



SOLUTIONS FOR FRACTURE PREVENTION

 IN GERMANY



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Report compiled by the International Osteoporosis Foundation (IOF) under the umbrella of Capture the Fracture® initiative (CTF), in collaboration with German bone health experts.



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SUMMARY

This document provides an assessment of the current policy and post-fracture care landscape in Germany, and provides recommendations which are aligned to the needs and opportunities identified by the Capture the Fracture® Partnership in cooperation with a panel of German experts.

This document aims to:

SECTION 1 - A Problem on the Rise

Summarize the increasing burden of fragility fractures in Germany

SECTION 2 - Successes and Missed Opportunities

Map out successful post-fracture care initiatives in Germany, and identify areas for improvement

SECTION 3 - Solutions Exist: Policy Recommendations

Provide health policy recommendations to address the burden of osteoporosis and fragility fractures and drive their implementation

SECTION 4 - Build Your Response

Support local stakeholders in prioritising osteoporosis and fragility fractures

Key Messages

Growing burden of osteoporosis, increasing treatment gap, importance of the disease management program and of secondary fracture prevention

- a. Fragility fractures are a major public health concern in Germany** and are associated with a substantial (and escalating) health and financial burden. Approximately 831,000 fragility fractures occurred in the year 2019 and osteoporosis-related costs were estimated at €13.8 billion in the same year. With an ageing population and no change in policy, the number of fragility fractures is expected to increase by more than 16% over the next 15 years.

- b. Osteoporosis remains largely underdiagnosed and undertreated.** Today, more than 2.4 million German women who are at high risk of fracture remain untreated for osteoporosis, despite the existence of safe and effective medications. Furthermore, all patients are insured (by law) and therefore no restriction with regard to treatment at least for oral bisphosphonates exists. Despite this, osteoporosis is rarely diagnosed although bone mineral density assessment is available nationwide. Poor treatment initiation is especially marked in high-risk patients with about two-thirds of German patients not currently receiving effective secondary fracture prevention after an initial fragility fracture, despite this population being at highest risk of further fracture.

- c. Insufficient funding of the Osteoporosis Disease Management Program (DMP) by health insurers.** Although the DMP was approved by the responsible authority (Federal Joint Committee, GBA) in 2020, no funding was made available until the end of 2023, which is slowing down the desired improvement in care. Since 2020, patients diagnosed with osteoporosis could be treated as part of a structured treatment program called DMP. The DMP osteoporosis is aimed at women and men aged 50 and over with a diagnosis of osteoporosis, which can be treated with medication, among other things, in accordance with the DVO guidelines, and is particularly aimed at preventing falls and (further) fractures. This is an important first step towards preventing age-related fractures in patients.

- d. The German population is underserved with Post Fracture Care (PFC) services.** Despite the recognized benefits of FLS (a model of Post Fracture Care) in reducing the risk of fractures, only 1-10% of the hospitals in Germany (as described in the SCOPE 2021 report) were reported to have an FLS. This represents a substantial missed opportunity, as it is a well-known fact that those who have had one fracture are vastly more likely to have another, and that targeting treatment in this group through FLS is a viable, and high-yield place to start. However, several German hospitals have implemented orthogeriatric services for the management of patients with fractures.

Key Recommendations

Although several initiatives are already in place and need to be reinforced, specific recommendations include:

- 1. Passing regulations and/or providing financial incentives** to fund and support FLS infrastructure
- 2. Emphasising post-fracture care** with osteoporosis treatment as a priority of healthcare management
- 3. Rolling out a larger number of FLS** to increase post-fracture screening, diagnosis and treatment rates
- 4. Improving awareness** in the medical field as well as in the public sphere of osteoporosis

