

COVID-19 FUNDED RESEARCH PROJECTS IN FOCUS: Indirect Health Impacts



Issue date

January 2023

Key findings:

Number of projects:

1,962

Funding investments
(known funding amounts):

\$316m

Top funder:

UKRI

Indirect health impacts

Introduction

To date, the COVID-19 pandemic has claimed over 6.6 million lives and devastated health systems across the globe [1, 2]. There have been more than 620 million known cases worldwide [1]. However, the true scale of the impact of COVID-19 remains underestimated, as worldwide indirect health impacts will continue to develop over time.

Public health interventions (PHIs) instituted to control the spread of COVID-19 led to disruptions in healthcare delivery, potentially worsening outcomes of other disease conditions, as witnessed in the 2014-2016 West Africa Ebola outbreaks [3]. Examples of the impacts include: fewer hospitalisations and less treatment for heart disease (with lower- and middle-income countries (LMICs) seeing an increase in deaths from heart disease); higher rates of death among those with diabetes, linked to routine care being disrupted (and in some deprived countries it has been harder than before to access insulin); disruptions to cancer care has been observed in multiple countries; NHS England waiting lists for elective care have grown, and the subsequent delayed treatments can increase preventable deaths as well as harming people's wellbeing; and, particularly in LMIC regions, there has been a reduction in families accessing immunisation services for common childhood illnesses, which might lead to future vaccine-preventable disease outbreaks [4]. There has also been a marked effect on activity levels, especially in older people [5]. Further, the wider negative socio-economic implications of lockdowns which exacerbate poverty, particularly in less-resourced countries, intersect with other social determinants of health to promote adverse disease outcomes.

Here, we present the scope of funded research activity focussed on the indirect health impacts of COVID-19, drawing on evidence from the January 2023 update of the Living Mapping Review (LMR) of COVID-19 funded research projects and the UKCDR/GLOPID-R COVID-19 Research Project Tracker.

Methodology

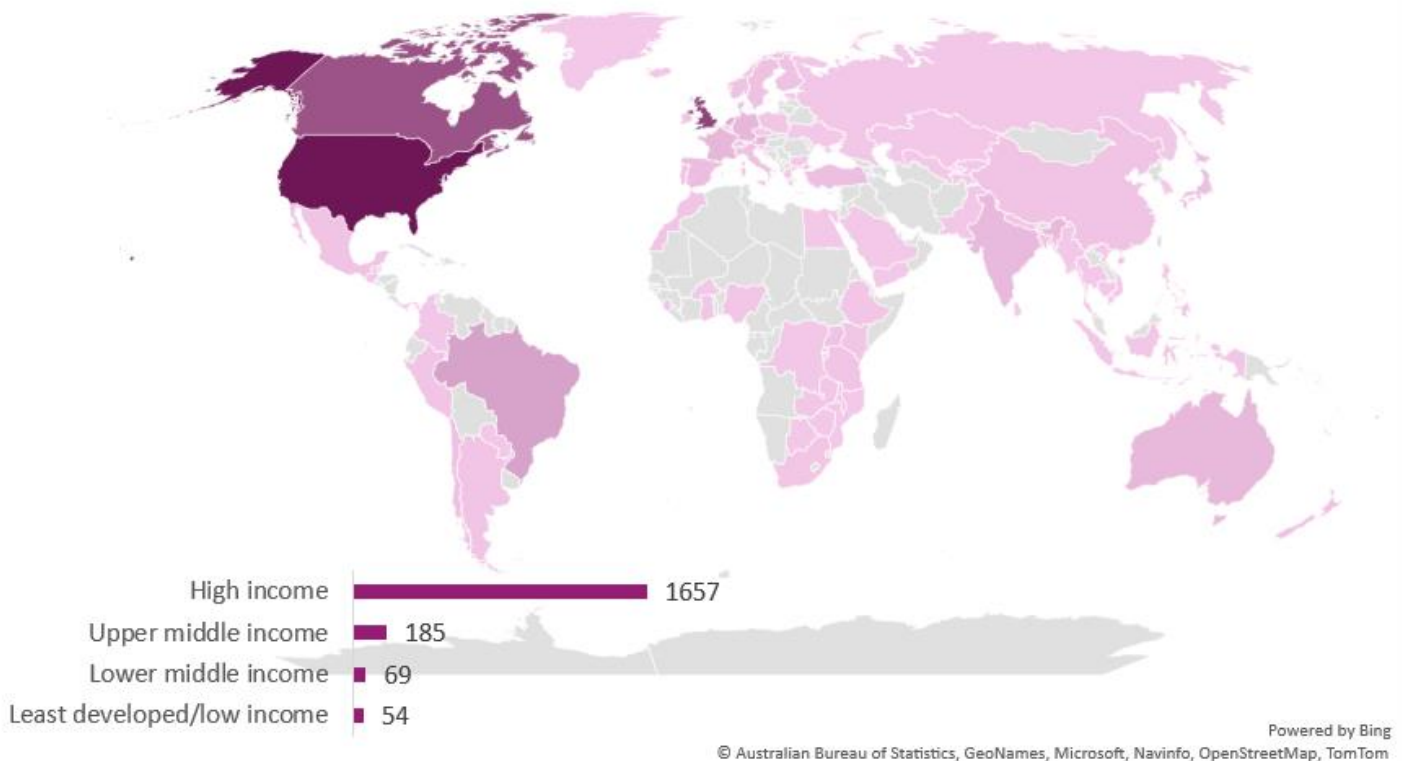
Descriptive and thematic analyses were conducted as outlined in the LMR study protocol. Projects focusing on indirect health impacts of COVID-19 were identified and coded as such. The identified projects include those assessing the disruptions of healthcare services (quality, access and utilisation), changes in health-related behaviours (e.g. diet, physical activity), neonatal, maternal and child health impacts, non-communicable diseases, other chronic disease conditions and mental health. As part of the analysis the following were determined: key funders; funding amounts; country distribution of projects; specific research focus (within indirect health impacts); and study populations.

