



The implementation of fall prevention checklist to decrease inpatient falls.

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“Success doesn’t come from what you do occasionally. It comes from what you do consistently.”

- MARIE FORLEO

Organizational Culture



The organization's mission, vision, philosophy, and leadership highly encourage and support Evidence-Based Practice.

Organizational Readiness

Are we ready for EBP?

- ❖ Anticipated Stakeholders
 - ❖ Nursing Leadership (Nurse Manager, OCL Nurse Executive)
 - ❖ Unit Staff (RN, NA)
 - ❖ Physical Therapy
 - ❖ Patients
- ❖ Barriers
 - ❖ Leadership support
 - ❖ Staff resistance to change
- ❖ Facilitators
 - ❖ Leadership support
 - ❖ EBP Mentor
 - ❖ Staff involvement



Background of the Issue



FALLS



- ❖ Compromise patient safety and affect quality of health outcomes
- ❖ Highest number of sentinel events reported to The Joint Commission in 2018 (Baker, 2019).
- ❖ Continues to be one of the biggest issues in hospital settings to this date (Baker, 2019).
- ❖ Occur when fall prevention methods are not appropriately and consistently followed
- ❖ Effective fall prevention strategies are important in addressing the issue of fall

Significance of the Issue:

Patient Safety

- Life-threatening Injuries
 - Fractures
 - Lacerations
 - Hemorrhage
 - Other injuries
- Death

