

Reducing Call Alarm Fatigue to Improve Client Safety

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**Introduction**

Exposure to an excessive number of alarms can overload healthcare workers' senses, leading to alarm desensitization. Reducing call light fatigue is quite critical to improving the client's safety. Alarm fatigue is known to be one of the top safety concerns in the healthcare setting. The Joint Commission recognized Alarm safety as one of the 2017 National Patient Safety Goals (Cruz, 2018). Call light fatigue occurs in every hospital and has a significant impact on the patient's safety. The Emergency Care Research Institute pointed out that alarm fatigue and other alarm-related incidents are the most severe technological issue in healthcare (Jubic, 2017). Alarms cause nurses to become overwhelmed, leading to the patient falling or other incidents (Jubic, 2017). With alarms frequently going off, it becomes easy to tune out the sound. Insufficient response time to call lights leads to inadequate care and lower client satisfaction scores. As nurses, it is their responsibility to stop alarm fatigue from negatively affecting patient safety. Nurses become desensitized, leading to client neglect. Our assessment of call light fatigue will examine the background, reasons, and implications of call light fatigue.

**Literature review**

Alarm fatigue often causes frustration and confusion with the nurses experiencing this issue. False alarms often cause alarm fatigue among the nurses working in the pediatric intensive care unit (PICU). False alarms or nuisance alarms can often go off even when the newborn moves a limb, and it is crucial to distinguish between a false alarm and a real alarm. Overall, distinguishing between the two is quite tricky, and it is essential not to ignore an emergency by mistake due to the numerous nuisance alarms throughout the day.

Working with the multidisciplinary team will help overcome alarm fatigue in the PICU. Working as a team to answer alarms on the PICU or any unit will help eliminate fatigue and

produce a better patient outcome. Collaboration in the PICU will give all the nurses a responsibility to help other nurses out when they are not as busy. Appointing specific roles to nurses within the facility can also help minimize fatigue. One of the nurses will have the job of answering alarms when needed. Having an extra nurse for the alarm notification role will help decrease the nurse's fatigue while increasing the quality of care every patient will receive.

Working as a team is crucial, and collaboration with every nurse will help eliminate fatigue while increasing the survival rate among all the patients in the PICU (Jubic, 2017).

Alarms are going off non-stop in the hospital, and as a nurse, it is crucial to set parameters when caring for patients. Setting parameters will help limit the number of fatigue nurses have. As a nurse working in the ICU, there will be times where the EKG monitor shows abnormal rhythms. It is critical as a nurse to not engage in this situation as always an emergency. Short-term changes in EKG strips, heart rate, respiration, and blood pressure could all be due to the patient's movement. Setting priorities as a nurse is quite essential to improve the patient's care. False alarms go off all the time, and it is crucial not just to prioritize an alarm going off as critical even though it is not. All alarms are intimidating, and it is easy to turn the attention towards the sound of the alert even when there are other things more important than that alarm. It is also important as a nurse to educate the family members on the possibility of false alarms going off. Educating the family is also beneficial because they are less likely to become stressed out and will ultimately relieve the nurses' stress and fatigue. Overall, prioritizing will help decrease the amount of tiredness during the day, ultimately improving patient care (Simpson & Lyndon, 2019).

Call lights cause fatigue among the nurses and allow the patient to improve the patient's outcome. Call light response works toward improving the patient's satisfaction. Along with that,

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call lights improve how the patient perceives or even decrease the number of falls. Delays in call light response can impact the patient's likelihood of falling and their amount of pain they are experiencing. As a nurse, the number one goal is to improve the patient's care and keep the patient and the family happy. Maintaining client satisfaction is hard to do with the numerous call lights that go off during every shift. When working in a hospital, there are ways to reduce the number of call lights during the day. When performing rounds, assess the patient's pain, bed position, IV pump, and asking if they have to use the bathroom. Along with that, evaluate their comfort level, their environment, and finally, ask them if there is anything else they would like before leaving and notify them that the nurse will be back. This simple assessment will drastically reduce the number of call lights received during the day (Nelson & Staffileno, 2017).

Another method that works to help eliminate fatigue while adding to the quality of care is the call light triage. Triageing the call light is a convenient and successful idea when a patient alarms their call light. The triage starts with the unit secretary. It keeps on triaging down the nurses' list until one of them can answer the patient's notification. The use of these two methods helps improve patient's satisfaction and safety significantly. Overall, the number of falls among the patients decreased, and the patient's pain control score rose to higher levels. The call light interventions improve fatigue among the nurses and improve care due to increased patient satisfaction (Nelson & Staffileno, 2017).

Evidence shows that nurses hear as many as 700 monitor alarms per client in a given day. As nurses become increasingly desensitized to alarms, alarm response rates decrease or diminish altogether. Reports of sentinel events related to alarm fatigue make it necessary for healthcare facilities to reduce alarm fatigue. The utilization of evidence-based research may help manage alarms in their facilities. In many cases, telemetry monitors will alarm, and there is nothing that

the nurse can do. With unnecessary alarms sounding, they distract nurses from other alarms that may require immediate attention. Specific yellow premature ventricular contractions (PVC) alarms are unactionable and make up a large percentage of general alarms. The alarm parameters changing resulted in an 84% reduction in PVC alarm rate and a 54% reduction in overall cardiac monitor alarms. The author hopes that sharing this study's results will impact call alarm fatigue in facilities across the US. Many health care facilities are in the beginning phases of reducing alarm fatigue. Sharing of information has added to the body of knowledge that these facilities may learn (Srinivasa et al., 2017).

