BROKEN BONES, BROKEN LIVES:
The fragility fracture crisis in Europe

The development of this initiative has been supported by UCB.
Prevalence:
Approximately 20 million people have osteoporosis in the EU6* (2015)

* EU6: France, Germany, Italy, Spain, Sweden and the UK
Fragility fractures due to osteoporosis affect both men and women.

Incidence across EU6 in 2017:
Approximately 3% of women over the age of 50 suffer a new fragility fracture every year.
Lifetime risk of sustaining a hip fracture is similar to the lifetime risk of a having a stroke in Europe for both women and men.

**Estimated Lifetime Risk of Hip Fracture**

<table>
<thead>
<tr>
<th></th>
<th>For Men Aged 50 Years Is Between</th>
<th>For Women Aged 50 Years Is Between</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stroke = 14%</td>
<td>6.1% → 13.7%</td>
<td>9.8% → 22.8%</td>
</tr>
</tbody>
</table>

*Stroke risk for individuals aged 50 in Europe

**Fragility Fractures Are the 4th Most Burdensome Chronic Disease**

- Ischemic Heart Disease
- Dementia
- Lung Cancer
- Fragility Fractures
- COPD
- Ischemic Stroke
- Parkinson Disease
- Rheumatoid Arthritis

<table>
<thead>
<tr>
<th>DALY's</th>
<th>0</th>
<th>1 000 000</th>
<th>2 000 000</th>
<th>3 000 000</th>
<th>4 000 000</th>
<th>5 000 000</th>
<th>6 000 000</th>
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<tbody>
<tr>
<td>Ischemic Heart Disease</td>
<td>6000000</td>
<td>50000000</td>
<td>40000000</td>
<td>30000000</td>
<td>20000000</td>
<td>10000000</td>
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<tr>
<td>Dementia</td>
<td>3000000</td>
<td>40000000</td>
<td>50000000</td>
<td>60000000</td>
<td>70000000</td>
<td>80000000</td>
<td>90000000</td>
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<tr>
<td>Lung Cancer</td>
<td>2000000</td>
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<td>40000000</td>
<td>50000000</td>
<td>60000000</td>
<td>70000000</td>
<td>80000000</td>
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<tr>
<td>Fragility Fractures</td>
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<td>30000000</td>
<td>40000000</td>
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<td>60000000</td>
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<tr>
<td>COPD</td>
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<td>40000000</td>
<td>50000000</td>
<td>60000000</td>
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<tr>
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<td>15000000</td>
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<td>25000000</td>
<td>30000000</td>
<td>35000000</td>
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<tr>
<td>Parkinson Disease</td>
<td>100000</td>
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<td>3000000</td>
<td>4000000</td>
<td>5000000</td>
<td>6000000</td>
<td>7000000</td>
</tr>
<tr>
<td>Rheumatoid Arthritis</td>
<td>50000</td>
<td>1000000</td>
<td>1500000</td>
<td>2000000</td>
<td>2500000</td>
<td>3000000</td>
<td>3500000</td>
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</table>

* Disability-adjusted life years: a measure of the impact of a disease or injury in terms of healthy years lost.

 Broken bones, broken lives: The fragility fracture crisis in Europe
FRAGILITY FRACTURES INCUR SUBSTANTIAL HEALTHCARE COSTS

Fracture-related costs:

1st YEAR

Happen during first year after fracture

Highest with hip fractures

HIP FRACTURE 1/5 of total fractures

HIP FRACTURE 56% of total costs
FRAGILITY FRACTURES HAVE A MULTIFACETED IMPACT ON THE INDIVIDUAL AND SOCIETY

Reduced independence and lifestyle impairment

LIFE-CHANGING IMPACT OF FRAGILITY FRACTURES

<table>
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<th>LONG-TERM CARE</th>
<th>SICK DAYS</th>
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<tbody>
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<td><strong>35.3% of patients aged 90 + years</strong> move into long-term care following hip fracture</td>
<td>taken by <strong>working persons</strong> due to fragility fractures</td>
</tr>
</tbody>
</table>

7.615.720

Patients suffering fragility fractures depend on care from family and friends

Fragility fractures can significantly impact the working population

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FRAGILITY FRACTURES ARE A GROWING CHALLENGE IN THE PUBLIC HEALTH LANDSCAPE

The incidence of fragility fractures is set to rise

+23%

Fracture-related costs are set to rise

€ 37.5 BILLION 2017

€ 47.4 BILLION 2030

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EFFECTIVE MANAGEMENT IMPROVES OUTCOMES AND REDUCES COSTS

One fragility fracture leads to another:

Women who had a fragility fracture are five times more likely to experience a second fracture within the first year after a fracture than women who have not had a prior fracture, yet…

Massive Treatment Gap

60–85% of women do not receive treatment following a fracture.

With appropriate medical treatment, many fragility fractures can be avoided.
EFFECTIVE MANAGEMENT IMPROVES OUTCOMES AND REDUCES COSTS

Coordinated care models are multidisciplinary healthcare delivery models which aim to identify, diagnose and treat patients who have suffered a fragility fracture.

Multidisciplinary models for secondary fracture prevention can contribute to closing the treatment gap.

FRACTURE LIAISON SERVICES (FLS)

= cost-effective care delivery model to IMPROVE OVERALL OUTCOMES & REDUCE COSTS

**EFFECTS of FLS** (absolute change)

- BMD testing: +24%
- Treatment adherence: +22%
- Treatment initiation: +20%

<table>
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<th>Re-fracture rate</th>
<th>Mortality</th>
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<tr>
<td>-5%</td>
<td>-3%</td>
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FOR MORE INFORMATION
www.iofbonehealth.org/broken-bones-broken-lives

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The data analysis presented in this report was conducted by Quantify, a health economics analysis and consulting firm based in Stockholm.