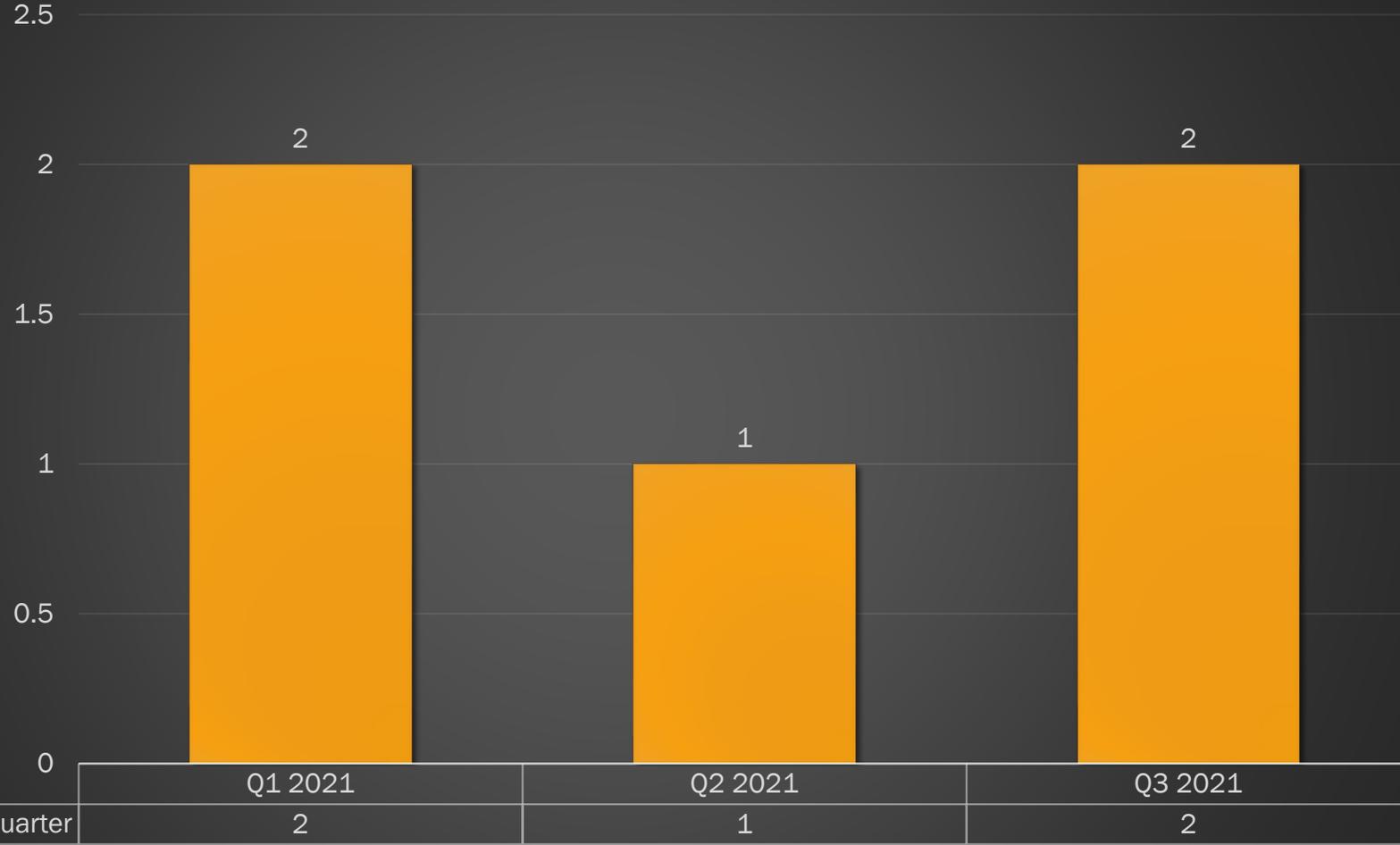
Increase cost

- No CMS reimbursement
- Increased Length of stay
- Additional treatments, rehabilitation, surgeries

Physical & Psychological

- Trauma
 - fear of falling
 - fear of harm
- Mistrust on healthcare providers
- Decreased confidence on quality of care
- Decrease patient satisfaction

Number of Falls in NU 5B



■ Number of Falls per Quarter

Step 0: Problem / Clinical Inquiry

Inconsistencies in the implementation of fall prevention strategies result in missed prevention intervention.

Preventable Falls

Inconsistencies are not due to the lack of knowledge on fall prevention methods
But the failure to use the knowledge appropriately and continuously.

Step 1: PICO Question

P - opulation

• Adult hospitalized patients

I - ntervention

• Fall prevention checklist

C - omparison

• Current practice

O - utcome

• Incidence of falls

PICO Statement

In adult hospitalized patients, how does fall prevention checklist compared to current practice affect incidence of falls?



Step 2: Search Strategy

Databases: PubMed, CINAHL, Cochrane, Up to Date

Keywords list: fall prevention, checklist, guidelines, hourly rounding, fall prevention bundle, fall prevention toolkit, inpatient, acute care hospitals, adults

MeSH terms: AND and OR



Critical Appraisal



- ❖ Crandall, M., Duncan, T., Mallat, A., Greene, W., Violano, P., Christma, A. B., Barraco, R. (2016). Fall-related injuries in the elderly, prevention of. *J Trauma*, 81(1), 196-206. DOI: 10.1097/TA.0000000000001025.
- ❖ Duckworth, M., Adelman, J., Belategui, K., Feliciano, Z., Jackson, E., Khasnabish, S., Lehman, I. S., Lindros, M. E., Mortimer, H., Ryan, K., Scanlan, M., Spivack, L. B., Yu, S. P., Bates, D. W., & Dykes, P. C. (2019). *J. Med Internet Res*, 21(1), e10008. DOI: 10.2196/10008
- ❖ Dykes, P. C., Burns, Z., Adelman, J., Benneyan, J., Bogaisky, M., Carter, E., Ergai, A., Lindros, M. E., Lipsitz, S. R., Scanlan, M., Shaykevich, S., & Bates, D. W. (2020). Evaluation of a patient-centered fall-prevention tool kit to reduce falls and injuries: A nonrandomized controlled trial. *JAMA Network Open*, 3(11), e2025889. DOI: 10.1001/jamanetworkopen.2020.25889
- ❖ Hicks, D. (2015). Can rounding reduce patient falls in acute care? An integrative literature review. *MEDSURG Nursing*, 24(1), 51-5. PMID: 26306357
- ❖ Johnston, M. & Magnan, M. A. (2019). Using a fall prevention checklist to reduce hospital falls: Results of a quality improvement project. *Am J Nurse*, 119(3), 43-49. DOI: 10.1097/01.NAJ.0000554037.76120.6a
- ❖ Trepanier, S. & Hilsenbeck, J. (2014). A hospital system approach at decreasing falls with injuries and cost. *Nursing Economics*, 32(3), 135-41. PMID: 25137810.



