Reducing response times and the number of patients falling with Smart Nurse Call

at Harrogate and District NHS Foundation Trust

A case study demonstrating how Ascom's Smart Nurse Call solution helped improve patient outcomes, staff workloads and hospital costs

Background

Harrogate and District NHS Foundation Trust in northern England is dedicated to improving the health and wellbeing of the local community. With that goal in mind, the Trust aims to provide a working environment that promotes wellbeing, uses digital innovations to integrate care, improve patient outcomes through enhanced quality and safety.

As a result, when the Trust needed to refurbish its Wensleydale ward at its Harrogate District Hospital site – an acute cardiology and respiratory medical ward with a high turnover of patients – at its Harrogate District Hospital site, it decided to embrace the latest digital solutions to create a 'digital exemplar ward'. Having a nurse call system is a statutory requirement, but the hospital went further by installing a smart nurse call solution in partnership with Ascom that would help the nursing team work smarter in delivering care.

Taking on the challenge of patient falls

The Trust decided to undertake a before-and-after study to measure improvements to patient outcomes, staff workloads and even care costs that the new smart nurse call solution could deliver. This study focused on the incidence of patient falls and whether the new smart nurse call solution could help reduce falls and minimize the consequences to improve patient outcomes.

The Trust's hypothesis was as follows:
"If we reduce the response time to patients calling nursing staff via the call system, we will reduce patient frustration and thereby reduce the likelihood of patients leaving beds unassisted, falling and causing harm."

National statistics

In the UK, inpatient falls have been reported at **2.7%**, corresponding to **247,000** inpatient falls annually in England alone[1]

Nearly **100,000** of these patients suffer **bruises, grazes, lacerations** or more **serious injuries**[1]

The cost of treating falls in hospitals in the UK has been estimated at **£630 million** per year[3]

Around **2,000 hip fractures**[2] and **600 other fractures**[1] were reported each year as well as **130 deaths** associated with falls[1]

Achieved results

12.2% (22 seconds) improvement in response times
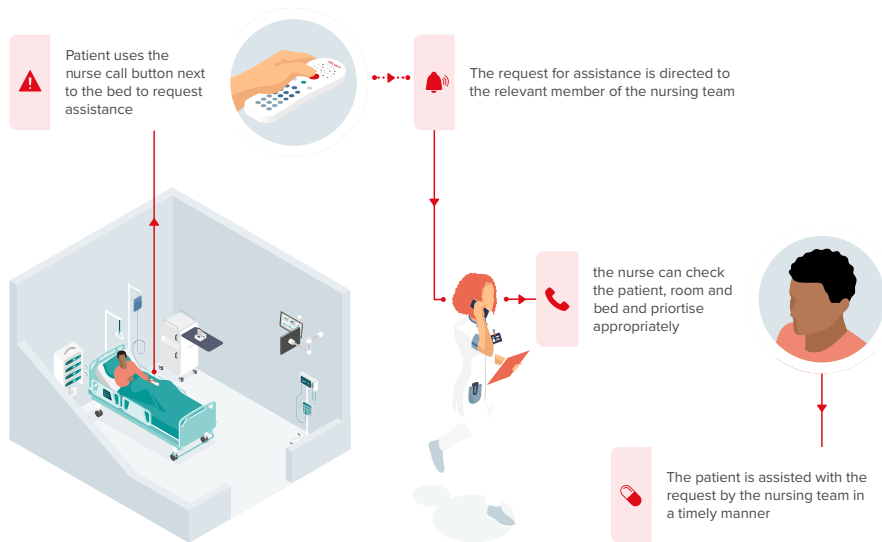
Up to 41% reduction in patients falling

