

# UK-REACH: United Kingdom research study into ethnicity and COVID-19 outcomes in healthcare workers

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<b>Registration date</b> 23/11/2020	<b>Overall study status</b> Ongoing	<input type="checkbox"/> Statistical analysis plan <input checked="" type="checkbox"/> Results
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## Plain English summary of protocol

### Background and study aims

People from ethnic minority communities may be at higher risk of getting COVID-19 and of having a more severe illness than those of White ethnicity. Healthcare workers may also be at higher risk of COVID-19. This study aims to look at the risk of COVID-19 in ethnic minority healthcare workers and try to understand the reasons why ethnicity may impact on COVID-19 outcomes over the next 25 years.

Alongside the main study, three sub studies will also investigate closely related issues in smaller groups of healthcare workers and stakeholders:

1. The ethical, legal and acceptability issues that large studies involving personal and health data have to consider.
2. A qualitative study with the aim of understanding HCWs experiences of COVID-19, especially things like their views of the pandemic, challenges they have faced, or things that they think have put them or others at risk.
3. A stakeholder group of members from organisations representing different health care professions in the UK will provide feedback on the data coming out of the other work packages of UK-REACH.

### Who can participate?

The main study will look at health records of over 1.5 million people from ethnic minority backgrounds including healthcare workers from the UK.

The sub studies will also recruit healthcare workers who have experienced working in a healthcare setting during the COVID-19 pandemic and members of NHS collaborating organisations.

### What does the study involve?

Information from NHS human resource records will be linked with medical records containing information relevant to COVID-19. This linkage and the storage of data will occur in a "trusted research environment" which provides the best possible security for this information.

Healthcare workers will be asked to fill out an online questionnaire containing questions on topics including their job, their interaction with COVID-19 patients, their physical and mental

health and their social and living circumstances.

The sub studies will involve interviews and focus group discussions to gather qualitative data.

What are the possible benefits and risks of participating?

There are no risks associated with participating. The only benefit to participating is helping with the research and allowing us to advise on how to make things safer for ethnic minority healthcare workers.

Where is the study run from?

The University of Leicester (UK)

When is the study starting and how long is it expected to run for?

The main study will run from August 2020 to August 2045.

The sub studies will run from August 2020 to July 2021.

Who is funding the study?

1. UK research and Innovation
2. National Institute for Health Research (NIHR) (UK)

Who is the main contact?

Dr Manish Pareek, University of Leicester  
mp426@leicester.ac.uk

Dr Laura B Nellums, University of Nottingham  
laura.nellums@nottingham.ac.uk

Dr Amit Gupta, Oxford University Hospital  
amit.gupta@ouh.nhs.uk

## Contact information

### Type(s)

Scientific

### Contact name

Dr Manish Pareek

### ORCID ID

<https://orcid.org/0000-0003-1521-9964>

### Contact details

University of Leicester  
Department of Respiratory Sciences  
Leicester  
United Kingdom  
LE1 7RH  
+44 (0)116 2585506  
mp426@le.ac.uk

### Type(s)

Public

### Contact name

Dr Holly Reilly

### **Contact details**

Department of Health Sciences  
University of Leicester  
Leicester  
United Kingdom  
LE1 7RH  
None provided  
uk-reach@leicester.ac.uk

## **Additional identifiers**

**Integrated Research Application System (IRAS)**  
288316

**Protocol serial number**  
Sponsor Reference 0801

## **Study information**

### **Scientific Title**

United Kingdom Research Study into Ethnicity And COVID-19 outcomes in Healthcare workers

### **Acronym**

UK-REACH

### **Study objectives**

Ethnic minority healthcare workers may be at increased risk of acquisition of, and adverse outcome from, coronavirus disease 2019 (COVID-19) compared to their White colleagues. However, the quality of data relating to COVID-19 outcomes in HCWs remains poor, with no large dataset analysis of the risk of COVID-19 in clinical or ancillary staff stratified by ethnicity or occupation type, or controlling for potential confounders.

