NIHR | National Institute for Health and Care Research

NIHR ARCs supporting the fight against COVID-19

Contents

Foreword

The COVID-19 pandemic is the greatest public health challenge in the UK for at least a century. The speed of its spread, devastating impact and longer-term implications for our health and care economy have demanded radical and swift responses. All of us at our individual Applied Research Collaborations (ARCs) have had to pivot our existing research programmes to this changed environment.

In 2020, we made rapid changes to our research programmes across the ARCs, to inform policy and practice, improve health and care, and deliver national-level impact in this rapidly changing landscape.

Our expertise in data modelling, multi-morbidity, mental health and social care alongside our ability to build and sustain collaborations across the NHS, social care, the voluntary sector and industry, has placed us in a unique position. We have been able to contribute to the efforts to understand the virus and its impact on communities, locally, nationally and globally.

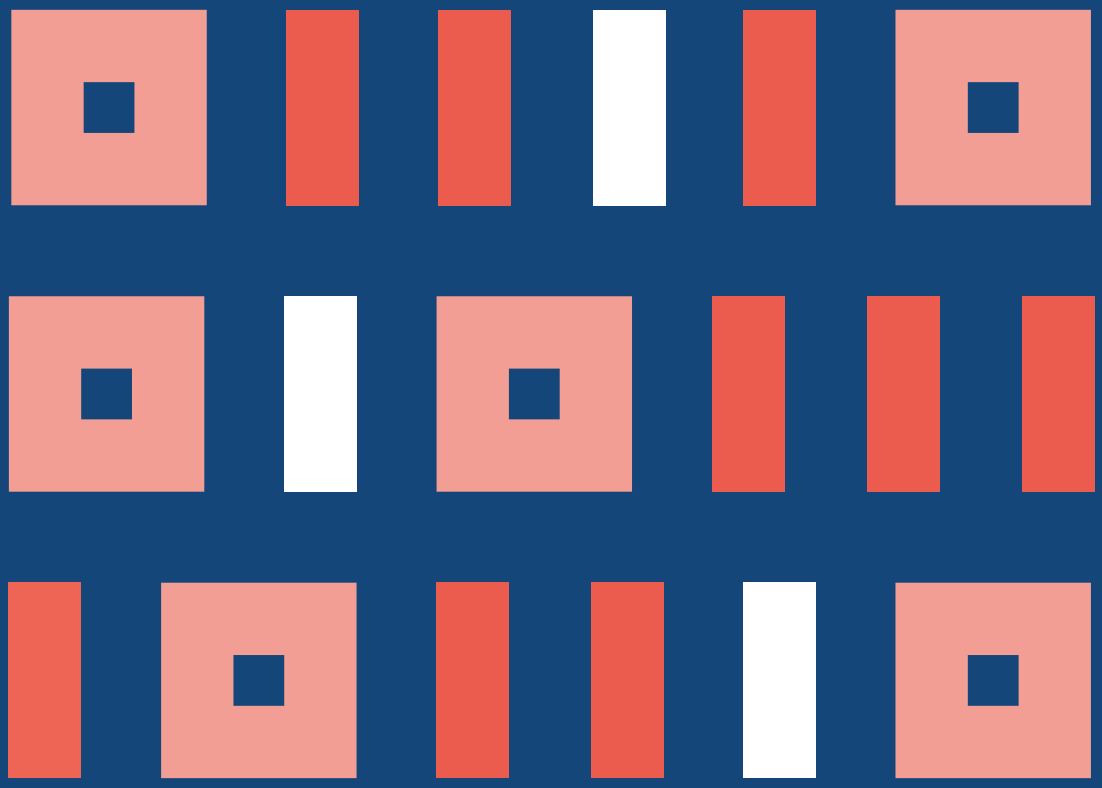
This publication outlines our response as ARCs, both collectively and individually, to this challenge. It showcases the part we have played in supporting the health and care sector and patients, public and communities. We are proud of our part in lending our expertise to understanding the disease and assisting the global effort to contain it, improving outcomes and saving lives.

Finally, it points the way to future avenues of research and how we may play a part in building a healthy economy for the 21st century. Our work with the Beneficial Changes Network (BCN) and NHS Insights Prioritisation Programme (NIPP) in areas like remote consultations and assessments, paves the way for longer term changes to health and care provision that the pandemic has accelerated.

As ARC Directors we would like to thank all of the ARCs for sharing their project information and supporting the development of this brochure. In particular, we'd like to thank Professor Kamlesh Khunti, Dr Kevin Quigley and Charlie Franklin of ARC East Midlands for drawing together the information and designing the final document and Zoe Trinder-Widdess and Lin Lin Ginzberg of ARC West for their Communications support. We hope you enjoy reading it.

ARC Directors March 2023

DATA AND ANALYTICS



Unlocking the value of health data during a pandemic: OpenSAFELY

In the midst of the pandemic, NIHR ARC Oxford and Thames Valley's (ARC OxTV) informatics team directed OpenSAFELY, the world's largest secure analytics platform for electronic health records, to answer urgent clinical questions about COVID-19.

What did we do?

ARC OxTV's informatics team created the OpenSAFELY analytics platform, a secure means for storing electronic health records in the NHS. It is now delivering analysis across more than 58 million patients' primary care NHS records.

OpenSAFELY is being used to monitor the impact of COVID-19 on routine service provision, to identify variation in care.

As much as OpenSAFELY is about the research outputs, it is also about encouraging a modern, open, efficient and collaborative approach to computational data science across the NHS.

ARC OxTV has begun to promote OpenSAFELY directly to the public; and the NHS analyst workforce, as an example of how these working methods can benefit science.

What was the impact?

OpenSAFELY has been critical in informing and supporting the Scientific Advisory Group for Emergencies (SAGE) committee throughout the pandemic, including:

- Factors associated with COVID-19 related hospital deaths such as inequalities and ethnic background
- The impact of different drugs and treatments.
- The risk associated with different variants of SARS-CoV-2
- The longer-term impact of COVID-19 hospitalisation
- The clinical impacts of long COVID

Another impact was the confirmation of ethnic differences in infections and COVID-19 on routine services, to identify variation in care and to help inform policymakers' decisions on dealing with the NHS backlog.

More than 80 separate projects across the UK have used OpenSAFELY-TPP and OpenSAFELY-EMIS. The lessons learned from building OpenSAFELY have also been used as evidence in the Goldacre Review led by Dr Ben Goldacre, informing the Government's digital data strategy. All 30 high level recommendations from the report formed the framework for the strategy.

Finally, OpenSAFELY was included as a case study in ARC Greater Manchester's citizens' juries commissioned by NHSX and the National Data Guardian. It was included as a case study in the NHS data strategy.

Providing vital support to maintain emergency services using an interactive tool

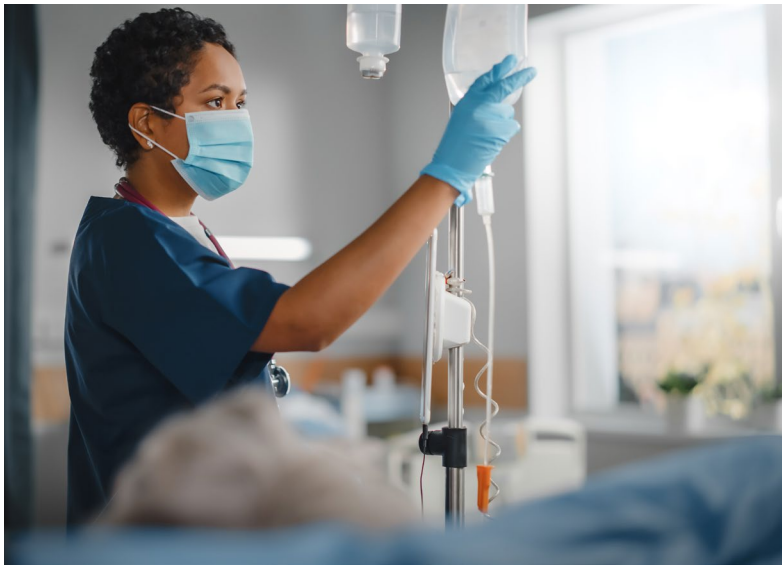
A successful collaboration between NIHR ARC South-West Peninsula (ARC SWP), University of Exeter researchers and the NHS resulted in an interactive tool for health trusts to ensure they maintained sufficient levels of life-saving equipment and bed spaces during the pandemic.

What did we do?

The tool allows services to predict the demand for in-patient beds, intensive care, PPE, ventilators, oxygen and testing kits, with a facility to examine the effect of varying assumptions on outputs.

It works by analysing and comparing the local spread of COVID-19 with other areas both nationally and internationally. The researchers are then able to adjust their data and forecast based on live information. The project evolved to model the various scenarios that might arise as lockdowns are eased. This includes carefully tracking the R number.

The initial model was developed in partnership with Northern Devon Healthcare NHS Trust and Royal Devon and Exeter NHS Foundation Trust, but is now available as an online app. The tool has been rolled out to Royal Cornwall Hospitals NHS Trust, with plans to roll it out to NHS trusts in Somerset.



What was the impact?

Angela Hibbard, Chief Finance Officer at Royal Devon University Healthcare NHS Foundation Trust led the project for the local NHS. She described the tool as "being hugely important in informing the decision-making within both trusts during the COVID-19 crisis. It has helped us make well-informed and evidence-based decisions across a range of key issues such as PPE and ventilators being available to frontline staff when they need them. More importantly, it is helping us model scenarios as we start to come out of lockdown and what this may mean to our hospital capacity requirements going forward."

Data resources developed to track and support local services

NIHR ARC North West Coast (ARC NWC) have developed the Place-based Longitudinal Data Resource (PLDR). The PLDR is a web-based resource that brings together datasets which track changes in the determinants of health and health outcomes, in specific places over time.

What did we do?

The PLDR was ARC NWC's response to a request by partners for accurate data to support analysis of local interventions and their impact on the local community and their health. Partners were particularly interested in comparing areas where new service interventions had been introduced to areas where they hadn't.

