

Clearing the air: Improving clinical alert workflow to reduce fatigue and noise

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Introduction: Healthcare environment concerns

It is clearly evident that the healthcare environment is becoming more complex with the increase in smart technologies and devices that are critical to provide better care. With efforts being made to improve patient safety, new and advancing technologies have overwhelmed caregivers with audible notifications, and the extensive use of these technologies and devices makes responding to alerts even more complex and challenging. This creates an environment that makes it difficult for clinicians to prioritize and manage their patients' care. It can be a pending problem based on the level of complexity in the health system, hospital, or unit — as well as the care team's stress and alert fatigue levels. Sensory overload experienced by bedside care teams has recently been linked to sentinel events.

Industry leaders warn of the challenges

Alert fatigue continues to gain media attention and has become an urgent need of The Joint Commission to resolve and address. Recently, the U.S. Food and Drug Administration reportedly reviewed more than 500 reports of patient deaths related to alarms and monitoring devices that occurred over a four-year period. Today, "Improve Staff Communication" is now the number two issue identified in The Joint Commission's 2012 National Patient Safety Goals. ECRI Institute also recognizes the critical need for organizations to focus on improving processes to prevent health technology challenges. In ECRI's annual report for 2012, "Alarm Hazards" has moved up in critical importance to the number one technology hazard needing critical attention by hospitals and caregivers.

In 2012, The Joint Commission identifies improving staff communications as a National Patient Safety Goal.

Factors affecting clinicians and care

There are many other factors and practices in the hospital setting today that create issues affecting both the patients and the clinicians caring for them. The ability to hear an alarm and respond quickly is not always achievable when clinicians have a high nurse-to-patient ratio and an abundance of alarms. It can become overwhelming for the clinician and disruptive to the care of the patient.

- Unit structure and private rooms create a barrier that prevents caregivers down the hall from hearing, distinguishing or quickly responding to an issue or alarm sounding in another area.
- Consider many alarms going off at the same time for one or many patients. The amount of alarms and overall noise these systems produce not only affects the patient environment, they affect the ability for the right caregiver to hear and manage them.
- Also consider the nurse-to-patient ratio during different shifts — this creates additional issues with resource limitations and timeliness challenges for the most critical needs.

An ICU, for example, may have between 50 and 100 devices generating alarms.


The adoption of event management solutions that deliver alarms and other notifications to a caregiver's assigned mobile device has been a critical factor in helping manage communications for healthcare environment challenges that impact care. Whatever the initial cause of the alerts, the sheer number of notifications can be overwhelming to a busy clinician. The more instances of nuisance alerts delivered to the caregiver's devices, the lower the clinician's confidence in the alerting system. Alert fatigue, a potential resulting issue of alert desensitization, can stifle a clinician's acceptance of the devices sending the alerts. These nuisance alerts may also lead to a clinician or facility turning off the alerts or the devices that are sending or receiving alerts.

Therefore, we must find the fine line of delivering only the alerts that are relevant and urgent enough for caregivers to redirect and manage their activity to facilitate safe, quality patient care. Safety of the patient must be of the highest priority when considering the type of alerts that should be transmitted to the devices that the caregiver will be carrying.




*More Alerts on Devices and
More Devices With Alerts*

Alert fatigue



Patient Safety and Satisfaction

Compromised workflow & patient care



Communication Hazards

Creates inefficient work environment

Three challenges affecting alert fatigue and communications

More alerts on devices and more devices with alerts

We just discussed the abundance of devices and alerts and alarms they produce. This issue has created an alert fatigue challenge for care teams that is expected to increase as even more devices are brought into care units. As a result, caregivers may have difficulty distinguishing the alarms and responding to them properly. The overload of noise experienced by care teams that has been linked to sentinel events could potentially have been avoided with improved workflow practices that manage these alarms, reduce the fatigue, and allow the caregiver to respond to them appropriately.

Patient safety and satisfaction

The Joint Commission's National Patient Safety Goals help create a culture of safety within the healthcare environment. It is important for hospitals to comply with these best practices in care. By reducing nuisance alarms and the noise associated with them, and by responding faster to meaningful and critical alerts, patient care and patient satisfaction can be improved. To maintain accreditation with The Joint Commission, hospitals must demonstrate appropriate policies and procedures and be compliant with these goals.

With new Medicare reimbursement rules effective as of October 2012, patient satisfaction survey results are expected to be a factor in up to 30% of the reimbursement. Increasing your patient satisfaction scores may result in a financial benefit.