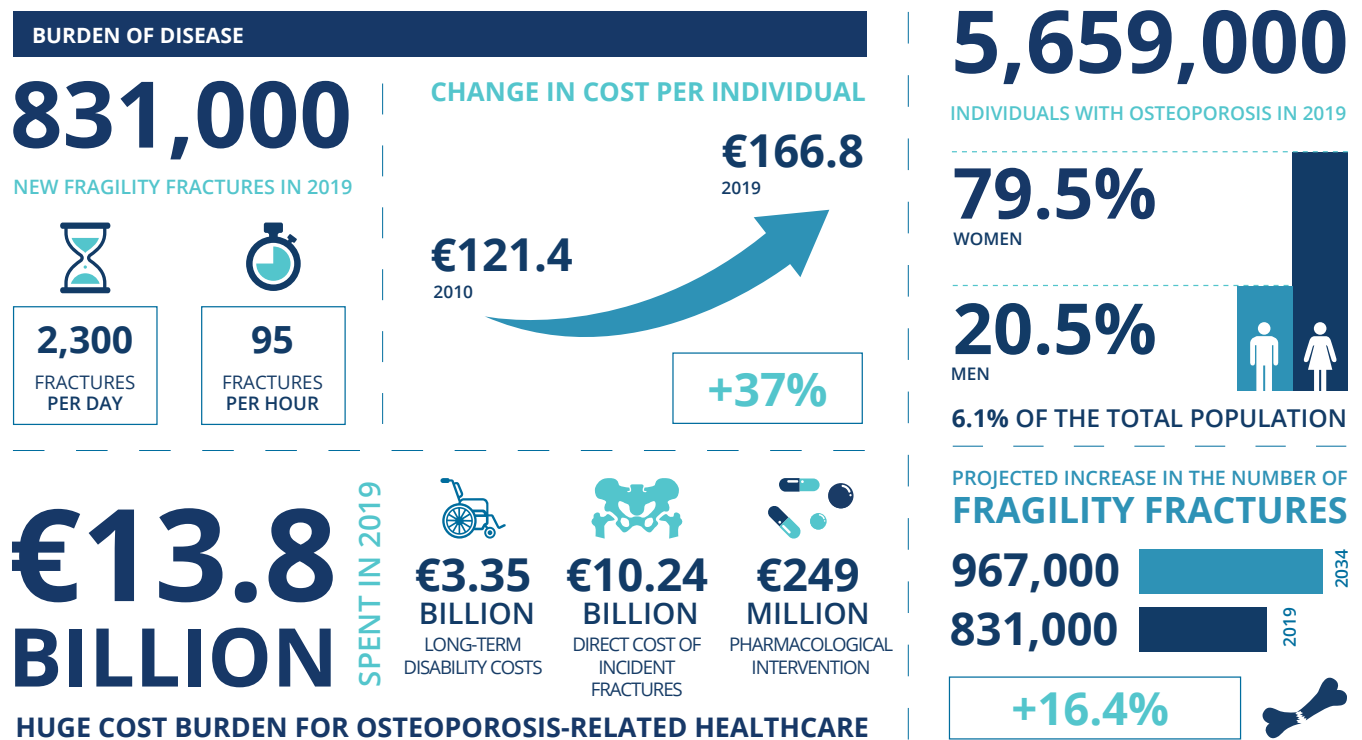


A PROBLEM ON THE RISE

Osteoporosis is a disease which makes bones weak and fragile. This greatly increases the risk of breaking a bone even after a minor fall or bump. The disease has no obvious symptoms, and many people do not know they have osteoporosis until they suffer a fracture.

Figure 1
Burden of osteoporosis-related fractures in Germany (ScoreCard for Osteoporosis in Europe, 2021)

These, osteoporotic ‘fragility fractures’ are common, particularly in older adults, are increasing in prevalence, can be life-altering, causing pain, disability and loss of independence, and are associated with a substantial direct and indirect financial burden. Figure 1 summarizes key data regarding the burden of osteoporosis and fractures in Germany.



Population ageing

Increase of the ageing population. Currently, in Germany, the average life expectancy is 83.4 years for women and 78.5 years for men. In 2006, the over 65s made up 19% of the population, which will rise to more than 30% by 2050.

This shift in demographics **will markedly increase** the incidence and societal burden of fragility fractures within the population.

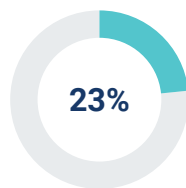
Fractures are common

Fragility fractures are a substantial public health issue. In 2019, about 831,000 fractures occurred in Germany (approximately 95 fractures per hour).

Fragility fractures affect numerous women and men. It has been reported that nearly 5.6 million individuals (including 4.5 million women) are living with osteoporosis in Germany (representing 5.4% of the total population). The prevalence of osteoporosis in the over 50s is 23% for women and 7% for men. Another study using a German claims database reported a 16% overall prevalence of osteoporosis in persons ≥ 50 years of age. Furthermore, the lifetime risk of hip fracture (the most serious fracture type) from age 50 is 14% in women and 5% in men.