Step 3: Evaluation/Summary

Citation	Conceptual Framework	Design/ Method	Sample/ Setting	Major Variables and Definitions	Outcome Measurement	Data Analysis	Findings	Level of Evidence	Quality of Evidence: Critical worth to practice
Hicks, D. (2015). Can rounding reduce patient falls in acute care? An integrative literature review. <i>MEDSURG Nursing</i> , 24(1), 51-5. PMID: 26306357	N/A	Systematic Review	Initial research yielded 2,856 results. 434 were Journal articles and 14 articles from that met the inclusion criteria	Dependent variable = Falls in Acute care setting Independent variable = Hourly Rounding	Analyze evidence demonstrating nursing rounds decrease patient falls in acute care setting.	Samples articles were read for patterns, similarities, and differences. Data were reduced and detailed by source, purpose, sample interventions, and findings related to falls in acute care setting.	Several of the studies used hourly round while some included it in a checklist and another created rounding with script. Fall rates decreased in majority of the reviewed studies. Two studies showed no change in fall rates.	Level V	Strength: Good The review suggested the effectiveness of hourly rounding in reducing falls in acute care settings. Limitations: Samples were nonrandomized, small size, and studies have brief length of time of less than 1 year. Sample studies detailed hourly rounding, but rounding methods and use of 4P's were inconsistent



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<p>Crandall, M., Duncan, T., Mallat, A, Greene, W., Violano, P., Christma, A. B., Barraco, R. (2016). Fall-related injuries in the elderly, prevention of. <i>J Trauma</i>, 81(1), 196-206. DOI: 10.1097/TA.0000000000001025.</p>	N/A	<p>Systematic Review of RCTs, observational studies, case-controlled studies, and meta-analysis</p> <p>GRADE (Grading of Recommendations Assessment, Development, and Evaluation)</p>	<p>1830 studies. 50 articles were chosen and used to create recommendations.</p> <p>Population focus is age 65 years and older.</p>	<p>Dependent variable = falls with injury</p> <p>Independent variables</p> <ul style="list-style-type: none"> • Bone mineral-enhancing agents • Hip protectors • Exercise programs • Physical environment modifications • Risk factor screening • Multiple interventions tailored to population 	<p>Falls with injury, including but not limited to fractures, contusions, lacerations, and hemorrhage.</p>	<p>Each reviewer independently evaluated the data and quantified the strength of any recommendations based on overall quality of the evidence.</p> <p>GRADE Methodology:</p> <ul style="list-style-type: none"> • Strong = “we strongly recommend” • Weak = “we conditionally recommend” 	<ul style="list-style-type: none"> • Bone mineral-enhancing agents = “conditionally recommend” • Hip protectors = “conditionally recommend” • Exercise programs = “conditionally recommend” • Physical environment modifications = “conditionally recommend” • Risk factor screening = “conditionally recommend” • Multiple interventions tailored to population = “strongly recommend” 	Level I	<p>Strength = good</p> <p>Combined programs or strategies have promising effect on decreasing fall-related injuries among the elderly, but the limitations have to be considered.</p> <p>Limitation: Homogeneity or variation in study population characteristics and dosing strategies of bone mineral-enhancing agents. Gender and racial differences may decrease generalizability. Other limitation are small sample sizes. Cost-effectiveness of multiple strategies may have to be assessed.</p>

