Croatia National Public Health Information System (Nacionalni javnozdravstveni informacijski sustav)

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Data source | Human | Administrative healthcare records (e.g., claims) | Birth registry | Cancer registry | Death registry | Diagnostic tests or procedures reimbursement | Disease registry | Emergency care discharge records | Hospital discharge records | Hospital inpatient records | Hospital outpatient visit records | Induced terminations registry | Other | Primary care medical records | Registration with healthcare system | Specialist ambulatory care records | Vaccination registry

Administrative details

Administrative details

Data source ID

1111155

Data source acronym

NAJS

Data holder

Croatian Institute of Public Health (HZJZ)

Data source type

Administrative healthcare records (e.g., claims)

Birth registry

Cancer registry

Death registry

Diagnostic tests or procedures reimbursement

Disease registry

Emergency care discharge records

Hospital discharge records

Hospital inpatient records

Hospital outpatient visit records

Induced terminations registry

Other

Primary care medical records

Registration with healthcare system

Specialist ambulatory care records

Vaccination registry

Data source type, other

Electronic health records

Main financial support

National, regional, or municipal public funding

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)

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.

No

Data source website

https://www.hzjz.hr/nacionalni-javnozdravstveni-informacijski-sustav-najs/

Contact details

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Data source regions and languages

Data source countries

Croatia

Data source languages

Croatian

English

Data source regions

Bjelovarsko-bilogorska županija

Brodsko-posavska županija

Dubrovačko-neretvanska županija

Istarska županija

Karlovačka županija

Koprivničko-križevačka županija

Krapinsko-zagorska županija

Ličko-senjska županija

Međimurska županija

Osječko-baranjska županija

Požeško-slavonska županija

Primorsko-goranska županija

Šibensko-kninska županija

Sisačko-moslavačka županija

Splitsko-dalmatinska županija

Varaždinska županija

Virovitičko-podravska županija

Vukovarsko-srijemska županija

Zadarska županija

Zagrebačka županija

Data source establishment

Data source established

15/06/2019

Data source time span

First collection: 01/01/1998

The date when data started to be collected or extracted.

Publications

Data source publications

Simetin, I. P., Svajda, M., Ivanko, P., Dimnjakovic, J., Belavic, A., Istvanovic, A., & Poljicanin, T. (2021). COVID-19 incidence, hospitalizations and mortality trends in Croatia and school closures. Public Health, 198, 164-170.

Vince, K., Brkić, M., Poljičanin, T., & Matijević, R. (2021). Prevalence and impact of pre-pregnancy body mass index on pregnancy outcome: a cross-sectional study in Croatia. Journal of Obstetrics and Gynaecology, 41(1), 55-59.

Siroglavić, K. J., Polić Vižintin, M., Tripković, I., Šekerija, M., & Kukulj, S. (2017). Trends in incidence of lung cancer in Croatia from 2001 to 2013: gender and regional differences. Croatian Medical Journal, 58(5), 358-363.

Capak K, Brkić-Biloš I, Kralj V, Poljičanin T, Šekerija M, Ivanko P, Draušnik Ž, Mihel S, Fuštin D, Cerovečki I, Švajda M, Dimnjaković J, Sarajlić G, Benjak T. Prevalence of somatic comorbidities among coronavirus disease 2019 patients in Croatia in the first pandemic wave: data from national public health databases. Croat Med J. 2020 Dec 31;61(6):518-524. doi: 10.3325/cmj.2020.61.518. PMID: 33410298; PMCID: PMC7821369.

Dimnjaković, J., Poljičanin, T., Pristaš, I., Ivanko, P., Pavić, I., Capak, K. Peak Health Care Burden During the First Three COVID-19 Waves in the Republic of Croatia

Studies

List of studies that have been conducted using the data source

DARWIN EU® - CGRP antagonists - Treatment patterns and users characteristics

DARWIN EU® - Incidence of suicidality in patients with specific chronic skin conditions

DARWIN EU® – Paracetamol prescribing and paracetamol overdose in Europe: a descriptive analysis of trends and patient characteristics

DARWIN EU® - Antipsychotic prescribing in the general population in Europe: a descriptive analysis of trends and patient characteristics

DARWIN EU® - DUS Characterising STOPP criteria medication use in people with recurrent falls

DARWIN EU® - Antipsychotic prescribing in people with dementia in Europe: a descriptive analysis of trends and patient characteristics

DARWIN EU® -Drug utilisation of salbutamol products for inhalation and therapeutic alternative inhalation products

DARWIN EU® - Suicidality incidence rates in adult male patients and in patients treated with finasteride and dutasteride

DARWIN EU® - Prevalence of hypertrophic cardiomyopathy (HCM) and obstructive hypertrophic cardiomyopathy (oHCM) in six European countries

DARWIN EU® - Impact of risk minimisation measures related to the risk of meningioma in women using nomegestrol and chlormadinone

DARWIN EU® - Clozapine and the incidence of agranulocytosis over time

DARWIN EU® - Antipsychotic prescribing in children in Europe: a descriptive analysis of trends and patient characteristics

DARWIN EU® - Eye disorders in women with breast cancer treated with anastrozole, letrozole or tamoxifen

DARWIN EU® - RR2 Drug utilisation study of prescription opioids

DARWIN EU® - Drug utilisation study on antibiotics in the ‘Access’ category of the WHO AWaRe classification of antibiotics for evaluation and monitoring of use

