

# Unidade Local de Saúde de Matosinhos

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Data source

Human

Other

Primary care medical records

## Administrative details

### Administrative details

#### PURI

<https://redirect.ema.europa.eu/resource/1111171>

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#### Data source ID

1111171

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#### Data source acronym

ULSM

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#### Data holder

[Unidade Local de Saúde de Matosinhos \(ULSM\)](#)

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#### Data source type

Other

Primary care medical records

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### **Data source type, other**

Electronic health records, EHRs contain totality of primary care and hospital production from 1988 until present for a well defined region of Portugal (Matosinhos) corresponding to a living unselected patient population of 170.000 with complete healthcare coverage from the public sector and spanning over 20 years, and additional 600.000 patients from other regions that visited the Hospital Pedro Hispano at some point in time. Data contains every visit, imaging and other exams reports (primary care and hospital), procedures (surgical, inpatient, outpatient in both hospital and secondary care) prescribed medications (primary care and hospital inpatient and outpatient), totality of laboratory measurements (inpatient and outpatient), selected specimen and device data, death date and hospital diagnosis associated with death, allergies and the totality of clinical notes (primary care and hospital)

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### **Main financial support**

European public funding  
Funding by own institution

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### **Care setting**

Hospital inpatient care  
Hospital outpatient care  
Primary care - GP, community pharmacist level  
Primary care - specialist level (e.g. paediatricians)  
Secondary care - specialist level (ambulatory)

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### **Data source qualification**

If the data source has successfully undergone a formal qualification process (e.g., from the EMA, ISO or other certifications), this should be described.

Yes

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## Description of the qualification

Qualification by EHDEN project

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### Data source website

<https://www.ulsm.min-saude.pt/>

## Contact details

Cristina Gavina



[cristina.gavina@ulsm.min-saude.pt](mailto:cristina.gavina@ulsm.min-saude.pt)

## Data source regions and languages

### Data source countries

Portugal

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### Data source languages

Portuguese

## Data source establishment

### Data source established

01/01/1998

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### Data source time span

**First collection:** 01/01/1998

The date when data started to be collected or extracted.

# Publications

## Data source publications

[Prevalence, outcomes, and cost of chronic kidney disease in a contemporary population of 2.4 million patients from 11 countries: The CaReMe CKD study](#)

[Twenty years of real-world data to estimate chronic kidney disease prevalence and staging in an unselected population](#)

[Cost of healthcare utilization associated with incident cardiovascular and renal disease in individuals with type 2 diabetes: A multinational, observational study across 12 countries](#)

[Prevalence, outcomes and costs of a contemporary, multinational population with heart failure](#)

[Cardiovascular Risk Profile and Lipid Management in the Population-Based Cohort Study LATINO: 20 Years of Real-World Data](#)

## Studies

List of studies that have been conducted using the data source

[DARWIN EU® Monitoring prescription of essential medicines administered in ICU](#)

## Data elements collected

The data source contains the following information

## **Disease information**

Does the data source collect information with a focus on a specific disease? This might be a patient registry or other similar initiatives.

Yes

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## **Disease details (other)**

Source data is recorded using ICD-9 and ICD-10 and mapped into OMOP-CDM standard SNOMED concepts

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## **Rare diseases**

Are rare diseases captured? In the European Union a rare disease is one that affects no more than 5 people in 10,000.

Yes

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## **Pregnancy and/or neonates**

Does the data source collect information on pregnant women and/or neonatal subpopulation (under 28 days of age)?

Yes

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## **Hospital admission and/or discharge**

Yes

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## **ICU admission**

Is information on intensive care unit admission available?

Yes

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## **Cause of death**

Captured

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## **Cause of death vocabulary**

SNOMED CT

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## **Prescriptions of medicines**

Captured

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## **Prescriptions vocabulary**

ATC

RxNorm

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## **Dispensing of medicines**

Captured

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## **Dispensing vocabulary**

ATC

other

RxNorm

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## **Dispensing vocabulary, other**

Only for inpatient prescriptions

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## **Advanced therapy medicinal products (ATMP)**

Is information on advanced therapy medicinal products included? A medicinal product for human use that is either a gene therapy medicinal product, a somatic cell therapy product or a tissue engineered products as defined in Regulation (EC) No 1394/2007 [Reg (EC) No 1394/2007 Art 1(1)].