The PLDR uses local and national datasets, such as hospital admissions, budgets and prescribing, to calculate indicators for places over a period of time. These are scaled at neighbourhood, local government, regional and national level. As well as tracking interventions, PLDR allows service providers to identify health inequalities in provision and evaluate and assist in planning for reconfiguration.

In responding to the COVID-19 pandemic the PLDR was invaluable. Public health agencies across the North West wanted to understand how key vulnerabilities, including age, ethnicity, income deprivation, care home residence and housing conditions, are distributed across and clustered within communities.

Using the PLDR, ARC NWC developed a Small Area Vulnerability Index (SAVI) across England based on predictors of mortality risk observed during the first wave. This helped to inform the targeting of control measures and plans for future waves of the pandemic.

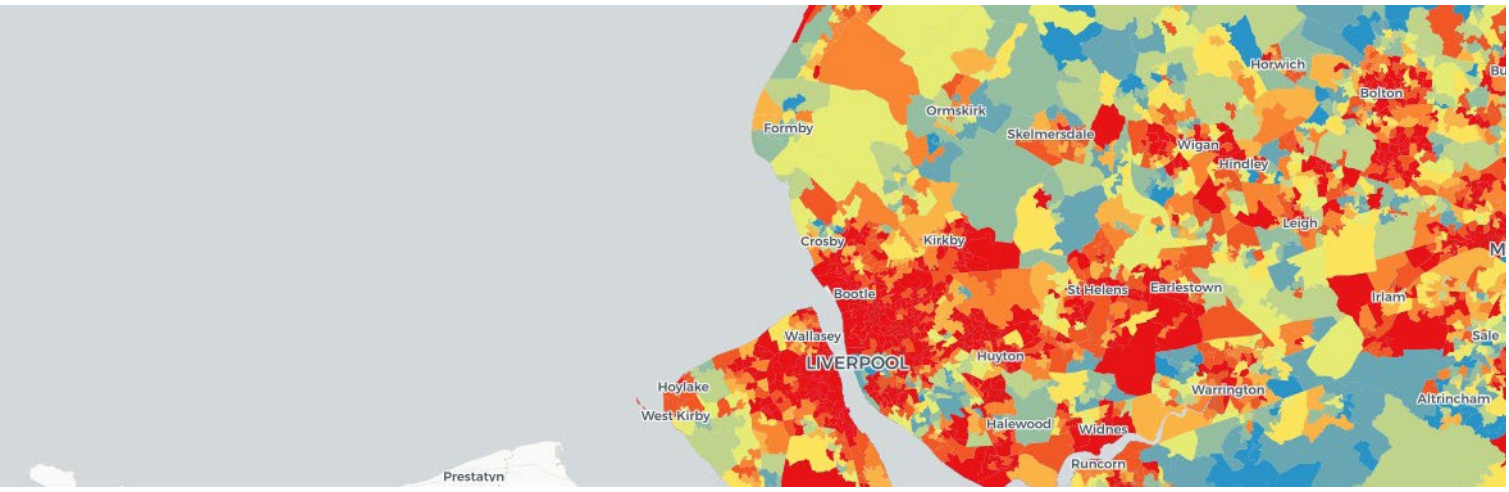
The PLDR was also used to understand the effectiveness of measures such as COVID-19 restrictions, open-access community asymptomatic testing and the use of mobile vaccination units.

What was the impact?

The research found that people in certain areas of the North West, West Midlands and North East were particularly vulnerable to severe COVID-19. PLDR provided critical support to help shield vulnerable groups and assist in the targeting of resources and control measures.

The study demonstrated the positive impact of community testing which led to the widescale roll out of such approaches across the country. In Liverpool the evaluation of mobile vaccination units led to continued funding of this initiative to promote uptake.

Amongst the organisations that have used the PLDR-SAVI for their COVID-19 response are the Department for Health and Social Care, the COVID-19 Merseyside Resilience Forum, Lancashire and Durham County Councils, and Midlands Engine.



Predicting COVID-19 bed occupancy to support hospital bed management

A collaboration between NIHR ARC Northwest London (ARC NWL) and the local Integrated Care System (ICS)

What did we do?

During the COVID-19 pandemic, many NHS organisations used predictive models to try and get ahead of the burden on healthcare services by understanding and planning for what might happen next.

Working with NWL ICS, the Information and Intelligence Theme at ARC NWL developed a real-time, weekly predictive multivariable model of hospital bed usage for patients with COVID-19. This was used alongside other national and local models to support the weekly decision making of the NWL Gold Command throughout the pandemic.

The model took into account 430,000 COVID-19 positive tests over a six-month period for the North West London population of 2.2 million people registered with GPs. It enabled strategic leadership to plan and prepare for potential changes in the number of hospital beds needed for COVID-19 patients.

What was the impact?

This collaborative approach connected an agile informatics solution to regional healthcare decision-makers and leaders. The use of real-time accessible data enabled the predictive model to support service evaluation of bed occupancy and patient flow. It demonstrated the application of a whole system de-identified patient dataset in supporting improvements in care delivery. The collaboration continues, helping the system meet healthcare needs.

Kavitha Saravanakumar, Director of Business Intelligence for NWL Integrated Care Board has been leading the data and analytics support to NWL Gold Command. NWL Gold Command was established to manage the COVID pandemic and included representation from all acute, mental health and community providers across NWL. She described the tool as “Hugely important in informing the decision-making within NWL sector and our response to the COVID pandemic. The model helped provide a forward view of the demand that we would see as a system with our general and acute bed base.

She also stated that: “This data along with a number of other data feeds and models helped the system plan effectively, ensuring mutual aid was used where required to alleviate pressures. More importantly, it was helpful to work with our local academic organisation as we were able to take an agile approach and update the model to reflect vaccination uptake when COVID vaccinations were rolled out widely.”

ARC develops a predictive model aimed at creating an early warning system for COVID-19 infections

NIHR ARC Wessex have been working on the Predicting Patient Deterioration Risks in COMMunities (PPDRCOMM) project, for use in residential settings such as care homes where it provides additional support.

What did we do?

PPDRCOMM uses patient observational data, such as temperature, respiration rate and blood oxygen levels, combined with more general information such as patient demographics and co-morbidities, to predict the spread and severity of COVID-19. This includes information from patients who are in the early stages of infection.

This information is collected regularly so that machine-learning algorithms can report real-time risk scores where there is the likelihood of a rapid deterioration. This allows for real-time detection of deterioration earlier than had been possible with standard forms of diagnosis. It helps to address the clinical need for pre-emptively stopping the severe deterioration of those with a seemingly mild case of COVID-19.

The modelling work is using data and information from virtual wards managed by Hampshire Hospitals NHS Foundation Trust in the North Hampshire community. The system aims to link community, primary and secondary care to focus on the patient's needs and vulnerability.

What was the impact?

This project is ongoing and the project team are working with Primary Care Networks, Hampshire Hospitals NHS Foundation Trust, South Coast Ambulance Service and AHSN Wessex.

The predictive tool is being developed in conjunction with COVID Oximetry @home (CO@h), which was launched in November 2020.

An early evaluation of the service has shown that it reduced the length of hospital stay by an average of 6.3 days and mortality rates also dropped significantly. Work on the project is ongoing.

ARC rapid response service provides evidence and support locally, nationally and internationally

In response to the pandemic, NIHR ARC West set up a rapid response service so they could respond to key questions from the health and care systems in their region within 48-60 hours of the request being received. They also conducted rapid research and evidence work on the use of corticosteroids for severe COVID-19.

What did we do?

Co-ordinated by ARC West, researchers from the NIHR in Bristol and partner universities rapidly reviewed evidence and offered expertise to help clinical commissioning groups, local authorities and public health departments to respond to the pandemic. This expertise was also used nationally and internationally.

Members of the ARC West evidence team also contributed to a prospective meta-analysis of randomised trials for corticosteroids for severe COVID-19. It aimed to provide speedy additional evidence to inform World Health Organization (WHO) guidance. The team, which included Professor Julian Higgins and Dr Jelena Savović, worked on the analysis, assessments of risk of bias in the included trials and assessment of overall certainty in the evidence.

What was the impact?

In total, 27 reports were published, many of which influenced practice. A review into the impact of COVID-19 on mental health outcomes was picked up by the Department of Health and Social Care and informed the development of the overall national strategy for supporting vulnerable groups during the pandemic. Recommendations from a review on the impact of COVID-19 on Black, Asian and minority ethnic communities were used by Bristol City Council's Race Equality COVID-19 Steering Group to address disparities over the following year.

The prospective meta-analysis found that corticosteroids, a cheap and readily available drug, reduce the risk of death amongst critically ill COVID-19 patients by 20%. These results were published in September 2020. As a result, the use of corticosteroids became part of WHO guidance and national guidance in the UK. It was considered by the UK Government Scientific Advisory Group for Emergencies (SAGE) in October 2020.

Dexamethasone and other corticosteroids are now widely adopted standard care for hospitalised COVID-19 patients across the world. NHS England estimated that by March 2021, Dexamethasone had saved 22,000 lives in the UK and approximately one million worldwide.

ARC organised citizens juries sees how the public feel about patient data sharing during a crisis

The rules on sharing of health and care data were changed by the Government during the COVID-19 pandemic. The speed at which these changes were made meant there was no time to canvass public opinion. NIHR ARC Greater Manchester (ARC GM) responded by convening citizens juries in three areas of England to discover their views.

What did we do?

In collaboration with NHSX and the National Data Guardian for Health and Social Care, ARC GM commissioned three citizens juries that were run online between March and May 2021. We wanted to involve the public in deliberating whether pandemic data sharing initiatives should be continued after the pandemic had ended.

Overall, the juries supported the data sharing initiatives introduced during the pandemic and were broadly in favour of them continuing, although they had concerns about how some initiatives had been introduced. Many jurors were concerned that there was lack of transparency about the data sharing initiatives, believing transparency and governance important even in a pandemic. More details on the jury findings and recommendations were presented in a public-facing report

What was the impact?

