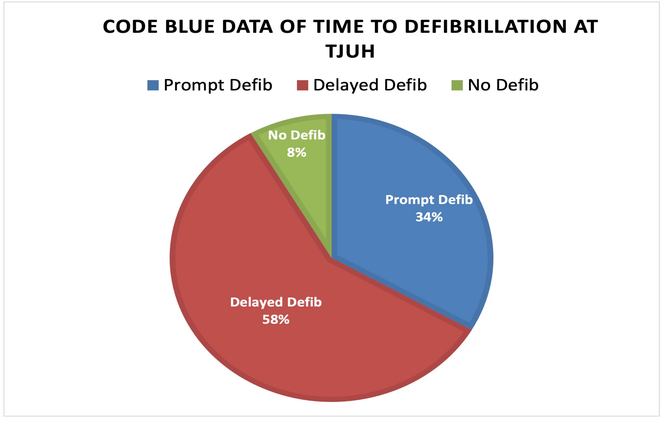
Improving Time to Defibrillation at Thomas Jefferson University Hospital

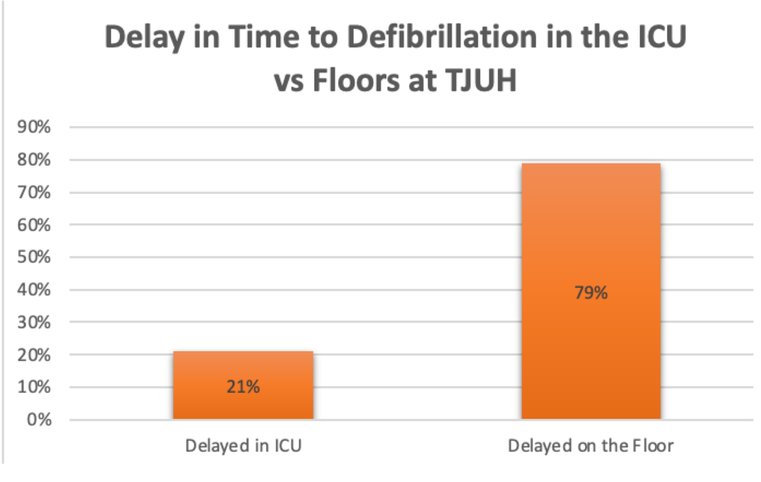
SAIRAMYA BODEMPUDI MD [1], LISA WUS DNP, RN, CRNP, PCCN-CMC, CCCTM, JUERGEN KLOO MD [1], PATRICK ZENIECKI BS, MA [2], FRANCES MAE WEST MD [1], YAIR LEV MD [1]

1 Department of Internal Medicine, Thomas Jefferson University Hospital
2 Sidney Kimmel Medical College, Thomas Jefferson University

Problem Definition

- AHA's "Get with the Guidelines" recommends defibrillating within 2 minutes after onset VFib/VTach cardiac arrest, defined as "prompt defibrillation"[1]
- Retrospective chart review of 360 Charts between 1/2018 to 9/2019 with 24 Vfib/VTach events
- Currently at TJUH only 34% VFib/Vtach arrests were defibrillated within the recommended 2-minute interval
- 8% of patients did not receive any shock for a shockable rhythm despite being in cardiac arrest longer than 2 minutes.
- The average time to defibrillation was 2 minutes and 13 seconds
- 3 patients received delayed defibrillation in the ICU compared to 11 on the floor





Aims For Improvement

- Increase in timely defibrillation by 30% over 1 year
- Decrease in the amount of Vfib/VTach cardiac arrests that are not defibrillated to <1% within a 1 year time frame

Intervention

- We aim to empower nursing staff certified in ACLS to identify and defibrillate Vfib/VTach cardiac arrest in less than 2 minutes
- An educational module (QR code links to content of the module) in addition to code blue simulation sessions and pre and post-tests have been initiated
- Data from the above measures will be analyzed in addition to patient outcomes over the established time period

Methods

Recruitment of nurses from a nursing unit at TJUH (n=36)

→ First round of simulation code events to establish baseline time to defibrillation (15 sim sessions done)

↓

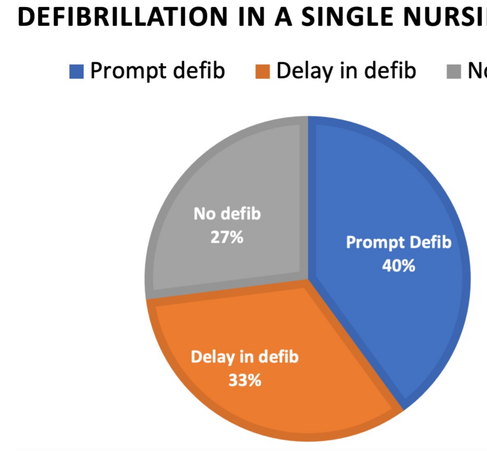
Nurses in the study will be assigned the MyJeffHub educational module with a 2 week deadline (pre and post-test included)

← Second round of simulation code events to assess improvement in time to defibrillation after nurses finish module

=completed =pending

Preliminary Findings

- 39 nurses from one nursing unit recruited for the study
- 36 participated in simulations
- 15 simulation sessions with 2-3 nurses in each session were completed
- The baseline simulation data showed similar results to the code blue data- 33% delay in defibrillation and 27% no defibrillation



Next Steps

- Assigning nursing educational module on MJH
- Collecting post-nursing educational module simulation data to assess if time to defibrillation improved with nursing education
- Implementing this study in other nursing units
- Collecting code blue data to see if time to defibrillation improved for real code blue events at our institution

References:

1. Chan PS, Krumholz HM, Nichol G, Nallamothu BK; American Heart Association. National Registry of Cardiopulmonary Resuscitation Investigators. Delayed time to defibrillation after in-hospital cardiac arrest. N Engl J Med. 2008 Jan 3;358(1):9-17. doi: 10.1056/NEJMoa0706467. PMID: 18172170.