

We found variation in incidence of subsequent fractures across countries, primary care, and hospital data.

Under-diagnosis and treatment of osteoporosis require greater focus for better quality of care across aging population in Europe.

Imminent Subsequent Fractures In Postmenopausal Women With Fragility Fractures: Incidence And Patient Characteristics From Six European Countries

Background: The occurrence of a first fragility fracture increases the imminent risk of subsequent fractures in the next 1 to 2 years. Most studies have been conducted in a single country or using different methodologies, making comparison between countries difficult.

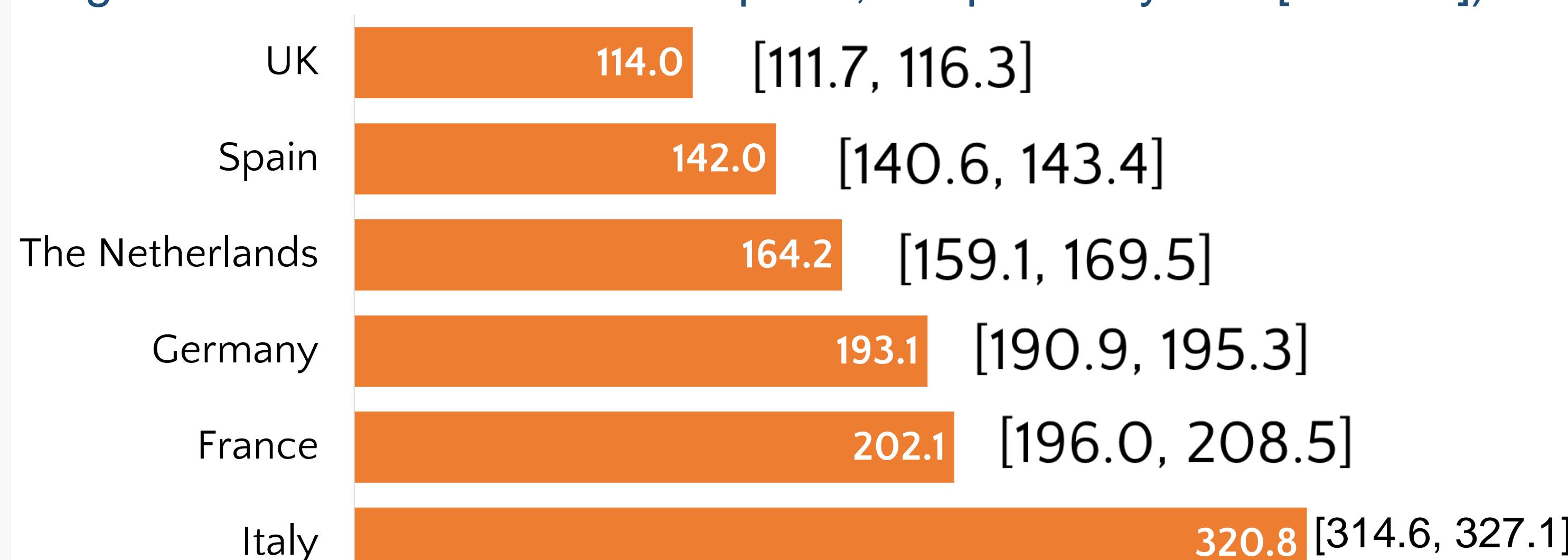
Results

- Patients with imminent subsequent fractures (ISF) had higher rates of comorbidities and comedications.
- Low osteoporosis treatment across countries (1.7 – 15.9%).

