



# Medical/Surgical ICU Reduces Length of Stay by 16%, Total Ventilator Days by 20%, and Saves an Estimated \$508,000

## ABSTRACT

A Clinical Nurse Specialist and a joint nursing and physical therapy team decided to improve patient outcomes by targeting functional decline in the medical/surgical intensive care unit (ICU). They utilized the Progressive Mobility® Program and implemented it using existing Hillrom Progressa® ICU beds. A 3-month pre- and post-quality improvement study was conducted, and the Impact Tracker™ Quality Improvement Program was used to measure clinical outcomes. ICU length of stay (LOS) was reduced by 16%, total number of days patients were receiving mechanical ventilation support was reduced by 20%. By comparing projected baseline period with intervention period spending on clinical conditions, the hospital saved an estimated \$508,000.

## FACILITY

A nonprofit, multiservice, inner-city acute care hospital in the United States with a 20+ bed medical/surgical ICU.

## BACKGROUND

Immobility has been linked to significant functional decline among critically ill patients.<sup>1</sup> With increasing evidence supporting the use of early mobility in critically ill patients, a team of caregivers at the hospital recognized the importance of establishing an early mobility protocol that is beneficial for patients and can be easily implemented by nursing staff. Hillrom introduced the team to the Progressive Mobility® Program, which they adapted to meet the unique needs of the hospital and implemented using Hillrom Progressa® ICU beds. Together with the Hillrom Clinical Outcomes Manager, the team designed, trained, implemented and measured outcomes of an early mobility program focused on reducing functional decline in the medical/surgical ICU.

## CLINICAL OUTCOMES

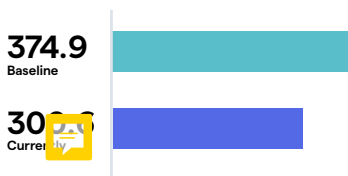
Following implementation of the Progressive Mobility® Program protocol, the hospital reduced the ICU LOS by 16% and the total number of days patients were receiving mechanical ventilation support from 375 to 301, a 20% reduction (Fig 1). Their ventilator-associated event (VAE) rate also declined from 12.4 to 9.6, a 23% improvement. Overall time spent in the hospital was shortened, with LOS reduced by 9%. Readmission rate to the ICU also declined by 18%.

## METHODS

The team of caregivers utilized the Hillrom Progressive Mobility® Program protocol, an interdisciplinary, evidence-based approach. Under guidance of the program chairman and literature support, a comprehensive, multidisciplinary training was developed and initiated with a strong focus on team building between the nursing and physical therapy teams. Baseline clinical outcomes data were gathered and the Impact Tracker™ Quality Improvement Program was used to compare a 3-month baseline period with a 3-month intervention period.

### VENTILATOR DAYS

20% REDUCTION



### ICU LENGTH OF STAY (DAYS)

16% REDUCTION



Figure 1. A 20% reduction in ventilator days and 16% reduction in ICU LOS were clinical results of the Progressive Mobility® Program intervention.

**“The Progressive Mobility® Program has been a great win for our institution—it’s very gratifying to see that something that we can integrate into our day-to-day care can have such a direct impact on patient outcomes.”**

## FINAL SUCCESS

When possible, measured clinical outcomes were assigned a cost of case.<sup>2-4</sup> Using these data from the literature and adjusting to current values using US Bureau of Labor Statistics data, total costs of the baseline period outcomes were compared with those of the intervention period. These calculations yielded an estimated \$508,473 in total savings for the hospital during the most recent 3-month intervention period—the most significant driver of savings was reductions in ventilator days (\$282,000), followed by VAEs (\$132,000) and ICU LOS (\$95,000) (Fig 2).

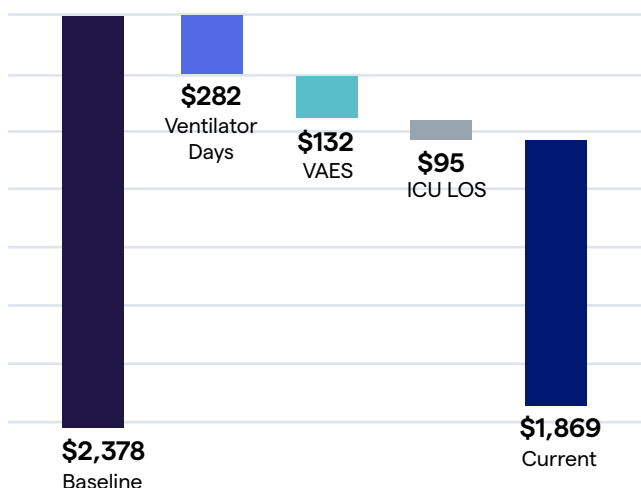


Figure 2. Financial outcomes of the Progressive Mobility® Program in a 3-month pre- and postreview. Above values are expressed in thousands

## CONCLUSIONS

Patients in the medical/surgical ICU benefited from the Progressive Mobility® Program protocol in the following ways:

- Fewer days receiving mechanical ventilation support
- Lower risk of acquiring a VAE
- Fewer days spent in the ICU
- Lower risk of ICU readmission
- Shorter overall hospitalization

These clinical improvements translated into an estimated financial savings of more than 508,000.

### References

1. King, L. Developing a progressive mobility activity protocol. *Orthop Nurs.* 2012;31:253-262.
2. Dasta JF, McLaughlin TP, Mody SH, Piech CT. Daily cost of an intensive care unit day: the contribution of mechanical ventilation. *Crit Care Med.* 2005;33:1266-1271.
3. Harris B, Dillree C, Wolfe J, Woodland G, Talbot T. The cost of ventilator-associated events at an academic medical center. Poster presented at: IDWeek 2015; October 7-11, 2015; San Diego, CA. <https://idsa.confex.com/idsa/2015/webprogram/Paper52005.html>. Accessed June 16, 2016.
4. Rappleye E. Average cost per inpatient day across 50 states: 2015. [www.beckershospitalreview.com/finance/average-cost-per-inpatient-day-across-50-states.html](http://www.beckershospitalreview.com/finance/average-cost-per-inpatient-day-across-50-states.html). Accessed June 16, 2016.

## LEARN MORE

Please visit [hillrom.com](http://hillrom.com) or contact a Hillrom representative for further information.

**hillrom.com**

Hillrom reserves the right to make changes without notice in design, specifications and models. The only warranty HillRom make is the express written warranty extended on the sale of its products.

© 2022 Welch Allyn Singapore Pte. Ltd. ALL RIGHTS RESERVED. APR -R1 01-JUNE-2022 ENG-APAC  
1 Yishun Avenue 7 Singapore 768923 Tel: +65 6499 7350 Fax: +65 6499 7351