

Optimization of External Ventricular Drain Supply Organization To Expedite Care

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Introduction

- Optimization of time taken to place an External Ventricular Drain (EVD) is vitally important to provide expeditious critical care to patient that are suffering from acute intracranial pathology

- There are several observed barriers that impact the time taken to EVD placement

- Through a quality improvement initiative, our department sought to identify barriers expeditious EVD placement and provide a intervention to improve our ability to provide acute neurosurgical care.

AIM STATEMENT

1. Identify inefficiencies in the organization, stocking and location of EVD supplies
2. Decrease the time taken to gather equipment for EVD placement by 30%.

MUSC Pillar Goals

1. Quality

2. Innovation

3. Growth

METHODS AND RESULTS

Interventions

- The neurosurgery residents, neurosurgery and neurocritical care attendings, and nursing staff met to discuss the inefficiencies in the current system of EVD supply organization. A simple solution for a centralized, organized location of EVD supplies was designed that facilitated easy stocking as well as easy supply acquisition.

Data Collection

- Prior to implementation of the EVD supply intervention, the time taken to acquire EVD supplies and bring them to the room of a patient that needed an EVD placed was timed (n=10).
- Data collection was limited to patients that needed an EVD in the NSICU
- Start time was determined as the time at which the resident was made aware of the need for an EVD and stop time was determined as when all needed items were in the patients room.
- After implantation of the EVD supply intervention, similar time stamps were acquired (n=10).

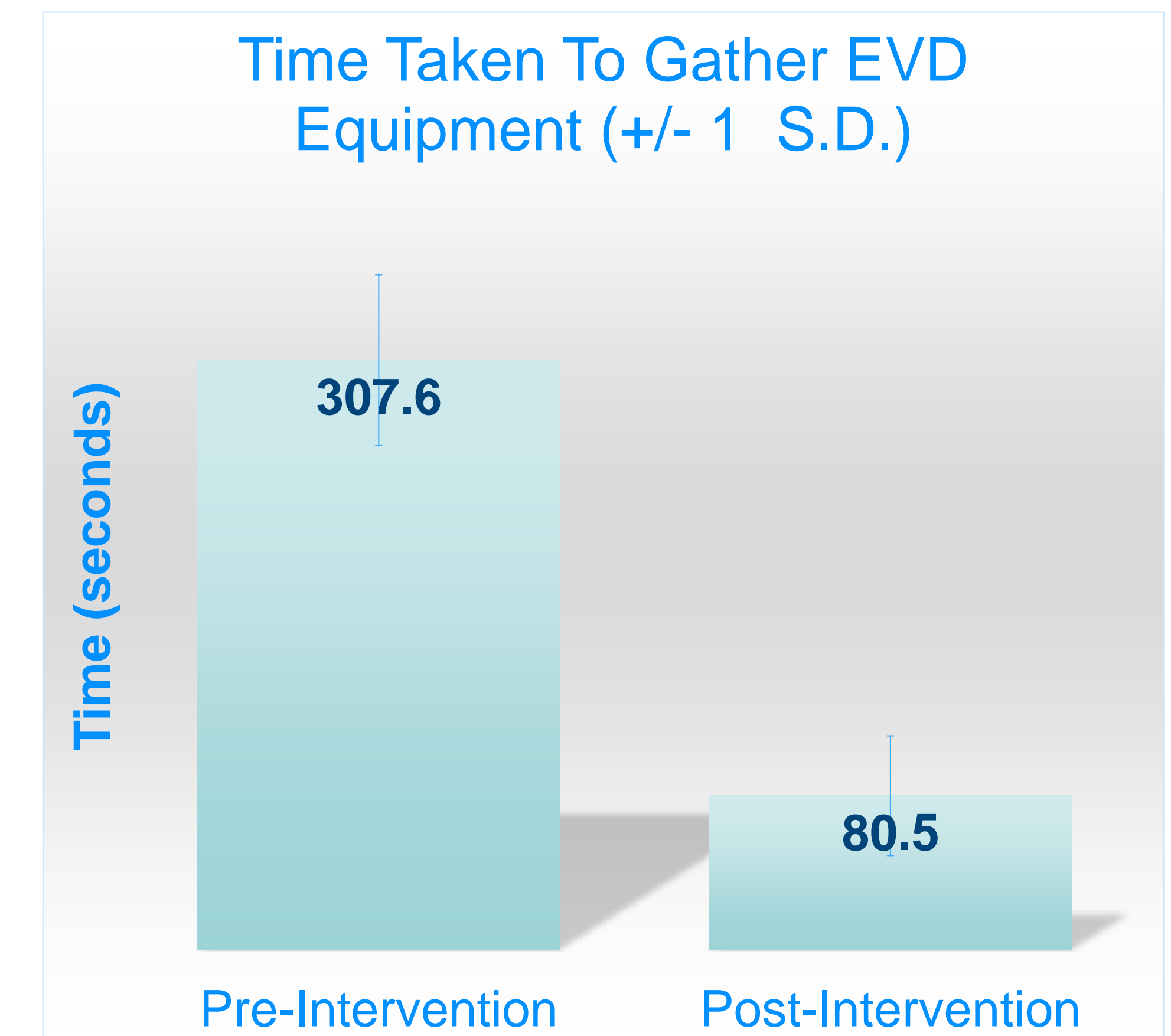
Results



Figure 1A-B: EVD cart design (A) and fully stocked and implemented EVD cart (B)

	Mean Time Taken To Gather EVD Supplies (sec)	Standard Deviation	P-Value
Pre-Intervention (n=10)	307.6	44.4	<.00001
Post-Intervention (N=10)	80.5	31.3	

Results



SUMMARY

- We were able to bring together residents, attendings, and nursing staff to identify a systematic problem and provide a solution that is unique and tailored to the needs of our Neuroscience ICU.
- Implementation of an EVD cart drastically reduces the time needed to gather EVD equipment and will expedite care to critically ill patients.
- Next Steps: Set up a protocol to assure that the nursing staff is stocking the cart appropriately.

REFERENCES

1. Chang H, Silva M, Giner A, et al. Ventriculostomy supply cart decreases time-to-external ventricular drain placement in the emergency department. *Surg Neurol Int.* 2021;12:362. Published 2021 Jul 19. doi:10.25259/SNI_371_2021