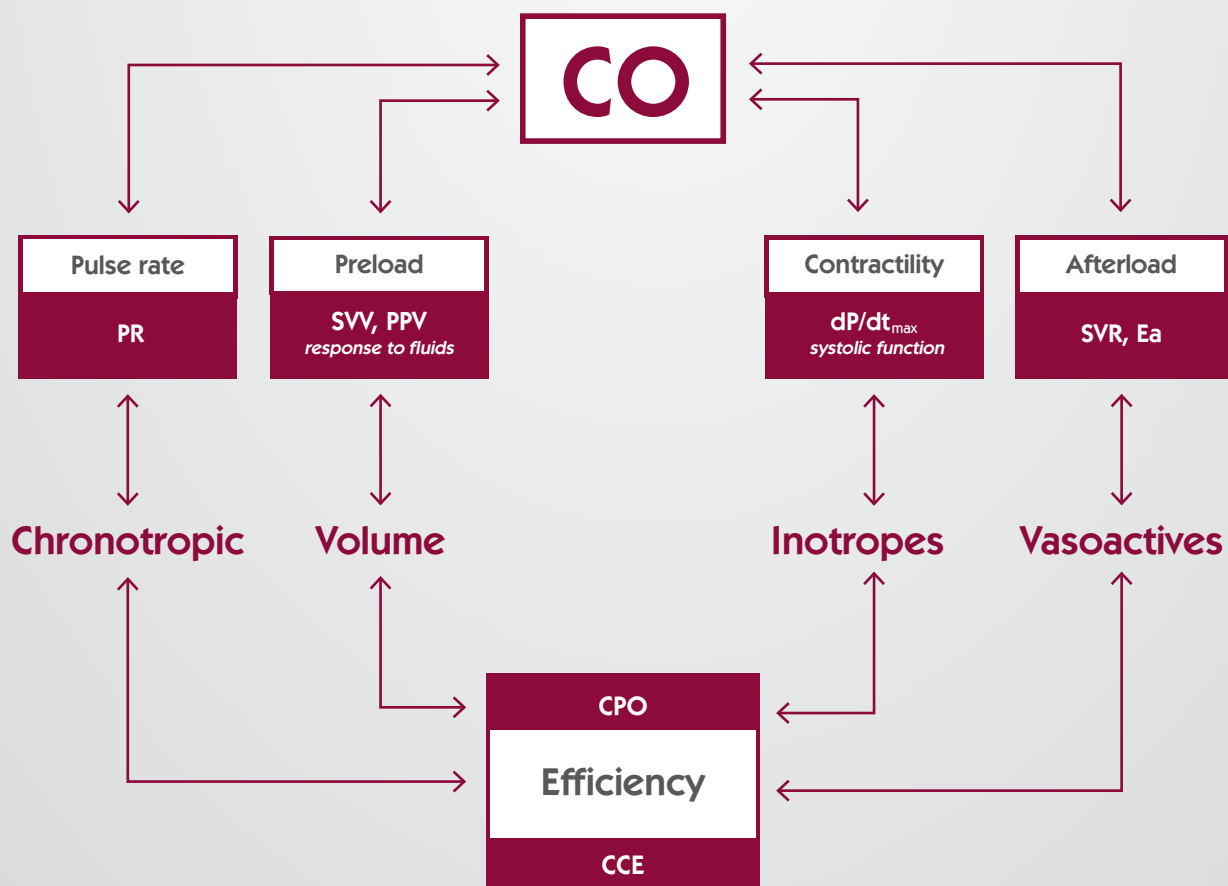
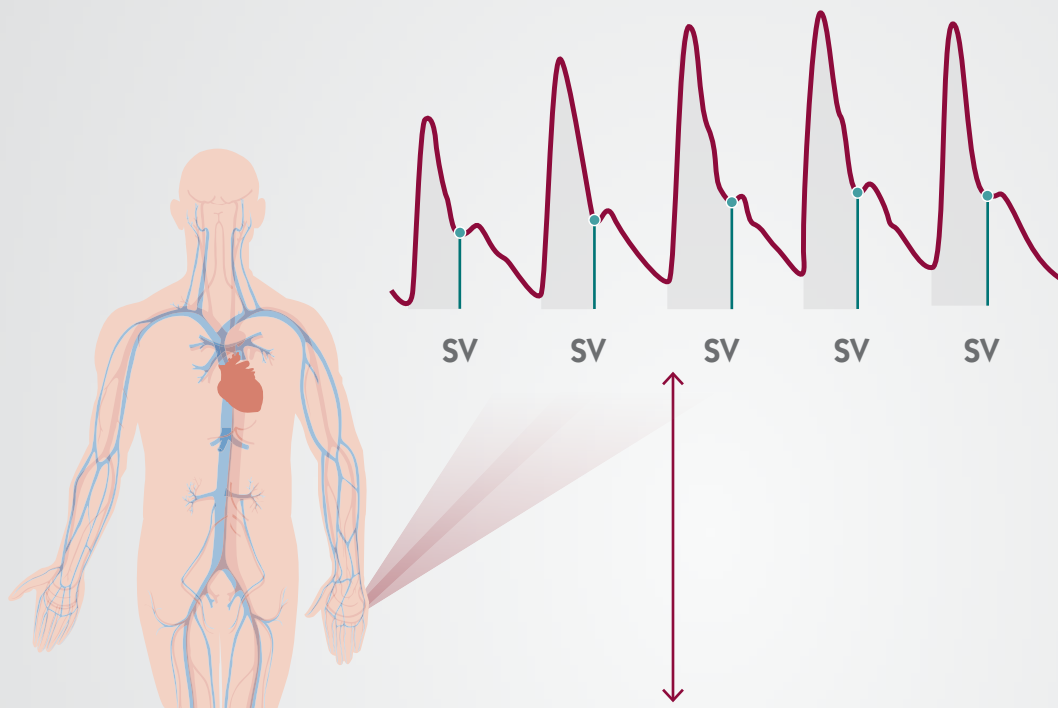
**Aortic
Insufficiency**

