Data Aggregation Reporting Tool for Implementation in Home Health Fall Reduction Program

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Abstract

Falls are a major preventable problem in healthcare that affects people of all ages but disproportionately affects the frail and elderly. Fall reduction programs play a significant role in reducing falls and fall-related injuries and are a critical component in Home Health settings. This project takes place in a Home Health and Hospice services agency. The purpose of the project consisted of aggregating fall data for benchmarking metrics to bring the agency's Fall Reduction Program closer to compliance with state and national fall prevention guidelines. Two hundred and three fall event reports were analyzed and a problem arose from the collected information. Close to half of the reports were incorrectly or insufficiently documented. Frontline staff was invited to complete an informal questionnaire which delved into the clinician's familiarity with the fall reduction program and asked questions regarding the reporting tool usage. The discovery of results led to the secondary objective of the project which involved modification of the reporting tool to make it more effective. Application of care environment manager and clinical outcomes manager were the clinical nurse leader themes utilized along with Kotter's theory of change to conduct this quality improvement project. The expectations are that this project will raise falls awareness via training and education, raise the compliance rate for correct fall event report documentation, and serve to provide continued data aggregation for the Fall Reduction Program’s tracking and trending purposes.
Clinical Leadership Theme

The clinical leadership themes incorporated within this project was those of care environment manager and clinical outcomes management. The CNL roles most often fulfilled were team manager, information manager, and systems analyst/risk anticipator for the former and outcomes manager and educator for the latter, respectively. The global aim of this project is to reduce falls and fall-related injuries at a Home Health and Hospice agency through data aggregation for metric benchmarking and implementation of an effective fall reduction program data aggregation tool.

Statement of the Problem

The microsystem in which this project is taking place has a Quality Assessment Performance Improvement (QAPI) team that is responsible for implementing the Fall Reduction Program (FRP). The Home Health Quality Improvement website defines QAPI as a merger of two complimentary approaches to quality management (homehealthquality.org, 2017). Recognition, evaluation, and reduction of falls pose significant challenges in home care, thus, reducing falls requires a multifaceted approach. According to the guidelines in the FRP, an active QAPI team is a critical component in successfully reducing falls through their responsibilities which comprise of collaboration on identification and implementation of fall preventing strategies including, but not limited to; designing, implementing, and evaluating fall reduction activities, being a resource to staff when patients are identified as high fall risk, making recommendations for treatment plans, participating in the collection and analysis of falls data to assess if there are common factors, and to determine if interventions are successful at reducing falls and fall-related injuries. The FRP also highlights that the process of addressing fall
reduction in home care is similar to that of other clinical problems. The process includes three primary steps: 1) identify and evaluate all patient fall occurrences, 2) establish a process to reduce falls and 3) monitor the program's effectiveness, including staff compliance.

The microsystem in which this project is taking place is an innovative community-based Home Health and Hospice organization that employs the EPIC EHR platform. This allows most local hospitals and large medical facilities utilizing EPIC to seamlessly and instantly share patient information within the microsystem as well as provide real-time data to the frontline staff involved in direct patient care. However, there is an issue which should be addressed regarding falls reporting and the manner in which this data is collected, specifically, the fall event reporting tool (see Appendix A) and how this data is disseminated across the frontline staff. Currently, the details of fall data are not entered in EPIC as part of the patient's health record with the exception that the fall did indeed occur. Instead, the clinicians have to download the reporting tool from the agency's SharePoint database, complete it and send it to the case managers and quality program managers for review. After the review process, they are then accumulated in three-ring binders as physical copies of the fall event reports. Additionally, this data is currently not organized in a manner that would be helpful in extrapolating thorough amounts of significant risk factors that may have been influential in the fall incident. Furthermore, incomplete and inconsistent event descriptions in the fall event reports pointed out a need to modify the fall event form and educate all frontline staff on proper event form documentation. Therein lays the multiplicity of the problem; first, the current falls event form does not capture the Fall Reduction Program's desired metrics in order to fully track trends, second, staff are not adequately instructed on form completion, third, data is not organized into categorical information, and lastly, staff do not receive summaries of data in order to create an urgency to address these gaps in care. This
problem presents a major barrier in the process of implementing a successful FRP since this issue directly impacts step number one in the improvement process which consists of identification and evaluation of fall occurrences.

To address the lack of aggregated falls data available to the FRP this project will focus on organization, categorization, and analyzation of the available fall event reports as well as probing patient records to discover trends and common factors. Equally important is the modification and standardization of the Fall Event Reporting Tool (FERT) so that future QAPI team members can easily access the anticipated aggregated data. A question that can be asked of the data can be about the factors contributing to falls and how can we capture the necessary metrics required by the FRP to successfully implement it. According to the fall prevention guideline summary offered by the National Guideline Clearinghouse (2012), recommended data elements to include could be things such as time of fall, location of the fall, activity attempting before the fall, injuries sustained, were medications taken 4 hours prior to the fall and what those were, category of medications patients are taking, cognitive status, if mobility aids were present/used, primary diagnosis, continence status as well as demographical information such as age and gender (see Appendix B). Fortisky et al. (2008) also indicates and supports mobility impairments, balance disturbances, polypharmacy, postural hypotension, and environmental hazards as evidence-based risk factors for falls in older adults.

**Project overview**

The primary goals and objectives of this project are to consolidate, categorize, and translate accumulated fall event reports into numerical data and visual graphical form to provide a summary of data on key process indicators and health outcomes focusing on the effort to
identify and protect at-risk patients. The aggregated data will also serve as a benchmarking tool for the QAPI team. This categorical information is best captured and analyzed using a Pareto chart.

