



# FALSE ALARM: A Danger to Physician Reactivity and Patient Health. Observations at a Community Hospital and Strategies for Improvement

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## BACKGROUND

- Alarm fatigue is defined as the desensitization of a clinician to an alarm stimulus that results from sensory overload (1). This leads to the response from the alarm to be either delayed or completely ignored.
- Despite the intended utility of alarms, multiple studies have shown that the majority of alarms are false or irrelevant in multiple settings including the PICU, and ICU (2,3) with rates of false alarm varying from 72%-99% in the ICU setting and up to 94% in the PICU setting.
- High numbers of false alarms result in a “Crying-wolf phenomenon” (4), in which alarms are ignored due to desensitization, which can lead to disastrous consequences in cases where the alarm is clinically relevant and pertinent to the patient.

## INTRODUCTION

- Our goal was to determine how prominent (if at all) alarm fatigue was at smaller community hospitals with lower patient volumes compared to large academic medical centers (which have reported alarms in excess of 350 per patient per day (5)).
- Our project evaluated and analyzed alarm data at a community hospital and attempted to identify strategies to minimize alarm fatigue.

## METHODS

- Data was collected at a community hospital, Shawnee Mission Medical Center (SMMC) in Merriam, KS.
- The data collected was obtained from the medical-surgical-telemetry-unit, a 28 bed unit.
- Data was collected for a period of four weeks
- Data collection was performed manually by trained nursing staff and study investigators.

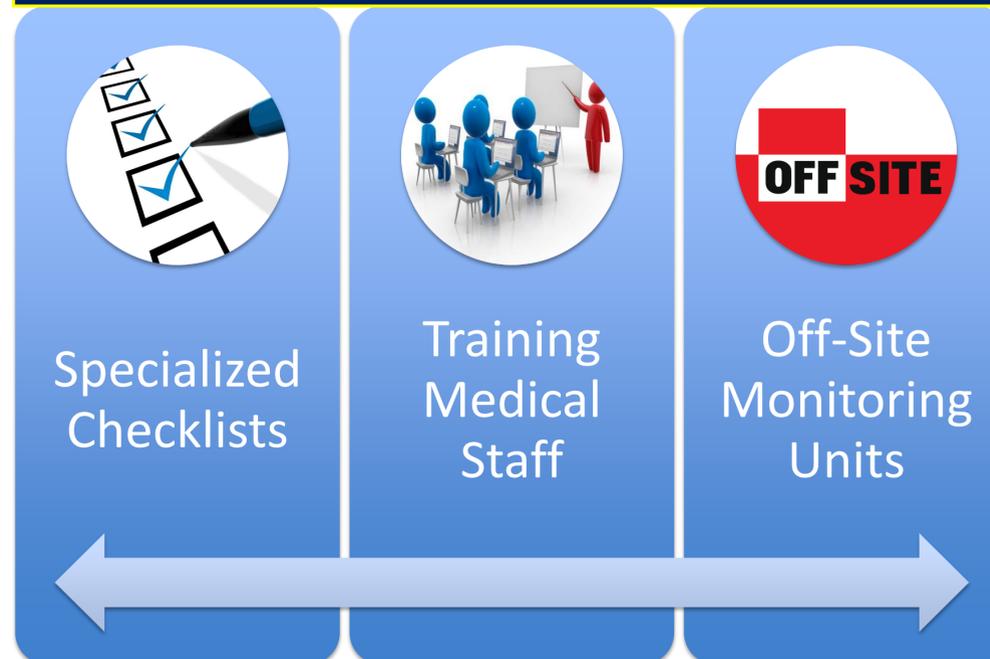
## RESULTS

- Over 348 hours of data was obtained.
- SMMC’s medical-surgical-telemetry floor recorded 20,486 alarms during the 4 week observation.
- This was 58.9 alarms per hour on a unit, and nearly two alarms per bed, per hour.
- This resulted in nearly 24 alarms per patient daily.

## CONCLUSION

- Physicians at a community hospital suffer from a sizeable but significantly lower amount of alarms compared to their tertiary care referral hospital counterparts.
- However, this still results in an immense amount of fatigue from continuous alarms.
- This may lead to diminished patient care and a less favorable work environment for physicians and nursing staff.

## STRATEGIES TO IMPROVE ALARM FATIGUE



## DISCUSSION

- Future work should involve community hospitals creating quality improvement projects to decrease the amount of false alarms in a medical unit, and thus decrease alarm fatigue.
- A separate study revealed that off-site central monitoring units show efficient, equal detection of cardiopulmonary events and alarms with no subsequent increase in cardiopulmonary events (6).
- Training medical staff about alarm fatigue may also lead to reduced alarms (7) and thus alarm fatigue.
- Specialized checklists listing varying factors of alarm modification and response for medical staff resulted in a significant reduction in physiological monitor alarms (8).
- Future work will involve using some or all of these strategies to reduce the burden of alarms at Truman Medical Center-Hospital Hill

## CREDITS/DISCLOSURE/REFERENCES

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