Step 3: Evaluation / Summary



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<p>Johnston, M. & Magnan, M. A. (2019). Using a fall prevention checklist to reduce hospital falls: Results of a quality improvement project. <i>Am J Nurse</i>, 119(3), 43-49. DOI: 10.1097/01.NAJ.000554037.76120.6a</p>	N/A	Quality Improvement Initiative	84-bed University-affiliated National Cancer Institute in the Midwest. One unit (Bone marrow transplant unit with 19-bed capacity volunteered as pilot study.	<p>Dependent Variable = fall incidence</p> <p>Independent variable = fall prevention checklist</p>	14-item fall prevention checklist based on existing hospital protocol evaluating fall prevention interventions	<p>Daily number of falls were tracked and compared with a 3-month retrospective data.</p> <p>The 14-item checklist was evaluated by staff for its ease of use and value in fall prevention.</p>	<p>Two common errors or omissions were noted: (1) Incorrect bed alarm setting and (2) missing fall risk signage.</p> <p>No falls occurred during 1 month implementation period.</p> <ul style="list-style-type: none"> • Checklist functioned as reminder to correct errors • Checklist improved staff awareness of fall risks <p>Limitations: Small number of observations and short period of time for data collection makes it difficult to draw conclusions on possible trends in fall rate that may be related to the checklist. Low number of checklist evaluations raises questions about response bias.</p>	Level VI	<p>Strength = Good</p> <p>The use of fall prevention checklist is useful as fall prevention strategy.</p> <p>The checklist can be modified based on unit specific needs.</p> <p>Staff buy in may be a challenge for sustainability but with proper education and guidance it can be a promising intervention.</p>



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<p>Duckworth, M., Adelman, J., Belategui, K., Feliciano, Z., Jackson, E., Khasnabish, S., Lehman, I. S., Lindros, M. E., Mortimer, H., Ryan, K., Scanlan, M., Spivack, L. B., Yu, S. P., Bates, D. W., & Dykes, P. C. (2019). <i>J. Med Internet Res</i>, 21(1), e10008. DOI: 10.2196/10008</p>	N/A	Case-control study	<p>Setting: 3 institutions -Brigham and Women’s Hospital, Montefiore Medical Center, and New York-Presbyterian Hospital. Conducted in 6 Neurology units and 7 medical or med-surg unit</p> <p>Sample: 1209 audits for patient engagement measures. 1401 audits for presence of Fall TIPS poster at bedside.</p> <p>Inclusion criteria: Diverse population of patients aged 18 years and older, alert and oriented or have family present involved in care, English or Spanish speaking, and LOS >24 hours.</p>	<p>Dependent variable= injury-related fall</p> <p>Independent variables = 3-step fall prevention process across the Fall TIPS modalities:</p> <ul style="list-style-type: none"> • laminated Fall TIPS • Electronic Fall TIPS • Patient bedside Fall TIPS display 	Percentage of patients and families who reported knowing their personal fall risk factors and plan from the 3 Fall TIPS modalities	<p>Random audits to assess effectiveness of patient/family engagement and protocol adherence.</p> <p>Patient demographics was analyzed and presented in table format. Patient engagement audit data by modality and adherence to Fall TIPS protocol were presented in line graph.</p>	<p>No single modality is better in engaging patients. All units reached significant rates (>80%) of patient engagement and adherence with the sign protocol to reduce fall and fall with injury rates</p> <p>Fall TIPS modality is effective at engaging patients in the 3-step fall prevention process and can be used into practice.</p>	Level IV	<p>Strength = good</p> <p>Generalizability and applicability of the study is possible in inpatient units. Patient engagement is an important aspect of patient safety.</p> <p>Limitations: Differences in communication channels, social systems, support from leadership and timing of Fall TIPS implementation may have affected the level of patient engagement with fall prevention.</p> <p>Study is an implementation science study and not designed to randomize units to each modality but assess efficacy of the Fall TIPS modalities within the existing institutional frameworks. Implementation of practice into workflow does not allow for perfect comparability, but demonstrates the possibility of significant adherence to an evidence-based fall prevention program in the workflow.</p>



