

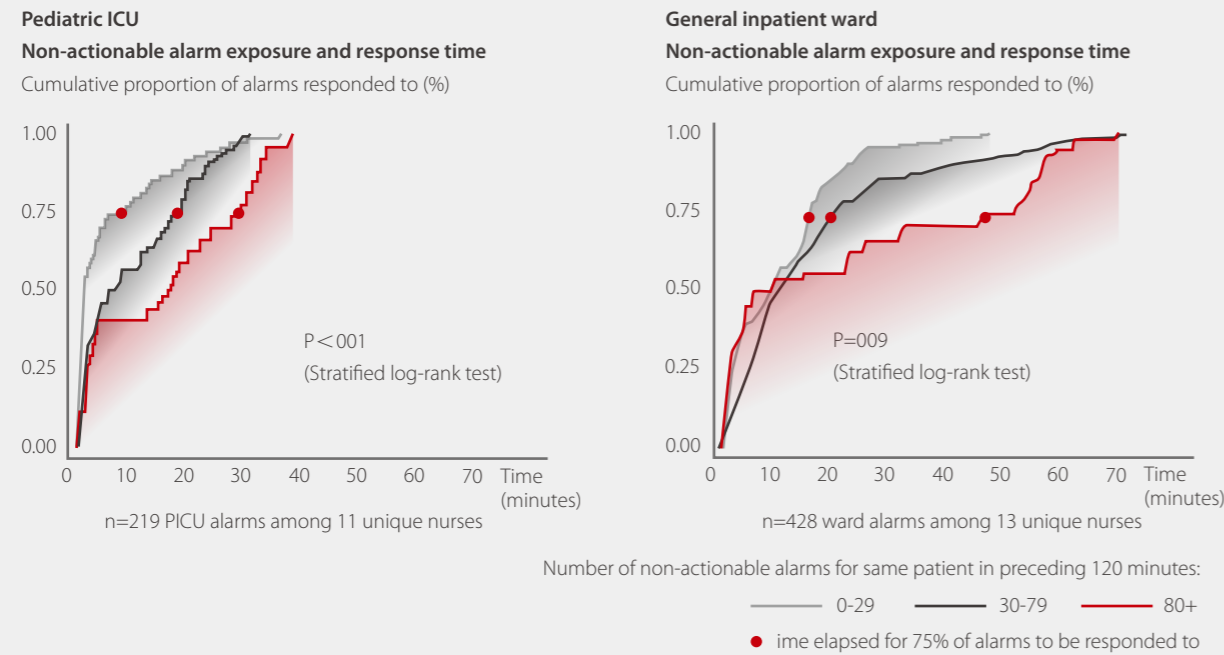
**iAlarm**  
Alarm Management Solution

Intelligent alarm for better patient care



# The Huge Challenge Clinicians Faced

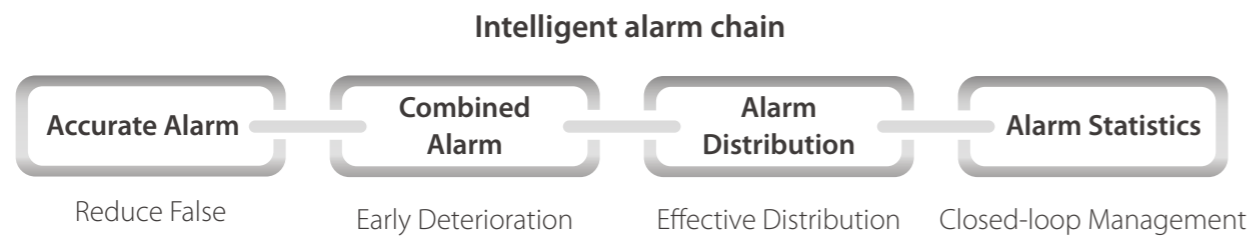
Alarm fatigue is a growing concern in healthcare. Caregivers are faced with a large number of meaningless alarms every day, which makes them lose their sensitivity to alarms, leading to ignoring and missing the really important ones. Alarm fatigue is related to patient safety, ECRI has ranked alarm as the top ten health hazards for many years, and ranked first for 3 consecutive years (2012-2014).