Vasodilatation

Vasoconstriction

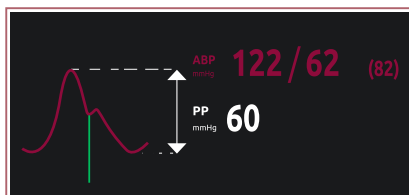
Each of your patients is unique and their individual haemodynamic condition can evolve rapidly and differently. The shape of the arterial pressure wave is the result of a complex balance which depends on both the coupling of the cardiac function with the vascular system and their interaction with the respiratory system.

The precise analysis of the shape of the wave removes the need for calibration and pre-estimated data about the patient. It also identifies the dicrotic pressure and the $Z(t)$ impedance of the cardiovascular system, even in cases of unusual pressure wave forms.



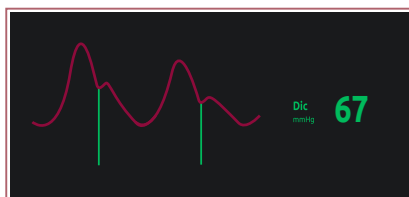
Haemodynamic variables

Including unique variables only to MostCare Up



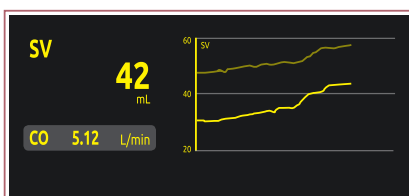
Pressure

Systolic, diastolic, mean and pulse pressure (PP) are measured with every heartbeat.



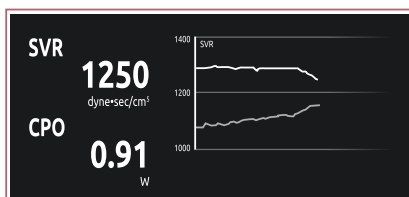
Dicrotic pressure

The value of the dicrotic pressure, gauged with precision at 1000Hz, provides information about the vascular condition and the ventricular-arterial coupling.



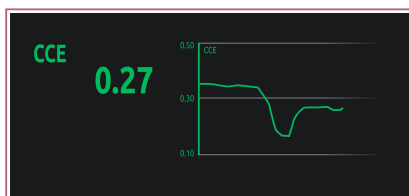
Cardiac output

The stroke volume (SV) is measured beat-by-beat and allows for the cardiac output (CO) to be calculated.