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<p>Dykes, P. C., Burns, Z., Adelman, J., Benneyan, J., Bogaisky, M., Carter, E., Ergai, A., Lindros, M. E., Lipsitz, S. R., Scanlan, M., Shaykevich, S., & Bates, D. W. (2020). Evaluation of a patient-centered fall-prevention tool kit to reduce falls and injuries: A nonrandomized controlled trial. <i>JAMA Network Open</i>, 3(11), e2025889.</p>	<p>RE-AIM framework: Reach, Effectiveness, Adoption, Implementation, and Maintenance</p>	<p>Stepped wedge design</p> <p>Nonrandomized controlled trial</p>	<p>Setting: 14 medical units within 3 academic medical centers in Boston and New York.</p> <p>Sample: 37,231 inpatient hospitalized adults</p>	<p>Dependent variable = fall and falls with injury</p> <p>Independent = Fall TIPS in 3 modalities:</p> <ul style="list-style-type: none"> Laminated paper poster Integrated in electronic health record (EHR) Electronic bedside screen (e-bedside) 	<p>Rate of falls and falls with injury per 1000 patient days</p>	<p>Poisson regression models.</p> <p>Statistical significance set at $P < .05$ using a 2-sided test. SAS statistical software version 9.4 was used for analysis.</p> <p>21 months of preintervention data and 21 months of postintervention data.</p>	<p>Decreased mean length of stay, improved staff compliance 86% and >95%.</p> <p>Decreased rates in falls and fall-related injuries. 18% reduction in falls for patients younger than 65. 10% reduction in falls for patients 65 and older.</p>	<p>Level III</p>	<p>Strength = good</p> <p>The multisite evaluation proved generalizability of the Fall TIPS tool kit. Fidelity of unit champions and staff engagement are important in discovering and addressing barriers. Leadership involvement is also vital for integration of the tool kit into practice. These are vital to the success and sustainability.</p> <p>Limitation: There are challenges in conducting pragmatic studies that engage stakeholders in intervention development in complex clinical settings. Quantifying association between intervention and fall reduction may be difficult with involvement of end users. Iteratively changing processes could impact practice and outcomes. Support from leadership and unit champions, communication channels, timing of implementation, and nurse and patient adherence to the protocol were variables that could not be fully controlled. The study design did not allow for perfect comparability.</p>

Step 3: Evaluation / Summary



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<p>❖Trepanier, S. & Hilsenbeck, J. (2014). A hospital system approach at decreasing falls with injuries and cost. <i>Nursing Economics</i>, 32(3), 135-41. PMID: 25137810.</p>	N/A	Quality Improvement Study	<p>Adult patients in for-profit health care system based in Midwest United States.</p> <p>50 acute care hospitals in 11 states were included.</p>	<p>Dependent variable = fall and fall with injury</p> <p>Independent variable = multiple and patient-centered fall prevention strategies</p>	Percentage of fall with injuries per 1,000 patient days.	Raw data was analyzed then normalized the raw fall data with patient days.	<p>Raw data = 41% decrease in fall with injuries after the first year and additional 31% comparing year 2 to baseline.</p> <p>Normalized raw data = 37.5% decrease in fall with injuries after the first year and additional 33.3% comparing year 2 to baseline.</p> <p>58.3% total decrease in acute care setting over 2-year period.</p>	Level VI	<p>Strength = good</p> <p>Multifactorial prevention program appears to have impact in decreasing rates of injury-related falls.</p> <p>Limitations: Convenient sample size was used, making it difficult to generalize the findings. A reliable method to verify how completely each expected intervention was implemented at the hospital level was not identified. Also, researchers are unable to identify which intervention had the most impact on falls.</p>

