



No More Squeaky Wheels:  
**Using Enterprise  
Asset Management  
to Boost Patient  
Satisfaction**



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*Jay Smith is in the hospital recovering from a successful open heart surgery—and he just wants to sleep. All of his visiting family members and friends have gone home; it’s a dark and peaceful night outside; and the constant overhead pages that he heard earlier in the day have started to subside. Finally, Jay begins to doze off. Every 10 minutes or so, however, he hears a high-pitched squeaking noise coming from the hallway, as the nurses push a medication cart from room to room. And, Jay never gets that deep REM that he really needs to recover from his illness.*

*When it comes time to fill out a Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS) patient satisfaction survey, which is distributed by the Centers for Medicare & Medicaid Services (CMS), all Jay can think about is that he never got the shut eye he so direly coveted during his hospital stay—despite the fact that he received top-notch surgical and nursing care. And, his discontent is expressed in his answers to the survey questions.*

Yes, one squeaky wheel can have a negative impact on patient survey results. And, that’s unsettling as the healthcare industry adopts value-based reimbursement models, where patient satisfaction scores have a direct impact on financial reimbursement.

“Hospitals are starting to be reimbursed based upon the outcomes of these surveys,” said Phillip Ingmire, Senior Business Analyst, Development, Infor. “The whole effort of healthcare organizations, then, should be to try to improve patient experience levels to ensure they get the best and most financial reimbursement. In addition, when hospitals attain better patient satisfaction scores, they can market this accomplishment directly to patients—something that is becoming important as consumers are increasingly responsible for choosing their providers.”

Through the HCAHPS survey process, patients could be asked various questions pertaining to their hospital stay. As far as the patient environment, questions could include the patient’s perspective on quietness, temperature, lighting, room cleanliness and room layout.

To support positive care experiences, hospital leaders need to ensure that patients are treated in environments that are conducive to healing. Patients need to be able to relax and rest in a comfortable, quiet safe space. At the same time, staff members need to quickly and efficiently attend to patient needs. And, finally, to provide the high-quality, technology-enabled care that is expected in today’s healthcare environments, staff members and patients need to have access to the array of biomedical devices and equipment that is an expected part of the modern day patient care experience.



**TOP 10**  
Medical Device  
Challenges

Managing devices and systems on the IT network  
*(e.g., connectivity, responsibilities):*



Integrating data into electronic health records:



Maintenance of infusion pump systems:



Cybersecurity of devices/systems:



Managing recalls:



Device incident reporting/investigations:



Spectrum/wireless management:



Battery management:



Endoscope management:



Managing nonhospital-owned devices brought in by patients:



“When patients are more satisfied with their surroundings, the environment, the equipment, and the facilities—that all contributes to their overall wellbeing. In the hospital environment such satisfaction can actually help to expedite their recovery,” said Bernard Tisserand, Director of EAM Practices, Avaap. “So, to improve the patient care experience, healthcare organizations need to consider not just the clinical care but also the equipment and facilities that become part of the overall experience.”

“One common issue that hospitals have regarding poor patient satisfaction scores, according to CMS based on HCAHPS surveys, is the quietness at night during their stay. There are many factors that contribute to poor patient satisfaction scores. However, some fixes to reduce noise could be installing sound absorbing materials like acoustical ceiling tiles and sheet vinyl flooring. Additionally, for rolled equipment the wheels or casters can have an improved lubrication schedule or be replaced with quieter casters,” Ingmire said.

This simple fix would have allowed Jay Smith his much needed rest while recovering in the hospital.

With the rampant proliferation of technology in recent years, however, properly managing the many devices that are now becoming the norm in hospital environments is a Herculean task, of sorts. Consider the following: There are currently more than 10,000 medical devices available to hospitals, according to the World Health Organization.<sup>1</sup>

Not surprisingly, then, with all of these devices in place, service and maintenance costs per bed have exploded. As such, more efficient and effective acquisition, distribution and maintenance of these devices not only leads to better patient satisfaction but to significant cost savings as well.

Managing all this technology, however, is not an easy task. According to a survey of 1,900 healthcare technology professionals administered by the Association for the Advancement of Medical Instrumentation (AAMI), this proliferation of devices has resulted in a variety of challenges (see chart).