The citizens' juries were extensively cited by Goldacre and Morley in their April 2022 review, Better, Broader, Safer: Using Health Data for Research and Analysis, commissioned by the Secretary of State for Health and Social Care. The report advocates the use of secure platforms and transparency to earn public trust. It states that the citizens' juries showed that the public understand the concepts behind robust TREs (Trusted Research Environments), and strongly support such work.

Locally, the insights from the citizens' juries were used to inform public awareness campaigns and to build trust in healthcare data sharing in relation to the Greater Manchester care record. The Summary Care Record Independent Advisory Board have used the jury findings to recommend changes to the summary care record's communication and public engagement strategies.

CHILDREN AND YOUNG PEOPLE

Providing valuable support for children and young people throughout the pandemic

NIHR ARC Oxford & Thames Valley (ARC OxTV) have led the project COVID-19: Supporting Parents, Adolescents and Children during Epidemics (Co-SPACE), tracking the mental health and wellbeing of young people during the pandemic.

What did we do?

COVID-19 and the related public health measures led to major disruptions to families' lives. Children, young people and their families have experienced different pressures over the pandemic.

The Co-SPACE project aimed to track children and young people's mental health, throughout the COVID-19 crisis, through an online survey. This was completed monthly by parents and carers of children aged 2-16 and young people themselves aged 11-16.

The team has shared study materials with collaborators in over 15 countries, including Germany, China, Japan, USA, Canada and Iran. Findings are helping us identify what protects children and young people from deteriorating mental health over time, what support families need and how this may vary according to contexts.

What has been the impact?

Throughout the project data snapshots, with findings broken down by region, informed resources and support for families through local policy and practice. The team have put mechanisms in place to ensure there is strong communication between the project teams and government departments, including the Education, Health and Social care and Work and Pensions. The UKRI Emerging Minds Research Network regularly disseminates findings across the UK.

So far, the study has shown that:

- There is increasing evidence of a negative effect on mental health outcomes during the pandemic
- In July 2020, a national survey suggested that one in six people might be suffering from mental health problems
- Those that have struggled most have often had pre-existing vulnerabilities

CARE HOMES

ARC supports care home staff and helps protect residents during the pandemic

NIHR ARC East of England (ARC EoE) provides COVID-19 focused support for care homes, in its role as national care home network lead. The network continues to build research capacity across the UK in studies responding to the unique circumstances of the pandemic.

What did we do?

In response to the pandemic ARC EoE mapped all research in care homes across the 15 ARCs. They provided this directory to the SAGE Social Care Group at the request of its Chair.

When COVID-19 started to spread in care homes, ARC EoE researchers, along with colleagues from ARC Kent, Surrey and Sussex listened to the care homes who were asking for support. They produced 'Top Tips For Tricky Times' on eight topics identified by care home staff as areas where support was needed.

The network is leading on a £2.3 million NIHR-funded project for researchers from seven ARCs to develop a prototype minimum data set for care homes (DACHA study). Another project is has investigated how videoconferencing and online technology are being used by health and social care providers.

What was the impact?

The top tips resource is being used both nationally and internationally, including translation into Spanish. Feedback from care home staff has confirmed it's especially useful for staff working with people living with dementia. A paper reporting on this was published in the Journal of Long-Term Care.

The DACHA study is having a policy impact. The team are briefing the Department of Health and Social Care, NHS England, NHS Improvement and the Professional Records Standards Body on early findings. They have developed methodology innovations that respond to COVID-19 and the lack of linked data sets for care homes.

ARC EoE continues to develop collaborations with regional partners to support cross-sector working to investigate how assistive and remote consulting technologies are being used across the region. ARC EoE and the Eastern Academic Health Science Network pooled their shared learning and collaborated to obtain competitive funding from the NHS Insights Prioritisation Programme.

Point of care tests to support care home residents

NIHR ARC West Midlands (ARC WM) is leading an NIHR funded study to determine the best point of care COVID-19 tests, adapting the study for care homes.

What did we do?

During the pandemic, care home residents had disproportionate rates of mortality as well as a general high burden of illness. However, at this critical time, face-to-face visiting by GPs, their primary source of clinical care, was replaced with telephone support. This left care home staff without their previous level of support. Avoiding transfer to hospital during the crisis, if possible, was best for both care home residents and the homes.

An acute medical assessment and treatment service delivered in the care home was urgently needed. So, an NIHR funded study to determine the optimal point of care tests for COVID-19 was adapted for use in care homes.

The COVID-19 National Diagnostic Research and evaluation platform (CONDOR) study evaluated COVID-19 diagnostics in the settings where they were to be used, such as GP surgeries, care homes or hospitals, as well as their performance in laboratory settings. Professor Daniel Lasserson (ARC WM) tested the accuracy and usability of point-of-care testing for COVID. He also worked on the CONDOR-CH (Care Homes) evaluations, examining treatments for COVID in care homes.

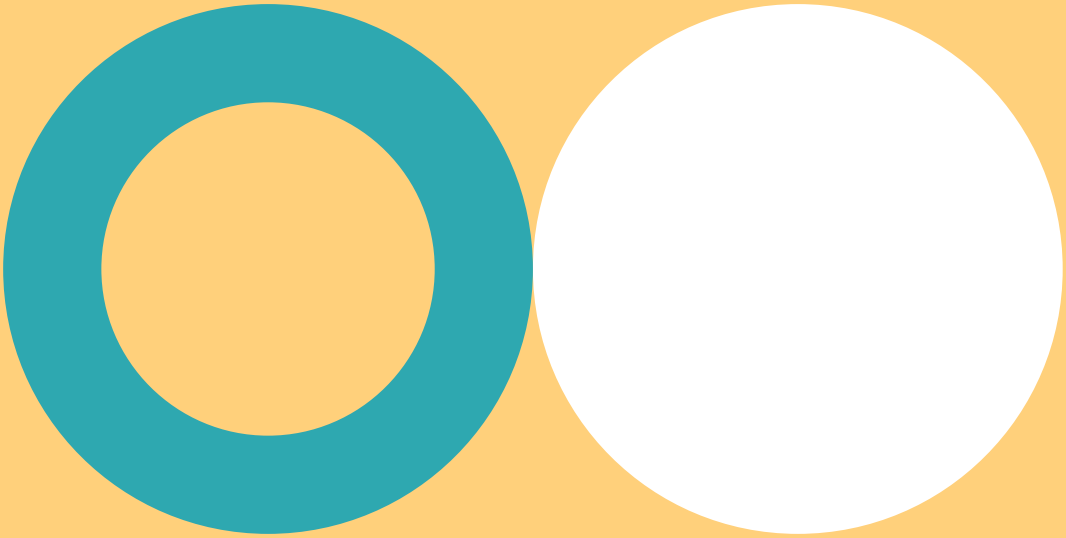
Professor Adam Gordon (NIHR ARC East Midlands) leads these two care home studies. They intersect to benefit care home residents who were acutely ill and needed diagnostic testing as part of treatment in place.

What was the impact?

CONDOR-CH informed many decisions about procuring testing equipment for care homes in 2020 and 2021. The study showed that it was feasible and safe to implement testing technologies in care homes, but that attention to implementation policies was required. The researchers worked with procurement teams at the Department of Health and Social Care to produce costing models, and consulted with manufacturers to build use cases for the technologies.

CONDOR-CH was cited in a SAGE paper on mitigations in the post-vaccination landscape, around alternatives to lateral flow testing.

EQUALITY AND DIVERSITY



Group led by ARC researches impact of COVID on health inequalities

NIHR North East and North Cumbria (ARC NENC) has led work to analyse and publicise the impact of COVID-19 on regional and health inequalities. The research group also looked at how different COVID-19 experiences worsened existing inequalities in chronic disease and the social determinants of health. ARC NENC wants to ensure that the COVID-19 pandemic doesn't increase health inequalities for future generations.

What did we do?

ARC NENC has been working with ARC Greater Manchester, the Northern Health Science Alliance (NHSA), North East Quality Observatory and the Academic Health Science Network for North East and North Cumbria (AHSN NENC), to analyse the impact of COVID-19 on inequalities across England using routinely collected indicators.

This work has included:

- Explaining pathways linking COVID-19 and health inequality. The overview paper has been used by health leads and policymakers more than 300 times, including in reports by the Chief Medical Officer for Wales and Public Health Wales
- Leading a policy report on COVID-19 in the Northern Powerhouse
- Leading the independent SAGE report into COVID-19 and inequalities
- Supporting the Health Inequalities Impact Assessment on COVID-19 for Public Health England North East, which examined young peoples' experiences of COVID-19 and mental health. This work was funded by NE Youth, NU COVID-19 Research Fund and the Tilly Hale Fund
- Supporting research into community aid responses to COVID-19 by the Catherine Cookson Foundation
- Delivering presentations on health inequalities to the All-Party Parliamentary Group on Health in all Policies (February 2021) and Left Behind Areas (March 2021)

What was the impact?

This work has led to widespread publicity including BBC News, ITV News, Sky News, Guardian, Times, Daily Mail and Independent.

ARC leads research into the impact of COVID on ethnic minorities including chairing SAGE subcommittee

NIHR ARC East Midlands (ARC EM) has been involved in a range of COVID-19 projects and workstreams including publishing reports on the impact of COVID-19 on ethnic minority communities. Professor Kamlesh Khunti, Director ARC EM, was one of the first people to highlight the disproportionate impact of COVID-19 on ethnic minority populations and that people were suffering more severe disease and increased mortality.

What did we do?

ARC EM has expertise in multiple long-term conditions, health inequalities, mental health, social care and using real world data for health. These specialisms are contributing to a range of studies and other activities that deal directly with COVID-19. Professor Kamlesh Khunti has had a pivotal role both nationally and locally serving as a member of SAGE and involvement in several high-profile work streams.

- As part of his work on SAGE, Professor Khunti chairs a subcommittee looking at the impact of the virus on ethnic minority communities
- The Centre for Ethnic Health Research (CEHR), based at ARC EM, collaborated with the national and regional Clinical Research Network to increase recruitment of ethnic minority communities to COVID-19 studies
- Professor Khunti was a member of the Academy of Medical Sciences Group who published the report: Preparing for a Winter Challenge 2021
- ARC East Midlands contributes to a number of national COVID-19 studies including the Post-hospitalisation COVID-19 study (PHOSP-COVID), which is looking at the longer-term impact on people hospitalised with COVID-19, and UK-REACH which is looking at the outcomes for healthcare workers from an ethnic minority background who have contracted COVID-19

What was the impact?

