Reducing hospital-acquired pressure ulcers through focused clinical daily safety huddles in a stroke unit.

CLARK, Laura and CLARK, Richard

Title: Improving Patient Safety by reducing Hospital Acquired Pressure Ulcers through Focused Clinical Daily Safety Huddles in a Stroke Unit: A Service Evaluation

Authors: Richard Clark & Laura Clark

Abstract:

BACKGROUND: Patient safety remains a critical concern in healthcare systems worldwide, particularly in acute settings such as stroke units, where multidisciplinary coordination is essential.

METHOD: This study explores the implementation and impact of a Focused Clinical Daily Safety Huddle (FCDSH) as a non-technical intervention aimed at enhancing patient safety, reducing hospital-acquired pressure ulcers (HAPUs), and improving interprofessional collaboration. The project employed Kotter's eight-step change model to guide the implementation process and utilised Plan-Do-Study-Act (PDSA) cycles for iterative development. Stakeholder engagement, coaching leadership methodology, and a robust data collection process, including run charts, supported the intervention.

RESULTS: Results demonstrated a significant increase in the number of days between reported pressure ulcers, with the ward achieving 142 days without an incident post-intervention compared to a baseline average of 18.2 days. The findings highlight the effectiveness of FCDSHs in improving communication, fostering teamwork, and reducing preventable patient harm.

CONCLUSION: This service evaluation contributes to the growing evidence base for human factors approaches and non-technical skills in clinical practice.

Keywords: Patient safety, safety huddles, stroke unit, human factors, pressure ulcers, interprofessional collaboration, healthcare leadership.

Introduction

Patient safety is a foundational aspect of healthcare provision, yet the complex nature of hospital environments often leads to adverse events. Non-technical interventions, such as focused safety huddles, have emerged as promising tools for addressing latent risks and enhancing team coordination. This service evaluation investigates the introduction of a Focused Clinical Daily Safety Huddle (FCDSH) within a UK stroke rehabilitation ward to reduce the incidence of Hospital Acquired Pressure Ulcers (HAPUs) and to assess broader impacts on communication and collaboration.

Background and Rationale

The continuous drive to mitigate risk and reduce preventable harm is at the forefront of healthcare. However, Sauro et al. (2021) estimate that 9 in every 100 hospital admissions still result in some kind of patient harm, which increases the financial burden and length of stay (Miller & Stockwell, 2024). Within recent years, focused clinical daily safety huddles (FCDSHs) in healthcare settings have been implemented and trialled with a varying amount of success (Ezzeldin et al., 2025; Guo et al., 2022; Pimentel et al., 2020).

Although emerging evidence supports their effectiveness, FCDSHs have often been implemented in practice with limited reference to established academic frameworks or theoretical foundations. More recently, efforts by educationalists and academics have aimed to clearly define what constitutes a clinical safety huddle (Clark, 2025; Lin et al., 2022; Pimentel et al., 2021). Cooper & Lee (2013) describe a clinical safety huddle as a structured gathering of multi-professionals to identify and discuss potential avoidable risks with the aim of timely mitigation. Lubinensky et al. (2015) further define it as a scheduled, periodic meeting of interdisciplinary colleagues to identify and resolve departmental patient-care concerns promptly.

Focusing the safety huddle on a single high-prevalence risk, such as HAPUs, enables clinicians to implement immediate and targeted interventions to reduce the likelihood of harm.

Stephen-Haynes (2024) reports that the global prevalence of pressure injuries is approximately 13% among hospitalised patients. Jia et al. (2023) found that patients with hospital-acquired pressure sores experience a two-day longer hospital stay compared to unaffected patients. Guest et al. (2017) estimated the financial burden of pressure ulcers to the NHS at over £500 million annually, not including an additional £20 million spent on litigation related to pressure ulcer claims (Stephenson, 2019).

Alarmingly, approximately 60,000 deaths each year are attributed to pressure ulcers, highlighting their global clinical significance (AHRQ, 2024). Prevalence rates in critical care settings can range from 12% to 32.7%, the highest across healthcare environments (Cox et al., 2022), underscoring the need for robust prevention strategies.

The United Kingdom National Patient Safety Agency (2011) defines patient safety as; “any unintended or unexpected incident which could have or did lead to harm for one or more patients receiving NHS care.” Whereas Donaldson (2021) argues that patient safety improves the quality of care and can save lives, with the NMC (2018) stating that everyone deserves ‘safe, effective and person-centred care’.