DARWIN EU® - Drug Utilisation Study on Antibiotics in the ‘Watch’ category of the WHO AWaRe classification of antibiotics for evaluation and monitoring of use

DARWIN EU® - Coverage of meningococcal vaccines in the target population in Europe

DARWIN EU® - Descriptive study of tetanus immunoglobulin use and tetanus-prone wounds in Europe

DARWIN EU® - Characterisation of individuals with cystic fibrosis in Europe

DARWIN EU® - RR Childhood hypertension and sartans prescribing in children

DARWIN EU® – Prevalence of selected cancers

DARWIN EU® - Acute myeloid leukaemia: incidence, patient characteristics, treatments, and survival in the period 2015–2024

DARWIN EU® – Drug Utilisation Study of terbinafine-containing products

DARWIN EU® – Proof-of-concept: Preparedness for annual seasonal influenza vaccine effectiveness studies - Vaccine coverage and incidence of influenza-related outcomes

DARWIN EU® - Capturing suicidality and depression related variables in databases

DARWIN EU® - Alzheimer’s Disease: Incidence, Prevalence, and Individuals' Characteristics

DARWIN EU® - Treatment characterisation and post-diagnosis outcomes in Alzheimer’s disease

DARWIN EU® - Determinants for use of GLP1 receptor agonists – a drug utilisation study

DARWIN EU® - Population demographics and disease frequency across the DARWIN EU® network

DARWIN EU® - Drug utilisation study of intramuscular depot olanzapine

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.

No

Disease details (other)

undefined

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.

No

Pregnancy and/or neonates

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

Yes

Hospital admission and/or discharge

Yes

ICU admission

Is information on intensive care unit admission available?

Yes

Cause of death

Captured

Cause of death vocabulary

ICD-10

Prescriptions of medicines

Captured

Prescriptions vocabulary

ATC

Dispensing of medicines

Captured

Dispensing vocabulary

ATC

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)].

No

Contraception

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

Yes

Indication for use

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

Captured

Indication vocabulary

ICD-10

Medical devices

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

Yes

Administration of vaccines

Yes

Procedures

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

Captured

Procedures vocabulary

Other

Procedures vocabulary, other

diagnostic and therapeutic procedures, https://hzzo.hr/hzzo-za-partnere/sifrarnici-hzzo-0

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

Clinical measurements

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

Yes

Genetic data

Are data related to genotyping, genome sequencing available?

Not Captured

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.

Not Captured

Patient-reported outcomes

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

No

Patient-generated data

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

Yes

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

Unique identifier for persons

Are patients uniquely identified in the data source?

Yes

Diagnostic codes

Captured

Diagnosis / medical event vocabulary

ICD-10

Medicinal product information

Captured

Medicinal product information collected

Active ingredient(s)

Batch number

Brand name

Dose

Package size

Route of administration

Strength

Medicinal product vocabulary

ATC

Quality of life measurements

Not Captured

Lifestyle factors

Captured

Lifestyle factors

Alcohol use

Diet

Frequency of exercise

Tobacco use

Sociodemographic information

Captured

Sociodemographic information collected

Age

Gender

Living in rural area

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 (≥ 65 years)

Adults (65 to < 75 years)

Adults (75 to < 85 years)

Adults (85 years and over)

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

>95%

We have full national healthcare coverage and almost 100% of population is registered within in.

Number discrepancies (more insured people than what population of Croatia is supposed to be) comes from people who migrated out of the country that kept their healthcare, and an influx of migrant workers who get insured through their work status.

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)

We currently do not have data on all visits recorded in private healthcare, currently private health care represents only small percentage of health care in Croatia and is most popular in dental and gynecological care.

Family linkage

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

Permanently

Family linkage available between the following persons

Father-child

Mother-child

Population

Population size

5131318

Active population size

4319574

Population by age group

Age group	Population size	Active population size
Infants and toddlers (28 days – 23 months)	64165	62391
Children (2 to < 12 years)	380381	379636
Adolescents (12 to < 18 years)	260400	259688
Adults (18 to < 65 years)	2746542	2602939
Elderly (≥ 65 years)	1679830	1014920

Median observation time

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

8.00

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

8.00

Data flows and management

Access and validation

Governance details

Documents or webpages that describe the overall governance of the data source and processes and procedures for data capture and management, data quality check and validation results (governing data access or utilisation for research purposes).

https://www.hzjz.hr/nacionalni-javnozdravstveni-informacijski-sustav-najs/

Biospecimen access

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

No

Access to subject details

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

Yes

Description of data collection

Database managment system, API, surveys etc.

Event triggering registration

Event triggering registration of a person in the data source

Birth

Disease diagnosis

Insurance coverage start

Start of treatment

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

Death

Insurance coverage end

Event triggering creation of a record in the data source

Hospital discharge, specialist encounter, medicinal product dispensing etc.

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

Linked data sources

Pre linked

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

No

Data source, other

All data sources at individual level can be linked

Linkage strategy

Deterministic

Linkage variable

Personal unique identifiers

Linkage completeness

More than 90%

Data management specifications that apply for the data source

Data source refresh

Monthly

Every 6 months

Informed consent for use of data for research

Not Required

Possibility of data validation

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

Yes

Data source preservation

Are records preserved in the data source indefinitely?

Yes

Approval for publication

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

Yes

Data source last refresh

31/07/2025

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

CDM website

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

Data source ETL CDM version

5.4

Data source ETL frequency

6,00 months

Data source ETL status

In progress