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Increasing Patient Safety by Reducing Falls Among In-Hospital Community-Dwelling Patients 65 Years Old or Older by Using a Shift Change Fall Safety Checklist

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NUR 701: Writing for Publication

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I. Abstract

This manuscript is designed to promote and improve healthcare safety, quality, efficiency, and lower medical costs for hospitals and patients. Falls, fall injuries, and their devastating consequences are rising, yet falls are preventable even among senior patients. *Search Engines and Key Terms*

SciWheel was used to save the literature and eliminate duplications. Key terms were used in the Boolean strings: elderly fall prevention, senior fall safety, in-hospital fall prevention, falls in the aging, and fall prevention tools. The CINAHL Plus yielded 58. PubMed search yielded 121. And Google Scholar yielded 32. The total of all three searches was 211. Thirteen duplicates were eliminated by SciWheel, leaving 198 articles. Excluded were 168 articles about machines, articles about patients less than 65 years old, and articles not about hospital patients, leaving 30 articles. SQUIRE 2.0 was used in organizing this manuscript (Ogrinc et al., 2016).

Falls are America's leading cause of injury among the elderly, according to the National Center for Injury Prevention and Control (2020). Falls, fall injuries, and their devastating consequences are rising, yet falls are preventable events (Alamgir, Muazzam, & Nasrullah, 2011). Annually, there are seven hundred thousand to a million falls in U.S. hospitals that cause pain, suffering, deaths, and enormous healthcare cost. (Johnston & Magnan, 2019). Decreased balance can lead to falls that produce in-hospital patient pain, suffering, disability, increased mortality, and morbidity (National Center for Injury Prevention and Control, 2020). The combined direct and indirect cost of fall injuries in 2010 among the elderly was an overwhelming \$50 billion and is expected to increase substantially by 2040 (Lohman et al., 2017). A significant portion of these spiraling upward costs was shared by local hospitals and patients.

Joint Commission (2015) stated that lack of adherence to hospital-approved fall risk prevention protocols was a main contributor to causing hospital patient falls. The Shift Change Fall Safety Checklist was designed to reduce this problem (Johnston & Magnan, 2019). In some cases, it can also help improve communication by addressing the hearing and vision needs of the patients.

Introduction: Problem

Joint Commission (2015) studied in-hospital falls across the nation and stated that one of the most common causes of in-hospital falls was due to the lack of adherence to hospitalapproved fall risk prevention protocols, as was noted in their Sentinel Event Alert Issue No. 55. Inefficient communication between staff and patients was also noted as needing improvement (Joint Commission, 2015). Prevalence studies of in-hospital fall rates have shown that falls extend from 3.1 to 11.5 falls per 1,000 bed-days; the hospital units with the most falls include the medical-surgical units, neurosurgery, and neurology units (Bouldin et al., 2014). Most hospitals have between 3 to 5 falls per 1,000 bed days per month (Agency for Healthcare Research and Quality [AHRQ], 2013). The Shift Change Fall Safety Checklist (Johnston & Magnan, 2019) could help reduce falls by even one fall per 1,000 bed-days and offer a significant improvement in healthcare among patients 65 and older.

A common contributing factor that increases in-hospital falls is the lack of nursing staff's adherence to approved fall risk prevention protocols, often caused by unintentional omissions, also called slips (Kalisch, & Xie, 2014). Nurses and nursing assistants often work under stress, making it easy to forget to do specific tasks that they meant to do. Just as checklists are used by airplane pilots preparing to takeoff, nurses can make sure nothing is omitted by using checklists

(Gawande, 2011). The Shift Change Fall Safety Checklist would not take up time during the shift. It is to be completed in the 15 minutes before or 15 minutes after the hour of shift changes. *Available Knowledge*

Many fall assessment tools are available, addressing a variety of interventions being used by hospitals (Magnani et al., 2021; Meekes et al., 2021; Strini et al., 2021). While comparing the Wilson-Sims Falls Risk Assessment (WSFRAT) used in many psychiatric facilities, the MFS as described by the AHRQ (2013), and the Stopping Elderly Accidents, Deaths, and Injuries (STEADI) fall prevention algorithm (CDC, 2020), only the STEADI addressed a more accurate stratification of all areas needed in fall prevention (Lohman et al., 2017). The STEADI algorithm recommends a combination of different tools to address three assessment areas.

(See the STEADI Algorithm – Figure 1.)

According to Strini et al. (2021), the MFS is easy and quick for hospital staff and administrators. Still, the MFS lacks assessment of certain evidence-based factors needed to fully evaluate fall risks, such as the sensory deficits in hearing and vision. Additionally, the MFS does not allow for the evaluation of patients on specific drugs that cause dizziness leading to imbalances that cause falls (Strini et al., 2021). This lack of thorough assessment can lead to increased patient falls. However, this can be compensated by adding noted items to the Shift Change Fall Safety Checklist to help fall proof the patient's assessment.