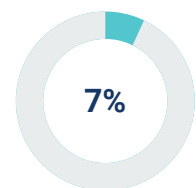
WOMEN

+50
YEARS



MEN

+50
YEARS



Fragility fractures are on the rise. With life expectancy continuing to increase, fragility fracture incidence in Germany is predicted to increase by 16% in the next 15 years.

Re-fractures are also on the rise. It is well recognised that the risk of further fractures after an initial fracture is significantly higher. A German study including about 18,000 fracture patients demonstrated that subsequent fractures occurred in 16% of patients during a 1-year follow-up period. In another German study including about 145,000 patients aged ≥ 70 years 30% of patients had at least one subsequent fracture during a median follow-up of 3.2 years.

Fragility fractures are associated with increased death. A German study including more than 120,000 patients aged 65 years and older with hip fractures showed that 21% of the patients died within 6 months and 28% within 12 months.

TWELVE-MONTH
HIP
FRACTURE
MORTALITY

28%
FOR PATIENTS
AGED +65



SIX-MONTH
HIP
FRACTURE
MORTALITY

21%
FOR PATIENTS
AGED +65

Fragility fractures cause pain, disability, loss of independence, and have a significant impact on quality of life. In Germany, an estimated 24 years are lost due to disability (disability-adjusted life years, DALY) due to fragility fractures, per 1,000 individuals aged over 50 years.

Financial impact

Fragility fractures are costly to the healthcare system. In 2019, the total related burden for osteoporosis was estimated at €13.8 billion, including €10.2 billion for direct costs of incident fractures, €3.4 billion for long-term disability costs and €249 million for pharmacological treatment.

The financial burden is on the rise. The cost of fragility fractures per inhabitant has increased by 37% between 2010 (€121) and 2019 (€167). Due to the ageing population, the direct costs of incident fractures are predicted to increase by more than 25% in the next 15 years.



Fragility fractures do not just affect national finances directly, but also indirectly through fractures in the workforce and the additional care required from family and relatives of working age. Although the majority of fragility fractures affect those in later life, 20% of fractures occur prior to retirement. Using a simulation model, a German study reported that indirect costs represented 16% of the total burden of fractures in 2010, a proportion that is expected to increase to 22% in 2050.

Fragility fractures in Germany generate a legacy of financial burden with 12% of patients aged 50 or above who suffer a hip fracture being institutionalized within 6 months of discharge from hospital (this is a higher risk compared to stroke, myocardial infarction, pneumonia or a combined group of all other hospitalizations). The risk of institutionalization increased exponentially with age with risk due to a femoral fracture increasing from 3.6% in women aged 65 to 69 years to 34.8% in women aged 95 years and older.



SUCCESSES AND MISSED OPPORTUNITIES

We have identified positive initiatives to be reinforced and missed opportunities which should be seized.

Positive initiatives to be built upon

Approval of the Disease Management Program for osteoporosis.

Despite its approval, so far, it has not received any funding by health insurers. Probably in 2023, patients diagnosed with osteoporosis requiring medication will be able to receive care within a structured DMP. With the osteoporosis DMP, the disease will be elevated to its justified status as one of the most important chronic and progressive conditions.

Guidelines for the management of osteoporosis are available in Germany with a focus on different demographics: postmenopausal women, osteoporosis in men, secondary osteoporosis including glucocorticoid-induced osteoporosis. Germany has its own risk assessment guidelines (DVO) that are universally adopted.

Robust collection of data in the national hip fracture registry. This initiative is highly functional and rigorously updated, not only with hip fracture data but also data pertaining to other fragility fracture types.

Value of a coordinated management of osteoporosis via FLS. A German study revealed that FLS led to more people being diagnosed with osteoporosis and a higher rate of osteoporotic treatment.

German health insurance offers **full reimbursement for osteoporosis medications**. Furthermore, the estimated average waiting time for DXA is short and the reimbursement for DXA is available. While DXA reimbursement exists, it is so low that many providers who have a DXA scanner do not apply for health insurance reimbursement but rather offer it to patients as an “individual health service” that the patient has to pay for out of their own pocket.

Strength in collaboration. There are a substantial number of organizations active in the bone field. All German scientific societies active in the bone field are currently integrated in an “Umbrella Organization of German Scientific Societies of Osteology - Dachverband Deutschsprachiger Wissenschaftlicher Gesellschaften für Osteologie, DVO e.V.”. In addition, all patient advocacy organisations are merged into an umbrella organisation, the OSD, Osteoporose Selbsthilfegruppen Dachverband e.V. These groups cover three particular areas of advocacy including policy, capacity and peer support.

