

**Standardizing Post-fall Huddle and Documentation Processes**

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### Abstract

**Problem:** A quality improvement (QI) team within a large nonprofit medical system identified a critical lack of uniformity in fall protocols across its 13 hospitals, affecting fall pattern analysis and resource allocation. The pilot hospital, exemplifying this issue, reported the system's second-highest fall rate in fiscal year 2022, with 439 falls, including numerous injuries and fatalities. **Purpose:** This QI project aimed to standardize post-fall huddles and documentation across inpatient units, with the goal of reducing fall recurrence and lowering both the total number and severity of falls by effectively analyzing causes and targeting prevention strategies at both the micro (individual) and macro (system-wide) levels. **Methods:** Implementation included educating the nursing staff about post-fall huddles, integrating the post-fall form into the hospital's intranet, and incorporating it into the fall management policy to proactively monitor data and implement changes. The huddles focused on identifying falls' root causes and preventive strategies against them. **Results:** Comparing the fall rate during the intervention period against the same 15-week period in 2022, the initiative led to a 37% reduction in total falls (from 94 to 59) and a 59% decrease in injurious falls (from 32 to 15), surpassing the 5% target. During the implementation period, there was only one repeat fall among the 59 fall incidents, highlighting the initiative's effectiveness in prevention. Despite challenges with staff adherence initially (especially in weeks two and three) and later (with week 13 at 14% compliance), the median post-fall huddle adherence rate consistently remained at 100%. **Conclusions:** The standardized post-fall huddle protocol significantly reduced patient falls in the pilot hospital, surpassing initial goals and demonstrating that structured approaches can markedly enhance patient safety and care quality. Continued adherence is essential for maintaining these improvements.

Keywords: Post-fall huddles, patient safety, fall prevention, hospital falls, quality improvement.

## **Standardizing Post-fall Huddle and Documentation Processes**

### **Problem Description**

The quality improvement (QI) team's assessment of a large nonprofit medical system's fall protocols found that each hospital had separate post-fall debriefing processes with no standardized tool in place. For example, one hospital used paper forms, while another used electronic forms, to assess falls and document post-fall procedures. Moreover, each hospital's documentation content is different, which leads to inaccurate system-wide assessments of fall trends or policy flaws, consequently resulting in inefficient resource allocation. These divergences complicate the system-wide detection of debriefing processes, patient harm trends, and quality care gaps among hospitals regarding patient falls.

These divergences arose from the local community hospitals' acquisition processes. Each hospital entered the system with its own policies and healthcare cultures, so bureaucratic integration proved challenging. Out of the 2,577 falls recorded for the medical system in the fiscal year 2022, 711 resulted in temporary minor harm, 43 in temporary major harm, 1 in permanent significant harm, and 4 in death, with abatement costs totaling \$308,553.87 between 7/19/2021 and 6/20/2022.

To initiate the standardization initiative, the QI team selected a community hospital that recorded the second-highest fall rate within the medical system, with 439 falls occurring in fiscal year 2022. These incidents led to 141 minor injuries, 12 major injuries, 1 permanent significant injury, and 2 deaths. The hospital currently uses EHR flowsheets and an incident reporting system to document falls, but this is not a standard practice across the entire medical system. See Figure 1 for detailed fishbone diagram analysis. This QI project's purpose was to standardize post-fall huddles and documentation across inpatient units, with the goal of reducing fall recurrence and lowering both the total number and severity of falls by effectively analyzing causes and targeting prevention strategies at both the micro (individual) and macro (system-wide) levels.

**Available knowledge**

The occurrence of patient falls in hospitals is a significant issue in the United States, with an estimated 700,000 to 1 million falls happening annually (AHRQ, 2021). Falls can result in fractures, lacerations, and internal bleeding, which require further treatment and healthcare resources. However, research indicates that one-third of these falls are preventable, and effective communication of fall risks between healthcare providers and patients, as well as among healthcare providers, can help reduce fall incidents (AHRQ, 2021). To combat this trend, standardized post-fall huddles and documentation can help healthcare providers determine the reasons for hospital falls and prevent them from recurring (Jones et al., 2019; Reiter-Palmon et al., 2015; Tzeng et al., 2015; Wolf et al., 2013). Please refer to Table 1 and 2 for evidence review and synthesis.

Several studies have shown that a standardized post-fall huddle and documentation process can be effective in preventing falls. Wolf et al. (2013) implemented a standardized process for post-fall huddles and documentation, which reduced hospital falls by 22% and hospital falls with injury by 37%. Reiter-Palmon et al. (2015) used post-fall huddles to reduce recurrent hospital falls, with significant decreases in the number of falls with injury. Tzeng et al. (2015) showed that summarizing patient fall data in an actionable format can help reduce the total patient fall rate. Shorr et al. (2008) demonstrated that post-fall huddles capture more fall incidents than incident reports alone, while Gallion et al. (2015) showed that the Morse Fall Scale, along with post-fall huddles, is better suited to direct post-fall interventions. To further support the standardization of post-fall huddle and documentation processes, the Post-Fall Multidisciplinary Management Guideline provides a comprehensive approach to managing patients who have fallen, with recommendations for assessment, management, and prevention strategies (UNMC, 2018).

## **Quality Improvement Framework**

To standardize post-fall huddles and documentation processes, the PARIHS (Promoting Action on Research Implementation in Health Services) framework can identify the key elements of evidence, context, and facilitation (Kitson et al., 2008). Evidence includes the best practices for fall prevention, post-fall huddles, and documentation processes, as outlined in the literature synthesis. The QI team sought to assess the project site's organizational and social context and to identify what may block or facilitate this project's implementation. To accomplish this, the QI team gathered feedback from stakeholders, such as frontline staff and leadership, and analyzed its organizational culture and resources. Facilitation can involve utilizing change agents and coaching staff, providing ongoing education, and training, and continuously evaluating and adjusting the process. The PARIHS framework can facilitate an evidence-based, contextually appropriate, and well-supported implementation, improving patient safety outcomes and healthcare delivery (Kitson et al., 2008). See Figure 2 for an illustration of the PARIHS framework.

## **Methods**

### **Context**

This project is part of a larger initiative to standardize how falls are handled and documented across the medical system. The project took place at a pilot site with 259 licensed beds, encompassing all adult inpatient units in the hospital. This effort was concentrated on the site's medical-surgical, intermediate care, and intensive care units, targeting a diverse range of care settings to comprehensively assess the initiative's impact. Annually, this site manages approximately 17,000 admissions and employs around 4,000 individuals. This pilot hospital registers the second-highest fall rate in the medical system. Presently, the institution uses EHR flowsheets and an incident reporting system to record falls. The organizational culture of this pilot hospital is anchored in evidence-based practices, with robust

structures in place to bolster QI initiatives. The hospital has formed a dedicated fall team committee, which the hospital's top leadership regularly attends. Consequently, resource allocation and project approvals are streamlined to ensure optimal efficacy. Additionally, unit nurse managers actively participate in weekly fall meetings, facilitating data-driven decisions that aim to augment fall mitigation strategies and ultimately enhance patient safety outcomes.

### **Intervention**

The primary objectives of this intervention were to achieve 100% compliance in post-fall debrief completion during the implementation period, reduce both the overall fall rate and the injurious fall rate by 5%, and eliminate repeat fall incidents during the 15-week project span. This was accomplished by standardizing the post-fall huddle and its accompanying documentation, thereby ensuring comprehensive patient information was readily accessible to the care team. This made identifying fall trends and well-informed systemic changes more conducive to fall prevention.

The initial phase involved comprehensive training for primary nurses and charge nurses working across 12-hour morning and evening shifts, with a focus on the revised post-fall procedures and post-fall debrief tool. Specialized training was imparted to nursing coordinators to ensure their competency in the newly updated procedures and the post-fall debrief tool. After the training sessions, the post-fall debrief tool was placed on the hospital's intranet and was integrated into their fall event protocols.

Following an inpatient fall, the protocol mandated the immediate initiation of the DRSABCDE (Danger, Response, Send for help, Airway, Breathing, Circulation, Disability, and Exposure) first-aid action plan by the primary nurse, supplemented by vital sign monitoring, neurological evaluations, and injury assessments. Office clerks, charge nurses, and primary nurses were all responsible for notifying nursing coordinators of any fall incidents, to ensure prompt reporting and intervention. Nursing coordinators were tasked with conducting the post-fall huddles to delineate each fall's root causes, type,

and preventability, as well as record any sustained injuries. Moreover, the nursing coordinator was required to complete the post-fall debrief tool, which was subsequently shared with the unit manager. The unit managers' and frontline staff's interaction cultivated a cooperative ethos and helped pinpoint and rectify the reasons behind patients' falls. It also fostered a culture of accountability and an unflagging commitment to patient fall prevention from both the leadership and frontline staff. See Figures 3 and 4 for current and desired process map.

The QI team deployed several strategies and tactics to effectively implement the project. One key strategy involved securing formal commitments, including written agreements from pivotal partners, specifying their roles in the project's fruition. This measure elucidated the project's objectives to all stakeholders, thereby making this project's success a shared endeavor. To maintain an open channel of communication with stakeholders, periodic email correspondences and weekly meetings disseminated the collated data. Furthermore, the QI team offered educational sessions to stakeholders so that they were kept abreast of the post-fall huddle process and its subsequent implementation.

### **Measurement**

The project aimed to demonstrate the effectiveness of the aforementioned changes in practice through one process measure and three outcome measures. Post-fall huddle staff adherence is the process metric. Formally, it is the percentage of times post-fall debriefs have been documented and put into practice. Operationally, it is the total number of patient falls with corresponding post-fall debriefs and documentation, divided by the total number of patient falls, multiplied by 100. This project's post-fall huddle debrief tool was developed from a comprehensive review of literature and tailored to meet the specific requirements of the system. It is important to note that, currently, there is no existing post-fall huddle debrief tool that has been rigorously tested for reliability and validity. The tool facilitated the

post-fall huddle team's efforts to identify the root cause of each fall, and then to devise effective strategies to prevent future fall incidents. See Appendix A for the post-fall debrief tool.

Outcome metrics assessed the overall performance of the post-fall huddle process. These metrics comprised the total fall rate, the rate of injurious falls, and the rate of repeat falls. The total fall rate was defined as the frequency of patient falls during their hospital stays, and it was calculated per 1,000 inpatient-days. For the purposes of this project, a fall was delineated as an unplanned descent to the floor, regardless of whether an injury was sustained, and included falls precipitated by physiological or environmental factors. The rate of injurious falls, similarly calculated per 1,000 inpatient-days, pertained to falls which incurred physical injuries, irrespective of the degree of severity (be they minor, moderate, major, or fatal). A repeat fall was characterized as more than one fall experienced by a single patient during his or her hospital stay. See Table 3 for detailed outcome goals.

The comparison period data for total falls, injurious falls, and repeat falls, from September 4, 2022, to December 11, 2022, had been previously collected by the hospital's staff. During the implementation phase, unit managers forwarded post-fall debrief tools, completed by nursing coordinators, to the fall team, the clinical site representative (CSR), and the project lead for data processing. The project lead was then responsible for inputting the data into REDCap, a HIPAA-compliant platform, for analysis. To remain abreast of new fall incidents, the project lead was required to attend daily briefings from Monday to Friday and to review patient charts and incident reports.

### **Ethics**

To ensure ethical integrity, all patient data analyzed in the scope of this project were coded, and access to the collected data was restricted solely to team members directly involved in the project. Further safeguarding confidentiality, data extracted for analytical purposes were coded. Only the quality improvement project lead had access to the identifiable raw data and had it solely for conducting

analyses. Protective measures for patients' privacy extended to the digital realm, where all computers and electronic formats employed by the project were secured with the organization's approved password protocols.

It should be noted, however, that the outcomes of this project are not universally applicable beyond the context of this medical system, given that the tool and interventions were uniquely adapted for the system. Aggregated findings of the project were reported back to the involved site to inform ongoing quality improvement measures. With appropriate permissions, findings were also disseminated externally to contribute to the wider body of knowledge.

The Human Research Protections Office (HRPO) of the University of Maryland School of Medicine's Institutional Review Board (IRB) determined that this project constituted Non-Human Subjects Research, thus complying with the associated ethical standards. No conflicts of interest were declared in relation to this project.

