

## FIRST RESPONSE MONITOR

Award-winning lightweight connected device for measurement and real-time display of respiratory and heart rate

### THE CHALLENGE >

Measuring and monitoring vital signs of trauma patients at the point of injury is crucial as it critically improves the chances of patient survival - yet it remains a time-consuming and manual process for first response medics.

Medical management on the battlefield or at a disaster is complicated by difficult access and is often only possible once the patient has been moved from the location of injury. Equipment needs to be reliable, robust and easy to use, but lightweight and compact.

### THE SOLUTION >

Cambridge Design Partnership interviewed a range of army medics about their needs and challenges in multiple casualty emergency situations.

We identified the need for a low-cost device to bridge the gap between manual methods of vital signs measurement - which can be laborious and challenging amidst the noise and stress of a disaster or on the front line - and more expensive, larger patient monitoring systems.



### BENEFIT >

The First Response Monitor is a lightweight, robust and low-cost wearable device that not only monitors patients but collects and transmits data in real-time, enabling the medic to care for a greater number of casualties, providing more effective casualty triage to deliver improved patient outcomes.

The small device clips onto a patient's nose and monitors breathing rate and heart rate, giving 'at a glance' indication of both parameters, and this data is added to a trends graph showing how these measurements have changed over time. This enables the medic to focus their efforts on providing care rather than taking measurements but also enables the care giver to understand how the patient's condition has changed over time. The data can be transmitted using Bluetooth low energy to a smartphone app or tablet, enabling other data analyses such as multiple patient triage or situational awareness across the group.

The First Response Monitor has won two Red Dot Design Concept Awards, with a 'Best of the Best' award in the Life Science category - an accolade given to groundbreaking design that is considered the best work in a category.