Findings

Locations, funders and funding amounts

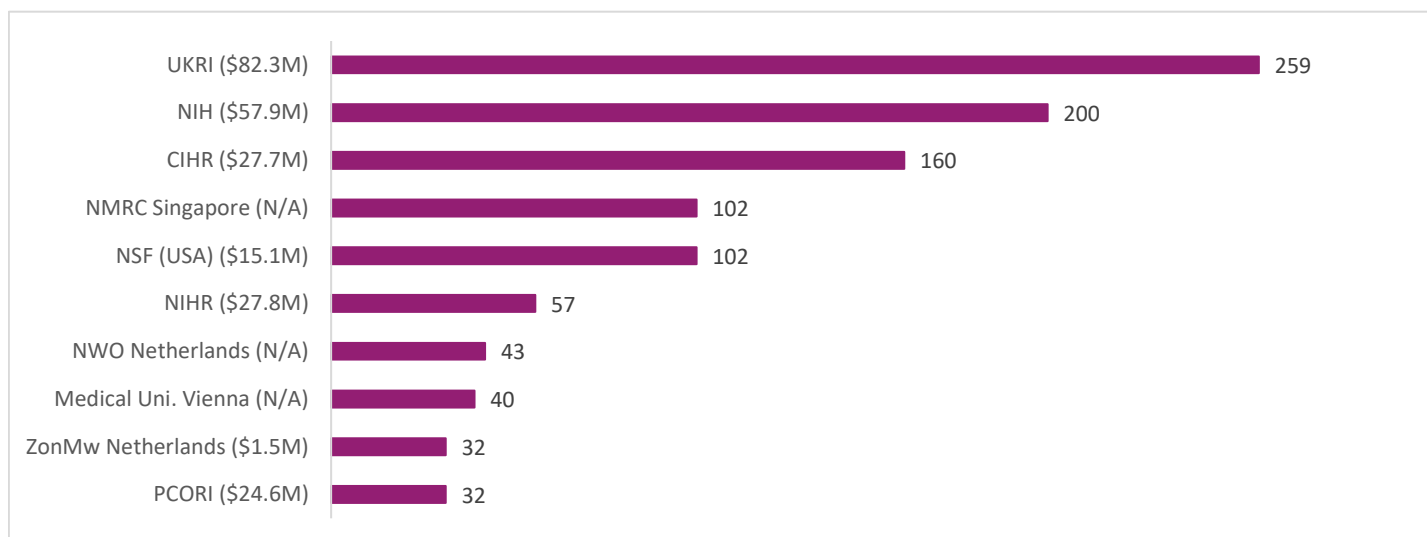
Research involved at least 83 countries; 37 of which are high-income countries (HICs) and 46 are low- or middle-income countries (LMICs). Despite this, only 290 projects (15%) took place in at least one LMIC (with 54 projects taking place in at least one least-developed country) whereas 1657 (84%) projects took place in at least one HIC (see Figure 1).