A Pareto chart is effective in visualizing categorical data such as what activity factors were involved at the time of a fall. The bar graph is sorted by the highest category first and the smallest category last, therefore clearly identifying an area of focus for implementing an improvement strategy. It can be helpful to make several charts of different trends, as the highest category for one situation may not be as high for another situation. For example, a Pareto chart may identify that walking to the bathroom is the highest category of activity relevant to falls while another Pareto chart may show that the highest category for the time of falling is 4 AM. Therefore, an analysis may lead to a focused improvement opportunity. Pareto charts can also be displayed as comparison bar graphs for before and after interventions.

In addition to a Pareto chart, a run chart is another excellent option to track data over time. Run charts provide an essential benefit for monitoring trends. For example, we may identify a trend and implement an intervention to reduce fall risk; we can measure if the intervention is working by taking the average fall rate prior to the intervention and then following the intervention. It is very valuable to generate control charts over time to determine whether or not the processes are stable. When processes appear to be unstable a focused investigation can readily occur to identify possible causes. Even if an area is stable, but has high fall rates, it would still be important to identify ways to reduce the fall risks.

When analyzing data it is important to separate the data on the basis of specific characteristics. For example, falls can be separated by total number of falls, falls with major
injury, and falls with minor injury, witnessed falls or unwitnessed falls. It may also be helpful to break out falls data based on the type of service. Once the data has been stratified, consideration will be given to other related measures which might be related to the data. For example, unwitnessed falls with major injury may indicate analysis of staffing effectiveness, such as whether full-time staff or per-diem staff was working, or an analysis of the patient's physical environment, such as poor illumination conditions or inadequate assistive devices. Aggregated data is displayed in Appendix C.

The second focus of this project will be to modify the Fall Event Reporting Tool in a practical manner that captures essential metrics which can be used to implement evidence-based recommendations by the QAPI team. Modification of the FERT will be accomplished by comparing the current form and standardizing it with the addition of desired categories outlined in the FRP manual. Modification of this tool is important because it will provide standardization for those clinicians that fill them out as well as facilitate the tracking of trends and aid in monitoring the effectiveness of the fall reduction program. The recommended modified FERT will be presented to the Quality manager for review and approval by the QAPI team. Upon approval, the tool will replace the older FERT and will be available for future use by all clinicians in a trial period to evaluate effectiveness. Education will be provided at interdisciplinary group meetings regarding form changes and correct fall documentation completion as this was one of the discovered areas which lacked reinforcement in this microsystem.

In quality improvement, audit and feedback are very important and as information managers, CNL's are equipped to do this. Gifford et al. (2016) proclaim that audit and feedback are useful in "identifying gaps in care, implement[ation] of improvement initiatives, and
changing provider behaviors”(p.79). Therefore, by providing results of the collected baseline data to the frontline staff and education on correct FERT completion, clinicians and healthcare decision makers can feel motivated to address the gaps in care and make changes.

A successfully implemented fall reduction program requires continuous data collection, analysis, and monitoring. Although results of this quality improvement project will not be collected and assessed by the end of the semester due to time constraints, we aim to have a systematic approach to promote 100 percent compliance in uniform fall event form completion from all clinicians by the end of fiscal year 2018 (June 30, 2018) and to be able to capture vital metrics for the FRP improvement process. These objectives tie into the project's global aim statement of reducing falls and fall-related injuries through an effective fall reduction program by providing an effective data aggregation tool. Furthermore, analysis of data will permit evaluation of critical identifying factors to anticipate risks to patient safety and support change in the delivery of care so that health care outcomes may be improved.

Rationale

Falls are far too common of an occurrence in the healthcare industry and have the potential to cause a lot of harm with one in five causing a serious injury and triggering great financial burden of approximately $31 billion annually (CDC.gov, 2016). Furthermore, falls affect a greater proportion of elderly people sending 2.8 million of them to the Emergency Room for treatment of injuries and out of those, over 800,000 continue on to hospitalization due to a head injury or hip fracture (CDC.gov, 2016). Consequently, after a fall, Rimland et al. (2016) assert that fear may develop of falling again which causes more falls, avoidance or restriction of
activities of daily living, diminished social interaction, and autonomy loss—all of which can lead to depression and deterioration of quality of life (p.1).

The rationale for The Joint Commission to require health care organizations to implement a fall reduction program and evaluate the effectiveness of the program is that falls account for a significant portion of injuries and are consistently among the most frequently reviewed Sentinel events. According to The Joint Commission's Sentinel Event Alert issue 55 (2015), strategies that include implementation of a standardized assessment tool to identify fall and injury risk factors, assessment of a patient's individual risks that may not have been captured through the tool, and interventions tailored to an individual patient's identified risks are among the most successful. Furthermore, The Joint Commission National Patient Safety Goal for fall risk reduction requirements include: assessing the patient's risk for falls, implementing interventions to reduce falls based on the patient's assessed risk, educating staff on the fall reduction program, educating the patient and, as needed, the family, on any individualized fall reduction strategies, and evaluating the effectiveness of all the fall reduction activities including assessment, interventions, and education (Murphy, 2012). Systematic reporting and analysis of fall incidents are vital components of a fall reduction program as well which is why there is a need to modify the fall event Reporting tool currently in use at my microsystem. Moreover, it is a Performance Improvement (PI) requirement by the Joint Commission for Home Care leadership/management to set priorities for data collection including data related to high-risk and problem prone processes related to falls (jointcommission.org, 2015).