Step 3: Levels of Evidence Synthesis Table

LEVEL OF EVIDENCE	1	2	3	4	5	6
Level I: Systematic Review of Meta-Analysis		X				
Level II: Randomized Controlled Trial						
Level III: Controlled Trial without randomization					X	
Level IV: Case-controlled or cohort study				X		
Level V: Systematic Review of qualitative or descriptive studies	X					
Level VI: Qualitative or descriptive study, CPG, Lit Review, QI or EBP project			X			X
Level VII: Expert Opinion						

Step 3: Outcomes Synthesis Table

Outcomes	1	2	3	4	5	6
Fall	↓	↓	↓	✓	↓	NE
Falls with Injury	NE	↓	NE	✓	↓	↓
Length of stay	NE	NE	NE	NE	↓	NE
Cost	NE	NE	NE	NE	NE	↓
Staff satisfaction	↑	NE	↑	NE	NE	NE
Staff responsiveness	✓	NE	↑	NE	↑	NE
Patient satisfaction or engagement	↑	NE	NE	↑	NR	NE

Symbol Key

↓ = Decreased, ↑ = Increased, — = No Change, NE = Not Examined, NR = Not Reported, ✓ = Applicable or Present

Step 4: Evidence-Based Recommendations

- ❖ A checklist of multifactorial strategies are effective in fall prevention
- ❖ Staff and patient involvement are also vital
 - ❖ Fall prevention checklist education
 - ❖ Multidisciplinary staff, patients and their families
- ❖ Audits and timely feedback to determine compliance



Evidence says...



Putting it all together . . .

NU 5B FALL Prevention Checklist

DATE: _____

SHIFT: _____

Room #	Morse Fall Scale (MFS**) #	Fall Prevention Bundle (Yellow Signage, Non-skid Socks, Armband, Side rails) (Yes/No)	Room Modification (Clutter-free, spill-free, call bell, belongings, bed locked and low position, near Nurses Station) (Yes/No)	Hourly Rounding Log (Yes/No)	Bed/Chair Alarm or 1:1 Sitter (high-risk pts- MFS 45 or above) (Yes/No)	Fall TIPS form (Yes/No)	Patient Education* (Yes/No/NA)
5B 120							
5B 122							
5B 124							
5B 126							
5B 128							
5B 130							
5B 132							
5B 140							
5B 142							
5B 144							
5B 146 A							
5B 146 B							
5B 148							
5B 150							
5B 152							
5B 154							
5B 182							
5B 184							
5B186							
5B 188							
5B 190							
5B 192							
5B 194							
5B 196							
5B 198							

**MFS 45 or greater requires either Bed Alarm/Chair Alarm or Sitter.

*Patient education is a requirement. Not Applicable (N/A) means the patient is confused or not redirectable

Step 4: Implementation Plan

Strategy #1

ACTION PLAN

- Action Plan table
- Meetings, goals, timeframes, expectations, and outcomes

Strategy #2

STAKEHOLDERS

- Key stakeholders (leadership, staff, patients)
- Involve leadership (Nurse Manager, OCL Nurse Executive)
- Share vision and plans
- Encourage and address feedback

Step 4: Implementation Plan

Strategy #3

STAFF INVOLVEMENT

- Share vision and plans (staff education, daily huddles, one-to-one coaching)
- Discuss staff responsibilities, timeframes, and outcomes
- Clarify confusions and address questions
- Unit champions with clear expectations and responsibilities

Strategy #4

IMPLEMENTATION

- “Go Live” date
- Daily audit to identify effectiveness and address barriers
- Provide continuous feedback
- Celebrate successes

Step 4: Implementation Plan

***So
What...***

- ❖ The use of a checklist with multifactorial fall interventions can decrease incidence of falls.
- ❖ The checklist will provide the necessary steps for consistent and appropriate completion of tasks.
- ❖ Not because we do not know how to perform the task, but to ensure that we prevent any oversight that could lead to potential error due to omission.