Too many false alarms and the sensitivity of nursing staff is reduced.<sup>[1]</sup>

## Mindray against alarm fatigue

Mindray has been working hard to help minimize the risk of alarm fatigue for several years. Through the intelligent alarm chain, we provide accurate alarm, combined alarm, alarm distribution and statistical solution, caregivers can get more accurate alarms and meaningful notifications at the right time.



[1] Association between exposure to non-actionable physiologic monitor alarms and response time in a children's hospital.

## Accurate alarm

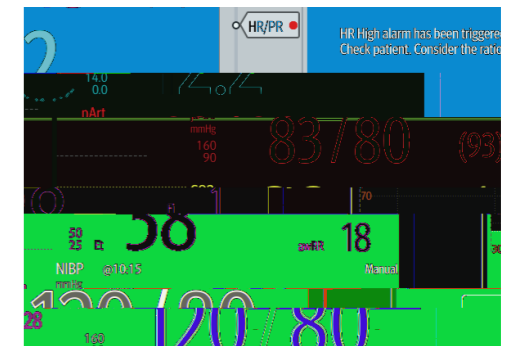
Reduce false alarm

### CrozFusion™

Mindray patient monitors features innovative CrozFusion technology, which combines and analyzes SpO<sub>2</sub>, ECG and IBP to reduce false arrhythmia alarms and increase the accuracy of HR and PR. Arrhythmia false alerts can be significantly reduced.

### Personalized alarm settings

Proper alarm settings can significantly reduce the frequency of insignificant alerts. Mindray patient monitors provides intelligent alarm limits recommendation and back off mechanism based on trend data over a period of time to support personalized threshold settings for different patients.



### Intelligent alarm strategy

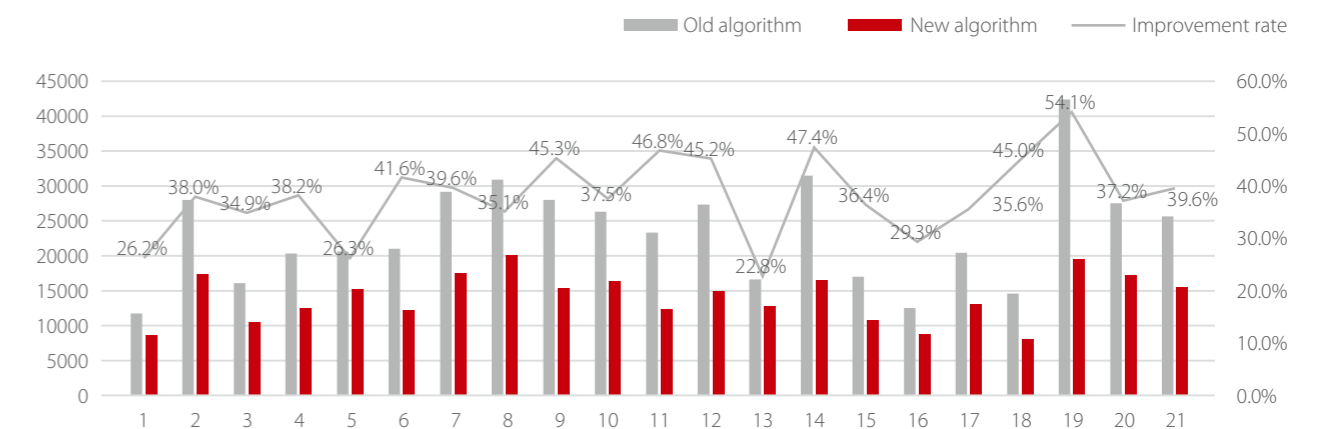
#### ARR Alarm refractor period

During the refractory period, high priority ARR will shield itself and lower level alarms, so as to avoid repeated meaningless alarm.