(See the Morse Fall Scale – Figure 2.)

(See the Shift Change Falls Safety Checklist – Figure 3.)

A sensory assessment is critical in fall prevention (Gopinath et al., 2016; Yang, 2021). If a hearing deficit has not been assessed on the fall risk assessment self-report tool like the MFS, it will not be addressed in the patient's care plan or interventions. An intervention stating that the patient needs his hearing aids put in or needs a written communication will be omitted, causing miscommunication. The patient may have left their hearing aid at home in a rush to get to the hospital. Two or three days may pass before all the patient's nursing staff knows to write the patient notes or help the patient get their hearing aids from home as an intervention. Therefore, the patient's hearing needs are not addressed if sensory deficits were not listed on the initial assessment tool. Further, newly prescribed pain medications often lead to imbalances that cause falls (Kuschel, Laflamme, & Möller, 2015; Silva, Costa, & Reis, 2019). If such new prescriptions of narcotics are not assessed, this contributes to the problem of fall risks (Joint Commission, 2015).

Rationale

Falls are multifactorial; therefore, using only one tool to evaluate patient fall risks on admission cannot give a complete picture (Lusardi et al., 2017; Taylor et al., 2019). First, a patient's medical history with any history of falls is needed. Secondly, a self-report, such as the MFS, is needed to address such as feelings of dizziness or imbalance. Then thirdly, a performance evaluation like *Timed-Up & Go* is needed for a full fall risk diagnosis, as defined by Lusardi et al. (2017). STEADI addresses all three assessments in one algorithm (Strini et al., 2021: Taylor et al., 2019).

Many seniors lack core muscle strength in their low back, abdomen, and upper thighs to maintain the balance needed to stand from a seated position well enough without pulling up on furniture (Granacher et al., 2013; Patti et al., 2021). In three minutes or less, the *Timed Up and Go* performance evaluation can allow nurses to detect this problem well enough to assess when a person will need a walker to prevent falls (Lohman et al., 2017). A performance evaluation that nurses can use would allow nurses to more quickly get walkers ordered for patients who need

one to get from the bed to the restroom late at night when many falls happen in hospitals. Otherwise, patients would have to wait for the physical therapist to have time in their schedule to do a more extended thirty-five-minute evaluation before the walker could be ordered. This wait could leave patients without a walker for a few more days allowing time for a fall. STEADI additionally offers other interventions that may help to avoid falls (Lohman et al., 2017).

Some patients may tell the nurse during the self-report that they really need a walker and may therefore not need a performance evaluation like STEADI. Hospitalized patients may not be aware that certain neurological illnesses can cause imbalances that lead to falls (Homann et al., 2013). Practitioners, caregivers, and family members often have done little to warn seniors of the dangers of falls or train them on fall prevention (Mamani et al., 2019). Therefore, many older patients do not realize that they are at risk of falls that may cause serious injuries, much less are they aware of how some falls could lead to death (Vincenzo et al., 2022).

The Shift Change Fall Safety Checklists can serve a two-fold purpose in reducing patient falls. First, this Checklist can help nurses and nursing assistants adhere to the whole bundle of hospital fall risk prevention protocols more consistently. Additionally, this Checklist can be used to add sensory deficit assessments that may not have been addressed in the initial assessment tool like the MFS. Since no tool is everything needed, having more than one assessment tool has the advantage of covering a broader view of patient needs (Strini et al., 2021).

Each shift, using the Checklist, would allow the patients to be assessed for medications like narcotics or tranquilizers that may cause dizziness that leads to falls. During shift change, these new medications would be brought to the on-coming nurse's attention by the Checklist. New narcotics prescriptions are not always stated during nursing shift reports but would be noted on the Shift Change Fall Safety Checklist. In addition to noting the list of fall prevention

6

protocols, a short assessment can be added to the bottom of the Shift Change Fall Safety Checklist, noting hearing and vision assessment. The MFS does not record hearing or vision deficits or medications that may cause dizziness. However, the Fall Safety Checklist would show the oncoming nurse any hearing or vision deficits of their patients to help foster more effective communication. Further, the off-going nurse would let the oncoming nurse know that the patient has hearing aids or glasses kept in a specific place, which is not always mentioned in the report. Further, each shift, the oncoming nurse would know of new medications their patient has started that may lead to a fall and if the patient needs to have hearing aids put in or glasses put on to improve communication.

Specific Aim

This quality improvement project aims to reduce patient falls by helping nursing staff increase patient safety by boosting the usage of evidence-based fall risk prevention protocols among community-dwelling inpatients ≥ 65 years of age. In addition, the Checklist would help nursing staff to become more consistent in their use of hospital fall prevention protocols, and, in some cases, it may also be used to improve communication.

