

Decreasing Risk Factors for Post-Intensive Care Syndrome Using Nurse-Led Rounds and a Novel ICU Liberation Bundle

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Background

- As patients recover from critical illness, many experience health impairments known as post-intensive care syndrome (PICS)
- PICS manifests as physical, cognitive, and psychological symptoms
- PICS affects patients' family members
- The Society of Critical Care Medicine created the ICU Liberation Bundle to minimize PICS risk factors

Purpose

- Improve consistency of ICU Liberation Bundle interventions and reduce PICS risk factors in a 36-bed mixed ICU at a large, tertiary medical center

Methods

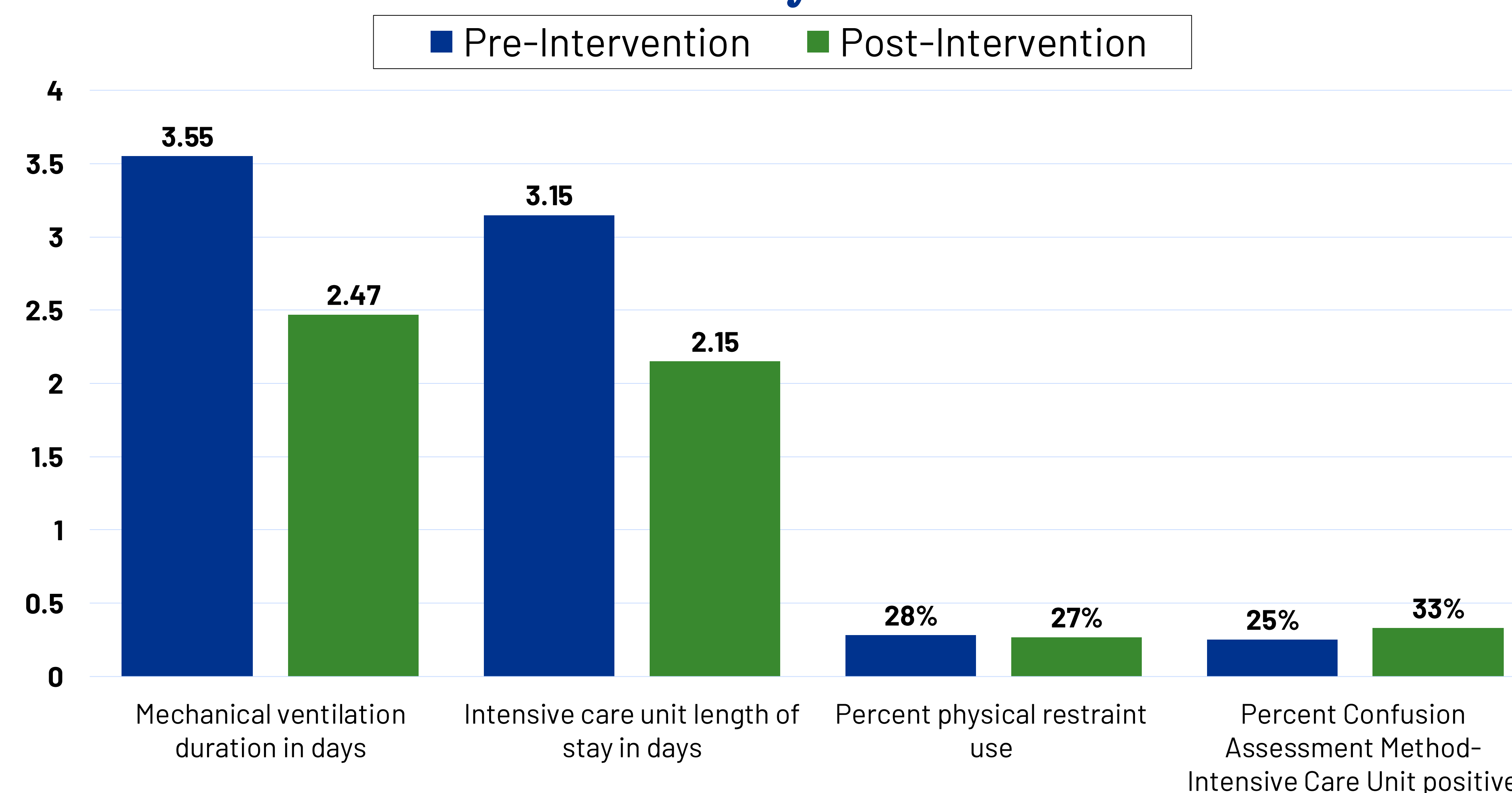
- Stakeholder education on PICS and ICU Liberation Bundle interventions
- Interdisciplinary collaboration to create bundle-based rounding tool targeting modifiable PICS risk factors
- Quality Improvement project with six-month pre- and post- implementation timeframes to implement nurse-led rounds using rounding tool
- Patients receiving critical care for any diagnosis
- Deidentified Epic data compiled using Microsoft Power BI

Results

Post-implementation data demonstrates:

- 57% increase in ICU Liberation Bundle compliance
- 31% reduction in average ventilation duration ($p=0.015$)
- 32% reduction in average ICU length of stay ($p=0.006$)
- 26.6% reduction in average foley catheter duration ($p=0.001$)
- 23% reduction in average central line duration ($p=0.043$)

Post-intensive care syndrome risk factors



Quality Outcomes	Pre-Intervention			Post-Intervention			P-Value
	Mean	Standard Deviation	Population Size	Mean	Standard Deviation	Population Size	
Average Central Line Dwell Time	3.73	5.84	1376	2.87	3.78	135	0.043
Average Indwelling Foley Catheter Dwell Time	2.97	5.23	1276	2.18	3.01	1350	0.001
% of Patients with Central Line	29.6	0.02	1276	29.4	0.02	1350	0.930
% of Patients with Foley Catheter	48.7	-4.24	1276	40.5	-4.24	1350	0.000
% of Central Line Infections	0.79	-1.78	378	0	-1.78	397	0.075
% of Catheter UTIs	0.32	-1.33	621	0	-1.33	547	0.184

Discussion

- Nurse-led rounds using a bundle-based tool was associated with statistical and clinical improvements in PICS risk factors
- The project highlights the importance of interdisciplinary collaboration in improving outcomes among critically ill patients
- Increase in positive Confusion Assessment Method-ICU scores likely due to 42% increase in data collection

Implications for Practice

- Feasibility of transitioning from physician-led rounds to nurse-led rounds in a teaching hospital supports adoption in other settings
- Further research is indicated on the duration of restraint use after PICS risk factors are reduced
- Decreases in ICU length of stay and hospital-acquired infections could meaningfully decrease healthcare expenditure

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