

TRANSFORMING NURSE CALL REPORTING

Practical Analytics at the Bedside. The Untapped Power of Nurse Call Data.



In the early 2000s, clinical informatics emerged as a recognized medical subspecialty focused on applying data and analytics to enhance patient care, streamline workflows, and improve outcomes. Although nurse call is often viewed primarily as an alerting and communication tool, many hospitals now recognize that modern nurse call systems generate a rich stream of operational and clinical data that supports these same clinical informatics goals.

When analyzed effectively, nurse call data can reveal patient needs, staff responsiveness, workflow patterns, staffing-level challenges, potential quality gaps, and emerging trends across these areas. Hospitals that leverage this information can turn everyday patient requests into actionable intelligence for continuous improvement. Studies have shown that communication technologies such as call systems provide measurable indicators of caregiver responsiveness and workload patterns, supporting their use in quality-improvement initiatives (1).

Nurse Call Reporting: Untapped Clinical Dataset

Modern nurse call technology records every patient and staff interaction, creating multiple data points for analysis including:

- Type of request - patient call or staff workflow
- Escalation events
- Unit workload patterns
- Date and time of request
- Response time
- Responding caregiver

When aggregated over days, weeks, and months, these data points provide a clear operational view of bedside care delivery—revealing trends that may be missed when examining individual calls and responses in isolation. For example, analysis can identify:

- Peak call volumes by unit that may require staffing adjustments
- Response-time delays during shift change or handoffs
- Recurring, high-frequency requests that point to predictable care needs
- Units with disproportionate call demand relative to available staff

These insights help leaders move from anecdotal feedback to **evidence-based operational decisions**. Research has shown that call system usage patterns can reflect patient demand and nursing workload, providing actionable operational intelligence for hospital leaders (2).

Nurse Call Reporting: Improving Patient Safety

One of the most significant use cases for nurse call data is preventing adverse events, including falls, unmanaged pain, toileting accidents, and patient dissatisfaction.

Evidence suggests a direct correlation between longer staff response times to patient calls and higher rates of inpatient falls and lower patient satisfaction, highlighting the importance of timely responsiveness in preventing adverse outcomes (3)(4).



By monitoring response times and escalation patterns, organizations can identify risk trends before harm occurs. Aggregated nurse call data may indicate:

- Units with consistently slow response times that may require workflow redesign
- Frequent bathroom-related calls that may signal the need for proactive rounding
- High escalation rates that may indicate staffing or communication issues

For example, Chief Compliance Officer at Exalt Health, Kimberly Rudowski, BSN, RN, FACHE, CPHQ, reviews the nurse call data in conjunction with fall event records.

“Records may identify specific days and times when delayed response time is associated with increased falls. These findings affect future adjustments to rounding practices, resulting in improved response timelines and possibly a reduction of inpatient falls.

Also, analysis of toilet-related call patterns may further support identification of high risk patient populations and response delays enabling updated proactive toilet roundings and targeted staffing strategies specifically aimed to mitigate fall risk.

Furthermore, when patients had unusually high call frequencies or urgent calls more often, these patterns were not observed prior to documented clinical reporting. Now, the nursing staff can intervene earlier to address emerging patient needs.”

As modern nurse call has evolved to be a point-of-care solution to streamline workflows between staff, nurse call data can also provide insight into nursing workload and workflow inefficiencies.

Analysis of call types often reveals that many requests fall into predictable categories:

- Bathroom assistance
- Pain management
- Repositioning
- IV pump alarms
- Basic comfort needs

Understanding these patterns enables teams to implement purposeful rounding or proactive care strategies that address needs before patients activate the call system. The result is often fewer interruptions, reduced alarm fatigue, and improved workflow efficiency.

Nursing research has shown that a large portion of nurse call use is related to routine, predictable patient needs, which can be proactively addressed through structured rounding and workflow redesign (5).

In addition, Kimberly Rudowski, BSN, RN, FACHE, CPHQ, indicates *“that before having the ability to see nurse call measurements, during Exalt Health’s shift transitions, there could be missed calls and slower response times. Targeted process changes were implemented to address these gaps, resulting in fewer missed calls and clearer staff accountability during handoff periods. These changes could be as simple as having the nurse assistants start an hour earlier than nursing shift change, so they are available during critical handoff times.”*

Applied quality improvement work from Johns Hopkins University demonstrated that targeted interventions using call system data for improved communication workflows and structured rounding resulted in shorter response times, decreased call volume, and improved patient satisfaction. This reinforces the role of nurse call analytics as a practical tool in real-world quality improvement initiatives (6).

Nurse Call Reporting: Turning Data Into Action

Healthcare organizations increasingly incorporate raw nurse call data into enterprise quality dashboards alongside clinical, safety, and patient experience metrics to support data-driven decision-making.

Solutions like the Jeron Provider Nurse Call can readily export data to 3rd party informatics systems for additional analysis. This saves nurse leaders time and reduces the gap between data collection and corrective actions when needed.

Healthcare already relies on analytic environments supported by clinical informatics teams to monitor key initiatives, including falls reduction, pressure injury prevention, patient experience, staffing optimization, and throughput.

For example, when nurse call events (call type, frequency, response time, escalation patterns) are correlated with other clinical and operational data sources, such as EHR documentation, staffing levels, and patient acuity, organizations can:

- **Identify early indicators of patient risk**

Increased call frequency or repeated urgent requests may signal deterioration, fall risk, or unmet care needs before they are formally documented.

- **Strengthen falls prevention programs**

By aligning toileting requests, response times, and fall incidents, clinical informatics teams can evaluate whether delays or workflow gaps contribute to adverse events.

- **Enhance staffing and workload balancing**

Nurse call activity by unit, shift, and time of day provides objective data to support staffing models and resource allocation decisions.

- **Improve patient experience metrics**

Response times and communication patterns can be mapped to HCAHPS domains such as responsiveness of hospital staff (7).

- **Support workflow optimization and care standardization**

Variability in response patterns across units or teams can highlight opportunities for process improvement and best practice adoption.

Conclusion

Nurse call systems generate a continuous stream of data that reflects real-time patient needs and caregiver responsiveness.

When analyzed thoughtfully, this information can serve as powerful evidence for improving care quality, enhancing workflow, and strengthening patient safety initiatives.

As healthcare systems increasingly adopt smart hospital technologies (8), the future capabilities of utilizing nurse call data as part of clinical informatics could include predictive analytics to identify high-risk patients, automated escalation of workflows, or even AI-driven prioritization of patient requests.

By shifting perspective from call system alerts to actionable data, healthcare organizations can unlock new opportunities to improve both patient outcomes and optimal performance.

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Jeron Provider Nurse Call End User:

Kimberly Rudowski, BSN, RN, FACHE, CPHQ has over 30 years of experience in the field of nursing, healthcare administration, quality and compliance. She is currently the Chief Compliance Officer at Exalt Health.

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