Industry Leaders Describe Barriers And Solutions to Continuous Monitoring

The Backstory

This past November, a diverse group—including physicians, nurses, healthcare technology experts, medical device manufacturers, patient safety advocates, and representatives from professional societies—met to discuss how technology could be used to ensure the well-being of patients on opioids.

That meeting marked the formal start of the National Coalition to Promote Continuous Monitoring of Patients on Opioids, which is run by the AAMI Foundation. There is debate about how best to use that technology, with some experts noting that the introduction of more monitors could contribute to the problem of alarm fatigue if not properly integrated and managed.

However, the stakeholders at that meeting believe that the electronic continuous monitoring of patients on opioids would represent an advance for patient safety, provided the technology meets the needs of clinicians and is coupled with education and training.

This is one of a series of occasional articles looking at the work of the coalition and other safety initiatives by the AAMI Foundation.

Four healthcare technology industry leaders talk about why they support the continuous monitoring of all patients on opioids, which is a major two-year initiative of the AAMI Foundation. Their companies are among the platinum industry partners in this effort.

What are the top three barriers hospitals face when implementing continuous monitoring of patients on opioids outside the intensive care unit? How can these barriers be overcome?

Elms: I believe the top three barriers are a lack of standardized clinical protocols, having sufficient human and medical device resources, and the problem of alarm fatigue. The first step to mitigating alarm fatigue is to understand the sources and nature of the alarms being sounded. By implementing middleware solutions, hospitals can aggregate and report on the multiple sources of alarms, most of which are silos of technology, each contending for clinician attention.

Once an accurate inventory is available, and evaluated regularly, clinical leadership can begin to ascertain alarm threshold values that trigger the majority of nonactionable alarms at the patient bedside. Research indicates that substantial reduction in alarm volumes can be achieved through simple adjustments to threshold limits.

Gross, et al., writing in the spring 2011 issue of Horizons, observed that:

- Heart rate (HR) alarm load reduced 50% with an adjustment of high HR from 120 to 130 bpm
- SpO2 alarm load reduced 36% with a change of threshold from 90% to 85%
- SpO2 alarm load reduced 65% with a threshold change from 90% to 80%

Kiani: The first barrier is that hospital administrators and clinicians are not always aware of the frequency and impact of opioid-induced respiratory depression and post-op complications. Solution: The first step is education. It is important to make the team aware of the risks of unmonitored beds and the latest research that demonstrates the need to include continuous monitoring. It also is important to review published evidence about best practices in continuous monitoring, such as the experience of continuous monitoring at Dartmouth Hitchcock Hospital, which saw a reduction in rapid response team activation and intensive care unit bouncebacks.

The second barrier is a misconception that adding continuous monitoring is not cost-effective and may add to the already intense workload of nurses. Solution: It is important to
learn about hospitals that have implemented continuous monitoring. There is a cost savings associated with eliminating “dead-in-bed” and reducing rapid response activation. Nurses understand that through connectivity with devices and the electronic medical record, continuous monitoring solutions can ease workflow by simplifying the charting process and complementing clinical decision making.

The third barrier is that continuous monitoring is complex and cumbersome to install and operate. However, more than 200 hospitals have deployed systems similar to what Dartmouth Hitchcock Hospital used and in a relatively short span of time demonstrated the simplicity and ease of integration of continuous monitoring in the post-acute care environments.

Murray: I believe the key barriers to the implementation of continuous monitoring for all patients on opioids in the acute care setting are 1) a resistance to change the clinical status quo, 2) the need to change behavior for clinical staff, and 3) a lack of understanding about the cost benefits of available technology. With respect to the status quo, we know it often is difficult to create change for a variety of reasons. It is difficult to change habits without an understanding of the benefits for making these changes.

To address this challenge, it will be necessary to continue to generate the clinical evidence that supports the patient safety benefits for continuously monitoring these patients. We are undertaking initiatives in several countries to continue to build evidence and support for the patient safety benefits of making a positive change to continuous monitoring.

Additionally, it is difficult for clinicians to change practice without encouragement for adopting new clinical behavior. It is often the easiest solution to do nothing versus making a change. Therefore, it is critical for manufacturers to make their technology as simple and as easy to use as possible for the clinician. Clinical support for new technology adoption will be driven by both the clinical need and the ease of change for the clinician to adopt new technology for their patients.

Last, but not least, it is difficult to introduce new technology without first understanding the cost benefits of that technology. In 2015, hospitals globally have a difficult challenge with managing their budgets, and it is not easy for administrators to say yes to additional purchasing costs. To address this challenge, it is important for us (as industry) to make it easy for the hospital system to understand both the clinical and cost evidence that supports a positive return on their investment of new continuous monitoring technology that we know will save patient lives. Our models need to be based on real evidence that demonstrates true value for all key stakeholders in the healthcare delivery system—patients, clinicians, providers, and manufacturers.

Welch: I believe the top three barriers hospitals face to implementing continuous monitoring of patients on opioids outside the intensive care setting are 1) lack of organizational readiness to
adopt transformative care models, 2) the problem of nuisance alarms, and 3) a need to integrate any solution into the nursing workflow.

I believe the solutions to these barriers are:

• A Centers for Medicare & Medicaid Services requirement to continuously monitor patient on opioids
• The development of nationally recognized order sets for surveillance monitoring
• Successful alarm management initiatives throughout the hospital

**At the end of the two-year initiative, what do you hope will be accomplished?**

Kiani: This initiative is aligned with one of the first Actionable Patient Safety Solutions (APSS) from the Patient Safety Movement Foundation. The APSS is called “Failure to Rescue: Post-Operative Respiratory Depression.” I hope that the coalition will deliver clear recommendations on what methods, technologies, and protocols should be implemented to address and eliminate this preventable problem. I also hope that the coalition will work with the Patient Safety Movement Foundation to bring medical technology companies, clinicians, hospital administrators, and government officials together to create change, such as in the support of legislation like Leah’s Law, which will require continuous monitoring for patients on opioids.

Murray: I believe that synergy and teamwork will create momentum for positive change. By working together collaboratively and creatively, we believe this specific AAMI Foundation coalition will help create the awareness of the need to change the level of care for patients on opioids throughout the acute-care setting. The momentum created by this awareness will provide the impetus for positive change for patient safety for years to come. I am excited to partner with our colleagues in this AAMI Foundation initiative as we work together for increased safety in the hospital environment.

Welch: At the end of this two-year initiative, I would expect to see reproducible surveillance monitoring models at several leading institutions.