# Social Sciences/COVID-19

In response to the COVID-19 pandemic, the Liverpool academic community has come together to form a partnership, supported by the NIHR Health Protection Research Unit in Emerging and Zoonotic Infections (HPRU-EZI) and the Centre of Excellence in Infectious Diseases Research (CEIDR). To build on the substantial external grant funding which Liverpool investigators have already attracted, the partnership established an initial Strategic Research Fund of £1.1M, through the support of UoL (£400K), Alder Hey Children's Hospital (£300K), CEIDR Innovations (£250K) and HPRU-EZI (£150K). From this fund, a Social Science research programme has been funded, focused on these areas:

- Covid-Liv Cohort Study: The psychological and social impact of COVID-19
- Understanding choice, control and risk in public and community responses to the COVID--19 epidemic across the health divide to inform public health strategies in UK and Malawi
- Rapid and responsive development of support materials for health and social care workers in an unprecedented public health emergency
- Distortion of Health and Social Care Systems
- Responding to the COVID-19 economic (after)shocks: Developing learning and resources to strengthen the resilience of the Liverpool City Region economy
- Generating actionable evidence for containing the spread of COVID-19 misinformation

The Social Science/COVID-19 (SSCOVID) programme projects are designed to answer key questions for our population, health and care services, communities, businesses and the wider economy, while also drawing on key international comparisons. They have been chosen as important areas for study because they concentrate on key aspects of COVID-19 that affect our daily lives, health care delivery and the wider regional economy. They draw together expertise to complement and link with biomedical-focused research. A SSCOVID leadership group has been created to develop collaboration across project areas. It is enabling learning across the programme, and linking with other relevant partners across the Cheshire and Merseyside region. If you would like to find out more about any of the project areas listed above, please find full abstract details below, along with contact details.

**Area A:** **Covid-Liv Cohort Study: The Psychological and Social Impact of Covid 19.**

**PIs:** **Kate Bennett (kmb@liverpool.ac.uk)**
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Our city region has some of the most disadvantaged neighbourhoods in the country and so is subject to some of the greatest health and care inequalities. To date there has been no research into the psychological, social and community impact of Covid-19 in the Liverpool City Region (LCR) with a direct focus on health inequalities and neighbourhood disadvantage.

**Aim**: To understand the psychological and social impact of COVID-19 on household members across a representative range of neighbourhoods within LCR.

**Objectives**:

1. To assess the impacts of COVID 19, including differences between those who contract and who do not contract Covid-19, by neighbourhood deprivation.
2. To examine the impact of social support on individual wellbeing
3. To assess changes in loneliness over time as a consequence of COVID 19
4. To examine how tolerance of uncertainty influences individual wellbeing
5. To examine the individual, community and societal factors which promote or hinder resilience at an individual and household level
6. To examine the impact of household structure on individual wellbeing and resilience.

**Methods:**

We will sample the neighbourhoods within LCR included in the NIHR CLAHRC NWC Household Health Surveys, contacting those participants who indicated that they would welcome further contact about applied health research. This will enable us to meaningfully explore the role of disadvantage on psychological, social and health behaviour responses during this crisis. Using online or telephone methods, we will survey adults at 3 time points - Week 1, Week 6, Week 12, aligning with the Covid-Liv Virology to provide nuanced bio-psychosocial data. Unique and household identifiers will enable the linkage of this survey to the original NIHR CLAHRC NWC Household Health Survey responses as well as the biological samples collected by Covid-Liv.

**Area B:** **Perception and impacts of pandemic risk at three levels in the region: Household, Community and Organisations, particularly among less privileged communities; and overseas in Sub-Saharan Africa (Malawi and Cameroon).**