Gaps and missed opportunities

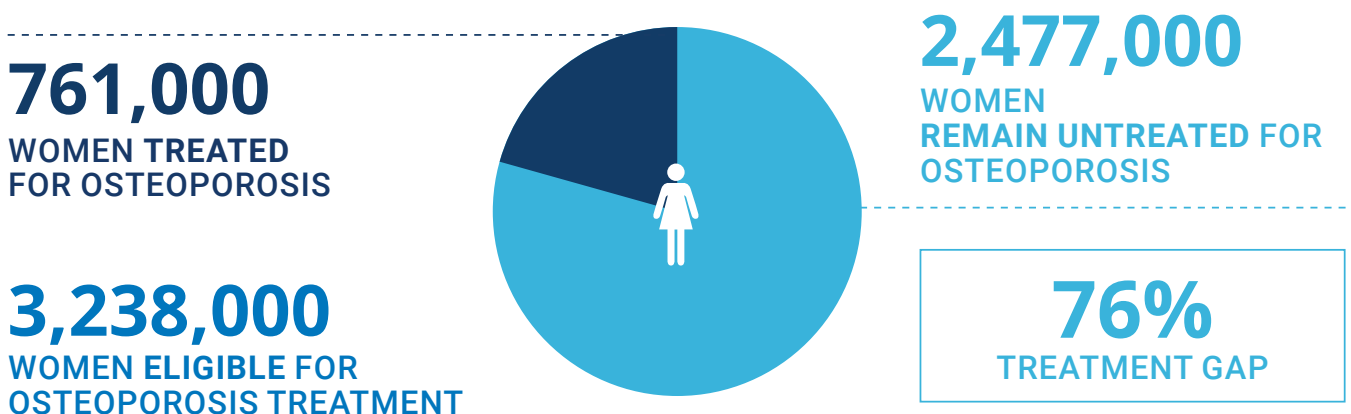


Figure 2
Treatment gap in German women
(ScoreCard for Osteoporosis in Europe,
2021)

More than 3.2 million German women who are at high risk of fracture remain untreated for osteoporosis, despite available effective and safe medications. A recent German observational study confirmed that continued treatment with osteoporosis medication was associated with reductions of fracture rates in a real-world setting.

High treatment gap. The SCOPE study reported an estimated 76% of German women (aged 50 years and above) eligible for osteoporosis treatment do not currently receive preventative treatment after an initial fragility fracture. This gap is similar to 2010 (77%), reflecting the lack of development and progress in post-fracture care. This estimation is similar to a recent German study revealing that among persons with an osteoporosis diagnosis, an osteoporotic fracture, or a diagnosis of osteoporosis and/or osteoporotic fracture, 31%, 22% and 30% received an osteoporosis-specific prescription, respectively.

Poor medication intake and adherence, even after previous fragility fracture. Those who have had one fracture are highly likely to sustain another. Despite this, only 20% to 40% of German women are commenced on anti-osteoporosis treatment within the first year of an osteoporotic fracture. Furthermore, 2-year persistence with osteoporosis medications is estimated to lie between 17% and 40%.

Too few FLS initiatives are currently operational. Despite the benefits of FLS in reducing the risk of fractures and cost-saving, FLS are only present in 1-10% of hospitals in Germany (as described in the SCOPE 2021 report).

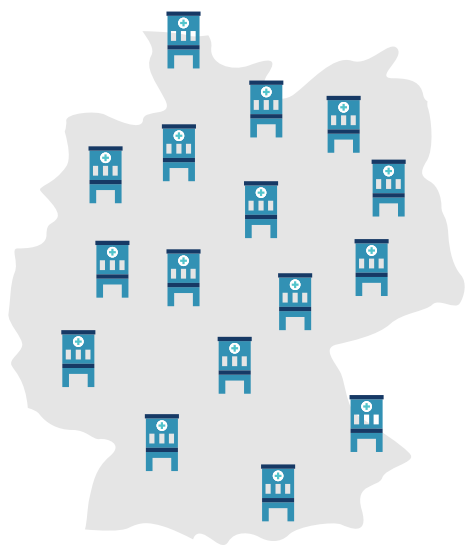
ONLY
1-10%
OF GERMAN
HOSPITALS



**HAVE A
SERVICE
FRACTURE
LIAISON**



As of February 2024, there are 2 FLS centres following International Osteoporosis Foundation & Capture the Fracture® guidelines, including, 1 silver star, and 1 blue star service.