An audit of the microsystem's available fall data indicated that there is a need for an effective Falls Reduction Program. Aggregate fall data for the second half of the fiscal year 2017 (FY17) and the first half of the fiscal year 2018 (FY18) were reviewed. It was discovered that
123 falls had occurred in the second half of FY17 and out of those instances 62 of the FERT were incomplete or lacked information. Likewise, for the fiscal year 2018 (FY18), there have been a total of 70 fall occurrences up to date and out of those reports it was found that 30 were incompletely filled out. This translates to 50.4 percent of incomplete reports for FY17 and 42.8 percent for FY18 (Figure I).

An anonymous informal questionnaire was created and sent out via email in the form of a PDF to all frontline staff that is involved in the fall reporting process to ascertain the barriers related to correct form completion and to gain insight into the processes involved with provider training (see Appendix D).

![Aggregate Falls for FY17 and FY18](image)

Figure 1. Aggregate falls for 2nd half of FY17 and 1st half of FY18

The informal questionnaire allowed the staff to comment on their familiarity with the FRP, whether they felt that enough training or education was provided regarding the FRP, exposure to falls data either through interdisciplinary group discussions or information boards in provider areas, if instruction was received for filling out the FERT, ease of filling out a FERT, employment of patient's EHR to assist in filling out the FERT, what kind of fall prevention
education they provided to patients, and an open comment section for any suggestions they might have regarding ways to make filling out the FERT easier.

Twenty-six responses were returned, and compilation of the data cemented the necessity for this project. Out of the twenty-six responders twenty-two or approximately 85% were familiar with the Fall Reduction Program. Twelve responders (46%) felt like they had received enough training and education about the agency's FRP while fourteen of them (54%) felt they had not. The biggest variance in opinions resulted from the question regarding discussion of falls and fall prevention during multidisciplinary group meetings; 1 responder (3%) replied they were never discussed, four responders (15%) answered as rarely discussed, another four responders (15%) said they were discussed sometimes, eight responders (31%) commented that only when a fall occurs, and six responders (23%) responded that they were discussed all of the time. Fifteen responses (57%) indicated receiving instruction on filling out the Fall Event Report completely while eleven responders (43%) had not. Another fifteen responses (57%) specified using the patient's EHR to assist them in filling out the FERT while three of them (12%) said they did not, and seven of the responders (27%) replied that they used it sometimes. A vast majority of responders (77%) were unaware of their microsystem's fall rates. The question regarding the type of education clinicians provided to their patients resulted in an even split with thirteen responders (50%) providing only verbal education and the other half providing both verbal and educational materials. The open comment section of the informal questionnaire revealed that having the FERT available in the EPIC EHR system and receiving more education and training on form completion was desired and necessary.

A microsystem assessment was performed by attending home health, hospice, and community-based palliative care interdisciplinary group (IDG) meetings, ride-a-longs with home
health nurses, hospice nurses, and physical therapists, as well as attending a new employee orientation. Observations reflected the responses of the informal questionnaire and revealed other trends and patterns. Communication between interdisciplinary providers and case managers seemed to be affected by inherent occupational distractions such as traffic while traveling to and from patient visits, connectivity issues with the EPIC platform, and missed or canceled appointments that disturbed work processes. This lack of communication resulted in delays of workflow, duplicate reports, and frustration among providers. There was also no discussion about fall prevention or consistent awareness during the interdisciplinary group meetings. Information boards about fall prevention and fall rates were non-existent.

A lack of standardization also resulted in the variations of reporter reliability which affected the ability to provide the best possible plans of care. Another significant factor involved in the reliability of fall reporting was the patient population and the circumstances surrounding the falls. A high proportion of the falls were unwitnessed and dementia rated among the top afflicted patient diagnosis. According to Winter, Watt, and Peel (2013), poor cognitive function and cognitive decline are independent fall risk factors in the older population. Ease of accessibility and submission of the FERT was also compromised because providers need to go into a separate database, fetch the form, complete it, and submit it elsewhere. These observations are highlighted in the root-cause analysis Ishikawa fishbone diagram (see Appendix E) as well as other microsystem observations noted in the SWOT analysis (see Appendix F).

According to the Centers for Disease Control and Prevention (2016) the average cost of hospitalization for a fall injury is over $30,000 and the cost of treating those injuries increases with age and injury severity. A systematic review by Heinrich et al. proclaimed that a fall-related hospitalization costs upwards of $40,000 (as cited in Hoffman, Hayes, Shapiro, Wallace, and
Ettner, 2017). However, for the sake of calculating the minimum financial impact this project may impart, we will use the lesser figure in determining cost benefit. Considering that the microsystem currently averages approximately ten falls per month, this equates to a massive healthcare preventable monthly cost of $297,300. If we multiply that figure to reflect a year’s worth of falls we find that we can prevent $3,567,600 of falls-related Medicare costs yearly. The projected cost of this project is estimated at $35,598. This expected cost incorporates 0.5 hours of training and education for 133 staff members for a total of 66.5 hours at an average hourly rate of $64—which once benefit pay of 1.4% is calculated on top of the hourly salary—comes out to $5,958. Additionally, a CNL input of 220 hours at an average hourly rate of $80 with benefits incorporated at the same percentage rate of 1.4 comes out to $24,640. A budget of $2000 dollars is needed to cover the costs of printed material, poster boards, and miscellaneous office supplies. The cost savings that this project could potentially produce is an incredible $3,532,002 which is calculated by subtracting the cost of the project from the cost of the average yearly falls sustained. The breakdown is also displayed in a cost analysis chart in Appendix G. Even if this project prevents only one fall a year, it would cover most of the cost associated with implementing this project.

