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Commentary: The Five Ws of a Fracture Liaison Service: Why, Who, What, Where and How? In Osteoporosis, We Reap What We Sow

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Abstract

Establishing a Fracture Liason Service (FLS) to identify and treat patients with a recent fragility fracture has been show to be effective, save money, useful to document high quality of care, and makes good clinical sense. A FLS starts with an osteoporosis champion and encompasses identification of patients with a recent fracture, diagnostic workup, treatment and followup. A FLS is most effective when it is able to function in multiple settings: the hospital, emergency department and outpatient clinic. Implementation may be somewhat easier in a closed healthcare system but can be feasible even in an open system. There are many barriers to implementation which can be addressed. The future of FLS care lies in a collaborative systems-based approach with appropriate stakeholder engagement, leading to seamless integration of osteoporosis care.

Keywords

Fracture Liaison Service; FLS; osteoporosis management; fracture; risk; fragility fracture

What is a Fracture Liaison Service?

A fracture liaison service (FLS) is a multidisciplinary system approach to reducing subsequent fracture risk in patients with a recent fragility fracture by identifying them at or proximate to the time they are treated at the hospital for fracture and providing them easy access to osteoporosis care.

Why a FLS?

We know that current osteoporosis management following fracture is poor. Although treating patients with fragility fracture would seem to be “low lying fruit”, we know that only a minority of patients are being diagnosed and/or treated. The Health Employer Data Information Set (HEDIS), an outcomes evaluation of managed care performance across many quality of care domains, tells us that about 22.5% of patients 67 or older with fragility

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Conflict of Interest

J Curtis declares no conflicts of interest.

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fracture are diagnosed or treated within six months of a fracture. (1) The potential benefits of a FLS are compelling, as follows:

It works. A system approach is needed since individual solutions have not worked. For example, neither patient nor provider education has increased diagnosis/treatment of osteoporosis. Similarly, many other interventions to improve rates of secondary prevention for fractures have been met with disappointing results (2).

It saves money. A FLS improves medical care for the patient by reducing their risk of further fracture. This can result in cost-savings to a health care system. Both Kaiser-Permanente Southern California and Geisinger have shown cost savings [3,4].

It documents high quality care as part of hospital accreditation efforts. A FLS helps hospitals meet new accreditation criteria proposed by The Joint Commission (5).

It's the right thing to do. Finally, a FLS simply makes good clinical sense as it helps our patients reduce their risk of subsequent fracture.

The What and Where: describing a FLS program across various healthcare settings

The FLS process begins with the identification of a bone health champion, often a physician who approaches the administration of his/her health system or hospital with the benefits of a FLS. The physician is typically a bone health expert, such as an endocrinologist, rheumatologist, internist, physiatrist or orthopedist. This champion typically is a key factor in helping set up a FLS, which typically involves the up-front cost of hiring a part or even full time staff person, the FLS provider. This person is usually a nurse, nurse practitioner, or physician assistant.

The first patient step that the FLS needs to undertake is identification of patients with fragility fracture in hospital, emergency department, or clinic. In hospital, the patient is often assigned to an orthopedic ward where the orthopedic nurses can help identify the patients with fragility fracture and refer them to the FLS. In the emergency department, patients with fragility fracture as defined by the fracture site and age (e.g. wrist fracture above age 50) can receive specific discharge instructions which refer them to the FLS or to their PCP for OP evaluation. Patients evaluated exclusively in the outpatient setting, or in circumstances where real-time fracture identification in hospital is not feasible, fracture patients may be identified by the FLS using a systems approach where health information technology (or even simple billing data) identifies all patients with fragility fracture with a given ICD-9 code.

The second step is diagnosing osteoporosis. Patients identified can be automatically referred for DXA via a standardized order set, or individually by the FLS provider. Patients with hip fracture or vertebral fractures over age 50 can be assumed to have osteoporosis even without DXA. This information should be sent to the PCP, although initial responsibility for osteoporosis management remains with the FLS provider.

Once osteoporosis is diagnosed, patients and their families need instruction in the universal recommendations for osteoporosis care (NOF guidelines (6)). This can be done by the FLS provider, an orthopedic nurse, MD in a osteoporosis or fracture prevention clinic, or the patient's PCP.

The next steps require individualizing osteoporosis medication based on the patient's medical history and insurance. Once a medication is chosen, follow-up care is needed to

assure adherence to treatment. Even if the FLS continues to follow patients longitudinally, the PCP for each patient needs to be part of the plan. Communication is needed at all steps.

How?

Barriers and Solutions

Each of the above elements that contribute to a FLS has an Achilles heel that may derail implementation of a successful program.

The first essential element is the requirement for a local bone health champion who can initiate the process, oversee the implementation of an identification system to find fracture patients, and facilitate tracking outcomes via a database or similar registry. This individual could be a physician, a hospital manager, or an allied healthcare provider. Ideally, the best option is a partnership between several of these types of individuals. Having a healthcare provider part of a FLS program that can order labs and DXA testing and prescribe osteoporosis medications is very helpful to make sure that the spectrum of osteoporosis care can be provided as part of the program rather than just a single component. The champion of the FLS then typically needs to obtain support for the FLS program, both to generate interest and consider how the up-front costs of setting up the FLS will be covered. In the U.K., a local audit of the hospital's current (and often poor) post-fracture osteoporosis care has been shown to motivate hospital administrators to increase attention on osteoporosis management and motivate interest in the FLS.