## EXACTLY WHAT YOU'RE LOOKING FOR

Certainly, as hospitals depend on an ever-growing number of devices and technologies, staff members often face a seemingly simple—yet often vexing—challenge: They need to find what they need, when they need it.

“Locating equipment in a hospital can sometimes be a big challenge. Frequently, staff members have trouble finding equipment simply because it has been hidden away by someone else,” said Steve Beard, Senior EAM Solution Architect.

In addition to expediently locating equipment, staff members need “to have the assurance that the equipment is going to operate as designed and that it is fully functional,” Beard pointed out. In fact, healthcare organizations need to comply with specific Joint Commission standards related to the maintenance and calibration of medical devices.

“There’s nothing worse than going into an emergency department and having to wait around until the staff can find the right piece of equipment. It can be very frustrating for patients,” Beard said. Providing access to equipment that is in working condition is not only good for patient care but ultimately can help to cut costs as well. If staff members routinely struggle to find equipment,

<sup>2</sup> Association for the Advancement of Medical Instrumentation. AAMI Names Top 10 Medical Device Challenges. <http://www.aami.org/productspublications/pressreleasedetail.aspx?ItemNumber=1229>

hospitals might purchase more equipment than what is truly needed which drives up cost unnecessarily.

While timely access to operable devices and equipment is a key piece of the patient satisfaction puzzle, healthcare organizations also need to provide a comfortable physical environment to patients. “It’s important that all of the facility related equipment is running optimally. Whether it’s the air conditioning, the temperature control, the lighting. All of these operational systems can have an impact on patient care and satisfaction,” Ingmire pointed out.

## EMPOWERING ACTION

To meet these challenges and create optimal care environments, hospitals need to proactively manage assets and the physical environment in an effort to not only provide quality care, improved clinical outcomes and enhanced patient satisfaction, but to reduce costs as well. In addition, The Joint Commission regulations for medical equipment maintenance that were introduced in 2013 specifically require hospitals to manage medical equipment by implementing medical equipment maintenance plans, compiling full inventories, following manufacturer maintenance recommendations to the letter, identifying high-risk equipment, and closely monitoring the credentials of those who maintain the equipment.<sup>3</sup> Unfortunately, trying to manage such a huge effort manually or with spreadsheets often turns into an exercise in futility. What’s needed is technology, such as an enterprise asset management (EAM) system, which can enable healthcare organizations to seamlessly and proactively manage medical devices, equipment and the physical environment.

“A hospital will find itself in a challenging situation if the equipment is either not where it needs to be when it needs to be there or is there and no operation is scheduled. The way to address that and therefore improve patient care and safety is to leverage software that provides healthcare staff members with alerts that provide the ability to more proactively manage the purchasing, maintenance and servicing of equipment,” Beard said.

An enterprise asset management (EAM) system can help healthcare organizations take a holistic approach to managing all of the varied equipment, devices and systems that support the care environment. “Assets can be controlled by the system to create the optimal care environment from something as simple as ensuring lighting during a procedure to making sure equipment is fully operational and where it needs to be. This enables clinical staff to focus on providing better patient care.,” said Brett Weiss, Vice President, Avaap Healthcare.

More specifically, a system such as Infor EAM can help to create a pleasing care environment by enabling healthcare organizations to:

**Optimally manage equipment and device inventory.** Mobile devices and assets account for significant capital and operating expenditures. Through an enterprise asset management program, hospitals can better analyze equipment needs and, therefore, control purchasing and maintenance costs.

“An EAM system can generate requisitions for the purchase of materials, whether it’s new assets or parts and equipment to fix those assets. It can integrate with a financial management solution so the ordering of the equipment can be automated and the costs can be monitored,” Weiss said.

<sup>3</sup> Grimes, S. New medical equipment maintenance standards require more hospital time, money and staff. Becker’s Hospital Review, November 9, 2014. <http://www.beckershospitalreview.com/hospital-management-administration/new-medical-equipment-maintenance-standards-require-more-hospital-time-money-and-staff.html>

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**Quickly locate equipment.** When an EAM system works in conjunction with a real time locating system (RTLS), it can be used to identify exactly where equipment and devices reside in real time. "When location tags are placed on everything in the hospital and the RTLS is integrated with the EAM, staff can immediately see on an integrated CAD drawing, the physical location of any device they're looking for," Beard said. As such, clinicians can spend less time hunting down equipment and more time directly engaged with patients. Patients are therefore more likely to receive the high quality care that can reduce length of stay and readmissions.

