

# Monitor Alarm Fatigue

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## Question:

For monitor alarm fatigue does the use of multi-sound alarms reduce the risk of nurse alarm burnout as compared with single sound alarms? Monitor alarm fatigue occurs when “a practitioner is desensitized to alarms and alerts” (Hannibal, 2011).



## Method of Study:

A Quantitative research study will be conducted. A pretest will be completed to assess nurses perceived rate of monitor alarm ignorance. Education will be provided on alarm sounds, as well as what is critical vs. non-critical. New alarm systems will be instituted.



## Data collection:

Pre alarm change data including rate of false positives vs. incidence of nurse ignorance to alarms. This could take up to 6 months to get a good data base. Post alarm change data will include rate of false positives, nurse ignorance, rate of alarm loudness before and after new alarm implementation. The post alarm change data could take up to 6 months to collect.

## Why is this important to nursing?:

Reducing the amount and types of sounds that nurses encounter reduces the chances of monitor alarm fatigue from happening. Alarm monitor fatigue is a patient safety concern. False positive alarm rates are as high as 99.4% (Siebig et al., 2010). This can desensitize nurses to the actual important alarms. Reduction in false positive alarms and reduction of alarms altogether can reduce response time to emergencies, improve patient safety and sentinel patient events related to alarm systems fatigue. Studies show there is potential to drop unneeded clinical alarm rates to 43% (Siebig et al., 2010).

## References

Graham, K. C., & Cvach, M. (2010). Monitor alarm fatigue: standardizing use of physiological monitors and decreasing nuisance alarms. *American Journal of Critical Care, 19*(1), 28-34.  
Hannibal, G. B. (2011). Monitor alarms and alarm fatigue. *AACN Advanced Critical Care, 22*(4), 418-420.  
Siebig, S., Kuhls, S., Imhoff, M., Langgartner, J., Reng, M., Schölmerich, J., ... & Wrede, C. E. (2010). Collection of annotated data in a clinical validation study for alarm algorithms in intensive care—a methodologic framework. *Journal of critical care, 25*(1), 128-135.

## Research shows...:

Alarms used in the ICU to date do not project the urgency of a problem with a patient. Multi-sound alarms could help reduce the risk of alarm fatigue, ignoring important alarms, and increase patient satisfaction. (Graham & Cvach, 2010).

## Study subjects:

The main subjects of this study will be nurses in the ICU. Alarms will also be studied and changed for the 14 bed ICU. Patient satisfaction scores regarding sound reduction will also be taken into consideration.

## Limitations:

- Cost of new alarm system
  - Diligence of documentation from nurses
- Number of nurses participating in study