Methodology

The quality improvement objective to reduce falls and fall-related injuries will be carried out by implementing a modified version of the current Fall Event Reporting Tool. Implementation of this project will necessitate an overhauling of the current microsystem culture with the critical support of leadership. As small as a change may seem, deviation from set patterns and processes will cause turbulence in any work setting which is why it is imperative that an effective leadership framework is put in place to create an enabling environment for the
participants. An appropriate approach to guide this project will consider a change theory that is versatile and animates people to become invested leaders in support of the proposed change.

Kotter's Theory of Change, a powerful leadership framework, will be effected in this project. Kotter proclaims that the sequential and often overlapping steps that encompass his change model run parallel and interact with one another (as cited in Nelson, Batalden, and Godfrey, 2007, p.82). Those steps include: creating a sense of urgency, building a guiding coalition, forming a strategic vision and initiatives, enlisting a volunteer army, enable actions by removing barriers, generate short-term wins, sustain acceleration and institute change.

Upon implementation of this project, a sense of urgency will be established by creating a rich information environment. This will be achieved by sharing the informal questionnaire results conducted on the staff, aggregated falls data, shortcomings of the current FERT and cost-benefit analysis as well as statistics on falls with the leadership and frontline staff. Engagement of key stakeholders will aid in building the guiding coalition so that there is leadership facilitating the change to initiate the necessary steps towards the process improvement. Input from the frontline staff will be directed towards the senior organizational leaders so that they can collaborate with the unit managers to inform program planning such as staff training and education once the modified FERT is approved so that continuation of data collection and analysis can resume. The purpose of the process improvement project needs to be made explicit so that awareness of the change process becomes the basis for understanding the common goal and all parties involved can relate to the purpose. This step runs parallel to Kotter's fifth step of enabling action by removing barriers in providing the means (modified FERT) to collect the needed metrics so that FRP progress can be measured. Once the strategic vision and initiatives are formed, a volunteer army of early adapters will be enlisted as unit champions to provide
guidance and motivation for the rest of their peers. The short-term wins celebrated will be the involvement of the frontline staff in proposing their needs to better serve our patient population and when feedback is available for performance improvements. Additionally, recognition, incentives, and rewards for high performance can contribute towards fostering accountability in the microsystem. Healthy competition between the regional teams can also play a role in maintaining quality alignment through the provision of unit-level data which Gifford et al. (2016) proclaim can be "powerful indicators that could facilitate team building and align…teams to work towards a common goal" (p.82). The acceleration step will be sustained by continued awareness through maintenance of an updated performance wall and ongoing discussion and education during weekly interdisciplinary group meetings. Once all staff receives training and education on FERT completion, quarterly collection and analyzation of FERT will provide the results needed to measure effectiveness. Predictions project that some staff will be reluctant to the change and may become a barrier towards the anticipated goal of 100% complete and correct FERT documentation because of the perceived workload increase. These staff members will be easily identified through the fall event review performed by nurse managers before fall event reports get passed on to the Quality Program Manager. The change will be instituted when the microsystem get acculturated to the new FERT and is compliant with correct documentation as well as taking an active approach in the agency's Fall Reduction Program.

**Literature Review**

The articles included in this literature review describe the components surrounding falls, fall prevention programs, patient safety interventions, strategies to support evidence-based care through audit and feedback, and financial implications. The focus of this study was to assess the disseminated evidence regarding falls and apply it to my microsystem's Fall Reduction Program.
A search of the CIHNAL and Cochrane Database of Systematic Reviews was conducted using the PICO search strategy of fall prevention program, evidence-based fall prevention practice, staff education and training, and home health. Other literature reviewed consisted of government agency databases, not-for-profit research healthcare organizations and healthcare related journals.

The Joint Commission (2015) published Sentinel Event Alert #55 in response to the prevalence of falls and fall-related injuries in healthcare settings. The report establishes common underlying causes and recommends steps to diminish risk and prevent future incidences of falls. An analysis was performed which found that the most contributing factors of falls were inadequate assessments, communication failures, lack of adherence to protocols and safety practices, inadequate staff orientation, supervision, staffing level or skill mix, deficiencies in the physical environment, and lack of leadership. The report provides recommendations to mitigate these factors, and numerous toolkits and resources are amassed for organizations to utilize. Since my microsystem is accredited by the Joint Commission, it is important to ensure that compliance is met through their recommendations.

Murphy (2012) focuses on the safety and quality of care in the home healthcare environment. The article outlines current national quality initiatives that should be used in conjunction with The Joint Commission National Patient Safety Goal for the design and implementation of a fall risk reduction program. Recommendations included conducting a literature review for best practice in determining the most effective approach for the particular agency as well as consideration given to the needs of the specific population being served. Medicare's quality areas for outcomes (safe, effective, efficient, patient-centered, timely, and
equitable care) are also touched upon and should also be considered when developing the fall risk reduction program.

