



# Owensboro Health Regional Hospital

Helping reduce alarm fatigue and improve patient safety

## Organization Overview

Owensboro Health is a nonprofit health system with a mission to heal the sick and to improve the health of the communities it serves in Kentucky and Indiana. The system includes Owensboro Health Regional Hospital (OHRH), nationally recognized for design, architecture and engineering; Owensboro Health Muhlenberg Community Hospital; Owensboro Health Twin Lakes Medical Center; the Owensboro Health Medical Group comprised of over 200 providers at more than 20 locations; three outpatient Healthplex facilities, a certified medical fitness facility, the Healthpark; a surgical weight loss center and program, and the Mitchell Memorial Cancer Center.

## Challenges

- Streamline alarm management
- Make it easy for clinicians to identify when, from where and why infusion pumps alarm
- Send notifications from clinical systems to a single clinical communication application with context about the patient, care team and event

## Vocera Solution

- Vocera Engage
- Vocera mobile application

## Results\*

- Helps reduce alarm fatigue with contextual alert and alarm notifications sent to the appropriate clinicians
- Helps care team members stay focused, connected and allows them to collaborate productively
- Helps make alarm management faster and easier
- Helps create a quieter environment with fewer nuisance alarms

## Challenges

Alarm fatigue can occur when clinicians are exposed to an excessive number of clinical alarms, causing alarm desensitization and leading to missed alarms or delayed response. As the frequency of alarms used in healthcare rises, alarm fatigue has been increasingly recognized as an important patient safety issue.<sup>1</sup>

Nearly a decade ago, The Joint Commission approved a new National Patient Safety Goal on clinical alarm safety (NPSG.06.01.01). The Goal requires hospitals to establish alarm safety as an organizational priority and identify the most important alarms to manage based on their own internal situations.

Owensboro Health Regional Hospital (OHRH) leadership were mindful of the detrimental impact that high exposure to medical device alarms can have on clinicians' cognitive load. They decided to leverage technology to achieve clinical interoperability and streamline alarm management.

OHRH leadership wanted to make it easy for clinicians to identify when, from where and why infusion pumps were alarming. They also wanted a solution that would send notifications from the electronic health record (EHR) and other clinical systems to a single clinical communication application with context about the patient, care team and event.

"The tricky thing about infusion pumps is that when they alarm, there is no central monitoring place for those alarms to be routed to," said Jacob Kittinger, RN, MSN, Manager of Clinical Support at Owensboro Health. "Before we implemented our Vocera solution, it was challenging to know which pumps were going off and why, unless you happened to be in the same room as the pump, which caused unnecessary noise and chaos."

## Vocera Solution

OHRH decided to utilize the Vocera Engage intelligent workflow engine to connect a multitude of its clinical systems and deliver filtered, prioritized alarm and event notifications to the Vocera mobile app. Vocera Engage contains Engage Medical Device Alarm Notification (EMDAN), FDA 510(k)-cleared middleware, to deliver secondary alarm and event notifications.

The hospital was the first in the United States to integrate ICU Medical's IV smart infusion pumps with EMDAN, part of Vocera Engage, to enable nurses to receive IV pump alarm notifications on their Vocera app. The notification provides care team members with invaluable details about why the pump is alarming, such as an empty bag or an occlusion, which wouldn't be available otherwise. The integration provides near real-time, contextual notifications and helps improve clinical awareness, staff response times, patient safety, and patient and staff satisfaction.

“When infusion pumps are administering high-priority medications, it’s crucial for clinical staff to know when and why the IV drip stops,” said Kittinger. “With the Vocera integration, intelligent alarm notifications with vital information about medications are routed directly to a nurse’s Vocera app, which helps improve safety and save time.”

To further help reduce alarm fatigue and other nursing interruptions, OHRH also leveraged its Vocera solution to send notifications from the EHR, physiologic monitors, patient surveillance systems, real-time locating systems, ventilators and nurse call systems to the Vocera app.

## Results\*

The alarm management capabilities of the Vocera system allow the hospital to intelligently triage and route notifications with context to the appropriate OHRH clinicians, helping reduce alarm fatigue. Only actionable notifications are sent to the right caregivers on their Vocera app.

Bringing together voice calling, secure messaging and alarm notifications in a unified experience helps care team members stay focused, connected, and allows them to collaborate productively using one app with the same contextual information.

“Without leveraging the Vocera system for our infusion pump integration, an IV pump alarm would sound until a nurse walked by, heard it and turned it off. Or, when a patient notified staff using the nurse call button,” explained Kittinger. “The integration makes alarm management faster and easier. Interoperability between our many clinical systems and the Vocera app helps improve the healthcare experience for both patients and nurses by helping create a quieter environment with fewer nuisance alarms.”

“Before we implemented our Vocera solution, it was challenging to know which pumps were going off and why, unless you happened to be in the same room as the pump, which caused unnecessary noise and chaos.”

– **Jacob Kittinger, RN, MSN**  
Manager of Clinical Support  
Owensboro Health

“The integration makes alarm management faster and easier. Interoperability between our many clinical systems and the Vocera app helps improve the healthcare experience for both patients and nurses by helping create a quieter environment with fewer nuisance alarms.”

– **Jacob Kittinger, RN, MSN**  
Manager of Clinical Support  
Owensboro Health

## Reference

1. Woo M, Bacon O. Alarm Fatigue. In: Hall KK, Shoemaker-Hunt S, Hoffman L, et al. Making Healthcare Safer III: A Critical Analysis of Existing and Emerging Patient Safety Practices [Internet]. Rockville (MD): Agency for Healthcare Research and Quality (US); 2020 Mar. 13. <https://www.ncbi.nlm.nih.gov/books/NBK555522/>

For More Information  
Visit **vocera.com**,  
email **info@vocera.com**  
or call **+1 888 9VOCERA**

## Vocera, now part of Stryker

3030 Orchard Parkway  
San Jose CA, 95134  
t: +1 408 882 5100  
f: +1 408 882 5101  
toll free: +1 888 9VOCERA  
vocera.com

\*In addition to Vocera technology, the facility’s results may reflect the additional training, policies, procedures and specific configuration parameters implemented by the facility. The results are not necessarily representative of what another facility may experience

Stryker Corporation or its divisions or other corporate affiliated entities own, use or have applied for the following trademarks or service marks: Stryker, Vocera Engage, Vocera. All other trademarks are trademarks of their respective owners or holders. The absence of a product or service name or logo from this list does not constitute a waiver of Stryker’s trademark or other intellectual property rights concerning that name or logo. Copyright © 2023 Stryker. M0000012681 REV AA.