## **Results and Analytics**

### **Results**

In the project's first week, the pilot site recorded five falls, including a repeat fall and two injuries, all with post-fall follow-up procedures. The second week saw a reduction to three falls, none of which were repeats or caused injuries, though only one received the full post-fall follow-up (33%). The third week saw four falls, one injurious, with 50% receiving post-fall huddles and documentation. This pattern continued into the fourth week with four falls, none injurious or repeated, and 100% receiving complete post-fall follow-ups. Week five observed a decline to one non-injurious, non-repeat fall, which was fully followed up post-fall. Week six had three falls, none injurious or repeated, each receiving a full post-fall follow-up. The seventh week showed a slight increase to three falls, one injurious, all followed up with the required post-fall procedures. Week eight and nine reduced to two non-injurious,

non-repeat falls, both fully followed up post-fall. Cumulatively, that amounted to six consecutive weeks of 100% adherence.

However, week ten recorded four falls, one injurious, and only 50% adherence to post-fall protocols. Week eleven reported five falls, two injurious, and 60% post-fall follow-up adherence. Week twelve had six falls, three injurious, and an increase in post-fall staff huddle adherence to 67%. Week thirteen saw seven falls, two injurious, but just 14% followed the post-fall protocol. By contrast, week fourteen had six falls, one injurious, and 100% adherence to post-fall follow-ups. Week fifteen concluded with three falls, none injurious or repeated, but only 67% received post-fall follow-ups. See Table 4 for more details.

Figure 5's run chart showcases the post-fall huddle staff adherence percentage, reflecting a strong initial engagement with 100% adherence in the first week. However, in the second week, adherence sharply dropped to 33%, mainly due to managerial turnover in one unit, which interrupted the huddle process. The third week's adherence rate was not much better at 50% for post-huddle documentation. From the fourth week onwards, adherence notably recovered, maintaining 100% compliance until week ten. However, compliance then dipped to 50%. In week eleven, staff adherence rose to 60%. Week twelve saw staff adherence increase to 67%. Week thirteen marked the lowest point, with adherence decreasing to 14%. This dip, as indicated by run chart analysis, aligns with high patient turnover, understaffing, and holiday-related leadership absences. Encouragingly, week fourteen marked a return to 100% adherence, showcasing the staff's resilience in re-engaging with the protocol after facing disruptions. The data collection concluded with week fifteen at a 67% adherence rate. Although the run chart analysis shows periods of non-adherence, the overall commitment is strong, as seen by the high median adherence rate of 100%. The stable adherence percentage from weeks four to ten implies a period of effective and consistent practice. The fluctuations observed from week ten to thirteen seem to

stem from transitory challenges and not persistent systemic issues. The subsequent recovery in adherence underscores the team's capacity to realign with the huddle process following disruptions. The ongoing commitment to post-fall huddles and documentation enhances fall prevention strategies and improves the system's effectiveness in mitigating factors that contribute to falls.

Figure 6's run chart offers an analysis of the total fall count, highlighting week thirteen as an astronomical point with the highest number of falls at seven incidents. Conversely, the lowest fall count was recorded in week five, with a single incident. The median number of falls throughout the project was four. Initially, there was a downward trend in the total number of falls, characterized by minor fluctuations—either an increase or decrease of one or two incidents until week eleven. However, from week eleven to thirteen, there was a sharp increase in fall incidents. This surge can be attributed to high patient turnover, a temporary staffing shortage, and managerial absences due to holidays. In fact, a significant portion of the falls in week thirteen (four of the seven) occurred on November 25, the Saturday of Thanksgiving weekend. The number of falls decreased to six in week fourteen and further down to three in week fifteen. Comparing this data with the same period from the year 2022 showed marked, evident improvement. The 2023 intervention period registered a total of 59 falls, compared to 94 in 2022, a 37% reduction. The fall rate also decreased significantly from 4 falls per 1,000 inpatient-days in 2022 to the post-intervention rate of 3.5. This reduction is credited to the effective identification and correction of factors contributing to falls, facilitated by the implementation of post-fall huddles and subsequent preventative measures. Initially, the project aimed for a 5% decrease in falls, so the results far exceeded expectations.

The run chart in Figure 7 illustrates the injurious fall count, which peaked at three incidents during week twelve, an occurrence that stands out as an astronomical point. The median number of injurious incidents throughout the period was one. The trend generally showed a decrease in injurious

falls, with minor one-point fluctuations until week eleven. A spike in injurious incidents occurred in week twelve, followed by a downward shift starting from week thirteen and continuing until week fifteen, which recorded zero incidents. Thus, the intervention period's count of injurious falls stands at 13, a 59% reduction from the 32 incidents recorded during the same period in 2022. The 2023 fall rate of 0.8 per 1,000 inpatient-days was a massive improvement over the 2022 rate of 1.4 per 1,000 inpatient-days. This decline demonstrates how effectively interventions address systemic issues that lead to falls, particularly injurious ones.

Concerning repeat falls, as illustrated in Figure 8, there was only one such incident throughout the entire project period, which occurred during the first week. Subsequent weeks all reported zero repeat falls. The repeat fall rate was noted at 0.1 falls per 1,000 inpatient-days. Prior to this project, the site did not consistently track repeat falls; however, available data from fiscal year 2022 recorded 37 repeat falls. The project's outcome, with only one repeat fall, suggests that the post-fall huddles are effective in preventing the recurrence of falls by assisting frontline staff in understanding and mitigating their root causes.

## **Discussion**

The project's results far exceeded the initial goal of a 5% reduction in falls, marking a significant success that surpasses outcomes previously reported by other studies (Jones et al., 2019; Reiter-Palmon et al., 2015; Tzeng et al., 2015; Wolf et al., 2013). This success underscores the effectiveness of the implemented approach in addressing factors leading to falls. The post-fall huddles were particularly effective, with only a single repeat fall among the 59 recorded incidents, highlighting their role in analyzing causes and targeting prevention strategies. Furthermore, streamlining the post-fall huddle process has facilitated more informed decision-making and improved the efficiency of preventive measures.

The challenges encountered during the implementation phase were transient factors, such as high patient turnover, understaffing, and leadership gaps during holidays, rather than systemic issues with staff commitment or with the post-fall huddle process, itself. This was particularly evident in weeks ten to thirteen, where high fall counts were recorded, coinciding with the project's lowest adherence rates. Understaffed units risk foregoing huddles in order to save time on more pressing matters, but this was not directly quantifiable despite being observed, since such data were not available for either the intervention or the comparison period.

The outcomes achieved through this approach will be disseminated for system-wide adoption to elevate patient safety and care standards, while also contributing valuable insights into the broader body of knowledge. Furthermore, the post-fall debrief tool and associated practices are set to become a part of the system's institutional policy, ensuring lasting and improved care processes and outcomes. This strategic move towards standardization and sustainability not only significantly advances fall management, but also sets a new benchmark for patient safety protocols within the medical system.

### **Conclusion**

The post-fall huddle process at the selected pilot community hospital has markedly improved the management of falls there. The data presented indicates a significant reduction in the total number of falls, injurious falls, and repeat falls when compared to the comparison year's figures. The intervention exceeded the initial goal of a 5% reduction in falls. It also achieved a substantial 37% decrease in total falls and a 59% reduction in injurious falls. These figures testify to the successful identification and remediation of factors contributing to them. Additionally, the singular occurrence of a repeat fall underscores the effectiveness of post-fall huddles in dissecting the causes of falls and in formulating and executing targeted prevention strategies. While the initial weeks and some holiday weeks posed some

challenges with adherence, subsequent recoveries to full compliance highlight staff commitment to the processes and point towards a sustained improvement in fall management.

The project's outcomes have bolstered patient safety and showcased the potential of targeted quality improvement initiatives to effectuate significant changes in clinical practice. These outcomes have been so persuasive that the practices are being adopted as system-wide policy by the medical system that encompasses the hospital where this QI project was conducted. It is essential to sustain these practices to maintain the downward trend in fall rates and to promote an ongoing culture of safety and quality enhancement.

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## Tables

**Table 1**

*Evidence Reviews*

Citation: Reiter-Palmon, R., Kennel, V., Allen, J. A., Jones, K. J., & Skinner, A. M. (2015). Naturalistic decision making in after-action review meetings: The implementation of and learning from post-fall huddles. <i>Journal of Occupational and Organizational Psychology</i> , 88(2), 322–340. doi:10.1111/joop.12084					Level III – Quality B
Purpose/ Hypothesis	Research Design	Sample – Population, Size, Setting	Intervention/ Procedures	Primary Outcome/Measures	Results/Conclusions
<p>The study sought to better understand naturalistic decision making (NDM) in health care and how after-action reviews (AARs) can serve as learning tools in error reduction. It focused on post-fall huddles as a means to learn from mistakes and reduce patient falls.</p> <p>The study entertained four hypotheses: (1), that the use of self-guided post-fall huddles will increase over time; (2) that post-fall huddles will reduce the percentage of task, judgment, and</p>	Retrospective cohort design.	<p><u>Setting:</u> 17 small rural critical access hospitals in a Midwestern state.</p> <p><u>Sampling Technique:</u> Convenience sampling.</p> <p>226 patient fall event reports from the setting hospitals were collected (M = 13.29 per hospital, range 3–31), dating from August 2012 to November 2013.</p> <p><u>Inclusion Criteria:</u> The hospitals had to be critical access hospitals that were at least 35 miles apart from each other. They also had</p>	<p>The study reviewed how post-fall huddles were implemented and the outcomes from them over three periods – from August 2012 to January 2013, from February 2013 to July 2013, and from August 2013 to November 2013. These time periods covered three separate 6-month periods. The hospitals had sufficient time within those periods to collect fall event reports, hold post-fall huddles, and change their fall risk reduction programs. These periods also provided enough fall data for analysis.</p> <p>This study’s project emphasized standardizing fall event information via a standardized form that was filled out by hospital staff.</p>	<p>Researchers used chi-square analyses to verify or falsify the four hypotheses.</p> <p>Chi-square tests were used, first, because patient falls are rare, even across a sample of 17 hospitals over the total period and within each period. Second, they were used because the data was categorical (e.g., whether a post-fall huddle occurred).</p>	<p><u>Statistical results:</u> In response to hypothesis (1), self-guided post-fall huddles increased significantly. The chi-square analysis showed that the post-fall huddle rate and the project time period strongly correlated (<math>\chi^2 [2, N = 226] = 35.56, [p &lt; .001]</math>). Post-fall huddle rates increased 40% in the first period, and over 80% in the third period.</p> <p>In response to hypothesis (2), the chi-square analysis showed that only the percentage of task errors (<math>\chi^2 [2, N = 135] = 7.89 [p = .02]</math>) and coordination errors (<math>\chi^2 [2, N = 135] = 8.44, [p = .02]</math>) decreased significantly. Judgment errors, however, did not (<math>\chi^2 [2, N = 135] = 1.00, p [p = .61]</math>).</p> <p>In response to hypothesis (3), the chi-square analysis indicated no significant relationship between the project’s</p>

<p>coordination errors; (3) that identification of the aforementioned errors will improve as a result of post-fall huddles; and (4) that post-fall huddles will reduce the number of unassisted and injurious falls.</p>		<p>to have 25 or fewer patient beds and average patient stay durations under 4 days.</p> <p><u>Group Homogeneity:</u> The group was homogeneous. Refer to Table 1 for the composition of post-fall huddle teams' characteristics.</p> <p><u>Power analysis:</u> Not shared.</p>	<p>Each form included a post-fall huddle component to identify and reflect on errors and interventions to reduce patient fall risk.</p> <p>The standard reports followed each fall event, and a representative from each hospital forwarded secure copies of these reports to the researchers for analysis. The data from the event reports and post-fall huddles were manually input into a Microsoft Access database and verified by a fellow researcher.</p> <p>Researchers called or emailed members of the fall risk reduction team to clarify questions over some fall event reports and post-fall huddles. Researchers were also available to answer questions regarding the standardized form.</p> <p><u>Intervention Fidelity:</u> A researcher for this study reviewed each report and post-fall huddle and independently</p>	<p>duration and staff identification of errors (task: <math>\chi^2 [2, N = 135] = 3.93, [p = .14]</math>; judgment: <math>\chi^2 [2, N = 135] = 0.51, [p = .77]</math>; coordination: <math>\chi^2 [2, N = 135] = 1.62, [p = .44]</math>). Post-huddle teams could accurately identify two-thirds of their task errors, but only half of their judgment errors, and only one-third of their coordination errors.</p> <p>In response to hypothesis (4), the proportion of injurious falls and less adverse falls swayed significantly toward the latter (<math>\chi^2 [2, N = 135] = 8.50, [p = .01]</math>). The trend showed that more patient falls were assisted in correspondence to the increase in fall reporting and post-fall huddles. The relationship between the project duration and the percentage of both kinds of falls was marginally significant (<math>\chi^2 [2, N = 135] = 5.70, [p = .06]</math>). These results suggest that injurious falls become less frequent.</p> <p><u>Clinical significance:</u> Because task errors are more concrete, they are easier to identify and correct once hospital staff is aware of them. Post-fall huddles helped make staff more aware.</p> <p>Coordination errors result from limited or poor communication. Post-fall huddles led to more inter-professional communication, which likely reduced those errors as a whole.</p>
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			<p>evaluated the task, judgment, or coordination errors that resulted in each fall. Another member of the project did the same independently with a random 10% sample (n = 16 falls). There was an 87.5% agreement between the two researchers on the errors, which establishes acceptable inter-rater agreement.</p> <p>This study was approved by the hospitals' institutional review board.</p>		<p><b>Conclusions:</b> Post-fall huddles decrease the rate of recurrent falls and their negative consequences, but they do not enhance staff's clinical judgment.</p>
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**Recommendation:** Implement and enforce standardized post-fall huddles to reduce patient fall rates.

