Improve the delivery of CPR and a patient’s chance of survival

Q-CPR™ Measurement and Feedback Tool

Performing quality CPR in the treatment of cardiac arrest can improve the patient’s chance of survival and increase the opportunity for a complete neurological recovery. Recent science has shed new light on the importance of continuous chest compressions and optimal ventilations for victims of cardiac arrest. In addition, reestablishing coronary blood flow and perfusing the heart create a condition favorable for electrical defibrillation, when the patient has been unconscious for more than 5 minutes.

To assist care providers in performing quality CPR, we’ve added CPR measurement and feedback to our Philips HeartStart MRx monitor/defibrillator. This one-of-a-kind tool, powered by Laerdal’s Q-CPR™ technology, offers objective measurement and corrective feedback on compression depth and rate, as well as ventilation volume and rate. Q-CPR reinforces CPR training with each and every use.

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.

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 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.

Ventilations, too, are 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.

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 documents ventilation rate, compression rate, and “no-CPR” time every 25 seconds.

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

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