

The fracture liaison service in Italy: best practices for secondary fracture prevention

Barbara Rossi, Davide Di Fusco, Claudia Marchetta, Matteo Marconi, Serena Lavorgna, Gabriella Facchinetti, Daniela D'Angelo, Marco Bressi, Gessica Cherubini, Jacopo Giammatteo, Bruno Velia

National Centre for Clinical Governance and Excellence in Health Care, Italian National Institute of Health, Rome, Italy

ABSTRACT

Purpose: Fragility fractures represent a major public health challenge due to their impact on mortality, disability, quality of life, and healthcare costs. This study aims to define clinical and organizational best practices for implementing the fracture liaison service (FLS) model in Italy, integrating International Osteoporosis Foundation (IOF) standards within the organizational framework of the Italian National Health Service.

Methods: An evidence-informed narrative approach was developed integrating international literature on the FLS model, the IOF “Capture the Fracture” Best Practice Framework, and methodological principles of the Italian National Guidelines System. Organizational experiences from Italian regional initiatives and pilot programs were analyzed to identify operational components and transferable best practices. Evidence from clinical guidelines and real-world studies reporting reductions in refracture risk associated with implementation of the FLS model was also reviewed.

Results: The proposed framework identifies key operational domains for FLS implementation: systematic case finding of fragility fractures, standardized osteoporosis and fall risk assessment, coordinated multidisciplinary management, timely initiation of pharmacologic therapy, and structured long-term follow-up. Evidence from real-world studies indicates that FLS programs increase rates of osteoporosis diagnosis and treatment and reduce the risk of subsequent fractures. Additional components include patient education, shared decision-making, integration of patient-reported outcomes, and structured collaboration between hospital services, primary care, and community rehabilitation networks.

Conclusions: The integration of international FLS standards with national organizational best practices provides a practical framework to support the development and scaling of coordinated post-fracture care pathways in Italy, potentially improving secondary fracture prevention and continuity of care.

KEYWORDS

Fragility fracture, osteoporosis, fracture liaison service, integrated care pathway.

Introduction

Fragility fractures represent a major public health challenge in Italy not only because of the associated clinical and socioeconomic burden, but also because they expose a persistent gap in secondary prevention. Italian data show that many patients hospitalized for hip fracture do not receive anti-osteoporosis therapy after discharge, despite being at very high risk of subsequent fracture and adverse outcomes. This paradox underscores the need for structured post-fracture models capable of linking acute care, osteoporosis management, rehabilitation, and community follow-up. Despite the availability of effective diagnostic tools and osteoporosis treatments, a large proportion of patients who sustain a first fragility fracture remain undiagnosed and untreated, leading to a substantial secondary prevention gap^[1-3].

The fracture liaison service (FLS) model, promoted internationally by the International Osteoporosis Foundation (IOF) through its “*Capture the Fracture*” program, has emerged as an effective and evidence-based approach to address this challenge^[4].

In this article, a precise terminological framework is adopted to distinguish three interrelated but distinct levels of FLS implementation: (1) the “FLS model” refers to the overarching

Article history

Received 17 Mar 2026 – Accepted 30 May 2026

Contact

Barbara Rossi; barbara.rossi2@iss.it

National Centre for Clinical Governance and Excellence in Health Care

Italian National Institute of Health, via Giano della Bella, 34 00162 Rome, Italy

Phone: +39 0649904377

organizational and methodological architecture that integrates case finding, risk assessment, treatment initiation, and long-term follow-up; (2) “FLS programs” are the specific regional or institutional initiatives that adapt the model to local healthcare contexts; and (3) “FLS structures” are the operational clinical units that deliver coordinated post-fracture care pathways in practice.

In Italy, several pilot projects and regional initiatives have demonstrated the feasibility and clinical value of the FLS model which, by providing a coordinated, multidisciplinary approach to post-fracture care, ensures systematic patient identification, risk assessment, initiation of treatment, and structured follow-up, thereby reducing the risk of subsequent fractures^[3,4]. However, implementation, rather than systematically in-

egrated into national care pathways, remains heterogeneous and often dependent on local organizational contexts ^[5,6]. At the same time, evidence-based and expert consensus-informed osteoporosis management practices focus on patient-centered pharmacologic interventions, such as bisphosphonates, denosumab, or anabolic agents according to individual risk profiles, combined with calcium and vitamin D supplementation, lifestyle modifications, and fall prevention strategies. These approaches have been shown to reduce the risk of refracture by approximately 20–50% in real-world settings, while improving treatment adherence through patient education and structured monitoring ^[7–9].