The range of ARC EM's work on COVID has led to a greater understanding of the disease and ability to mitigate against its impact. Examples of specific impacts include:

- CEHR has collaborated on local and national projects and helped recruit patients for the vaccine taskforce group, PHOSP and the Janssen COVID-19 vaccine trial
- As part of his work on chairing the SAGE subcommittee, Professor Khunti made recommendations for additional ways to support these communities. CEHR has also worked with the South Asian Health Foundation to prepare a report recommending ways to support ethnic minority communities impacted by the virus

GENERAL PRACTICE

ARC carries out vital research into GP practices during the pandemic

The Rapid COVID-19 intelligence to improve primary care response (RAPCI) project investigated how GP practices responded to the changes in demand caused by the pandemic. This included the move to online and telephone consultations and their impact on patient care. RAPCI was a collaboration between NIHR ARC West, Bristol, North Somerset and South Gloucestershire Clinical Commissioning Group and GP federation OneCare.

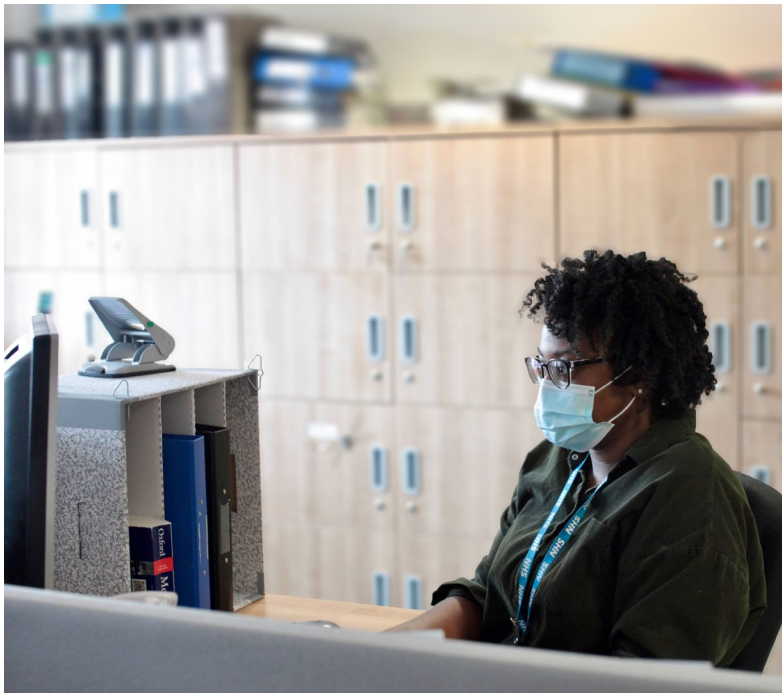
What did we do?

The team examined 350,000 patient records from 21 GP practices in Bristol, North Somerset and South Gloucestershire. They also conducted 87 interviews with practice staff at four points between May and July 2020, investigating their experience of delivering care in the pandemic and the move to remote consulting.

How remote consultations were implemented: By April 2020, 90% of GP consultations were conducted remotely, compared to 31% in April 2019. Text messaging increased more than three-fold. Practice staff reported telephone consulting was sufficient for many patient problems, while video consulting was used more rarely and became less necessary as lockdown eased.

How face-to-face contact was maintained: GPs continued face-to-face contact during the first lockdown for patients who needed it most. This included prioritising patients according to clinical need and using face-to-face contact when GPs were uncertain of a diagnosis or to reassure patients. But as practices became able to see patients face-to-face again, social-distancing and enhanced infection control measures reduced capacity and were time consuming, putting pressure on staff.

How the pandemic affected cancer symptom reporting: In 2019, potential cancer symptoms were reported in 21% of face-to-face GP consultations in over 50s, compared to only 13% of remote consultations. In 2020, this was 17% face-to-face and 14% remotely. Alarm symptoms saw a less pronounced decline, but still reduced by 27% overall.



What was the impact?

The researchers published five rapid reports online and disseminated them via social media and professional networks. Findings were included in reports to the UK Government's Scientific Advisory Group for Emergencies (SAGE), the Royal College of General Practitioners and NHS England. Findings were also presented to the Department of Health and Social Care to inform their COVID-19 response. The team published three journal papers with preprint versions posted online before peer review and disseminated via Twitter.

MENTAL HEALTH

National project on the pandemic's impact on frontline NHS staff and developing support for them

In collaboration with Kings College London, NIHR ARC North Thames (ARC NT) is the lead on NHS CHECK, a national cross-ARC study investigating the impact of COVID-19 on staff in 18 NHS trusts across England.

What did we do?

The COVID-19 pandemic represents possibly the biggest challenge the NHS has ever faced. It has underlined the importance of a healthy and well-functioning healthcare workforce. Staff absences and high staff turnover affect the quality of care received by patients. Identifying workers most at risk of adverse outcomes, and ways to support them, is vital.

NHS CHECK is the largest UK study of healthcare worker mental health and wellbeing. The study collected survey data from more than 23,000 participants from April 2020 and data collection is ongoing. Researchers also conducted qualitative interviews with around 80 healthcare workers, diagnostic interviews with around 300 healthcare workers, and ran a randomised controlled trial of a smartphone wellbeing app, developed by industry partner Koa Health, with around 1,000 healthcare workers.

The survey showed high prevalence of symptoms of mental ill health:

- 50% of participants reported symptoms of general psychological distress
- 25% reported symptoms of anxiety, depression, and post-traumatic stress disorder (PTSD)
- 30% reported experiencing potentially morally injurious events (situations that conflicted with personal ethical values)

Both clinical and non-clinical staff were affected, with younger, female staff most at risk, and those in specific settings, such as intensive care being at particularly high risk of PTSD. Using one-to-one diagnostic interviews found that

14% met criteria for a psychiatric diagnosis of depression, 13% for a diagnosis of an anxiety disorder, and 8% for a diagnosis of Post-Traumatic Stress Disorder (PTSD), which is twice that of the general population.

Findings show that support from colleagues and managers was a key factor in helping staff to cope. Interviewees felt the pandemic exacerbated existing problems, in particular workforce and resource shortages. Feelings of betrayal by government and senior management were frequently reported in interviews. Survey data showed such feelings were associated with worse mental health outcomes.

What was the impact?

Early findings from the online surveys indicated a lack of access to personal protective equipment (PPE) was associated with worse mental health outcomes for all types of staff. This was fed back to participating trusts, who were able to address this and increase provision of PPE.

The team provided regular briefings of key findings to trusts such as the characteristics of those most at risk of mental ill-health and the importance of support from colleagues and managers. This meant trusts could target resources most effectively.

Findings are informing policy. They have been presented to more than 20 influential audiences including the Royal Society of Medicine, Royal College of Psychiatrists, Leaders in Healthcare, BMJ podcast, NHS Confederation, NHS Leadership, House of Lords and Parliament. A Policy Lab in December 2021 brought together researchers, NHS staff, professional bodies such as the Royal College of Nursing, policymakers, NHSE/I and others to discuss how the NHS workforce can be better supported.

ARC team monitor mental health services to provide support to patients

A team of applied informatics researchers at NIHR ARC South London (ARC SL) have been using the Clinical Record Interactive Search (CRIS) system to analyse electronic mental health records.

What did we do?

The purpose of exploring the records was to monitor the response of mental health services during the pandemic and the special problems faced by service users.

The team, led by Professor Robert Stewart at King's College London, produced a series of reports highlighting:

- The increase in mortality among mental health service users
- Inequalities in mortality, for example by ethnic group
- The profound changes in mental healthcare delivery including falls in referrals and transition to virtual care

These findings have informed care and decision making.

What was the impact?

Working with Public Health England and NHS England, the findings played a key role in the decision to prioritise vaccination of people with serious mental illness (SMI) and learning difficulties. This was potentially the first instance of prioritisation of these vulnerable groups for national public health measures.

The findings also helped to secure agreement that people living with SMI, who had confirmed or suspected COVID-19, were provided with oximeters. This enabled them to monitor their blood oxygen levels, helping services detect early signs of deterioration. This was achieved through collaboration with the Academic Health Science Network (AHSN) for South London and key stakeholders including the ARC informatics research team.

In addition:

- The study's advice to services to help support those with SMI with COVID-19 was disseminated by the Royal College of Psychiatrists, the AHSN Network and the NHS National Deterioration group
- The team's analysis of COVID-19 mortality and learning disability was part of the SAGE working group's recommendation. It led to the decision to provide a more assertive outreach to this vulnerable group
- The team worked with 10 other mental healthcare providers to describe how mental healthcare changed during the first lockdown
- They also prioritised developing natural language processing algorithms to ascertain symptoms of long COVID for surveillance and monitoring in mental healthcare
- They have developed a unique natural language processing algorithm to identify recorded loneliness from routine mental healthcare records, which underpins several recent research outputs

DEMENTIA

ARC provides evidence-based guidance on how those living with dementia can stay well during the pandemic

The IDEAL Project, led by NIHR ARC South West Peninsula's (ARC SWP) Dementia Theme Lead Professor Linda Clare, focused on people with dementia, who are particularly vulnerable to the psychological and social impacts of isolation and lockdown.

What did we do?

During the first lockdown, the team set up the IDEAL COVID-19 Dementia Initiative (IDEAL-CDI) and conducted telephone interviews with people with dementia and carers, including a number from from Black and Asian communities. Based on the responses the team produced online guidance and information leaflets for people living with dementia and family carers. The aim was to support those living in the community during the outbreak to manage the psychological and social impacts of social distancing, self-isolation and lockdown.

Next, in the INCLUDE COVID-19 study, they interviewed 173 people with dementia and 242 carers from the IDEAL cohort over the telephone to find out about their experiences during the pandemic and how they were coping.

