Editorial: Hospital Variation in Time to Defibrillation after In-Hospital Cardiac Arrest

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- Evaluation of time to defibrillation is a quality measure for in-hospital cardiac arrest (IHCA).
- Delay in time to defibrillation is associated with decreased survival to discharge.
- Survival to discharge was higher in facilities with defibrillation times within 2 minutes compared with those with delayed defibrillation.

Top 10 Things to Know

1. Minimizing time to defibrillation has been associated with better survival after cardiac arrest.
2. The rate of survival to discharge after in-hospital cardiac arrest (IHCA) is 18% among adults.
3. The purpose of this research is to understand hospital level variations in time to defibrillation and quantify the contribution of various patient and hospital level factors.
4. Of the 7479 patients in this *NRCPR study who suffered an IHCA: Admission diagnosis was of cardiac etiology for 55%; of these, one of four had MI or heart failure. Initial shockable rhythm was ventricular fibrillation in 64%, pulseless ventricular tachycardia in 36%.
5. Only two hospital factors were associated with time to defibrillation: hospital bed size and arrest location within the hospital.
6. Decreased times to defibrillation were associated with hospitals of larger bed size.
7. Increased times to defibrillation were associated with non ICU arrest locations.
8. Hospital survival to discharge was 2555 (34.2%) but there was a large variation (from 5.3 to 49.6%) with higher survival rates among hospitals with the shortest times to defibrillation
9. This study showed time to defibrillation is a stronger predictor of survival than other hospital factors.

10. Given the significant variation in defibrillation times observed in hospitals in this study and the implication this variability has for survival, there is a critical need for a systematic analysis of top-performing hospitals to identify the processes they have implemented to minimize delays in defibrillation.

What does this mean for your facility?

Of course bed size cannot be changed. However, delayed time to defibrillation in non-ICU areas of the hospital may identify issues with unit staffing, training and availability of a defibrillator, especially a defibrillator with automated capabilities that all BLS-trained staff can operate.

*NRCPR is a performance improvement tool that can be used to identify and monitor key process variables and patient outcomes for in-hospital cardiac arrest. Link to: (NRCPR.org)

Chan (2009). Hospital Variation in Time to Defibrillation After In-Hospital Cardiac Arrest. Archives of Internal Medicine. July 2009