Yes

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## **Contraception**

Is information on the use of any type of contraception (oral, injectable, devices etc.) available?

Yes

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## **Indication for use**

Does the data source capture information on the therapeutic indication for the use of medicinal products?

Captured

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### **Indication vocabulary**

Not coded (Free text)

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### **Medical devices**

Is information on medicinal devices (e.g., pens, syringes, inhalers) available?

Yes

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### **Administration of vaccines**

Yes

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### **Procedures**

Does the data source capture information on procedures (e.g., diagnostic tests, therapeutic, surgical interventions)?

Captured

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### **Procedures vocabulary**

SNOMED CT

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### **Healthcare provider**

Is information on the person providing healthcare (e.g., physician, pharmacist, specialist) available?  
The healthcare provider refers to individual health professionals or a health facility organisation licensed to provide health care diagnosis and treatment services including medication, surgery and medical devices.

Yes

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### **Clinical measurements**

Is information on clinical measurements (e.g., BMI, blood pressure, height) available?

Yes

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## **Genetic data**

Are data related to genotyping, genome sequencing available?

Not Captured

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## **Biomarker data**

Does the data source capture biomarker information? The term “biomarker” refers to a broad subcategory of medical signs ( objective indications of medical state observed from outside the patient), which can be measured accurately and reproducibly. For example, haematological assays, infectious disease markers or metabolomic biomarkers.

Captured

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## **Patient-reported outcomes**

Is information on patient-reported outcomes (e.g., quality of life) available?

Yes

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## **Patient-generated data**

Is patient-generated information (e.g., from wearable devices) available?

No

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## **Units of healthcare utilisation**

Are units of healthcare utilisation (e.g., number of visits to GP per year, number of hospital days) available or can they be derived? Units of healthcare utilisation refer to the quantification of the use of services for the purpose of preventing or curing health problems.

Yes

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## **Unique identifier for persons**

Are patients uniquely identified in the data source?

Yes

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## **Diagnostic codes**

Captured

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## **Diagnosis / medical event vocabulary**

ICD-10-CM

ICD-9-CM

SNOMED CT

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## **Medicinal product information**

Captured

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## **Medicinal product information collected**

Active ingredient(s)

Dose

Formulation

Route of administration

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## **Medicinal product vocabulary**

ATC

RxNorm

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## **Quality of life measurements**

Captured

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## **Quality of life measurements vocabulary**

Not coded (Free text)

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## **Lifestyle factors**

Captured

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## **Lifestyle factors**

Alcohol use

Diet

Frequency of exercise

Other

Tobacco use

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### **Sociodemographic information**

Captured

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### **Sociodemographic information collected**

Age

Country of origin

Education level

Gender

Health area

Socioeconomic status

Type of residency

## Quantitative descriptors

## Population Qualitative Data

### **Population age groups**

Paediatric Population (< 18 years)

Preterm newborn infants (0 - 27 days)

Term newborn infants (0 - 27 days)

Infants and toddlers (28 days - 23 months)

Children (2 to < 12 years)

Adolescents (12 to < 18 years)

Adults (18 to < 46 years)  
Adults (46 to < 65 years)  
Elderly ( $\geq$  65 years)  
Adults (65 to < 75 years)  
Adults (75 to < 85 years)  
Adults (85 years and over)

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**Estimated percentage of the population covered by the data source in the catchment area**

100%

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**Description of the population covered by the data source in the catchment area whose data are not collected (e.g., people who are registered only for private care)**

The information available is collected from Pedro Hispano Hospital and 17 primary healthcare centers that together form Unidade Local de Saúde de Matosinhos and are responsible for public healthcare coverage for the region of Matosinhos. These institutions are part of the National Health System. These institutions grant access to all the population in the catchment area.

Nevertheless, private-sector health records are not included in our database.