The scope of alarm fatigue is broad, and its contributing factors are numerous. There are a variety of interventions that will reduce the number of non-essential alarms that sound for clients. Cardiac monitoring seems to have the most room for the reduction of alarms. Non-actionable cardiac alarms distract and desensitize nurses from other alarms that require their attention. An estimated 5-13% of alarms account for actionable alarms in current monitoring systems. An article by Hravnak et al. (2018) examines multiple interventions and analyzes those interventions' effects. Some strategies implemented include improving sensor reliability by better skin preparation before attaching monitor leads, changing electrodes daily, and using disposable wiring and sensors rather than reusable ones. Electrodes not sticking to the skin caused preventable alarms from one's personal experience. Customizing alarm settings around the client's baseline and widening the parameters proved to reduce the number of non-actionable alarms (Hravnak et al., 2018).

Strategies to provide further education and organization also helped reduce alarm fatigue. Educating staff on how monitors, sensors, and alarms function specific to the product manufacturer and especially arrhythmia alarms, is essential. Some hospitals have implemented

monitor watchers whose role is to observe a centralized bank of monitors and contact nurses with only actionable events via mobile technologies (Hravnak et al., 2018). Sarah Bush Lincoln hospital has implemented telemetry monitoring in many medical-surgical units. Off-unit telemetry monitoring reduces the workload and stress of nurses who work on those units. However, the critical care unit, emergency department, and step-down units are still responsible for monitoring their client's cardiac rhythm.

### **Case Study Example**

A study conducted by Casey et al. (2018) looks into alarm fatigue components in the critical care setting. Two hundred fifty nurses from ten intensive care departments from six different hospitals in Ireland contributed data for the study. 90% of participating nurses said that multiple non-actionable alarms occurred frequently and simultaneously, disrupting client care. Frequent false alarms causing reduced attention or response to alarms ranked the most significant obstacle to effective alarm management. Responding to call notices that are not urgent also drains nursing resources by taking a nurse away from a situation where they could be of better use. Inadequate staffing poses an issue to respond to all client needs promptly. Findings suggest that the majority of nurses are unaware of current evidence-based approaches to attenuate alarm fatigue.

From one's personal experience, it is difficult to know which alarms to pay attention to sometimes. One can understand why nurses become frustrated and lose their patience. 52% of nurses from the sample claimed they were unsure how to prevent fatigue-related call alarms. This study provides evidence that adverse events related to clinical alarms occur, as all sites studied reported patient adverse events related to clinical alarms.

Given that alarm fatigue is a complex, multifactorial problem, future research should identify alarm fatigue levels among critical care nurses and evaluate education and training approaches to manage alarm fatigue (Casey et al., 2018). This study implemented no changes. This study gauged the nurse's knowledge and feelings of alarm fatigue to gather information to formulate a plan to improve patient safety.

### **Synthesis**

Based on our clinical experience and journal articles looking into interventions to reduce alarm fatigue, there are several options that hospitals can implement to minimize alarm fatigue for their staff. Call light triage is one method that works to eliminate fatigue while adding to the quality of care. Triage allows nurses to hear client call bells that require a registered nurse (Nelson & Staffileno, 2017). Hourly rounding on clients addresses their needs and minimizes their need to use their call bell. In a perfect world, nurses could check on clients hourly, but we all know the real world can not follow theory strictly. Some variables limit potential effectiveness (Morgan et al., 2016). The pace and higher acuity of busier or understaffed units could negatively impact the rate of completing and documenting hourly rounds. The regular presence of float staff may be unaware of unit initiatives (Birdsong, 2019).

According to research, the best clinical practice to reduce alarm fatigue is to set parameters on non-actionable alarms, like cardiac monitoring alarms. Ensuring that electrodes, blood pressure cuffs, and oxygen saturation monitors are well placed and secured to the client helps reduce avoidable alarms. Using skin prep, changing electrodes daily, or using disposable lead wiring and sensors improves monitoring equipment reliability, thus reducing alarm noise congestion (Hravnak et al., 2018).

Perhaps the most important aspect of executing an improvement plan is educating the nursing staff. There are multiple approaches to education, and the best route may involve a combination of techniques. Education on unit policies and teaching time management strategies help reduce stress, so answering call bells or responding to alarms is not as stressful. Educating the family is also beneficial because they are less likely to become stressed out and ultimately relieve the nurses' stress and fatigue (Simpson & Lyndon, 2019). Educating staff on how monitors, sensors, and alarms function specific to the product manufacturer is essential in reducing false alarms. False alarms attribute to non-actionable alarms. A study done by Hravnik et al. (2018) states that an estimated 5-13% of all alarms heard in a given unit are actionable by staff members. The remaining 87% of alarms contribute to distraction, lower client safety, and increase staff fatigue. Reducing false alarms is one significant way to reduce the total alarms heard, alleviate alarm fatigue, and improve client safety (Hravnak et al., 2018).

Overall there has been a significant amount of research on eliminating call light fatigue; as time goes on, the future needs to expand beyond and set priorities. One main priority that comes to mind is the patient's safety. Keeping the patients safe and providing them with quality care are the priorities for future research. Creating a bundle of evidence-based nursing interventions will improve the safety and quality of care provided to the patients. Providing the patient with safety measures will improve their satisfaction and eliminate the stress in the nurse. The decrease in anxiety will help the nurse provide more quality care and be less fatigued (Nelson & Staffileno, 2017).

## **Conclusion**

Alarm fatigue proves to be an issue among healthcare workers that have potentially severe consequences for client safety. Many factors play a role in overwhelming and distracting

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alarms. In this report, we have addressed safety concerns along with ways to fix issues of alarm fatigue. Hopefully, in time, hospitals will implement evidence-based solutions to reduce the number of alarms that nurses hear, reduce fatigue, and improve client care and safety.

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