Figure 1: Locations of projects investigating COVID-19 variants



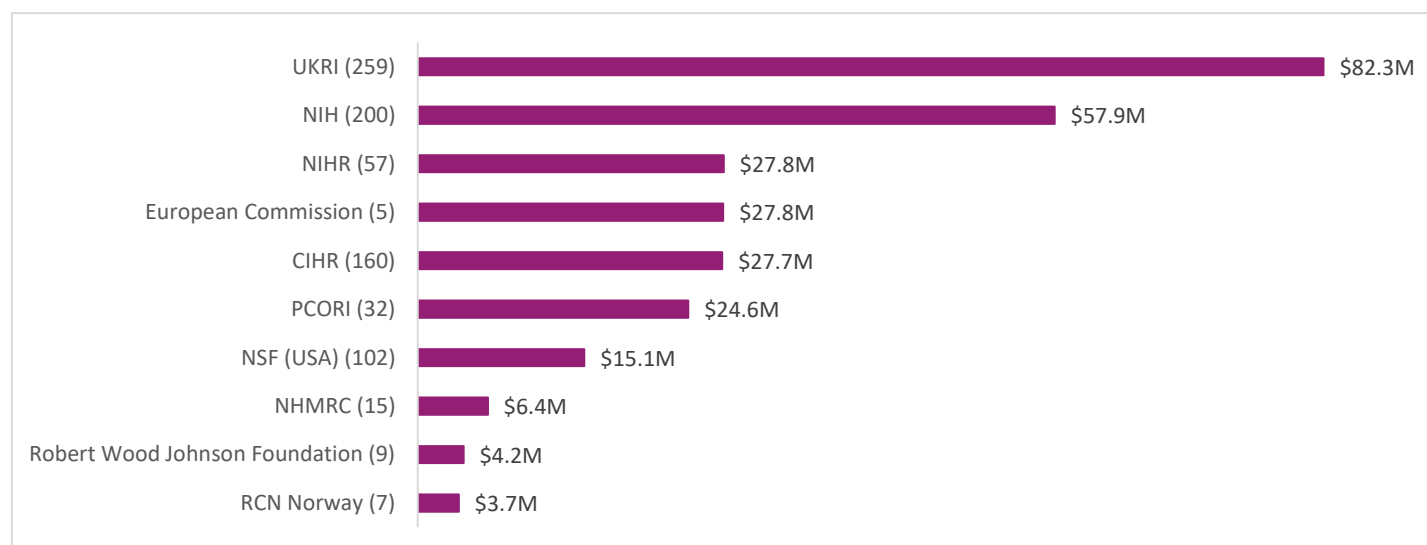
The 1962 projects focusing on indirect health impacts of COVID-19 were funded by at least 206 known funders. The largest number of projects have been funded by UK Research and Innovation (UKRI) (259 projects), National Institute for Health (200) and the Canadian Institutes of Health Research (CIHR) (160). The remaining top project funders can be seen in Figure 2. UKRI invested the most money into projects (where funding amount is known) with \$82.3m. The next highest known investor was NIH, who contributed \$57.9m in this area of research. A further list of funders contributed nearly \$28m each: NIHR; European Commission and CIHR. The remaining known funding amounts can be seen in Figure 3.

Figure 2: Top 10 research funders investing* in indirect health impact research (no. of projects)



**known funding amounts in brackets*

Figure 3: Top 10 research funders investing* in indirect health impact research (amount invested) (USD)



**number of projects in brackets*

Research focus and WHO research priorities

When coding projects against the WHO Research Roadmap priorities, 88 percent of projects investigating indirect health impacts were coded as “Social sciences in the outbreak response” (1717 projects). The next highest number was for “Clinical characterization and management” (230, 12%), followed by “Infection prevention and control, including health care workers’ protection” (110, 6%).

