

Overview of fracture liaison services in the UK and Europe: standards, model of care, funding, and challenges

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Abstract

Fragility fractures represent a growing global problem, including in the United Kingdom and European countries. Reports demonstrate the benefits of national guidance and organized fragility fracture programs through fracture liaison services to deliver care to patients who sustain these injuries. The challenge of assembling multidisciplinary teams, providing routine screening of appropriate patients, and monitoring therapies where there is a known compliance problem, remains an obstacle to the success of fragility fracture treatment programs to all. Efforts should continue to introduce and maintain fracture liaison services through coordinated national approaches and advanced systems.

Keywords: fracture liaison services, fragility fractures

1. Introduction

The United Kingdom (UK) and Europe have more developed health care systems than many other areas of the world, but also

have a significant older population. With increasing age comes the risk of fragility fractures and the associated costs to the individual and to the health care system. Only through targeted and systematic prevention programmes will the burden of fragility fractures be reduced. The following reports from 6 countries indicate the difficulties in introducing Fracture Liaison Services (FLSs), due to the multidisciplinary nature, many referral points, incomplete evidence behind both the diagnosis and treatment modalities, and lack of crucial funding for a preventative service in the face of many other pressing health care needs. All reports show that achieving a national approach is the goal, but without clear leadership and guidance, it is difficult to introduce. The recognition of the importance of creating and supporting FLSs cannot be lost on any orthopaedic trauma surgeon, as it is their responsibility to give patients access to this service, which should be part of the standard care they provide.

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2. United Kingdom

2.1. Introduction

The English Fracture Liaison Service (FLS) model of care is based on structuring fracture prevention services around a dedicated coordinator, with support from a lead clinician in osteoporosis who provides a link between all the multidisciplinary teams involved. The core components of the secondary fracture prevention are to ensure that all adults, aged 50 years and over, presenting with a fragility fracture after minimal trauma (a fall from standing height or less) are systematically assessed, recommended therapy, and then monitored for at least 12 months. The model serves 2 main purposes; one, to ensure patients eligible for anti-osteoporosis therapy start treatment early and adhere; two, to constantly evaluate service performance to optimize effectiveness, efficiency, and patient experience (Fig. 1).