People with dementia felt their abilities were declining more rapidly during the pandemic and were less satisfied with their lives.

For carers, the pandemic meant that there were fewer opportunities to gain support and respite. It was often difficult explaining social restrictions and lockdowns to the person with dementia.

Based on the evidence gathered in these studies and in the wider IDEAL programme, the team involved people with dementia and carers in co-producing the Living with Dementia toolkit to provide support at a time when people felt isolated.

What was the impact?

The team recommended maintaining and strengthening telephone support, improving public awareness, finding ways to provide respite care that meets social distancing requirements and making information content and delivery more culturally aware.

The guidance leaflets were distributed online through a network of organisations and formed part of the Alzheimer's Society support package via helplines and frontline staff. They were also distributed nationally through the ARC and AHSN networks. Initially prepared in English and Welsh, the leaflets were translated into 10 more languages by the Race Equality Foundation.

The Living with Dementia toolkit, originally envisaged as a source of support during the pandemic, has evolved into a long-lasting resource to provide hope and inspiration for people living with dementia and their families.

END OF LIFE CARE

ARC team conducted rapid research to understand the response of palliative and end of life care services to COVID-19

Early in the COVID-19 pandemic, it became clear that there was an urgent need to understand how palliative and end of life care services were responding, to understand the most effective treatments and to help improve care. In April 2020, a team of palliative and end of life care researchers at NIHR ARC South London (ARC SL) launched a collaborative national project, providing a rapid review of the palliative care response to the pandemic (CovPall).

What did we do?

The CovPall Study Documented how palliative care and hospice services responded, the challenges faced and their innovations. The team identified any unequal access to care across settings, including care homes. The aim was to understand symptoms and problems faced by patients, how these changed over time, and what treatments and therapies worked best.

What was the impact?

The team's rapid research provided the first evidence of palliative care needs and response to treatment among people dying with COVID-19, and recommendations for palliative care and hospice services.

The team led a collaboration to produce factsheets for patients admitted to hospital with COVID-19 and their families. These were translated into 27 languages and have been downloaded more than 13,000 times in English and more than 1,000 times in other languages by patients, families and hospital staff in the UK and internationally.

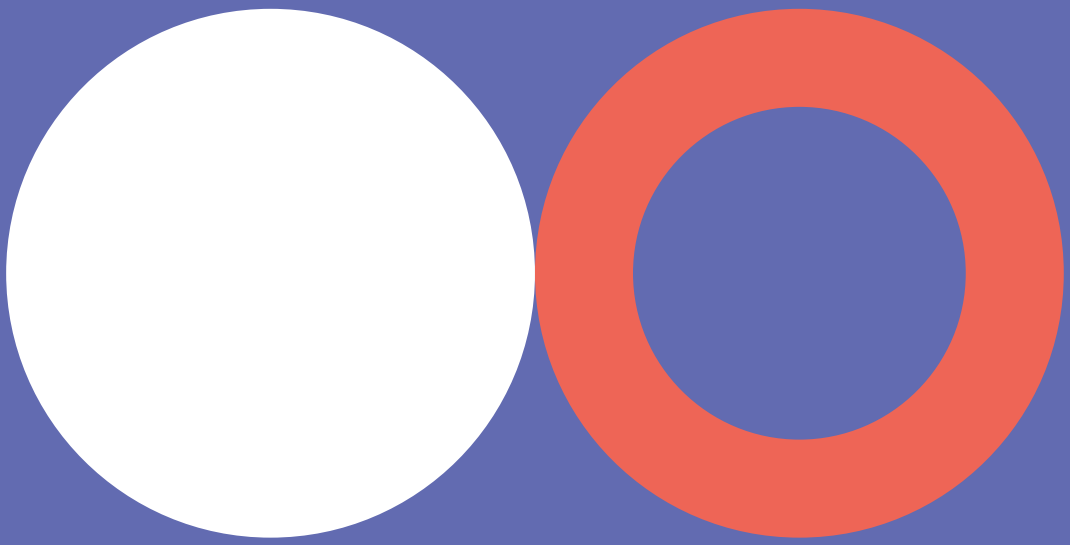
Health professionals said the factsheets have been invaluable: "Having something to give to patients in their language has been so helpful. They can then take their time reading this and come back to us if they have any questions."

The team also worked with NHS Improvement London to inform future responses to COVID-19 and ensure that palliative care is better integrated into NHS care.

With patients, families and clinicians, the team co-produced practical evidence-based guidance for managing breathlessness at home. This guidance was adopted by Hospice UK, the European Association for Palliative Care, the International Association of Gerontology and Geriatrics and the European Lung Foundation (more than 275,000 views).

CovPall was selected by HDR UK to accelerate use of data for vital COVID-19 research. It has led to two further studies CovPall Rehab and CovPall Care Homes.

CARE LEAVERS



ARC prepares guidance to support care leavers during the pandemic

NIHR ARC Kent, Surrey and Sussex (ARC KSS) conducted a national online survey of care leavers, to gather data on the impact of the pandemic and their support needs going forward. They then held online workshops to develop key messages and priorities.

What did we do?

ARC KSS carried out an online survey of 134 care leavers and then organised two rounds of online workshops with 10 care leavers. Mental health was identified as a key issue with:

- 70% of respondents reporting a deterioration of their mental health during lockdown
- 45% screening positive for possible clinical depression
- 43% for possible clinical anxiety

These workshops were used to draft key messages for services, informing how to provide relevant and adequate support to care leavers at this critical time. They were also used to develop support materials for other care leavers to guide them through the post-lockdown transition.

Care leavers were engaged throughout the research process. They advised on survey design and content and co-produced the key messages. They also advised on how to reach the people most in need of the materials.

The research showed that lockdown had affected care leavers' daily lives, wellbeing, mental and physical health and social connections. It also identified some specific challenges for disabled care leavers.

What was the impact?

ARC KSS staff and care leavers presented the findings of the research at events for local authority, health, Department for Education, care leavers, researchers, AHSN and voluntary sector staff.

The findings have also been shared through NHS England, Directors of Children's Services, NHS mental health trusts and the Department for Education National Adviser for Care Leavers. Finally, the resources and key messages have been shared with other care leavers across 88 local authorities. The key messages from the project have also influenced national policy through the National Care Review.

This work has opened new avenues of research, building on the positive working relations with care leavers and voluntary sector organisations.

WORKFORCE PLANNING

ARC Director leads development of Risk Reduction Framework for NHS and social care staff

Director of NIHR ARC East Midlands (ARC EM), Professor Kamlesh Khunti led an expert working group that developed a risk reduction framework for NHS staff at risk of greater levels of severity from COVID-19 infection.

What did we do?

The framework was developed at the request of NHS England and was aimed at helping employers to supplement risk assessment of their staff, particularly high risk and vulnerable groups, such as ethnic minority populations, to ensure staff safety. The framework was used in conjunction with NHS employers guidance as an aid to decision making. It could be incorporated into existing risk templates already in use in many health care settings.

ARC EM funded staff prepared the report, the risk assessment tool and the associated infographics, providing support for its dissemination.

The framework was published by the Faculty of Occupational Medicine and was endorsed by NHS England and NHS Improvement's Chief People Officer Prerana Issar. The framework has been featured in the Health Service Journal. It was accompanied by a Practice Pointer article published in the British Medical Journal, produced by ARC EM funded staff. The framework has also been published on the website of the National Institute for Health and Care Excellence, NHS England, and NHSemployers.org.

What was the impact?

It is estimated that over 70% of NHS staff have been assessed using the framework. Professor Khunti was asked to develop a similar risk assessment framework for care staff. He has also been asked to present his findings to a number of NHS organisations.

The development and use of the NHS Framework and Care Framework helped NHS organisations manage their staff resources in a time of acute pressure caused by the pandemic, as well as saving lives.

ARC develops guidelines for ongoing online therapeutic meetings

During the pandemic NIHR ARC Kent, Surrey and Sussex (ARC KSS) decided to look into how psychological therapy would adapt to online meetings.

What did we do?

COVID-19 prevented or obstructed normal face-to-face psychological therapeutic meetings. As a result many therapists switched to online meetings which changed the dynamics of the relationship between therapist and client. As the period of lockdowns ended ARC KSS funded a study looking at how therapy would function moving forward. The study named "Room or Zoom" involved online questionnaires of therapists, some interviews and some video analysis of sessions.

The findings reveal how online interventions can be effective with the right tools and capacities in place. 90% of participants who filled in the survey continued their practice online during the pandemic including covering assessments, counselling, mentoring or check-ins, specific therapies like Cognitive Behavioural Therapy (CBT), workshops on stress or anxiety, or play-based sessions. It involved practitioners working in mental health, physical health, education and social care.