UK-REACH aims to investigate:

1. The relationship between ethnicity and COVID-19 diagnosis and clinical outcomes in HCWs through expedited linkage and analysis of anonymised NHS human resource, Professional registration and NHS datasets within a Trusted Research Environment (SAIL databank)
2. The changes in health outcomes, social circumstances and professional roles of ethnic minority HCWs (White ethnic group as comparator) over the course of forthcoming pandemic waves and beyond, through a novel longitudinal cohort study of ethnic minority HCWs facilitating understanding of absolute risk and generalisability of the findings
3. The ethical and legal implications of linking professionals' registration data to healthcare data through a comprehensive policy analysis and interviews with key stakeholders and cohort participants
4. Risk perceptions, support and coping mechanisms relevant to COVID-19 through qualitative research with ethnic minority HCWs
5. Key priorities and recommendations for addressing ethnic disparities in COVID-19 outcomes

through sustained joint working with a multi-professional, national stakeholder group represented by the GMC/NMC, Royal Colleges, ethnic minority Professionals' Associations, and HCWs

### **Ethics approval required**

Old ethics approval format

### **Ethics approval(s)**

Approved 12/10/2020, London-Brighton & Sussex Research Ethics Committee (Ground Floor, Skipton House, 80 London Road, London, SE1 6LH; +44 (0)207 104 8241; brightonandsussex.rec@hra.nhs.uk), ref: 20/HRA/4718

### **Study design**

Work package 1 - UK-wide retrospective data-linkage cohort study of a minimum 7 months duration

Work package 2 - Multicentre longitudinal cohort study of 25 years duration

Work package 3 - Qualitative study utilising in-depth semi-structured interviews

Work package 4 - Qualitative study utilising in-depth semi-structured interviews and focus groups.

Work package 5 - Separate patient and public involvement, engagement and participation work package to inform and support the work of the other work packages

### **Primary study design**

Observational

### **Study type(s)**

Other

### **Health condition(s) or problem(s) studied**

Impact of ethnicity on COVID-19 outcomes in healthcare workers

### **Interventions**

Work package 1

Investigators will undertake expedited linkage and analysis of anonymised data on COVID-19 outcomes among clinical and ancillary NHS healthcare workers, including NHS human resource (Electronic Staff Record), professional registration, and NHS datasets, including primary care data, hospital episode statistics, Intensive Care National Audit and Research Centre data, mortality data, Public Health England COVID-19 results, and COVID-19 Symptom Tracker data within a Trusted Research Environment (SAIL databank) to understand the impact of ethnicity (as per ONS classification) on COVID-19 outcomes. Researchers will compute crude/adjusted incidence rate ratios to compare ethnicity (White, Asian, Black, Other) in terms of COVID-19 diagnosis and outcomes (diagnosis, hospitalisation, ITU admission and death) and will adjust for core predictors including age, sex, deprivation and comorbidities, including cardiometabolic conditions. Work package 1 will assess risk across occupations and by setting (hospital, community etc), assessing interactions with ethnicity.

Work package 2

Work package 2 aims to recruit at least 30,000 staff (clinical and ancillary Staff) (66% of whom will be from minority ethnic groups). Researchers will invite healthcare workers to participate via healthcare regulators and NHS organisations. Following an online consent process, participants will be asked to complete a baseline questionnaire with questions relating to demographics,

healthcare role (type, setting and redeployment), location of work/residence, interaction with COVID-19 patients, levels of sickness/PPE, social circumstances and physical/mental health. Participants will be asked to provide consent to follow their health by extracting information from their past and future NHS healthcare records (including NHS number), any COVID-19 related records, and from "Zoe COVID-19 symptom tracker" websites or apps if they use them.

#### Work packages 3, 4 and 5

The proposed qualitative research component in UK-REACH will utilise semi-structured interviews (both WP3 and 4) and focus groups (WP 4 only) to explore the experiences and perceptions of staff in healthcare settings, including both clinical and ancillary staff from ethnic minority communities, around risk, support, and coping mechanisms. WP3 will have a particular focus on ethico-legal aspects, specifically looking at the ethical and legal implications of large dataset analyses/cohort studies, such as risks of re-identification and identifying core principles of information governance in the context of sensitive data and healthcare worker datasets. The rich diversity of the project will be complemented by a robust Public Involvement and Engagement (PIE) strategy which has been in-built into the project (WP5) and conforms to the principles of (i) being receptive of public views and opinions, (ii) collaborating and co-creating with the public and (iii) involving the public in the wider dissemination of results.

