

# First in the Nation

## One Unit's Journey to Achieving Fragility Fracture Certification

Audry McDonald ▼ Samantha Church ▼ Laura Hixon ▼ Linda Vo ▼ Martha Sleutel

Osteoporosis is related to more than 2 million fractures and \$19 billion in healthcare costs each year (S. Rawlins, 2014). A fragility fracture (FF) is a low-energy fracture of the distal radius, proximal humerus, ankle, or proximal femur (hip) from minimal trauma such as a fall from a standing height. In addition to cost, FFs often result in the loss of independence and productivity (S. Rawlins, 2014). In 2015, our orthopaedic unit received the first certification ever awarded for FFs. Fragility fracture certification is a new certification demonstrating that a healthcare facility complies with national patient care standards and uses evidence-based practice guidelines to deliver quality outcomes. Orthopaedic nurses have a critical role in optimizing future bone health and fracture prevention. Our story describes the process and challenges faced becoming the first organization in the nation to be successfully surveyed for The Joint Commission's Fragility Fracture Certification.

**I**n 2015, our orthopaedic unit received the first certification ever awarded for fragility fractures (FFs). In this article, we describe our organization's unusual beginning along the certification pathway, how we achieved certification, and how this journey has helped pave the way for others aiming toward FF certification. Our story includes the process of certification and the challenges we faced in becoming the nation's first organization to successfully survey for The Joint Commission's Fragility Fracture Certification.

### Background

According to Rawlins (2014), osteoporosis is one of the leading causes of more than 2 million FFs and the associated \$19 billion in healthcare costs each year. An FF is a low-energy fracture of the distal radius, proximal humerus, ankle, or proximal femur (hip) from minimal trauma, such as a fall from a standing height. Fragility fractures are associated with considerable costs to patients and society, often resulting in a loss of independence and productivity. These patients can suffer long recovery times, and some are never able to return to their previous level of physical ability. The negative impacts of FFs have led to an increased focus on the need

for evidence-based standards of care to improve the overall outcomes for patients suffering from FFs (Rawlins, 2014).

Our journey began with a multidisciplinary vision of providing the highest standards of care for patients admitted to our orthopaedic unit with FFs. As part of a quality improvement (QI) initiative, unit nurses gathered the latest standards of care from the American Orthopedic Association's (n.d.) "Own the Bone" FF prevention program. As we organized the guidelines and standards of care, our team compared our orthopaedic practices and unit performance with each of the Own the Bone program's desired standards of care. During this analysis, the nursing staff began asking the question, "Is there a specialty certification for orthopaedic units managing patients with an FF and if not, why?"

The staff brought these questions to our outcomes director who discovered that there was no disease-specific specialty certification within the orthopaedic population. This led to further inquiries of how to initiate an application for a new, disease-specific certification through The Joint Commission (TJC). The Joint Commission website contained valuable information about the certification process for new specialties, the required forms for submission, and the committee evaluation process determining the necessity of the proposed specialty certification. After reviewing the many guidelines and standards of care for patients suffering from an FF, we were convinced that the orthopaedic community needed a specialty certification for this patient population.

**Audry McDonald, MHA, BSN, RN-BC**, Nurse Manager Ortho/Neuro Unit, Texas Health Arlington Memorial Hospital, Arlington.

**Samantha Church, BSN, RN**, Ortho/Neuro Staff Nurse, Texas Health Arlington Memorial Hospital, Arlington.

**Laura Hixon, MSNE, RN, CMSRN, ONC**, Ortho/Neuro Staff Nurse, Texas Health Arlington Memorial Hospital, Arlington.

**Linda Vo, BSN, RN**, Supervisor Ortho/Neuro, Texas Health Arlington Memorial Hospital, Arlington.

**Martha Sleutel, PhD, RN, CNS**, Nurse Scientist, Texas Health Arlington Memorial Hospital, Arlington.

The authors and planners have disclosed no conflicts of interest.