Step 5: Evaluate the Outcomes

Mechanisms for Measurement

- ❖ Daily chart audit
- ❖ Real-time unit observations
- ❖ Interview patients and staff

Timeline for Measurement

- ❖ Track fall incidents monthly post-intervention

Return on Investment (ROI)

- ❖ Decrease cost by decreasing the number of falls
- ❖ Improve patient safety, patient involvement, and staff engagement

Return on Investment

- ❖ According to The Joint Commission (2021)
 - ❖ Estimated cost of one fall with injury is about \$ 14,056
 - ❖ Additional 6.3 hospital days
- ❖ Cost of fall prevention checklist is minimal
 - ❖ Time of staff is embedded in the workflow
 - ❖ Cost of print and paper are included in the unit budget/supply



Sustainability Plan

Key Players

Leadership

5B Nurse Manager
OCL Nurse Executive

Multidisciplinary Team

5B staff (RN, NA)
Unit-based council chair
and members
Unit Champions
Providers
Physical Therapist

Patients

5B patients/families

Sustainability Plan

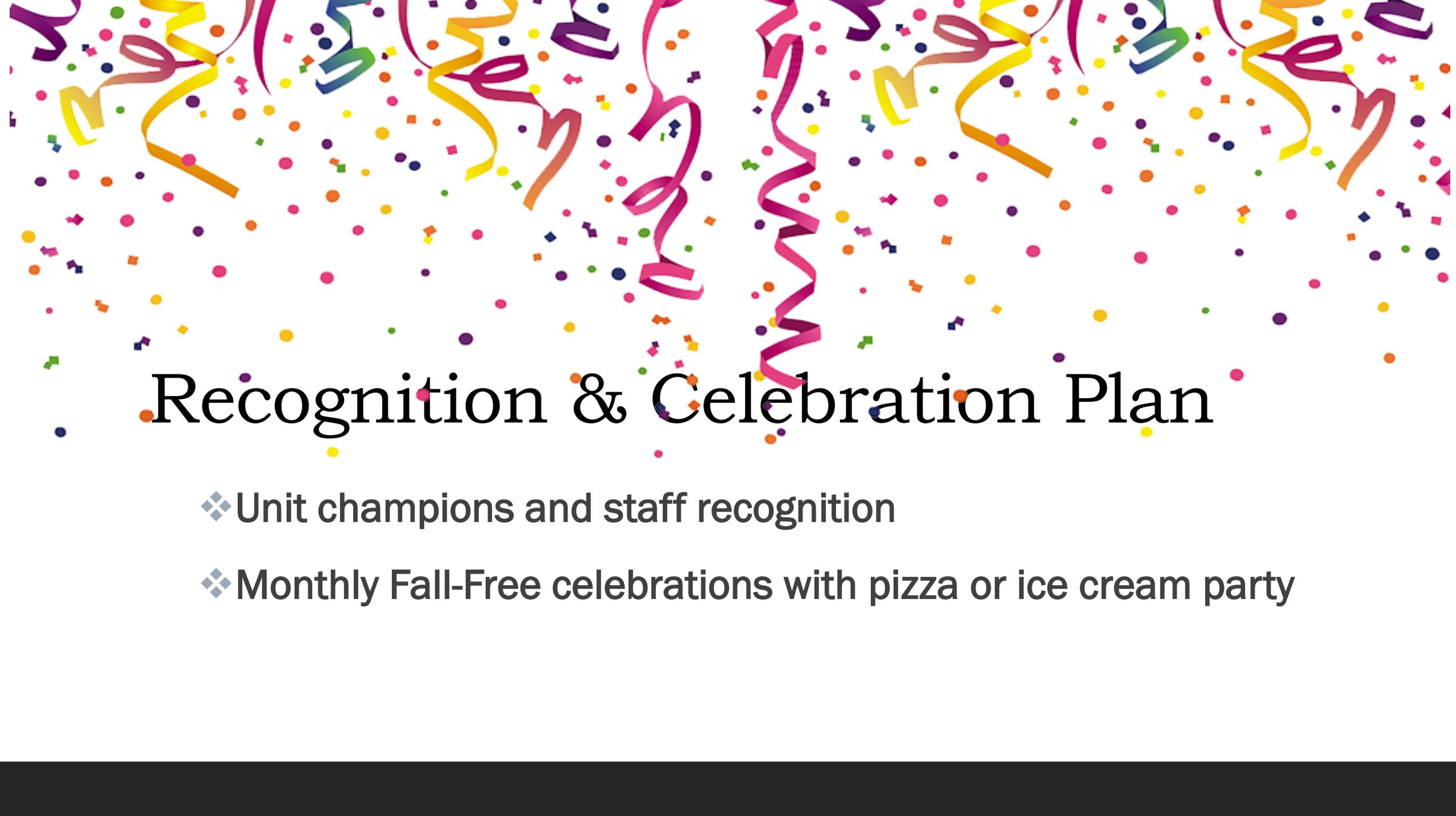
- Staff education
- Involve key stakeholders
- Establish unit champions
- Discuss responsibilities, expectations, and outcomes

