Inflammation and Immunity Driver Programme

RESPIRATORY HEALTH INEQUALITIES IN ENGLAND

Study at a glance

A national study of more than 8.7 million people found persistent differences in respiratory exacerbations and mortality according to sex, socioeconomic deprivation, ethnicity and region.

Study period: November 2019 – March 2025

Data: NHS primary care, hospital and mortality records

Who was studied?

7.64 million People with **asthma**

1.21 million People with **COPD**

Researchers examined monthly rates of exacerbations and all-cause mortality across England.

Impact of sex, socioeconomic deprivation, ethnicity, and region on exacerbation rates and mortality of chronic respiratory diseases in England: population-based cohorts

Funded by HDR UK's Inflammation and Immunity Driver Programme

HDRUK Health Data Research UK

Women had more exacerbations

Asthma

33% **higher** average monthly **exacerbation** rate in women than men

COPD

30% **higher** average monthly **exacerbation** rate in women than men

Men had higher mortality

Asthma

13% **higher** all-cause **mortality** in men with asthma

COPD

15% **higher** all-cause **mortality** in men with COPD

Deprivation mattered

The **biggest differences** were seen between the **most** and **least deprived areas**.

Asthma

2 x **higher** all-cause mortality in the most deprived areas

2.23 x **higher** exacerbation rates

COPD

41% **higher** all-cause mortality

68% **higher** exacerbation rates in the most deprived areas compared with the least deprived

A North-South divide

People in the **North East of England** experienced higher rates than those in the **South West.**

Asthma

69% **higher** exacerbation rate

22% **higher** all-cause mortality

COPD

42% **higher** exacerbation rate

15% **higher** all-cause mortality

What happened during COVID-19?

Mortality increased during the first and second waves of the pandemic.

Among people with asthma, the rise was particularly pronounced among:

- Black and Asian people
- People living in more deprived areas
- People living in northern England

Exacerbations fell during the main pandemic waves — potentially because people were shielding and exposed to fewer respiratory viruses, but also because some people may have avoided healthcare and events went unrecorded.

Key messages

Where you live, your **socioeconomic circumstances** and your **sex** can be strongly associated with the burden of chronic respiratory disease.

The study shows that these inequalities have persisted despite changes during the COVID-19 pandemic.

Greater investment in respiratory research and making respiratory health a national priority are needed to reduce these inequalities.