**2
CENTERS**



AS OF
FEBRUARY 2024



1



1

Lack of financial support from government and health insurance companies. Despite the approval of the DMP for osteoporosis, it has organisational and funding issues, and is therefore not yet underway.

Inconsistent patient and treatment pathway. There is currently no consistent implementation of a robust treatment pathway to ensure adequate post-discharge care and transition to primary care. This is further reinforced by a split between hospital and office-based settings regarding the diagnosis and treatment of osteoporosis. Most osteoporosis care is supposed to be provided by private practice orthopaedic surgeons, opposite to many other countries where this care is in the hands of primary care and/or internal medicine. The silo-based care is an important challenge in Germany. Financial compensation is further very low for a patient with osteoporosis.

Lack of electronic sharing system and obstacles on multidisciplinary collaboration. There is no system in place to electronically share patient information. Each private practice has their own electronic medical record that is not linked to the hospitals or other practices. As such, information of previous fractures, co-morbidities, lab and imaging results and previous treatments does not get exchanged. Hospitals and private practices are afraid other providers / hospitals will “steal” their patients.

SOLUTIONS EXIST: POLICY RECOMMENDATIONS

Specific policy recommendations include:

1 Financial incentives for osteoporosis care

- Funding / reimbursement structure for discharge management of patient fragility fractures (e.g. FLS nurse).
- Incentives for hospitals and private practice physicians to develop FLS.
- Hospital managers, primary care managers and private practice physicians currently should receive incentives to treat patients with osteoporosis and develop FLS.

2 Optimizing patient and treatment pathway

- Increasing the number of patients who receive an osteoporotic treatment during inpatient care and optimised discharge management to guide patient care following discharge from hospital.
- Interdisciplinary collaboration required to develop optimum treatment strategies as bone health crosses many medical disciplines.

3 Facilitate greater FLS uptake to increase post-fracture screening, diagnosis and treatment rates

- Extra support (logistically and financially) from health insurances.
- More data on the efficiency of FLS within German policy would inform future practice

4 Increasing public awareness of osteoporosis

- Public awareness of osteoporosis should be improved through a suite of engagement activities.

BUILD YOUR RESPONSE

Disease management program

- Although the **disease management program** is an important first step towards better post-fracture care for patients, **financial incentives** are necessary to fund FLS both on the hospital and private practice side.
- **Regulations/laws** that make FLS mandatory in centres that take care of osteoporotic fractures would be recommended.

Find and treat your fractures (through increased availability of FLS)

- **Employ and improve the infrastructure already in place.**
Germany still has a very small number of FLS on the CTF map. Coalition of these facilities would strengthen the CTF message and potentially improve patient outcomes.
- **Shift national and medical opinion of fragility fractures and osteoporosis among patients, clinicians and hospital managers** and enforce the concept that it is a disease which requires management and can be treated. This will require specific involvement from rheumatology, endocrinology, geriatrics, orthopaedics, internal medicine, gynaecology, radiology, nurses, physical medicine and rehabilitation and primary care physicians.
- **Facilitate and improve the development of FLS and additional network structures to improve diagnosis and treatment rates.**
Draw on the resources and guidance from the IOF/CTF to develop German policies, foster coalition, improve mentorship, and utilize FLS databases (as described below).

Make use of available resources

The International Osteoporosis Foundation has developed several tools to facilitate and improve the development of Post Fracture Care/FLS including:

1. **The Policy Toolkit** which is a CTF-P Guidance for Policy Shaping generic narrative and associated resources (slide kit in several languages, Executive Summary, Infographic, webinar, outline video and policy toolkit. <https://www.capturethefracture.org/resource-center/advocating-for-pfc/policy-toolkits>
2. **The Capture the Fracture® Resource Centre** (<https://www.capturethefracture.org/resource-center>) which provides tools and resources to achieve the following:
 - Implementing an FLS
 - Improving an FLS
 - Advocating for the development of FLS



The Capture the Fracture® programme provides tools and resources to optimise post-fracture care:

1. **The Best Practice Framework**
 - Provides guidance for institutions that are implementing FLS
 - Sets benchmarking criteria to stimulate quality improvement of post-fracture care services at the organisational level
2. **The Mentorship Program** which partners experienced partners of FLS with newly formed services
3. **The Benefit Calculator:** a microsimulation tool to estimate the financial consequences of improving post-fracture care.