#### Intervention Type

Other

#### Primary outcome(s)

##### Work package 1

1. Suspected (based on self report or symptoms) or confirmed (positive molecular test for SARS-CoV-2) COVID-19 diagnosis
2. Hospitalisations, which includes all hospitalisations (any hospital admission recorded during the study period in secondary care or CHES data) during the study period and COVID-19 related hospitalisations (any hospitalisation where COVID specific ICD-10 codes are recorded or the is record of a positive SARS-CoV-2 test during or within 28 days prior to a hospital admission)
3. ITU admission - admissions to ITU recorded during the study period in those with a COVID-19 hospitalisation using secondary care or CHES data or with an ITU admission and confirmed COVID-19 notification recorded in ICNARC
4. Mortality, both all cause mortality (any death registration recorded during the study period in ONS mortality data). and mortality due to COVID-19 (any death registration with COVID-19 specific ICD-10 codes recorded for the primary or secondary cause of death during the study period in ONS mortality data.)

##### Work package 2

1. COVID-19 outcomes (infection, hospitalisation, mortality) by linkage to healthcare records (as for work package 1 above)
2. Mental health outcomes by the inclusion of validated screening tools in the questionnaire
3. Sociodemographic, occupational and health differences between ethnic groups that may impact on COVID-19 outcomes, through the inclusion of questionnaire items relating to changes in professional roles/practice, social circumstances and physical/mental well-being

##### Work package 3 and 4

The proposed qualitative research component in UK-REACH will utilise semi-structured interviews (both WP3 and 4) and focus groups (WP 4 only) to explore the experiences and perceptions of staff in healthcare settings, including both clinical and ancillary staff from ethnic minority communities, around risk, support, and coping mechanisms. WP3 will have a particular

focus on ethico-legal aspects, specifically looking at the ethical and legal implications of large dataset analyses/cohort studies, such as risks of re-identification and identifying core principles of information governance in the context of sensitive data and healthcare worker datasets.

#### Work package 5

Work package 5 is a Public Involvement and Engagement (PIE) strategy. The primary outcome of which will be to complement the other work packages through designing, delivering and disseminating all aspects of the project, including monthly reports with recommendations to inform policy and practice.

#### **Key secondary outcome(s)**

There are no secondary outcome measures

#### **Completion date**

01/08/2045

## **Eligibility**

#### **Key inclusion criteria**

##### Work package 1

1. Adult (aged 16 or over)
2. Healthcare worker - as identified by HR records or professional registers

##### Work package 2

1. Adult (aged 16 or over)
2. Lives and works in the UK
3. Healthcare worker or ancillary worker in a healthcare setting
4. Willing and able to provide informed consent

##### Work package 3 and 4

1. Adult (aged 16 or over)
2. Willing and able to provide informed consent
3. Has experience of working in a healthcare setting during the COVID-19 pandemic

##### Work package 5

1. Adult (aged 16 or over)
2. Member of a collaborating organisation and/or has experience of working in a healthcare setting during the COVID-19 pandemic

#### **Participant type(s)**

Health professional

#### **Healthy volunteers allowed**

No

#### **Age group**

Adult

#### **Sex**

All

**Total final enrolment**

0

**Key exclusion criteria**

Does not meet inclusion criteria

**Date of first enrolment**

01/11/2020

**Date of final enrolment**

01/04/2021

**Locations****Countries of recruitment**

United Kingdom

England

**Study participating centre****Leicester Royal Infirmary**

University Hospitals of Leicester NHS Trust

Infirmary Square

Leicester

England

LE1 5WW

**Sponsor information****Organisation**

University of Leicester

**ROR**

<https://ror.org/04h699437>

**Funder(s)****Funder type**

Research council

**Funder Name**

UK Research and Innovation

**Alternative Name(s)**

UKRI

**Funding Body Type**

Government organisation

**Funding Body Subtype**

National government

**Location**

United Kingdom

**Funder Name**

National Institute for Health 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**

Work package 1 & 2 datasets will be stored in an anonymised format at the SAIL databank. Anonymised data from work packages 1 and 2 may be made available to facilitate other research projects. For work package 2 we will have obtained consent for this, however, work package 1 is a data linkage study and therefore consent from individual participants will not be sought. Access to study data may be granted after discussion with the chief investigator and data access committee (to be set up).

In work packages 3, 4 & 5 datasets will be kept on secure University servers. Access to these datasets may be granted after discussion with the chief investigator and data access committee (to be set up).