Table 1. Patient characteristics

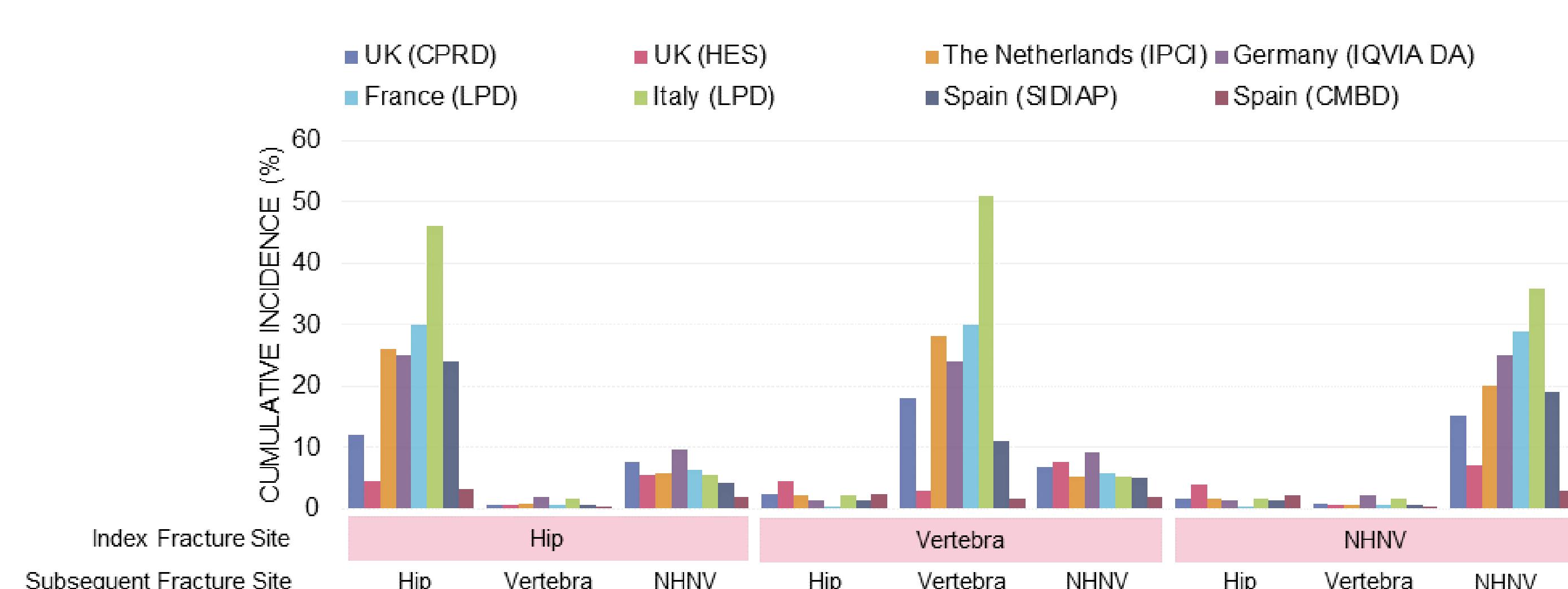
Characteristics	CPRD (UK)		IPCI (NL)		DA Germany		LPD France		LPD Italy		SIDIAP (ES)	
	ISF (n = 927)	No ISF (n = 38837)	ISF (n = 3863)	No ISF (n = 12560)	ISF (n = 29204)	No ISF (n = 72382)	ISF (n = 4096)	No ISF (n = 10823)	ISF (n = 10202)	No ISF (n = 14204)	ISF (n = 38904)	No ISF (n = 105088)
Age, median (IQR)	74 (63-83)	72 (61-83)	71 (61-81)	69 (60-80)	74 (64-81)	72 (62-80)	70 (61-79)	67 (59-78)	75 (66-83)	74 (63-83)	74 (63-82)	72 (62-82)
Cardiovascular disease, (%)	39.5	37.1	30.2	25.4	40.6	35.6	17.1	16.8	41.4	38.1	28.3	28.3
Hypertension, (%)	51.9	50.2	40.6	30.0	47.8	43.3	37.0	35.7	63.0	60.3	41.1	41.6
Osteoporosis, (%)	27	21.6	14.1	9.3	45.6	34.8	38.8	19.3	40.0	37.7	15.3	16.6
Osteoporosis drugs, (%)	2.5	1.7	2.9	3.0	13.2	7.1	15.9	7.2	13.7	9.4	5.8	6.9