**PIs:** **Dr Nicola Desmond (nicola.desmond@lstmed.ac.uk)**
**Prof Mark Gabbay (mbg@liverpool.ac.uk)**

We will collect qualitative data from purposively sampled households participating in the COVID-LIV main project who are providing data to Area A (Bennett and Corcoran et al), Communities through Public Advisors and Community activist residents of our sample areas and associations they introduce us to as key actors, and from key local employers (and linked with Area D- health and social care providers- also key local employers).
Our focus is on Risk in the Pandemic and its interplay with socio-economic environments and lived realities. Thus we will be asking in semi-structured interviews with household informants about perceptions of Risk, reactions to that risk, barriers to acting on advice, attitudes and implications as well as needs and hopes for the future. Our community interviews will focus on how risk has altered activity behaviour and structures within the community- social structures, support structures, interventions etc. With employers we will focus on risk reduction, impacts on employees and the organisations themselves. We will undertake a second wave of interviews with household and community informants where we will offer the opportunity to explore further, experiences of risk and the impact of COVID19 and social distancing and social isolation measures using photographs taken by the respondent to highlight issues of importance to them in relation to COVID risk. We will only undertake one round of Organisation interviews. The work in Africa will be with existing embedded community researchers using online/mobile surveys linked to photo-elicitation highlighting concerns and worries and where risk sits within their priorities such as food security and work/income.

Area B has a sub-study focusing on COVID Risk within the Liverpool Muslim community. This will use qualitative semi-structured interviews and focus groups to explore cultural, social and religious beliefs and practices and other elements within the community relevant to the pandemic and risk of infection and its consequences.

**Area C:** **Rapid and responsive development of support materials for health and social care workers in an unprecedented public health emergency**

***Testimonies of Care in the Context of Covid-19: meditations on medical and healthcare work at the Royal Liverpool University Hospital***

**PI:** **Ciara Kierans (ciarak@liverpool.ac.uk)**

Covid-19 has placed profound pressures on staff involved in front-line healthcare delivery, in terms of the provision of appropriate and timely care, but also in terms of the material and organisational preparedness for such care. This includes, among other things: technological and bureaucratic arrangements, changing protocols and guidelines, the availability of resources and equipment (test-kits, protective clothing etc.) as well as knowledge, technological and emotional and mental health support for staff working in stressful circumstances. Providing a record of such challenges is of critical concern, upon which lessons for future practice, care and response (including out with pandemic settings) will emerge. This project will work with healthcare staff at the Royal Liverpool University Hospital to generate narratives of care provision in the context of Covid-19. It will stand as a significant resource to aid reflective professional practice at a time when practitioners have little opportunity to do just that, as well as extending understandings of infrastructures of medical care during a time of crisis.

**Area C:** **Rapid and responsive development of support materials for health and social care workers in an unprecedented public health emergency**

***The impact of Covid 19 on front line community mental health staff focusing on risk perception and reduction: Community Mental Health Teams – Risks and Strategies***

**PI:** **Liz Perkins (lizp@liverpool.ac.uk)**

On Monday 16 March 2020 the UK government announced new actions to control COVID-19. These recommendations directly affected the entire UK population. The recommendations included the cessation of non-essential contact with others and all unnecessary travel; working from home where possible; the avoidance of pubs, clubs, theatres and other social venues, and social distancing when out in public spaces. Where individuals or anyone in their household recorded a high temperature or a cough they were required to isolate at home for 14 days.

The capacity of individuals to protect their health and adhere to social distancing, hygiene and self-isolation measures will reflect the current health divides and the adequacy of social and welfare systems in place to mitigate them. Those living in poverty with crowded households, limited access to amenities, and poor accommodation may be at greater risk of infection. Physical and mental health issues further increase the risk.

To date social science research on the impact of COVID has largely focused on older people, people admitted to ICUs and their family members and staff working in the NHS or Nursing Home settings. Less attention has been paid to staff working in the community or to those individuals with pre-existing mental health issues. The ability of people to work in the community has been profoundly affected by all the strategies in place to deal with COVID and in particular access to the wider health and social care infrastructure - social care and support service in both the statutory and voluntary sector have either closed or changed the nature of their provision.

This study seeks to explore the capacity of mental health teams to respond to the risk of Covid-19 by exploring their perception of risk and the strategies they have adopted to continue to provide a service to people in the community. It is envisaged that this study will produce evidence for future public health crises. The study will explore the impact on frontline community mental health staff of delivering a service to people with a mental health issue using in-depth interviews. In-depth interviews will be conducted with up to 20 community mental health team staff employed by Mersey Care NHS Trust.