Derived variables

Systemic vascular resistance (SVR), cardiac power output (CPO) and oxygen delivery (DO_2) are examples of the derived variables provided by MostCare Up.



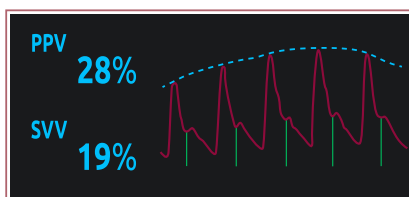
CCE

Cardiac cycle efficiency (CCE) is an exclusive variable which describes haemodynamic performance in terms of energy expenditure in the patient being monitored².



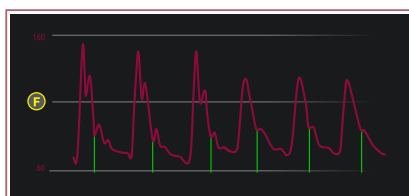
dP/dt max

The maximum pressure variation compared to time (dP/dt_{max}) is linked to the hearts contractility and also to the condition of the vascular system.



Dynamic variables

Pulse pressure variation (PPV) and stroke volume variation (SVV) during the respiratory cycle can be viewed simultaneously.



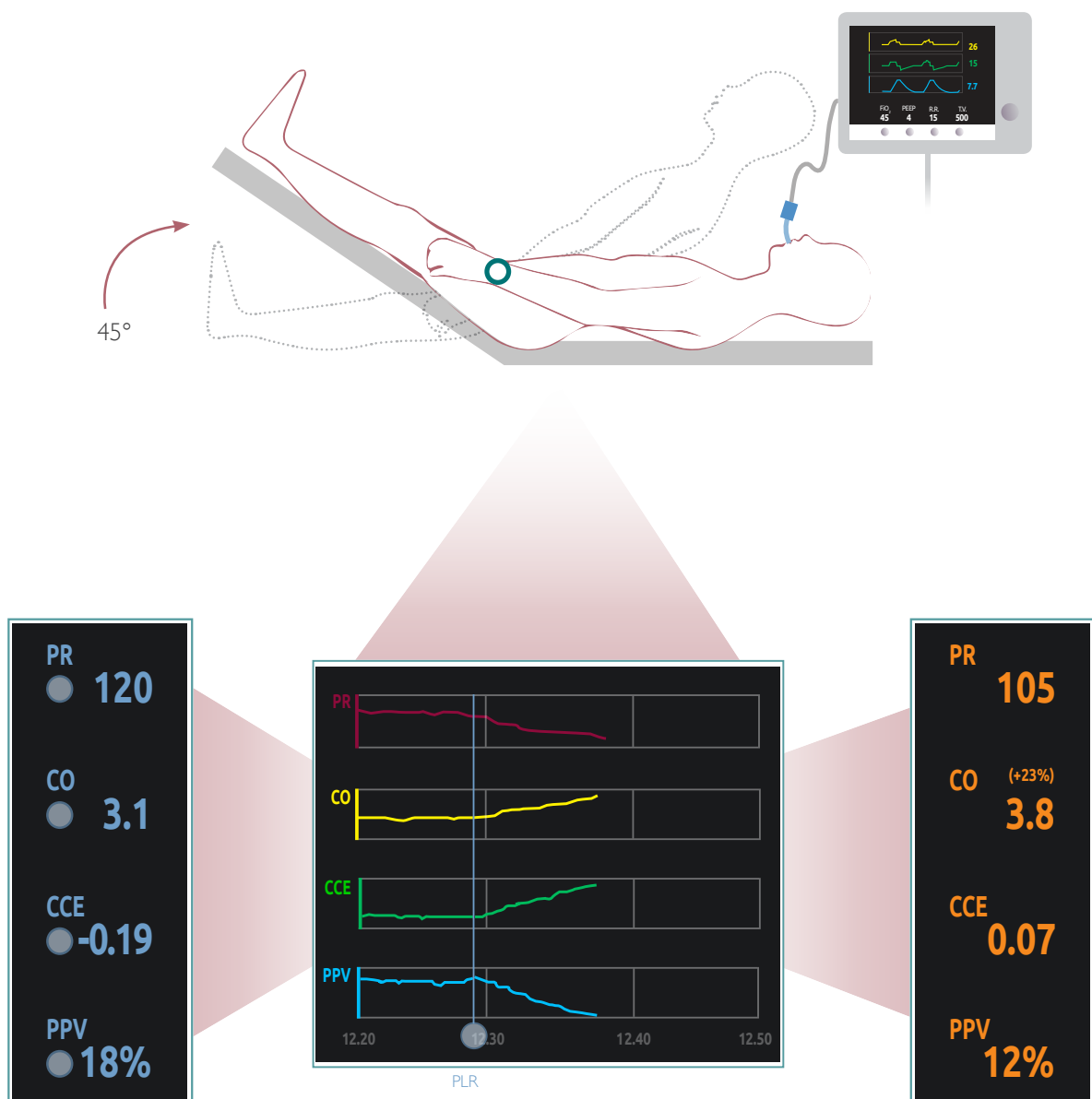
Dynamic filter

The shape of the pressure curve can be affected by resonance phenomena. The exclusive, dynamic filter in MostCare Up has been designed to automatically optimise the quality of the wave and to reduce these phenomena³.

Markers and trends

MostCare Up can display trends for many haemodynamic variables simultaneously

It is also possible to insert personalised markers during specific events (e.g. start treatment). Designed specifically to help the clinic when monitoring haemodynamic variations following specific treatments (e.g. fluid challenge).



Connectivity and data management

MostCare Up supports the most advanced communication and data transmission standards

The patients parameters and screenshots can be saved to the machine's memory or exported via the USB port and can be transferred to the hospital's platform using the HL7 protocol. The image on the display can be shared for monitoring or educational purposes via HDMI.



Applications

The PRAM method requires no external calibration or anthropometric data

MostCare Up can therefore be easily used on any patient who requires constant or occasional haemodynamic monitoring, and, more specifically, during haemodynamic instability or in the presence of acute clinical variations in high risk patients.

Perioperative

Fluid optimisation in high risk surgery patients has significantly reduced postoperative complications and length of hospital stay, and improved patient outcomes, thus resulting in substantially lower costs.⁴⁻⁶

Intensive care and critical patients

Thanks to beat-by-beat analysis, the PRAM method is able to reliably recognise and monitor the haemodynamic changes resulting from the administration of vasoactive drugs and fluids, in real time and even in septic or trauma patients.⁷⁻¹⁰