Methods Context

The Donabedian conceptual model and framework were applied (Ayanian & Markel, 2016). Donabedian is a classical framework for health care improvement. Donabedian Theory has three main levels. The nursing staff represents the first level called *structure*. The second level, called *process*, is represented by the nursing staff using the Shift Change Fall Safety Checklist. The third level is the *outcome* represented by the process leading to an improved outcome of reducing falls by at least one fall per 1,000 bed-days per month (Ayanian & Markel, 2016).

All patients in this study have qualified for the Acute Care for the Elderly (ACE) unit, which focuses on reducing the functional decline of the elderly and reducing their anxieties from hospitalization. Because the senior population has already grown exponentially, the ACE overflow unit is where this quality improvement project pilot study occurred. Included were community-dwelling inpatients \geq 65 years old who scored at risk for falls on the MFS. Other patients included were those who started on a narcotic or tranquilizer. Excluded were patients who did not score at risk on the MFS; patients from nursing homes or other facilities; and bedridden patients who were too immobile to fall. Current standards of care include an initial assessment with the MFS (AHRQ, 2013) to determine which patients are at risk for falls. Items on the hospital-approved fall risk protocols to be listed as items on the Shift Change Fall Safety Checklist include patient education; family education; nursing staff awareness; nursing assistant awareness; signage on the door; precaution wristband; the bed in low position; bed alarm correctly set; non-skid yellow precaution socks on; call light in reach; personal items in reach. *Description of the Interventions*

The Shift Change Falls Safety Checklist containing the hospital-approved fall risk prevention protocols will be completed by the oncoming nurse or nurse assistant during the thirty-minute shift change reporting period based on what they found at the beginning of their shift. At the bottom of the listed fall risk prevention protocols, needed evidence-based items not addressed on the initial MFS assessment will be added. The only data to be collected by the Implementation Team member assigned to supply the Shift Change Fall Safety Checklist to the unit is that which was completed by the oncoming nursing staff during the thirty minutes of shift change reporting.

(See the Shift Change Fall Safety Checklist Flow Chart - Figure 4.)

8

Interventions by Steps

Step 1: Retrospective Review of Fall Statistics- One member of the Implementation Team will review the statistics of falls on the unit for the past six months to determine the average number of falls per 1,000 patient bed-days for each month. For the month of this pilot project, the goal is to reduce falls per 1,000 patient bed-days by at least 1.0. This retrospective review starts two weeks before the month of full implementation. This takes place from Sept. 19th to 23rd, 2022. **Step 2: Staff Training** - Another member of the Implementation Team will provide an explanation of the how, when, and who should be using the Shift Change Fall Safety Checklist. Those patients who scored on the MFS as being at risk for falls will have the Shift Change Safety Checklist completed by the oncoming nurse or nursing assistant during the thirty minutes period of the shift change before they accept their patients. Other patients who begin medications that may make them drowsy or unable to have good balance should also be started on the Shift Change Safety Checklist. Staff training takes place the week following the retrospective reviews. This takes place from Sept. 26th to 30th, 2022.

(See Staff Training Sheet – Figure 5.)

Step 3: Project Implementation – The evidence-based Shift Change Fall Safety Checklist will begin once the Implementation Team member in charge of supplying and collecting the forms has the forms in place on the unit. At least 90 patient checklists should be completed for this project over four weeks. This starts Oct. 2nd to 29th, 2022 but may be extended.

Step 4: Post Implementation Follow-up – All of the nursing staff who completed the Shift Change Fall Safety Checklist provide their feedback on the Staff Evaluation Form. The Implementation Team will tabulate the data collected from the nurses and nursing assistants to incorporate the suggestions from staff that would make the project run smoother.

9

(See Staff Evaluation Form Figure 6).

Step 5: Post-implementation review of interventions If any intervention listed in the Fall Safety Checklist was noted as not being completed, it is evaluated by the Implementation Team to see if that intervention needs to be modified to be more effective.

(See Evaluation of Interventions Figure 7.)

This will take place from Oct. 30th through Nov. 5th, 2022.

Step 6: **Data analysis** Pearson's Correlation should be used to show a correlation between using the Shift Change Fall Safety Checklist and a decrease in falls on the unit. The Nursing Implementation Team should collect at least 90 checklists during the four weeks of October 2022. The hospital's fall rate is expected to be reduced by at least one fall per 1,000 patient bed-days (Johnston & Magnan, 2019). The staff survey evaluations should be reviewed by the Nursing Implementation Team to employ staff suggestions as needed. The Shift Change Fall Safety Checklist analysis and staff survey evaluations should be fully reviewed and completed by the Nursing Implementation Team between Nov. 6th and 12th, 2022. The Nursing Implementation Team will review the results with their Faculty Chair and Project Manager.