DOI: 10.1097/NOR.0000000000000363

Our first task was to provide evidence of the need for a new specialty certification. To do this, we used metrics from our QI initiative outlining how we identify potential patients with an FF and standardize their care on the basis of core components of the American Orthopedic Association's (n.d.) "Own the Bone" program. We also used FF guidelines from the National Institute for Health and Clinical Excellence (NICE) (National Clinical Guideline Centre, 2011) and the Institute for Clinical Systems Improvement (Institute for Clinical Systems Improvement, 2013) to create standardized treatment plans for patients during the acute phase of their hospitalization.

During this process, we did extensive research, clarified criteria, and revised our drafts on the basis of input from TJC and our multidisciplinary certification team. Initially, the certification was titled the "Geriatric Fracture Certification"; however, we wanted the certification to represent all populations at risk for FF trauma and decided to change the name to "Fragility Fracture Certification." In 2014, we submitted our application to TJC to create the nation's first FF certification. Several months later, they approved our proposal! The next step was for our healthcare facility to apply for this new designation.

### Program Requirements

The goal of the newly approved FF certification is twofold: (1) to provide high-quality, evidence-based care through the acute phase of an FF patient's hospital stay and (2) to prepare patients to transition into their post-hospitalization phase with multidisciplinary support and rehabilitation. The certification requirements include a rigorous on-site review process, evaluating all aspects of patient care including nutrition counseling, exercise recommendations, lifestyle coaching, medication information, and bone density testing. Facilities must also demonstrate (a) an adherence to national patient care standards, (b) targeted orthopaedic education of nurses and staff, (c) timely pain management, (d) delirium screening and prevention, and (e) the appropriate and timely initiation of physical therapy (see Table 1).

Meeting program requirements involved a multidisciplinary patient care approach. To attain stakeholder engagement and solicit input, we created an interdisciplinary committee, including the following clinicians:

- Orthopaedic surgeon
- Medical physician
- Emergency department (ED) physician
- Orthopaedic nurses
- ED nurses
- Surgery department nurses
- Physical therapists
- Case management and social services teams
- Outcomes management team
- Hospital educators
- Pharmacists
- Senior leadership team

This committee created a dashboard based on program requirements and goals so we could monitor unit outcomes. Each month, the committee tracked how consistently we achieved the program's goals and objectives and then began developing care paths and order sets mirroring guidelines and standards. The FF committee created a framework for the patient care experience from "door to discharge." This intensive attention to detail required an entire team effort and systematic approach.

### Priorities of the FF Program

The Fragility Fracture Certification was created and implemented with four program requirements aimed at:

1. Assessing evidence of cognitive impairment and/or delirium upon admission and continually during the hospital stay
2. Initiating physical therapy on postoperative day 1
3. Immediately implementing pain management timelines upon patient presentation to the ED (National Clinical Guideline Centre, 2011)
4. Providing patients with education on reducing their risk of future FFs.

Below we report how we addressed each priority goal.

TABLE 1. GOAL PROGRESS IN YEARS 1 AND 2			
Target Outcome	Goal	2014	2015
Door-to-pain medication	<30 minutes	123 minutes	59 minutes
Admit to OR	<24 hours	29 hours	28 hours
PT evaluation POD #1	>90%	94%	98%
Delirium screen <12 hours of admit	>90%	67%	82%
UTI	<3.3%	15%	3.35%
LOS	<5 days	6 days	5.6 days
FF patient education completed	≥90%	96%	98%

Note. FF = fragility fracture; LOS = length of stay; OR = operating room; POD, postoperative day; PT = physical therapy; UTI = urinary tract infection.

## ASSESSMENT FOR COGNITIVE IMPAIRMENT OR DELIRIUM

### *Delirium Assessment*

Delirium is an acute disturbance in cognitive function, resulting in disorganized thinking and misperception of the environment (Mayo Clinic, 2015). Delirium is associated with a decrease in cognitive function, increased length of stay, higher hospitalization costs, more restraint use, more long-term cognitive impairment, and higher rates of death (Vanderbilt University Medical Center, 2013; Waszynski, 2007). It is estimated that up to 41% of patients suffering from an FF will also develop delirium during their hospital stay (Bruce, Ritchie, Blizzard, Lai, & Raven, 2007). Because of the high incidence of patients at risk, it is critically important to manage delirium through continuous prevention and detection screening (Bruce et al., 2007).