Critical patient

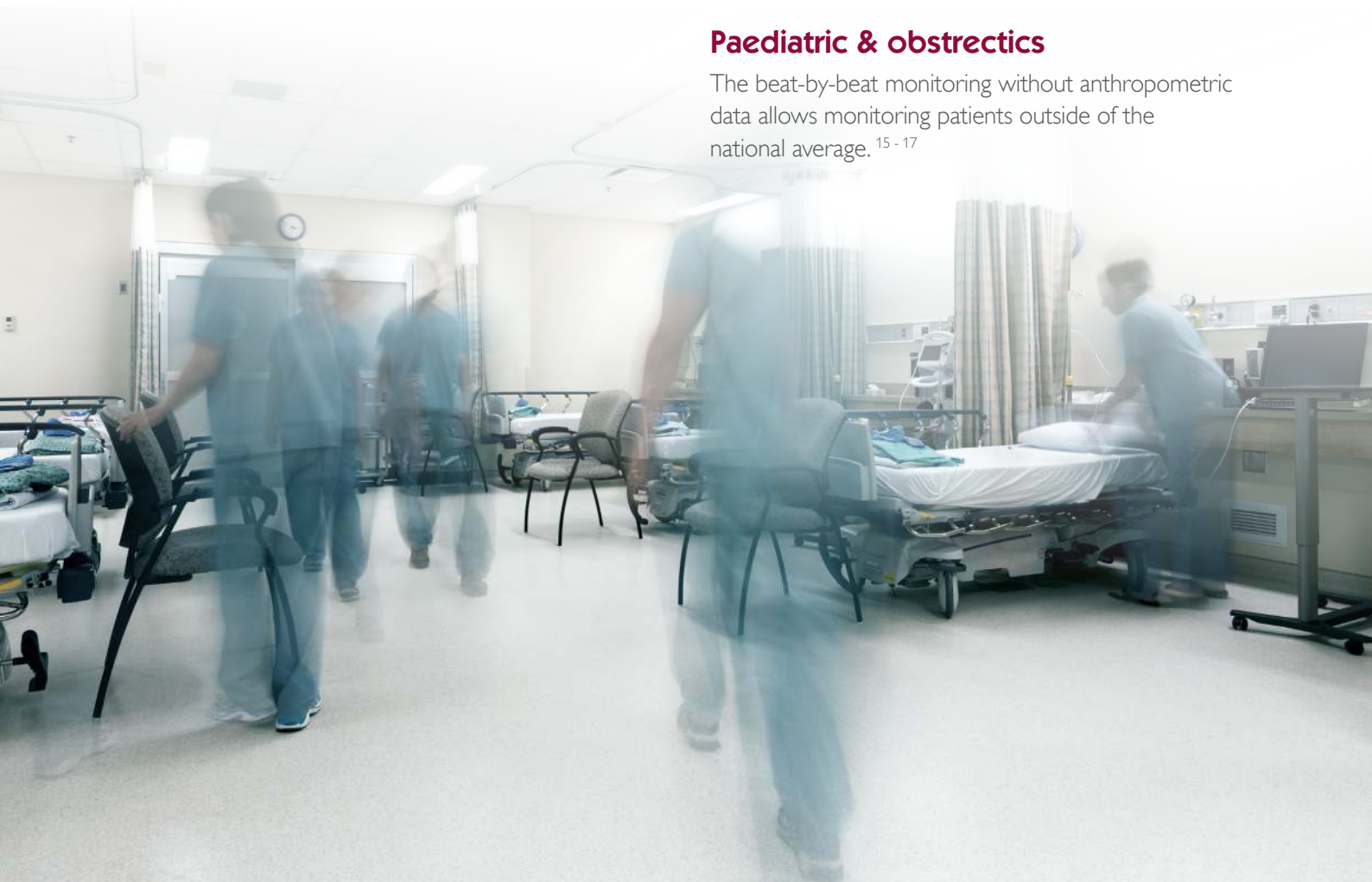
The echocardiography is a gold standard technique to evaluate ventricular function. Some of the variables provided by MostCare Up (dP/dtmax and CCE) supply a constant stream of information about the cardiac function in the critical patient.¹¹

Cardiac insufficiency

The beat-by-beat monitoring of haemodynamic variables like diastolic pressure, dP/dtmax and CCE guarantees a rapid and immediate evaluation of any clinical variations in the patient so that immediate action can be taken.¹²⁻¹⁴

Paediatric & obstetrics

The beat-by-beat monitoring without anthropometric data allows monitoring patients outside of the national average.¹⁵⁻¹⁷



