COVID-19 FUNDED RESEARCH PROJECTS IN FOCUS

Key Findings:

Number of indirect health impacts projects:

746

Funding investments (known funding amounts):

$134m

Top funder:

NIH

Indirect health impacts

To date, the COVID-19 pandemic has claimed over a million lives and devastated health systems across the globe (1) (2). However, the true scale of the impact of this pandemic remains underestimated as a result of limited evidence on the indirect health impacts secondary to the global pandemic response. Public health interventions (PHIs) instituted to control the spread of COVID-19 have led to disruptions in healthcare delivery, potentially worsening outcomes of other disease conditions, as witnessed in the 2014-2016 West Africa Ebola outbreaks (3). Indeed, there have similarly been projections of devastating consequences for reproductive, maternal and child health and non-communicable diseases (4)(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 second 3-month 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 analysis were done as outlined in the LMR study protocol. Projects addressing indirect health impacts were identified and key funders, funding amounts country distribution of projects, specific research focus and study populations targeted were determined.
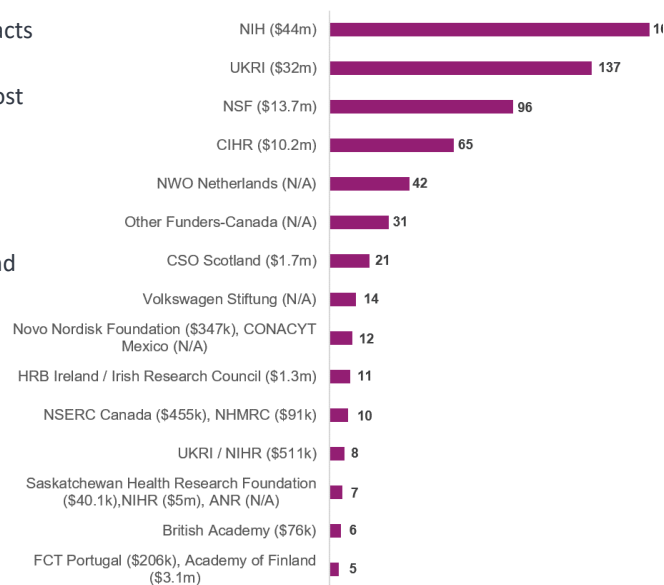
Findings

Locations, funders and funding amounts

The 746 projects focusing on indirect health impacts of COVID-19 were funded by 53 funders with an investment of at least $134m. NIH funded the most projects followed by UKRI and NSF as shown in Figure 1.

Research involved at least one of 55 countries including 13 Least Developed Countries (LDCs) and eight Low-and middle-income countries (LMICs). The majority of research projects were in High-income countries (HICs) as seen in Figure 2.

Figure 1: Funders of projects focusing on indirect health impacts (Funders of 5 or more projects shown)

Funder	Projects
NIH ($44m)	1●
UKRI ($32m)	137
NSF ($13.7m)	96
CIHR ($10.2m)	65
NWO Netherlands (N/A)	42
Other Funders-Canada (N/A)	31
CSO Scotland ($1.7m)	21
Volkswagen Stiftung (N/A)	14
Novo Nordisk Foundation ($347k), CONACYT Mexico (N/A)	12
HRB Ireland / Irish Research Council ($1.3m)	11
NSERC Canada ($455k), NHMRC ($91k)	10
UKRI / NIHR ($511k)	8
Saskatchewan Health Research Foundation ($40.1k),NIHR ($5m), ANR (N/A)	7
British Academy ($76k)	6
FCT Portugal ($206k), Academy of Finland ($3.1m)	5

*Known funding amounts included

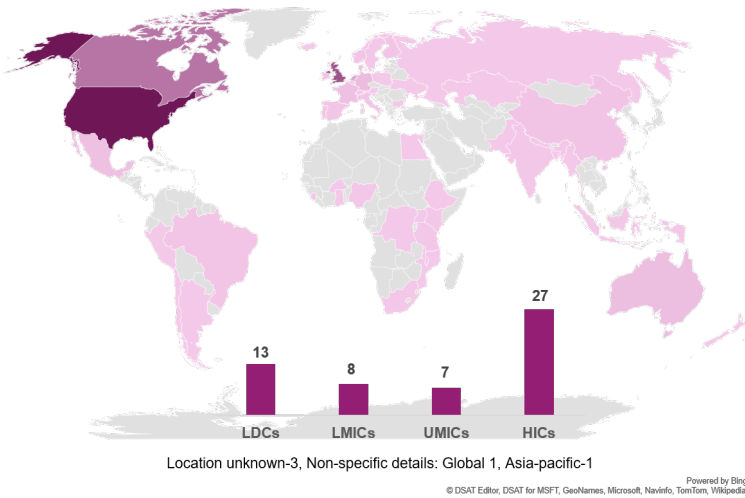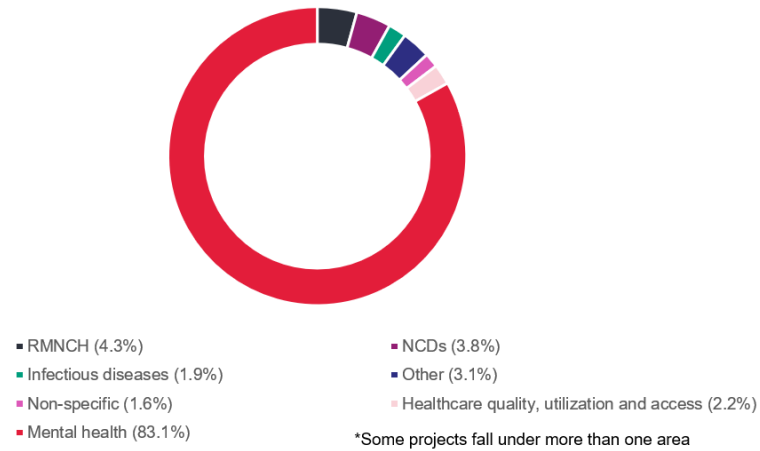Figure 2: Locations of projects focusing on indirect health impacts of COVID-19

