PHILIPS

capsule

Case study

Trident Medical Center

Implements ventilator data integration that follows the patient and enables a comprehensive, reliable respiratory record

TRIDENT MEDICAL CENTER

Critically ill patients who require mechanical ventilation generate a wide array of complex data points that provide an important picture of their current state and clinical history.

The more comprehensive and easily accessible these records, the more likely the better the decision-making and care that follows. Convinced of this, in March 2015, Trident Medical Center (Charleston, SC) — a Hospital Corporation of America (HCA) facility — implemented the Capsule Medical Device Information Platform (MDIP) for direct ventilator data integration into a Meditech electronic medical record (EMR) solution. Additional goals included maximizing the value of skilled respiratory therapy time and trending electronic information to gain clinical insight and address ventilator-related quality measures.

About Trident Medical Center

Trident Medical Center is a 313-bed major medical center providing a comprehensive range of services and specialties including a 24-hour emergency room with a Level II Trauma Center.

The hospital's breadth of care options includes specialty facilities such as an award-winning Heart Center, the Trident Breast Care Center and the South Carolina Institute for Robotic Surgery. Trident Medical Center offers Critical Care Services and 24/7 hospitalist and intensivist programs. For more than 40 years, Trident Medical Center has proudly served patients and families in Berkeley, Charleston and Dorchester Counties.

At that time, Trident relied on a legacy ventilator integration system that was not able to support the full range of data points that would drive better care. As a result, respiratory therapists (RTs) spent a significant amount of time on data collection and transcription. Already a success in other departments, Capsule MDIP was the obvious choice for the replacement. Managing the project was Angela Holten, RRT, RCP, manager of respiratory care for Trident, a skilled department manager and respiratory therapist with almost 20 years of experience.

Challenge

A key goal was to support continuous data acquisition wherever the patient was located. The legacy, fixed-location solution left the hospital with numerous information gaps when the patient was moved away from their assigned ICU bed.

Holten explains that "…ventilator patients often are admitted through the emergency department (ED) and may be moved to care areas such as imaging or radiology for short time periods. For greater efficiency and safety — including prevention of ventilator-acquired pneumonia (VAP) — ventilators travel with patients rather than assigning transport devices or new ventilators in each care area. Without mobile integration, device data was lost or skilled therapists were distracted transcribing detailed measurements onto scraps of paper for manual EMR input." The mere inversion of two digits could launch a series of unneeded tests or serious interventions. The result was that despite its advanced technology, the hospital's respiratory data integrity was still easily compromised.

"With the new system, we wanted not only to capture a broad range of relevant ventilator parameters but to present them clearly and logically," Holten adds. "Efficient workflow and data accuracy also were crucial. For example, we wanted the Capsule MDIP display readings to match device data exactly to streamline validation. That meant configuring Capsule for appropriate rounding of the more precise figures actually output by the device. Naturally, overall system reliability was paramount."

Other goals included ensuring correct bedside patient/device association through barcode scanning, as an alternative to relying on an ADT feed. Also important was enabling a quick, detailed review of recent data to provide a historical perspective on the patient's current condition.

Solution

"Capsule met all our needs and more. I was immediately impressed with its wireless capabilities," says Holten, recognizing that data acquisition could now follow the ventilator and patient throughout the hospital. "Moreover, the difference in performance and reliability between Capsule and our legacy system was enormous."

Today, Capsule Neuron medical grade clinical computers running Capsule Vitals Stream application connect with 22 Maquet SERVO-i ventilators in a mobile installation. The secure association feature enables direct association of patient and device through barcode scanning nearly anywhere in the hospital. Once established, data immediately begins flowing. As an extra check, therapists also must confirm the patient's identity on the Neuron's Vitals Stream screen. "All parameters have been carefully mapped to the MEDITECH record and present for easy validation. This is thanks to the dedication and patience of the Capsule team that worked with us tirelessly to meet Trident's goals," comments Holten.

She also notes that Capsule's more complete and accurate device data translates to meaningful trending and analysis for a wide variety of both business and clinical use cases. Trident has leveraged this to report ventilator-related quality metrics. Due to a more complete EMR record, therapists can now review data retrospectively to spot trends. Potentially, ventilator data can also help address other quality measures, track equipment utilization and optimize billing.

"Our therapists just love everything about the Capsule solution and prefer it to other systems they have used elsewhere," Holten concluded. "Physicians and administrators appreciate the more comprehensive data. Implementing an MDIP is the wave of the future. It provides more accurate information and saves time. It's also the right thing to do for patients."

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