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Perioperative

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Critical patient

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Paediatric patient

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Obese patient

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Variables of MostCare Up

Haemodynamic variables		Formulas	Physiological range ***	Units
Pressures				
Sys	Systolic pressure			mmHg
Dia	Diastolic pressure			mmHg
MAP	Mean arterial pressure			mmHg
Dic	Dicrotic pressure		70 ÷ 105	mmHg
PP	Pulse pressure	$P_{sys} - P_{dia}$	30 ÷ 50	mmHg
MAP-Dic	Mean and dicrotic pressure difference	MAP-Dic	-10 ÷ +10	mmHg
CVP*	Central venous pressure			mmHg
Cardiac output				
SV	Stroke volume		60 ÷ 100	mL
SVI	Stroke volume index		35 ÷ 45	mL/m ²
SV _{kg}	Weighted stroke volume	SV/weight		mL/kg
CO	Cardiac output		4.0 ÷ 8.0	L/min
CI	Cardiac output index		2.6 ÷ 3.8	L (min· m ²)
SVR	Systemic vascular resistance	$(MAP - CVP) / CO \cdot 80$	800 ÷ 1400	dyne· sec/cm ⁵
SVRI	Systemic vascular resistance index	$(MAP - CVP) / CI \cdot 80$	1600 ÷ 2400	dyne· sec· m ² /cm ⁵
Oxygen delivery				
SpO ₂ *	Arterial oxygen saturation		96 ÷ 100	%
DO ₂ *	Oxygen delivery	$DO_2 = CO \cdot CaO_2$ con $CaO_2 = Hb \cdot 1,34 \cdot SaO_2$	900 ÷ 1000	mL/min
DO ₂ I *	Oxygen delivery index	$DO_2I = DO_2 / BSA$	500 ÷ 600	mL/min/m ²
Efficiency and cardiac function				
dP/dt _{max}	Maximal slope of the systolic upstroke		0.9 ÷ 1.3	mmHg/msec
CCE	Cardiac cycle efficiency		-0.2 ÷ 0.3	units
CPO	Cardiac power	$MAP \cdot CO / 451$	0.80 ÷ 1.20	W
CPI	Cardiac power index	$MAP \cdot CI / 451$	0.50 ÷ 0.70	W/m ²
Vascular function				
Ea	Arterial elastance	Dic/SV	1.10 ÷ 1.40	mmHg/mL
PPV/SVV	Dynamic elastance	PPV/SVV		units
Z _{tot}	Cardiovascular impedance			mmHg· sec/mL
Dynamic variables				
PPV	Pulse pressure variation		< 15**	%
SVV	Stroke volume variation		< 15**	%
SPV	Systolic pressure variation			%
DPV	Dicrotic pressure variation			%
Other specific variables				
PR	Pulse rate			1/min
Dia _{pk}	Diastolic peak			mmHg

* When added probes are used, DO₂ and DO₂I calculated with fixed Hb value.

** Approximate values reported in the literature in the patient receiving controlled mechanical ventilation.

*** Normal values in the adult patient. The values depend on the patient in relation to the clinical conditions.

BSA = body surface area, calculated by the standard formulas of DuBois & DuBois, using the values of weight and height.

Ordering information

Monitors

VMB08MC0202E2V	MostCare Up monitor - On Demand version with rigid case
VMB08MC0255E2V	MostCare Up monitor - Endless version with rigid case

Cards

VMB04MCU1D02	MostCare Up card - 24 hours (1 day)
VMB04MCU1M02	MostCare Up card - 30 days (1 month)
VMB04MCU1Y02	MostCare Up card - 365 days (1 year)
VMB04MCU01U02	MostCare Up card - 1 use (72h)
VMB04MCU10U02	MostCare Up card - 10 uses (72h each)
VMB04MCU50U02	MostCare Up card - 50 uses (72h each)

Cables From a standard monitor to MostCare Up - Y cable

VMC03MUYBBR	MostCare Up BPY CABLE - BBraun transducer type connection
VMC03MUYBD	MostCare Up BPY CABLE - BD transducer type connection
VMC03MUYBIO	MostCare Up BPY CABLE - Biosens.Utah transd. type connection
VMC03MUYDPT	MostCare Up BPY CABLE - Codan DPT transducer type connection
VMC03MUYEDW	MostCare Up BPY CABLE - Edwards transducer type connection
VMC03MUYMED2	MostCare Up BPY CABLE - Medex TranSt. transd. type connection

Cables From an arterial catheter pressure transducer

VMC03MUBBR	MostCare Up BP CABLE - BBraun transducer type connection
VMC03MUBD	MostCare Up BP CABLE - BD transducer type connection
VMC03MUBIO	MostCare Up BP CABLE - Biosens.Utah transd. type connection
VMC03MUDPT	MostCare Up BP CABLE - Codan DPT transducer type connection
VMC03MUEDW	MostCare Up BP CABLE - Edwards transducer type connection
VMC03MUMED	MostCare Up BP CABLE - Medex LogiCal transd. type connection
VMC03MUMED2	MostCare Up BP CABLE - Medex TranSt. transd. type connection

For further information, please contact: vygon@vygon.co.uk

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