Fortinsky et al. (2008) conducted a study on 26 home health care agencies to determine the extent of implementation of fall risk assessments and management practices for older patients. The study conducted in-service training to the participating institutions on the assessment of five evidence-based risk factors—mobility impairments, balance disturbances, multiple medications, postural hypotension, and environmental hazards. Results yielded a surprisingly high rate of success in implementation of fall risk management practices by clinicians. However, a greater variation was found in the results regarding fall risk assessment practices. This study suggests that evidence-based training can stimulate fall risk assessment and management for healthcare clinicians. This study shows the importance of training and education in motivating personnel to become more compliance organizational standards and protocols.

Hoffman, Hays, Shapiro, Wallace, and Ettner (2017) conducted a study to estimate expenditures for fall-related injuries (FRI) among Medicare beneficiaries. Using Medicare claims and Health and Retirement data for 5,497 participants, ICD-9 codes for trauma, fractures, and dislocations were utilized to estimate the costs of fall-related injuries. Principal findings estimated that costs varied depending on the location of initial treatment and it showed Emergency Room visit followed by hospitalization as the most burdensome to our healthcare system. It was also noted that the aging of the US population along with the growing morbidity among aging adults would only exacerbate future FRI expenditures. This is significant because it helps us examine the implications of FRI costs and the effect it may impart of CMS solvency.
Winter, Watt, and Peel (2013) conducted a systematic review of 11 studies which researched fall prevention interventions in cognitively impaired older people residing in the community. Exercise, health assessments and management of risks, multi-component and cognitive behavioral programs, and hip protectors were the interventions identified in these studies. The systematic review yielded inconclusive results and conflicting evidence for falls prevention interventions for this complex subset of the populace. Seven of the studies showed an intervention effect in decreasing fall risk while only two of them showed significant improvement in physical performance. This systematic review is important because a high proportion of the fallers in my microsystem had cognitive deficiencies.

Rimland et al. (2017) conducted a systematic overview of 59 systematic reviews and synthesized data on non-pharmacological fall interventions in older people. The aim was to provide clinicians with clinical decision making support via the provision of a wide-ranging perspective of findings. The most frequent interventions showed that exercise either alone or combined with other interventions, environmental modifications, assistive and protective aids, staff education, and vision assessment/correction were effective treatments albeit with differentiating levels of effectiveness. The systematic overview concluded that the most effective intervention was an exercise program along with multifactorial interventions. This correlates to the improvement project because polypharmacy is a major concern in fall occurrences and non-pharmacological interventions would benefit immensely.

Gifford et al. (2016) performed a study using a qualitative approach to explore the use of audit and feedback in home and community health care settings to support high-quality evidence-based care for falls prevention. The specific objectives were to understand how audit and feedback processes are currently employed and to explore the type of information that is
considered useful to frontline providers, middle managers, and senior leaders to improve patient care. Results showed that variable data was available, but evidence suggests that frontline staff did not routinely receive feedback whereas middle-level managers and senior leaders regularly received data which was used to inform organizational planning. Furthermore, frontline clinicians reported data on patient characteristics pertinent and useful while management and leadership were more interested in process indicators. Overall, an overwhelming majority of respondents signified that receiving data on patient outcomes such as fall rates were relevant and meaningful in benchmarking practices and targeting areas for improvement initiatives.

Timeline

This project began in September 2017. A thorough microsystem assessment was performed through ongoing attendance to interdisciplinary meetings and ride-a-longs with frontline staff through the beginning of November. This was also the period in which the agency's Fall Reduction Program was reviewed with the Quality Program Manager and data collection was initiated of the available physical copies of Fall Event Reports. Once initial data aggregation was completed, an informal questionnaire was sent to providers to gain insight on barriers to complete data collection. Informal questionnaires were received by mid-November and responses analyzed. During this time, EPIC EHR access was granted and deeper data mining commenced to aggregate desired metrics by the Fall Reduction Program. Comparison of the metrics captured in the current Fall Event Reporting Tool to the desired data conveyed a need to modify it in order to capture data for tracking and trending purposes.

The modified Fall Event Reporting Tool was submitted to the Quality Program Manager for review by the end of November and pending approval by the Quality Assessment
Performance Improvement team. Currently, there are logistical and staff changes that might impact the priority of this project. It is expected that approval of the modified form will be made by mid-December and the old form will be updated with the prototype. Once approved, meeting with nurse managers and available clinical staff will commence the education and training phase which is expected to continue until all three service regions are covered. This phase is expected to continue until the end of January. Continuous input from staff during this phase will be considered a critical step in ensuring the success of the project. Data walls displaying the aggregated falls data will be created and utilized to raise awareness and to keep staff abreast of progress. It is expected that by the end of FY18 (June 30, 2018) 100 percent of clinicians involved in filling out the FERT will be compliant with the set expectations.

**Expected Results**

It is expected that the aggregated falls data will spark interest in the staff, both frontline and leadership, and will start a remodeling of the current culture. Team cohesion and communication will hopefully improve by constant information exposure and motivation of unit champions. Having data walls with the newfound knowledge will maintain staff abreast of the current progress and hopefully get them invested in the Fall Reduction Program. This aggregated data will provide the benchmarking metrics that the FRP needs to track their progress in order to become compliant with The Joint Commission's recommendations of tracking, aggregating and analyzing fall's contributing factors on an ongoing basis so that improvement efforts can aid in aligning with the National Patient Safety Goals provided in The Sentinel Event Alert #55 (jointcommission.org, 2016). The Centers for Medicare and Medicaid Services' mandated public reporting quality comparison data of home health agencies is also expected to aid in the
Implementation of the modified FERT will be expected to aid in the future collection of metrics and will be relevant for targeting areas for process improvement initiatives as well. The provided education and training will establish a sense of ownership for fall prevention and will instill a newfound purpose in patient-centered care. It is also expected that the FERT will be implemented into the EPIC EHR in the near future for ease of clinician reporting and to leverage technology to improve interdisciplinary communication. Utilization of the EPIC EHR should be optimized and having the FERT instituted in the system will also prove fiscally responsible. If the FERT is on the EPIC platform, reports can be run and metrics can be retrieved through technological means instead of manual aggregation. This encompasses the lean methodology of waste reduction and thus will provide cost savings through saved workable hours (IHI.org, 2017). Overall, it is expected that through this project the microsystem will have the means to successfully implement their Fall Reduction Program's quality improvement measures and reduce falls and fall-related injuries in community-dwelling elderly adults.

