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Improving Time to Defibrillation

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Background

In cardiac arrest, early defibrillation of shockable rhythms is critical. Prompt defibrillation improves the chance of survival in a code. Delay reduces effectiveness by almost 10% per minute^{2,8}. American Heart Association (AHA) requires hospital time to defibrillation to be less than 3min⁶.

Providence St Vincent (PSV) cardiac arrest Code Blue data show opportunity to decrease time to fibrillation, an organizational goal for 2023.

Delayed defibrillation occurs during Mock Code Blue events also. During Q1 and Q2 2023, defibrillation occurred < 3 min in only 13% of mock code scenarios. In 50% of mock codes, defibrillation occurred >5 min.

At PSV, all clinical staff conduct quarterly CPR skills practice via the Resuscitation Quality Improvement (RQI) modules^{9,10} however, hands-on practice for defibrillation occurs annually.

Purpose

The purpose of this project is to determine if more frequent hands-on defibrillation practice will improve time to defibrillation during mock code blue scenarios.

Methods

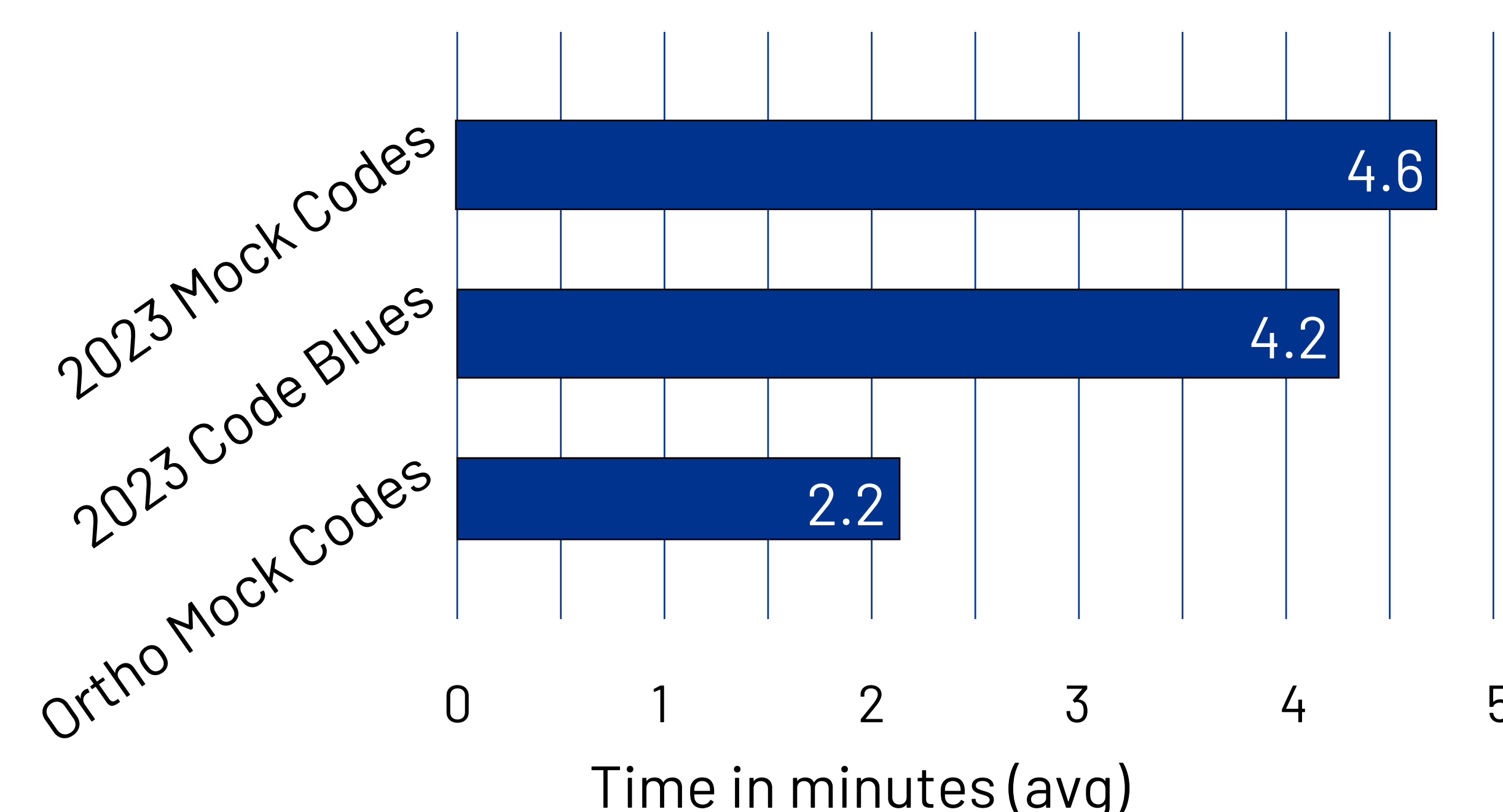
From September – November 2023, hands-on practice opportunities were provided 1 week/month on the Orthopedic unit for all RNs and CNAs. A combination of practice methods were used to provide hands-on with the defibrillator^{1,3,4,5,7}. During the first session each RN/CNA were coached through using the defibrillator. The second session included teach-back. The third session was a self-driven practice with prompting for steps when asked.