£57K estimated annual cost saving for ward

How Smart Nurse Call works

With traditional nurse call systems, patients request assistance by pressing a nurse call button, which creates an alert sound and light. This alert sound and light is only muted when the nurse responds and turns off the alert.
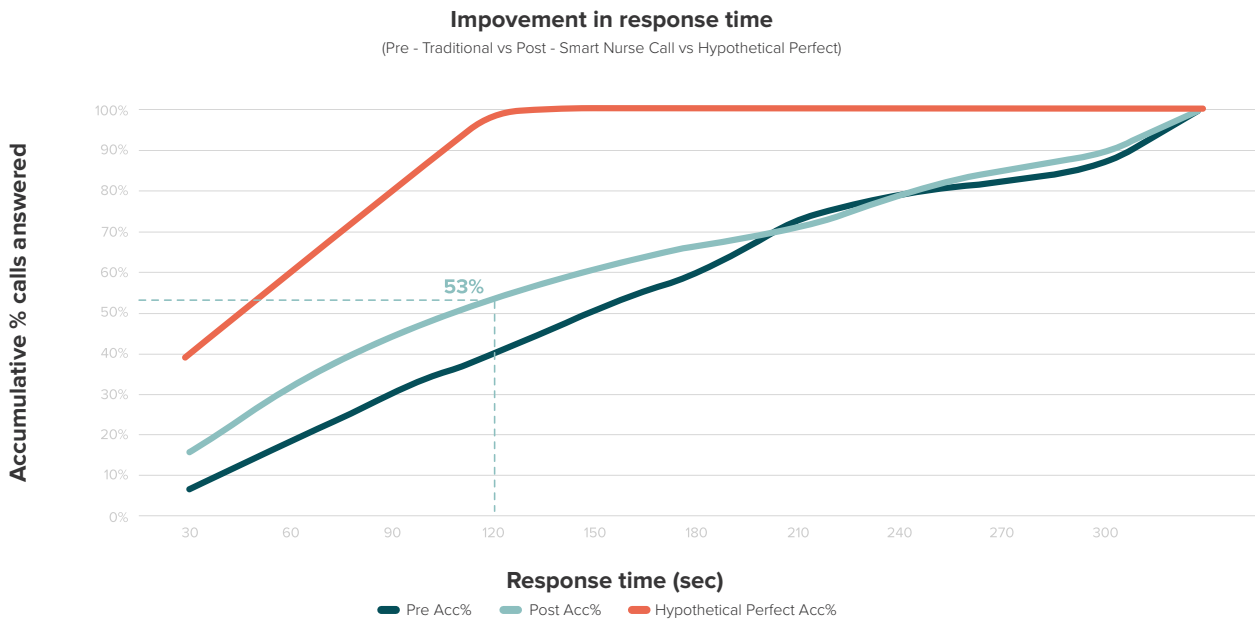
With Smart Nurse Call, the request for assistance is directed to the designated team member's mobile device.

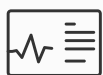# Patient request for pain medication answered on nurse's mobile device

Patient uses the nurse call button next to the bed to request assistance

The request for assistance is directed to the relevant member of the nursing team

the nurse can check the patient, room and bed and priortise appropriately

The patient is assisted with the request by the nursing team in a timely manner

12.2% (22 seconds) improvement in response times

There was a clear improvement in nurse response times when comparing the 3-month period before implementation and the 3-month period after.

Impovement in response time
(Pre - Traditional vs Post - Smart Nurse Call vs Hypothetical Perfect)

Accumulative % calls answered

53%

Response time (sec)

— Pre Acc% — Post Acc% — Hypothetical Perfect Acc%

Response time analysis insights

Critical window in **response time** exists, which when exceeded can lead to **patients falling**