**Proactively manage maintenance.** An EAM solution can measure how well equipment is performing and trigger maintenance alerts when performance falls below desired thresholds. This allows engineers and other staff members to provide needed maintenance before a piece of equipment actually fails.

"You're always going to have what we call corrective work orders. A faucet's going to break, a lightbulb's going to go out. You're always going to have work orders for something that failed. But your critical equipment can't be based on corrective work orders. Your critical equipment needs to be proactively monitored. Healthcare organizations can then become more predictive in their maintenance approach, rather than just reactive," Weiss said. "The last thing you want to do is be reactive – and just fix equipment and devices when they are broken. When they are broken, they can't be used in your service and that ultimately will have a negative impact on patient satisfaction."

What's more, an EAM solution can also help to assess the criticality of a piece of equipment. "Managers can give one piece of equipment a higher criticality rating than another piece. So in the maintenance queue the piece of equipment with the higher score gets greater attention because of the risk associated with losing service relative to that device," Weiss said.

**Proactively control the environment.** With an EAM system in place, it's possible to control aspects of the physical environment to make patients more comfortable. An EAM system, for instance, could provide "alert management and workflow" features that help transform the maintenance approach from reactive only to more condition-based and predictive. The metric data captured in equipment operating systems and integrated with an EAM system can trigger alerts to maintenance technicians to proactively rehabilitate equipment before failure occurs. In addition, patient feedback and satisfaction surveys might reveal various shortcomings that are linked to patient satisfaction. "Patients might complain that it's too bright in the evening. Through the EAM system, you can change the automation so that the lights dim to a certain level at a certain time each night," Weiss said.

**Better leverage staff resources.** Equipment and device maintenance often accounts for significant spending both in dollars and staff time. "With an EAM solution in place, managers can more efficiently maintain equipment by assigning the right people to work on different maintenance tasks based on their skills. The system can also generate schedules so that you can track labor hours and how your maintenance team is deployed across the organization," Beard said.

An EAM solution also can help to optimize staff workflow. "The system can capture how these operational systems are performing. And based on those triggers, it can generate work orders and workflow notifications to the maintenance teams, so that will help them become more predictive and effective in their maintenance approach," Tisserand said.

Some EAM systems also provide staff members with access to valuable data while on the go. As such, staff can respond to maintenance requests while they are in the field or wherever critical

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assets are located. The benefits of such mobility include reduced commute time, increased productivity, decreased labor hours and minimized down-time.

**Plan improvements or new facilities.** Data obtained through an EAM system can be used to justify projects to improve patient experience and also drive specific “patient experience” criteria in the design of construction and renovations projects, equipment selection and operational/process changes.

“An EAM system can help hospital leaders determine if they need to reconfigure or redesign a wing or department so that it can be more conducive to supporting a better patient experience,” Ingmire said.

“Having a positive patient environment experience tied with a similar clinical care experience ensures that the hospital organization is looking out for the patient’s best interest and treatment,” Ingmire stated. “Patient experience is based on three important and related factors: people, process and place. Caring staff, patient-centered operations and well-designed facilities work together to support an excellent patient experience, a significant metric for attracting and retaining patients, maximizing reimbursement and achieving better outcomes.”<sup>4</sup>

In the final analysis, by managing devices, equipment and environmental systems, hospitals can improve utilization and discover opportunities to reduce the amount spent on unnecessary inventory, lowering overall costs. Perhaps more important, though, this proactive management of assets can have a positive impact on patient care. And, when a hospital can combine a positive patient experience with optimal patient care, patient satisfaction is likely to soar, making it possible to succeed under value-based models. ■



*Avaap is one of the largest providers of IT services and solutions for organizations that use Infor and Epic enterprise software applications. With deep expertise in healthcare and other industries, Avaap delivers ERP and EHR consulting services that address industry challenges while accelerating implementations and upgrades, extending software capabilities and helping customers achieve more immediate value from clinical, financial and business application investments. Visit [www.avaap.com](http://www.avaap.com)*

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<sup>4</sup> Building Patient Satisfaction. Physical environment improvements can lead to better patient experiences and HCAHPS scores. Health Facilities Management, August 2016. <http://www.hfmmagazine.com/articles/2314-building-patient-satisfaction>