



Jackson Memorial Hospital realizes vision of telemetry everywhere with Philips Enterprise Monitoring as a Service



Jackson Memorial Hospital

With seven hospitals, a network of urgent care centers, multiple primary care and specialty care centers, and two long term care nursing facilities, Jackson Health System (Miami, Florida, USA) is one of America's largest public health systems. At the system's flagship, 1500-bed Jackson Memorial Hospital, a history of staggered investments in physiological monitoring had resulted in a patchwork of systems from multiple vendors. Leadership at the hospital recognized that standardizing on a single vendor for all monitoring would help streamline integration so all vital records are captured throughout the patient stay, boost staff efficiency, ensure that vital signs are measured with the same technology across monitors, and provide a common monitoring platform for ease of use, staffing flexibility and simplified staff education.

"Before 2018, we had physiological monitors from at least four different companies. When we added staff or conducted continuing education, we had to train on four different systems," explains Carol Biggs, DHSc, Senior Vice President and Chief Nursing Executive, Jackson Health System. And while we had a central monitoring area, it couldn't even be called a unit because we were using so many systems."

In 2018, to meet its needs for standardized, and up-to-date monitoring to support its plans for "telemetry everywhere," Jackson Health System entered into a groundbreaking, 11-year Enterprise Monitoring as a Service (EMaaS) agreement with Philips Healthcare. The agreement covers house-wide physiological monitoring, including telemetry, transport, bedside, and spot check monitoring in all clinical locations of the hospital, running on Jackson's existing 802.11 wireless infrastructure.

"This is a first-of-its-kind partnership between a healthcare organization and a vendor, and we're taking advantage of the opportunity to innovate together."

**Mike Garcia, Chief Information Officer,
Jackson Health System**

EMaaS is a shared-risk model that enables hospitals to access up-to-date monitoring capabilities that are aligned to their performance goals. The model includes hardware and software upgrades that allow the hospital to keep up with rapidly changing technology without the risk of obsolescence. The benefits of EMaaS also extend beyond new technology with **ongoing clinical workflow optimization, continuing education, asset management services and analytics** that support continuous improvement over the course of a long-term partnership.



Telemetry everywhere

Philips enabled Jackson Memorial Hospital to realize its goal of “telemetry everywhere” – an idea that would have been cost-prohibitive with other vendors due to the high costs of installing a proprietary network throughout their entire facility. The EMaaS model provides data that allows clinical leaders to quickly assess and enhance telemetry use. Leveraging analytics from EMaaS simplifies the decision-making process and improves efficiency by bringing telemetry to the patient, rather than the patient to telemetry. The EMaaS solution provides the data to assess and support telemetry use and the integration services to ensure that telemetry monitors could be used throughout the hospital.

“Prior to our agreement with Philips, we had two telemetry floors. If a patient needed telemetry, we needed to find a bed on those floors... If patients no longer needed telemetry, we had to move them to non-telemetry beds. When we move a patient, it can add a half-day to the length of stay. And when patients move to different floors, it also changes their medical team. Bringing telemetry to the patient, rather than the patient to telemetry, is efficient and supports quality care.”

Dr. Carol Biggs, DHSc, Senior Vice President and Chief Nursing Executive, Jackson Health System



Mike Garcia, Chief Information Officer, adds, “If we had decided on a different vendor’s solution that had proprietary wireless connectivity, we would not be able to place monitors in any unit at will. It would have to be solely the units that were wired for that technology. But with Philips IntelliVue monitors, we’re not tethering patients to a fixed unit. We are really capable of monitoring these patients from anywhere our wireless network is present.”



“This really is a partnership where we’re looking at quality, finances and utilization, and making decisions together.”

Dr. Carol Biggs

Initial assessment identifies areas to improve

Before EMaaS was even implemented at Jackson Memorial, Philips conducted an assessment that identified bottlenecks in accessing telemetry devices, manual documentation of waveform strips. To address these issues, Philips helped Jackson Memorial standardize the central monitoring workflow, and implemented electronic documentation of waveforms for a single patient record throughout their stay.