Quantitative data will be collected from the Shift Change Fall Safety Checklist. Staff Surveys will be collected as quantitative data also. Both sets of data will be tabulated by the Nursing Implementation Team. The Shift Change Fall Safety Checklist will be tabulated in percentages to show the interventions that were completed and not completed. The staff evaluation suggestions will be collected and evaluated as qualitative data to consider how the staff feels about this pilot project. The Nursing Implementation Team will report all data to the Project Manager.

Ethical Considerations

Data collected from observation of the oncoming nurse will only include the patient's initials. However, this still has to be protected based on the Health Insurance Portability and Accountability Act (HIPPA) standards. Therefore, the patient's initials must be de-identified using a random code generator. The code key was kept by the Nursing Implementation Team leader. A password-protected computer file was used to secure the data collected. Data collected is then kept in a locked office. All the Shift Change Fall Safety Checklist forms can be put into the hospital's computerized system for a sustainability plan that would allow this project to be used in other hospital units.

V. Results

(See Flow Chart in Figure 4).

The standard unit for calculating hospital fall rates is expressed as falls per patient occupied bed-days x 1,000 (AHRQ, 2012). The incident reports will show the number of falls in a month for the hospital unit. As an example, the unit had five falls in a month. Use this number to calculate the falls per bed-days. Find the number of beds that were occupied each day for a particular month. Add up the number of total occupied beds for each day of the month. So if the number is 901 patient bed-days. Divide the number of falls reported on incident reports by the number of patient bed-days for the month. 5/901=0.00554. Multiply this, times 1,000, which equals 5.549 or 5.5 falls per 1,000 bed-days (AHRQ, 2012).

Previous records of the fall rates for the hospital units should be available in hospital records for each month. Pearson's Correlations were used to measure the strength of linear association between two variables (Sedgwick, 2012). Therefore, Pearson's Correlations can be used to show there is a correlation between using the Shift Change Fall Safety Checklist and the reduction in patient falls as opposed to the number of falls when the Checklist was not being used. It is expected that using the Checklist will reduce falls on the unit by at least one fall per

1,000 patient bed-days. This reduction would save pain, suffering, and cost for both the patient and the hospital.

VI. Discussion

Key findings relevant to the rationale

The impact of falls on the elderly is growing extensively across the world (Tanwar et al., 2022). This problem also is increasing among hospital community-dwelling inpatients locally. An average of 10,000 Americans are turning 65 daily in a population explosion, and the death rate from falls among the elderly is increasing (Burns & Kakara, 2018). The management of fragility fractures becomes more challenging among the elderly(Falaschi & Marsh, 2021). The problem of falls becomes compounded for in-hospital elderly patients who are in an unfamiliar environment (Lee et al., 2022). Yet, according to evidence-based research from Joint Commission (2015), many in-hospital falls, even among the elderly, can be prevented, reducing pain, suffering, and financial burdens for patients while reducing hospital costs as well.

Joint Commission (2015) stated that one of the top reasons for patient falls resulted from a lack of adherence to hospital-approved fall risk prevention protocols. Better communication between hospital staff and patients was also mentioned by Joint Commission as needing improvement. The Shift Change Falls Safety Checklist can be used to improve the nursing staff's adherence to fall-risk prevention hospital protocols and improve consistency in care. In some cases, this can also improve communication between patients and staff by making the staff aware of patient deficits in hearing and vision and providing certain interventions. Therefore, falls can be decreased by at least one fall per 1,000 bed-days, reducing morbidity, reducing mortality, and reducing high costs to patients and hospitals.

12

Strengths of the project

This project is easily sustainable because the cost is very low. This project requires the use of a printer, ink, paper, and salaries for the Nursing Implementation Team. This should cost no more than around \$5,000. The salary of the nurse manager's time is about \$2,000 and the Implementation Team members are graduate assistants. In contrast, according to Joint Commission (2015), the average cost of just one in-hospital fall with injury is \$14,000.00. So, the project is very cost-effective. If this project and all of its forms are uploaded to the hospital computer system, it can be used throughout the hospital wherever it is needed in other hospital units. This makes it very sustainable.

Reducing falls, as this quality improvement project is expected to do, should keep patients from having longer hospital stays from fall injuries. It should decrease morbidity and mortality of the elderly. It should reduce medical costs for patients. Additionally, it should reduce needed staffing days as well as reduce hospital non-reimbursable costs.