The next task for the FLS is in identifying fracture patients in multiple settings, ranging from an orthopedic wing, a medical wing where orthopedists are consultants to a hospitalist service, an emergency department, or a hospital-affiliated radiology practice that performs vertebroplasties or kyphoplasties. Each setting has specific needs and solutions, and there is no one-size-fits-all strategy about how best to do this. Moreover, each setting will require buy-in from all relevant stakeholders. In the ED, age and fracture-site specific orders are helpful so as to maximize the focus on older patients experiencing low-trauma fractures that are strongly suggestive of a fragility fracture. In the hospital, we similarly need to standardize care with standardized order sets. In all settings, we can benefit from use of IT to produce lists of fracture patients based on ICD9 codes. This approach perhaps best serves in the role of a 'safety net' to prevent fracture patients from falling through the cracks and being missed by the more real-time processes of the FLS.

It is clear that FLS personnel need to provide a constant input of time, osteoporosis education, and reinforcement of the importance and facets of the program to engage providers who care for fracture patients. Staff turnover, clinicians who are not particularly interested in osteoporosis, teaching hospitals with residents and fellows on short term rotations who are soon replaced by new residents, and providers who surgically repair the fracture but who disavow responsibility for what happens after hospital discharge can be an impediment to progress.

Diagnosing and managing OP may vary depending on the patient and the care setting. For example, a patient with hip fracture may be too sick to be able to understand what is being recommended in the hospital with regard to osteoporosis management. However, at the time of a first outpatient follow-up visit (e.g. 14 days after hospitalization) when sutures are removed, there is an opportunity to order a DXA and facilitate a consult with the FLS provider and/or a fracture prevention clinic. A skilled nursing facility, or home health care setting [7,8,9], might also be a teachable moment to provide osteoporosis-related education and care, especially under the direction of a FLS provider. Family members may need to be involved but likewise may not understand how treatment of osteoporosis differs from

treatment of the acute fracture. Some fracture patients may not be deemed appropriate for osteoporosis care by the FLS due to concomitant comorbidities (e.g. patients with advanced dementia or with malignancies on hospice) (10). However, these exceptions are best standardized if possible to prevent inappropriate variations in osteoporosis care that is withheld by the FLS.

Among the biggest challenges in successfully implementing and sustaining a FLS is funding. Covering the salary of a FLS provider within a healthcare system is a frequent challenge, as the healthcare system usually receives a single payment provided under a global Diagnosis Related Group (DRG) for fracture repair. This bundled payment must encompass all services and disincentives all 'extra' care except that directly related to the fracture. Thus, osteoporosis management, receipt of DXA and administration of osteoporosis therapies (including infrequently dosed parenteral treatments that might be more convenient to patients) are not reimbursed in hospital or SNF settings. How can this problem be overcome? At least for osteoporosis evaluation and management, coding modifiers may be used to separate this care from the global surgery payment. Some have attempted to justify the costs of FLS personnel costs in the form of downstream revenue to the health system from ancillary services (e.g. DXA), but this alone is unlikely to be sufficient to yield cost neutrality of a FLS program, especially as DXA reimbursement has declined over time [11]. Payments to a hospital for providing high quality care and avoiding readmission penalties are other possibilities to help demonstrate to a hospital administrator that the return on investment in a FLS program in an open healthcare system is justified. In contrast, FLS programs in closed healthcare settings and in single payer healthcare systems have been shown to reduce costs (8, 9).

Why is there a disconnect between cost savings realized for open versus closed healthcare systems? The answer lies in who is realizing the cost savings – it is only the payer responsible for healthcare costs that reaps the benefits of cost savings from avoided fractures. Indeed, and although perhaps short-sighted, hospitals may complain that their revenues are at risk as a result of services not being rendered when fractures are avoided. For that reason, payers should be the primary motivator to directly support FLS programs. In the U.S., the largest payers expected to realize these cost savings are the Medicare program and affiliated Medicare managed care plans.

The PCP is a needed partner to a FLS, but PCPs can also at times be a hindrance if he or she does not understand the FLS or feels that it is intrusive or unwelcome, dismisses osteoporosis as simply a consequence of old age, or sees a fragility fracture as simply an unavoidable result of a fall. Ongoing education to PCPs by the FLS is crucial, as is communication with the PCP at key transitions of care. Incentivizing providers and healthcare systems and larger entities like accountable care organizations (ACOs) may provide additional impetus to more effectively coordinate care.

A further challenge in care coordination for older patients with recent fractures relates to the multiplicity of settings in which post-fracture care is delivered. Coordination of care remotely (e.g. follow-up telephone calls) is often impractical and inefficient. Thus, engaging patients in person across the various setting in which they receive post-fracture care (e.g. nursing home, home health, and via ambulatory visits) and involving family members whenever possible likely will yield better outcomes but is often challenging in a fragmented healthcare system.

The future

The future of FLS care lies in a coordinated strategy based on a seamless integration of care. The FLS program must provide a systematic approach to quickly identify fracture patients to

appropriate health care providers (e.g. FLS provider) that is primarily focused on managing osteoporosis. This person would direct patients to receive diagnostic testing with DXA, shepherd longitudinal osteoporosis management including implementing universal osteoporosis recommendations (e.g. nutritional, lifestyle) and initiating prescription medications, and engage services to help with fall prevention and balance training.

Despite the benefits that FLS programs have been shown to achieve, they require an initial and sometimes ongoing input of resources in the form of salary support for FLS personnel. In addition, the activation energy required to overcome clinical inertia to start any new program seeking to improve quality of healthcare must also be considered. Ultimately, these investments have been shown to yield downstream cost savings, but one cannot invest resources that are not available. Indeed, it is sobering to realize that even in the U.K. where dramatic cost costs from a FLS have been demonstrated; still only ½ of localities have implemented a FLS (12). Much like a farmer who must make an initial investment of time and seed during planting season in order to later reap a harvest, a FLS requires initial resource inputs to establish but has the potential to yield appreciable public health impact to reduce the burden of fractures.

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