
Coordinating Multidisciplinary Care — Improving Outcomes after Fragility Fractures

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Osteoporosis-related fractures may be devastating for patients and can strain health care systems, demanding involvement from many medical fields, ranging from primary care to subspecialties. Fractures occurring later in life are a major cause of disability, resulting in long-term care needs for many people and premature death for some. Hip fractures in particular account for substantial

mortality and loss of independence due to mobility limitations, particularly within the first 12 months after a fracture.¹ Despite treatment advances, 12-month mortality remains high; depending on geographic region, the rate ranges from 14.4% to 28.3% for community-dwelling patients and from 40% to 55% for those living in long-term care facilities. Moreover, the total number of hip fractures is expected to nearly double by 2050.¹

The World Health Organization has officially recognized osteoporosis as a major contributor to the global burden of disease. Despite evidence that bone-strengthening medications and fall-prevention strategies reduce rates of adverse outcomes, such care continues to be underutilized, with less than 20% of patients receiving pharmacologic treatment after a fragility fracture.¹

Fracture liaison services (FLS) aim to identify and provide care for patients with a fragility fracture in order to reduce the risk of a subsequent fracture.^{1,2} These services are designed to bridge the gap between acute fracture care and the long-term management of osteoporosis. Similar models, based on a multidisciplinary approach, are used in clinical areas such as cancer, cardiovascular diseases, and diabetes and are recommended in guidelines of scientific societies such as the American Diabetes Association and the American Heart Association.

Some countries are already realizing the benefits of FLS, but there are important barriers to their widespread adoption in the United States. FLS programs implicitly recognize that osteoporosis is a major public health problem and offer a cost-effective, evidence-based strategy for preventing further fractures, disabil-

ity, and premature deaths. Moreover, we believe that making such services a routine part of post-fracture care would benefit all patients regardless of race and ethnicity, thereby reducing current disparities in care. And the integrated approach may offer a useful model for the management of other chronic diseases.

There are actually four models of FLS, and they vary in the intensity of care provided. All four models employ a fracture liaison nurse or equivalent professional.

Model A — which entails identifying patients with fragility fractures, investigating their condition, initiating treatment, planning other preventive measures, and arranging follow-up — requires a multidisciplinary, systematic approach involving several health care professionals and is coordinated by a nurse. Patients presenting with a fragility fracture are systematically evaluated to determine their risk of future fracture, risk of falls, and nutritional status. Then, the FLS team develops an individualized management plan that may include pharmacologic treatments, lifestyle modifications such as resistance and balance exercises, nutrition counseling, and education about fall prevention. The team also facilitates communication between tertiary and primary health care providers to ensure coordination of care and ongoing monitoring of patients' bone health. Under this FLS model, long-term follow-up reduces the risk of secondary fragility fractures.²

In the other, lower-intensity FLS models, patients are identified and assessed by the same type of fracture liaison nurse or an equivalent professional and then referred to a primary care clinician for initiation of treatment (model B), referred to primary care with-

out assessment or initiation of treatment (model C), or simply informed about their bone health (model D). Most of the available scientific evidence relates to model A FLS programs, which have been linked to improved clinical outcomes.² Such programs provide organized, multifaceted coordination for all the health care professionals involved in the care of patients with fragility fractures, including primary care providers, bone specialists, orthopedic surgeons, geriatricians, internists, nurses, and therapists.

Implementation of FLS can offer numerous benefits for both patients and health care systems.¹⁻⁴ Such services have been shown to reduce the incidence of subsequent fractures by 74% in patients' first year after a fracture and by 32% in the second year and beyond²; they have also been found to reduce related mortality.³ FLS intervention improves patient outcomes such as treatment initiation, adherence to treatment, and quality of life and reduces frailty and the risk of falls.⁴

On the cost side of the equation, FLS offer a return of \$10.49 for every \$1 invested. The highest returns on investment are achieved by organizations that provide treatment recommendations and incorporate primary care clinicians into the effort.⁴ Health care systems such as Kaiser Permanente, which has implemented FLS in multiple regions, have observed substantial reductions in the rates of subsequent fractures.⁵ Recently, several projects have been funded by the Patient-Centered Outcomes Research Institute to evaluate various models of FLS delivery, assess their effects on patient outcomes, and inform policy decisions regarding broader implementation.

The International Osteoporosis

Foundation (IOF), the Fragility Fracture Network (FFN), and the American Orthopaedic Association (AOA) have played central roles in advancing FLS implementation and dissemination of best practices. Initiatives such as the IOF's "Capture the Fracture" program and the AOA's "Own the Bone" program provide recognition, training, and tools to support and improve the quality of FLS worldwide. The American Society for Bone and Mineral Research (ASBMR) led a multistakeholder group (including representatives of the IOF, the Bone Health and Osteoporosis Foundation [BHO], the FFN, and the AOA) in developing recommendations highlighting the importance of early assessment and intervention after a fragility fracture.¹ These evidence-based recommendations aim to help health care systems fill the substantial gap in the care of patients with fragility fractures, which is exemplified by the low percentage of patients who receive antiosteoporosis treatment after a fracture. The recommendations have informed the development and implementation of FLS worldwide.

Some other countries have successfully implemented FLS programs that aim to guarantee early antiosteoporosis treatment and adherence, while monitoring program performance and efficacy as well as patient experience. FLS quality indicators have been established in several countries. For example, Australia, Denmark, and Hong Kong have national quality indicators for hip-fracture care whose achievement is associated with reduced mortality.³ The United Kingdom has established a national FLS database for fracture monitoring and implemented an-

nual audits of all secondary care hospitals engaged in fracture care. Funding remains a key barrier, although some countries, such as Japan and Australia, have allocated funds for FLS at the national or health care system level.

Despite the proven benefits of FLS and the availability of evidence-based guidelines, implementation of these services in the United States has been limited. One important barrier is the lack of reimbursement for FLS-related services, which undermines health care institutions' ability to invest in these programs. In the absence of financial incentives, many institutions struggle to justify devoting the resources required to establish and sustain FLS, which results in missed opportunities for fracture prevention and improved patient outcomes, as well as future cost savings.

The ASBMR and the BHO are now actively advocating for Medicare reimbursement for FLS under the Centers for Medicare and Medicaid Services' physician fee schedule, targeting a tailored coding solution for care pathways for hip and vertebral fractures. This advocacy effort has gained traction, garnering the support of several other organizations, particularly under the aegis of the recent White House Initiative on Women's Health Research. If approved, such a coding solution could greatly enhance hip-fracture care, paving the way to reduced post-fracture mortality in the United States.

We believe the time is right to improve the care of patients who have sustained fragility fractures. The global burden of hip fractures is expected to nearly double over the next few decades, and current U.S. practices aimed at secondary-

fracture prevention are not working. To avert a global crisis, coordinated global solutions are imperative for reducing treatment gaps and improving postfracture care. FLS can meet those goals and save money by reducing the burden on health care resources over the long term. Ensuring adequate financial coverage for FLS and coordinated advocacy by scientific societies, governments, and other stakeholders may ultimately translate into successful secondary-fracture prevention that substantially improves patients' quality of life.

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