Figure 1. Incidence rate of ISF per 1,000 person-years [95% CI]



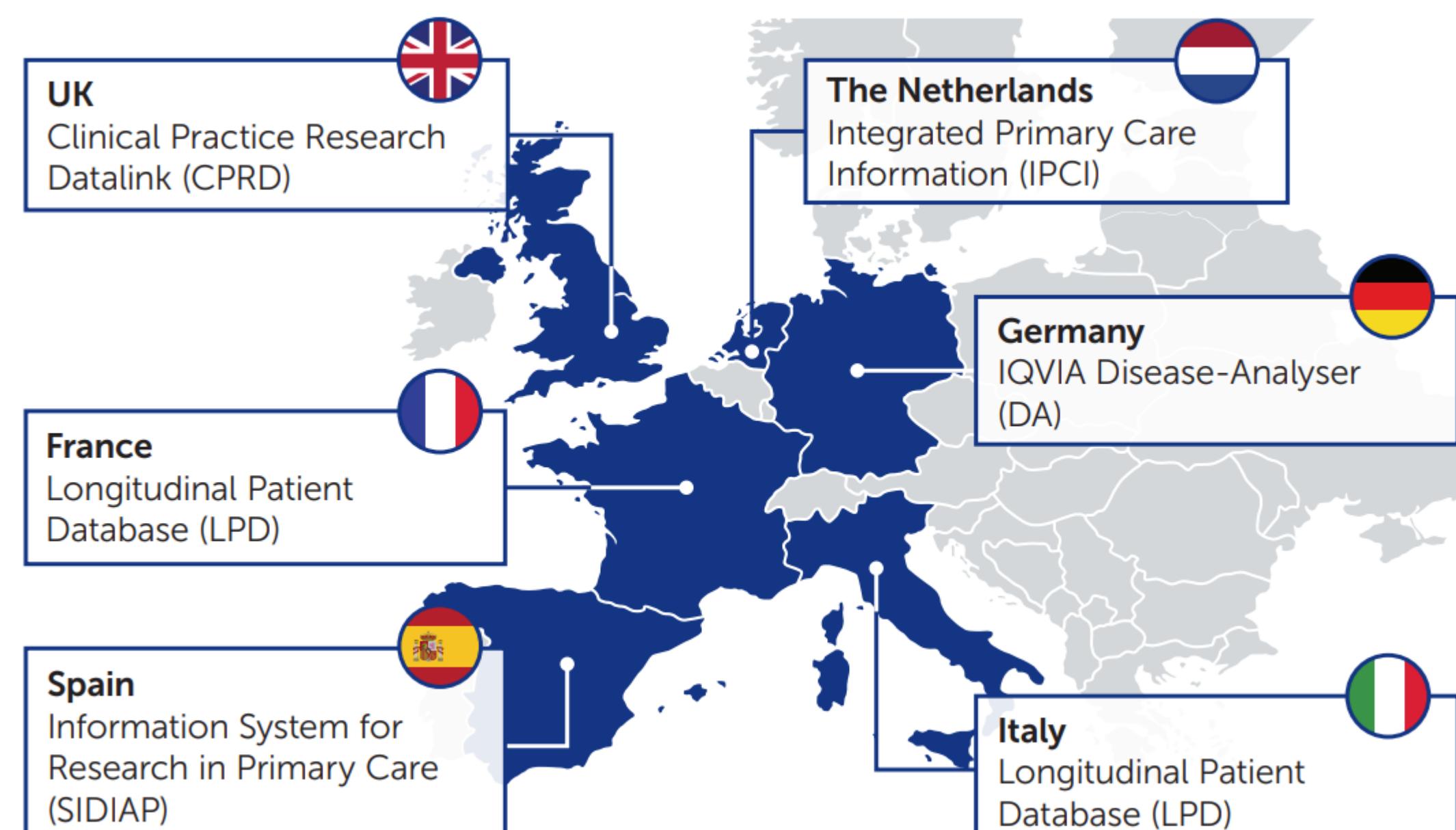
- ISF in primary care occurred most frequently at the same site of the index fracture, whilst in hospital records: non hip non vertebral (NHN) in UK, hip in Spain.