This work outlines the role of best practices in supporting the implementation of the FLS model in Italy. It aims to demonstrate that an approach informed by international recommendations and tailored to the organizational characteristics of the Italian National Health Service and existing well-established care pathways can provide a practical strategic framework to support clinicians, healthcare managers, and policymakers in developing and scaling FLS models at hospital, network, and regional levels.

Evidence-based knowledge for FLS programs

The FLS is a coordinated model of care designed to proactively identify patients with fragility fractures and ensure the timely initiation of secondary prevention strategies. Within this framework, FLS programs aim to bridge the gap between acute fracture management and long-term osteoporosis care by promoting systematic patient identification, comprehensive risk assessment, and structured follow-up.

Core components of FLS programs include case finding, assessment of osteoporosis and fall risk, patient and caregiver education, initiation and optimization of pharmacologic treatment, and long-term monitoring of adherence and outcomes ^[3,8,10,11].

International evidence and IOF reports demonstrate that effective FLS programs significantly increase rates of osteoporosis diagnosis and treatment, improve patient adherence, and reduce the incidence of subsequent fractures, while also contributing to more efficient use of healthcare resources ^[9]. In Italy, recent organizational experiences suggest that their wider implementation could improve post-fracture care and support more efficient use of healthcare resources ^[12]. These findings highlight the potential clinical and economic benefits of systematically implementing coordinated post-fracture care pathways.

The IOF “*Capture the Fracture*” Best Practice Framework provides an internationally recognized benchmark for evaluating FLS structures. The framework identifies key domains for high-quality FLS implementation, including patient identification, risk assessment, treatment initiation, follow-up, and communication with primary care providers ^[4]. Aligning Italian initiatives with these internationally recognized standards could support both quality improvement and greater comparability across healthcare systems.

In this context, Italy already possesses several enabling elements, including consolidated regulatory references, methodo-

logical tools, and regional experiences that have demonstrated the feasibility of integrated fragility fracture care pathways. The challenge is therefore not to develop entirely new models, but rather to consolidate existing experiences, promote the dissemination of effective practices, strengthen professional competencies, and reduce regional disparities in access to coordinated post-fracture care.

Best practices as core elements for implementing the FLS model in Italy

The Italian National Guidelines System (SNLG) has progressively established itself as a key methodological and cultural reference framework within the country’s National Health Service. Beyond the development of clinical recommendations, it also supports the identification and dissemination of good clinical, organizational, and management practices. Structured collaboration with scientific societies plays a central role in this process, translating scientific evidence into clinical practice and transforming research findings into measurable health benefits for patients.

An important step in this evolution is represented by the expansion of SNLG methodological manuals, which provide differentiated and complementary tools. These tools extend beyond traditional clinical guidelines to encompass operational best practices, care pathways, and organizational recommendations. This broader methodological framework enables healthcare institutions to operate according to principles of consistency, measurability, and adaptability, while maintaining a balance between scientific rigor and the sustainability of healthcare processes.

Within the context of the FLS model, good clinical and organizational practices should focus on three key domains: systematic case finding and patient identification, coordination through a dedicated multidisciplinary team, and standardized clinical and risk assessment. Ensuring uniformity of care across the entire care continuum requires the adoption of evidence-based protocols for treatment and follow-up, supported by digital tools and telemedicine where appropriate.

Comprehensive patient evaluation should include fracture history, prior fractures, assessment of osteoporosis and fall risk factors, medication review, bone mineral density testing, and evaluation of secondary causes of osteoporosis, comorbidities, and functional status. Fall risk assessment, including gait and balance evaluation, should also be integrated to support tailored interventions such as physiotherapy, home environment modifications, and medication optimization.

A defining component of high-performing FLS models is the presence of a dedicated coordinator, frequently with advanced nursing expertise, who acts as the operational link between acute fracture care, diagnostic work-up, treatment initiation, patient education, and community follow-up. In the Italian context, formal institutional recognition of this role should be considered a best-practice requirement rather than an optional organizational feature, because continuity of care between hospital and territory cannot depend solely on informal professional commitment.

