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Use of Non-Invasive Hemodynamic Monitoring Device in the ICU

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Background

- Hypotensive patients prescribed vasopressors before determining fluid resuscitation response
- Prolonged length of stay results from vasopressor need, titration and dependency[3]
- Ventilator and hemodialysis needs prolonged due to vasopressor administration[4]
- Project Purpose: To determine the effectiveness of using a non-invasive hemodynamic monitoring device to decrease length of stay in ICU patients

PICO

In hypotensive ICU patients, does the use of a non-invasive hemodynamic monitoring device decrease ICU length of stay compared to ICU patients treated with standard level of care practices?

- P: Hypotensive ICU patients
- I: Use of a non-invasive hemodynamic monitoring device
- C: ICU patients treated with standard level of care practices
- O: Decreased length of stay in ICU patients managed with a non-invasive hymodynamic monitoring device

Methods

- Use of the non-invasive hemodynamic monitoring device on hypotensive patients
- Patient chart review to document and track the use of this device
- Determine device effectiveness in decreasing patient ICU length of stay
- Compare ICU length of stay of patients not monitored with the non-invasive hemodynamic monitoring device verse patients that did use this non-invasive method

Variable	Non-Invasive Stroke Volume Fluid Therapy	Usual Care n = 35	Δ/p value
ICU LOS (days)	5.98 ± 0.68	8.87 ± 1.18	2.89 days

Outcomes

- Use of non-invasive hemodynamic monitoring device through passive leg raise or fluid bolus monitoring and analysis decreased patient ICU length of stay

Conclusion

- The use of a non-invasive hemodynamic monitoring device in hypotensive ICU patients decreases ICU length of stay
- Recommendation: Implement the non-invasive hemodynamic device in all ICU settings to promote fluid resuscitation evaluation in hypotensive patients

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