# Impact of COVID-19 on Asthma Exacerbations (Asthma Attacks During COVID-19)

**First published:** 14/06/2022

**Last updated:** 14/03/2024

Study Ongoing

## Administrative details

**EU PAS number**

EUPAS47704

**Study ID**

47715

**DARWIN EU® study**

No

**Study countries**

☐ United Kingdom

**Study description**

Hypotheses: We hypothesise that there was a significant drop in the rate of asthma exacerbations due to lockdown measures. Once the lockdown measures are eased, we hypothesise that there will be a rebound effect and the rate of asthma exacerbations will return to pre-lockdown period. Method: We will undertake an interrupted time series study where we will follow a cohort of asthma patients from 2015 to 2020 using a UK-wide primary care database. This cohort of patients will be identified by looking at all available patients records in the period 2010-2015 and any patient with any asthma diagnosis code in that period will be included. We will define 3 time-periods for comparison in this interrupted time-series analysis. These 3 time-periods are the pre-lockdown phase, during lockdown phase, and after lockdown measures are eased (referred to as post-lockdown phase henceforth). We will use the cut-off date of 24th March 2020 to separate pre-lockdown and during-lockdown periods (the UK government announced lockdown measures on the evening of 23rd March 2020). As lockdown measures are further expected to be eased in the near future, we will ascertain the cut-off time to separate during-lockdown and post-lockdown periods in due time. Study Setting: Optimum Patient Care Research Database (OPCRD) consisting of 8.8 million patients from over 700 practices from across the UK.

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**Study status**

Ongoing

# Research institutions and networks

## Institutions

### Asthma UK Centre for Applied Research

**First published:** 01/02/2024

**Last updated:** 01/02/2024

Institution

## Contact details

### Study institution contact

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Study contact

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### Primary lead investigator

Syed Ahmar Shah

Primary lead investigator

## Study timelines

### Date when funding contract was signed

Planned: 01/06/2020

Actual: 01/01/2022

### Study start date

Planned: 01/07/2020

Actual: 11/10/2021

### Data analysis start date

Planned: 15/07/2020

Actual: 01/05/2022

**Date of final study report**
Planned: 12/06/2022

## Sources of funding

- Other

## More details on funding

Medical Research Coucil, UK, University

## Regulatory

**Was the study required by a regulatory body?**

No

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

Not applicable

## Other study registration identification numbers and links

Reference: ADEPT1020

# Methodological aspects

## Study type

## Study type list

**Study type:**

Non-interventional study

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**Scope of the study:**

Disease epidemiology

**Main study objective:**

Assess how the rate of asthma attacks have varied during the COVID-19 pandemic

## Study Design

**Non-interventional study design**

Cohort

## Study drug and medical condition

**Medical condition to be studied**

Asthma

## Population studied

**Age groups**

- 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)
- Adults (65 to < 75 years)
- Adults (75 to < 85 years)
- Adults (85 years and over)

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**Estimated number of subjects**

500000

## Study design details

**Outcomes**

Asthma Exacerbation

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**Data analysis plan**

This will be interrupted time series analysis. We will estimate the rate of exacerbations (total number of exacerbations per patient, per month) and then perform a segmented regression analysis to determine intercepts and slopes in each period segment (pre-lockdown, during lockdown, and post-lockdown easing phase). We will use autocorrelation and partial autocorrelation plots to determine the presence of “autoregression” and “moving average” type relationships in the data. We will then fit a generalized least squares-based model that incorporates both “autoregression” and “moving average” type relationships in the data. The fitted model will then be used to derive the predicted and counterfactual values which will then be used to compute the absolute and relative changes in asthma exacerbation rates as a result of lockdown measures.

## Documents

**Study publications**

Shah SA, Quint JK, Nwaru BI, Sheikh A. Impact of COVID-19 national lockdown on ...

# Data management

## ENCePP Seal

The use of the ENCePP Seal has been discontinued since February 2025. The ENCePP Seal fields are retained in the display mode for transparency but are no longer maintained.

## Data sources

**Data source(s)**

Optimum Patient Care Research Database

**Data source(s), other**

Optimum Patient Care Database United Kingdom

**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