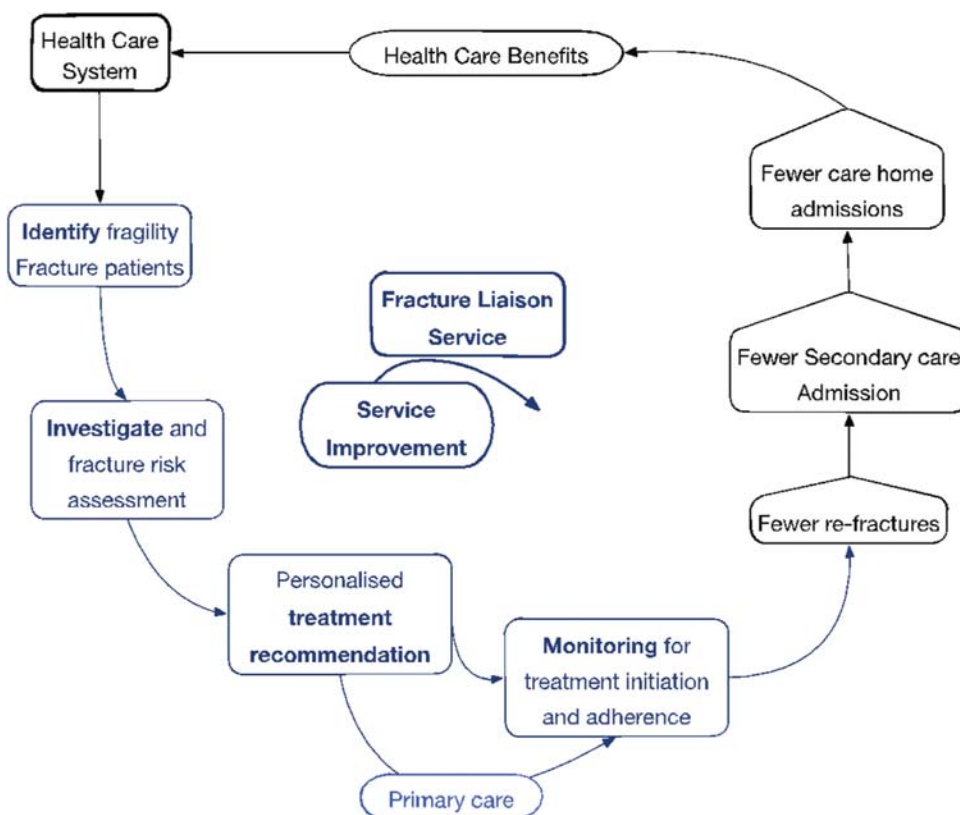


Figure 1. The outline model for the key steps for secondary fracture prevention in the United Kingdom.

2.2. National guidelines and standards

The efficacy of this model has been supported by several studies, with improvements in reduction in refracture rates and mortality from meta-analyses.^[1-3] Critically 2 standards have been developed: Organizational clinical standards fusing the 5iQ model developed by the Royal Osteoporosis Society (ROS), for what a good FLS should look like, and patient level performance indicators for driving quality improvement by the Royal College of Physicians Fracture Liaison Service Database (FLSDB) audit, a mandatory audit for all secondary care hospitals in England and Wales supported by the Health Quality Improvement Partnership.^[4,5] Output annual reports provide benchmarking and live run charts for all participating FLSs, on a publicly accessible platform.^[6]

2.3. Organization, successes, and barriers

2.3.1. Funding. Fracture Liaison Services are funded from regional sources but there is guidance for the development of business cases, including national toolkits for FLSs, developed by the ROS, which contains a comprehensive and stepwise approach to setting up an FLS.^[6] Practitioner training programs run by the ROS, ensure that evidence-based and current knowledge of fracture prevention are implemented in practice.^[7] Additionally, using the empirical evidence from academic research to demonstrate the efficacy of FLSs, alongside clinical guidelines, allows decision makers to prioritize the FLS in the context of everincreasing health care needs from other long-term conditions in their locality. UK-based evidence comes from the outcomes of the Glasgow FLSs, data from Hospital Episode Statistics, and the ReRefresh study.^[8-15] Finally, outcomes data

from the FLSDB, which is the only national secondary prevention patient-level audit worldwide, allows cost effectiveness calculations and also creates a standard in benchmarking the services against local and national comparators, which is invaluable.^[6]

2.3.2. Challenges and successes. The key barrier to success of FLSs in the UK is the inability to secure funding based on clinical need especially after the era of COVID, highlighting the need for more policy work at the national and regional levels to appropriately prioritize FLS in local decision-making.

The process of setting up an FLS in the local setting is a challenge. Specific common areas include: developing an effective multidisciplinary team, including an FLS champion to drive local service improvement and development; identification of vertebral fractures, commonly missed on radiographs, usually diagnostic of osteoporosis, and with a low rate of presentation to health care services, particularly if occurring in isolation; and monitoring patients so enough start treatment within 16 weeks of the index fragility fracture and remain on treatment for at least a year.^[6]

Lastly, for FLSs to perform, they need not only to exist but to continuously improve. An FLS is less likely to be sustainably funded if it remains poor performing and not delivering the expected benefits to patients and the local health and social care systems. Quality assurance and quality improvement come from analysis of the 100,000's of patient records submitted to the national FLSDB audit report to inform resources to support FLSs getting started and becoming more effective. The other focus should be training local sites to rebuild better after the pandemic based on the metrics from the FLSDB, highlighting areas of good

practice and areas for improvement at the local, regional and national levels and provide the capacity and tools for local services to engage effectively in quality improvement.