Within this framework, the FLS model ensures that eligible patients receive individualized, evidence-based treatment plans that may include pharmacological therapy, optimization of calcium and vitamin D intake, lifestyle interventions, and fall prevention strategies. Treatment decisions should be guided by fracture risk profile, age, renal function, comorbidities, patient preferences, and regional formularies, while remaining consistent with both national and international clinical guidelines [7,8,11]. Figure 1 illustrates the integrated care pathway proposed for FLS implementation in the Italian healthcare context.

The above core elements provide the necessary operational foundation and support the development of integrated care pathways for fragility fracture management.

Best practices as effective tools for personalized management and patient education and empowerment

Good clinical and organizational practices should aim not only to standardize care but also to optimize and integrate existing healthcare resources. This can be achieved through network-based models, structured referral pathways, and forms

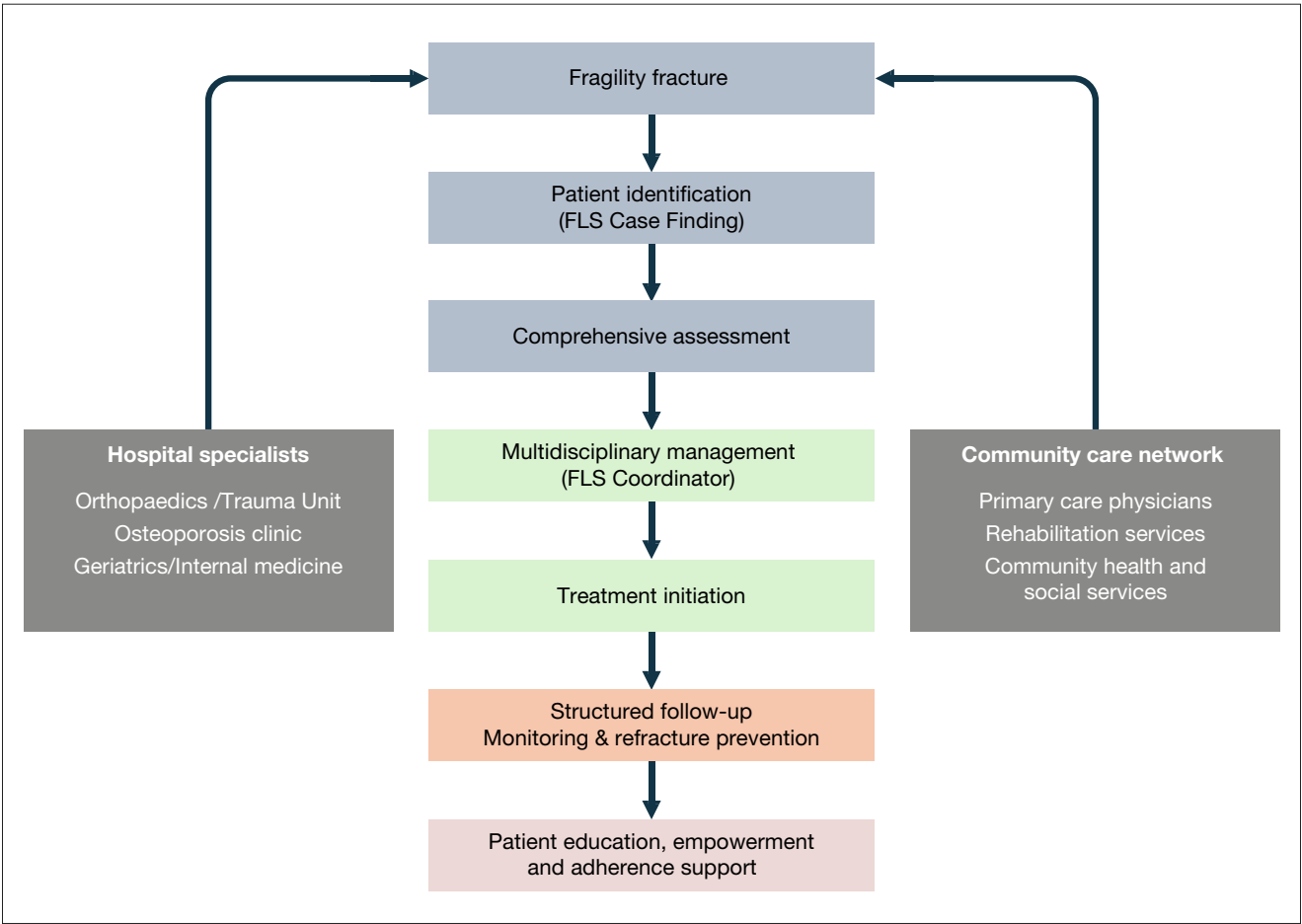
of inter-institutional collaboration that facilitate coordination across different levels of care.