Analytics deliver insights

In day-to-day operations, patient-focused organizations have little time to analyze equipment use. EMaaS analytics deliver insights that support effective resource allocation. For example, Philips initially addressed perceived monitor shortages by delivering more monitors to Jackson Memorial, for a total of 252 telemetry monitors. But analysis showed that a maximum of 182 monitors were used at any time. So, Philips suggested a central pool of monitors that could be deployed where they were needed. This allowed telemetry hardware and software to be flexed up or down depending on staff availability, patient census and acuity. Philips’ analysis also helped the hospital understand which clinical units had higher rates of telemetry usage, so they could distribute telemetry monitors where they would be used the most.

“Now our monitor distribution is based on data and recommendations provided by Philips. Before, for example, if I needed eight additional monitors in trauma, I would have simply pulled one from each of a number of areas, because that’s the democratic thing to do. But now, I can see that one area has 12 monitors and is only using six regularly, so I can move four to trauma and there will still be two extra if they need them. Everybody understands why I made that decision, because it’s based on data.”



Kaizen event brings clarity and empowers staff

As part of the analytics, assessment and performance improvement activities included with EMaaS, Philips conducted an assessment that uncovered some barriers to efficiency, including varied interpretations of the hospital's telemetry use policy, communication issues, workflow, alarms and battery management.

Philips conducted an onsite multidisciplinary Kaizen event, led by Philips Clinical Professional Services, to address some of those issues. The three-day event focused on improving communication and trust between telemetry technologists and nurses, creating consistent workflow processes, and clarifying telemetry admission and discharge processes.

One immediate benefit of the Kaizen event was a deeper understanding of team members' areas of focus, and how each member's actions affected patient care and staff efficiency. "One of the primary challenges we had was lack of clarity about everyone's roles and responsibilities, as they related to monitoring, escalation, and alarms," notes Carolyn Carter, Associate Chief Nursing Officer, Jackson Memorial Hospital.

"During the Kaizen event, nurses from various units, telemetry technologists, administration and the medical team were all at the table giving their perspectives. We discussed the end-to-end process of telemetry from admission to discharge, and looked at it from the various stakeholders' perspectives."

Carolyn Carter, Associate Chief Nursing Officer, Jackson Memorial Hospital

That was very revealing. "For example, when we added patients on telemetry, it could result in one CMU (central monitoring unit) tech having a heavier workload, because we didn't have a process in place to prevent that. Together, we were able to see how we could make the process more efficient and distribute workload more equitably."

A second challenge concerned variations in how patients were "admitted" to a monitor. Lack of process clarity caused issues for CMU technologists and resulted in telephone calls to the nurses. Carter explains, "When a patient is placed on a telemetry monitor, that patient has to be registered to that monitor. The nurses didn't understand the importance of registration, so they'd simply put a patient on a monitor. The telemetry techs would see the rhythm at the central monitoring unit, but they wouldn't know which patient it belonged to. Then the techs had to call the nurses to sort it out." This created extra work for the technologists and disrupted the nurses' work on the floor.

At the Kaizen event, the team identified 17 action items and assigned each one to a "clinical champion" responsible for identifying the next steps. They also identified quick wins that could be implemented easily. For example, they developed a standardized process for the monitoring admission, leading to a 50% decrease in phone calls* between the central monitoring unit and the nurses on the floor, and improved teaming and trust.



“When they went through the Kaizen event, the staff learned about things they could do to make monitoring a better experience for themselves and their patients. Maybe we could have done it alone, but could we have done it within that time frame? I don’t think so.”

Dr. Carol Biggs



New goals set

The efforts to improve telemetry are ongoing. The team is currently working on improving alarm management, developing measures that ground telemetry use in industry-standard guidelines, and moving patients off telemetry monitors in a timely manner when telemetry orders expire.

The team is also reviewing current data and staff and patient needs in areas other than telemetry to identify the next priorities for improving workflow, staff efficiency and quality of care.

“We are always looking for opportunities to improve,” Garcia points out. “This is a first-of-its-kind partnership between a healthcare organization and a vendor, and we’re taking advantage of the opportunity to innovate together.”

