

# PHILIPS

## Success Story

### Emory Healthcare



### Leveraging Philips eICU program, Emory Healthcare has managed to:

- Save \$4.6 million over 15 months – or \$1,486 in Medicare spending per patient
- Discharge more patients to home healthcare rather than nursing homes or long-term care hospitals
- Improve continuity of care and increase adherence to quality guidelines

# Improving Outcomes while Saving Money

How Emory's eICU program led to more timely critical care, resulting in healthier patients at discharge and millions of dollars in savings

### Overview

Intensive Care Units (ICUs) are a vitally important component of U.S. healthcare, treating approximately five million of the sickest and oldest patients each year.<sup>1</sup> With an aging population and increased prevalence of chronic diseases, the need for high-quality and timely critical care is greater than ever before. However, managing the growing number of ICU patients is increasingly challenging due to a nationwide shortage of highly skilled critical care nurses and intensivists.<sup>2</sup>

Emory Healthcare confronted these challenges by using Philips eICU technology to expand access to critical care services. By remotely monitoring patients on a continuous basis, Emory's eICU program helps care teams quickly recognize and respond to changes in patients' vital signs, allowing critical care to be provided where and when it is needed most. As a result of the eICU program, Emory's patients benefited from improved continuity of care and better adherence to quality guidelines. Consequently, they were healthier at discharge and were more likely to go home, rather than to a nursing home or long-term care hospital.

### Key Findings

Emory's success was highlighted in a report conducted by Abt Associates and commissioned by the Centers for Medicare and Medicaid Services, "Evaluation of Hospital-Setting HCIA Awards." The three-year independent audit analyzed financial and clinical outcomes at the nine healthcare organizations that received CMS Innovation Grants to tackle the toughest healthcare challenges, with two of the grants dedicated to eICU programs.

Emory used its \$10.7 million grant from CMS to launch an eICU program to monitor critical care patients 24/7 and provide intensivist physician oversight and support on the night and weekend shifts. "The goal was to improve quality of care, shorten ICU lengths of stay, and discharge patients in a better state of recovery, potentially reducing Medicare spending," says Cheryl Hiddleston, MSN, RN, CCRN-E director of the Emory eICU Center.

Over the course of a 15-month period, Emory's eICU program was compared to nine other hospitals in the Atlanta area in order to determine the effectiveness of the program. The patients were followed for the hospitalization period and 60 days

1. Halpern NA, Pastores SM. Critical Care Medicine in the United States 2000-2005: An Analysis of Bed Numbers, Occupancy Rates, Payer Mix, and Costs. *Crit Care Med.* 2010 Jan;38(1):65-71.

2. Halpern NA, Pastores SM, Oropello, Kvetan. Critical Care Medicine in the United States: Addressing the Intensivist Shortage and Image of the Specialty. *Crit Care Med.* 2013 Jan; 41(12):2754-2761.

3. Emory Health. CMS report: eICU program reduced hospital stays, saved millions, eased provider shortage. April 5, 2017. Web.



"Our mission at Emory is to deliver quality care to patients at a cost they and their families can afford and to provide access whenever and wherever people need it," said Dr. Timothy Buchman, Director, Critical Care Center, Emory Healthcare. "These independent findings verify that our innovative approach to addressing a highly variable, complex patient population – those in the critical care unit – improves patient outcomes, allowing them to leave the ICU healthier, thereby reducing the need for patients and their families to have extended rehab stays or be readmitted."

after discharge. Emory achieved the following results across its 136 beds at five hospital sites:<sup>4</sup>

- **\$1,486 reduction in average Medicare spending per episode** relative to the comparison group, yielding an estimated savings of \$4.6 million around care of these federal beneficiaries during the 15 month comparison period. (p<0.01)
- **4.9% increase in the relative rate of discharges to home healthcare, while discharges to skilled nursing facilities and long-term care hospitals declined by 6.9%** (p<0.01), indicating that Emory was discharging patients with less need for institutional post-acute care after their eICU stay
- **2.1% decrease in the rate of 60-day inpatient readmissions** (p<0.10) relative to the comparison group

#### Core Measures Summary

Outcomes	Estimate
<b>Aggregated Results</b>	
Total spending	-\$4.6 million
<b>Per episode (N=3,093)</b>	
Total spending	-\$1,486
Thirty-day inpatient readmissions	-0.89
Sixty-day inpatient readmissions	-2.14
Thirty-day ED visits	0.21

It is important to note that the savings reported are specific only to Emory's Medicare population, which comprises about 65% of its total patient population. During the five quarters studied (April 1, 2014 to June 30, 2015), 8,019 unique patients were managed through the eICU program at Emory, resulting in approximately \$12 million in total savings, based on the average savings of \$1,486 per patient.

#### Patients Go Home Healthier

Due to the level of high-quality and consistent care, patients were healthier when they were discharged and had fewer readmissions for 60 days following their inpatient stay. Emory discharged more patients to home settings than long-term care or skilled nursing facilities, and patient satisfaction for those patients who received care at Emory was higher than at the comparison hospitals.

Emory's results echo those from an earlier study in JAMA which showed:

*Patients in the tele-ICU group had lower rates of complications, recovered more quickly, and were significantly more likely to be discharged to their homes than patients in the pre-intervention group. These findings suggest that critical care programs that implement processes that increase adherence to best practice, lower rates of complications, shorten response times to alerts and alarms, and support early intensivist case involvement will provide better care at a lower cost.<sup>5</sup>*

The report's findings add to the growing evidence that telemedicine in the ICU improves outcomes and saves money. "These findings have shown that increased stability with fewer complications has longitudinal benefits beyond when a patient leaves the ICU," said Manu Varma, Business Leader, Philips Wellcentive and Hospital to Home. "As health systems transition to value-based care and depend more on population health tools, these long-term benefits to patients are not only reducing readmissions and improving outcomes, but also have the potential to increase hospital ratings and lower the cost of care."



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4. Abt Associates. Evaluation of Hospital-Setting HCIA Awards. Prepared for CMS; Baltimore, MD: 2016.

5. Lilly CM, et al. Hospital Mortality, Length of Stay and Preventable Complications Among Critically Ill Patients Before and After Tele-ICU Reengineering of Critical Care Processes. *JAMA*. June 2011; 305(21): 2175-83.

6. Emory Health. CMS report: eICU program reduced hospital stays, saved millions, eased provider shortage. April 5, 2017. Web.