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Japan – Innovation EMS Helmet

EMS Interactive Command Control System and EMS Helmet in Japan

BRIEF BACKGROUND

The Kokushikan University Disaster Prevention and Rescue Research Institute in Japan developed specialized medical communication equipment with Shanghai company First Respond Inc. Together, they created an EMS helmet that allows critical care providers to connect to an advanced interactive medical command control system. The helmet is designed to prevent mis-triage by allowing rescuers on the other end of the call to not only hear, but to see physical signs on the patient. This is an ideal tool for large sporting events, such as the 2020 Tokyo Olympic and Paralympic games.

STEPS TAKEN

The EMS helmet was designed to enable visible-voice biphasic communication between the on-site EMS staff and the Medical Control physician in the command control room. This information and communications technology device provided ideal medical control by transmitting information from the scene, including scene safety, initial and ongoing exam, face and skin color, sweat and advanced treatment, including intubation.

This 400g WIFI/4G EMS helmet offered built-in headphone audio, video transmission with GPS command system, and hands-free operation. Battery operation allowed six-hour video communication or 20-hour stand-by. When used, the MC physician could judge appropriate examination and treatment from the room by watching live video. A dedicated dispatch channel allowed the flow of emergency communication in both directions. Additionally, the interactions were recorded; which proved effective for sharing.

CHALLENGES

Initially, the EMS helmet was not fully waterproof. This hurdle had to be overcome to be truly useful in the field.

RESULTS

During the initial trials, there were over 20 emergencies at marathon events in Japan and China. EMS crews successfully resuscitated refractory ventricular fibrillation and pulseless electrical activity as directed by the MC physician.



Information, learning and event review after the incident.

Figure 1. EMS helmet allowed visible-voice biphasic communication between the on-site EMS staff and the MC physician



Figure 2. Trauma assessment shared with EMS physician via WIFI access

OUTLOOK

The creators plan to introduce the EMS helmet at high-attendance sporting events, such as the 2020 Tokyo Olympic and Paralympic Games..

CONTACT

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