Quantifying the economic impact of osteoporotic fractures in the working age population

Prepared for the Royal Osteoporosis Society

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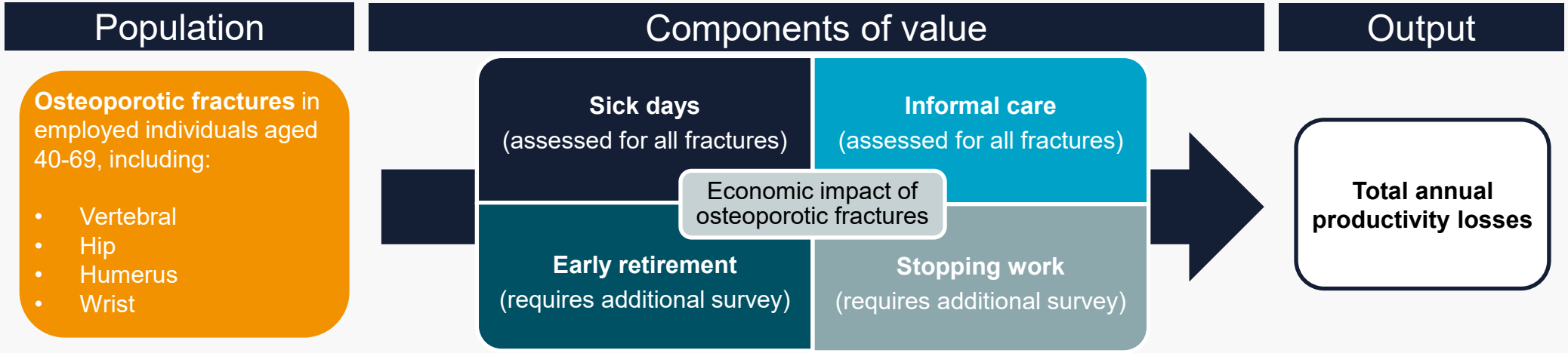
Executive summary

The Royal Osteoporosis Society (ROS) is advocating for a national roll-out of FLS to address the high risk of subsequent fractures in individuals with fragility fractures, often linked to osteoporosis. These fractures can significantly affect productivity, but the full economic burden on employed individuals is still unclear. This project aimed to build on existing work conducted by ROS which quantified the broader impact of osteoporotic fractures in older workers to support the economic case for universal access to FLS.

LCP developed a framework to capture the key value components that contribute to the economic impact of osteoporotic fractures. Following a review of previous research by ROS, including the report "*Impact of osteoporotic fractures on the workforce in England"* and a member survey, several data gaps were identified. LCP conducted further research to quantify the costs associated with these gaps and made recommendations for further data collection.

Our findings indicate that the annual total productivity losses due to sick days and informal care from osteoporotic fractures in employed adults aged 40 to 69 may exceed £129 million.

We recommend that the Royal Osteoporosis Society conducts a larger, more representative survey to capture a comprehensive view of osteoporotic fractures in the UK. This should include individuals aged 40 to 49, insights into caregiver experiences and details on individuals forced out of the workforce.



Framework developed to quantify the economic impact of osteoporotic fractures. Previous ROS work had identified sick days for vertebral and hip fractures, informal care for hip fractures, and an estimate for loss of earnings due to people leaving work due to osteoporotic fractures. LCP work focused on addressing gaps in this previous work, namely costs associated with sick days and informal care for all fracture types.

Abbreviations: FLS, Fracture Liaison Services; ROS, Royal Osteoporosis Society; UK, United Kingdom.

Over 57,000 osteoporotic fractures occur annually among employed individuals in England, costing employers over £129 million

Osteoporotic fractures

- We estimate there are more than **8,300 osteoporotic fractures** in the **40 to 49 age group** and **over 49,000** among **older working individuals aged 50 to 69** in England every year (**total 57,000**).
- In this scenario, we estimate that more than **50%** of **all fractures are vertebral** and **54%** of **all fractures** occur among **women aged 50 to 69**.

Sick days

- We estimate **over 1 million sick days** and an associated cost of over **£87 million** due to osteoporotic fractures in employed individuals aged 40 to 69 in England.
- More than **56% of the costs** of sick days are **attributed to vertebral fractures**.
- Among individuals aged 50 to 69, **annual sick days** taken by **women** represented **62%** of the total.

Informal care

- Individuals who suffer osteoporotic fractures often require **additional support from informal carers**, such as family and friends. If we assume all carers are employed, osteoporotic fractures could result in up to **460,000 additional lost workdays**.
- Based on an average daily salary of £93.48 in 2022, these informal care days could cost employers an estimated **£43 million annually**.

Early retirement and stopped working

- ROS surveyed its members in July 2023 to explore the impact fractures had on employment. The findings indicate that osteoporotic fractures between the ages of 50-65 forced **18.1% of people into early retirement**, while **15.3% stopped working**.
- The survey did not include those aged 40 to 49; as such it is not possible to estimate the costs of early retirement in this group.

Total annual productivity losses

- Current estimates of annual total productivity losses for sick days and informal care due to osteoporotic fractures in employed adults aged 40 to 69 exceed **£129 million** in the base scenario.
- **Productivity losses** among those aged **between 50 and 69** account for **over 86% of the total costs**, highlighting the disproportionate economic burden of fractures on older working individuals.

Abbreviations: ROS, Royal Osteoporosis Society

Further considerations for a future survey

ROS 2023 survey on lost productivity amongst people who suffered fractures at working age mentions that:

- 354 members reported a fracture between the age of 50 to 70
- The mean age of survey respondents was 67.9 years (SD 8.0, range 50 – 93 years)
- 93% of survey respondents were women

Regarding pre-fracture job category, the survey also indicates that among 145 full time working respondents, 46.2% were professional workers, 17.2% were in administrative roles, and 13.8% were managers. These roles tend to be associated with higher salaries, suggesting that the survey may not entirely represent the impact on productivity among people from lower socioeconomic groups.

To further complement the present analysis, we recommend that ROS undertakes a larger and more representative survey. Some key considerations when designing this survey include:

- **Expand sample size:** A larger sample could provide more statistically robust data and offer a better representation of the impact on productivity.
- **Include individuals aged 40 to 49:** The impact on individuals in this group, particularly those who stopped working due to fractures, would provide a fuller picture.
- **Ensure representativeness:** Include individuals from diverse ethnicities, socioeconomic groups, and regions to accurately reflect the UK population.
- **Capture caregiver insights:** Obtain details on caregiver demographics, occupation, average care time and fracture site of the recipient.
- **Capture unpaid productivity:** Current results underestimate the impact of osteoporotic fractures given unpaid productivity is not captured. Most osteoporotic fractures occur in 60+ year old women; this demographic likely offer substantial unpaid productivity in terms of e.g., caring for others or volunteering.
- **Collect data on stopped working:** Include questions on pre-fracture occupation, absence duration, and whether absence was temporary or permanent.

Abbreviations: ROS, Royal Osteoporosis Society.

Contact us

Catrin Treharne
Principal and Health Economics Lead
Catrin.treharne@lcp.uk.com

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We aim to lead the transition of health systems from importers of illness to exporters of health through realigning value between patients, manufacturers of medicines and payers.