PHILIPS

Clinical evidence series

Reducing alarm rates and improving nurses' experience with intelligent alarm management

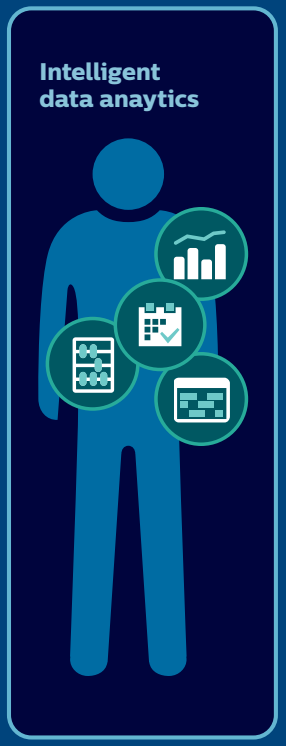
Aims of alarm management:

Enhance patient safety and comfort through reducing alarm fatigue and improving action to important alarms[1,2]

Improve response time and care processes by efficient notification and escalation of alarms[3,4]

Maintain improvements over time by careful measurement and customization of changes[5,6]

Continuous improvement through Alarm Management Clinical Services



People

- Change management through awareness and feedback
- Staff enablement
- Education

Processes

- Understanding status quo
- Measuring and tracking changes
- Guidelines and policies
- Monitoring and escalation procedures

Technology

- On patients
- In patient rooms
- On the units
- On caregiver's smart devices
- Meaningful reporting

Case study: Alarm management using **Intellivue Alarm Advisor**

Testing physiologic monitor alarm customization software to reduce alarm rates and improve nurses' experience of alarms in a medical intensive care unit[7]

A pre-post study was conducted by the Yale School of Nursing in a 56-bed medical ICU at the Yale New Haven Hospital (USA) using **IntelliVue Alarm Advisor**, a customization support software for alarm limit violations. Alarm advisor generates notifications to the caregiver if a medium priority alarm has been silenced for a number of times, or if the alarm limit has been violated within a time window. Philips customized the alarm-management solution deployment, and provided dedicated on-site training for 130 nurses. Although the unit had many alarm reduction strategies in place before this study, the Philips system was associated with positive results including:

Reduction in several medium-priority alarms:

- **-9.3%** heart rate
- **-11.8%** respiratory rate
- **-15.9%** arterial pressure alarms

-32%
A lower number of nurses post-intervention reported that alarms disturbed their workflow.

Shorter alarm duration:

- **-7.8%** heart rate
- **-13.3%** respiratory rate
- **-9.3%** arterial pressure alarms

-43%
A lower number of nurses reported encountering situations where patients needed urgent attention and no one responded to the alarms.

This study was sponsored by Philips Healthcare.

References

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