### *Non-ICU CAM Tool*

At our hospital, this screening begins when a patient with either a suspected or known FF arrives at the facility. Each of these patients is assessed for delirium with a version of the Confusion Assessment Method (CAM) tool. The CAM is a standardized, widely used, evidence-based tool designed to help identify delirium in patients within the acute care setting (Wei, Fearing, Sternberg, & Inouye, 2008). It assesses for presence, severity, and fluctuation of delirium, including “acute onset, inattention, disorganized thinking, altered level of consciousness, disorientation, memory impairment, perceptual disturbances, psychomotor agitation or retardation, and altered sleep-wake cycle” (Wei et al, 2008). On the basis of guidelines for delirium assessment on medical surgical units (National Clinical Guideline Centre, 2010), nurses use the non-ICU CAM tool to assess patients for delirium.

Every shift, the nurses complete the non-ICU CAM tool for all patients with an FF. If the overall score is positive, we notify the medical physician and add an acute confusion care plan to the patient’s chart. This provides nursing interventions tailored to dementia and confusion. There is no additional medical intervention for a positive non-ICU CAM. Initially, nurses documented the non-ICU CAM only on patients with hip fracture. With increased nurse education, the program expanded to include all patients with FF older than 50 years. With this consistency, we made great progress on our rates of delirium screening from when we started.

### *Identifying Delirium Patients With FF Located on Other Units*

We addressed delirium on our unit patients with FF, but we needed a mechanism for assessing delirium in FF patients on other units. Our first challenge was identifying eligible patients who might be on other hospital units. To avoid missing patients, the unit secretary or charge nurse runs a report of all patients in the hospital with a fracture in their diagnosis. Patients with pelvic, spine, facial, or digit fractures are excluded from the program. This process identifies patients with an FF on

telemetry units, ICU, or other units. When these off-unit patients are stable, they are transferred to the orthopaedic unit.

The success of the non-ICU CAM spread to other units, as they realized the importance of quickly identifying and decreasing delirium. Ortho nurses created an education poster on the importance of documenting the non-ICU CAM for patients older than 50 years, and it was circulated throughout the medical-surgical units for staff nurse acknowledgement. In addition, orthopaedic nurses made a one-page education handout and shared it during a hospital-wide implementation. These processes ensured that we were consistent in addressing delirium.

## INITIATION OF PHYSICAL THERAPY

It is well known that early mobilization promotes better patient outcomes, including reducing the rate of complications and length of stay (Epstein, 2014). The FF committee discussed the evidence-based benefits of physical therapy (PT) on postoperative day one and strategized how to consistently accomplish this. We decided to collaborate with PT to ensure that the evaluations of the orthopaedic patients were prioritized first thing in the morning and that they received pain medication prior to therapy. Our assigned PT noted that she is “more cognizant of evaluations on weekends” due to this program. She shared her perceptions that the FF program definitely “increased the communication between the nurses and physical therapists on the units.”

## PAIN MANAGEMENT

### *Timing*

Managing pain is a priority in the orthopaedic and FF population (National Clinical Guideline Centre, 2010). The FF program requires that emergency nurses administer pain medication when the patient first arrives and not delay until procedures are completed. This was a change in practice for them. One ED nurse reported, “We have started looking at all fractures in a different manner. We really try to focus on their comfort now and even have a goal of pain medication administration within the first 30 minutes of arrival.” Timing of analgesia on admission to the ED is tracked monthly at our FF committee meetings. Reeducation is done as needed for the ED staff if the analgesia time interval starts to increase.

