![VERSUS — Locating Advantages for Healthcare™]

Memorial Hospital Miramar
Miramar, Florida

Taking a Closer Look: The Versus System, Tested and Proven at Memorial Hospital Miramar

When Memorial Miramar first opened its doors in 2005, it did so with Versus Advantages, the Versus Real-Time Location Information System, in place. Being a new facility, with all new staff who were unfamiliar with GE CareCast and the other clinical systems, Miramar sought a way to move patients and update the computer systems—automatically.

There were two key reasons for doing so:

1. Instant identification of patient location enhances communication, increasing discharge and transfer rates while reducing wait times and time spent searching. It also facilitates more rapid delivery of services for blood draws, medication administration and even the delivery of dietary trays.

2. Clinicians want to be focused on patient care. Automating data entry tasks reduces time spent in front of a computer and allows caregivers to spend more time on direct patient care.

Versus Advantages, displayed on screens in the Emergency Department at Memorial Miramar, communicates real-time patient location and room status

Because Versus offers connectivity to other information systems, Versus is now an important piece of the enterprise infrastructure at Miramar. Versus feeds location information to Memorial Miramar's mainframe system. From there it is dispersed to every system requiring patient location information, including Epic EMR, Epic Prelude/ADT (facility-wide), Picis in the OR and many ancillary systems (labs, Pyxis, dietary services, SoftID, etc.). Through automation, the Versus system is responsible for assigning patients to beds, time stamping and capturing patient visit milestones, sending alerts, reducing manual data entry and providing task notification.

> **ROI**
> Versus helped decrease patient stay an average of 37% for children, 18.5% for adults that had been released, and 36% for adults that had been admitted.
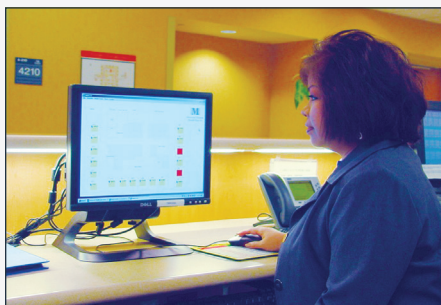
Transforming the ED

By placing badges on patients in the ED, patient visit milestones are automatically set and displayed for staff to see. When the patient moves from waiting to triage and treatment to inpatient floors or discharge—virtually anywhere within the facility, the patient's location is updated in real-time.

Terri Niepokny, Miramar's Badge Coordinator, explains, "CareCast and Versus Floorplans in the ED automatically update when the patient moves from the ED to an inpatient floor. No one has to go in and remove the patient from the CareCast tracker—it just happens automatically when that patient enters the inpatient room. Without Versus, the patient would stay in the system a lot longer."

Through enhanced patient flow and communication, Versus has dramatically reduced length of stay measures: by 37% for children, 18.5% for discharged adults and 36% for admitted adults. As an added bonus, Miramar has increased cash collections by 45% based on their badge collection/discharge procedures.

From Patient Tracking to Bed Management

A key aspect to automated patient location is that it helps identify a room as clean, occupied, dirty, cleaning in process, etc. Prior to Versus Advantages, this was done manually and would have


Installation Highlights:

- Enterprise Patient Tracking (over 900 patient tags for use in ED, OR and on inpatient floors)

- Enterprise Asset Tracking of nearly 500 pieces of equipment

- Bed Visibility and Management with Automated Room Status and Clean/Dirty Notification Alerts

- Integrated to a variety of clinical information systems, including:
  - Epic EMR (since 09/2011)
  - Epic Prelude/ADT (since 09/2011)
  - GE Centricity (2005-2011)
  - Custom Mainframe
  - Picis
  - Pyxis

Lanie Robinson, RN, MSN, Nurse Manager and Clinical Nurse Specialist on a medical surgical unit at Memorial Hospital Miramar, identifies patient's location and progress through icons on the Versus Floorplan. She can easily determine Room Status (Available, In-use, Dirty, etc.) based on automated and color-coded values.

required a call to the nursing supervisor, who would have to actually walk the floors, checking availability and whether the rooms were patient-ready. She'd have to make multiple phone calls. Now, when the nursing supervisor receives a call from the ED, she just accesses the Versus screen and tells the ED what room to put the patient in. She may not get as much exercise, but she has a better real-time view of her department (census, room status, etc.).

"Initially, Memorial Healthcare System was looking for a bed management application," says System Analyst, Sharon Boothe-O'Connor. "They looked at several and they were all very, very expensive. So, we ran it by Versus. The system we have now was designed for us by Versus. It works very, very well."

Bed Turnover – Too Fast?

Typically, room turnover in hospitals takes 4 to 8 hours. At Memorial Miramar, the average time from patient discharge to "Room Clean" status was 1 hour and 8 minutes during their August 2008 timeframe. Typically room turnover rates are evaluated based on random audits using latently recorded, manually entered data. Miramar was able to run their turnover report in less than 30 seconds using the Versus report package.

Also, the average time to clean a patient room at Miramar is 24.6 minutes, faster than even high-end hotel standards. Quicker room turnover provides more efficient throughput facility-wide, reducing boarding and patient bottlenecks.

