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From noise to clarity 3 steps to smarter alarm management

Across NHS hospitals, clinical teams face a daily reality of noise overload. Bedside monitors, pumps, ventilators and nurse call systems produce a continuous stream of alarms and data—often disconnected, repetitive, and clinically irrelevant. Instead of clarity, this creates alarm fatigue, staff stress, and reduced patient safety. This guide outlines three essential steps for NHS Trusts to reduce alarm burden and unlock the full potential of their device data.

Step 1: From alarm fatigue to insight

Studies show that up to 90% of alarms are not actionable. Repetitive alerts lead to desensitisation, automatic responses, and missed critical events. The key is to measure—not just count. NHS hospitals that collect structured data on alarm frequency, type, and timing gain crucial insights into clinical patterns and system weaknesses.

By analysing alarms in clinical context, hospitals can:
- Optimise thresholds
- Safely filter non-essential alarms
- Improve staff focus and patient rest
- Enhance team awareness and satisfaction.

This shift from reactive to reflective care lays the foundation for smarter alarm management.

"Once we visualised the data, people finally saw the patterns. It became about better decisions, not just lowering the volume."
— Maud Bomert, Clinical Informatician, The Netherlands

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Step 2: Build a stronger integration layer

Most NHS wards operate with a mixed fleet of devices from multiple vendors—often using outdated or incompatible protocols. This fragmentation hinders data sharing and workflow efficiency. The Medical Device Data Gateway (MDDG) by itemedical offers a vendor-neutral, scalable integration platform that helps NHS Trusts standardise and unlock real-time bedside data.

Key benefits for NHS environments:
- Complete data capture. Including alarms (every 6 sec), vitals, waveforms
- Standardised output. HL7, FHIR, JSON to EMRs, PDMS or mobile alerting
- Smart filtering. Forward only relevant alerts based on clinical logic
- Flexible protocols. Supports legacy ports, gateways and modern network devices
- Better documentation. Automated vitals to EMR reduces nursing burden.

The MDDG helps NHS hospitals consolidate fragmented systems into one structured, interoperable data layer—improving care coordination and supporting scalable innovation.

Step 3: Code clinical judgement

Gathering data is just the start. The real transformation happens when data is filtered and delivered with clinical intelligence. The MDDG's rule engine enables NHS teams to embed real-world logic into alert management:

- Desaturation alert forwarded only if SpO_2 < threshold for >15 seconds
- Grouped alerts. E.g. five alarms within an hour trigger one message
- Trend detection. Rising heart rate + falling oxygen saturation = early deterioration.

These rules reduce noise, false positives, and non-urgent distractions—while surfacing meaningful alerts that prompt faster intervention. Rules can be adapted to specific care models, patient types or staffing levels—making this approach resilient and NHS-ready.

The NHS context: clarity over complexity

Technology should support—not overwhelm—clinicians. With the MDDG and its intelligent rule engine, hospitals move toward a new standard:

- Where alerts are purposeful.
- Where data supports—not distracts.
- Where only the right alarms are heard, and silence means safety.

Ready to move from alarm fatigue to smarter care?
Start with insight. Build with integration. Act with intention.