2.4. Future direction

An FLS should deliver a seamless journey for the patient from diagnosis of a fragility fracture onward. Delivering the right care close to patients' residences has been on the NHS agenda for years and there is an established framework of support to ensure local delivery meets expected benefits for patients. With Integrated Care Systems becoming active in UK planning of health and social care, FLSs are optimally placed to identify those patients who have complex needs. There are clear whole system benefits available from identifying this cohort of patients as they have an associated high health resource requirement.

There is growing awareness that the FLS model is becoming a "standard of care." To ensure maximum benefit to patients and payers alike, it is important that the model of FLS delivery addresses appropriate clinical quality standards and metrics. Lastly, it is important to appreciate that collaborative working between charitable organisations, government entities, and health care professionals has allowed rapid development and implementation of FLSs in the UK, benefitting the requirements of patients, health care providers, and social care planners.

3. Italy

3.1. Introduction

Fragility fractures represent a major public health care issue in Italy, with a consistently increasing incidence trend. Based on national epidemiological data, it is estimated that 560,000 fragility fractures occurred in 2017, with an overall expense of € 9.4 billion for the Italian National Health Care System (SSN). Conversely, in the same year, only € 514 millions were spent for primary and secondary prevention of these fractures. Projections of epidemiological data estimate that, without an implementation of the national prevention programs, fragility fractures in Italy will increase by 22% for an overall expense of € 11.9 billions by 2030.

3.2. National guidelines and standards

It is desirable to developing an effective national primary prevention model that allows for individuals to begin an antifracture treatment prior to their first fracture event. However, an effective primary prevention program is difficult to achieve on a large scale. In contrast, secondary prevention programs are easier to manage and represent a first essential step to address the huge phenomenon of fragility fractures.

In 2010, the Italian Ministry of Health issued a document focused on diagnostic and therapeutic interventions in preventing fragility fractures. Among the general objectives, the document outlined the need to reduce fragility femoral fractures by 20%. Among the specific objectives related to secondary prevention, the document called for targeted antifracture therapy to those patients hospitalized for fragility fractures, and for these patients to obtain more than 70% adherence to the treatment at 1 year. Unfortunately, these ambitious objectives were totally disregarded. To date, less than the 20% of patients

who sustain a major fragility fracture (vertebral, hip, distal forearm, and proximal humeral fractures) start an effective secondary prevention program. Furthermore, less than 50% of these patients are still adherent to the treatment at 1 year.

3.3. Organization, successes, and barriers

Over the years, many resources have been invested toward improving the management of the elderly patients affected by femoral fragility fractures. Within the hospital context, "Fracture Units" have been created with the aim of reducing postoperative complications and mortality rates. However, at present, Italy lacks a validated and uniform national program for the prevention of fragility fractures and the long-term care of these patients. For this reason, taking inspiration from existing models used by other European countries, the major Italian Orthopaedic Societies have recently drafted a national "Fracture Liaison Service FLS" model.^[16] Adherence to this FLS model by the "Fracture Units" aims to decrease the "treatment gap" (the number of patients who would be eligible for an antifracture therapy as supported by the Italian SSN, but who do not receive it), boost long-term adherence to the treatment, and reduce the incidence of refracture.^[17] The FLS model is based on a multidisciplinary approach that involves the collaboration of several specialists (Orthopaedic Surgeon, Geriatrician, Physiotherapist, Radiologist and, when necessary, Rheumatologist, Endocrinologist, and Pain Specialist). The model is structured in 4 macro-phases:^[18]

Phase 1: Patients hospitalized for a fragility fracture are initiated into a secondary prevention program. The physician responsible for the patient discharge (Orthopaedic surgeon or Geriatrician) plans first level blood tests and a medical examination at a medical center qualified in the treatment of osteoporosis within the first 6 months after the fracture. The physician also prescribes Vitamin D and Calcium supplementation if the patient is not taking any antifracture medications.