Other Information

The National Institute on Aging, a component of the National Institutes of Health, currently has a Funding Opportunity Title called *Transition to Aging Research for Predoctoral Students (F99/K00)*. The Announcement Type is a reissue of RFA-AG-22-026. This grant may be used to address the need to reduce falls among in-hospital patients who are 65 or older (The U. S. National Institute on Aging, n.d.). The amount to be requested is \$5000.00. This should be used for funding a securely locked cabinet for data storage, a laser printer, ink cartridges, clipboards, staplers, pencils, pens, and a thank-you luncheon for both shifts of nurses who would be completing the shift change checklist forms and other forms needed. In addition, in-kind contributions from the hospital would include access to the hospital information technology system for data storage and staff salaries of those involved. This pilot project expense of \$5,000 is minimal compared to the average non-reimbursable cost to the hospital of just one fall, which amounts to \$14,000 (Joint Commission, 2015).

References

Agency for Healthcare Research and Quality. (2012). How to measure fall rates and fall prevention practices.

www.ahrq.gov/sites/default/files/wysiwyg/professionals/systems/hospital/fallpreventiontraining/module5/module5_slides_fallprev.pptx

- Agency for Healthcare Research and Quality. (2013). Preventing falls in hospital: Tool 3H: Morse Fall Scale for identifying fall risk factors. Downloaded from https://www.ahrq.gov/patient-safety/settings/hospital/fall-prevention/toolkit/morse-fallscale.html
- Alamgir, M. S., & Nasrullah, M. (2011). Unintentional falls mortality among elderly in the United States: Time for action. *Injury*, 43(12), 2065–2071.
 https://doi.org/10.1016/j.injury.2011.12.001
- Ayanian, & Markel, H. (2016). Donabedian's lasting framework for health care quality. *The New England Journal of Medicine*, *375*(3), 205–207. doi.org/10.1056/NEJMp1605101
- Bouldin, Andresen, E. M., Dunton, N. E., Simon, M., Waters, T. M., Liu, M., Daniels, M. J.,
 Mion, L. C., & Shorr, R. I. (2013). Falls among adult patients hospitalized in the United
 States: Prevalence and trends. *Journal of Patient Safety*, 9(1), 13–17.
 doi.org/10.1097/PTS.0b013e3182699b64
- Burns, E., & Kakara, R. (2018). Deaths from falls among persons aged ≥65 Years United States, 2007-2016. MMWR. Morbidity and mortality weekly report, 67(18), 509–514. doi.org/10.15585/mmwr.mm6718a1

- Centers for Disease Control and Prevention. National Center for Injury Prevention and Control. (2020). Falls and the injuries and deaths they cause are increasing. https://www.cdc.gov/steadi/pdf/STEADI_ClinicalFactSheet-a.pdf
- Centers for Disease Control and Prevention. (2021). Resource: Algorithm for fall risk, screening, assessment, and interventions. https://www.cdc.gov/steadi/pdf/Algorithm-508.pdf
- Falaschi, P., & Marsh, D. (2021). Orthogeriatrics : the management of older patients with fragility fractures (P. Falaschi & D. Marsh, Eds.; Second edition.). Springer Nature Switzerland AG. doi.org/10.1007/978-3-030-48126-1
- Gawande. (2011). The checklist manifesto: How to get things right. *Journal of Nursing Regulation*, 1(4), 64–64. doi.org/10.1016/S2155-8256(15)30310-0
- Gopinath, McMahon, C. M., Burlutsky, G., & Mitchell, P. (2016). Hearing and vision impairment and the 5-year incidence of falls in older adults. *Age and Ageing*, 45(3), 409–414. doi.org/10.1093/ageing/afw022
- Granacher, U., Gollhofer, A., Hortobágyi, T., Kressig, R. W., & Muehlbauer, T. (2013). The importance of trunk muscle strength for balance, functional performance, and fall prevention in seniors: a systematic review. *Sports medicine*, 43(7), 627-641.
- Homann, Plaschg, A., Grundner, M., Haubenhofer, A., Griedl, T., Ivanic, G., Hofer, E., Fazekas,
 F., & Homann, C. N. (2013). The impact of neurological disorders on the risk for falls in
 the community dwelling elderly: a case-controlled study. *BMJ Open*, *3*(11), e003367–
 e003367. doi.org/10.1136/bmjopen-2013-003367
- Joint Commission. (2015). Preventing falls and fall-related injuries in health care facilities. *Sentinel event alert*, (55), 1–5. https://www.jointcommission.org/-

