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What causes NHS primary care services to become busier in the Winter and what can we do about it?

Submission date
04/06/2024

Recruitment status
Recruiting

Registration date
24/02/2025

Overall study status
Ongoing

Last Edited
04/03/2025

Condition category
Other

[ ] Prospectively registered
[ ] Protocol
[ ] Statistical analysis plan
[ ] Results
[ ] Individual participant data
[ ] Record updated in last year

Plain English summary of protocol

Background and study aims
Respiratory viruses significantly contribute to how busy GPs are in the winter. The major winter viruses are 'flu, Covid-19 and respiratory syncytial virus (RSV). The increase in pressure on GPs due to epidemics of these viruses is intense, but there is little understanding of the consequences of these pressures on patient health. Respiratory infections don't affect everyone equally. People with lower incomes or of ethnic minority backgrounds are more likely to become infected and have worse outcomes afterwards. These groups also tend to have poorer access to GPs which may worsen during particularly busy periods such as during winter when respiratory viruses surge. This could widen health inequalities. Vaccines can limit the impact of respiratory infections, and are available for the major viruses that occur in winter. However, there are existing inequalities in access to and uptake of vaccines, with people from lower income groups and minority ethnic backgrounds less likely to receive them.

This project aims to understand:
- The impact of wintertime pressures on GP practices
- How those affect patient health
- If there are inequalities in impact on patients in different income and ethnicity groups
- If increasing vaccination could reduce inequalities.

By better understanding how existing inequalities influence winter pressures in the NHS, we hope to identify strategies to reduce the impact of respiratory infections, tackle health inequalities and improve health outcomes.

Who can participate?
We will utilise all available health records accessible through the OpenSafely Platform.

What does the study involve?
Using a secure patient records database, we will identify key information about winter pressures that is currently not known: which symptoms patients see the GP for, which patient groups are most affected and how this differs between GP practices. Through surveys and previous

research, we will identify signs that a practice may be becoming overwhelmed, e.g. changes in the delay from appointment booking to appointment date. We will investigate any association between how much pressure a practice is under and whether patients registered there are more likely to go to hospital or have severe health events. We will use mathematical modelling to assess how demographic factors and unequal vaccine coverage affect winter pressures in different groups and test different strategies (e.g. prioritising different groups for vaccination) to minimise epidemics. We will use data from 2015-2024 to address our questions, but we will update this data during the project to stay up to date.

What are the possible benefits and risks of participating?
None

Where is the study run from?
London School of Hygiene and Tropical Medicine (UK)

When is the study starting and how long is it expected to run for?
June 2024 to April 2027

Who is funding the study?
National Institute for Health and Care Research (NIHR) (UK).

Who is the main contact?
Prof Michael Marks, michael.marks@lshtm.ac.uk

Contact information

Type(s)
Public, Scientific, Principal investigator

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Additional identifiers

Integrated Research Application System (IRAS)
349399

Central Portfolio Management System (CPMS)

65297

National Institute for Health and Care Research (NIHR)
158218

Protocol serial number
31473

Study information

Scientific Title
Impact and inequalities of winter pressures in primary care: providing the evidence base for mitigation strategies

Acronym
WinterPressures

Study objectives
In England, primary care provision is unequally distributed by socioeconomic status and ethnicity, as is prevalence of chronic disease, uptake of vaccination, and impact of infectious disease epidemics. These inequalities likely synergise resulting in unequal impacts on healthcare and patient health during epidemics of common winter-seasonal respiratory viruses.

This project will generate a comprehensive examination of winter pressures in primary care in England, their consequences, predictability and potential mitigations, to help address underlying health inequalities arising from winter pressures.

Research Questions
What causes winter pressure in primary care and how do we measure onset, duration and intensity of pressure?
What are the consequences of primary care winter pressures for severe health events?
Can we predict which practices are vulnerable to winter pressures?
How can vaccination be used equitably to mitigate winter pressures?

Ethics approval required
Ethics approval required

Ethics approval(s)
Approved 04/12/2024, HRA and Health and Care Research Wales (HCRW) (2 Redman Place, Stratford, London, E20 1JQ, United Kingdom; -; approvals@hra.nhs.uk), ref: 24/HRA/5020

Primary study design
Observational

Study design
Observational study

Study type(s)
Other

Health condition(s) or problem(s) studied
Understanding pressure on primary and secondary care services within the NHS

Interventions
WP 1: We will conduct a comprehensive analysis of winter pressures, including the patient, practice and disease factors that generate them, and use a range of practice-level metrics to identify when practices begin to experience excess pressures and how intense they are.

WP 2: We will use advanced statistical methods to estimate the secondary care use, severe outcomes and mortality resulting from pressures in primary care, to establish if pressure in primary care has downstream consequences on these factors and on inequalities.

WP 3: We will develop state-of-the-art prediction models for winter pressures at a practice, and test those models during the study period to identify the factors associated with when and how much pressure a practice is under.

WP 4: We will use innovative transmission modelling and cost-effectiveness analysis of potential vaccination strategies that could mitigate respiratory epidemics to generate evidence-based strategies to prevent pressure in general practice and increase health equality.

Intervention Type
Other

Primary outcome(s)
Collected from patient records during the data collection phase:
1. Measures of the onset duration and intensity of pressure experienced in primary and secondary care
2. Measures of the impact of primary care winter pressures for severe health events
3. Development of a risk prediction model for winter pressures
4. Mathematical models of how vaccination can mitigate winter pressures

Key secondary outcome(s)
There are no secondary outcome measures

Completion date
30/04/2027

Eligibility

Key inclusion criteria
We will utilise all available health records accessible through the OpenSafely Platform.

Participant type(s)
Other

Healthy volunteers allowed
No

Age group
All

Sex
All

Key exclusion criteria
Does not meet inclusion criteria

Date of first enrolment
01/08/2024

Date of final enrolment
30/04/2027

Locations

Countries of recruitment
United Kingdom

Study participating centre
London School of Hygiene and Tropical Medicine
Keppel Street
London
United Kingdom
WC1E 7HT

Sponsor information

Organisation
London School of Hygiene & Tropical Medicine

ROR
https://ror.org/00a0jsq62

Funder(s)

Funder type
Government

Funder Name
National Institute for Health and Care Research

Alternative Name(s)

National Institute for Health Research, NIHR Research, NIHRresearch, NIHR - National Institute for Health Research, NIHR (The National Institute for Health and Care Research), NIHR

Funding Body Type
Government organisation

Funding Body Subtype
National government

Location
United Kingdom

Results and Publications

Individual participant data (IPD) sharing plan
The investigators do not have access to individual participant level data as part of the project.

IPD sharing plan summary
Not expected to be made available