Phase 2: Patients, under the care of a qualified medical center, undergo a dual-energy X-ray absorptiometry (DXA) and a medical examination carried out by a specialist in the treatment of osteoporosis. The specialist will plan second level tests as needed.

Phase 3: Based on the patient's test figures, the specialist verifies the appropriate calcium and vitamin D daily recommendations and concludes the visit with an antifracture therapy prescription. Due to the high mean age, comorbidities and the poor adherence to bisphosphonate oral treatment of these elderly patients, intravenous therapy with Zoledronic acid and subcutaneous therapy with Teriparatide or Denosumab are generally preferred. These medications must be prescribed only based on a specific "treatment plan."

Phase 4: The specialist plans the follow-up appointment for renewing the treatment plan. The patient is then redirected to his/her General Practitioner who examines all the records.

3.4. Future direction

To date, several Italian Hospitals have already started the FLS model testing phase.^[19] Preliminary data show a mean decrease by 20% in the treatment gap, and a mean decrease by 5% in the refracture rate.^[19] These data need to be confirmed by a largescale and long-term analysis. Nevertheless, the short/medium-term goal is to extend this model to each health care facility in the country.

4. Spain

4.1. Introduction

Fragility fractures are one of the biggest health problems in Spain. It is one of the countries in Europe with the largest elderly population and highest life expectancy, so the prevalence of this pathology is expected to increase in the upcoming years.^[20] Estimates predict an incidence of 11/1000 per year for fragility fractures overall, with estimates for hip fractures at 40,000, spine at 30,000, wrist at 30,000, and others at 104,000 fractures per year. The total number of fractures is estimated to rise from 204,000 to 286,000 by 2025.^[20] The economic burden of fragility fractures was estimated in €2,842 million, with costs resulting from incident fractures (48%), long-term care (37%), and pharmacology prevention (15%).^[21]

4.2. National guidelines and standards

Efforts have been made to create a consensus for the diagnosis and treatment of this problem in the Spanish state, but since the national health system has been transferred to the regional authorities, no guidelines have been published in this regard since 2010.^[22] Since 2017, a national hip fracture registry has been created, in which many hospitals participate and produce their annual reports.^[23]

The Spanish Society of Orthopaedic Surgery and Traumatology (SECOT) has issued some recommendations for the management of osteoporosis and fragility fracture, but if we only consider these fractures as a consequence of osteoporosis, we will limit our ability to evaluate the full scope of the problem. Fragility fractures must be considered to be both a social and medical problem, and a new paradigm should be proposed. Trauma is the seventh leading cause of death in the elderly, and the leading cause that is directly preventable. In addition, 70% of these fractures occur at home^[20]; therefore, SECOT, together with the social agencies, has created a guide for the prevention of falls at home, entitled “Parachutes, prevention of falls in the elderly at home.”^[24]

4.3. Organization, successes, and barriers

Although there is private medicine, in Spain there is a universal health care system, and the provision of health services is decentralized. The services' responsibility declines in the different regions and the organization can be very heterogeneous. Despite this, the National Health System creates guidelines that must be followed by all, and to better ensure compliance, the National Health System creates guidelines that attempt to achieve consensus among the regional health authorities.^[21] A guide to prevent fragility fractures was created in 2010, but unfortunately, that publication has not been updated since then.^[22] Generally, the funding to address fragility fractures lies within the public health system.

4.4. Future directions

It is estimated that, with the increase in cases of fragility fractures, health spending will increase by around 25% in Spain, which would place a heavy burden on public health systems.^[22] A national approach is necessary to face this challenge. One of the most important barriers to the implementation of a general action plan is the decentralization of health resources. But this so-called vacuum could be an area for improvement for the growth of

national scientific societies and the creation of supra-regional entities to coordinate this problem.