/media/tjc/documents/resources/patient-safety-topics/sentinel-

event/sea_55_falls_4_26_16.pdf

- Johnston & Magnan, M. (2019). Using a fall prevention checklist to reduce hospital falls: Results of a quality improvement project. The American Journal of Nursing, *119*(3), 43-49. doi.org/10.1097/01.NAJ.0000554037.76120.6a
- Kalisch, B. J., & Xie, B. (2014). Errors of omission: Missed nursing care. Western journal of nursing research, 36(7), 875–890. doi.org/10.1177/0193945914531859
- Kuschel, Laflamme, L., & Möller, J. (2015). The risk of fall injury in relation to commonly prescribed medications among older people--a Swedish case-control study. *European Journal of Public Health*, 25(3), 527–532. https://doi.org/10.1093/eurpub/cku120
- Lee, Sararaks, S., Yau, W. K., Ang, Z. Y., Jailani, A.-S., Abd Karim, Z., Naing, L., Krishnan, T., Chu, A. R., Junus, S., Ahmad, M. S., Sapiee, N., Veloo, V. W., Manoharan, S., & A Hamid, M. (2022). Fall determinants in hospitalized older patients: a nested case control design - incidence, extrinsic and intrinsic risk in Malaysia. *BMC Geriatrics*, 22(1), 179– 179. doi.org/10.1186/s12877-022-02846-6
- Lohman, Crow, R. S. R. S., DiMilia, P. R. P. R., Nicklett, E. J. E. J., Bruce, M. L. M. L., & Batsis, J. A. J. A. (2017). Operationalization and validation of the Stopping Elderly Accidents, Deaths, and Injuries (STEADI) Fall Risk Algorithm in a nationally representative sample. *Journal of Epidemiology and Community Health (1979)*, *71*(12), 1191–1197. doi.org/10.1136/jech-2017-209769
- Lusardi, Fritz, S., Middleton, A., Allison, L., Wingood, M., Phillips, E., Criss, M., Verma, S.,Osborne, J., & Chui, K. K. (2017). Determining risk of falls in community dwelling older adults: A systematic review and meta-analysis using posttest probability. *Journal of*

Geriatric Physical Therapy (2001), 40(1), 1–36.

doi.org/10.1519/JPT.000000000000099

- Magnani, P., Porto, J. M., Genovez, M. B., Zanellato, N. F. G., Alvarenga, I. C., dos Santos, P.
 F., & de Abreu, D. C. C. (2021). What is the best clinical assessment tool for identification of adults aged ≥80 years at high risk of falls? *Physiotherapy*, *110*, 63–69. doi.org/10.1016/j.physio.2020.03.002
- Mamani, A., Reiners, A. A. O., Azevedo, R. C. de S., Vechia, A. D. R. D., Segri, N. J., & Cardoso, J. D. C. (2019). Elderly caregiver: Knowledge, attitudes and practices about falls and its prevention. *Revista Brasileira de Enfermagem*, 72(suppl 2), 119–126. doi.org/10.1590/0034-7167-2018-0276
- Meekes, Korevaar, J. C., Leemrijse, C. J., & van de Goor, I. A. (2021). Practical and validated tool to assess falls risk in the primary care setting: A systematic review. *BMJ Open*, *11*(9), e045431–e045431. doi.org/10.1136/bmjopen-2020-045431
- Ogrinc, Davies, L., Goodman, D., Batalden, P., Davidoff, F., & Stevens, D. (2016). SQUIRE 2.0 (Standards for Quality Improvement Reporting Excellence): revised publication guidelines from a detailed consensus process. *BMJ Quality & Safety*, 25(12), 986–992. doi.org/10.1136/bmjqs-2015-004411
- Patti, Zangla, D., Sahin, F. N., Cataldi, S., Lavanco, G., Palma, A., & Fischietti, F. (2021).
 Physical exercise and prevention of falls. Effects of a Pilates training method compared with a general physical activity program: A randomized controlled trial. *Medicine* (*Baltimore*), 100(13), e25289–e25289. doi.org/10.1097/MD.00000000025289
- Sedgwick. (2012). Pearson's correlation coefficient. *BMJ (Online)*, *344*(jul04 1), a1837–e4483. doi.org/10.1136/bmj.e4483

- Silva, Costa, D. C. M. da, & Reis, A. M. M. (2019). Risk factors associated with in-hospital falls reported to the Patient Safety Committee of a teaching hospital. *Einstein (São Paulo, Brazil)*, 17(1), eAO4432–eAO4432. Fdoi.org/10.31744/einstein_journal/2019AO4432
- Strini, Schiavolin, R., & Prendin, A. (2021). Fall risk assessment scales: A systematic literature review. Nursing Reports (Pavia, Italy), 11(2), 430–443. doi.org/10.3390/nursrep11020041
- Tanwar, Nandal, N., Zamani, M., & Manaf, A. A. (2022). Pathway of trends and technologies in fall detection: A systematic review. *Healthcare (Basel)*, 10(1), 172–. doi.org/10.3390/healthcare10010172
- Taylor, D., McCaffrey, R., Reinoso, H., Mathis, M., Dickerson, L., Hamrick, J....Klein, C.
 (2018). An interprofessional education approach to fall prevention: Preparing members of the interprofessional healthcare team to implement STEADI into practice. Gerontology & Geriatrics Education, 40(1), 105-120. doi:10.1080/02701960.2018.1530226
- U. S. National Institute on Aging. (n.d.) Overview information. RFA-AG-016: Transition to aging research for predoctoral students (F99/K00 Clinical Trial Not Allowed) (nih.gov) https://grants.nih.gov/grants/guide/rfa-files/RFA-AG-22-026.html
- Vincenzo, Patton, S. K., Lefler, L. L., McElfish, P. A., Wei, J., & Curran, G. M. (2022). A qualitative study of older adults' facilitators, barriers, and cues to action to engage in falls prevention using health belief model constructs. *Archives of Gerontology and Geriatrics*, 99, 104610–104610. doi.org/10.1016/j.archger.2021.104610
- Yang. (2021). Identification of optimal foot tactile sensation threshold for detecting fall risk among community-dwelling older adults. *Physical Therapy*, 101(8), 1–. doi.org/10.1093/ptj/pzab119