**Nursing Relevance**

Patient outcomes are linked directly to nursing care. The growing geriatric population poses new challenges to health care practitioners and the booming field of home health presents an excellent opportunity to impact this vulnerable population's health outcomes. The assumed notion that falls are an inevitable part of aging should be dismissed as nurses play a critical role in the prevention of these devastating events. As frontline providers, nurses can mitigate the chances of elderly falls through identification of patients at risk for falling, identification of
modifiable risk factors, and offering effective evidence-based interventions. Nevertheless, nurses must be equipped with the tools necessary to effect change.

An effective Fall Reduction Program has the power to change practice by providing the technical, supportive, and educational aspects of fall prevention to the frontline providers. This includes having an effective manner of collecting data and analyzing it to provide performance goals. Just as evidence-based practice is standardized to promote best outcomes, the data aggregation tool must also follow a standardized model to promote uniformity within the milieu. Additionally, raised awareness through education is critical and must be a continuous process. This will also foster openness in communication lines between frontline staff and managerial stakeholders. This empowerment will undoubtedly motivate nurses to perform to the fullest scope of their practice and provide moral autonomy which "implies accountability that makes the practitioner professionally and morally responsible for the well-being and safety of the patient" (Dempsey, 2004, p.483).

However, there is also the issue of nurses' attitudes toward home health falls. Many believe that it is beyond their control because unlike an acute care setting, the staff is not always in the patient's environment to control risk factors. This may lead to non-compliance with the microsystem's FRP and thus negatively affect the orchestrated efforts by the rest of the clinical staff that is onboard. This is why it is of upmost importance to fulfill the role of liaison and advocate as a CNL so that laggards can be supported and barriers recognized that impede progress. A CNL must advocate not only for the patient but for the frontline staff as well. Perhaps, efforts to conduct research on other possible risk factors such as nursing work may shed a different light on fall prevention.
Summary

Falls are rated among some of the most common occurrences in our growing geriatric population and inflict negative health outcomes that diminish the quality of life should a serious injury occur. The enactment of effective Fall Reduction Programs (FRP) is an essential effort to try to curtail the frequency of these grave events. Improving the quality of healthcare can only be achieved by having the necessary metrics in order to identify deficiencies and evaluate areas of improvement. It is especially relevant today with the current requirements of governmental agencies that compare performance and the existence of universal mandated clinical data sets.

The microsystem in which this project took place is an innovative community-based Home Health and Hospice agency that serves most of the San Francisco Bay Area. The global aim of this project is to reduce falls and fall-related injuries in the home health patient population by the implementation of an effective data aggregation reporting tool for the FRP. Fall event reports are the primary tool of data collection for the FRP and thus are an important aspect of the identification and improvement process of problem areas. During initial data collection from fall event reports submitted by clinicians, it was discovered that there was a major inconsistency in the manner of reporting and in the completeness of the reports. Upon further review of the FRP guidelines for data collection, it was noted that the current reporting tool lacked many of the needed data points necessary for efficient data aggregation. The objectives were thus identified as initial data aggregation for benchmarking purposes for the FRP and modification of the Fall Event Reporting Tool for continued data collection as well as education and training to standardize and achieve 100% compliance with the documentation process by the end of the fiscal year 2018 (June 30, 2018).
An informal questionnaire was sent out to the frontline staff to investigate fall event form documentation barriers and to inquire about the staff's familiarity with the FRP. Staff was also given the opportunity to comment on ways they felt could improve the process of event reporting. Concurrently, deeper data mining was performed via patient record reviews to extract the missing data that the current fall event reporting tool could not capture. The results of the returned informal questionnaire indicated that a majority of the polled staff was familiar or had heard about the FRP but about half of them felt more training and education was needed. This information was relayed to the middle management and leadership for consideration of program training and educational needs. A modified version of the fall event reporting tool was also created to include all data point outlined in the agency's FRP and was submitted to the Quality Program Manager and the Quality Assurance Performance Improvement team for review and approval.

To facilitate adoption of the project, Kotter's 8 step process for leading change was used. A sense of urgency was created via the sharing of information gathered during the microsystem assessment which pointed to a need for this project. A guiding coalition was sought and built by engaging key stakeholders to support the development of the project and to ensure progression and acceptance by frontline staff. Data aggregation and analyzation was part of the initiative process to inform program planners of deficient areas which led to the strategic vision of implementation of an effective aggregation tool and continued training and education for frontline staff to raise awareness and continue the support of the mission. This will be supplemented by the creation of information walls of the aggregated falls data which will be displayed in provider areas. Some of the frontline staff were identified as unit champions and were enlisted as the volunteer army. Continuous surveying and input from the rest of the
frontline staff will be assessed to gauge project effectiveness and to identify further barriers impeding progression. Short term wins will be generated and celebrated through unit cohesion by the inclusion of staff input to generate changes that may simplify work processes and continually as performance improvement is generated. This acceleration will be sustained by keeping staff abreast through interdisciplinary group meetings and monthly fall awareness agency meetings. Finally, change will be instituted once achievement of 100% compliance is reached with correct and complete fall event form documentation so that metrics for the FRP can be continuously and efficiently generated.