Campaigns have been introduced to prevent fragility fractures, focusing on the pharmacological prevention of osteoporosis; however, the reduction of the presentation of some of the fragility fractures with the pharmacological treatment of osteoporosis has been called into question.^[22] Although in Spain, despite treatment rates of 75% of potentially treatable women being treated, the presentation of these fractures will continue to increase by up to 28%, until 2030.^[25] Regardless, mortality from osteoporosis continues to decrease in Spain,^[26] supporting a path that should be followed to face this great health challenge.

5. Greece

5.1. Introduction

According to WHO data, the proportion of the population over the age of 60 years will nearly double from 12% in 2015 to 22% in 2050. Overall, the prevalence of osteoporosis is approximately 6% and 22% respectively in men (highest in the 60–64 years age group) and women (highest in the 75–79 years age group) aged 50 years or more, and 5.5% in the general population of the European Union (EU).^[26,27] The number of men and women over 50 years of age amounted to 1,959,000 and 2,277,000 respectively in Greece in 2010. The population greater than 50 years of age is expected to increase from 4.2 million in 2010 to 5.1 million in 2025, corresponding to an increase of 20%.^[22]

The number of national incident fractures in Greece in 2010 was estimated at 86,000 with 15,000 hip, 13,000 vertebral, 15,000 forearm, and 43,000 other fractures. The total number of fractures was estimated to rise from 86,000 in 2010 to 107,000 in 2025, corresponding to an increase of 24%.^[22] In Greece, the incidence of hip fractures increased from 107/100,000 inhabitants before 1992 to 119/100,000 inhabitants in 1998, and this increase was mainly due to the aging of the population.^[22] According to different studies from Greece, the mortality rate during the first year after a hip fracture was approximately 15%. Similar findings for the Greek population were reported in a study from the urban area of Athens (mortality rate of 18%) and from the rural area of Crete (mortality rates of 17% for women and 23% for men).^[28] The biggest burden on the health system is caused by hip fractures, with an average annual cost per fracture of €4334.27, due to their treatment, which in 90% of cases requires surgery. Respectively, the average annual cost for clinical vertebral fracture was €2723.27 and for wrist fracture was €1731.35.^[21]

5.2. National guidelines and standards

Aiming to reduce the effects of fragility fractures, national guidelines in Greece for the diagnosis and treatment of osteoporosis have been established.^[29] These updated guidelines were designed to offer valid guidance on fracture risk assessment, diagnosis, pharmacological treatment, and follow-up of osteoporosis based on updated information and national evidence from clinical practice and the health care setting. At the same time, in the last 20 years, many associations (e.g., Hellenic Society for the Study of Bone Metabolism, Hellenic Foundation of Osteoporosis, Fragility Fracture Network GR, and Hellenic Association of Geriatrics and Gerontology) have been established and are active in the field of patient information, counselling of the Ministry of Health, and training of health care professionals (e.g., anesthesiologists, orthopaedic surgeons, physiatrists, physi-

cal therapists, and nurses), both for the prevention and posttraumatic management of patients with fragility fractures. As a result of the above actions, the proportion of the population over the age of 50 that was treated for osteoporosis increased from 1.67% in 2001 to 8.2% in 2011, although a recent study provided evidence that individuals who experience fragility fractures were not adequately managed for osteoporosis.^[21,30] Other actions include the development of software and the recording process of fragility fractures in 8 selected hospitals in Greece, the coordination of actions and cooperation with international networks and, finally, actions and programs to prevent falls in the elderly.

5.3. Organization, successes, and barriers

Only about 40% of the patients hospitalized for a fragility fracture, managed both operatively and nonoperatively, follow a rehabilitation program by specialized therapists after discharge. In contrast, there are about 70 private rehabilitation centers in the country for medium-term recovery but with a heterogeneous distribution. The National Organization for the Provision of Health Services (EOPYY) is administered as a self-governing public entity and operates under the supervision of the Ministry of Health. It functions as a monopsony, as it is the sole purchaser of health services, setting the preconditions required for contractual commitments with health care providers who manage the recovery of fragility fracture consequences.