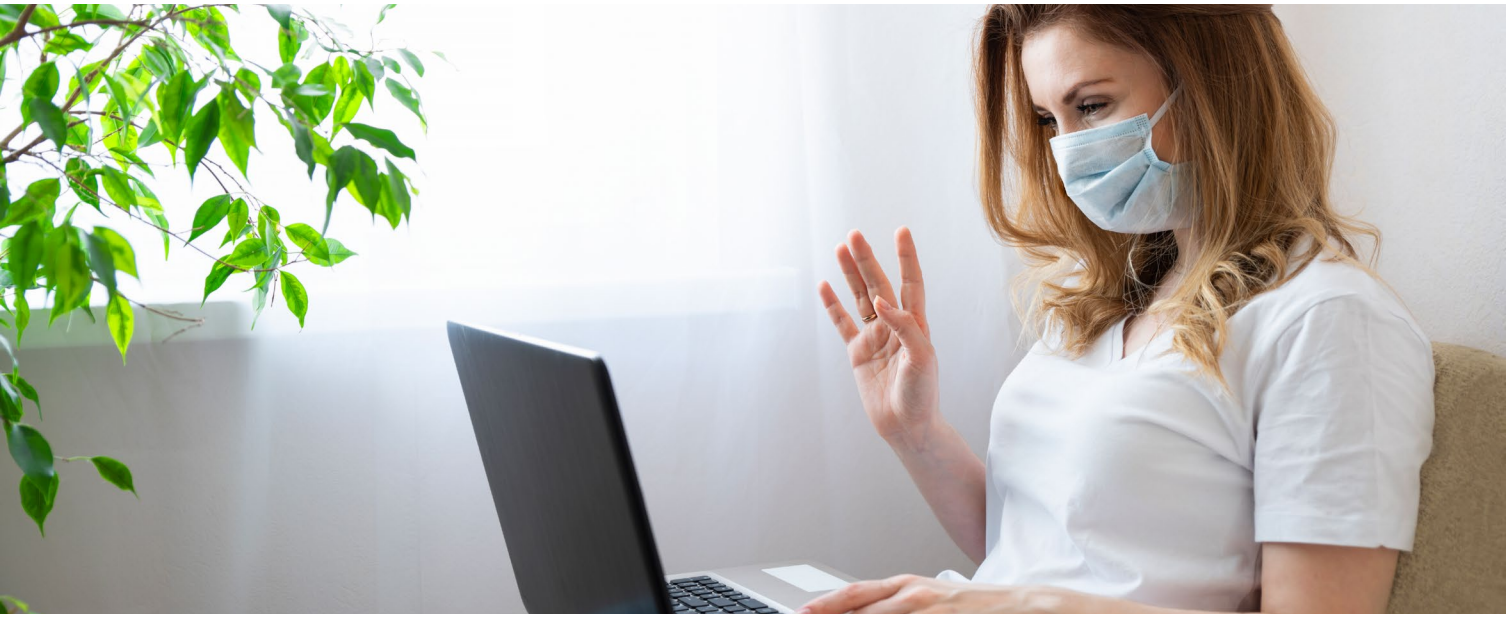
Almost half would continue with online meetings after the lifting of restrictions and a further third reported that they "may" do so.

What was the impact?

ARC KSS co-produced a set of guidelines aimed at practitioners in mental health, education and social care settings. The guidelines help practitioners and their organisations better support parents and their children accessing online services. They are broadly applicable to any service offering online therapeutic meetings, such as children and their families, or adults in a variety of settings.

The guidelines are being used by paediatricians via the paediatric neuropsychology research interest group. In addition, the ARC has been in contact with a technology company (Safe Space One) who are using the guidelines and study findings in the development of a new meeting platform for therapeutic interactions. The platform is being designed to foster attunement and to counter some of the difficulties identified, such as data security and privacy, accessibility and group meetings.

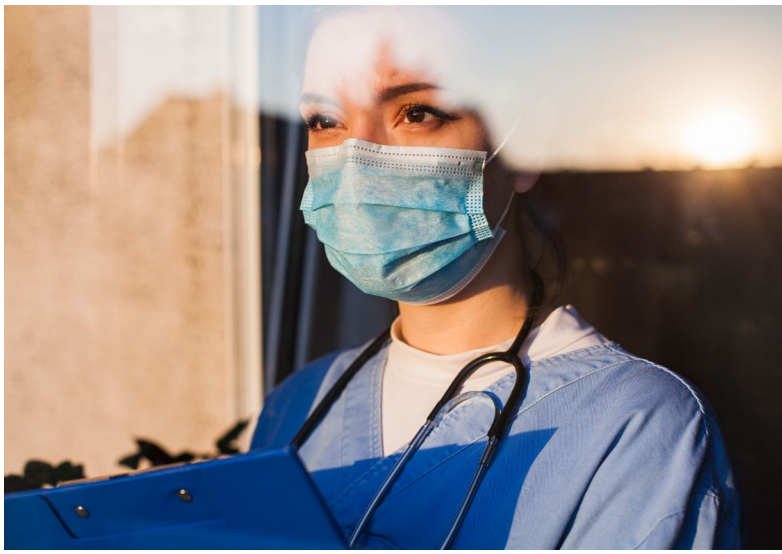
Finally, the study has led to additional research including a new survey to assess how practitioners are integrating online and in-person methods.



COLLABORATIONS

ARC creates operational research group

NIHR ARC South West Peninsula (ARC SWP) created a national collaboration group to coordinate operational research into COVID-19



What did we do?

As part of its role in leading the national ARC network in operational research (OR) ARC SWP has co-ordinated a series of network meetings across the UK. These online meetings began in April 2021 and focussed on the use of OR to address key issues in the pandemic. These included modelling demand and predicting ongoing workforce and bed capacity.

Initially the network engaged with the existing ARCs across England but the group quickly expanded to cover the rest of the UK. The group became known as the National COVID-19 Operational Research Network (N-CORN) and included all relevant professional staff interested in this area. The group has around 70 members who share resources using a Microsoft Teams site.

What was the impact?

So far, the group has held about 20 online meetings with presentations demonstrating the use of OR methods to address a wide range of issues arising from the pandemic. For example, recent N-CORN presentations have concentrated on modelling to help organise the vaccine roll-out for the UK population.

The benefits expertise sharing and enabling initiatives. Minutes and recordings of the presentations are made available after each meeting. Professor Martin Pitt, who leads the N-CORN group, helped lead the health stream at the OR Society conference and is planning its future development.

ARC coordinates London-wide network of applied health research centres and NHS clinical and transformation leads

The London Evaluation Cell, later named the London Strategic Research Health and Care Learning System, was established in June 2020, a collaboration of the three London ARCs and AHSNs (North Thames, Northwest London and South London) and the London regional NHS clinical and transformation leads. The cell was co-ordinated by NIHR ARC North Thames (ARC NT) and chaired by an NHS Chief Executive.

What did we do?

During the first wave of the pandemic, health and care services across London quickly innovated and adapted to provide care and to protect staff and patients.. The unique circumstances created the need for rapid implementation of new pathways and service models, and to provide services remotely. As a result, there was an urgent need to understand the extent to which major changes were positive and if there were any adverse consequences.

The cell had three aims, to:

- Develop evaluation priorities, including forming a list of research proposals, detailing the most significant health and care changes caused by COVID-19 in London, outlining how they could be evaluated to inform ongoing adoption and implementation of changes across the capital
- Develop a learning health system that allows service delivery to be informed by research findings, and timely capture, analysis and feedback of clinical, service and outcomes data. This helps drive continual improvements to practice, that can be applied across larger populations
- Create long-lasting partnerships between the collaborating ARCs, AHSNs and AHSCs in conjunction with NHS England

What was the impact?

The cell led to a collaboration and knowledge sharing network that didn't previously exist. It enabled clinical and academic health leaders to collectively identify and set evaluation priorities, rapidly translating knowledge into service provision across the regional care sector.

The cell has been renamed the London Strategic Research Health & Care Learning System. It has met all of its aims, establishing a range of collaborations.

ARC NT is carrying out a rapid synthesis of existing evidence regarding clinical and patient experiences of remote consultations during the pandemic. These have been completed and shared across the network group.

ARC sets up local collaboration group to coordinate research support

In response to the unique circumstances created by the pandemic, NIHR ARC Yorkshire and Humber (ARC Y & H) set up the Bradford COVID-19 Scientific Advisory Group (C-SAG). C-SAG included acute trusts, the local clinical commissioning group, the local authority and four regional higher education institutions.

What did we do?

Through co-production C-SAG was able to identify priorities and particular concerns. In particular, C-SAG supported the vaccination rollout as well as looking at its impact on NHS services, staff and patient groups.

C-SAG has built on and strengthened local relationships between researchers, the public, professionals and policy-makers. It has helped secure funding and shaped new areas of collaboration between policy-makers and researchers. As the pandemic has evolved C-SAG has developed a broader agenda. It now provides a longer term scientific advisory service to the area, to benefit the local health and social care community and population.

What was the impact?

C-SAG has:

- Informed a local mental health needs assessment and associated business cases
- Informed the work and activities of a district food strategy group
- Supported the development of a council plan
- Supported successful funding applications for children and young people
- Supported early and ongoing understanding of the impacts of the pandemic and the local track and trace system

C-SAG's work has featured on BBC Radio 4 and BBC Look North as well as other local media. It was included in written evidence submissions to House of Commons and House of Lords committees and the Parliamentary Office of Science and Technology.

Locally the impact of C-SAGs work has been acknowledged. Duncan Cooper, Consultant in Public Health for Bradford Council, said "Strategically, the whole body of research has provided a robust research arm to our response. It has been responsive to questions, drawn upon the local databases of Connected Bradford and the Born in Bradford cohort, and delivered reports in genuinely quick time – in fact, at lightning speed by academic standards. C-SAG has been the go-to resource on our doorstep."

The C-SAG also won a prestigious national Municipal Journal award for supporting local evidence-based responses to the pandemic.

VACCINE PROGRAMME

ARC researches equity of UK vaccine strategy

NIHR ARC Greater Manchester (ARC GM) studied the equitability of the UK's COVID-19 vaccination 2020-21 strategy rollout in the Greater Manchester area.

What did we do?

ARC GM investigated the equity in COVID-19 vaccine coverage in Greater Manchester, comparing and contrasting data with flu vaccine coverage from the Greater Manchester Care Record (GMCR). They found that ethnic inequalities in COVID-19 vaccine uptake are wider than those seen previously for flu vaccine, even amongst those recently vaccinated against flu.

These inequalities were highest amongst people with the greatest risk of severe COVID-19, namely older and more clinically vulnerable people, and those living in the most income-deprived areas.

ARC GM then worked with local communities to explore the experience of the roll out of the COVID-19 vaccination programme, identifying themes which could explain these inequalities. They included mistrust stemming from racism, experiences of culturally insensitive healthcare, and awareness of previous unethical healthcare research.

There were also concerns about potential unknown side-effects of COVID-19 vaccines compared with existing vaccines. This may have been heightened among people from minority ethnic groups because they were underrepresented in COVID- 19 vaccine trials.

What was the impact?

Insights so far propose the wider use of evidence-informed approaches, some of which have been used successfully during the pandemic in areas of GM.

These include text message and reminder telephone calls for vaccination appointments, home visits to advocate vaccination by culturally skilled volunteers and vaccination during home visits by health care professional or community health workers.