An effective means of data collection must be present in order for any Fall Reduction Program to be successful. Without continuous aggregation of data to track and trend metrics, programs lack the information needed to direct process and quality improvement initiative. It is with great hope that this project will enable the microsystem to become a step closer to being compliant with state and national guideline recommendations for fall reduction initiatives and ultimately become an ambassador in the Home Health field for outstanding patient outcomes.
References


Appendix A

Fall Event Reporting Tool

<table>
<thead>
<tr>
<th>FALL EVENT REPORT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Person Affected</td>
</tr>
<tr>
<td>Patient Name</td>
</tr>
<tr>
<td>MR #</td>
</tr>
<tr>
<td>Date of Fall</td>
</tr>
<tr>
<td>Witnessed by Employee</td>
</tr>
<tr>
<td>Unwitnessed by Employee</td>
</tr>
<tr>
<td>Primary Diagnosis</td>
</tr>
<tr>
<td>Did the patient go to the ER?</td>
</tr>
<tr>
<td>Dr. notified by Pathways staff</td>
</tr>
<tr>
<td>Date: _____________</td>
</tr>
<tr>
<td>Briefly describe the event:</td>
</tr>
</tbody>
</table>

### Medications

- Medication within 4 hours prior to fall
- On Anticoagulation Therapy

### Medication Names:

### Interventions and follow-up (Check all that apply):

- Visit or phone call within 24 hours of notification of fall
- Clinical Team notified
- Reviewed Fall Prevention section of Handbook
- Reassessed Fall Risk
- Reviewed and updated Patient Care Plan
- Reinforced safe use of DME / Assistive Device
- Instructed to call for non-emergency lift assist
- Requested DME / Assistive Device
- Requested or increased HHA visits
- Requested or increased PT, OT, RN, MSW or other visits

### Patient / Caregiver education about:

- Always get assistance with amb, transfer, toilet, etc.
- Reducing clutter, removing or securing rugs
- Other safety measures (lighting, clothing)
- Obtaining additional caregiver help

### Recommended/Provided (or arranged for):

- Bed or chair alarm
- Room (“baby”) monitor
- Hip protectors
- Side rails
- Hospital bed
- Wheel Chair
- Walker or cane
- Bedside commode
- Pathway’s Apron

### Facility staff or Caregiver education:

- Scheduling toileting, or offering frequent assist to BR
- Need for increased observation of patient

Other (describe):

This is a confidential and privileged document
Appendix A (continued)
Appendix B

Modified Fall Event Reporting Tool
# Appendix B (continued)

## Fall Event Report

### Interventions and follow-up (Check all that apply):
- [ ] Visit or phone call within 24 hours of notification of fall
- [ ] Clinical Team notified
- [ ] Reviewed Fall Prevention section of Handbook
- [ ] Reassessed Fall Risk
- [ ] Reviewed and updated Patient Care Plan
- [ ] Reinforced safe use of DME / Assistive Device
- [ ] Instructed to call for non-emergency lift assist
- [ ] Requested DME / Assistive Device
- [ ] Requested or increased HHA visits
- [ ] Requested or increased PT, OT, RN, MSW or other visits

### Patient / caregiver education about:
- [ ] Always get assistance with ambulation, transfer, toilet, etc.
- [ ] Reducing clutter, removing or securing rugs
- [ ] Other safety measures (lighting, clothing)
- [ ] Obtaining additional caregiver help

### Other (describe):

### Outcome
- [ ] No Injury
- [ ] Minor Injury
- [ ] Moderate Injury - requiring physician treatment
- [ ] Major Injury - an event that resulted in a permanent injury, was life threatening, requiring close monitoring or an increased level of care or required intervention such as major surgery. **Hospitalization**
- [ ] Death - an event that may have contributed to or resulted in a patient's unexpected death

**Reported by:**

**Date:**

---

**Manager Follow Up Required**

- [ ] Staff education
- [ ] Contacted SNF or ROFE
- [ ] Discussed at Clinical Team or IDG

### Comments:

**Manager's signature**

**Date**

---

*This is a confidential and privileged document. Do not share with patient. Do not copy or place in medical record. Do not refer to Clinical Notes. Person discovering event must complete within 24 hours. In the event of death or serious injury, notify Quality Manager immediately.*

---

Page 2 of 3
Appendix C

*Aggregated Falls Data*

**Proportion of Falls by Gender**

- Male: 39%
- Female: 61%

**Falls by Age Range**

<table>
<thead>
<tr>
<th>Age Range</th>
<th>Number of falls</th>
</tr>
</thead>
<tbody>
<tr>
<td>86-95</td>
<td>50</td>
</tr>
<tr>
<td>76-85</td>
<td>25</td>
</tr>
<tr>
<td>65-75</td>
<td>20</td>
</tr>
<tr>
<td>96 and over</td>
<td>15</td>
</tr>
<tr>
<td>64 &amp; under</td>
<td>10</td>
</tr>
</tbody>
</table>
Percentage of Patients with History of Prior Falls