5.4. Future directions

Fragility fracture-related burden is expected to increase over the coming decades due to the aging of population. In our country, action is needed to ensure that prevention campaigns are expanded, all individuals at high risk of fragility fracture are appropriately assessed, patients with fragility fractures are treated promptly in specialized units, orthogeriatric services are available, and the entire post-fracture pathway is supervised, with special care to rehabilitation and secondary prevention.^[30] In conclusion, despite the absence of specialized geriatric units and the financial constraints, the steady rise of the number of patients receiving treatment for osteoporosis and the increasing number of rehabilitation centers are positive steps toward a holistic treatment of fragility fractures.

6. Belgium

6.1. Introduction

According to a recent report from the government of Belgium (population ~11 million), the speciality associated with the highest health care costs is the musculoskeletal system (1.6 billion euro or 17% of the total health care budget).^[31] Hip and other potentially preventable fractures contribute substantially to these costs. Although Belgium has a high osteoporosis disease burden, it has poor health care provision for musculoskeletal diseases in general, and osteoporotic fractures in particular.^[32] This is due in part to the complex political system in Belgium, with curative and preventive medicine spread across different health departments, and very little efforts dedicated to prevention or public health.

6.2. National guidelines and standards

Since the Belgian Bone Club guidelines for osteoporosis emphasize the importance of secondary fracture prevention

and identifying patients at high/imminent fracture risk based on recent fractures, there is a strong rationale for an FLS model. However, there are no guidelines nor even specific funding devoted to fracture prevention.^[33]

6.3. Organization, successes, and barriers

Only 4 centers are currently registered with the IOF “Capture the Fracture” initiative. Additionally, a few other university and regional hospitals have a long-standing FLS.^[34] These FLS centers are led by different specialties, mainly rheumatology, orthopaedic surgery, and geriatrics. Older fracture patients are increasingly treated in orthogeriatric services. A recent meta-analysis from Belgium shows that systematic care pathways, like orthogeriatrics or FLS, are associated with improved treatment gaps in osteoporosis.^[35] No specific funding is dedicated to FLS centers, and therefore, coordinators are paid via other budgets (e.g., budget for geriatric liaison services, specialist rheumatology nurses provided by hospitals etc.) or on a project basis.

6.4. Future directions

While secondary fracture prevention has markedly improved in the few centers with a dedicated FLS, a recent large prospective study from Brussels shows that the treatment gap is still ~85%, although somewhat lower for hip fractures (72.5%) and vertebral fractures (70.5%).^[36] Decreasing this gap will continue to be a necessary medical and socioeconomic ongoing target.

7. Netherlands

7.1. Introduction

In the Netherlands, fragility fractures continue to present major medical and socioeconomic challenges. It has been estimated that approximately 76,000 new fragility fractures occurred in the Netherlands, resulting in 13,000 hip fractures, 12,000 vertebral fractures, 12,000 forearm fractures, and 38,000 other fractures in 2010.^[21] That same year, previous and incident fractures also accounted for 26,300 quality-adjusted life years (QALYs), with the economic burden of incident and previous fragility fractures estimated at € 824 million. Although the uptake of osteoporosis treatments increased from 2001, the relative number of patients over the age of 50 that received treatment remained low, with the majority of women at high fracture risk not actively receiving^[21] treatment.