**IPD sharing plan summary**

Stored in repository

**Study outputs**

Output type	Details	Date created	Date added	Peer reviewed?	Patient-facing?
<a href="#">Results article</a>	Risk factors associated with SARS-CoV-2 infection in a multiethnic cohort of United Kingdom healthcare workers (UK-REACH): A cross-sectional analysis	26/05/2022	27/05/2022	Yes	No
<a href="#">Results article</a>	Hesitancy for receiving regular SARS-CoV-2 vaccination in UK healthcare workers: a cross-sectional analysis from the UK-REACH study	10/10/2022	10/10/2022	Yes	No
<a href="#">Results article</a>	A qualitative study exploring healthcare workers' lived experiences of the impacts of COVID-19 policies and guidelines on maternal and reproductive healthcare services in the United Kingdom	01/11/2023	16/03/2026	Yes	No
<a href="#">Results article</a>	Access to personal protective equipment in healthcare workers during the COVID-19 pandemic in the United Kingdom: results from a nationwide cohort study (UK-REACH)	05/07/2022	16/03/2026	Yes	No
<a href="#">Results article</a>	Association between ethnicity and migration status with the prevalence of single and multiple long-term conditions in UK healthcare workers	30/11/2023	16/03/2026	Yes	No
<a href="#">Results article</a>	Cohort Profile: The United Kingdom Research study into Ethnicity and COVID-19 outcomes in Healthcare workers (UK-REACH)	27/08/2022	16/03/2026	Yes	No
<a href="#">Results article</a>	Coping strategies used by migrant healthcare workers to support their mental health during COVID-19 in the United Kingdom: a qualitative analysis	30/10/2024	16/03/2026	Yes	No
<a href="#">Results article</a>	Coverage, completion and outcomes of COVID-19 risk assessments in a multi-ethnic nationwide cohort of UK healthcare workers: a cross-sectional analysis from the UK-REACH Study	14/06/2023	16/03/2026	Yes	No
<a href="#">Results article</a>	Discrimination, disadvantage and disempowerment during COVID-19: a qualitative intrasectional analysis of the lived experiences of an ethnically diverse healthcare workforce in the United Kingdom	23/05/2024	16/03/2026	Yes	No
<a href="#">Results article</a>	Ethnic differences in SARS-CoV-2 vaccine hesitancy in United Kingdom healthcare workers: Results from the UK-REACH prospective nationwide cohort study	01/10/2021	16/03/2026	Yes	No
<a href="#">Results article</a>	Ethnic differences in cellular and humoral immune responses to SARS-CoV-2 vaccination in UK healthcare workers: a cross-sectional analysis	04/04/2023	16/03/2026	Yes	No
<a href="#">Results article</a>	Healthcare Workers From Diverse Ethnicities and Their Perceptions of Risk and Experiences of Risk Management During the COVID-19 Pandemic: Qualitative Insights From the United Kingdom-REACH Study	01/07/2022	16/03/2026	Yes	No
<a href="#">Results article</a>	Healthcare workers' views on mandatory SARS-CoV-2 vaccination in the UK: A cross-sectional, mixed-methods analysis from the UK-REACH study	25/04/2022	16/03/2026	Yes	No
<a href="#">Results article</a>	Hesitancy for receiving regular SARS-CoV-2 vaccination in UK healthcare workers: a cross-sectional analysis from the UK-REACH study	10/10/2022	16/03/2026	Yes	No
<a href="#">Results article</a>	Immunogenicity of concomitant SARS-CoV-2 and influenza vaccination in UK healthcare workers: a prospective longitudinal observational study	12/08/2024	16/03/2026	Yes	No
<a href="#">Results article</a>	Investigating the impact of financial concerns on symptoms of depression in UK healthcare workers: data from the UK-REACH nationwide cohort study	12/07/2023	16/03/2026	Yes	No