In terms of sub-priorities, 1115 projects were coded as N/A (i.e. even if they were within a WHO priority area, they were not within the sub-priority categories outlined by the Roadmap). The next highest numbers were within the areas of acceptance of and adherence to public health measures for COVID-19 prevention and control (381, 19% of all projects) and clinical care and health system approaches for supporting the physical health and psychosocial needs of those providing care for COVID-19 patients (149, 8%).

Across the research portfolio, significant attention was paid to the impact of the pandemic on cancer care (78 projects) and HIV care (55 projects). However, a huge area of research focused on mental health. 1316 projects were identified with a mental health focus, which represents 67 percent of the projects included in the analysis. Most of these projects were coded as “Social sciences in the outbreak response” (1275 projects, 97%). When further categorised against the WHO sub-priorities, most projects were categorised outside of them (i.e. as N/A). However, 340 (26%) were coded against acceptance of and adherence to public health measures for COVID-19 prevention and control, and 144 (11%) were coded against clinical care and health system approaches for supporting the physical health and psychosocial needs of those providing care for COVID-19 patients. UKRI funded the most projects (196) with a mental health focus and their investment was the highest at nearly \$71M. Figure 4 and Table 1 illustrate the above findings for all WHO priorities and the top six sub-priorities (in addition to those coded as N/A).

