



**PHILIPS**

Clinical Services

**5 facts**  
about alarm fatigue



**55% of surveyed nurses** indicate that they had probably or definitely been impacted by alarm fatigue.”<sup>1</sup>

## Fact 1

**The burden of alarms** in the hospital environment is problematic.

Alarm frequency is becoming unsustainable. Where individual nurses are required to field 3 or more alarms per minute, and where a single patient may generate >180 alarms over 24 hours, there is clearly a problem. Clinicians and administrators will ultimately be faced with a choice: Hire more people to field an ever-growing clamor of alarms, or reduce the number of alarms.

## Fact 2

**Half of all alarm** signals are not clinically relevant.

Studies show that **non-actionable alarm signals can be as high as 80%** and average about 50% of total alarm signals. Conversely, true actionable alarm sounds are low - **only 17% of alarm signals require intervention.**

*Non-actionable alarm signals are often caused by motion artifacts, manipulation of the patient or patient movement, inappropriate alarm limits or faulty technology.<sup>2</sup>*



## Fact 3

Excess alarms, particularly excess “nuisance” alarms, are **clinically harmful.**

When clinicians are desensitized, alarms are no longer effective, and true positive signals are liable to be lost. In extreme cases, alarm fatigue results in breach of monitoring protocol, with potentially disastrous results. Responding to nuisance alarms takes time away from clinically valuable tasks, and the break in clinician concentration results in risks of other errors.<sup>3</sup>

*An environment of intense alarm frequency can result in serious negative outcomes.*

## Fact 4

Having large number of false positive alarms is **operationally inefficient**.

Responding to **non-actionable alarms may consume 10% or more of nursing time** in a typical unit. In situations of above average alarm frequency and/or a high rate of non-actionable alarms, this could be 50% or higher.<sup>3</sup>

Time lost in this way can be valued in two ways – as a straightforward cost, in which about 10% of nursing wages are spent on false alarms – or as an opportunity cost, in which the time is taken away from other tasks that can improve clinical and operational performance, and patient satisfaction.

*Alarm fatigue is major source of nursing stress, dissatisfaction and burnout. One study found that 91% of nurses believe that noise has a negative impact on their work.<sup>4</sup>*



## Fact 5

There is a clear mandate to improve the **management of alarms**.

Improving the management of alarms is not synonymous with relaxing settings, or taking action to eliminate false positives. The problem of **excessive alarming is multi-dimensional and requires a multi-dimensional solution**.

In some cases, major gains can be realized with simple changes – in other cases, more comprehensive changes to equipment, behaviors and culture are required. Managing the alarm environment often requires substantial organizational effort and change management.

“The Joint Commission International (JCI) has stated that technologies designed to improve patient safety can create new hazards if not carefully implemented and managed.<sup>5</sup> And the ECRI Institute<sup>6</sup> has identified alarms as a top healthcare technology hazard.”

1. According to 2012 Web Survey conducted by Juniper Consulting Group (Junicon).

2. Chambrin, M., et al. "Multicentric study of monitoring alarms in the adult intensive care unit (ICU): a descriptive analysis", Intensive Care Medicine, 1999, V. 12 E:12, pp. 1360-1366.

3. "Just a Nuisance?", accessed 2017, <https://images.philips.com/is/content/PhilipsConsumer/Campaigns/HC20140401%5FDG/Documents/Just%2Da%2DNuisance.pdf>

4. Ryherd, E., et al. "Noise Pollution in Hospitals: Impacts on Staff", Journal of Clinical Outcomes Management, November 2012, V: 19, I: 11, pp. 491-500.

5. "Sound the Alarm: Managing Physiologic Monitoring Systems", the Joint Commission Perspectives on Patient Safety, December 2011, V: 11, I: 12. [http://www.jointcommission.org/assets/1/6/Perspectives\\_Alarm.pdf](http://www.jointcommission.org/assets/1/6/Perspectives_Alarm.pdf)

6. [https://www.ecri.org/topics/Pages/TopicLanding.aspx?topicid=c56c9f6e174e405795a4df49a04e6605&k=\\*%&rf=ECRItopics>equals\('Alarm Management'\)](https://www.ecri.org/topics/Pages/TopicLanding.aspx?topicid=c56c9f6e174e405795a4df49a04e6605&k=*%&rf=ECRItopics>equals('Alarm Management'))