- Monitor consistency of fall prevention interventions
- Measure falls incidents
- Identify barriers and address challenges



- “Go Live” date
- Daily audits
- Reinforce education as needed
- Celebrate successes
- Annual Competency

- Evaluate outcomes
- Timely feedback
- Continue implementation
OR
- Modify as needed



Recognition & Celebration Plan

- ❖ Unit champions and staff recognition
- ❖ Monthly Fall-Free celebrations with pizza or ice cream party

Step 6: Dissemination Plan

Local

Regional

National

International

“Aha” Moment!

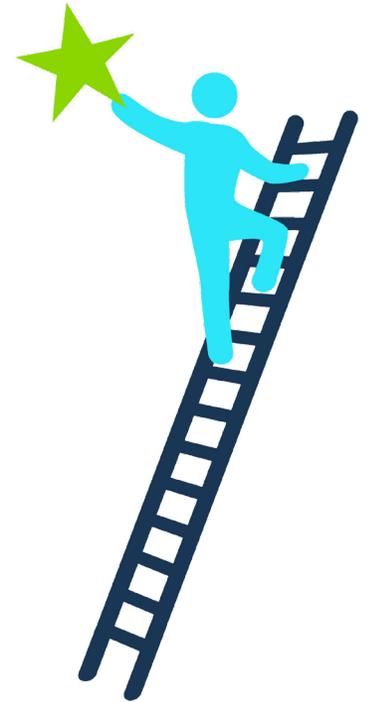
- ❖ Not one single approach is effective in preventing falls
- ❖ Multifactorial interventions prove to be more effective
- ❖ MEDVAMC Policy and tools readily available
- ❖ Applicability of evidence to our unit, population, and environment
- ❖ Unit-specific checklist was created

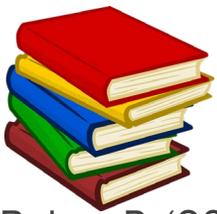


In Summary



We have the tools we need.
We just need to put it all together!
Most importantly...
Practice continuously and consistently!





References

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- ❖ Crandall, M., Duncan, T., Mallat, A, Greene, W., Violano, P., Christma, A. B., Barraco, R. (2016). Fall-related injuries in the elderly, prevention of. *J Trauma*, 81(1), 196-206. DOI: 10.1097/TA.0000000000001025.
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- ❖ The Joint Commission. (2021). Preventing falls. Retrieved from <https://www.centerfortransforminghealthcare.org/improvement-topics/preventing-falls/>
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