

Similarity-based approaches to identifying risk of future asthma attack using UK primary care data

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Study

Planned

Administrative details

PURI

<https://redirect.ema.europa.eu/resource/36060>

EU PAS number

EUPAS36059

Study ID

36060

DARWIN EU® study

No

Study countries

United Kingdom

Study description

Our aim is to investigate similarity-based approaches to identify the risk of a patient having an asthma attack in the 1 year following an asthma review appointment in primary care. We will use primary care electronic health records to derive this model. The two similarity-based approaches that we will investigate are a neighbourhood approach (i.e. identifying the patients who are most similar to the patient of interest and training the model only on these patients) and a cluster approach (i.e. identifying groups of similar patients via cluster analysis and training a separate model for each group). The variables that we will use to quantify similarity and derive the risk score will be chosen based on similar risk-prediction studies in asthma.

Study status

Planned

Research institution and networks

Institutions

University of Edinburgh

United Kingdom

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Last updated

04/11/2020

Institution

Hospital/Clinic/Other health care facility

Educational Institution

ENCePP partner

Networks

Optimum Patient Care (OPC) Network

United Kingdom (Northern Ireland)

First published: 26/09/2015

Last updated

08/08/2023

Network

ENCePP partner

Asthma UK Centre for Applied Research

Contact details

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Primary lead investigator

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Study timelines

Date when funding contract was signed

Planned:
18/08/2020

Study start date

Planned:
18/08/2020

Data analysis start date

Planned:
18/08/2020

Date of interim report, if expected

Planned:
30/06/2021

Date of final study report

Planned:
31/12/2021

Sources of funding

- Other

More details on funding

MRC (via PhD studentship)

Regulatory

Was the study required by a regulatory body?

No

Is the study required by a Risk Management Plan (RMP)?

Not applicable

Methodological aspects

Study type

Study type:

Non-interventional study

Scope of the study:

Disease epidemiology

Main study objective:

To investigate similarity-based approaches to identifying the risk of asthma attack in the year following an asthma review appointment in primary care.

Study Design

Non-interventional study design

Cohort

Study drug and medical condition

Medical condition to be studied

Asthma

Population studied

Age groups

Adults (18 to < 46 years)

Adults (46 to < 65 years)

Adults (65 to < 75 years)

Adults (75 to < 85 years)

Adults (85 years and over)

Estimated number of subjects

500000

Study design details

Outcomes

risk of asthma attack in following 1 year

Data analysis plan

The primary analysis will be carried out using data from OPCRD. The approach used in OPCRD will be externally validated using data from the SAIL databank. Methods of analysis are summarise below: Traditional approach: We will use methods such as logistic

regression to derive a score corresponding to the risk of asthma attack in the following year. Similarity-based approaches: We will use metrics such as the Euclidean distance to quantify the similarity between patients. We will then use this metric to identify a subsample using both a neighbourhood approach (i.e. all patients within a specified similarity threshold) and a cluster approach (i.e. identify subsamples using cluster analysis). We will use methods such as logistic regression to derive a risk prediction model from the identified subsample.

Data management

ENCePP Seal

Conflicts of interest of investigators

[ENCePP_COI_EUPAS36059.pdf](#)(64.99 KB)

Composition of steering group and observers

[EUPAS36059-40675.pdf](#)(26.03 KB)

Data sources

Data source(s)

Optimum Patient Care Research Database
SAIL Databank

Data source(s), other

Optimum Patient Care Research Database (OPCRD), SAIL databank

Data sources (types)

[Electronic healthcare records \(EHR\)](#)

Use of a Common Data Model (CDM)

CDM mapping

No

Data quality specifications

Check conformance

Unknown

Check completeness

Unknown

Check stability

Unknown

Check logical consistency

Unknown

Data characterisation

Data characterisation conducted

No