Abbreviated cardiac mock codes on the Ortho unit were done two, six, and seven weeks after completion of all sessions.

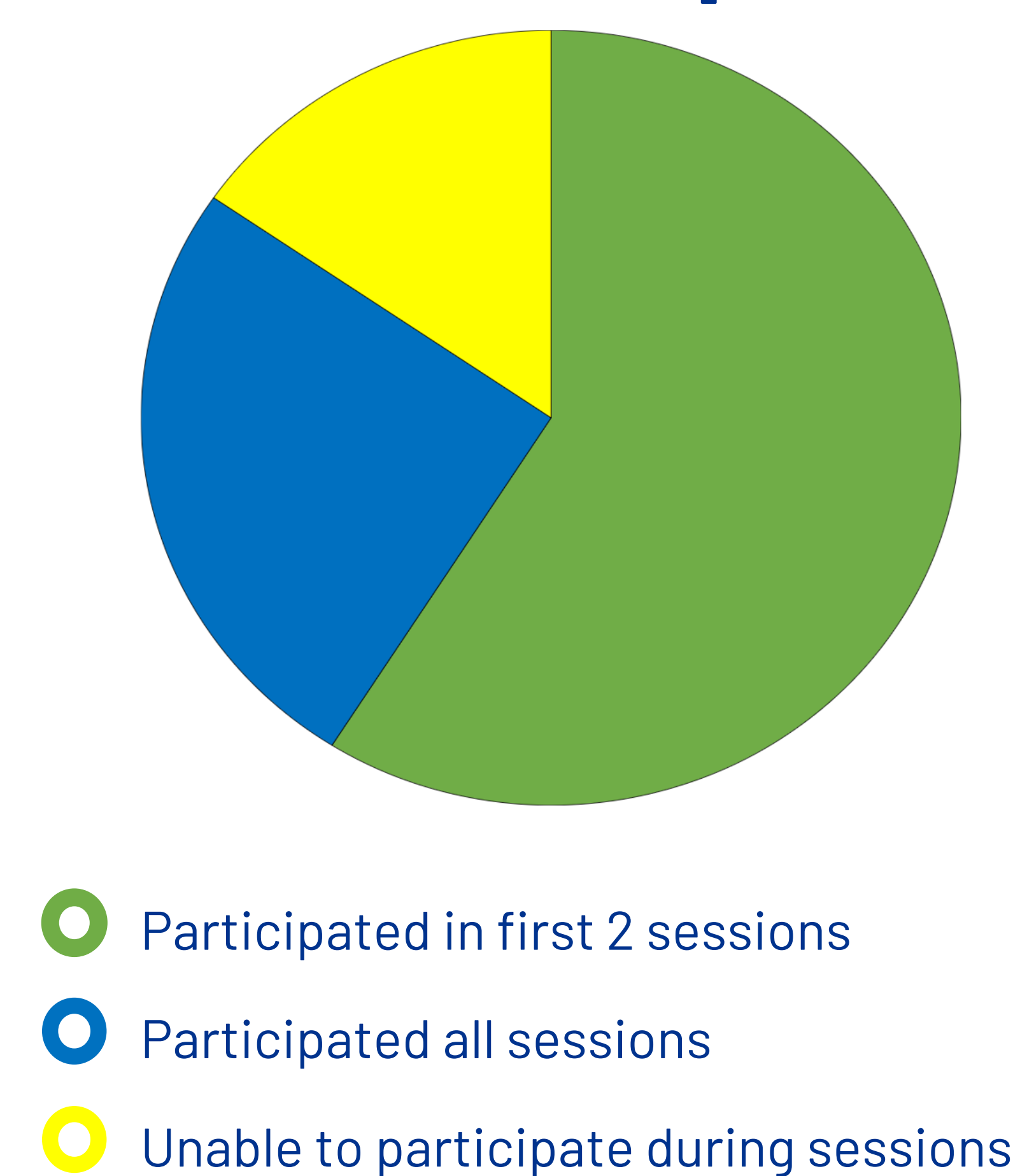
Results

Date	Nov 30	Dec 26	Jan 4
Time to Defibrillation	2.4 min	3 min	1.2 min
# of practiced Ortho Staff in the code	4	2	3
# of practice sessions done by Code Cart RN	1	3	3

Time to Defibrillation



Staff Participation



Conclusion

Increased hand-on practice reduced average defibrillation time in Mock Code Blue event. Our study was limited by float pool staff, randomly assigned to Orthopedics.

This was also non-mandatory participation. Variable unit staffing made it challenging to ensure equal participation among all staff present during a mock code.

Future research should focus on determining optimal frequency of defibrillator practice to ensure consistently reduced times.



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