Stopping Elderly Accidents, Deaths, and Injuries (STEADI) Algorithm



(The STEADI Algorithm CDC, 2021)

The MORSE Fall Scale

Morse Fall Scale			
Item	Item Score	Patient Score	
1. History of falling (immediate or previous)	No 0		
	Yes 25		
2. Secondary diagnosis (≥ 2 medical diagnoses in chart)	No 0		
	Yes 15		
3. Ambulatory aid			
None/bedrest/nurse assist Crutches/cane/walker	0		
Furniture	15		
	30		
4. Intravenous therapy/heparin lock	No 0		
3226 - 53	Yes 20		
5. Gait			
Normal/bedrest/wheelchair	0		
Weak*	10		
Impaired [†]	20		
6. Mental status			
Oriented to own ability	0		
Overestimates/forgets limitations	15		
Total Score [‡] : Tally the patient score and record.			
<25: Low risk			
25-45: Moderate risk			
>45: High risk			

* Weak gait: Short steps (may shuffle), stooped but able to lift head while walking, may seek support from furniture while walking, but with light touch (for reassurance).

[†] Impaired gait: Short steps with shuffle; may have difficulty arising from chair; head down; significantly impaired balance, requiring furniture, support person, or walking aid to walk.

[‡] Suggested scoring based on Morse JM, Black C, Oberle K, et al. A prospective study to identify the fall-prone patient. Soc Sci Med 1989; 28(1):81-6. However, note that Morse herself said that the appropriate cut-points to distinguish risk should be determined by each institution based on the risk profile of its patients. For details, see Morse JM, , Morse RM, Tylko SJ. Development of a scale to identify the fall-prone patient. Can J Aging 1989;8;366-7.

(The Morse Fall Scale AHRQ, 2013)

The Shift Change Fall Safety Checklist

Shift Change Fall Safety Checklist

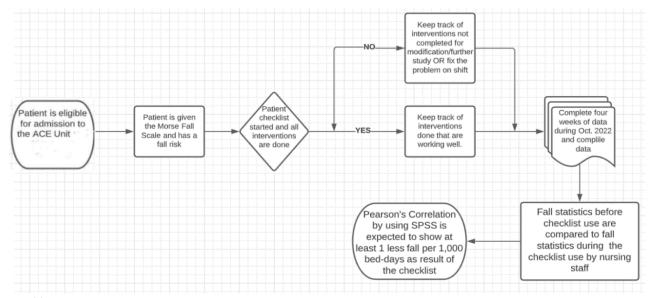
Staff Member <u>Name:</u>		Nurse or Nursing Assistant (circle one)			
	Patient 1	Patient 2	Patient 3	Patient 4	
Date:					
Shift:					
Room:					
Patient Initials:					

Hospital Fall Prevention Bundle Protocols	Patie	nt 1	Patie	nt 2	Patie	nt 3	Patie	nt 4
Daily Shift Fall Assessment completed for this shift	Yes	No	Yes	No	Yes	No	Yes	No
Daily patient teaching regarding fall prevention								
Visiting family teaching regarding fall prevention								
Fall precaution sign outside of the patient's door								
Patient has skid-proof socks on								
Patient's call-light is within reach								
Patient has personal items within reach								
RN is Aware of Patient's protocols								
Patient's bed and or chair alarms are correctly set								
Patient has on the falls precaution wristband on								
Items from STEADI below:								
Hearing deficit								
Patient needs hearing aids placed in?								
Patient needs a written note?								
Vision deficit								
Patient needs glasses put on?								

(Shift Change Fall Safety Checklist adapted from *Using a Fall Prevention Checklist to Reduce Hospital Falls: Results of a Quality Improvement Project.* Johnston & Magnan, 2019)



Shift Change Fall Safety Checklist Flow Chart



Note: Patients are qualified as eligible for the Acute Care for Elderly (ACE) unit first. This unit is focused on the early prevention of functional decline among hospitalized older adults. When the ACE unit needs more beds, the patients are admitted to the overflow unit for ACE patients. Next, patients who score at-risk on the hospital's assessment tool, in this case, the Morse Fall Scale (MFS). These patients qualify for the Shift Change Fall Safety Checklist use. Other patients at risk for dizziness or imbalances due to medications can also be added.