7.2. National guidelines and standards

In the Netherlands, a number of guidelines describe essential elements of the fragility fracture system. The third revision of the guideline “Osteoporosis,” published in 2011, identified the need for screening programs aimed at effectively and systematically screening as many patients as possible after a fracture, with specific directions on methods for the screening and treatment of osteoporosis in patients with a fracture (Fig. 2). In most hospitals, specialized nurses are used to implement this guideline in daily practice effectively, as demonstrated in some studies in the Netherlands.^[37,38] Implementing this guideline results in a rate of screening between 60% and 70%.^[37,38] Alongside these guidelines, 2 health care indicators were proposed and implemented by the Dutch scientific organizations: the percentage of patients with a fracture aged ≥ 50years (both male and female) that are screened for osteoporosis 3 months after sustaining a fracture;

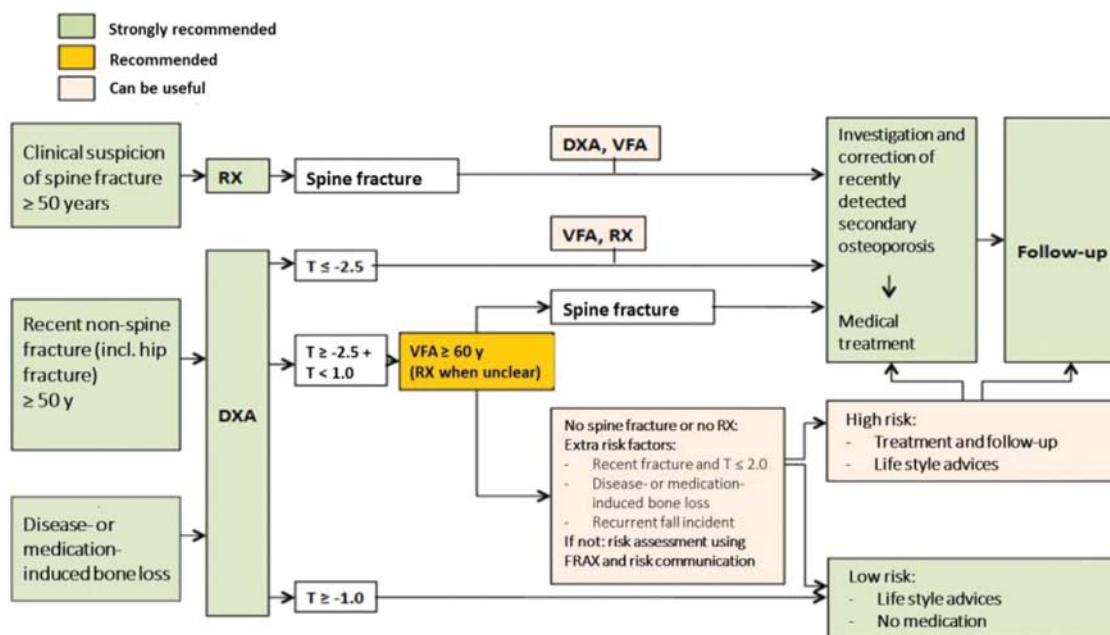


Figure 2. Netherlands Osteoporosis Guidelines.

and the percentage of patients after a fracture with osteoporosis (T-score ≤ -2.5) who have started treatment within 3 months after the diagnosis of osteoporosis.

Additionally, a guideline, initially published in 2004 and revised in 2017, focused on the best care for patients with an increased risk of falling, according to current standards. This guideline described the standard for fall risk assessment in both pre-hospitalization pre-fracture and inpatient post-fracture settings for patients at risk for fragility fractures. For inpatients, this assessment is preferably performed directly after admission to the hospital, or at least within 48 hours after admission. The individual components of this assessment are determined from the National Institute for Health and Care (NICE) guidelines. Additional to this assessment, the guidelines present a recommendation for a multifactorial intervention. These include 4 different interventions: medication review, intensive exercise therapy (at least once a day), nutritional intervention (consisting of additional proteins, calories, and vitamins), and knowledge transfer to patients. Studies focusing on the most critical individual risk factors have been shown to be effective in preventing falls.