<p>Citation: Jones.K, John Crowe, Joseph A. Allen, Anne M. Skinner, Robin High, Victoria Kennel, &amp; Roni Reiter-Palmon. (2019). The impact of post-fall huddles on repeat fall rates and perceptions of safety culture: a quasi-experimental evaluation of a patient safety demonstration project. <i>BMC Health Services Research</i>, 19(1), 1–14. <a href="https://doi.org/10.1186/s12913-019-4453-y">https://doi.org/10.1186/s12913-019-4453-y</a></p>	<p><b>Level II – Quality B</b></p>
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<p><b>Purpose/ Hypothesis</b></p>	<p><b>Research Design</b></p>	<p><b>Sample – Population, Size, Setting</b></p>	<p><b>Intervention/Procedures</b></p>	<p><b>Primary Outcome/Measures</b></p>	<p><b>Results/Conclusions</b></p>
<p>The study aimed to determine (1) how post-fall huddles and the risk of a repeat falls are associated; (2) how post-fall huddle participation and teamwork support perceptions are associated, with</p>	<p>Quasi-experimental design with a longitudinal assessment of repeat fall rates, as well as cross-sectional assessments of teamwork support for fall-</p>	<p><u>Setting:</u> 16 small rural hospitals in the central United States.</p> <p><u>Sampling Technique:</u> Convenience sampling.</p>	<p>The study's researchers formed fall-risk-reduction coordinating teams to lead each hospital's intervention. The teams included members across disciplines – nurses, pharmacists, physical or occupational therapists, patient safety officers, and quality improvement staff.</p>	<p>The study calculated the repeat fall rate for the study period by dividing the total number of reported falls by the number of unique medical record numbers connected to each fall.</p> <p><u>TeamSTEPPS@ teamwork:</u> The T-TPQ</p>	<p><u>Statistical Results:</u> In response to hypothesis (1), 308 patients suffered 347 falls, 222 of which had post-fall huddles conducted after them. Post-fall huddle participation negatively correlated with the proportion of patient falls per hospital and each hospital's repeated patient fall rate. The Spearman rank correlation coefficient showed a moderate effect of <math>-.47</math> (<math>p = .07</math>).</p>

<p>respect to fall-risk reduction; and (3) how post-fall huddle participation and patient safety culture perceptions are associated.</p>	<p>risk reduction and safety culture.</p>	<p><u>Inclusion criteria:</u> Each hospital had to have implemented team strategies and tools that align with the curriculum provided by the Team Strategies and Tools to Enhance Performance and Patient Safety (TeamSTEPPS®).</p> <p><u>Group Homogeneity:</u> The group was homogeneous. Refer to Table 1 for clinical characteristics.</p> <p><u>Power analysis:</u> Not shared.</p>	<p>Each huddle leader (“facilitator”) documented the cause of each patient fall after a post-fall huddle to (a) clarify why the fall happened, (b) identify errors that contributed to any preventable fall, and (c) recommend interventions to prevent a future patient fall or to minimize risk of system-wide patient falls.</p> <p>Facilitators were prompted to categorize falls as preventable (i.e., physiologically anticipated or accidental) or non-preventable (i.e., physiologically unanticipated). Both the coordinating team and facilitators were prompted to consider four error categories – task errors, judgment errors, coordination errors, and system errors – that may have led to the preventable falls and that a multiteam system should address in post-huddle actions.</p> <p><u>Intervention fidelity:</u> The researchers developed an online training program on post-fall huddles. It consisted of a demonstration video on post-fall huddle facilitation and participation, a pocket guide on post-fall huddles, and a post-fall</p>	<p>(TeamSTEPPS® Teamwork Perceptions Questionnaire) measured team members’ perceptions of the team skills and behaviors that the TeamSTEPPS® curriculum taught. 35 items across five dimensions (see Table 2) comprise the T-TPQ. Respondents rated their perceptions on a five-point Likert scale. Researchers adapted the survey to focus on teamwork support as it relates to fall-risk reduction.</p> <p>The Hospital Survey on Patient Safety Culture (HSOPS) validly assesses hospital safety culture. Its 42 items cover 12 dimensions (see Table 3), and likewise use a five-point Likert scale. Nine of those dimensions assess unit/department safety culture, and the other three assess hospital-wide safety culture.</p>	<p>In response to hypothesis (2), the total T-TPQ response rate was 49.4% (814/1649), ranging from 36% to 75% across the 16 hospitals. Every one of the five dimensions’ Cronbach coefficient alphas sat between .89 and .96. This indicates that the customized items are adequately internally consistent. 266 respondents (32.6% of them) reported participating in at least one post-fall huddle. Staff teamwork perceptions were over 80% for almost every item, even when staff did not participate in a post-fall huddle. Those who did participate, however, held comparatively and significantly more positive perceptions on two of seven items in the Team Structure dimension and on two of seven items in the Situation Monitoring dimension.</p> <p>In response to hypothesis (3), the total HSOPS response rate was 66.8% (1843/2761), ranging from 40% to 84% across the 16 hospitals. Every one of the 12 dimensions’ Cronbach coefficient alphas sat between .84 and .97. This indicates that the customized items are also adequately internally consistent. Post-fall huddle participants held significantly more positive perceptions, as compared against non-participants.</p>
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			<p>huddle form for the aforesaid documentation.</p> <p>The researchers further reviewed documentation accuracy with coordinating team members at quarterly conference calls to make sure that hospitals appropriately followed up on documented errors system-wide.</p>		<p><b>Clinical Significance:</b> Post-fall huddles reduced patient falls, improved teamwork perceptions of fall-risk reduction, and improved perceptions of patient safety culture. The first clearly benefits patients' health, and improved perceptions also coordinate staff better to prevent patient falls.</p> <p><b>Conclusions:</b> There are verifiable, real-time benefits to post-fall huddle participation. Multiteam system coordination improves with post-fall huddles, which reduces fall risk and recurrent patient fall rates.</p>
<p><b>Recommendations:</b> Keep post-fall huddle participation commonplace, not just for patient safety, but to improve staff morale and communication.</p>					

<p>Citation: Wolf, L., Costantinou, E., Limbaugh, C., Rensing, K., Gabbart, P., &amp; Matt, P. (2013). Fall prevention for inpatient oncology using lean and rapid improvement event techniques. <i>HERD</i>, 7(1), 85–101. <a href="https://doi.org/10.1177/193758671300700108">https://doi.org/10.1177/193758671300700108</a></p>					<p><b>Level II – Quality B</b></p>
<p><b>Purpose/ Hypothesis</b></p>	<p><b>Research Design</b></p>	<p><b>Sample – Population, Size, Setting</b></p>	<p><b>Intervention/ Procedures</b></p>	<p><b>Primary Outcome/ Measures</b></p>	<p><b>Results/Conclusions</b></p>

<p>This project aimed to reduce injurious patient falls at a large teaching hospital's three oncology divisions through standardization of the fall assessment and post-fall investigation process. It aimed to reduce the patient fall rate by 50% and the rate of injurious falls by 30%.</p>	<p>Pretest-posttest study.</p>	<p><b>Setting:</b> The academic medical center's three oncology units are part of a 13-hospital system. The selected hospital, Barnes-Jewish Hospital in St. Louis, Missouri, is affiliated with a medical school.</p> <p><b>Sampling Technique:</b> Convenience sampling.</p> <p>The oncology divisions were selected because of their total number of injurious falls from May 2010 to December 2010. Three of the hospital's four oncology divisions had the highest count of falls with injury (FWI) in the 13-hospital system. Of the selected divisions, Division B has 38 beds with 26 single rooms, Division C has 34 beds with 34 single rooms, and Division D has 25 beds with 11 single rooms.</p> <p><b>Inclusion criteria:</b> All patients who were admitted to Divisions B, C, and D were selected.</p> <p><b>Power analysis:</b> Not shared.</p>	<p>The study's researchers set up the required post-fall protocols. Divisions B, C, and D were previously using different post-fall huddle processes. The divisions agreed to fill in one form with question items after each fall. Some of the form's questions had to be completed within one hour of the fall, and the rest of the questions had to be answered within two days of the fall. The one-hour questions were to be answered by the staff-led post-fall huddle, while the two-day questions were to be answered by the respective division's Nurse Practitioner.</p> <p>The post-fall huddles collected some patient information, such as the patients' activities that caused their falls, their medications, their environmental conditions, their fall risk assessment scores, and the types of interventions that were in place.</p> <p>One huddle participant entered the investigation data into a secure database which the Preventable Harm Team managed. Researchers then aggregated the data and post-implementation progress reports followed from them.</p> <p><b>Intervention fidelity:</b> Each division's nurse managers and Nurse Practitioners taught their remaining staff appropriate</p>	<p>The study followed a pre- vs. post-implementation model. The total fall rate was calculated as the total number of patient falls per 1,000 patient-days. Every fall with injury (FWI) and fall with serious injury (FWSI) factored into the total rate of falls with injury as their sum per 1,000 patient-days. Their rates were also individually calculated per 1,000 patient-days.</p>	<p><b>Statistical Results:</b></p> <p>The total fall rate decreased by 22%, while the total rate of falls with injury decreased by 37% 16 months after the initial intervention. The 50% total fall rate decrease was not met, but the 30% decrease in the total rate of falls with injury was exceeded.</p> <p>For the total fall rate, the difference from the baseline to the post-implementation went from 5.93/1,000 to 4.61/1,000, which was statistically significant (<math>p &lt; 0.05</math>). The total FWI rate was 2.01/1,000 before, contrasted against 1.26/1,000 afterwards. That, too, was statistically significant (<math>p &lt; 0.05</math>). No FWSI falls occurred during the 16-month period.</p> <p><b>Clinical Significance:</b> Standardizing the fall assessment and post-fall huddle processes helped reduce the number of falls, and particularly the number of fall-related injuries.</p> <p><b>Conclusions:</b> A standardized post-fall huddle approach ensures more competence in the event of patient falls, and it generates better fall interventions for patients.</p>
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			<p>post-fall interventions through “Oncology Heroes Preventing Falls Competency and Skills Validation Checklist.” They then required a return demonstration to assure that the nurses had retained their training. About 150 nurses underwent this training and affirmed their commitment to fall prevention by signing the aforementioned checklist. Non-nurses received their training through staff meetings and one-on-one communication.</p>		
<b>Recommendations:</b> Use a standardized form of fall assessment and post-fall huddle procedure.					