Figure 4: WHO priorities for all indirect health projects and mental health only

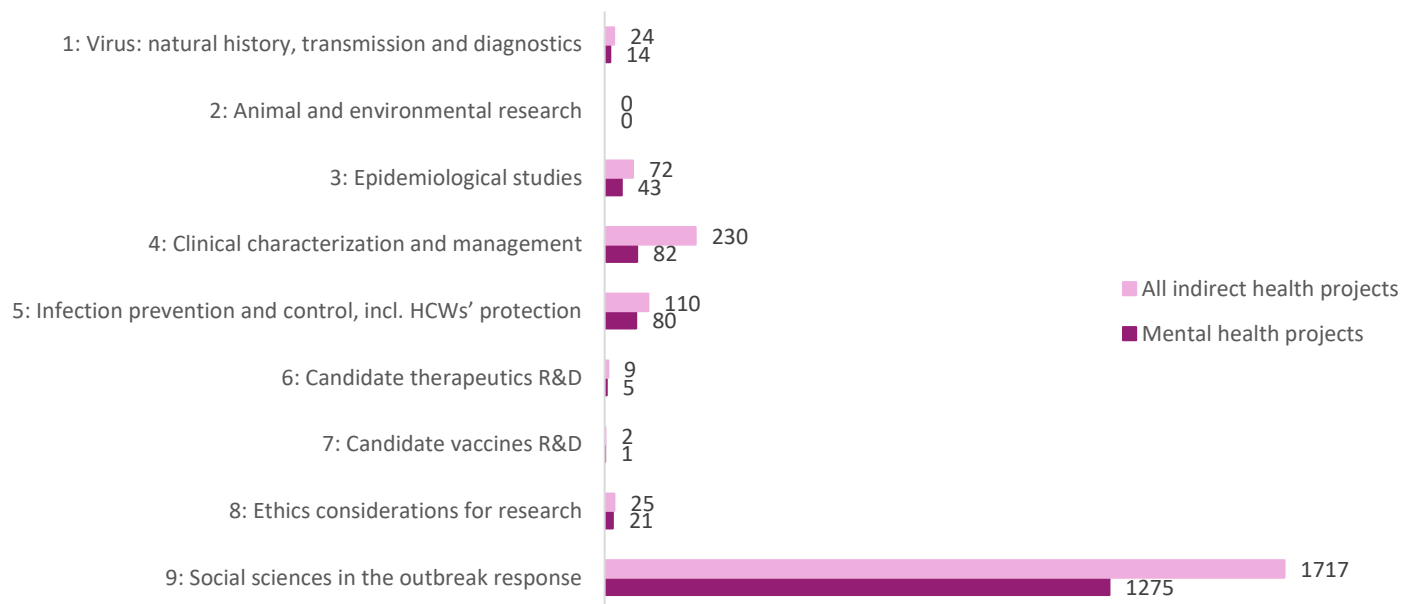


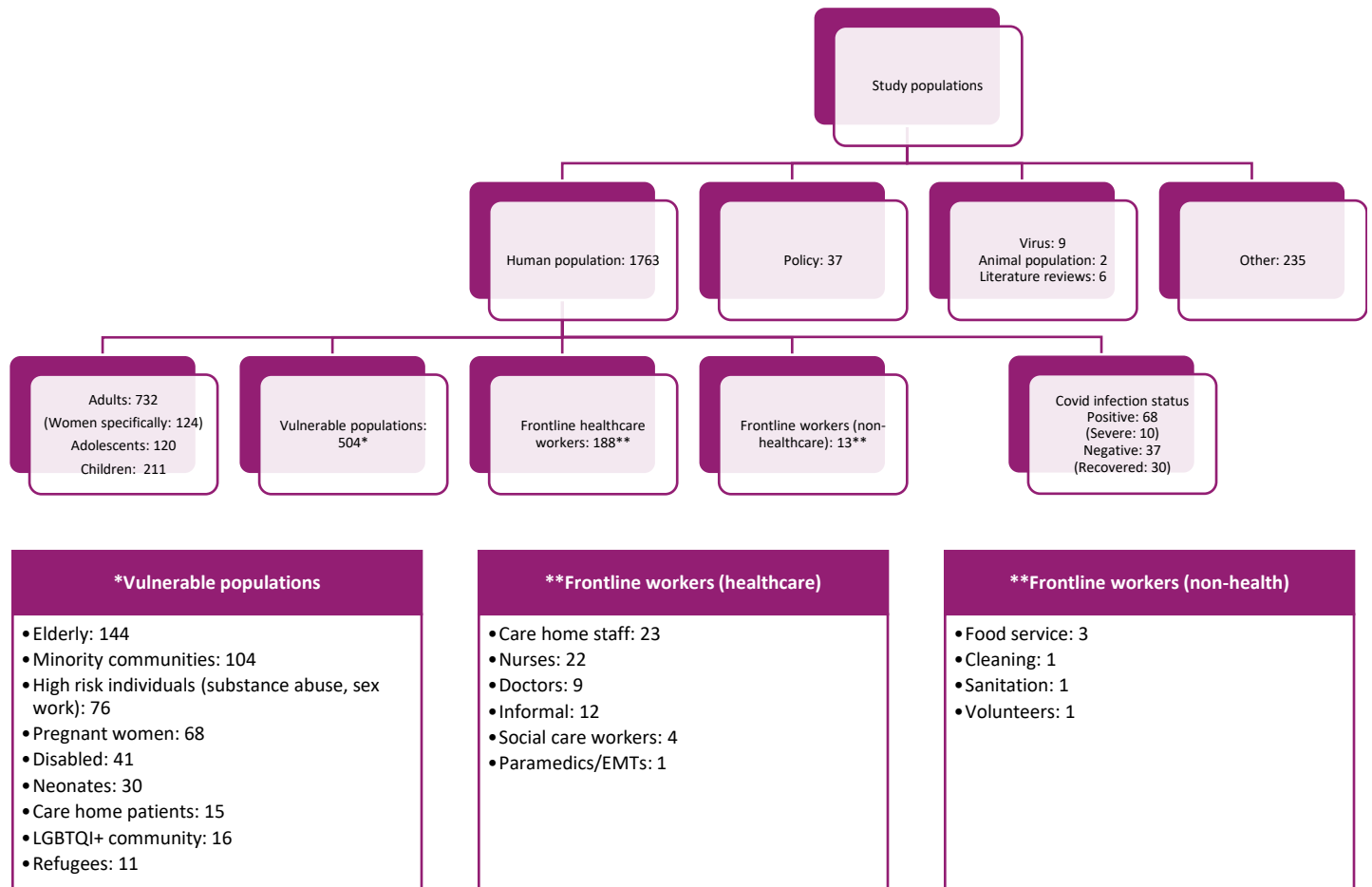
Table 1: Top six sub-priorities for all indirect health impact projects & mental health projects (& NA)