7.3. Organization, successes, and barriers

Another crucial tool to reduce future fracture risk is the implementation of FLSs in elderly patients who have low energy fractures. Intra-hospital standards are aimed at the reduction of mortality of frail patients with an injury. While improved detection of patients at risk and complications were found when using these FLSs compared with usual care, the reduction of mortality was not easily achievable.^[39] In addition, FLSs also aim to implement best practices after hospital admission with defining benchmark measurements that were incorporated into a national registry.

7.3.1. Models of care. Several practical designs for implementing the in-hospital fracture liaison services have been

used in the Netherlands. Involvement of a geriatrician or elderly care internal medicine physician is key for the surgical team to treat these patients, either through counseling or a primary physician. From a health economic perspective, delegation of tasks from physicians to nurse practitioners (NPs) is potentially cost-savings relative to a full-physician led program, potentially leading to more efficient care. In 1 report, a nurse practitioner led orthogeriatric care program was associated with reduced mortality (adjusted hazard ratio (aHR) for 3-month (aHR 0.50 [95% CI:0.26–0.97]) and 1-year mortality (aHR 0.50 [95% CI:0.29–0.85]), significantly increasing the number of patients after a hip fracture discharged home (40.4 versus 27.5%).^[40,41]

7.3.2. Registries. Two registries in the Netherlands track trauma patients including patients with fragility fractures; the Dutch Nationwide Trauma Registry, which includes all trauma patients admitted to a hospital within 48 hours after trauma. The registries’ strength lies in the broad inclusion criteria, which enables studies on the burden of injury and the quality and efficiency of the entire trauma care system, includes all traumareceiving hospitals, although does not specifically gather information on fragility risk. The Dutch Hip Fracture Audit registers trauma patients only after hip fractures, while also providing data on fragility risk factors and quality of multidisciplinary hip fracture care.

7.3.3. Funding. The accessibility and quality of the health care system in the Netherlands is the responsibility of the government, but the government is not in charge of its management. The Dutch health insurance system is a combination of private health plans with social conditions built on the principles of solidarity, efficiency, and value for the patient. The health care in the Netherlands is funded through taxation—mandatory health insurance fees and taxation of income (prespecified tax credits). The fragility fracture systems are funded within this health care

insurance program and have been demonstrated to be costeffective within this system.^[42]

7.3.4. Outcomes. One of the key success factors in implementing a fragility fracture system is the intense cooperation between the intramural disciplines and the geriatric rehabilitation centers aimed at reducing intramural length of stay and improving transmurial cooperation. Implementing a transmurial care program, where arrangements are made concerning treatment protocols (e.g., transmurial physiotherapy programs), multidisciplinary consultations and outflow trajectories and goals for length of stay have been demonstrated to increase the success rate of these programs.

A number of factors can be identified as barriers for successful execution of the fragility fracture programs. While many barriers are easy to address, others, such as the limited compliance to screening and medication use, are more difficult to change, especially in certain groups such as in older populations.^[43]

7.4. Future directions

By 2025, estimates predict that the burden of fractures in the Netherlands will increase by 30% to € 1069 million. By that time, when accounting for the demographic projections for 2025, the number of incident fractures is estimated at 107,000, representing an increase of 31,000 fractures. Hip, vertebral, forearm, and other fractures are estimated to increase by 6100, 4800, 3900, and 15,900, respectively. Therefore, programs aimed at decreasing the incidence of fragility fractures and improving the care of individuals having them continue to be of paramount importance in the Netherlands.

8. Conclusions

Collectively, throughout the UK and EU, reports show the importance of national guidance and systems to deliver essential FLS models. The difficulties of involving multidisciplinary teams, routine screening the patients, and monitoring therapies, where there is a known compliance problem, remain a challenge to all. All health systems require this service for their elderly patients, but both the introduction and maintenance of these services is difficult to achieve. Reports show that even in advanced health care systems, coordinated national approaches are lacking, a need that urgently should be addressed.

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