Citation: Tzeng, H.-M., & Yin, C.-Y. (2015). Exploring Post-Fall Audit Report Data in an Acute Care Setting. <i>Clinical Nursing Research</i> , 24(3), 284–298. <a href="https://doi-org.proxy-hs.researchport.umd.edu/10.1177/1054773814529791">https://doi-org.proxy-hs.researchport.umd.edu/10.1177/1054773814529791</a>					Level III and Quality C
Purpose/ Hypothesis	Research Design	Sample – Population, Size, Setting	Intervention/ Procedures	Primary Outcome/Measures	Results/Conclusions
<p>This study sought to illustrate one way of summarizing data of patient falls for bedside use. This summarization approach aggregated patient fall data to communicate to clinicians in an actionable format for bedside use.</p> <p>RN fall specialists completed post-fall audits, which the researchers then summarized via a retrospective and descriptive</p>	Retrospective, descriptive, chart-review design.	<p><u>Setting:</u> A nonprofit acute care hospital in the northwestern United States.</p> <p><u>Sampling Technique:</u> Convenience sampling.</p> <p>119 total patient falls occurred at the hospital, 107 of which met the inclusion criteria. Every included fall occurred between March 1, 2012 and December 31, 2012.</p> <p><u>Inclusion criteria:</u> Patient falls had to have occurred in the inpatient care units or the emergency room of the hospital. The RN fall specialists had to categorize them as accidental or anticipated physiological falls. The 9 excluded falls were categorized as unanticipated</p>	<p>A fall prevention initiative led a fall committee to create a post-fall audit tool. The committee consisted of the hospital’s nurses, pharmacists, educators, physical therapists, and facility managers.</p> <p>The fall committee collected and maintained the post-fall audits. One of two designated RN fall specialists completed each patient’s fall review and post-fall audit shortly after his or her fall occurred. The real-time audit tools aimed to improve the understanding of, history behind, and type of each fall. Another RN re-coded and anonymized the patient post-fall audit data into a spreadsheet. Researchers received that spreadsheet for analysis.</p> <p>This study was approved by the hospital’s institutional review board.</p>	<p>The pre-intervention data included the second, third, and fourth quarters of 2011; also, the post-intervention data were composed from the data from the second, third, and fourth quarters of 2012. The total patient fall rate was calculated as a ratio of the number of patient falls per 1,000 patient-days. An average injury rate was also calculated as the ratio of injurious patient falls per 1,000 patient-days. These two metrics were used to compare the pre-intervention and post-intervention data.</p>	<p><u>Statistical Results:</u> The total patient fall rate at the acute inpatient care units went down 8.47% (4.43/1,000) in 2012 compared to 2011 (4.84/1,000). The average injury rate was 22.09% lower in 2012 (0.67/1,000) than it was in 2011 (0.86/1,000).</p> <p>However, the RN nursing staff also expanded such that they covered an average of 15.15 hours in 2012 from their average 10.94 hours in 2011. They also provided 65.9% of the nursing hours in 2012, versus 65.64% in 2011. That amounts to a 38.48% increase in RN nursing hours per patient-day. This increase may confound the results of this study, as this study was not designed to analyze how changes in the nursing hours and post-fall auditing impacted the hospital’s total patient fall rate.</p> <p><u>Clinical Significance:</u> Systematic and timely reporting, interpretation, and analysis of electronically formatted fall data can facilitate fall and fall injury prevention. A proactive, preventative approach might decrease the rate of patient falls by offering a hospital’s direct care staff individualized information, and thereby increase their intervention rates in fall prevention.</p> <p><u>Conclusions:</u> The intervention of designating an RN fall specialist to compile and distribute post-fall audit</p>

<p>chart review. They then compared the total fall rates before and after the implementation of this summarization approach.</p>		<p>physiological falls, those due to things like cardiac arrest or medication changes. The remaining 3 falls did not occur in the inclusion areas.</p> <p><u>Power analysis</u>: Not shared.</p>			<p>data on an individual patient basis has a <i>prima facie</i> effect in reducing injurious and non-injurious falls.</p>
<p><b>Recommendations:</b> Provide individualized patient fall data such that patient care staff can easily access it and can plan post-fall interventions accordingly.</p>					

<p>Citation: Shorr, R. I., Mion, L. C., Chandler, A. M., Rosenblatt, L. C., Lynch, D., &amp; Kessler, L. A. (2008). Improving the capture of fall events in hospitals: combining a service for evaluating inpatient falls with an incident report system. <i>Journal of the American Geriatrics Society</i>, 56(4), 701–704. <a href="https://doi.org/10.1111/j.1532-5415.2007.01605.x">https://doi.org/10.1111/j.1532-5415.2007.01605.x</a></p>					<p><b>Level III and Quality B</b></p>
Purpose/ Hypothesis	Research Design	Sample – Population, Size, Setting	Intervention/Procedures	Primary Outcome/Measures	Results/Conclusions
<p>This study compared patient fall rates against two data sources: an incident reporting system and a formal fall evaluation service (a standardized post-fall tool).</p>	<p>Observational comparative study.</p>	<p><u>Setting:</u> The selected setting, Methodist Health Care of Memphis-University Hospital, has 693 beds and is a teaching hospital in Memphis, Tennessee. The study was conducted on 16 adult medical and surgical units (349 beds). This study was a part of a larger study to test how effective proximity alarms are in monitoring patients and reducing patient falls.</p>	<p>Healthcare professionals from the Fall Evaluation Service (“fall evaluators”) collected data on every patient who fell with a standardized post-fall tool. These fall evaluators consisted of the researchers, nurse managers, and nurse supervisors. This allowed for 24-7 coverage of the setting.</p> <p>The fall evaluators collected their data from the patients via their standardized tool after checking them for injuries. The evaluators then reminded the on-staff nurses</p>	<p>The researchers calculated fall rates from just the incident report data, and then calculated fall rates from the fall evaluator report data. Finally, they combined the data to calculate the overall fall rate.</p> <p>The researchers used hospital billing data from each nursing unit to</p>	<p><u>Statistical Results:</u> Incident reports identified 191 patient falls (3.73/1,000); but, the fall evaluators’ reports identified 228 (4.45/1,000) (see Table 1). The combined reports identified 266 falls (5.20/1,000). This amounts to a 39% increase over just incident-reported falls and a 17% increase over just fall-evaluator-reported falls. On a unit-by-unit comparison, these increases ranged from 13% to 125% (see Table 2).</p> <p>The incident-reported patient fall rate from 6 months before the study was 3.08 per 1,000 patient-days, .65/1,000 lower (p =</p>

		<p><u>Sampling Technique:</u> Convenience sampling.</p> <p>229 patients suffered 266 falls from September 9, 2005 to March 8, 2006. The mean age of the patients who fell was 64 (and ranged from 24 to 101). Most of the patients (n = 184, 69%) fell in the general medical, cardiology, or surgical unit. Some neurology/neurosurgery unit falls (n = 59, 22%) and cancer care unit falls (n = 23, 9%) also occurred.</p> <p><u>Inclusion criteria:</u> Both assisted and unassisted falls were included in the study. Falls were either injurious or non-injurious. Injurious falls included major injuries (e.g., fractures) and minor injuries (e.g., bruising).</p> <p><u>Power analysis:</u> Not shared.</p>	<p>to complete incident reports. These reports were completed via pen and paper and submitted to the Office of Clinical Risk Management (OCRM). The reports limited their focus primarily to the location of and injuries associated with patients' falls.</p> <p>The OCRM listed the fall incident reports using a traditional reporting system throughout the study period. Incident report listings were compared against the fall evaluation log for patient-specific identifiers (name, date of birth, and medical record number), nursing unit, and date of fall for matching. Ambiguous incident reports were not excluded in this study.</p> <p><u>Intervention fidelity:</u> Every fall evaluator received formal training from members of the study team, either in sessions or through individual instruction.</p> <p>The Methodist Hospital Institutional Review Board reviewed and approved the research protocol.</p>	<p>calculate the number of patient-days.</p> <p>The fall rates were calculated as the number of patient falls per 1,000 patient-days. The relative fall rate increases and injurious fall rate increases were calculated from the single and combined rates as <math>((\text{combined} - \text{single}) / \text{single}) \times 100</math>.</p> <p>Poisson regression estimated the study's p-values.</p>	<p>.07) than the rate recorded using incident reports during the study.</p> <p>Injurious fall rates from both sources consisted of 79 falls and 1.54 injurious falls per 1,000 patient-days. Against just 57 injurious falls (1.11/1,000) from the incident reports, that comprises a 28% increase (p = .06).</p> <p><u>Clinical Significance:</u> Incident reports miss falls, both injurious and non-injurious. The standardized post-fall tool can help hospitals determine causes of and recommend preventions for falls in acute-care settings, given broader utilization by nursing staff.</p> <p><u>Conclusions:</u> Incident reports are meant to document the extent of patient injuries to manage legal risk. Patients' physical conditions describing their risks for falls are not sufficiently specific in these incident reports, if they're present, at all. That data is needed to plan and implement patient-specific interventions and to reduce fall rates in hospitals. Since incident reports also miss patient falls of all kinds, a standardized post-fall tool can point to why patients are falling and can indicate how to stop them from falling in the future.</p>
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**Recommendations:** Use a more thorough and standardized documentation process to ensure all falls are recorded so that staff can act on them.

Citation: UNMC. (2018). <i>Post-Fall Assessment Tools</i> . UNMC. Retrieved from <a href="https://www.unmc.edu/patient-safety/capturefalls/roadmap/post-fall-assessment/tools.html">https://www.unmc.edu/patient-safety/capturefalls/roadmap/post-fall-assessment/tools.html</a>					Level IV	Quality A
Scope and Purpose	Research Design	Sample – Population, Size, Setting	Intervention/ Procedures	Applicability	Immediate post-fall nursing procedure per the Clinical practice guideline	
The Post-Fall Multidisciplinary Management Guidelines were created to describe and recommend optimal patient care and safety protocols after a patient fall. Besides aiming to prevent patient fall risk, they also aim to standardize the post-fall huddle process.	Clinical practice guidelines	<u>Stakeholder Involvement:</u> Health professionals from the Western Australia Post-Fall Working Party reviewed the Post-Fall Management Guidelines in Western Australian Healthcare Settings 2015. The professionals' clinical settings ranged from public and private, as well as rural and urban, inpatient facilities in Western Australia. They examined patient safety, reviewed post-fall care evidence, and examined the roles of healthcare professionals with	The stakeholders in this project sought to update the post-fall guidelines to reflect updated evidence and expert opinions, to benefit patient safety and care after patient falls. The revisions satisfy the National Safety and Quality Health Service Standards for Hospitals, the Cognitive Impairment Australian Commission on Safety and Quality in Health Care Clinical Standards, and Preventing Falls and Harm from Falls in Older People: Best	<u>Clarity of presentation:</u> Key recommendations are easily identifiable. The recommendations are specific and unambiguous.  <u>Applicability:</u> The guidelines primarily serve inpatient-facility and multi-purpose-site health professionals. They also consider resource requirements and offer tools with suggestions on how to properly implement the guidelines.  <u>Editorial Independence:</u> Those who funded this project did not influence the authors' generation of these guidelines.	The key post-fall guidelines pertaining to a primary nurse are as follows:  <ol style="list-style-type: none"> <li>1. Follow the DRSABCDE mnemonic: Danger, Response, Send for help, Airway, Breathing, Circulation, Disability, and Exposure.</li> <li>2. Check for vital signs (also taking blood sugar levels and performing EKGs) and perform a neurological exam, including a Glasgow Coma Scale and observations for delirium, confusion, headache, amnesia, vomiting, or changes in consciousness.</li> <li>3. Notify a patient's next of kin within four hours of the patient's fall.</li> <li>4. Reassess fall risk status, for instance, with the Falls Risk Assessment and Management Plan (FRAMP) and refer relevant staff to review the case.</li> <li>5. Design and implement an individualized, age-appropriate care plan and prevention strategy for the patient.</li> <li>6. Inform the multidisciplinary team of the fall and allow revisions to the care plan, as appropriate. This also includes the use of interpreters, as needed. The care plan should be made communicable to the patient's and next of kin's levels</li> </ol>	