**Area C: Rapid and responsive development of support materials for health and social care workers in an unprecedented public health emergency**

***Enhancing multidisciplinary clinical care for patients newly-diagnosed with cancer during the COVID-19 pandemic by understanding their psychological and communication needs***

**PI: Gemma Cherry (gcherry@liverpool.ac.uk)**

To assess and explore the psychological impact of COVID-19 on patients newly-diagnosed with cancer, and develop a better understanding of their unmet psychological and communication needs, so as to rapidly inform short- to medium-term improvements to their care by multi-disciplinary teams.

To assess immediate psychological and communication need in patients newly diagnosed with cancer and propose rapid improvements to their clinical care by multidisciplinary teams

To explore cancer patients' and healthcare staff's views of care provision within the context of the COVID-19 pandemic.

To identify the proportion of patients who experience clinically-significant depression, anxiety and trauma symptoms at 3- and 6- months post-diagnosis of cancer, measured by the Hospital Anxiety and Depression Scale (HADS) and Impact of Events Scale-Revised (IES-R), respectively.

To identify demographic, clinical and/or psychosocial predictors of depression, anxiety and trauma symptoms at 3- and 6-months post-diagnosis of cancer

Adult patients aged ≥16 years attending a tertiary oncology centre with a new primary histological diagnosis of lung, haematological, breast, colorectal or prostate cancer and expected survival of 6 months or more.

Quantitative data will be analysed using exploratory statistics to investigate prevalence of, and correlates of, clinically-significant depression, anxiety and trauma symptoms immediately post-diagnosis. Trajectories of depression, anxiety and trauma symptoms will be estimated using growth curve analysis. We will estimate and predict individual patients' slope and intercept scores. We will then regress predictor variables onto intercept and slope scores for all outcomes to identify variables likely to determine trajectories of depression, anxiety and trauma symptoms. Semi-structured qualitative interviews with a purposive subsample of patients (approximate $n$ = 20-30) will explore patients' emotional state since diagnosis, perceptions of

psychological and communication need, their experiences of their treatment and care, any perceived changes to usual treatment pathways and services as a result of COVID-19, and views about how services could be improved to better meet the needs of patients with a recent diagnosis of cancer in the current context. A sample of healthcare professionals ($n$ = 15-20) will also be interviewed to explore their perceptions of patients' needs and their experiences of current service provision in this context. Accounts will be analysed qualitatively to explore the factors that influence perception of need and particularly identify unanticipated influences on the relationship between distress and perceived need. Analysis will be inductive and informed by the constant comparison approach. Quantitative and qualitative data will be triangulated and reflected back to clinical staff to inform rapid improvements to multidisciplinary care.

**Area D** **Optimising COVID-19 adaptations for ethical, equitable and quality delivery of essential health services and more resilient health care systems in Liverpool and Liberia**

**PI:** **Sally Theobald (Sally.Theobald@lstmed.ac.uk)**
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The COVID-19 pandemic has led to changes in how health services are provided in order to free up available resources needed to care for the high number of patients with COVID-19 requiring hospitalisation, and to protect patients and staff from unnecessary high-risk contact. Patients with ongoing health care needs, including patients with chronic diseases; pregnant women needing maternal health care; and patients needing chronic cancer care, need regular follow-up, including laboratory investigations and blood transfusions. These patients also have a higher risk of becoming severely unwell if infected with COVID-19. As a direct result of COVID-19 the health system has changed how routine essential services are provided, e.g. cohorting patients or using phone consultations, to reduce physical contact and mitigate infection risk. With a sudden change in how health services are delivered, there is the risk that some patients, especially those who are more vulnerable, may not be able to get the care they need when they need it most. West Africa experienced similar challenges during the 2014-2015 Ebola epidemic. This study hopes to learn from Liberia about how to continue providing care for all citizens, both those with COVID-19, and for patients who need to continue to receive routine essential health care.

Our research project brings together social science, bioethics and health systems researchers and applies health systems models to understand short- and long-term impacts of COVID-19 on routine delivery of health care systems in different settings (Liverpool and Liberia). We will explore the perspectives of health care workers employed directly in the COVID-19 response and those working in other key areas of the health system (for example governance stakeholders, laboratory scientists, and other health care staff). We will study: decision making processes for essential service delivery, including how these decisions are communicated and the impacts and implications for the health workforce during periods of change, adjustments that have been made to maintain routine service delivery and the effect of these on the quality and equity of essential health care service delivery (including laboratory and blood transfusion services). We will work closely with policy makers and front-line staff to develop useful, evidence-based guidance and resource documents to inform the health systems response and to support governance and accountability to promote equity in decision making.