Perfect nurse call response time for all calls **within 2 mins**

20%↑
Up to 20% more calls answered **within 1 min**

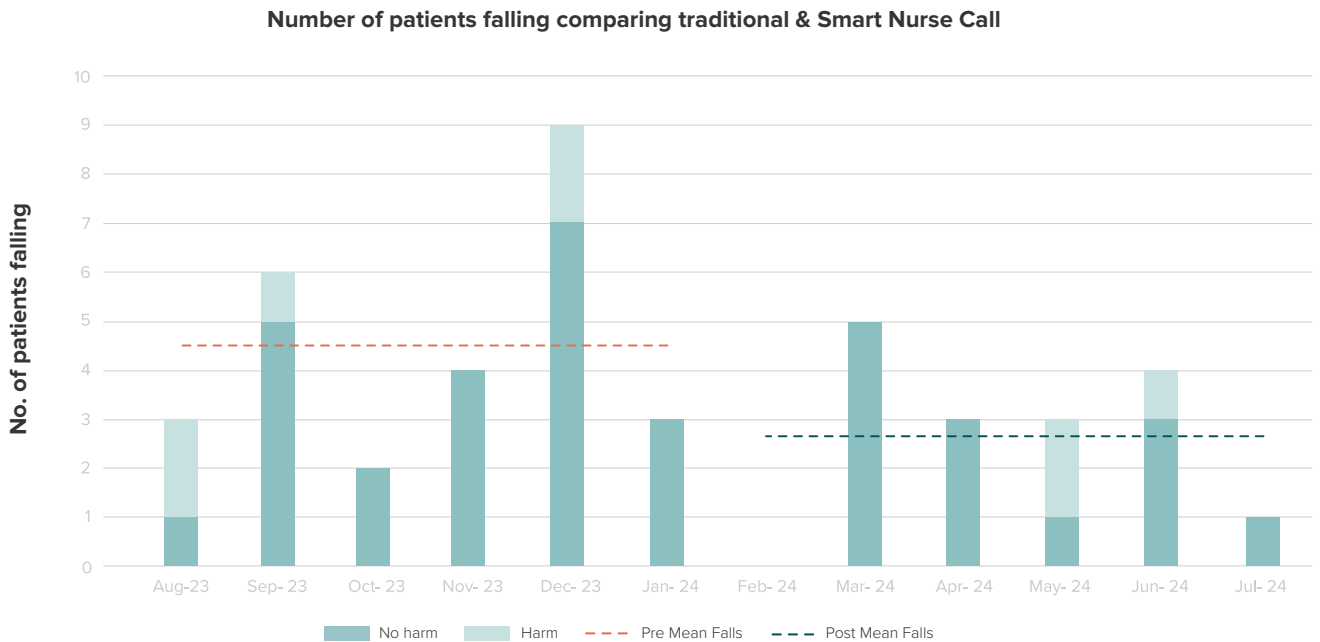**Up to 20%** calls responded to **within 2 mins**

Faster response = falls reduction

Urgent situations – nurse call **not turned off** – patient care **prioritized**

Up to 41% fewer patients falling

Number of patients falling comparing traditional & Smart Nurse Call

Legend: No harm | Harm | Pre Mean Falls | Post Mean Falls

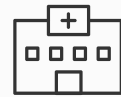## Analysis of patients falling

Zero falls for **6 weeks** following go-live of **Smart Nurse Call solution**

41% reduction in all patients falling **pre vs. post**

Average number of patients falling is **reduced** by **2 per month**

Hospital continues to **measure** and **control response time** and number of patients falling

£57K estimated annual cost saving for ward

NHS improvement suggests that each inpatient fall costs the system £2,600[4]. With an expected 22 fewer patients falling per year through using Smart Nurse Call, this would translate to an annual saving of approximately £57K for this ward alone.
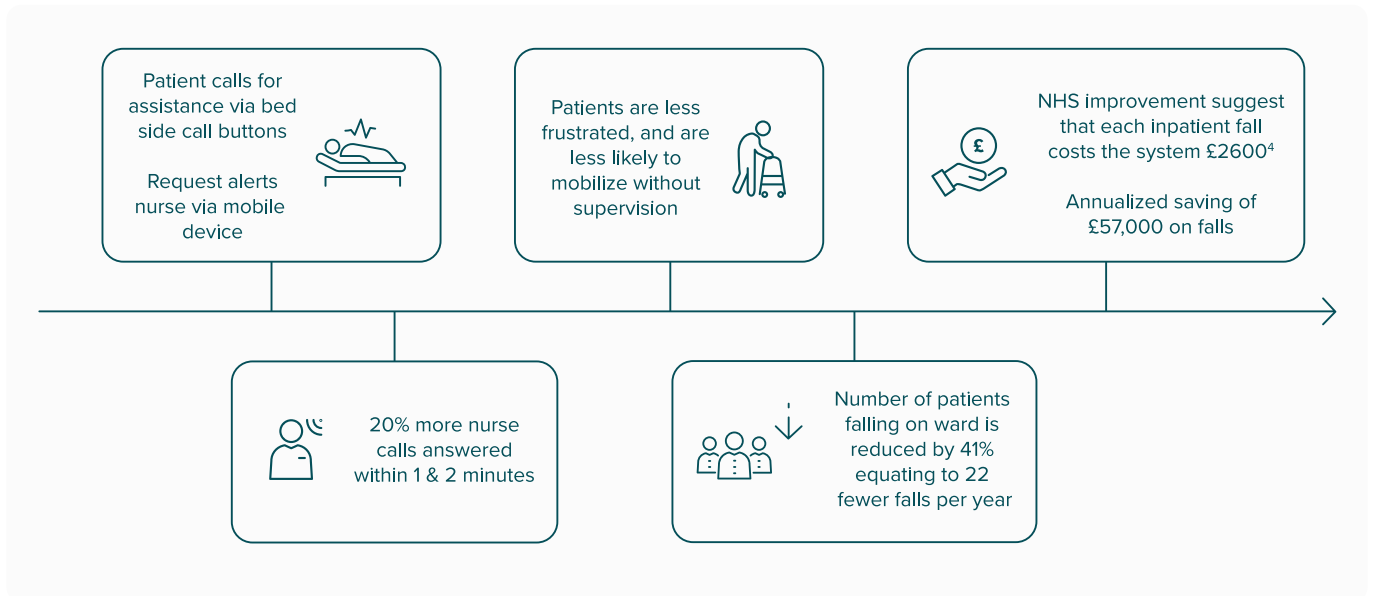
Positive experience for the nursing team