The research leads have also joined the COVID-IMPACT consortium managed by the British Heart Foundation (BHF) Data Science Centre / Health Data Research UK (HDR-UK) to build on the findings from the GMCR research using a national integrated dataset. This research project started in April 2022.

At the University of Manchester 'Making a Difference' Social Responsibility Awards, this work received two commendations in 'Outstanding benefit to society through research' and 'Outstanding public engagement initiative', along with receiving the 'Recognising Outstanding Engagement Award' at the NIHR Greater Manchester Clinical Research Network Evening of Excellence Awards, in November 2021.

ARC examines barriers to COVID-19 vaccination uptake in London

NIHR ARC North Thames (ARC NT) examined the barriers to uptake of the COVID-19 vaccination in London and interventions that could help address them. They found that lower uptake among Black ethnic groups in London was driven by trust issues, including mistrust of the vaccine itself.

What did we do?

For vaccinations to work, uptake must be high. However, London has historically lower uptake than other English regions. Researchers analysed uptake of the first vaccination dose across London during the programme's first six months (December 20–June 21) by vaccine priority cohorts and ethnicity.

The team explored barriers to vaccination for London residents and interventions at all levels to address these, including learning for future immunisation programmes.

They found stark differences in uptake, from 90% in white British compared to 57-65% in Black ethnic groups. Mistrust in Government institutions and information provided, together with access barriers (particularly for shift and zero hours contract workers, and for some ethnic or religious groups), were reported to drive such inequalities.

The success of the national vaccination programme depended on:

- Conceding local autonomy
- Investing in responsive and long-term partnerships to engender trust, through in-depth understanding of communities' beliefs
- Stakeholders working together at different levels, across traditional boundaries such as local authority boundaries
- One-to-one workplace conversations, out-of-hours question and answer sessions, support from trusted community champions and newspapers, and pop-up and outreach vaccination models were examples of the intensive interventions required

What was the impact?

To date findings have:

- Informed NICE Guidance Consultation on vaccine uptake in the general population
- Been reported to vaccine delivery teams locally and regionally, including London Vaccine Board, Joint NHSE/TCST London Screening Improvement Board, Beneficial Changes Network Quarterly Sharing Event and Improvement Directors Forum, informing ongoing vaccine delivery work
- Been circulated widely in the public domain, including in the Evening Standard and UCL News
- Been reported in a UCLPartners Evaluation Report for commissioning and policy development

This work is part of a wider Learning Health Systems approach, in partnership with our AHSN UCLPartners and NHS England and NHS Improvement.. It aims to support NHS and health and care organisations to rapidly make decisions backed by data and evidence, improve how services are delivered, and quickly monitor the impact so approaches can be adjusted as needed.

Exploring vaccination rates amongst pregnant women and children in deprived ethnic minority communities

An NIHR Northwest London (ARC NWL) co-produced project aimed to help vaccine services improve so more pregnant women and children could get vaccinated including against COVID.

What did we do?

Pregnant women and children are more likely to miss out on getting their routine vaccines if they are from an ethnic minority or live in a poorer area, which also means they are less likely to get their COVID vaccination.

In 2018 Dr Helen Skirrow of ARC NWL began a collaboration with the Mosaic Community Trust, funded by the NIHR Imperial BRC and the IMPRINT network. The Westminster based project looked at pregnancy vaccine rates and the reasons for low uptake. The researchers quickly discovered that the local population felt that their views had not been listened to.

In 2021 Dr Skirrow was awarded a personal NIHR Doctoral Fellowship. As part of this Mosaic Community Trust and Dr Skirrow are working with families to understand why not enough children are getting vaccinated in Northwest London.

Research into pregnancy vaccine uptake inequalities has continued, including on:

- Women's experiences of accessing pregnancy and infant vaccines during the pandemic
- Women's views on accepting COVID-19 pregnancy vaccines, funded by Imperial COVID-19 response fund and also the IMPRINT network

What was the impact?

On the ground, Mosaic's community health advocates through their collaboration with Dr Skirrow have:

- increased their vaccine knowledge
- Become vaccine advocates
- By being part of the research team, have learnt skills that are transferable to other professional and personal areas

Mosaic community health advocates have also been trained on how to facilitate focus groups which has allowed them to lead the ones connected to the project.

Dr Skirrow is also collaborating with the London School of Hygiene and Tropical Medicine and UK HSA. This collaboration has led to several peer reviewed research papers.

This research found that during the pandemic pregnant women from poorer neighbourhoods who also came from ethnic minority groups were more likely to have felt unsafe accessing vaccines for themselves and their babies. This means that inequalities in vaccine uptake may have been worsened by the pandemic.

The ARC is now collaborating with the Northwest London Integrated Care System which will lead to the development of a Maternity Equity and Equality Strategy to better support local under-served communities.

LONG COVID

ARC examines long COVID in £2.2m project

NIHR ARC West Midlands (ARC WM) researchers are playing a leading role in a major £2.2m research project funded by NIHR and UK Research. The project looks at how to improve understanding of the causes and symptoms of long COVID in non-hospitalised patients and assesses non-pharmaceutical therapies.

What did we do?

Around 1 in 10 people with COVID-19 continue to experience symptoms and impaired quality of life beyond 12 weeks. These symptoms can include extreme tiredness, shortness of breath, chest pain, brain fog, insomnia, mental health problems and changes to sense of smell or taste.

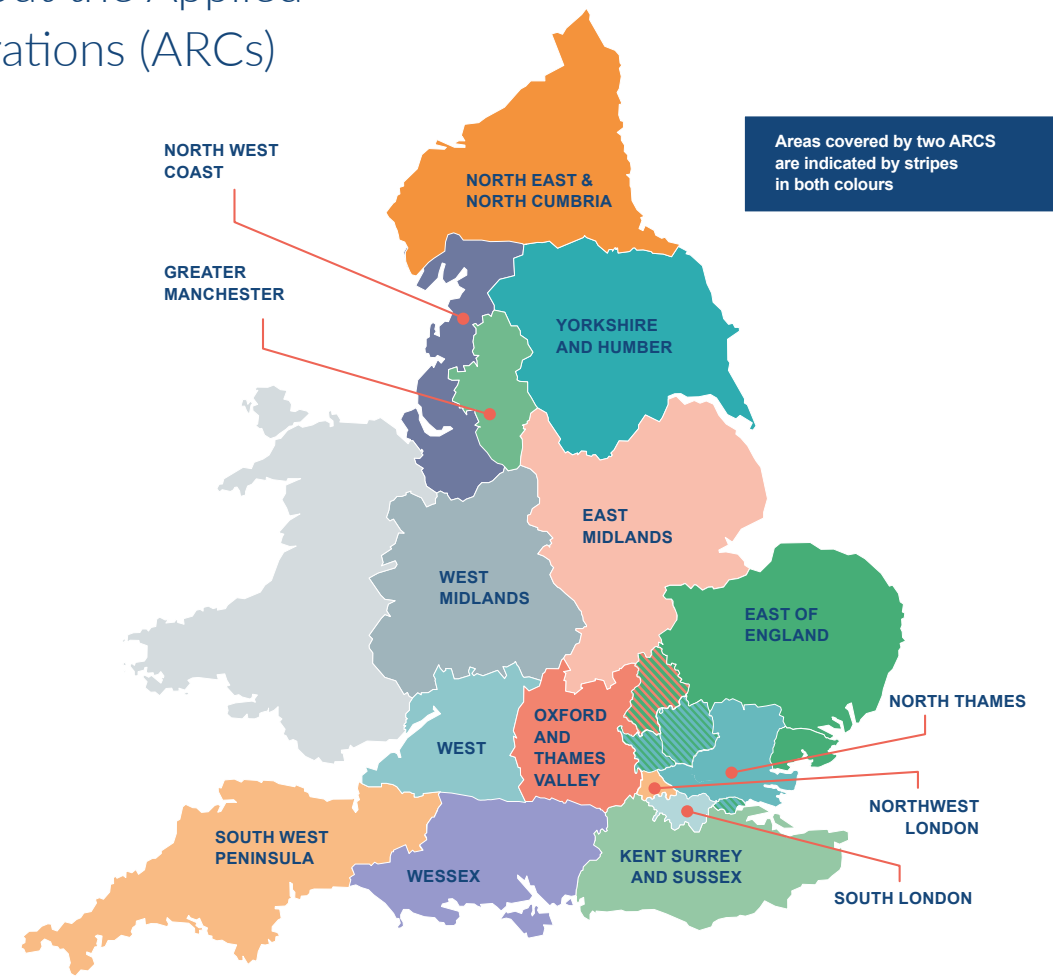
Through a partnership with the Clinical Practice Research Datalink using electronic GP records, researchers have identified thousands of non-hospitalised patients with long COVID.

The project assesses the use of a digital platform, called Atom5™ from med-tech company Aparito, which was configured for the study with patient input. The digital platform allows patients to self-report symptoms, quality of life and work capability.

What was the impact?

