



Improve CPR delivery

Q-CPR™ Measurement and Feedback Tool monitoring CPR quality in real time

Performing quality CPR in the treatment of cardiac arrest may improve the patient's chance of survival and increase the opportunity for a complete neurological recovery.* The 2005 American Heart Association Guidelines for CPR state that “Methods should be developed to improve the quality of CPR delivered at the scene of cardiac arrest by healthcare providers and lay rescuers. (Class IIa)” and that “Components of CPR known to affect hemodynamics include ventilation rate and duration, compression depth, compression rate and number, complete chest recoil, and hands-off time.”**

Philips now offers the only tool that measures and provides objective feedback in real time to the caregiver on six of these CPR components. The HeartStart MRx monitor/defibrillator with Q-CPR™ technology by Laerdal uniquely helps support your goal of providing the highest quality resuscitation care for each and every patient.

The 2005 AHA Guidelines also state that “Systems that deliver professional CPR should implement processes of continuous quality improvement that include monitoring the quality of CPR...”** For support of system-wide quality improvements, the Philips Q-CPR solution includes the Q-CPR™ Review software application, the only tool of its kind enabling such retrospective review of the essential components of CPR delivery along with other resuscitation data, including ECG, CO₂ and both defibrillation and patient care events.

The best CPR in the moment and tools for improving the quality of CPR across your organization. Only from Philips.



*Chow-In Ko P, Chen WJ, Lin CH, Huei-Ming Ma M, Lin FY. Evaluating the quality of prehospital cardiopulmonary resuscitation by reviewing automated external defibrillator records and survival for out-of-hospital witnessed arrests. Resuscitation. 2005; 64:163-169.

**American Heart Association 2005 Guidelines for Cardiopulmonary Resuscitation and Emergency Cardiovascular Care. Adult Basic Life Support. Circulation. 2005; 112:IV-29.

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Q-CPR is easy to set up, easy to use, and easy to experience. There is virtually no added time or weight: just a Compression Sensor weighing only 8 ounces. Apply the sensor and pads to the patient, connect them to HeartStart MRx, and CPR measurement and feedback begins.

Compressions

The Q-CPR Compression Sensor on the patient's chest gathers data and transmits it to HeartStart MRx where it's interpreted and displayed. Compression rate and depth are presented as a wave graph: wave height depicts compression depth, while the interval between waves indicates rate. A calculated compressions-per-minute (cpm) value is shown as a numeric above the wave. Compressions are also analyzed in real-time, contrasting actual performance with established American Heart Association (AHA) and European Resuscitation Council (ERC) guidelines. If either depth or rate drifts outside its target range, MRx displays on-screen signals and provides audible feedback.

Ventilations

Ventilation data is collected with the same pads used for defibrillation. Attached to the patient's chest, the pads detect changes in chest impedance which are interpreted by MRx then displayed as lung volume and ventilation rate on-screen. Just above the compression wave, the ventilation indicator shows lung volume. The calculated ventilations-per-minute (vpm) value appears next to the lungs indicator.

Ventilations are also analyzed and compared with established AHA and ERC guidelines. If either measurement, volume or rate, falls outside its target range, MRx provides on-screen signals and audible feedback.

Corrective Feedback

On-screen visual prompts and audible voice prompts alert the caregiver to needed adjustments in CPR performance. They are prioritized and delivered in the



The lungs indicator has four states: empty, 1/3-full, 2/3-full, and full (left to right).



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Code View



AED View

order of their clinical significance. In addition to depth, rate and volume, MRx with Q-CPR monitors lapses in compression and ventilation activity. For example, after a 15-second pause in compressions, voice and text prompts say, "15 seconds without compressions." Once a correction is made, the related prompts cease.

The volume of the voice prompts can be adjusted up or down and even turned off by the clinician. Visual prompts remain active regardless of the audio's on/off state.

Data Reporting

CPR measurements can be recorded using the strip chart printer on HeartStart MRx. Printing all active monitoring parameters in real-time, or with a 10-second delay, MRx can document ventilation rate, compression rate, and "no-CPR" time every 25 seconds.

Q-CPR data capture and audio recording are two additional options available on the HeartStart MRx. With either or both options activated, the Heartstart MRx saves CPR data in its internal memory. This information can be transferred to a PC running Q-CPR™ Review, our CPR data management application for case review, performance analysis, data storage and reporting. Q-CPR Review produces a statistical summary of each patient event that describes CPR quality at a glance and identifies areas for improvement. It can also aggregate events to track system-wide performance, trends and improvements as well as support resuscitation research.

To learn more about Q-CPR, HeartStart MRx and Philips Medical Systems, call 800.934.7372 or visit www.philips.com/heartstart.

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