"I get to see which patient is using their call bell and where they are in the ward, and I can prioritize based on my knowledge of the patients' conditions. If I'm busy with another patient, I know someone else will pick up the nurse call. As per our escalation process, it goes to my colleagues letting them know the call bell is unanswered and can redistribute resources appropriately.

Ascom's nurse call solution is great in an emergency, as I can identify exactly where I'm required and can rush to assist just by looking at my Ascom Myco 4 smartphone."

Simon Brazier

Clinical Site Manager, Chief Clinical Digital Officer (Nursing, Midwifery and AHPs)
at Harrogate District and District NHS Foundation Trust

In conclusion

Patient calls for assistance via bed side call buttons Request alerts nurse via mobile device	Patients are less frustrated, and are less likely to mobilize without supervision	NHS improvement suggest that each inpatient fall costs the system £2600[4] Annualized saving of £57,000 on falls
20% more nurse calls answered within 1 & 2 minutes	Number of patients falling on ward is reduced by 41% equating to 22 fewer falls per year	

Smart Nurse Call is designed to enhance patient safety, increase staff efficiency and boost satisfaction for both patients and staff. This is clearly demonstrated when we look at the number of patients falling and their impact on patient outcomes, staff workloads and hospital costs. But this is just one of many areas where quicker response times and more accurate and streamlined workflows can help.

For Harrogate and District NHS Foundation Trust this is also just the first phase in its digitalization roadmap. After implementing Smart Nurse Call and other improvements to patient-nurse communication, the next phases will look at solutions to manage patient deterioration more effectively and develop their clinical and critical communications. All in partnership with Ascom that will continue to provide the necessary products, solutions, training and technical support.

For more information about Smart Nurse Call and Ascom's other communication and collaboration solutions for hospitals and acute care, please visit ascom.com.

References:

1. National audit of inpatient falls 2022. [Jul; 2023]. 2022. https://www.data.gov.uk/dataset/320f3a10-f81b-410e-95b9-ed33bb702a62/national-audit-of-inpatient-falls-2022

2. Interventions for preventing falls in elderly people. Gillespie LD, Gillespie WJ, Robertson MC, Lamb SE, Cumming RG, Rowe BH. Cochrane Database Syst Rev. 2003:0

3. Hospital performance comparison of inpatient fall rates; the impact of risk adjusting for patient-related factors: a multicentre cross-sectional survey. Bernet NS, Everink IH, Schols JM, Halfens RJ, Richter D, Hahn S. BMC Health Serv Res. 2022; 22:225

4. Hospital performance comparison of inpatient fall rates; the impact of risk adjusting for patient-related factors: a multicentre cross-sectional survey
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About Ascom

Our vision is a world where the right information moves people forward. Our mission is to put the right information in the right hands at the right time so that people can make the best possible decisions.

We are a global provider of communication and collaboration solutions for the acute care, long-term care and enterprise sectors. Our solutions are based on intelligent integrations with software and hardware that are open source and compatible with third party solutions. Every single second, our systems generate large amounts of data, which we then turn into useful and actionable information. This helps us to bring data to life for people in the toughest operational environments, ensuring smooth, complete, and efficient workflows.

Ascom is headquartered in Baar (Switzerland), has operating businesses in 19 countries and employs around 1,400 people worldwide. Ascom registered shares (ASCN) are listed on the SIX Swiss Exchange in Zurich.