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St. John Ambulance Western Australia – HP-CPR

Considering Human Factors in Team Performance in the Design and Implementation of an HP-CPR Model for OHCA in Western Australia

BRIEF BACKGROUND

In early 2018, St. John Ambulance Western Australia (SJAWA) began designing a new HP-CPR model. To realize the objectives of high-performance care, SJAWA recognized the need to understand the human performance characteristics of the team. They identified that in pre-design simulations, teams achieved all ACLS objectives. However, several areas were found in need of critical improvements:

- Peri-shock pauses were untidy, prolonged, amplified and exaggerated. Every team member participated in rhythm verification and animatedly disengaged from the patient to demonstrate they were clear prior to shock.
- Communication tended to be reactive, unstructured, informal and passive. Noise levels and message ambiguity induced confusion.
- Overall situational awareness and leadership were superficial; individual paramedics undertook skills automatically with little group consultation. Duplication of duties was problematic.



*Image excerpt demonstrating the tactile hand-tap at the peri-shock interval
(St. John Ambulance Western Australia)*

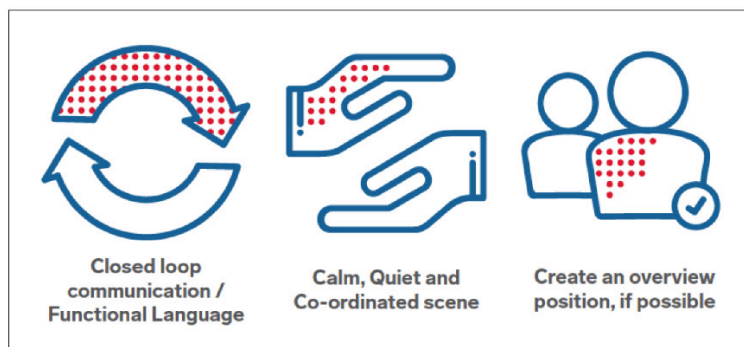
STEPS TAKEN

SJAWA sought the expertise of a human factors and technical systems expert to aid in their appraisal of the pre-design model to identify key performance traits and themes that required attention. Additionally, they engaged a small, diverse group of paramedics to better understand the causal factors of observed behaviors and allow them to contribute to solutions. Through these methods, the following measures were implemented:

- A tactile hand-tap was introduced at peri-shock intervals to mitigate the risk of accidentally shocking the compressor. Only the operator and compressor verified the rhythm, and coupled with functional language, made the peri-shock interval minimal and safe.
- They introduced standard phraseology. Short-phrase, functional language was crafted to ensure commands were common, clear, dominant and unambiguous. Closed loop communication methods were adopted for “check and challenge” situations, such as defibrillation. Unnecessary chatter was de-emphasized in favor of a calm, quiet and controlled scene.
- SJAWA established a hands-off leader mindset shift by paramedics who were accustomed to being hands-on. When adequate resources arrived on scene, leaders were instructed to stand back for an overview and situational awareness, troubleshooting as needed.

CHALLENGES

Modifying behaviors required trainers and paramedics to adopt a new mindset to overcome default behaviors. Reinforcement training tried to address this issue, but short duration HP-CPR conversion training could not guarantee modified behaviors over the long term. Providing cost-effective, follow-up reinforcement sessions posed a challenge.



RESULTS

Results were difficult to quantitatively measure, as this remains an ongoing quality improvement process. The use of tactile hand-taps was inconsistent and may have morphed into a 'stop sign' hand gesture for some paramedics. Anecdotally, functional language was adopted in real cases, but standard phraseology was not 100% compliant with teaching. Hands-off leadership was more prevalent but remains a challenge.

OUTLOOK

SJAWA is providing additional follow-up reinforcement training. Short vid-casts reinforcing principles of HP-CPR are available, along with other resources. The agency remains committed to exploring human performance and behaviors, and will attempt to acquire publicly available footage of OHCA cases to extract themes for quality improvement and development. SJAWA also intends to create a reflective environment through engagement with paramedics, so they may observe and consider their own performance. This remains a work in progress.

CONTACT

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