statMAP™

New Class of BP Device Overcomes Limitations

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Limitations of current BP devices

Current electronic BP measurement devices designed for clinical use have a number of limitations that make them suboptimal for professional use in the clinic and for EMS/medic use in the field.

1) These traditional BP devices are typically large standalone monitors or are a part of a multi-parameter monitoring system. Due to their size and weight, such BP devices are not optimal for use in the clinic and the field.

2) Although current hospital devices often have a backup battery for operation in the event of power failure, they do not use common disposable batteries and hence require the presence of 120/240 volt power for charging and for prolonged operation.

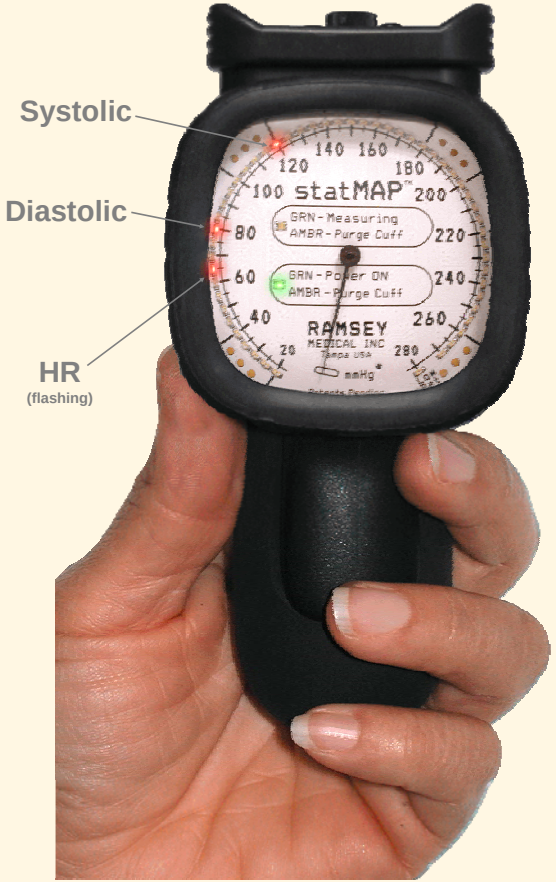
3) Current automated devices operate in a single mode (electronic only), and hence do not permit the clinician to conveniently do a manual reading for confirmation of the electronic reading when needed.

4) Another deficiency of existing electronic BP devices is that they have no means by which the clinician can determine if the BP device is in proper calibration. Since calibration of electronic BP devices with a pressure standard is typically done only once or twice a year in hospitals, (and probably never in the office, clinic, and home), the clinician does not know if the measurement values shown are inaccurate due to calibration error.

"Dual-mode" BP device developed

The statMAP is a "dual-mode" device, that combines both a manual sphygmomanometer and an electronic oscillometric BP device into a small, hand held, battery powered (2xAAA) unit. When the power is switched OFF, the statMAP is a manual aneroid sphygmomanometer, facilitating manual BP determination using the palpatory or auscultatory methods. When the power is switched ON, the statMAP is a state-of-the-art electronic, oscillometric BP device which has been clinically tested and meets both AAMI and EHS accuracy standards.

The presence of two independent cuff pressure sensors and indicators provides redundancy and assures proper calibration of both the manual and electronic systems if the simultaneous dual indications of cuff pressure agree. This continuous visual assurance of calibration accuracy potentially eliminates the clinical need for mercury manometers.



statMAP is easy to use

To use statMAP in its electronic mode, the device is switched ON and the cuff pressurized using the bulb to a level 40-50 mmHg above the palpatory systolic pressure. (Palpatory systolic can be measured using statMAP in manual mode). After cuff inflation, the device automatically deflates the cuff in steps while measuring the BP and heart rate (HR) – a typical determination takes 20-30 seconds after cuff inflation. When finished, the device depressurizes the cuff and displays the systolic and diastolic as steadily illuminated LEDs next to the measured values. The HR is displayed as a flashing LED next to the measured value. Displayed in this manner, there is a maximum display error of +/- 2 mmHg. If greater display precision is desired, pressing and holding the mode button on the top of the unit will permit the BP values to be read to the exact mmHg. (MAP is displayed with a second press and hold of the same button). Additional BP/HR readings are made by simply re-pressurizing the cuff.

Multiple readings combined into "NSV"

When multiple readings are made during a BP measurement session, each set of BP and HR values are stored internally for later use in determining the "Nominal Session Value" (NSV) . . . the BP value most representative of the multiple readings determined in a BP measurement session on a single subject. The statMAP estimates the NSV by removing the highs and lows for each BP/HR parameter stored and then averages the remaining values, weighting the values nearer the median value of each parameter more than the others. The algorithm used for estimating the NSV for the measurement session is dependant on the number of BP determinations in the session. As the number of BP determinations increases (a maximum of the last 10 values are used), the robustness of the estimation of nominal session value increases. Multiple readings, with typical inter-reading variability, are thus combined to form a representative value for the subject's BP at the time of the measurement session . . . the NSV.

Further information

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