Within this framework, the systematic introduction of PROMs (Patient-Reported Outcome Measures) and PREMs (Patient-Reported Experience Measures) represent a key element in strengthening a person-centered approach to care. These tools allow healthcare professionals to incorporate patients’ perspectives into clinical decision-making, recognizing their experiences and perceptions as essential dimensions of healthcare quality.

Effective FLS programs therefore provide structured patient-centered information on osteoporosis, fracture risk, lifestyle modifications, and the expected benefits of pharmacological and non-pharmacological interventions. Educational strategies should be tailored to patients’ health literacy, cognitive status, and cultural background, and may include written educational materials, group sessions, and the involvement of caregivers when appropriate. Shared decision-making processes and motivational interviewing techniques can further support acceptance and long-term adherence to therapies, particularly in chronic conditions such as osteoporosis, which are often asymptomatic.

Documented patient education and the provision of indi-

Figure 1 Integrated fracture liaison service (FLS) care pathway. Coordinated care model for FLS management of patients with fragility fractures. The model includes systematic patient identification, comprehensive assessment, multidisciplinary management coordinated by the FLS team, initiation of osteoporosis treatment, and structured follow-up for secondary fracture prevention. The diagram illustrates the integration between hospital-based specialists (left) and community healthcare services (right), ensuring continuity of care across the entire care pathway.



visualized discharge summaries are also essential for ensuring continuity of care between hospital services, primary care physicians, and community healthcare providers. Increasing attention is also being paid to the gender perspective.

This should not be considered a secondary aspect but rather an integral component of diagnostic, therapeutic, and care pathways. Biological, hormonal, and social differences between men and women significantly influence access to healthcare services, response to treatment, and disease progression [13–15]. In the context of bone fragility, the high burden of osteoporosis among post-menopausal women requires targeted prevention and management strategies capable of enabling early risk identification and reducing the incidence of fracture-related complications.

Although osteoporosis is traditionally perceived as a predominantly female condition, fragility fractures in men remain systematically under-recognized and undertreated. This is clinically relevant because men often present later in the disease trajectory, may receive less secondary preventive treatment after fracture, and experience unfavorable outcomes. In this context, the FLS model should be framed as a key strategy for identifying male patients who would otherwise remain outside osteoporosis pathways [13–15].

The clinical dimension of fragility fractures is also closely linked to a psychosocial dimension that significantly influences recovery and the maintenance of autonomy. A fragility fracture often represents a secondary vulnerability factor, with important consequences for quality of life, self-esteem, and social relationships among older adults. Evidence indicates that fear of falling, reduced confidence in physical abilities, and the resulting limitation of daily activities are associated with poorer functional recovery and an increased risk of social isolation.

In a longitudinal study, approximately 60% of patients reported fear of falling four weeks after a hip fracture and almost half at twelve weeks, with a significant correlation between persistent fear and poor recovery at one year [16]. In Italy, a multicenter survey also found that less than 15% of patients receive structured psychological support during post-fracture rehabilitation, despite the high prevalence of cognitive and nutritional impairments [16].

The presence of pre-fracture depression is associated with a threefold increase in the risk of poor functional outcome at four months [17]. These findings highlight the importance of integrating psychological and social support within multidisciplinary care pathways for fragility fractures. The management of frailty should therefore extend beyond the strictly biomedical dimension to include home support programs, counseling interventions, personalized rehabilitation pathways, and local services capable of identifying emerging needs in a timely manner.

In this context, the FLS model is increasingly recognized as an operational reference point for the integrated management of patients with fragility fractures. By coordinating multidisciplinary expertise and ensuring continuity between hospital care and community services, it can support early patient identification, comprehensive risk assessment, timely initiation of secondary prevention strategies, and structured long-term follow-up.

Italian context and organizational challenges: best practices for adaptation to healthcare fragmentation

The Italian National Health Service is regionally organized, with substantial variability in governance, resource allocation, and digital infrastructure across regions. This heterogeneity affects the development of integrated care pathways for fragility fractures and the capacity to implement standardized FLS programs in acute hospitals and community settings.