If all interventions are completed each shift, tracking is kept. If some interventions are not completed, attempts first will be made to fix the problem during that shift and then changed from uncompleted to completed. If the uncompleted interventions are not completed by the end of the shift, they will be referred for further study and modification.

After the four weeks, the data will be tabulated by the nursing implementation team. Pearson's Correlations in SPSS program can be used to show a correlation between using the Checklist and decreased falls on the unit. Using the Shift Change Fall Safety Checklist provides one way to reach the Triple Aim, help the most people at the lowest cost for better outcomes. It also addressed two deficits pointed out in the Joint Commission's Sentinel Event Alert Issue 55. These are the lack of adherence to protocols and the lack of full-circle communication.

Staff Training Sheet

Staff Training Sheet

The project is being implemented because Joint Commission noted in a Sentinel Event Alert in 2015 that falls were happening due to the lack of adherence to fall prevention protocols at many hospitals. Therefore, the Shift Change Fall Safety Checklist was created to promote consistency in fall prevention protocols. After reviewing the teaching video, the 14 items of this checklist will be explained. This checklist is to be used by the on-coming nurse or nursing assistant between 15 minutes before the hour and 15 minutes after the hour of shift change. Below is a review of the 14 interventions covered in the Shift Change Fall Safety Checklist.

The *Timed-Up-&-Go* performance assessment allows nurses and nursing assistants to know when the patient is a fall risk if the patient can not pass this test in three minutes or less. YouTube video demonstations on *Timed-Up-&-Go* Testing from the CDC STEADI program can be found online to be used during this training.

1. **Fall risk** – All patients who will need the checklist completed should have been given a risk score from the Morse Fall Scale being used on the hospital unit.

2. **Patient education** – The patients who are monitored should be educated about their fall score and understand what they are being expected to do, such as using the call light before getting up to go to the restroom.

3. **Family education** – Patient family members who visit the room should also have their relative's fall risk score explained in terms of what the patient has been asked to do and why.

4. RN aware - The RN should know the level of risk the patient scored on the Morse Fall Scale.

5. Nursing assistant aware – The nursing assistant should also know what level the patient scored on the Morse Fall Scale, especially concerning how to set the be alarm correctly.

6. Sign on the door – The fall alert sign should be posted on the outside of the patient's door.

7. Wristband – The patient should have his or her fall alert wristband on.

8. **Bed in low position** – The bed should stay in the lowest position, and if fall "landing pads" are used, they should be in place.

9. Bed alarm set correctly – Based on the Morse Fall Scale risk level, the bed/chair alarms are to be set.

10. Yellow socks on - Skid-proof socks should be on the patient with fall risks.

11. Call light in reach – The patient should have the call light close.

12. Personal items in reach – This should keep the items near the patient to prevent the patient from getting up.

13. **Hearing deficit** – The nurse and nursing assistant need to know if the patient needs written notes. If the patient can not hear the nurse at the door post saying to use the call light, staff needs to know the patient needs a written note or closer communication. The nurse needs to also know if the patient wears hearing aids that need to be put on or need to be kept in a certain place at night.

14. Vision deficit – The nurse and nursing assistant need to know if the patient can see well enough to see the call light button and do ADLs. The nurse needs to know if the patient wears glasses, if so, where are they to be kept at night so they are not lost.

Staff Evaluation of the Fall Safety Checklist

Staff Evaluation of the Fall Safety Checklist

Category	%Yes	%No
The checklist is easy to use.		
It is a good safety check		
It should be used by everyone.		
Should include more than one patient per checklist		
Should be used at each handoff		
It should be used for every patient		
It took too much time		
RN to RN only		
Nurse assistant to nurse assistant only		
Do you feel it would help to have a gait belt at the bedside?		
Other concerns for improvement:		

(Staff Evaluation of the Fall Safety Checklist adapted from Using a Fall Prevention Checklist to Reduce Hospital Falls: Results of a Quality Improvement Project. Johnston & Magnan, 2019)

Evaluation of the Interventions of the Fall Safety Checklist

Protocol Criteria % Done % Not Done % Not Applicable Fall risk Patient educated Family educated **RN** Aware Nursing assistant aware Signage on the door Wristband Bed in the low position Bed alarm correctly set Yellow socks Call light within reach Personal items in reach Hearing noted Vision noted

Evaluations of the Interventions of the Shift Change Fall Safety Checklists

(Evaluation of the Interventions of the Fall Safety Checklist adapted from Using a Fall Prevention Checklist to Reduce Hospital Falls: Results of a Quality Improvement Project. Johnston & Magnan, 2019)