





# Feasibility of a Federated Network Analysis Using Real-World Data Mapped to OMOP Common Data Model to Estimate Healthcare Resource Utilisation and Costs of Imminent Subsequent Fracture

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## Objective

To assess the suitability of OMOP-mapped RWD from six European countries to estimate the healthcare resource use and costs of imminent subsequent fractures in postmenopausal women with fragility fractures in primary and secondary care.

## Methods

Primary care

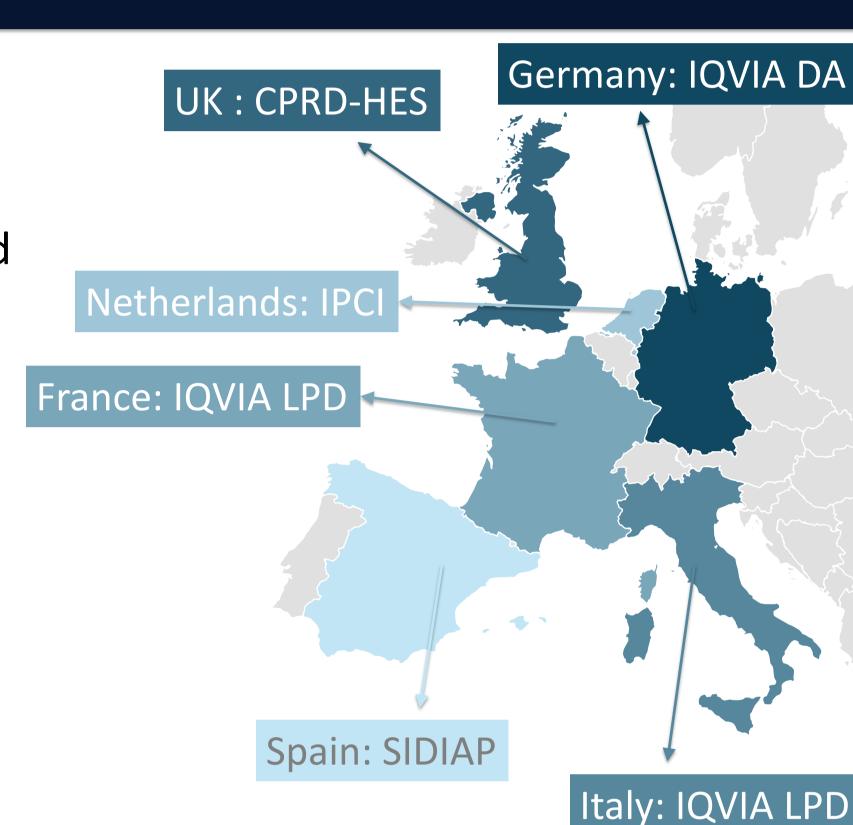


#### Resource use

- Specialty (e.g. General Practice, Rheumatology, Dermatology)
- Staff roles (e.g. GP, nurse)
- Types of visits (e.g. clinic, home)

#### Costs

 Country-specific, based on resource reporting detail and local reimbursement value.



Secondary care



#### Resource use

- Diagnoses
- Procedures
- Length of stay

#### Costs

 Country-specific, bespoke simplified local HRG/DRG algorithms and national cost tariffs.

## Results

Primary care unit cost:

 In CPRD (UK), DA (Germany), and LPD France we used the latest available national sources.

In LPD Italy we used published literature.

In **SIDIAP** (Spain), we used regional costs and assumed they were representatives of the entire country.

Secondary care costs:

• In UK, we developed a simplified bespoke algorithm to produce estimated HRGs based on a number of assumptions placed on the mandatory variables of the standard NHS Grouper.

In Spain hospitalisation unit costs were derived from the "Portal Estadístico" of the Spanish Ministry of Health extracted by sex and age.

Type of information included in original dataset

care data were only available in CPRD (UK) and SIDIAP (Spain). **CPRD** included information on outpatient and emergency care admissions, whilst SIDIAP did not.

Primary care data were available in all datasets, whilst secondary

Access to reference costs and established costing

tools

Availability of key tables and their linkage

VISIT\_DETAIL table was only available in **CPRD**; in other datasets, we used the VISIT\_OCCURRENCE table.

The linkage between the visit tables and PROVIDER tables allowed primary care encounters to be characterised by staff roles or specialties. In IPCI, however, this linkage was not possible, so visits were characterised by type.

**CPRD** source data included information on staff roles allowing to include only the clinically relevant ones (e.g., GP, nurse, while excluding e.g., receptionist or assistant).

In CPRD and SIDIAP, diagnoses and procedures were analysed using the source values in the corresponding tables reporting values expressed in ICD10CM and OPCS-4/ICD9CM-PCS terms allowing

a link to the reference unit cost.

**Availability of** source data

**Granularity of** mapped data

LPD Italy categorised all encounters under a single specialty.

In CPRD (UK), data included information on both hospital episodes and spells, as well as the order of diagnoses and procedures.

In SIDIAP (Spain), only primary diagnoses were mapped, and up to 10 procedures per hospital admission were recorded regardless of order.

In CPRD (UK), A&E and outpatient settings, diagnoses and procedures were either not mapped or mapped with limited granularity.

### Conclusions

- > It seems feasible to estimate resource use and costs within the OMOP-CDM environment using electronic healthcare records from administrative datasets.
- > Despite data standardisation, resource use and costs analyses may still require database-specific scripts due to dataset unique characteristics.
- > Understanding the data mapping process, through ETL documentation and consultation with local data partners, is crucial.
- > Access to established local costing sources and methods is essential for accurate cost estimation.

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