<a href="#">Results article</a>	One virus, many lives: a qualitative study of lived experiences and quality of life of adults from diverse backgrounds living in the UK during the COVID-19 pandemic	01/03/2023	16/03/2026	Yes	No
<a href="#">Results article</a>	Prevalence of and factors associated with long COVID among diverse healthcare workers in the UK: a cross-sectional analysis of a nationwide study (UK-REACH)	06/01/2025	16/03/2026	Yes	No
<a href="#">Results article</a>	Risk factors associated with SARS-CoV-2 infection in a multiethnic cohort of United Kingdom healthcare workers (UK-REACH): A cross-sectional analysis	26/05/2022	16/03/2026	Yes	No
<a href="#">Results article</a>	Sociodemographic factors associated with health-related quality of life in UK healthcare workers: a cross-sectional study	22/07/2025	16/03/2026	Yes	No
<a href="#">Results article</a>	"The vaccination is positive; I don't think it's the panacea": A qualitative study on COVID-19 vaccine attitudes among ethnically diverse healthcare workers in the United Kingdom	09/09/2022	16/03/2026	Yes	No
<a href="#">Protocol article</a>	The United Kingdom Research study into Ethnicity And COVID-19 outcomes in Healthcare workers (UK-REACH): protocol for a prospective longitudinal cohort study of healthcare and ancillary workers in UK healthcare settings	17/09/2021	21/09/2021	Yes	No
<a href="#">Protocol article</a>	Ethnicity and COVID-19 outcomes among healthcare workers in the UK: UK-REACH ethico-legal research, qualitative research on healthcare workers' experiences and stakeholder engagement protocol	03/03/2021	16/03/2026	Yes	No
<a href="#">Protocol article</a>	United Kingdom Research study into Ethnicity And COVID-19 outcomes in Healthcare workers (UK-REACH): a retrospective cohort study using linked routinely collected data, study protocol	28/06/2021	16/03/2026	Yes	No
<a href="#">HRA research summary</a>			28/06/2023	No	No
<a href="#">Other publications</a>	Sociodemographic factors associated with health-related quality of life in UK healthcare workers: a cross-sectional study	22/07/2025	24/07/2025	Yes	No
<a href="#">Other publications</a>	Caring for Those Who Take Care of Others: Developing Systemic and Sustainable Mental Health Support for the Diverse Healthcare Workforce in the United Kingdom	13/02/2023	16/03/2026	Yes	No
<a href="#">Other publications</a>	Caring for the carers: understanding long covid in our diverse healthcare workforce	06/05/2022	16/03/2026	Yes	No
<a href="#">Other publications</a>	Contextualising Intersectionalism at Ecosystemic Levels: Introducing 'Intrasectionalism' as a Conceptual Framework	18/01/2023	16/03/2026	Yes	No
<a href="#">Other publications</a>	Discrimination, feeling undervalued, and health-care workforce attrition: an analysis from the UK-REACH study	08/09/2023	16/03/2026	Yes	No
<a href="#">Other publications</a>	Factors associated with attrition from the UK healthcare workforce since the COVID-19 pandemic: results from a nationwide survey study	26/11/2024	16/03/2026	Yes	No
<a href="#">Other publications</a>	Healthcare workers must be included in long covid research in the UK	26/07/2023	16/03/2026	Yes	No
<a href="#">Other publications</a>	Intersectionality and developing evidence-based policy	22/01/2022	16/03/2026	Yes	No

<a href="#">Other publications</a>	Retention of ethnic minority staff is critical to resolving the NHS workforce crisis	10/03/2023	16/03/2026	Yes	No
<a href="#">Other publications</a>	The Ethical Implications of Big Data Research in Public Health: “Big Data Ethics by Design” in the UK-REACH Study	22/12/2021	16/03/2026	Yes	No
<a href="#">Other unpublished results</a>	Persistent hesitancy for SARS-CoV-2 vaccines among healthcare workers in the United Kingdom: analysis of longitudinal data from the UK-REACH cohort study	01/02/2022	16/03/2026	No	No
<a href="#">Preprint results</a>	non-peer-reviewed protocol in preprint	25/02/2021	17/03/2021	No	No
<a href="#">Preprint results</a>	non-peer-reviewed results in preprint	03/03/2021	17/03/2021	No	No
<a href="#">Preprint results</a>	Mental Health During COVID-19: A Qualitative Study with Ethnically Diverse Healthcare Workers in the United Kingdom	14/12/2021	16/03/2026	No	No
<a href="#">Preprint results</a>	“Data makes the story come to life.” Understanding the ethical and legal implications of Big Data research involving ethnic minority healthcare workers: a qualitative study	14/12/2021	16/03/2026	No	No
<a href="#">Study website</a>	Study website	11/11/2025	11/11/2025	No	Yes