Communication hazards

The continued drive to improve communication amongst healthcare staff is an ongoing critical challenge to be addressed. Poor communications can create an inefficient work environment and a poor use of staffing resources. Caregivers can be more effective when they are able to receive and respond to critical information quickly.

Get the right response at the right time

Nursing efficiencies are a key benefit of implementing an event management solution to resolve these communication and workflow issues. An event management solution can help you to analyze current workflows and retool them to best manage notifications. Implementing an event management solution that aligns with your clinical objectives may help improve staff satisfaction, by delivering meaningful alerts to the right caregiver at the right time — thus reducing alert fatigue and communication challenges. Increasing workflow efficiencies can provide financial benefits by leveraging the appropriate staff (such as higher paid caregivers) to perform the most clinically significant tasks, while lower-level staff handle routine, non-critical functions.

A valuable initiative can be developed to assist staff by creating new or restructuring existing clinical workflow processes. These processes are important to review on an ongoing basis as new technologies are adopted. Caregivers will need time to respond to new, relevant alerts.

An event management solution should be implemented that can provide a critical link between a busy clinician and the patient. This type of solution can continue to provide the ability for a means of direct communication, and also provides a rapid method of notification to a clinician for actionable patient alarms. Rapid notification leads to quick response time, leading to potentially improved patient care.

Alert delivery to a device carried by a caregiver

Alert delivery

Imagine Patient 1 who is connected to a heart monitor and is receiving a high flow of oxygen. His clinician is busy in another room, assisting Patient 2. At the same moment, Patient 1's monitor displays that his oxygen saturations have dropped to a critical level. With the event management alert, the clinician is notified on her mobile device of the crisis in action. She immediately runs to Patient 1's room and places the oxygen mask back on his face, therefore averting a potentially life threatening situation.

Alert delay

One example of an event management solution is one that includes alert delay functionality. Alert delay is a valuable feature of some event management solutions that helps reduce noise from nuisance alarms and unnecessary notifications if the caregiver is on-hand at the bedside to respond in real-time. When unit structure allows the caregiver to stay closer to the patient room, there is little or no need to send a nurse call light alert immediately to a caregiver. This alert delay can be in place while the solution continues to provide the functionality of notifying the clinician that the patient has sent out a request, when she is not in a position to attend to the need immediately. Self-correcting delays can also help to prevent an overload of messages coming from a patient monitoring device. A delay can be placed on alerts so that, if the condition self-corrects, it is not necessary to notify the clinician.

Scenario 1: Using alert delay

If a clinician is within a close proximity to the patient when a patient is in need of assistance and presses the call light, the alert to the nurse's hand-held device can be delayed. The alert delay functionality creates a time interval for the caregiver to attend to the patient's need and cancel the call light — preventing the secondary event notification system from sending out an alert.

Scenario 2: Self-correcting alerts

Imagine a child on the Pediatric Ward who is playing a video game. Movement can cause multiple false alarms to be generated and send a cascade of false alerts to a clinician's mobile device. Alert delay functionality can provide a delay that activates when an arrhythmia is detected by the patient monitoring system but is not maintained — an alert will not be sent to the caregivers end device.

These features can help reduce the number of nuisance messages being sent to the caregiver's end-device, while still allowing meaningful alerts that continue past the established delay state to be delivered to the caregiver. Thus, a clinician remains notified of those persistent, relevant alerts that need to be attended to, while the number of alerts being sent to their mobile device is decreased due to cancelling of a potentially false alarm.

Meaningful alerts to the right staff

Communication of alerts to the caregiver is essential. However, keep in mind that not all alarms are critical — nor do all require the immediate attention of a clinician. And, of those alerts being delivered, a clinical workflow best practice objective should be to deliver the most meaningful alerts that are clinically significant, to the right caregiver.

Who is the right caregiver? With the care of a patient assigned to a team, the unit should determine which alerts can be handled by the nursing care associate, such as a nurse call request for bathroom assistance, versus a monitor alarm notification, which must be responded to by the RN. Careful consideration should be given when choosing the notifications that are sent directly to specific caregivers to prevent alert fatigue. Best practice recommendations revolve around consideration of the patient population, clinical value or actionability of the alert, and relative clinical workflows. Implementation of filters and delays will assist with decreasing the amount of alerts being sent to caregivers' devices. It is important that the right alert go to the right caregiver at the right time to provide appropriate care.