		<p>regard to patient falls.</p> <p>The aforementioned stakeholders also consulted with other healthcare professionals, unregulated healthcare workers, and Western Australian healthcare consumers.</p>	<p>Practice Guidelines for Australian Hospital and Residential Aged Care Facilities.</p> <p>The stakeholders' outside consultations also offered valuable feedback that the stakeholders then incorporated into the guidelines.</p>		<p>of literacy and as agreeable to their cultural preferences as possible.</p> <p>7. Consult with physiotherapists, occupational therapists, and pharmacists within two days of a fall.</p> <p>As for the post-fall huddle (PFH) process, the following guidelines apply:</p> <ol style="list-style-type: none"> <li>1. Have the PFH take place as soon after the fall as possible, or at least within 24 hours of the fall.</li> <li>2. Include, as a minimum: <ol style="list-style-type: none"> <li>a. A clinical nurse specialist, clinical nurse manager, or shift coordinator;</li> <li>b. A physiotherapist or occupational therapist;</li> <li>c. A pharmacist;</li> <li>d. A medical officer from the treating team;</li> <li>e. The primary care nurse during that shift; and</li> <li>f. The patient or his next of kin.</li> </ol> </li> <li>3. Have the PFH team choose the lead.</li> <li>4. Gather in a predetermined area, preferably the patient's bedside.</li> <li>5. Discuss the fall as a group to identify what contributed to the fall and how to implement team-created fall prevention interventions.</li> <li>6. Provide total support for the next of kin during the discussion.</li> </ol>
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					<p>7. Document the PFH discussion and the associated interventions.</p> <p>8. Inform incoming staff of the interventions during handoffs.</p> <p>9. Follow up with staff and patients to ensure that they are following the fall prevention intervention.</p> <p>These questions can direct the PFH:</p> <ul style="list-style-type: none"> <li>● Regarding risk factors: <ul style="list-style-type: none"> <li>○ Did we know the patient was at risk?</li> <li>○ Has the patient had a previous fall while in hospital?</li> <li>○ Were minimum interventions in place?</li> <li>○ Was a FRAMP in place?</li> </ul> </li> <li>● Staff activities (ask why multiple times): <ul style="list-style-type: none"> <li>○ What were staff doing during the fall?</li> <li>○ What was the patient doing before the fall?</li> </ul> </li> <li>● Root causes of the fall (ask why multiple times): <ul style="list-style-type: none"> <li>○ What was different this time compared to previous times when the patient was doing the same thing?</li> </ul> </li> <li>● Interventions for implementation: <ul style="list-style-type: none"> <li>○ How could we have prevented this fall?</li> <li>○ What changes to the patient's care plan will decrease the risk of future falls?</li> </ul> </li> </ul>
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					<ul style="list-style-type: none"> <li>○ What patient or system problems require communication to other departments or disciplines?</li> </ul>
<b>Recommendations:</b> Follow authoritative and evidence-based guidelines in the formation of a post-fall protocol, to provide holistic care.					

Citation: Gallion, A. D. (2015). <i>Improving a fall prevention and management program in an acute care setting</i> . Eastern Kentucky University Encompass. Retrieved from <a href="https://encompass.eku.edu/dnpcapstones/7">https://encompass.eku.edu/dnpcapstones/7</a>					<b>Level V and Quality B</b>
Purpose/ Hypothesis	Research Design	Sample – Population, Size, Setting	Intervention/ Procedures	Primary Outcome/ Measures	Results/Conclusions
<p>This project sought to (1) implement the Morse Fall Scale (MFS) as the selected location’s new fall risk assessment tool (FRAT) and (2) to incorporate post-fall huddles (PFHs) into post-fall evaluations.</p>	<p>Quality improvement project, pretest and posttest.</p>	<p><u>Setting:</u> The selected project site was the 38-bed Unit 2 North Bed Towers (2NBT) medical and surgical unit of Cabell Huntington Hospital (CHH). CHH is a 303-bed hospital that provides care to over 29 counties in West Virginia, eastern Kentucky, and southern Ohio. The Marshall University Schools of Medicine and Nursing are affiliated with this hospital.</p> <p><u>Inclusion criteria:</u> Not shared.</p> <p><u>Sampling Technique:</u> Convenience sampling.</p>	<p>The RNs at 2NBT completed the MFS FRAT on all patients who were admitted from September 29, 2015 to October 29, 2015. 2NBT’s RNs could more accurately complete the fall assessment after integrating the MFS to the electronic charting system for this project. The primary care nurse and charge nurse held a PFH after every patient fall, also completing a PFH worksheet to submit to the unit manager.</p> <p>Prior to the intervention, patient falls were documented only with incident reports. The unit manager received these reports and directed them to the director of quality and performance improvement. The director also input the</p>	<p>The project leader audited the MFS FRATs and PFH worksheets against patient charts to log completion frequency and accuracy. The project’s analysis includes the actual patient fall rates, in addition to the MFS- and-PFH-documented patient fall rates.</p>	<p><u>Statistical Results:</u> The documented completion rate of MFS FRATs and PFH worksheets was 100%. Of the 38 patients admitted to 2NBT, 24 (62%) were identified as high-risk fall patients, as defined by scoring over 34 on the MFS assessment.</p> <p>Five (5) of the admitted patients fell within the duration of the project, which was an improvement over the seven (7) who fell in August of 2015. Three of the August patients who fell (43%) were not identified as fall risks under CHH’s previous non-MFS FRAT. Two of the five September-October patients who fell (40%) were identified as such under the MFS FRAT. The remaining three scored 20, 20, and 15 on the MFS.</p> <p>The post-fall documentation showed that four of the September-October patients (80%) fell when they were alone and not assisted by staff. Three of the five (60%) occurred at night, and two of the five (40%) were elimination-related. Fuller fall circumstances are summarized in Table 3.</p>

		<p>2NBT's nursing and patient care staff (35 RNs, 6 LPNs, and 11 PCAs) comprised the project's target population.</p> <p><u>Power analysis:</u> Not shared.</p>	<p>incident report data into the NDNQI database for future analysis and use by him in the forms of spreadsheets. Each unit and the whole hospital can receive these spreadsheets to contrast their patient fall rates against national benchmarks.</p> <p>The project's intervention did not remove incident reporting from the process.</p> <p><u>Intervention fidelity:</u> The 2NBT staff were trained on MFS and PFH implementation through the MFS training module (see Appendix E), which was provided through Healthstream, a CHH online learning system. The project's leader also taught relevant PFH protocols through PowerPoint presentations at mandatory staff meetings (see Appendix F). PFH information came from the National Falls Toolkit, which itself came from the United States Department of Veterans Affairs (2014).</p> <p>The Marshall University Institutional Review Board</p>	<p><u>Clinical Significance:</u> Documentation from PFHs was valuable in describing patient falls more clearly. The PFH protocol also keeps staff better informed of patients' fall histories and fall risks. PFH documentation further assists nursing staff to individualize interventions for patients, while the MFS FRAT helps to screen patients for heightened fall risks before they happen, thus improving their safety and quality of care.</p> <p><u>Conclusions:</u> The MFS FRAT, along with PFHs, are better suited to direct post-fall interventions than incident reporting, alone. They serve patient needs beyond the scope of incident reports' intended function, and the 100% rate of completion shows that they are not burdensome impositions on nursing staff.</p>
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			reviewed and approved the research protocol.		
<b>Recommendations:</b> Have an authoritative fall risk assessment tool to make post-fall huddles more effective, to better scrutinize fall risk for patients, and to individualize their care plans.					

**Table 2***Evidence Synthesis*

JHNEBP Model Level	Total Number of Sources	Author and Quality Rating of each study	Synthesis of Findings
<p><b>Level I</b> Experimental study · Randomized Controlled Trial (RCT) · Systematic review of RCTs with or without meta-analysis</p>			
<p><b>Level II</b> Quasi-experimental studies · Systematic review of a combination of RCTs and quasi-experimental studies, or quasi-experimental studies only, with or without meta-analysis</p>	<p>Two level II. Pretest-posttest study (Wolf et al, 2013). Quasi-experimental design with a longitudinal assessment of repeat fall rates, as well as cross-sectional assessments of teamwork support for fall-risk reduction and safety culture (Jones et al, 2019).</p>	<p>Wolf et al, 2013 B Jones et al, 2019 B.</p>	<p>For the total fall rate, the difference from the baseline to the post-implementation went from 5.93/1,000 to 4.61/1000, which was statistically significant (<math>p &lt; 0.05</math>). The total FWI rate was 2.01/1,000 before, contrasted against 1.26/1,000 after. That, too, was statistically significant (<math>p &lt; 0.05</math>). The study affirms that standardizing the fall assessment and post-fall huddle processes help reduce the number of falls, and particularly the number of fall-related injuries. Further, Jones, et al. (2019) showed that standardized post-fall huddle participation negatively correlated with the proportion of patient falls per hospital and each hospital's repeated patient fall rate.</p>
<p><b>Level III</b> Non-experimental study · Systematic review of a combination of RCTs, quasi-experimental, and non-experimental studies, or non-experimental studies only, with or without meta-analysis · Qualitative study or systematic review of qualitative studies with or without meta-synthesis</p>	<p>Four level III. Retrospective cohort design (Reiter-Palmon et al, 2015). Quasi-experimental design with a longitudinal assessment of repeat fall rates, as well as cross-sectional assessments of teamwork support for fall-risk reduction and safety culture (Katherine et al, 2019).</p>	<p>Reiter-Palmon et al, 2015 B. Tzeng et al, 2015 C. Shorr et al, 2008 B,</p>	<p>The studies showed that standardized post-fall huddle processes reduce total patient fall rates and their associated injuries. Reiter-Palmon, et al. (2015) showed that the proportion of injurious falls and less adverse falls swayed significantly toward the latter (<math>X^2[2, N = 135] = 8.50, [p = .01]</math>) upon standardizing post-fall huddle processes, contributing to more assisted falls. In Tzeng, et al. (2015), the total patient fall rate at the study's acute inpatient care units went down 8.47% (4.43 per 1,000 patient-days) in 2012 compared to 2011 (4.84 per 1,000 patient-days). The average injury rate was also 22.09% lower in 2012 (0.67 per 1,000 patient-days) compared to 2011 (0.86 per 1,000 patient-days). These were thanks to standardizations in their post-fall huddle processes. Along with the data from Shorr, et al. (2008), which showed that post-fall huddles capture more fall</p>

	Retrospective, descriptive, chart-review design (Tzeng et al, 2015).  Observational study (Shorr et al, 2008).		incidents than incident reports do (226 vs. 191), there's a strong basis for holding that a standardized post-fall tool is needed to plan and implement individualized interventions and to reduce fall rates in hospitals.
<b>Level IV</b> Opinion of respected authorities and/or reports of nationally recognized expert committees/consensus panels based on scientific evidence	One level IV.  Clinical practice guidelines (UNMC, 2018)	UNMC, 2018 A	The Post-Fall Multidisciplinary Management Guidelines were created to describe and recommend optimal patient care and safety protocols after a patient fall. In addition, they describe the process of post-fall huddles to engage in constructive discussions that yield effective interventions to prevent future falls. Implementing such guidelines serves to decrease patient fall rates and their associated injuries, improve patient satisfaction with their care, and improve the analysis process to yield more individualized and effective post-fall interventions
<b>Level V</b> Evidence obtained from literature reviews, quality improvement, program evaluation, financial evaluation, or case reports · Opinion of nationally recognized expert(s) based on experiential evidence	One level V.  Quality improvement project, pretest and posttest (Gallion et al, 2015).	Gallion et al, 2015 B	The Morse Fall Scale Fall Risk Assessment Tool (MFS FRAT), along with post-fall huddles, are better suited to direct post-fall interventions than incident reporting, alone. Gallion, et al. (2015) demonstrated as much by showing that more patients were identified as high-risk for falls under the MFS when they did fall. Also, the project achieved a 100% completion rate, which implies that it is not a burdensome requirement to provide a more detailed and standardized assessment to patients for fall risk or to have them participate in standardized post-fall huddles. The results of those post-fall huddles yielded more specific data points regarding patient falls to plan individualized interventions.
Overall Quality Rating w/rational and Recommendation: B; Good and consistent evidence to support practice change			