Figure 2. Two-year cumulative incidence of ISF



Methods

1 Data sources

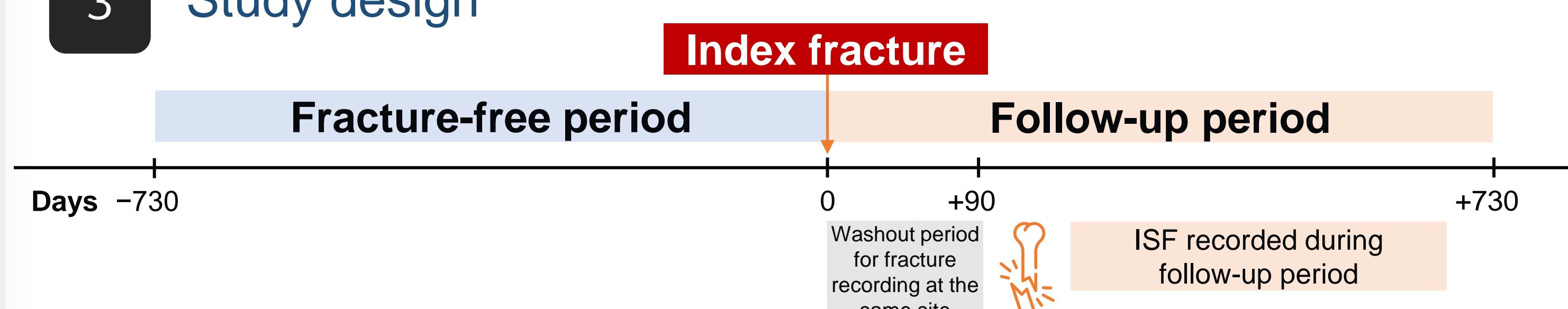


Hospital data linkage:
CPRD linked with Hospital Episode Statistics (HES),
SIDIAP linked with Conjunt mínim bàsic de dades (CMBD)

2 Eligibility criteria

Inclusion Criteria	Exclusion Criteria
Women aged ≥50 years	History of fracture in 730 days prior
Index fragility fracture between April 2010 to April 2018	Cancer (except non-melanoma skin cancer), Paget's disease of the bone, or other metabolic bone diseases at any time prior to and including index date
≥730 days observation period prior to index fracture	

3 Study design



Statistical analysis:

- Incidence rate (IR) per 1,000 person years (PY) of ISF
- Site-specific cumulative incidence, stratified by the index fracture site, accounting for competing risk of death

Strength: Network study allowed for the same methodology to be applied across six different European data sources.

Limitation:

Hospital records in UK and Spain did not include emergency room visits, thus missing fractures which do not need to be hospitalised. Higher IR of subsequent fractures in primary care could indicate re-recording of initial fracture.



Xihang Chen¹, Trishna Rathod-Mistry¹, Gianluca Fabiano¹, Antonella Delmestri¹, Alireza Moayyeri², Joshua Warden², Carlen Reyes³, James Brash⁴, Katia Verhamme⁵, Mees Mosseveld⁵, Sarah Seager⁴, Rafael Pinedo-Villanueva¹, Eng Hooi Tan¹

¹Nuffield Department of Orthopaedics, Rheumatology and Musculoskeletal Sciences, University of Oxford, Oxford, UK; ²UCB Pharma, Slough, UK; ³Fundació Institut Universitari per a la Recerca a l'Atenció Primària de Salut Jordi Gol i Gurina (IDIAPJGOL), Barcelona, Spain; ⁴IQVIA, London, UK; ⁵Erasmus University Medical Center, Rotterdam, The Netherlands

This study was funded by UCB Pharma and Amgen Inc. Graphical design support for figures provided by the Costello Medical design team.