Although orthogeriatric units, specialized trauma services, and outpatient osteoporosis clinics have progressively expanded, integration between acute care, rehabilitation, primary care, and community services remains inconsistent [5,8]. In particular, this fragmentation often affects the transition from hospitalization to long-term secondary prevention, which is the core domain of the FLS model. Additional challenges include variability in coding systems, reimbursement mechanisms, and regional healthcare planning, which may limit the institutional recognition and financial sustainability of FLS activities. In many cases, FLS programs are still supported through local initiatives or pilot projects rather than stable structural funding.

In this context, identifying and disseminating shared best practices can help regional healthcare authorities integrate the FLS model into formal care pathways and performance frameworks [18]. In recent years, Italy has made important progress in strengthening collaboration between healthcare institutions, scientific societies, and healthcare professionals through increasingly co-designed healthcare models.

Several regional experiences already provide valuable examples of good practices. Tuscany has introduced an integrated care pathway for fragility fractures that clearly defines roles, responsibilities, and timelines for hospital-to-community transitions [19]. Veneto has adopted regional operational guidelines for structured fracture care, while Lombardy has developed a network of centers dedicated to osteoporosis and fragility fracture management. Liguria has promoted integrated initiatives such as the LICOS project, aimed at strengthening collaboration between hospitals and community-based services [5]. Despite differences in local organization, these experiences share two fundamental principles: multidisciplinary and multi-professional collaboration. Effective fragility fracture management requires the integration of specialist expertise, including orthopedics, rheumatology, endocrinology, geriatrics, and general practice, with the contributions of nurses, physiotherapists, nutritionists, psychologists, and social workers.

Primary care physicians and community-based healthcare services play a central role in long-term follow-up and management of chronic diseases, including osteoporosis. Consequently, best practice FLS models should incorporate formal collaboration with general practitioners, community nurses, rehabilitation services, and social care networks, ideally within structured regional care pathways and shared clinical protocols [18].

Timely and bidirectional information exchange between healthcare providers is essential and should be supported by structured discharge communications, shared electronic health records, and clearly defined referral criteria for specialist reassessment. Integration with community-based fall clinics,

fracture clinics, and chronic care programs can further improve resource utilization and reduce duplication of assessments.

Telemedicine is playing an increasingly important role in supporting professional networks, ensuring continuity of monitoring, improving access to care, and maintaining consistency of clinical interventions, particularly in underserved areas [20]. From this perspective, digital health solutions can strengthen care coordination and facilitate follow-up of patients with fragility fractures, supporting continuity of care while complementing, rather than replacing, the therapeutic relationship between patients and healthcare professionals. In practical terms, telemedicine can support the FLS model through scheduled remote contacts to verify treatment initiation, persistence, and tolerability, reinforce educational messages, and identify early barriers to adherence. In selected cases, virtual fall risk assessments may also support review of home hazards, mobility concerns, and caregiver needs, especially for patients living in geographically underserved areas or with limited availability of transport [2,21]. The regional experiences of Tuscany, Veneto, Lombardy, and Liguria are here reframed as practical “blueprints” for FLS implementation, highlighting transferable models and strategies. At the same time, regional differences are examined, particularly in governance, financing, and infrastructure, as well as key systemic barriers such as fragmented funding and uneven care integration. Table I provides a concise comparative overview of these aspects.

Given the diversity of healthcare settings in Italy, ranging from large academic hospitals to smaller community facilities, best practice models must remain adaptable to different

organizational contexts. Simplified FLS structures may be appropriate in lower-resource environments, while more comprehensive configurations may be preferable in tertiary referral centers [18]. Possible FLS configurations include nurse-led services integrated within orthogeriatric services, outpatient services coordinated by bone specialists, and hub-and-spoke network models supporting multiple hospitals and community services.

Regardless of the organizational configuration adopted, adherence to the key domains for high-quality FLS implementation—case finding, risk assessment, treatment initiation, follow-up, and communication—remains essential.

Finally, good practices and clinical guidelines should be considered shared methodological tools rather than rigid constraints. They provide a common language that enables different disciplines and professional roles to collaborate within a healthcare system that not only treats disease but also addresses the broader needs of the person. By promoting evidence-informed decision-making, optimizing access to resources, reducing unwarranted variability, and supporting healthcare professionals in clinical practice, best practices can contribute to a more efficient, equitable, and patient-centered healthcare system.