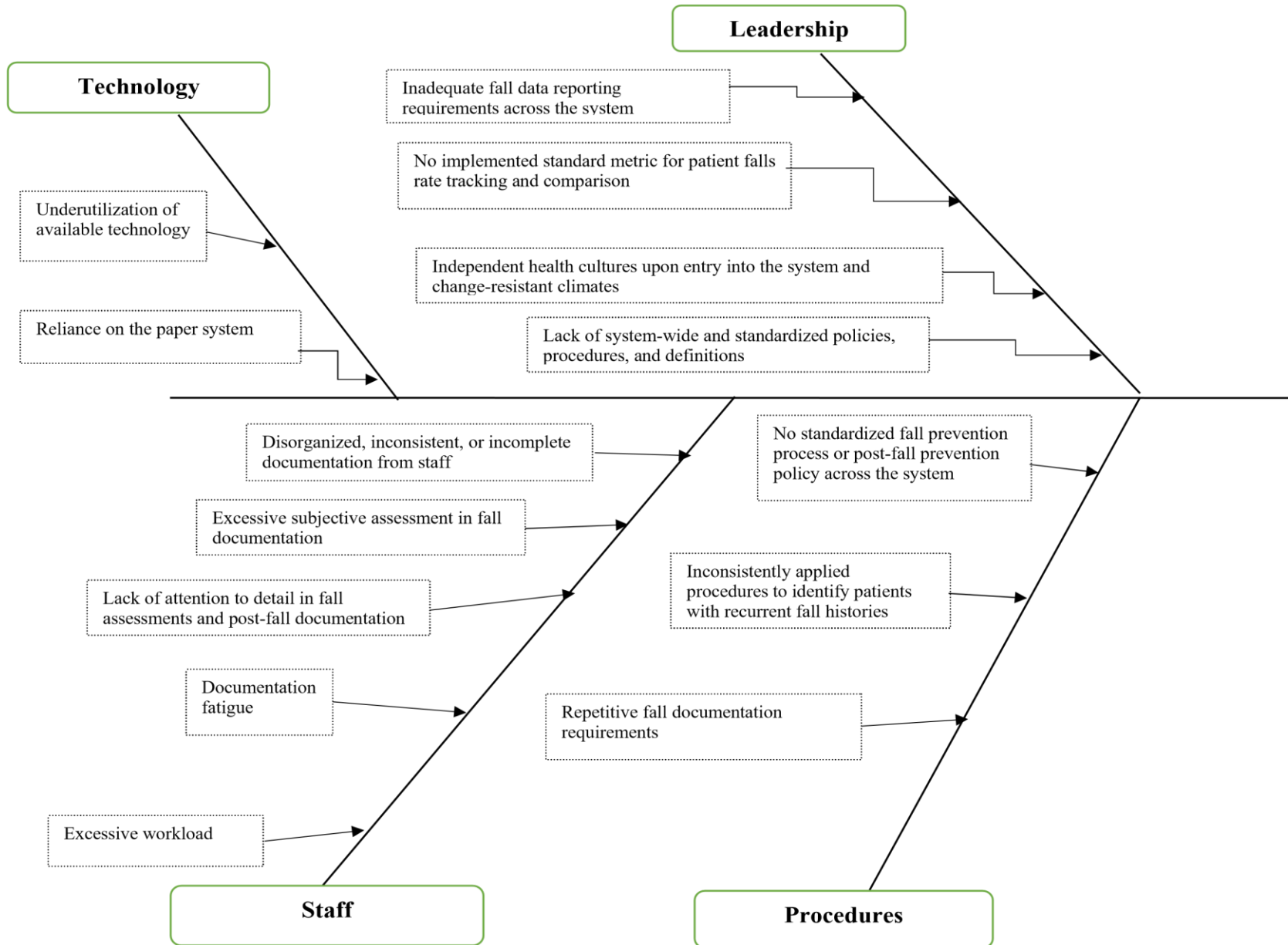
**Table 3***Project Goals*

Project Structure Goal(s)	Project Process Goal(s)	Outcome Goal(s)
<p>1. Staff will be educated on how to conduct post-fall huddles, starting on August 29, 2023; and, by September 4, 2023, all staff (100%) will have reviewed post-fall huddle protocols and will have demonstrated understanding of the process before implementation.</p>	<p>1. From the beginning of the implementation on September 4, 2023, to the end of the implementation on December 11, 2023, staff adherence with completing post-fall debriefs and documentation will hold at 100%.</p>	<ol style="list-style-type: none"> <li>1. Reduce the rate of total falls by 5% in the in the 14-week implementation period, compared to the same period from the previous year.</li> <li>2. Eliminate the rate of repeat falls in that time, and</li> <li>3. Decrease the rates of injurious falls by 5%, again comparing the implementation period against the same timeframe from the previous year.</li> </ol>

**Table 4***Process and outcome measures weekly data*

Weeks	Post-fall staff adherence rate	Total fall count	Injurious fall count	Repeat fall count
1	100%	5	2	1
2	33%	3	0	0
3	50%	4	1	0
4	100%	4	0	0
5	100%	1	0	0
6	100%	3	0	0
7	100%	3	1	0
8	100%	2	0	0
9	100%	2	0	0
10	50%	4	1	0
11	60%	5	2	0
12	67%	6	3	0
13	14%	7	2	0
14	100%	6	1	0
15	67%	3	0	0