- YES: 67%
- NO: 33%

Witnessed vs. Unwitnessed Falls

- Unwitnessed: 88%
- Witnessed: 12%
Appendix C (continued)

**Severity of Fall Injury**

<table>
<thead>
<tr>
<th></th>
<th>No Injury</th>
<th>Minor Injury</th>
<th>Moderate Injury</th>
<th>Major Injury</th>
<th>Death</th>
</tr>
</thead>
<tbody>
<tr>
<td>2nd half of FY17</td>
<td>63</td>
<td>38</td>
<td>10</td>
<td>6</td>
<td>1</td>
</tr>
<tr>
<td>1st half of FY18</td>
<td>46</td>
<td>21</td>
<td>2</td>
<td>1</td>
<td>0</td>
</tr>
</tbody>
</table>

**Most Common Diagnosis**

- CHF
- Dementia
- Other
- Cancers
- Inanition
- COPD
- Cardiomyopathies
- Multiple Falls
- Surgical Aftercare
- Hemiparesis/CVA
Appendix D

Informal Questionnaire

Informal Questionnaire (approx. 5 minutes)

This is an informal and anonymous questionnaire for clinicians that fill out the Fall Event Reports.

The purpose for this is to gain insight into the processes of filling out a Fall Event Report form once a fall occurs and to seek ways to improve data input and output so that we can better track and trend specific factors that may be contributory to the falls. This way we may be better able to target high risk clients and implement Evidence Based Practice measures to hopefully prevent or reduce the amount of falls our clients are experiencing. Transparency is extremely important in process improvement and I ask that you be as honest as possible as there are no reprimanding actions in sharing your opinion. Thank you for your help in filling this out.

You may print this out, complete it and drop it off in the office by the provider’s station. There will be a box with a sign for completed questionnaires by the office supplies and form mailboxes. You can also fill in the PDF form and send it via email. I will print them out and remove any identifying information.

1. Are you familiar with the Fall Reduction Program?   YES_____    NO_____
2. Do you feel that enough training and/or education was provided to you about the Fall Reduction Program?   YES_____    NO_____
3. How often are falls or fall prevention discussed in IDT/IDG meetings?
   Never_____ Rarely_____ Sometimes_____ Only when one occurs_____   All the time____
4. Did you receive instruction on filling out the Fall Event Reporting form completely
   YES_____    NO____
5. Do you find the Fall Event Report form easy to fill out?  YES_____   NO_____  
6. Do you use the patient’s electronic health record to assist you in filling out the form?
   YES_____   NO_____  SOMETIMES____
7. Are you aware of how many falls our clients experience each quarter?  YES_____   NO____
8. What kind of client education on falls prevention do you provide?
   Verbal_____ Educational material_____   Both____
9. In your opinion, what would make the process of filling out the Fall Event Report form easier for future use?   ________________________________________________________________
   ________________________________________________________________
10. Please feel free to include any other comments....
    ________________________________________________________________
Appendix E

*Ishikawa Fishbone Diagram*
Appendix F

**SWOT Analysis**

- **S**
  - Use of a Fall Risk Assessment at Start of Care (SOC) to determine the appropriate level of patient risk
  - Home therapy interventions that include exercises to improve lower body strength and balance
  - Medication review with the intention for reducing side effects and interactions as well as simplify medication regimes, if possible
  - Evaluation of the patient’s environment, recommending appropriate modifications and adopting best practices.
  - Family involvement in fall prevention

- **W**
  - Gaps in supervision
  - Documentation may be incomplete; unreported or unreported falls may pose significant data inaccuracies
  - Unknown if patient education is occurring and if it is, does patient comprehend?
  - Inadequate Fall Reduction Program awareness

- **O**
  - Staff education: engage staff by performing in-house training and creative demonstration of patient teach-back method
  - Consistent leadership support
  - Maintain a pleasant and safe work space and culture
  - Engagement and awareness creation of Fall reduction Program to all staff
  - Information wall on fall prevention and agency fall rates and goals

- **T**
  - Patient’s intrinsic and extrinsic factors
  - Clinician distractions in provision of care; internal and external factors (traffic, appointment cancellations, limited time with patients, vehicle troubles, etc.)
  - Lack of communication and team cohesiveness
### Appendix G

**Cost Analysis**

<table>
<thead>
<tr>
<th></th>
<th>#of staff</th>
<th>hrs/staff</th>
<th>total hrs</th>
<th>hrly rate</th>
<th>hrly salary</th>
<th>benefits</th>
<th>total salary</th>
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</thead>
<tbody>
<tr>
<td>Nurses education</td>
<td>133</td>
<td>0.5</td>
<td>66.5</td>
<td>$64</td>
<td>$4,256</td>
<td>1.4</td>
<td>$5,958</td>
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<tr>
<td>CNL</td>
<td>1</td>
<td>220</td>
<td>220</td>
<td>$80</td>
<td>$17,600</td>
<td>1.4</td>
<td>$24,640</td>
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<tr>
<td>Supplies</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>$</td>
<td>$2,000</td>
</tr>
<tr>
<td>Implementation Cost</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>$</td>
<td>$32,598</td>
</tr>
</tbody>
</table>

|                         |           |           |           |           |             |          |              |
| Average cost of a fall  | $30,000.00| 9.91      |           |           |             |          | $3,567,600   |
| Average falls per month |           |           |           |           |             |          | $3,535,002   |
| Multiplied by months in a year |           |           |           |           |             |          |              |
| Yearly cost savings    |           |           |           |           |             |          | $3,535,002   |