

BlueBox: A Device and System to Document Code Blue Scenarios

[LAB0035]

Background

- “Code Blue” is the signal used in hospitals to call for an immediate cardiopulmonary resuscitation (CPR) following a cardiac or respiratory arrest.
- According to the American Heart Association, there were **209,000 Code Blue incidences requiring CPR in the U.S. in 2016.**
- Detailed analyses of thorough and accurate recordings of Code Blue events enable improvement of in-hospital procedures.
- Although it is important to completely and accurately document such incidents, **there is no automated, standardized method to record patient status and vital signs, or the verbal communication between hospital staff.**
- Current handwritten records on a paper “code sheet” do not allow for accurate measurements of key quality indicators and are subject to human errors.

Innovation

- **Dr. Ruey-Kang Chang has developed a wearable device that records, analyzes, and generates a report for Code Blue scenarios called BlueBox.**
- The device has a sealed, splash-proof, circular recorder housed in an elongated patch shaped like a large bandage.
- BlueBox is automatically turned on when its protective cover is removed and the device is placed on the patient’s chest.
- The device continuously records the patient’s **vital signs, chest compressions, defibrillation, and all verbal communication until it is removed from the patient**, which automatically turns the device off.
- The device generates an “electronic code sheet” for review, filing, and reporting.
- BlueBox is designed to prevent unauthorized removal of internal memory or other tampering.



Advantage

- BlueBox records and synchronizes all treatment and patient parameters, making Code Blue documentation standardized, complete, and operator independent.
- Reliable recordings of Code Blue events allow for detailed review of each incident by the Code Blue team and the hospital, which is critical for staff education and quality improvement.
- The electronic “code sheet” does not need conversion for electronic medical record integration. Converting paper code sheets to electronic records is a challenge many hospitals are facing.

BlueBox: A Device and System to Document Code Blue Scenarios

[LAB0035]

Applications

- Accurately record all the vitals, procedures, and verbal communication during Code Blue incidents.
- Generate complete data set of Code Blue incidents for medical training and quality improvement.

Lead Inventor: Ruey-Kang Chang, MD, MPH

IP Status

- U.S. Patent No. 9,743,882 issued August 29, 2017
- U.S. Patent No. 11,141,599 issued October 12, 2021
- U.S. Patent Application 15/669,449 filed August 4, 2017 – pending
- U.S. Patent Application 17/394,062 filed September 4, 2021 – pending
- European Patent Application EP 19800860.9 filed May 7, 2019 – pending
- Chinese Patent Application CN 201980046242.5 filed May 7, 2019 – pending