### *Intravenous Acetaminophen*

In addition to timely pain management, the type and route of medication to be administered to patients with FF must also be considered. According to Pasero and Stannard (2012), intravenous (IV) acetaminophen provides a faster onset and higher blood concentration level versus the oral or rectal routes. Our facility is utilizing this form of pain management for patients with FF by using IV acetaminophen for the first 24 hours following surgery. We give a total of four doses, starting right at the end of anesthesia. Nurses initially expressed reservations about using “just Tylenol,” but as one nurse stated, “The IV acetaminophen is stronger than I

anticipated. This treatment along with using nerve blocks has provided patients with good pain control.” IV and oral narcotics are still available to the patient for severe pain, but IV acetaminophen is the first choice, because it can be given to all patients regardless of their ability to take narcotics or other medications.

## **Impact of Pain Management on Delirium**

At the beginning of our efforts, the delirium incidence was 25%. After collaborating with pharmacy to implement IV acetaminophen, the delirium incidence is now less than 8%. A month-to-month comparison between 2014 and 2015 found that 100% of patients in 2014 used IV narcotics in the first 24 hours, compared with less than 30% in 2015. With our focused attention on pain management, we also addressed delirium and confusion.

## **PREVENTION EDUCATION**

### **Patient Education**

It is important for nurses to provide standardized, high-quality patient education related to the care, treatment, and prevention of FFs. We created a *Fragility Fracture Handbook* that provides essential information for the patients to better understand their condition, treatments, and goals for a successful recovery. It highlights preoperative care, postoperative care, and physical therapy/exercises. This booklet supplements nurses’ instructions and helps address any patient questions or concerns before discharge. The section on delirium discusses everything patients and families need to know including the definition, signs, treatments, and optimal goals. We have found it is essential to include the family in patient education, especially related to preventing future FFs. One nurse observed, “the booklet really seems to help patients be more aware and educated on the care of their fractures.”

Before discharge, the case manager and the orthopaedic surgeon’s physician assistant review osteoporosis education with patients and families. Discussion items include recommended calcium and vitamin D intake, exercise, fall prevention, alcohol and smoking cessation, and the importance of bone density testing. The case manager secures the follow-up appointment for the patient to continue on the FF plan and reaches out to the patient after discharge for further education. As one of our case managers shared, “I feel I am making a long term impact on patients’ health and recovery.”

### **Staff Education**

All caregivers, from physicians to technicians, need to be “on the same page” with what we teach and do. Our first phase of education was teaching about the non-ICU CAM, as previously mentioned. For this topic, we used a poster on signs and symptoms of delirium, management strategies, how to chart, and what to do if the non-ICU CAM was positive. Management and peer leaders followed up with one-to-one conversations to both reinforce practices and address omissions.

Another educational topic was a web-based training overview on providing appropriate care for patients with FF. We included the FF definition, as well as a review of standards of care. New FF order sets were based on those standards and reinforced our consistent approach. Nurses learned strategies for postoperative mobility, required components of patient education in combination with “Own the Bone” education, and discharge planning.

## **Outcome Measurement**

To meet certification requirements, we needed to show evidence of meeting standards over a period of 1 year. Table 1 shows the metrics being measured, the evidence-based goal, and the progress we made toward the goals. When we began tracking the outcomes of our interventions, we noticed some problem areas, such as ED door-to-pain medication time frame, delirium screening initiation, length of stay, and urinary tract infection incidences. Over our first year, these outcomes improved as we hard-wired practice improvements.

## **The Joint Commission Survey**

### **PREPARATION**

Having our specific practice goals and progress highly visible helped us attain those goals and be prepared for the site visit. Additional preparations were aimed at ensuring consistent understanding of certification requirements among all caregivers. We made an education binder as a reference tool for all staff members, which covered background information, program requirements, and our progress on metrics. We met one on one with staff to review program highlights and to help them be able to speak to the achievements of the program. In addition, the FF Committee prepared a PowerPoint presentation for the surveyor summarizing our hospital demographics, our goals, current evidence-based practice guidelines, education for staff and patients, and dashboard information.