- A rapid review of publications reporting the symptoms, complications and potential management of long COVID was conducted early during the pandemic. The review informed the work of other research groups including the PC-COS team who are working on the development of a core outcome set for long COVID research
- The research team, with significant input from patient partners, developed the Symptom Burden QuestionnaireTM for long COVID (SBQTM), a patient-reported outcome measure that captures the presence and severity of symptoms of long COVID
- Since the SBQTM was in the British Medical Journal, it has been licensed for use in over 50 countries worldwide. The measure appears on the NIH Disaster Research Response Portal and is referenced by the World Health Organization (WHO)
- A retrospective matched cohort study was conducted using a UK-based primary care database, to determine which symptoms are associated with confirmed SARS CoV-2 infection beyond 12 weeks in non-hospitalised adults
- An Atom5TM digital platform which included the SBQTM was developed in conjunction with Aparito. This platform will be used in a feasibility study of non-pharmaceutical interventions

Find out more about the Applied Research Collaborations (ARCs)



NIHR ARC Scheme	www.nihr.ac.uk/explore-nihr/support/collaborating-in-applied-health-research.htm
NIHR ARC East of England	www.arc-eoe.nihr.ac.uk
NIHR ARC East Midlands	www.arc-em.nihr.ac.uk
NIHR ARC Greater Manchester	www.arc-gm.nihr.ac.uk
NIHR ARC Kent Surrey and Sussex	www.arc-kss.nihr.ac.uk
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NIHR ARC South West Peninsula	www.arc-swp.nihr.ac.uk
NIHR ARC Wessex	www.arc-wx.nihr.ac.uk
NIHR ARC West	www.arc-w.nihr.ac.uk/
NIHR ARC West Midlands	www.warwick.ac.uk/fac/sci/med/about/centres/arc-wm/
NIHR ARC Yorkshire & Humber	www.arc-yh.nihr.ac.uk/

Project contacts

Unlocking the value of health data during a pandemic: OpenSAFELY

Project contact: Paula Wray (paula.wray@phc.oxford.ac.uk)

Further information: https://www.arc-oxtv.nihr.ac.uk/news/unlocking-the-value-of-health-data-in-the-midst-of-a-pandemic-opensafely

Modelling demand and capacity for NHS Trusts in the South West

Project contact: David Walker (d.c.walker@exeter.ac.uk)

Further information: https://arc-swp.nihr.ac.uk/research/projects/modelling-sw-demand-and-capacity/

The Place-Based Longitudinal Data Resource (PLDR)

Project contact: Benjamin Barr (benbarr@liverpool.ac.uk)

Further information: https://arc-nwc.nihr.ac.uk/resources/the-place-based-longitudinal-data-resource-pldr/

GOLD Command

Project contact: Derryn Lovett (d.lovett@imperial.ac.uk)

Further information: https://www.arc-nwl.nihr.ac.uk/research/information-and-intelligence

Predicting Patient Deterioration Risks in COMMunities (PPDRCOMM)

Project contact: arcwessex@soton.ac.uk

Further information: https://www.arc-wx.nihr.ac.uk/research-areas-list/completed%3A-predicting-patient-deterioration-risks-in-communities

Rapid response service

Project contact: Zoe Trinder-Widdess (zoe.trinder-widdess@bristol.ac.uk)

Further information: https://arc-w.nihr.ac.uk/covid-19/

Citizens' Juries

Project contact: Sue Wood (sue.wood@healthinnovationmanchester.com)

Further information: https://arc-gm.nihr.ac.uk/media/Resources/ARC/Digital%20Health/Citizen%20Juries/12621_NIHR_Juries_Report_ELECTRONIC.pdf

COVID-19: Supporting Parents, Adolescents and Children during Epidemics (Co-SPACE)

Project contact: Paula Wray (paula.wray@phc.ox.ac.uk)

Further information: https://www.psy.ox.ac.uk/research/topic-research-group/supporting-parents-adolescents-and-children-during-epidemics

NIHR ARC East of England (ARC EoE) provides COVID-19 focused support for care homes

Project contact: arcoffice@cpft.nhs.uk

Further information: https://arc-eoe.nihr.ac.uk/ageing-and-multi-morbidity/arcs-response-covid-19-care-homes-research

The CONDOR Study

Project contact: Anne-Marie Brennan (a-m.brennan@warwick.ac.uk)

Further information: https://www.condor-platform.org/

Impact of COVID-19 on health inequalities

Project contact: ARCNENC@cntw.nhs.uk

Further information: https://arc-nenc.nihr.ac.uk/news/new-report-reveals-impact-of-covid-19-on-the-norths-health-and-economy/

ARC specialises in looking at impact of COVID-19 on BAME communities

Project contact: Kamlesh Khunti (kk22@le.ac.uk)

Further information: https://arc-em.nihr.ac.uk/about/centre-ethnic-health-research

Rapid COVID-19 intelligence to improve primary care response (RAPCI)

Project contact: Zoe Trinder-Widdess (zoe.trinder-widdess@bristol.ac.uk)

Further information: https://arc-w.nihr.ac.uk/research/projects/collecting-rapid-covid-19-intelligence-to-improve-primary-care-response/

NHS Check: Understanding and mitigating the psychosocial impact of COVID-19 on NHS staff in England

Project contact: Danielle Lamb (d.lamb@ucl.ac.uk)

Further information: https://www.arc-nt.nihr.ac.uk/research/projects/nhs-check/

Investigating the impact of COVID-19 on mental health services using informatics

Project contact: Jane Stafford (jane.stafford@kcl.ac.uk)

Further information: https://arc-sl.nihr.ac.uk/research-and-implementation/our-research-methods/investigating-impact-covid-19-mental-health

IDEAL: Improving the experience of dementia and enhancing active life

Project contact: David Walker (d.c.walker@exeter.ac.uk)

Further information: https://www.idealproject.org.uk/

Rapid evaluation of the COVID-19 pandemic response in palliative and end of life care (CovPall)

Project contact: Jane Stafford (jane.stafford@kcl.ac.uk)

Further information: https://arc-sl.nihr.ac.uk/research-and-implementation/our-research-areas/palliative-and-end-life-care/rapid-evaluation-covid

Resources launched to help support care leavers

Project contact: ARCKSSCommunications@spft.nhs.uk

Further information: https://arc-kss.nihr.ac.uk/news/resources-launched-to-support-care-leavers

Risk reduction framework for NHS staff at risk of COVID-19 infection

Project contact: Kamlesh Khunti (kk22@le.ac.uk)

Further information: https://arc-em.nihr.ac.uk/clahrcs-store/risk-reduction-framework-nhs-staff-risk-covid-19-infection

Zoom or room? Research-informed guidelines to support good communication in online therapeutic interactions

Project contact: ARCKSSCommunications@spft.nhs.uk

Further information: https://arc-kss.nihr.ac.uk/learning-and-development/research-week/previous-research-weeks/research-week-2021/101-poster-14-zoom-or-room/file

NIHR ARC South West Peninsula (ARC SWP) created a national collaboration group to coordinate operational research into COVID-19

Project contact: David Walker (d.c.walker@exeter.ac.uk)

Further information: https://arc-swp.nihr.ac.uk/news/n-corn-covid-19/

London Strategic Research Health and Care Learning System

Project contact: Susie Edwards (Susie.edwards@ucl.ac.uk)

Further information: https://www.arc-nt.nihr.ac.uk/research/projects/london-strategic-research-health-and-care-learning-system/

Bradford District COVID-19 Scientific Advisory Group (C-SAG)

Project contact: (YHARC@bthft.nhs.uk)

Further Information: https://www.arc-yh.nihr.ac.uk/what-we-do/covid-19-response

Understanding Community Experiences in Greater Manchester during the COVID-19 pandemic and exploring inequalities in the COVID-19 vaccination programme

Project contact: Mike Spence (mike.spence@healthinnovationmanchester.com)

Further information: https://arc-gm.nihr.ac.uk/projects/understanding-experiences-GM-covid-vaccination-programme

Tackling Barriers to COVID-19 Vaccine Uptake in London

Project contact: Susie Edwards (Susie.edwards@ucl.ac.uk)

Further information: https://www.arc-nt.nihr.ac.uk/research/projects/tackling-barriers-to-covid-19-vaccine-uptake-in-london/

Tackling Concerns about COVID-19 Vaccines

Project contact: Ganesh Sathyamoorthy (g.sathyamoorthy@imperial.ac.uk)

Further information: https://www.arc-nwl.nihr.ac.uk/research/covid-19/tackling-concerns-covid-19-vaccines

Symptoms, complications and management of long COVID: a review

Project contact: Anne-Marie Brennan (a-m.brennan@warwick.ac.uk)

Further information: https://research.birmingham.ac.uk/en/publications/symptoms-complications-and-management-of-long-covid-a-review

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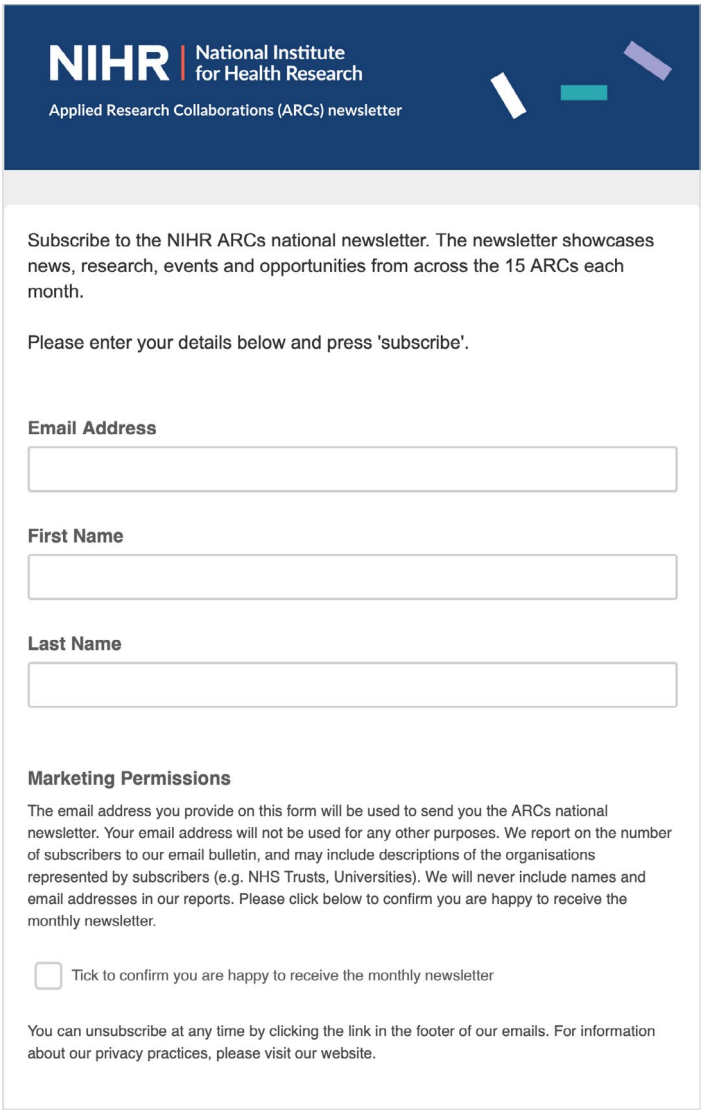

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