This research responds directly to questions emerging from senior health workers in the response in Liverpool and Liberia and is designed to complement other areas in the overarching NIHR funded 'COVID-19 Liv' social science research programme which is led by Prof Sally Sheard at the University of Liverpool. This project (also known as Area D) emerged from Professor Miriam Taegtmeyer's clinical COVID-19 experience and brings together researchers from LSTMs Centres for Health Systems Strengthening and Capacity Research , the Institute of Population Health (University of Liverpool) and researchers from the Liberian Ministry of Health. Co-leads are Laura Dean, Imelda Bates, Lucy Frith (UoL), Karsor Kollie (MoH Liberia), Sally Theobald and Miriam Taegtmeyer together with Joanna Raven; Rachel Tolhurst; Tim Martineau; Kim Ozano; Russ Dacombe; Taghreed El-Hajj; Yan Ding; Natasha Price; Helen Piotrowski; Victoria Watson; Rozi McCollum; Shahreen Chowdhury, Abiola Aiyenigba and Rachel Anderson de Cuevas.

**Area E:** **Responding to the COVID-19 economic (after)shocks: Developing learning and resources to strengthen the resilience of the Liverpool City Region economy**

**PIs:** **Mark Boyle (Mark.Boyle@liverpool.ac.uk)**
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Uneven geographical development and regional inequalities in the UK will both impact and be impacted by COVID-19. Cities are not equal in their capacity to respond to COVID-19. If the UK government's 'levelling up' agenda is to survive, it is essential that the UKs core cities are equipped to optimise their responses.

Only part way through a long-term programme of post-industrial regeneration, and already challenged by poor health, health inequalities and multiple deprivation, Liverpool City Region is especially at risk from COVID-19 and its fall out. Liverpool City Region Combined Authority and local authorities are playing a critical frontline role in the local COVID-19 response and are now mobilising to remediate the immediate health crisis and its wider social, economic, and environmental aftershocks and to prepare the city-region to build back better. The efficacy of their actions will determine the extent to which Liverpool City Region can reduce risks, mitigate vulnerabilities and emerge with greater resilience. Its capacity to assemble intelligence will determine their efficacy. This project has been conceived as action research, intervening in a live process to support local authorities to generate intelligence to cipher COVID-19 in ways which limit damage, enable lessons to be learned, and energise transformation for resilience. Co-created, inter-sectoral, inter-institutional and interdisciplinary in nature, we will pool local intelligence to enhance the capacity of Liverpool City Region to more effectively tackle COVID-19 locally. We will codify,

compare and contrast emerging thinking in each area concerning a) the public economic problems COVID-19 is creating, b) the uneven consequences for different economic sectors, places, institutions, communities and social groups and c) the efficacy of interventions to date, d) how best to approach the work of repair and recovery.  Outputs will include policy briefs -https://www.liverpool.ac.uk/heseltine-institute/covid-19policybriefs/

**Area F:** **Generating actionable evidence for containing the spread of COVID-19 misinformation**

**PI:** **Mark Green (mgreen@liverpool.ac.uk)**

Media posts about stockpiling, acts of prejudice, sharing of 'fake news' and general worries about Covid-19 may illustrate the degree of fear sweeping the UK as the spread of Covid-19 continues. Covid-19 is unique as the first pandemic occurring during the proliferation of 'fake news'. The close connectivity of humans through technical social networks and constant news/information sources creates a dangerous disease ecology that epidemics can thrive in. However, we can use these systems and data opportunities to minimise the spread of misinformation through disrupting its influence and better support how our local populations deal with the burden of life during a pandemic. Our project seeks to harness novel data structures to study, understand and minimise the spread of misinformation relating to Covid-19. Specifically, we are using Twitter data to explore how: (i) the content of online discussion has evolved since 31st December 2019 especially in relation to key events (e.g. pre- and post-lockdown), (ii) identify emotions and wellbeing measured through posts and their trends, and (iii) analyse the network structure of Twitter posts to identify how misinformation and 'fake news' spread to identify leverage points to stem their flows. NIHR's Health Protection Research Unit in Emerging and Zoonotic Infections and Public Health England are project partners on the work and hope to use the findings to refine their public messages and information resources.