### **SITE VISIT**

For TJC visit, we had one surveyor who focused on each aspect of the certification requirements. Our presentation provided the surveyor with an overview of our program. We did an individual tracer activity using a patient chart as a guide for each aspect of care that a patient experienced. The surveyor followed the route of that patient, visiting the ED, operating room, post-anesthesia care unit, and our orthopaedic unit. At each location, the surveyor questioned or verified aspects of FF patient care.

The orthopaedic unit was the focal point of the site visit. The surveyor met with staff nurses, case management, physical therapists, and respiratory therapists to fully understand the patient experience. Because he had a background in chronic obstructive pulmonary disease, he focused quite a bit on aspects of respiratory care. For each aspect of care, the surveyors continued to question and verify adherence to standards and our



strategies for meeting goals. We demonstrated how we abstracted the data and how we established the metrics and outcomes reflected in our dashboards.

At the end of the site visit, we again met with the surveyor to receive our report. One of the recommendations highlighted at that time was to continue to demonstrate proficiency in improving outcomes for the next survey. A minor suggestion was to assess the tobacco usage of our patients with FF to see whether more patient education needed to be focused toward tobacco cessation. The final result was that we were granted certification!

## Challenges and Lessons Learned

### CHALLENGES

Getting and maintaining physician buy-in was difficult. Despite using tailored order sets for a year, we continue to have a 25% rate of compliance with usage by the admitting medical doctors. The order sets match certification requirements and are designed to be quick and easy. The status quo is a powerful obstacle and some physicians continue using a general admission order set, resulting in inconsistent use of standards. In contrast, new postoperative order usage has been easier to implement. All of the orthopaedic doctors who take call at our hospital are aware of our postoperative order set. Occasionally, a physician doing hip fracture surgery might not use the order set, but the majority like the ease of using them. Although our overall rate of order set usage is high, we continue to work on strategies to improve compliance.

As mentioned earlier, it was a major obstacle when some of the patients with FF were sent to general medical-surgical units instead of the orthopaedic unit. When on other units, it is harder to educate patients and ensure our orthopaedic standards of care are met. Resolving this issue required education with bed control and the house supervisor to prioritize those FF program patients to the orthopaedic floor. This is an ongoing process but has improved with persistence and team focus.

Using the non-ICU CAM was another challenge mentioned earlier. Busy charge nurses had extra responsibilities to monitor compliance. This posed an additional burden when patients with FF were housed on other units or were cared for by nonorthopaedic nurses. One change that was helpful was the implementation of the non-ICU CAM throughout the entire hospital for all patients older than 50 years. This decreased the non-ICU CAM missed charting for patients who were on other floors. Compliance with this documentation remains a challenge to some units, but we use audits, consistent focus, and education to help the staff be accountable for their documentation.

An unexpected challenge was basic incentive spirometry (IS) usage. Our existing order set included IS administration, yet it was not consistently documented by the respiratory therapists (RT), making tracking difficult. With our electronic health record, there is not a standard location within the nursing chart because IS is currently listed as an RT order and not a nursing order. During the accreditation visit, TJC surveyor suggested standardizing IS and documentation. We are currently

working to change IS education and administration to a joint RT and nursing venture to ensure our patients are receiving adequate pulmonary care that is consistently documented. As part of a larger system, it takes time to change the process, but it is currently underway.

### LESSONS LEARNED

Looking back, we realize it would have been helpful to provide education to the staff about the goals of the FF program before introducing some of the process expectations. For example, the nurses were asked to begin doing a non-ICU CAM assessment each shift but were unaware of why. Nurses did not realize it was a program requirement. Most importantly, nurses did not know the magnitude of improvements in outcomes when delirium is recognized and addressed. Some of the difficulties could not be helped because the program was still being developed simultaneously when the CAM was introduced.

Our biggest lesson learned is for nurses to act on their questions and instincts. In this case, nurses' questions led to the creation of a new certification program. Nurses often do not realize their power to transform care on a larger scale. It is too easy to be lost "in the weeds," providing individual care on a busy unit, and letting useful questions and opportunities pass by.