This highlights that patient safety is not only a foundational expectation of care but also a constant area of vulnerability within healthcare systems. The World Health Organisation (2016) reinforces this by stating that patient safety is "the fundamental principle of health care" and warns that "every point in the process of caregiving contains a certain degree of inherent unsafety." Therefore, healthcare providers must remain vigilant and proactive in their efforts to identify and reduce safety risks.

Across the NHS and NHS England, numerous initiatives and safety alerts underscore the prioritisation of patient safety. Emanuel et al. (2008) highlight that while medicine aims to heal, the environments in which it is practiced often introduce risks and harms. This was not widely acknowledged until the latter part of the 20th century, leading to the development of patient safety as a distinct discipline with its own body of knowledge and dedicated professionals.

Crew resource management (CRM), a term originating in aviation, is defined by Skybrary (2014) as "the effective use of all available resources for flight crew personnel to assure a safe and efficient operation, reducing error, avoiding stress and increasing efficiency." In healthcare, CRM has been adapted to emphasise team-based training and communication, and although derived within the aviation industry it is now commonly associated with and widely used in healthcare (Salas et al., 2006; Buljac-Samardžić et al., 2021). In this context, the word “crew” is often replaced with “team” or “multi-professional team” to better reflect the diversity and structure of clinical workforces.

Methods

A coaching leadership style was adopted to engage stakeholders and encourage ownership. Kotter’s eight-step model (Kotter, 1996) informed the change process, while the PDSA cycle (Protzman et al,. 2023) guided implementation and refinement. Data on pressure ulcers were collected retrospectively for 20 data points pre-intervention and compared to post-intervention outcomes using run charts.

Stakeholder engagement was facilitated via a power-interest matrix, and a standard operating procedure (SOP) was co-developed with ward staff. The huddles were designed to be brief (10–15 minutes), inclusive, and focused on patient-specific risks. The initial focus selected by the team was hospital-acquired pressure ulcers.

Setting and Participants

This service evaluation was conducted on a 32-bed stroke rehabilitation ward within a large UK teaching hospital. The ward specialises in the sub-acute management and recovery of patients who have experienced a cerebrovascular event within the preceding six months. The patient cohort primarily consisted of individuals aged 70 years and older, reflecting national trends in stroke prevalence (King et al,. 2020; NICE, 2025). However, the unit also admitted a small number of younger patients (<60), typically with atypical stroke presentations or complex rehabilitation needs.

During the evaluation period, the ward maintained a consistently high bed occupancy rate, ranging from 90% to 98%, which aligns with national pressures on inpatient stroke services. High occupancy levels can pose operational challenges and increase the risk of adverse events, including hospital-acquired pressure ulcers (HAPUs), due to the complexity and dependency of the patient population. This context underscores the critical need for proactive, team-based safety interventions to mitigate risk.

A temporary deviation in ward function occurred during a norovirus outbreak, resulting in an 11-day closure to new admissions. During this period, the patient census fell to 14, approximately 44% of the usual capacity. Although this event represented a short-term disruption to usual service provision, it also presented an opportunity to observe safety huddle implementation during fluctuating operational pressures.

Patients admitted to the ward typically required multidisciplinary support, including physiotherapy, occupational therapy, speech and language therapy, and nursing care. The high acuity and rehabilitation demands made the ward an ideal setting for evaluating the impact of a structured, team-based safety intervention such as the Focused Clinical Daily Safety Huddle (FCDSH)

Ethical consideration

Due to this being a service evaluation, no formal ethical permission was required to be obtained from the organisation. However, the service evaluation proposal was agreed and accepted by the trust's internal governance committee and local HEI ethics approval was obtained. There were no video or taped recordings made of the FCDSHs and staff volunteered to participate freely and without coercion as part of their ongoing efforts to improve patient safety.

This service evaluation project was registered with the organisation's service improvement team and with the patient safety and governance department and it would be correct to highlight that both are keen to look at testing the FCDSH in other areas as soon as possible.

Results

The retrospective data showed a mean interval of 18.2 days between reported HAPUs.