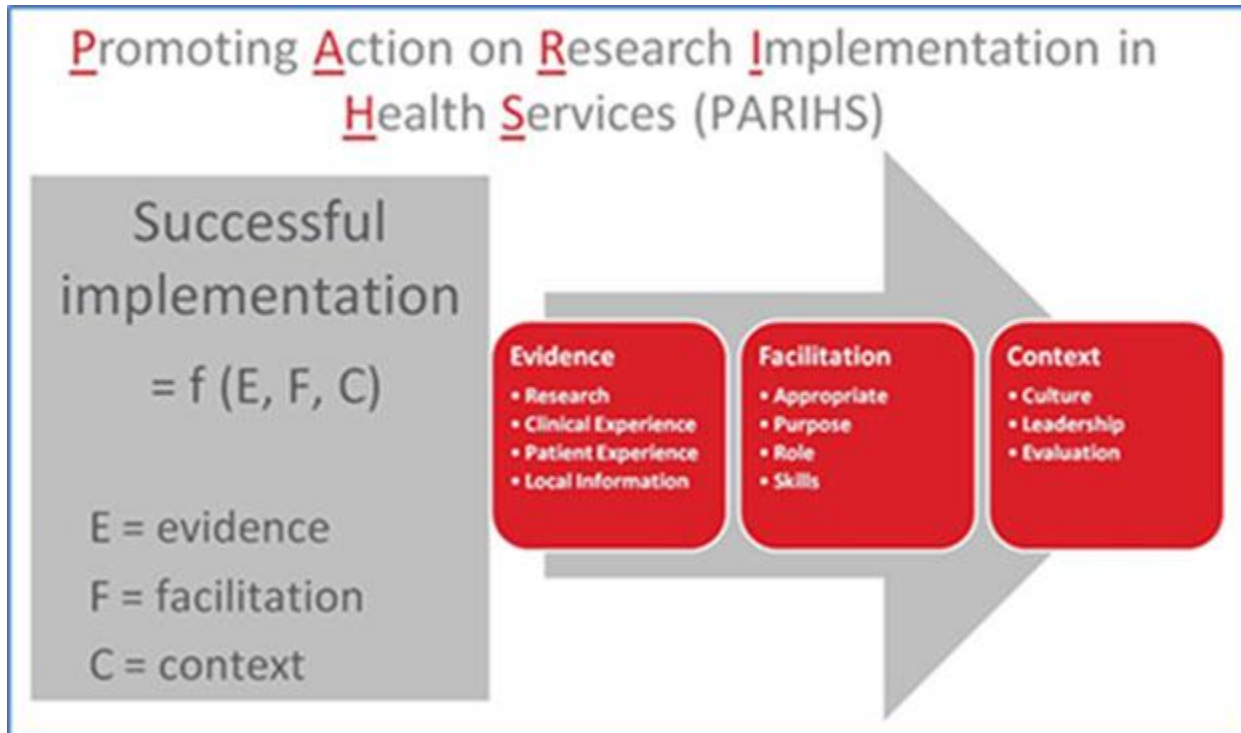
Figure 1  
Fishbone Diagram Analysis

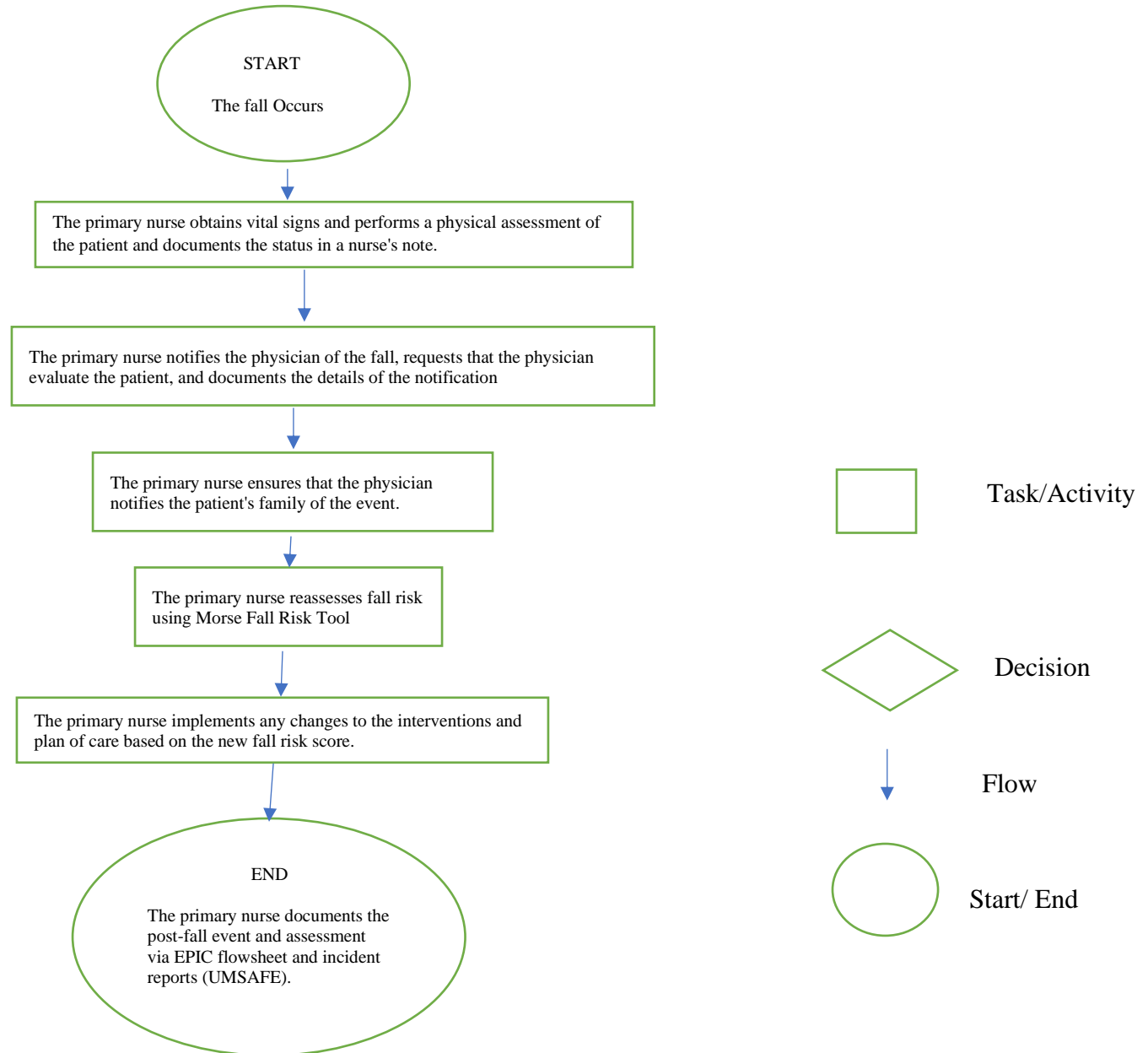


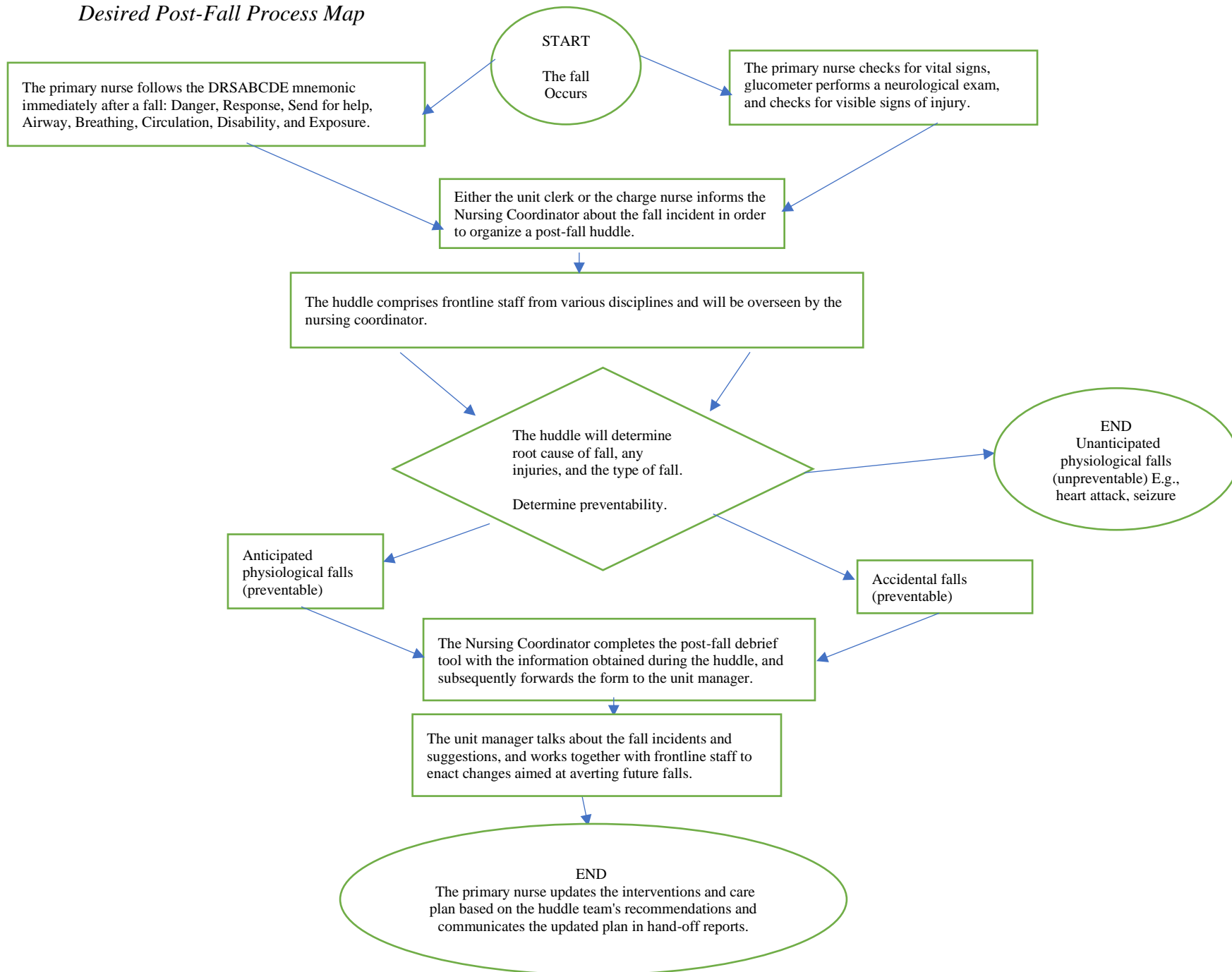
The nonprofit medical system hospital has been selected for a quality improvement project, consisting of eleven affiliated hospitals, each with its own policies and healthcare practices. Due to this, there is a lack of standardization in various processes across the system, especially concerning the documentation of post-fall incidents. The method of post-fall documentation varies across the system, with some hospitals using paper forms while others use electronic forms. The differences in post-fall documentation create inaccurate and flawed assessments across the system, which negatively affect the deployment of resources to handle post-fall incidents. Additionally, this widens the gap in the quality of care between hospitals, as reflected in their fall rates. In fiscal year 2022, the fall rate gap ranged from 5 to 13 percent.

**Figure 2**

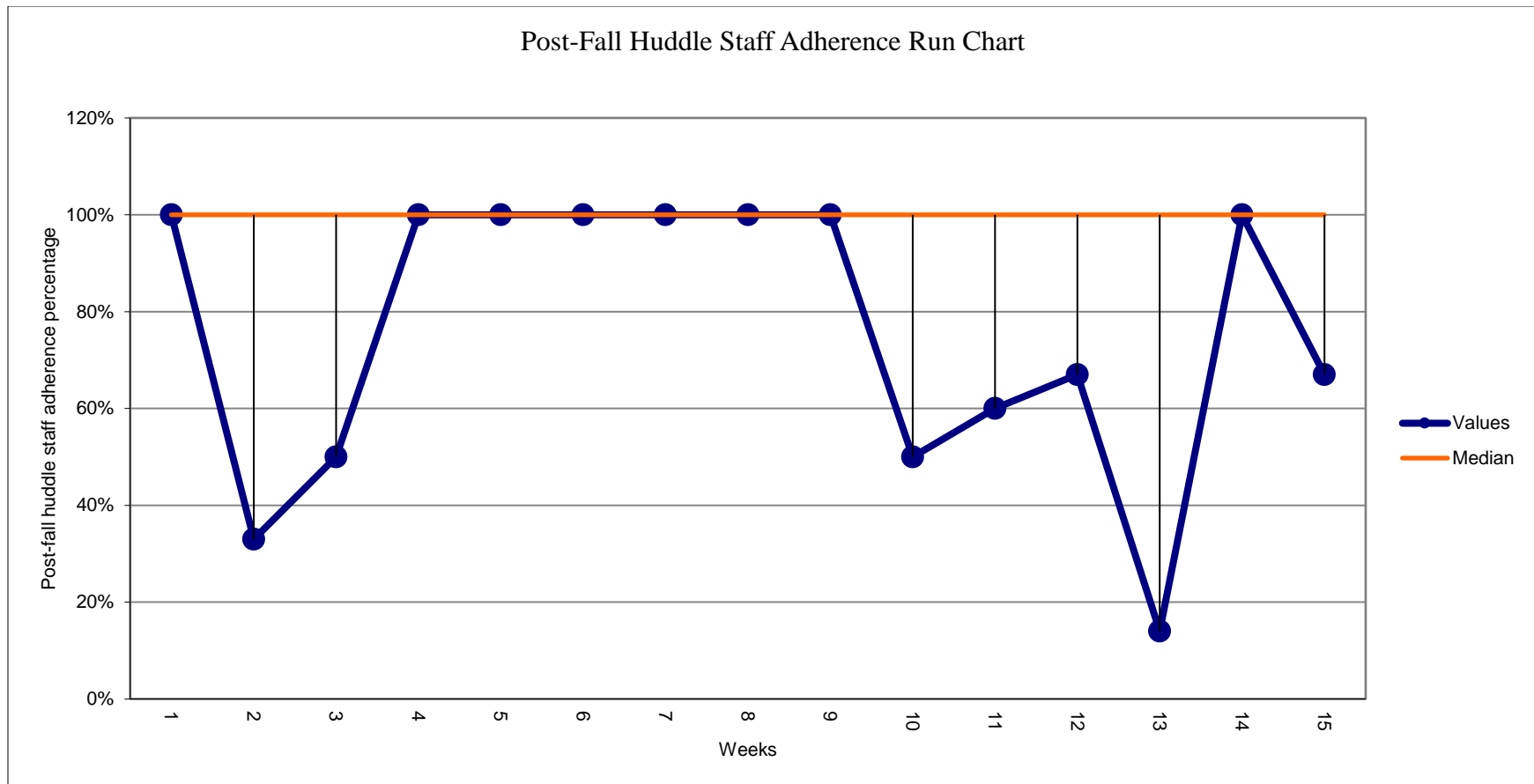
*The Parihs Theoretical Framework*



**Figure 3***Current Post-Fall Process Map at the Selected Pilot Study Site*

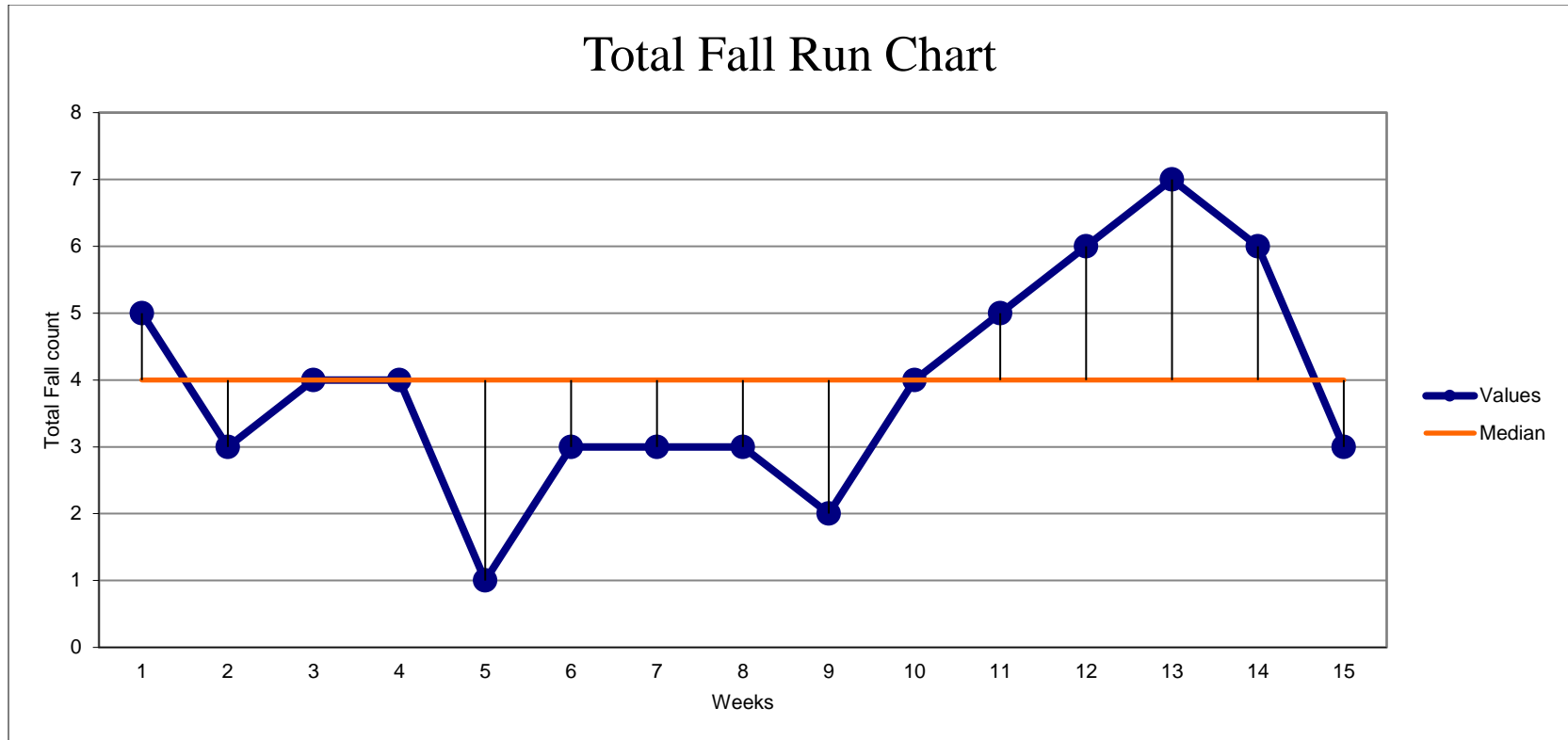
**Figure 4***Desired Post-Fall Process Map*