WHO sub-priority	Indirect health projects (all)	Indirect health projects: mental health focus
N/A	1115	683
9a: Effective approaches to promote acceptance, uptake, and adherence to public health measures for COVID-19, and how can secondary impacts be rapidly identified and mitigated?	381	340
9b: Relevant, acceptable and feasible approaches for supporting the physical health and psychosocial needs of those providing care for COVID-19 patients	149	144
4d: Improve processes of care, including early diagnosis, discharge criteria; Determine interventions that improve the clinical outcome of infected patients (Steroids, High flow oxygen therapy)	110	32
9c: Media and communication of COVID-19. Effective ways to address fear, anxieties, rumours and stigma, and improve public knowledge, awareness, and trust during the response	96	86
4b: Pathophysiology of COVID-19 infection	67	31
5d: Factors and methods influencing compliance with evidence-based IPC interventions during outbreak response	65	59

Study populations

The vast majority (1763, 90%) of projects studied indirect impacts of COVID-19 in human populations with most of the studies (where it was evident) involving adults (732, 37%) (see Figure 5). A quarter (504) of projects were coded against 'vulnerable populations' (mostly involving the following groups: elderly, minority communities, high-risk individuals and pregnant women). There were also a significant number of projects (188, 10%) interested in frontline healthcare workers.

Figure 5: Indirect health impact research projects classified using the study population categorisation system



Discussion and conclusion

In conclusion, the analysis of the data coded against indirect health impacts found that there is still limited representation of less-resourced countries in research projects, in line with previous versions of this tracker highlight. This represents a consistent gap in funded projects, which has been highlighted as a priority for research investment multiple times.

Mental health receives a lot of attention from research studies and such studies have helped to reveal how serious an issue mental health is for people across the world during the COVID-19 pandemic. WHO recently published that the “global prevalence of anxiety and depression increased by a massive 25%” during the first year of the pandemic and urged countries to improve the ways in which they support their populations’ mental health [6]. In the UK, research has found that those who previously struggled with their mental health have been impacted the worse and urgently need tailored support [7]. Research studies in this area will help countries to provide better support and services for populations’ mental health.

About the UKCDR/GloPID-R Tracker

The UKCDR/GLOPID-R COVID-19 Research Project Tracker (the Tracker) is a live open access database which categorises COVID-19 research activity funded around the world against the WHO research priorities outlined in the WHO Coordinated Research Roadmap. COVID CIRCLE has initiated a Living Mapping Review of these projects, published in Wellcome Open Research, to support funders and researchers in the achievement of a coherent response to this pandemic.

For more on the Tracker and our work on COVID-19, visit: ukcdr.org.uk/covid-circle This piece was developed by Chantel Jones, Adrian Bucher & Alice Norton.

Get in touch

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Notes

Limitations of data and findings: Study protocol is outlined in Living Mapping Review of COVID-19 funded research projects. Analysis was limited by:

- A lack of completeness of funding and/or qualitative data for some projects.
- Tracker data is more likely to be derived from UKCDR and/or GloPID-R funders.
- The absence of commercial research.

References

[1] World Health Organization, WHO COVID-19 dashboard. [online] World Health Organization. [cited 26 9 January 2023] Available at: <https://covid19.who.int>

[2] Gretchen B, Shubham S, Meredith L, John S. Challenges emerge for the US healthcare system as COVID-19 cases rise | McKinsey [Internet]. 2020 [cited 2020 Dec 9]. Available from: <https://www.mckinsey.com/industries/healthcare-systems-and-services/our-insights/challenges-emerge-for-the-ushealthcare-system-as-covid-19-cases-rise#>

[3] Ribacke KJB, Saulnier DD, Eriksson A, Schreeb J von. Effects of the West Africa Ebola virus disease on health-care utilization - A systematic review. *Front Public Heal* [Internet]. 2016 Oct 10 [cited 2020 Dec 9];4(OCT):222. Available from: www.frontiersin.org

[4] Hartmann-Boyce, J., 2022. (2022) Five ways the pandemic has affected routine medical care. [online] The Conversation. Available at: <https://theconversation.com/five-ways-the-pandemic-has-affected-routine-medical-care-184712> [Accessed 5th July 2022]

[5] Hunter, P., 2022. (2022) Summer 2022 saw thousands of excess deaths in England and Wales – here's why that might be. [online] The Conversation. Available at: <https://theconversation.com/summer-2022-saw-thousands-of-excess-deaths-in-england-and-wales-heres-why-that-might-be-189351> [Accessed 6th September 2022]

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[7] Mind (2021) Coronavirus: the consequences for mental health. Available at: <https://www.mind.org.uk/media/8962/the-consequences-of-coronavirus-for-mental-health-final-report.pdf>