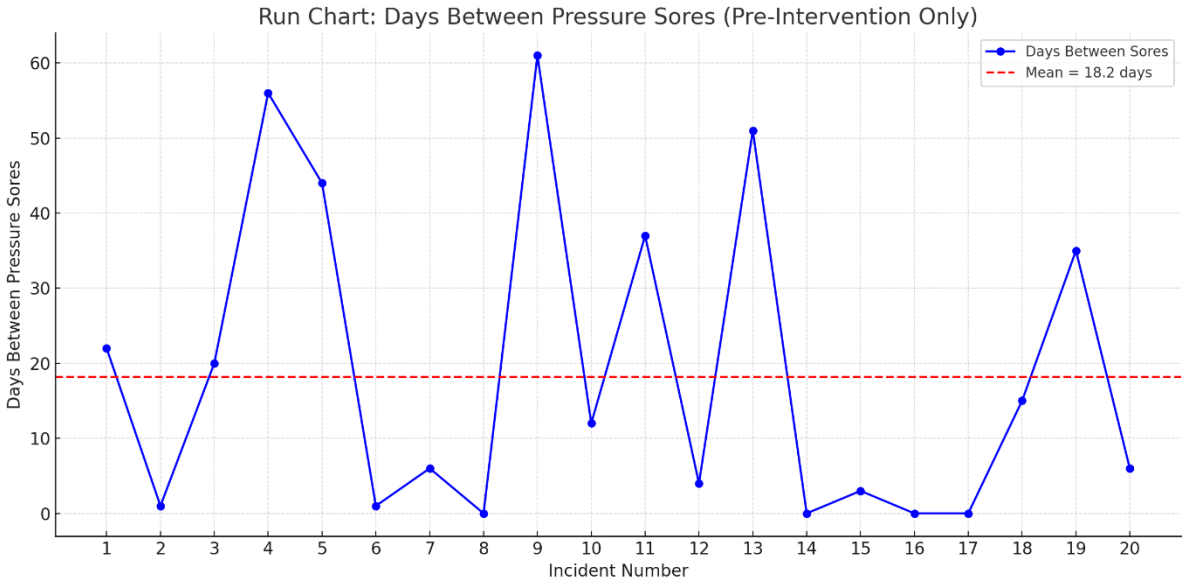

Figure 1.

Retrospective data were obtained from the DATIX incident reporting system for a period of a year (365 days). DATIX is a platform widely used within the NHS for capturing clinical incidents and near misses. DATIX is considered a reliable and comprehensive source of patient safety data, due in part to the emphasis placed on

accurate, timely, and mandatory reporting by staff. This ensured that the baseline data used in the evaluation were both credible and reflective of actual clinical practice within the ward environment.

Retrospective data points were plotted using a run chart so that a mean line could be established. Figure 1.

Following the introduction of the FCDSH, the stroke ward achieved 142 consecutive days without a single reported pressure ulcer, followed by a further 131 days. This represents an initial 659% increase in the days between incidents, suggesting a significant improvement in preventive care practices. Run chart analysis indicated a clear shift above the established baseline, with sustained special cause variation confirming meaningful change rather than random fluctuation. These findings provide strong evidence that the intervention had a significant and non-random impact on HAPU prevention.

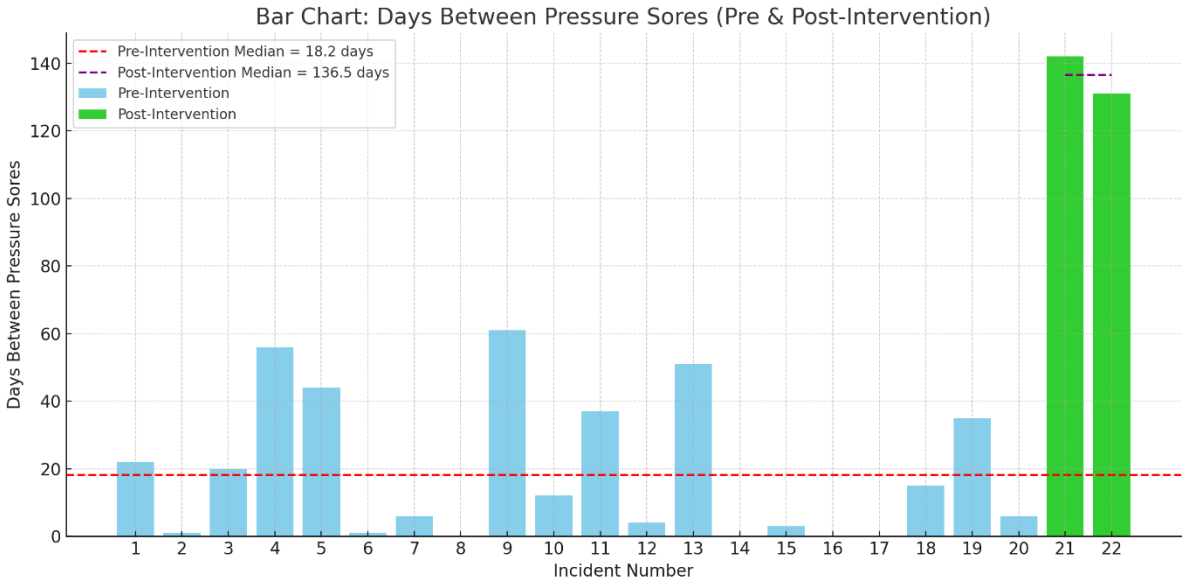

Figure 2.