It Just Makes Sense!

Automating the EMR: Memorial Hospital Miramar mandates that its clinical systems integrate to Versus Advantages in order to keep all systems in sync and automatically up-to-date with patient tracking data. As such, Miramar applied a two-way integration between Epic's EMR and Versus' RTLS. This integration provides automatic patient registration to Versus RTLS and real-time location data to Epic's Prelude/ADT. It is the premier hospital-wide RTLS integration to an Epic product and the first to apply the HL7 v3 standards.

Pyxis Medication Dispensing Unit: By automating the Pyxis Medication Profile with location information, the patient's medication profile gets updated and moves with the patient from one area to the next.
- *This integration has reduced calls to the pharmacy, OR unit, and nursing units, and improved communication, timeliness and delivery of care procedures. No more system overrides and workarounds.*

Dietary Services: Patient location (or discharge notification) is available on the dietary print-out.
- *This has helped cut down on the waste involved in preparing meals for patients who are no longer present and in the time required to deliver and retrieve trays.*

Medication Expirations: By tracking all crash carts and isolation carts, Miramar is able to quickly locate carts to replace meds that are about to expire or to restock supplies.

Compression Pumps: Required for each patient coming out of surgery, Memorial Miramar has been able to reduce the number that would otherwise be required by allowing each department to quickly and easily locate the pumps they own.

A Nice Problem to Have

When Memorial Miramar first implemented the Bed Turnover Process, the housekeeping staff were coming to clean the room even before transport volunteers had arrived to see the patient out. Terri remarks, "They told me 'Housekeeping gets here too fast! We don't even have the patient out of the room yet!' So, we revised the process so that volunteers are responsible for placing the badge in the discharge cabinet when they come to retrieve the patient."

Room Cleaning & Bed Turnover Times

Legend:
- Time Before Next Patient (Guest) Enters Room
- Time to Clean
- Time to Notify

1 = Miramar with Versus Bed Visibility
2 = Prominent Bed Management System [1]
3 = Average Hospital with no Bed Management * [1]
4 = Average Four Star Hotel [2]

[1] Based on Median Figures
[2] Based on check out at 12:00pm and check in at 3:00pm

* The average hospital has no notification procedure following patient discharge. Room cleaning can occur at any time, even sporadically, during the 4 hours between patient leaving the room and notification of room clean status

Measure to Manage

Memorial Miramar runs a variety of reports in relation to patient throughput and equipment (utilization, maintenance, battery, etc.). Terri explains, "We measure throughput times, wait times, doctor exam times, time to disposition, room turnover times. We're actually planning an upgrade that will allow reporting based on patient milestones." Sharon adds, "We get accurate time stamps and alerts, so we can see, 'Ok, the patient's been sitting out there for half an hour. Why?' Being able to capture accurate data is a huge benefit to us."

Today, Miramar makes it a point to track equipment that's important to nurses, the equipment that they don't have many pieces of or that is used regularly. Items tracked is a long list: BiPap machines, breast pumps, Telepaks, Computers on Wheels (COWs), Crash carts, Isolation carts, Digital Cameras, bladder scanners and more. They also track items needing regular maintenance, like IV pumps. Is it worth it? "We've invested millions of dollars in mobile equipment," Terri says, "so it makes sense to know where it is at and that it is being used."
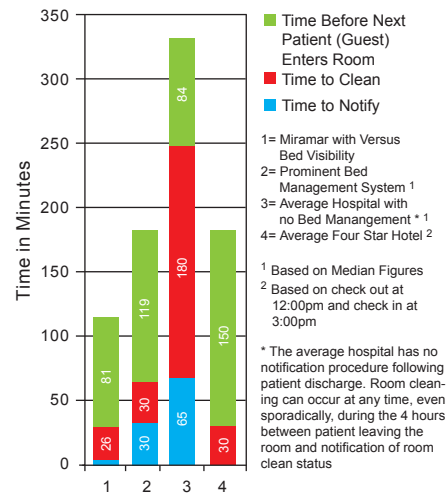
Looking to the Future

Sharon notes, "Once we have staff badged, as well, it will allow us to automate even more, such as nurse call and 'finish exam' alerts in the ED." Versus will capture time with the patient—accurately—based on unbiased rules so clinicians will no longer have to tell CareCast that they plan to be in with the patient or remember to record when they were with a patient. From a process standpoint, it's a manual entry task that will no longer need to be completed and yet, Miramar will collect this data and use it to alert staff that the patient is ready for the next stage of care.

In addition to time-stamping patient visit milestones related to staff interaction, Memorial Miramar is also looking into nurse call integration, which will allow automatic nurse registry, call cancellation and reporting on time together with patients. Real-time Dashboards and Bed Visibility incorporated as additional viewing tabs in Enterprise View are also under consideration.

About Memorial Healthcare System
Since its inception over fifty years ago, Memorial Healthcare System has been a leader in providing high quality healthcare services to south Florida residents. Memorial Regional Hospital, located in Hollywood, is the flagship facility of the healthcare system and is one of the largest hospitals in Florida. Memorial Hospital Miramar is a full-service acute care hospital located in Miramar.