## Family linkage

**Family linkage available in the data source permanently or can be created on an ad hoc basis**

Permanently

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**Family linkage available between the following persons**

Father-child

Mother-child

Sibling

## Population

### Population size

631219

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### Active population size

300479

## Population by age group

Age group	Population size	Active population size
Paediatric Population (< 18 years)	114688	48326
Preterm newborn infants (0 - 27 days)	3781	816
Term newborn infants (0 - 27 days)	34030	7344
Infants and toddlers (28 days - 23 months)	45558	11033
Children (2 to < 12 years)	76440	29066
Adolescents (12 to < 18 years)	62176	18062
Adults (18 to < 46 years)	291822	111308
Adults (46 to < 65 years)	191177	86934
Elderly ( $\geq$ 65 years)	140393	70708
Adults (65 to < 75 years)	99644	43756

<b>Age group</b>	<b>Population size</b>	<b>Active population size</b>
Adults (75 to < 85 years)	68974	28627
Adults (85 years and over)	29436	11336

## Median observation time

**Median time (years) between first and last available records for unique individuals captured in the data source**

8.00

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**Median time (years) between first and last available records for unique active individuals (alive and currently registered) capt**

12.00

## Data flows and management

### Access and validation

#### **Biospecimen access**

Are biospecimens available in the data source (e.g., tissue samples)?

Yes

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#### **Biospecimen access conditions**

Upon request and approval by the local Ethics Committee

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## **Access to subject details**

Can individual patients/practitioners/practices included in the data source be contacted?

Yes

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## **Description of data collection**

This is EHR data that is created by all healthcare professionals at ULSM during regular care and for healthcare purpose. Data is created by doctors, nurses and other professionals. Most EHR systems are official public national software (SONHO, SINUS) with additional EHR systems coming from third party vendors. The totality of data recorded within ULSM EHR systems is available for research purposes.

## Event triggering registration

### **Event triggering registration of a person in the data source**

Birth

Disease diagnosis

Practice registration

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### **Event triggering de-registration of a person in the data source**

Death

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### **Event triggering creation of a record in the data source**

Provision of care, for the first time, inside the hospital. The record is created by the administrative support staff when the patient does the check-in.

## Data source linkage

## **Linkage**

Is the data source described created by the linkage of other data sources (prelinked data source) and/or can the data source be linked to other data source on an ad-hoc basis?

Yes

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### **Linkage description, pre-linked**

Patient code is unique and created on birth or immigration. Codes are non overlapping and there guaranteed to be unique

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### **Linkage description, possible linkage**

Patient code is unique and created on birth or immigration. Codes are non overlapping and there guaranteed to be unique

## **Linked data sources**

### **Pre linked**

Is the data source described created by the linkage of other data sources?

No

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### **Data source, other**

National Death Registry

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### **Linkage variable**

cod\_utente

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### **Linkage completeness**

100%

**Pre linked**

Is the data source described created by the linkage of other data sources?

No

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**Data source, other**

National Drug Prescription and Dispensation Registry

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**Linkage variable**

cod\_utente

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**Linkage completeness**

100%

**Pre linked**

Is the data source described created by the linkage of other data sources?

No

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**Data source, other**

National Vaccination Registry

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**Linkage variable**

cod\_utente

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**Linkage completeness**

100%

**Pre linked**



Is the data source described created by the linkage of other data sources?

No

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**Data source, other**

Other quality registers

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**Linkage variable**

cod\_utente

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**Linkage completeness**

100%

**Pre linked**

Is the data source described created by the linkage of other data sources?

Yes

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**Data source, other**

The totality of data is automatically linked by default because all EHR systems use the same national patient code to register patient data.

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**Linkage variable**

cod\_utente

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**Linkage completeness**

100% in ULSM, and can be used to cross against the totality of national healthcare information available

Data management specifications that apply for the data source

### **Data source refresh**

Monthly

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### **Informed consent for use of data for research**

Required for intervention studies

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### **Possibility of data validation**

Can validity of the data in the data source be verified (e.g., access to original medical charts)?

Yes

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### **Data source preservation**

Are records preserved in the data source indefinitely?

No

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### **Data source preservation length (years)**

50 years

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### **Approval for publication**

Is an approval needed for publishing the results of a study using the data source?

Yes

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### **Data source last refresh**

01/04/2023

## Common Data Model (CDM) mapping

### **CDM mapping**

Has the data source been converted (ETL-ed) to a common data model?

Yes

### **CDM Mappings**

**CDM name**

OMOP

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**CDM website**

<https://www.ohdsi.org/Data-standardization/>

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**Data source ETL CDM version**

5.4

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**Data source ETL frequency**

1,00 month

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**Data source ETL status**

In progress