Reinforce your evidence base

- **Real-world studies.** Collecting more real-world data could reinforce the evidence base regarding the burden of osteoporosis and challenges. For example, the BEST-II Study of the IPAM project, performed with real-world data which focused on the proportion of untreated patients and the high rate of subsequent fractures in Germany acts as an encouragement for future collaborative, epidemiological endeavours.
- **Utilise the benefits calculator** to assess the expected financial impact of interventions to ensure you stay on track and utilise the extensive resources available.

Form a policy team

- **Use renowned (inter)national mentors/collaborators** to educate and monitor the implementation of fragility fracture care pathways and FLS development. Inviting all the relevant key players in FLS to participate in events which would consolidate collaboration over the longer term.
- The mentoring program should focus on how to **approach key stakeholders and convince them of the potential benefits of FLS.**
- **Promote integrated care models;** specialist doctors, primary care doctors, nurses and community pharmacists which facilitate the evaluation and treatment of patients with bone fragility fractures.
- **Policy recommendations for sustainable PFC services should involve approaching key funding stakeholders** including the Regional Authorities, major payers like AOKen, KVen, Ministry of Health of major Federal States like Bavaria and NRW etc.
- **Involve 'key players' for advocacy** including "Dachverband Deutschsprachiger Wissenschaftlicher Gesellschaften für Osteologie" and the "Bundesselbsthilfeverband für Osteoporose" (BfO) etc.

Engage the public

- **Engage patient support groups and the public at large** with education resources and high-quality literature.

Foster healthy ageing

- Empower clinicians and persuade health care managers and professionals that **healthy skeletal ageing is possible**, and that chronic bone conditions can be managed to prevent future fractures.
- The **vital importance of adherence to prolonged drug therapy should be highlighted** and the positive outcomes for therapy adherence emphasized.



GLOSSARY

FRACTURE – a broken bone

FRAGILITY FRACTURE - A broken bone which occurs due to minor force, such as a fall from standing height. The risk of fragility fractures can be reduced by lifestyle modifications, supplementation of calcium and vitamin D, falls prevention programmes and anti-osteoporosis medication.

FRACTURE LIAISON SERVICE (FLS) - See Post-Fracture Care Coordination Programme. A model of care which seeks to rehabilitate individuals after they have had a fracture and reduce the risk of them fracturing again in the future. The term is interchangeable with *POST-FRACTURE CARE (PFC) COORDINATION PROGRAMME*.

OSTEOPOROSIS - Osteoporosis is a disease in which the mass, density and strength of bone are reduced. As bones become more porous and fragile, the risk of fracture is greatly increased. The loss of bone occurs silently and progressively. It primarily affects the elderly and is more common in women than in men.

PRIMARY PREVENTION OF FRACTURES - Initiatives to prevent a first/sentinel/initial fracture occurring.

SECONDARY PREVENTION OF FRACTURES - Initiatives to prevent second/subsequent/further fractures occurring after the first fracture has occurred.

DALY (DISABILITY ADJUSTED LIFE YEARS) - a measure of overall disease burden expressed as the number of years lost due to disability or early death. One DALY represents the loss of the equivalent of one year of full health.



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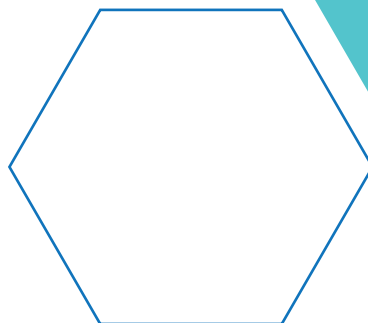
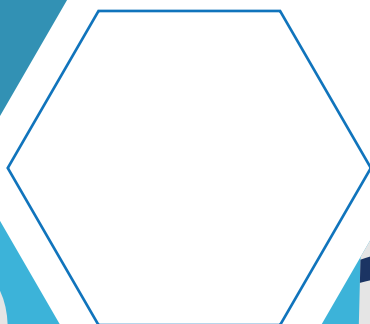
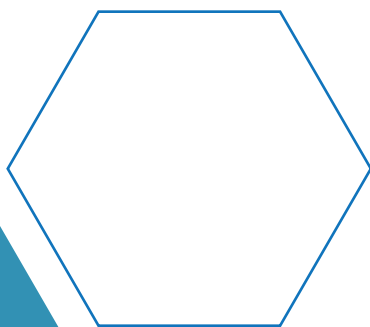
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*Our vision is a world without fragility fractures,
in which healthy mobility is a reality for all*



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