A total of 20 pre-intervention data points revealed a median interval of 18.2 days between reported hospital-acquired pressure ulcers (HAPUs), reflecting a high degree of variability and inconsistency in preventative care practices. In contrast, the two post-

intervention incidents occurred after 142 and 131 days respectively, producing a provisional post-intervention median of 136.5 days. Although the number of post-intervention data points is currently limited, the significant increase in time between events is indicative of a meaningful and sustained improvement in patient safety following the introduction of the Focused Clinical Daily Safety Huddle (FCDSH).

Figure 2 visually demonstrates this change, with segmented median lines delineating the pre- and post-intervention phases. The data meets the NHS Improvement criteria for special cause variation, suggesting the observed improvement is unlikely to be the result of random variation. Instead, it provides compelling evidence that the intervention had a substantive impact on reducing the occurrence of pressure ulcers. These findings reinforce the value of structured, team-based safety interventions particularly in high-risk environments such as stroke rehabilitation wards.

Qualitative feedback gathered from frontline staff revealed that the FCDSH fostered a heightened sense of vigilance, collective accountability, and proactive care. Staff reported feeling more empowered to identify patients at risk of developing pressure injuries and to implement timely preventative measures, such as repositioning schedules, regular skin assessments, and appropriate mattress usage. The increased visibility of patient safety risks through daily collaborative planning was cited as a key contributor to improved outcomes.

Furthermore, the implementation process catalysed several ancillary benefits. Junior staff reported increased leadership opportunities, and documentation practices were perceived to improve in both timeliness and accuracy. There was also a noted strengthening of interprofessional relationships, attributed to the shared decision-making culture fostered by the huddles. Observational data confirmed that the average duration of each huddle did not exceed 12 minutes, demonstrating the feasibility of integrating FCDSHs into routine workflows without detracting from clinical productivity.

Discussion

The introduction of a Focused Clinical Daily Safety Huddle (FCDSH) resulted in a marked improvement in patient safety outcomes, specifically in reducing the incidence of hospital-acquired pressure ulcers. This intervention also enhanced staff engagement, leadership emergence, and interdisciplinary collaboration. The positive outcomes observed can be attributed to several factors: the alignment of organisational objectives with frontline autonomy, the consistent application of human factors principles, and the structured use of improvement methodologies such as Plan-Do-Study-Act (PDSA) cycles and Kotter's change model.

This evaluation adds to the growing body of literature supporting non-technical interventions as viable tools for improving patient safety. When implemented systematically and with adequate stakeholder engagement, such interventions can generate measurable improvements without requiring significant financial investment. Moreover, the FCDSH approach addresses both latent organisational factors and active frontline risks hallmarks of high-reliability organisations.

Nonetheless, several limitations must be acknowledged. The single-site nature of the evaluation limits generalisability, and the focus on a single outcome measure (HAPUs) restricts broader applicability. The small number of post-intervention data points also necessitates cautious interpretation of sustained change. Future research should explore the scalability of FCDSHs across diverse clinical settings and examine their impact on a broader range of safety indicators, including falls, medication errors, and care escalation.

Conclusion

Focused Clinical Daily Safety Huddles (FCDSHs) offer a pragmatic, low-cost, and scalable approach to enhancing patient safety and interprofessional collaboration within acute and rehabilitation healthcare settings. This service evaluation demonstrates that, when underpinned by human factors principles and structured change management methodologies, FCDSHs can lead to measurable improvements

in patient outcomes specifically a marked reduction in hospital-acquired pressure ulcers.

Beyond the quantitative improvements observed, the intervention contributed to a culture of shared responsibility, proactive risk identification, and strengthened team cohesion. These outcomes reflect the wider benefits of embedding non-technical interventions into daily clinical routines.

The findings from this evaluation provide a compelling argument for the broader adoption of FCDSHs across diverse clinical environments. Further research is recommended to assess their long-term sustainability and to explore their applicability to other patient safety domains.

Conflicts of Interest: None declared.

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