Conclusions

The Italian National Institute of Health is currently promoting the development of good practices for the management of bone fragility and fragility fractures, based on the best availa-

Table I Comparative overview of regional FLS blueprints and implementation determinants.

REGION	ITALIAN MODELS CLOSEST TO FLS FRAMEWORKS	SPECIFIC ORGANIZATIONAL FEATURES	ALIGNMENT WITH FLS PRINCIPLES	VALUE AS A BLUEPRINT REPLICABLE IN ITALY
Tuscany	TARGET project [19]	Early regional disease management model aimed at secondary prevention after hip fracture in older adults, based on target population identification, regional administrative data, and post-fracture treatment monitoring.	Closely aligned, as demonstrated by systematic identification of patients at high re-fracture risk, structured post-fracture care, and integration between hospital care, prescribing pathways, and organized follow-up.	Useful for regions seeking a formal regional governance model built on defined target populations, process indicators, and system-level evaluation.
Liguria	LICOS project / hospital-to-community model [5]	Continuity-of-care model for skeletal fragility in older adults, centered on linkage between hospital care, specialist assessment, and community-based follow-up for patients with index fragility fractures.	One of the Italian experiences most closely resembling a “classic” FLS approach, owing to its multidisciplinary coordination, transitional care focus, and structured post-fracture management pathway.	Particularly replicable where the main barrier is post-discharge fragmentation and where formal coordination is needed between orthopedics, bone specialists, general practice, and community services.
Lombardy	Network / clinical governance model for fragility fracture prevention [18]	Governance-oriented approach based on integrated pathways or networks for patient identification, treatment initiation, and monitoring after fragility fracture.	Consistent with supranational FLS frameworks in that it emphasizes structured and integrated secondary fracture prevention, with expected benefits in terms of treatment initiation, adherence, re-fracture reduction, and mortality.	Suitable as a blueprint for hub-and-spoke contexts or for regions intending to develop inter-institutional networks rather than a single isolated hospital service.
Veneto	Regional structured post-fracture care approach consistent with Italian governance recommendations [5]	On the basis of the available literature, the Veneto approach is better described as consistent with integrated, multiprofessional, and standardized post-fracture care principles rather than as a single established project equivalent to TARGET or LICOS [5].	Alignment with supranational FLS principles lies mainly in organizational principles: identification of sentinel fragility fractures, treatment initiation, follow-up, and involvement of primary care within an integrated pathway [5].	Useful for regions that do not yet have a planned program but can implement adapted FLS principles through regional governance standards and structured operational pathways [5].

ble scientific evidence and expert consensus, in line with the principles of the SNLG. This initiative aims to support healthcare professionals and healthcare organizations by providing operational guidance to support consistency of care processes, dissemination of evidence-based practices, and systematic evaluation of clinical and organizational outcomes. Scaling FLS care in Italy requires not only clinical consensus, but also supportive governance, dedicated funding, digital interoperability, and recognition of the coordinator role.

The proposed approach builds on strengthening the resources and professional competencies already available within the healthcare system, promoting more integrated and efficient care processes capable of combining quality, equity, and sustainability. From this perspective, best practices represent a key lever for the development of the FLS model, as they promote uniformity and quality of clinical and care pathways while supporting healthcare professionals in clinical decision-making, reducing unwarranted variability, and coordinating clinical, organizational, and technological aspects of care.

The FLS model provides an effective and evidence-based organizational response to the growing burden of fragility fractures in Italy. By adapting international best practices to national and regional contexts, the Italian healthcare system can help close the secondary prevention gap and improve outcomes for older adults with fragility fractures. This broader implementation of the model, supported by shared best practices, represents a strategic opportunity to strengthen secondary fracture prevention and ensure continuity of care. By promoting integrated care pathways and multidisciplinary collaboration, this approach may contribute to a more person-centered, equitable, and sustainable healthcare system.