## Summary and Conclusion

Our journey showcases how we attained the first-ever national FF certification. It all began with nurses questioning the status quo. As certifications signify excellence, we felt it was essential to have a Fragility Fracture Certification as a measurable public credential of top-quality care. This certification validates adherence to evidence-based national standards along with performance measurement and improvement activities.

### ACKNOWLEDGMENTS

We acknowledge with gratitude the guidance, collaboration, and leadership of Joseph Borrelli, MD; Lori Dachroeden, RN, MSN, CPHQ; Lori Donovan, RN, MSN, CNOR, NEA-BC; and James Sammons, MD, MS, FACHE, FACOG, during our certification journey. We also thank the orthopedic nursing staff and the other multidisciplinary team members for their vital contribution and hard work, without which we could not have succeeded.

### REFERENCES

- American Orthopedic Association. (n.d.). *About Own the Bone*. Retrieved from <http://www.ownthebone.org/OTB/About/OTB/About/About.aspx?hkey=ab7a03e5-56fb-44f3-bb82-50b6cb533908>
- Bruce, A., Ritchie, C., Blizard, R., Lai, R., & Raven, P. (2007). The incidence of delirium associated with orthopedic surgery: A meta-analytic review. *International Psychogeriatrics*, 19(2), 197–214. doi:0.1017/S104161020600425X
- Epstein, N. E. (2014). A review article on the benefits of early mobilization following spinal surgery and other medical/surgical procedures. *Surgical Neurology International*, 5(Suppl. 3), S66–S73. doi:10.4103/2152-7806.130674

- Institute for Clinical Systems Improvement. (2013). *Osteoporosis, diagnosis and treatment of*. Retrieved from <https://www.icsi.org/guidelines>
- Mayo Clinic. (2015). *Diseases and conditions: Delirium*. Retrieved from <http://www.mayoclinic.org/diseases-conditions/delirium/basics/definition/CON-20033982>
- National Clinical Guideline Centre, National Institute for Health and Clinical Excellence. (2010). *Delirium: Prevention, diagnosis, and management* (NICE Clinical Guideline No. 103). Retrieved from <https://www.nice.org.uk/guidance/cg103>
- National Clinical Guideline Centre, National Institute for Health and Clinical Excellence. (2011). *The management of hip fracture in adults: Methods, evidence, & guidance* (NICE Clinical Guideline No. 124). Retrieved from [https://www.ncbi.nlm.nih.gov/books/NBK83014/pdf/Bookshelf\\_NBK83014.pdf](https://www.ncbi.nlm.nih.gov/books/NBK83014/pdf/Bookshelf_NBK83014.pdf)
- Pasero, C., & Stannard, D. (2012). The role of intravenous acetaminophen in acute pain management: A case-illustrated review. *Pain Management Nursing*, 13(2), 107–124. doi:10.1016/j.pmn.2012.03.002
- Rawlins, S. (2014). Treating women with osteoporosis: Review and NPWH survey results. *Women's Healthcare: A Clinical Journal for NPs*, 2(2), 34–49. Retrieved from <http://www.npwomenshealthcare.com>
- Vanderbilt University Medical Center, ICU Delirium and Cognitive Impairment Study Group. (2013). *What is delirium?* Retrieved from <http://www.icudelirium.org/index.html>
- Waszynski, C. (2007). How to try this: Detecting delirium. *American Journal of Nursing*, 107(12), 55–56. doi:10.1097/01.NAJ.0000301029.87489.35
- Wei, L., Fearing, A., Sternberg, E., & Inouye, S. (2008). The confusion assessment method (CAM): A systematic review of current usage. *Journal of the American Geriatrics Society*, 56(5), 823–830. doi:10.1111/j.1532-5415.2008.01674.x

For additional continuing nursing education activities on orthopaedic nursing topics, go to [nursingcenter.com/ce](http://nursingcenter.com/ce).