#### Anti-interference technolog

Reduce transient over limit alarms such as HR, Resp and SpO<sub>2</sub>.

According to clinical trial and statistics, the new algorithm can significantly reduce about 39.7% of the alarms, which greatly reduces the clinical alarm load.



21 beds 44614 hours alarm optimization statistics

# Combined alarm

## Early deterioration of patient's state

Based on research on clinical needs, expert consensus and literature, such as (Shock), (Sepsis 2018 definitions and guideline changes), etc., Mindray provides combined alarms on patient monitor to provide early warning of the deterioration of the patient's state, which is more meaningful than single parameter alarms.

## Technical scheme


By analyzing the real-time status, trend and abnormal duration of parameters, intelligently monitor the deterioration of the patient's condition, and timely remind medical staff through combined alarms.



Multi-parameter state analysis


Abnormal state duration is too long

Parameter trend fluctuates too much in a short time

### 14 preset alarms in 5 systems

Circulatory system  Cardiac

 Nervous system  Infect

 Respiratory system

### Support customization

# AlarmGUARD

## Effective alarm distribution-certified alarm management system

Presenting alarms via bedside equipment is not the most effective way to attract the attention of mobile clinicians. AlarmGUARD can further filter and prioritize alarms and send them to designated care providers via mobile devices.

## All bedside equipment integrated

Integrate all bedside equipment, including patient monitors, infusion pumps and ventilators from Mindray, and also 3rd party devices connected via the BeneLink module, which makes the alarm management of the whole department equipment easier.



## Unified alarm management

Based on the native architecture of the Mindray monitoring system, medical staff can directly obtain the device data and alarms without 3rd party protocol conversion. More comprehensive information can help you to quickly judge the accuracy of the alarm, and make the next step clinical decision.

- CentralStation/WorkStation/ViewStation/AlarmGUARD, multi-product component full-link control alarm risk.
- Synchronize the CentralStation bed list and care group settings to AlarmGUARD to simplify the clinical management process.
- One-click direct transfer of bedside call help event to the rapid response team, reducing rescue wait times.

AlarmGUARD allows caregivers to be assigned to specific patients with

## Alarm Statistics

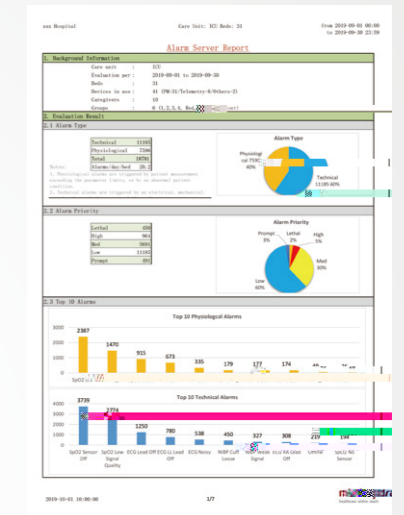
### Alarm closed-loop management

Mindray provides an alarm analysis tool to statistically analyze the alarm data of bedside equipment, including patient monitors, ventilators, infusion pumps, etc. We can help you to evaluate the situation and reduce the occurrence of clinically insignificant alerts.

Support generate PDF or Excel reports automatically, and send to managers via e-mail service

Detailed statistics include but are not limited to the following contents:

- Alarm Type
- Alarm Priority
- Top 10 Alarms
- Source of Alarms from different equipment
- Alarms from different parameters
- Alarm distribution in days/beds/work shifts
- Response to alarms by caregivers
- Remark and summary



## IT-Service level agreement for high quality after-sales support

Mindray clinical services can implement alarm management solutions in your department. Helps optimize configuration and clinical behavior after you have used it for a period of time and exposed problems.

- Clinical needs collection
- Alarm management presets

- Configuration confirmation
- Clinical training
- Clinical use and validation

- Optimize and modify the settings
- Clinical behavior improvement and training

- Clinical research
- Alarm statistics
- Status and goal comparison