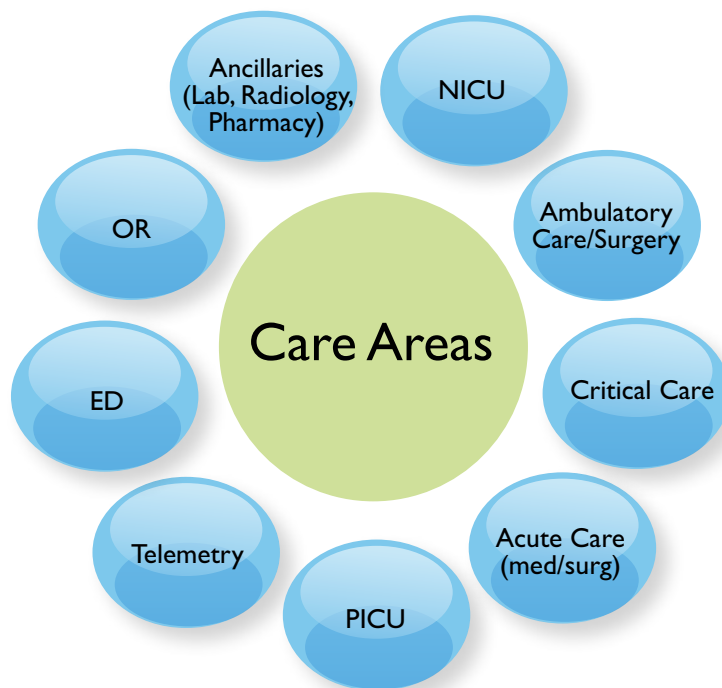
As you strive to prevent clinician sensory overload, it is important to choose clinically significant alerts that will improve patient care, reduce unit noise, and enhance nursing workflow. The right solution, along with best practices to manage alerts, is key to reducing alarm fatigue. And, with the transformation of these processes, you will ultimately help your clinicians enhance their clinical performance, quality of care given, and staff satisfaction.

Recommendations to reduce alert fatigue

- Set alert delays
- Filter out non-critical alerts
- Do not wait to address alert fatigue — manage the patient alarm limits
- Consider carefully before adding alerts — what is the clinical value?
- Address workflows in relation to response to alerts
- Run reports to analyze the number of alerts that are received by caregivers
 - What are the most common alert types?
 - How many occurred in a week?
 - per day
 - per shift
 - per patient
 - per clinician

About Philips IntelliSpace Event Management

Philips IntelliSpace Event Management is an event notification solution that delivers meaningful alerts and notifications within a health system that are relevant, reliable, and actionable. IntelliSpace Event Management has been a leading solution for over 12 years that delivers the right information to the right person at the right time, for quick clinical decision-making, improved response to patient needs, and ultimately, exceptional quality care. Communication challenges can be improved in many different types of hospital settings, and within the many different care areas.



IntelliSpace Event Management provides you with an effective process supported by clinical expertise to best manage how and when alerts are presented to caregivers — through customization of alert processes based on patient populations, unit, and staffing structure and workflow.

IntelliSpace Event Management integrates and leverages data from patient monitoring, nurse call, and other clinical information systems — simplifying complex input and output flow to provide meaningful alerts sent to the caregiver's mobile device. Information will be sent to the appropriate person, based on assigned role and skills set. IntelliSpace Event Management has

developed several clinical and physiologic tools to help you achieve your communication and care goals to reduce the number of alerts being received by the caregiver, while continuing to provide a channel of communication for alarms requiring immediate attention. With the utilization of an alert configuration where only actionable alerts are passed directly to caregivers, alert delays are available for those alerts that will self-correct or do not require immediate notification. This can help you limit the stimuli received by your bedside caregivers. Logging of these activities provides operational reporting and quality metrics for hospital leadership to monitor progress and measure performance against objectives.

Implementing this solution can help with patient satisfaction, improving satisfaction survey scores. Clinicians can associate satisfaction improvements to the patient's confidence that — when bells and alarms go off in the room and their nurse may not be within eye/ear shot — the right caregiver is receiving the alerts on their mobile device, and will respond to it appropriately.

Benefits of a clinically focused alert management solution:

- Improved care team coordination and patient care
- Enhanced patient and family satisfaction
- Efficient processes and workflows
- Reduced costs
- Satisfied clinicians

Next steps

To learn more about how your organization can benefit from IntelliSpace Event Management, please contact your Philips Healthcare representative, or contact us at

- Email: EventMgtInfo@philips.com
- Call: Toll-Free (866) 363-7446, Option 1; or Direct (561) 361-6990, Option 1

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