Emergency Vital Signs Monitor

The Crisis

According to the Center for Disease Control, every year there are over 120 million visits to the emergency department.

In 2010 alone, at least 55 million of those visits required care from a trauma center.

As an EMT, it is expected that an initial assessment and transport decision is made within ten minutes of arriving on scene. They need the best information possible to make an informed decision.

Pulse Oximetry

The percentage of O2 in the blood can be used to help medical responders make informed decisions regarding patient care because it can be a sign of breathing emergencies like untreated asthma, pneumonia or bronchitis.

The gold standard in non-invasive blood oxygen measurement is pulse oximetry, which uses a set of red and infrared light sources to measure oxygenated hemoglobin because of how it absorbs light.

Typically a Red to IR ratio of 0.5 equates to approximately 100% SpO2, a ratio of 1.0 to approximately 82% SpO2, while a ratio of 2.0 equates to 0% SpO2.

Sphygmomanometer

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Blood pressure provides very important signs of a person's medical health. This includes hemorrhaging or going into uncompensated shock which can be fatal if left untreated.

By using a strain gauge, modern digital electronics can measure the oscillations in pressure that are generated by a heart beat.

The fluctuation will be analyzed in an algorithm which gives the systolic and diastolic pressure.

References


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