**Figure 5**  
*Post-Fall Huddle Staff Adherence Run Chart*



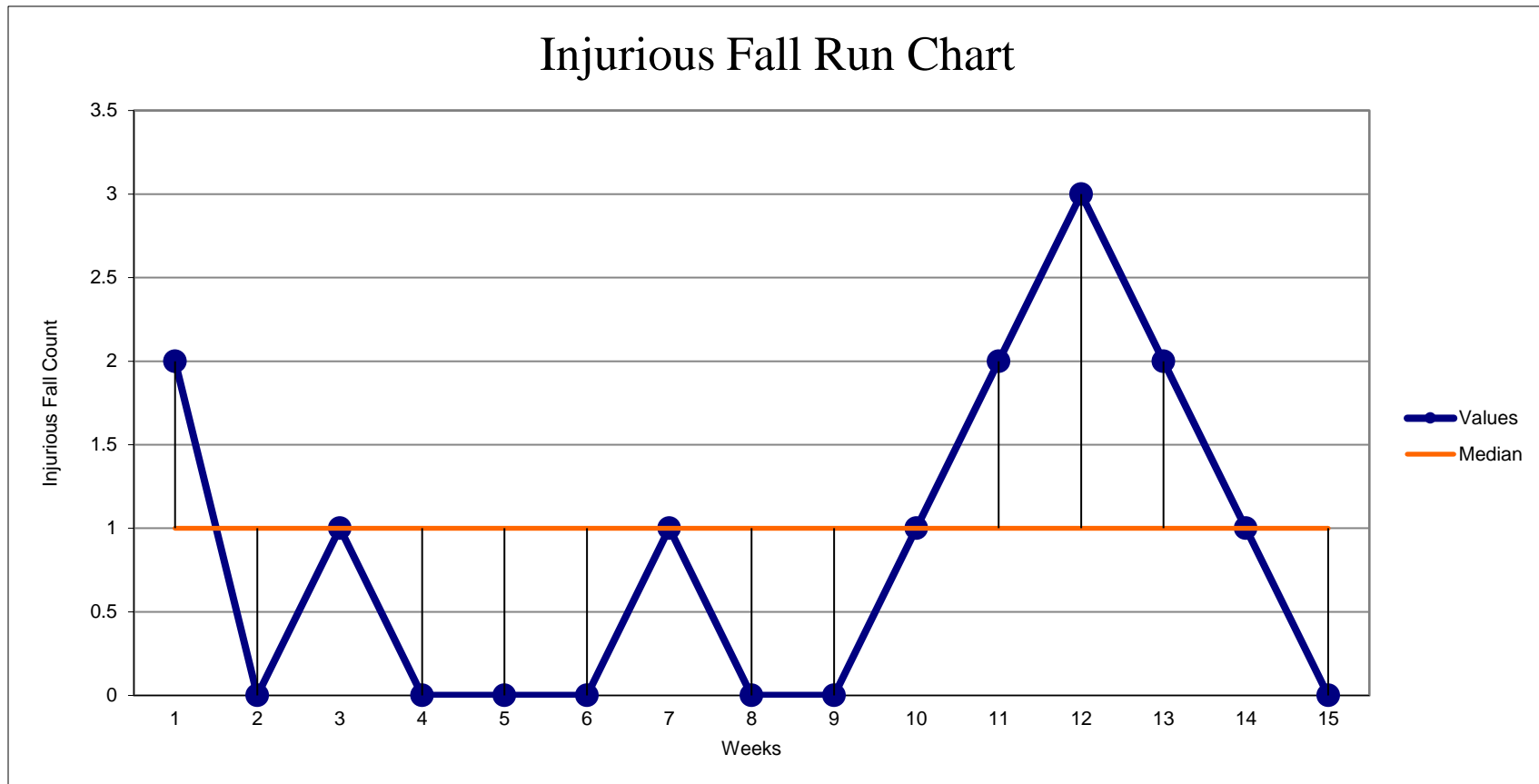
*Note:*  $y$  denotes the percentage of staff adherence to post-fall huddle procedures.  $x$  represents the weeks of the intervention. The blue line represents the actual adherence percentages per week, while the orange line indicates the median adherence across all observed weeks. Run chart analysis indicates that, while there is an overall commendable level of adherence, as reflected by the median, the process is not immune to substantial deviations. The stable adherence percentage from weeks four to ten implies a period of effective and consistent practice. However, since those weeks lie on the median line, they are not considered runs. The fluctuations observed from week ten to thirteen seem to stem from transitory challenges and not persistent systemic issues. The subsequent recovery in adherence underscores the team's capacity to realign with the huddle process following disruptions. There are no notable trends or shifts seen in the chart, as defined by the presence of six or more consecutive downward or upward changes week over week.

**Figure 6**  
*Total Fall Run Chart*



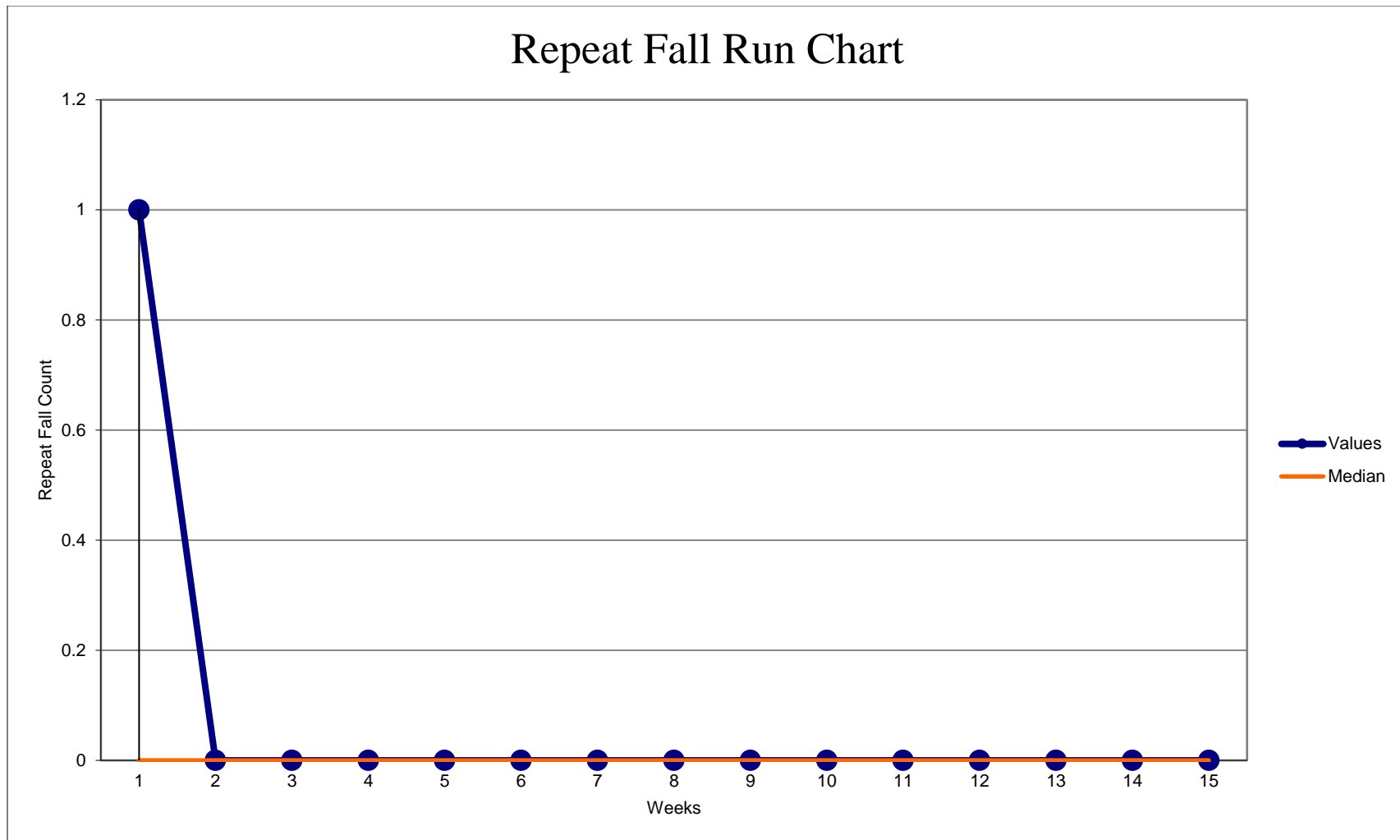
*Note:*  $y$  denotes the total fall count, and  $x$  represents the weeks. The blue line shows the actual fall count per week, while the orange line across the chart at the level of four falls indicates the median value of the data, acting as a benchmark to assess fluctuation over time. The run chart reveals that although the median fall count is four, the actual number of falls each week shows significant variance, with a peak in week thirteen. The absence of a sustained upward or downward trend indicates that high points of fall incidents are not indicative of a long-term pattern of increase or decrease. The variability, particularly the peak in week thirteen, may point to specific, non-systematic causes for the falls during that period, such as leadership absence due to holidays.

**Figure 7**  
*Injurious Fall Run Chart*



*Note:*  $y$  denotes the injurious fall count, and  $x$  represents the weeks. The blue line displays the actual injurious fall count per week, while the orange line across the chart at the level of one injurious fall indicates the median value of the data, serving as a benchmark to assess fluctuations over time. The run chart demonstrates that injurious falls fluctuate around a median of one, suggesting that specific, potentially transient factors may be contributing to these variations rather than a consistent systemic issue. An upward trend is evident between weeks 10 and 13, with a consecutive increase in the count of injurious falls. The chart does not show any shifts, as there are no sequences of six or more consecutive data points all situated above or below the median.

**Figure 8**  
*Repeat Fall Run Chart*



*Note:*  $y$  denotes the repeat fall count, and  $x$  represents the weeks. The run chart shows that, after an initial incident of a repeat fall, subsequent measures were effective in reducing repeat falls to zero for the remaining weeks observed. The consistent zero value indicates no further occurrences of repeat falls, which suggests the effectiveness of post-fall huddles in analyzing the causes of falls and targeting prevention strategies.

**Appendix A**  
*Post-Fall debrief tool*

## Post Fall Debrief Tool

1. **Unit/ Department:** \_\_\_\_\_
2. **Patient name:** \_\_\_\_\_
3. **Date of Birth:** \_\_\_\_\_
4. **MRN:** \_\_\_\_\_
5. **Age range:**
  - 1 to 40
  - 41 to 50
  - 51 to 60
  - 61 to 70
  - 71 to 80
  - 81+
6. **Event Date/ Time?** \_\_\_\_\_
7. **Event Witnessed?**
  - Yes
  - No
8. **Fall risk score prior to fall**
  - 0: No risk for falls
  - < 25: Low risk
  - 25-45: Moderate risk
  - >45: High risk
9. **Time of Last Rounding?** \_\_\_\_\_
10. **Mobility status at time of fall?**
  - Independent
  - one assist
  - two assists
  - bedrest
11. **Previous Fall during this stay?**
  - Yes
  - No
12. **What was the extent of harm to the patient as a result of the fall?**
  - Death related to event
  - Major: Fall resulted in surgery, casting, traction, consultation for neurological (e.g., skull fracture, subdural hematoma) or internal injury (e.g. rib fracture, liver laceration) or need for blood products.
  - Moderate: Fall resulted in suturing, application of steri-strips/skin glue, splinting or muscle/joint strain.
  - Minor: Fall resulted in application of dressing, ice, cleaning of wound, limb elevation, topical medication, bruise, or abrasion.
13. **Was the patient administered any medication within two to six hours prior to the fall that could have played a role in the incident?**
  - No harm
  - Yes
  - No
14. **Which specific medication(s) contributed to the fall?**
  - Mood Stabilizers
  - Benzodiazepines
  - Diuretics
  - Narcotics
  - Sedatives/Hypnotics
  - Atypical Antipsychotics
  - Anti-hypertensive
  - Polypharmacy/use of multiple high-risk medications
  - Other (comment): \_\_\_\_\_
15. **Staffing at time of event?**
  - Fully staffed
  - Short staffed
16. **Acuity at time of event?**
  - Lighter
  - Normal
  - Heavier than normal
17. **Census of the unit during the time of the fall?** \_\_\_\_\_
18. **At the time of the fall, select all applicable fall prevention interventions listed below that were in place.**
  - Bed in lowest position
  - Bed/chair alarm activated
  - Best visual access (e.g., room close to nursing station/door open)
  - Call bell within reach
  - Established toileting/elimination schedule
  - Purposeful Rounding (e.g., hourly comfort and safety round)
  - 1:1 Sitter/ Virtual monitoring supervision
  - Non-skid footwear
  - Fall risk armband
  - High fall risk signage
  - Other (comment): \_\_\_\_\_
19. **Post Fall intervention, immediate actions**
  - Bed in lowest position
  - Bed/chair alarm activated
  - Best visual access (e.g., room close to nursing station/door open)
  - Call bell within reach
  - Established toileting/elimination schedule
  - Medication review for potential medication changes to lessen fall risk
  - Purposeful Rounding (e.g., hourly comfort and safety round)
  - 1:1 Sitter/ Video monitoring Supervision
  - Non-skid footwear
  - Fall risk armband
  - High fall risk signage
  - Other (comment): \_\_\_\_\_
20. **Fall risk Score post fall?**
  - 0: No risk for falls
  - < 25: Low risk
  - 25-45: Moderate risk
  - >45: High risk
21. **What were our successful actions prior to/during/after this incident of falling?** \_\_\_\_\_
22. **What measures can we take to avoid a recurrence of this fall?** \_\_\_\_\_