References

- Pennestrì F, Corbetta S, Favero V, Banfi G. Fragility fracture prevention: implementing a fracture liaison service in a high volume orthopedic hospital. *Int J Environ Res Public Health*. 2019;16(24):4902.
- Iolascon G, Paoletta M, Liguori S, Gimigliano F, Moretti A. Bone fragility: conceptual framework, therapeutic implications, and COVID-19 related issues. *Ther Adv Musculoskelet Dis*. 2022;14:1759720X221133429.
- Toro G, Braile A, Liguori S, et al. The role of the fracture liaison service in the prevention of atypical femoral fractures. *Ther Adv Musculoskelet Dis*. 2023;15:1759720X231212747.
- Åkesson K, Marsh D, Mitchell PJ, et al. Capture the fracture: a best practice framework and global campaign to break the fragility fracture cycle. *Osteoporos Int*. 2013;24(8):2135-52.
- Cavagnaro P, Giusti A, Pleitavino F, Odetti P, Santolini F, Bianchi G. Fracture liaison service: un modello di management di continuità assistenziale per la fragilità scheletrica nell'anziano tra ospedale e territorio. *I Luoghi della Cura*. 2/2018.
- Frediani B, Gaudio A, Giannini S, Lello S, Napoli N, Rossini M. Current clinical practices in osteoporosis management across Italy: a survey analysis and expert opinion. *Arch Osteoporos*. 2026;21(1):47.
- Kanis JA, Cooper C, Rizzoli R, Reginster JY; Scientific Advisory Board of the European Society for Clinical and Economic Aspects of Osteoporosis (ESCEO) and the Committees of Scientific Advisors and National Societies of the International Osteoporosis Foundation (IOF). European guidance for the diagnosis and management of osteoporosis in postmenopausal women. *Osteoporos Int*. 2019;30(1):3-44.
- Sistema Nazionale Linee Guida – ISS, 2021. Diagnosi, stratificazione del rischio e continuità assistenziale delle fratture da fragilità. Available at: <https://www.iss.it/-/snlg-fratture-da-fragilita>. Accessed January 23, 2026.
- Li N, Hilgsmann M, Boonen A, et al. The impact of fracture liaison services on subsequent fractures and mortality. *Osteoporos Int*. 2021;32(8):1517-30.
- Jaglal SB, Cameron C, Hawker GA, et al. Development of an integrated-care delivery model for post-fracture care in Ontario, Canada. *Osteoporos Int*. 2006;17(9):1337-45.
- Åkesson KE, Ganda K, Deignan C, et al. Post-fracture care programs for prevention of subsequent fragility fractures: a literature assessment of current trends. *Osteoporos Int*. 2022;33(8):1659-76.
- Tarantino U, Greggi C, Visconti VV, et al. Fracture liaison service model: project design and accreditation. *Osteoporos Int*. 2023;34(2):339-48.
- Vescini F, Chiodini I, Falchetti A, et al. Management of osteoporosis in men: a narrative review. *Int J Mol Sci*. 2021;22(24):13640.
- Zhang YY, Xie N, Sun XD, et al. Insights and implications of sexual dimorphism in osteoporosis. *Bone Res*. 2024;12(1):8.
- Alswat KA. Gender disparities in osteoporosis. *J Clin Med Res*. 2017;9(5):382-7.
- MacKay S, Ebert P, Harbidge C, Hogan DB. Fear of falling in older adults: a scoping review of recent literature. *Can Geriatr J*. 2021;24(4):379-94.
- Mossey JM, Mutran E, Knott K, Craik R. Determinants of recovery 12 months after hip fracture: the importance of psychosocial factors. *Am J Public Health*. 1989;79(3):279-86.
- Cianferotti L, Porcu G, Ronco R, et al. The integrated structure of care: evidence for the efficacy of models of clinical governance in the prevention of fragility fractures after recent sentinel fracture after the age of 50 years. *Arch Osteoporos*. 2023;18(1):109.
- Piscitelli P, Brandi ML, Nuti R, et al. The TARGET project in Tuscany: the first disease management model of a regional project for the prevention of hip re-fractures in the elderly. *Clin Cases Miner Bone Metab*. 2010;7(3):251-4.
- Ezeamii VC, Okobi OE, Wambai-Sani H, et al. Revolutionizing healthcare: how telemedicine is improving patient outcomes and expanding access to care. *Cureus*. 2024;16(7):e63881.
- Girgis CM, Clifton-Bligh RJ. Osteoporosis in the age of COVID-19. *Osteoporos Int*. 2020;31(7):1189-91.

Acknowledgments: The authors express their sincere gratitude to all researchers of CNCG group including Massimo Marzi, Alessandro Mazzola and Roberta Tosoni for their valuable technical and administrative contribution.

Conflict of Interest: The authors declare no conflict of interest.