Figure 3: Spectrum of projects focusing on indirect health impacts of COVID-19

Location unknown-3, Non-specific details: Global 1, Asia-pacific-1

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- RMNCH (4.3%)
- NCDs (3.8%)
- Infectious diseases (1.9%)
- Other (3.1%)
- Non-specific (1.6%)
- Healthcare quality, utilization and access (2.2%)
- Mental health (83.1%)

*Some projects fall under more than one area

Research focus and WHO research priorities

Most projects identified assess the mental health impacts of COVID-19 with fewer projects involving Reproductive Maternal Newborn and Child Health (RMNCH), Non-communicable diseases (NCDs) and infectious diseases as seen in Figure 3. Some projects assessed the general impact of the pandemic on healthcare quality, utilization and access whereas those classified as "other" included projects exploring health behaviour change such as changes to diet and physical activity. 84% of NCDs projects focussed on impacts on cancer care and impacts on HIV management was most often researched under infectious diseases.

Mental health projects were analysed in greater detail by categorising against the WHO priorities. Most of the projects fell within "social sciences in the outbreak response" as shown in Figure 4. When further categorised against the sub-priorities in this priority area (shortened forms used in Figure 5), most projects focussed on the secondary health impacts of public health interventions for COVID-19 prevention and control. The projects categorised under "N/A" fall outside the WHO sub-priorities under the broad social sciences priority area.

Study Populations

Over 90% of projects studied indirect impacts of COVID-19 in human populations with most of the studies involving adults as seen in Figure 6. Few projects involved children and other vulnerable populations including pregnant women, the disabled and the elderly. Similarly, only a few of projects involved frontline workers, COVID positive patients and recovered patients.

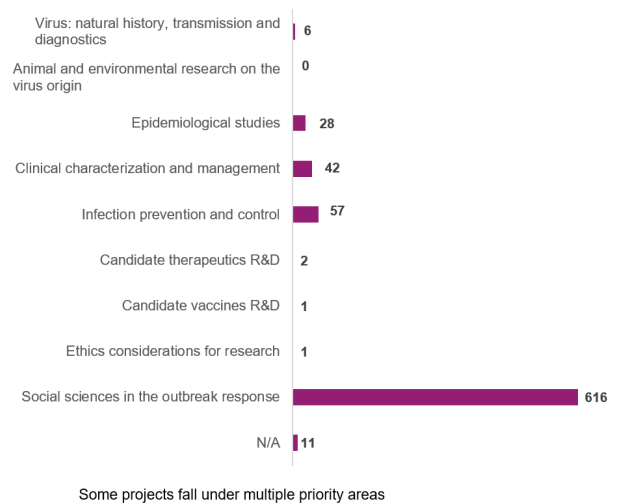Figure 4: Mental health projects categorised by WHO research priority areas

Some projects fall under multiple priority areas

Figure 5: Mental health projects falling under "social sciences in the outbreak response"
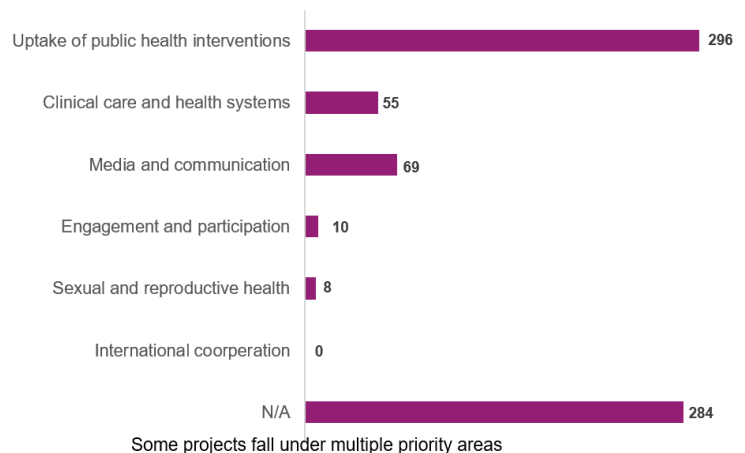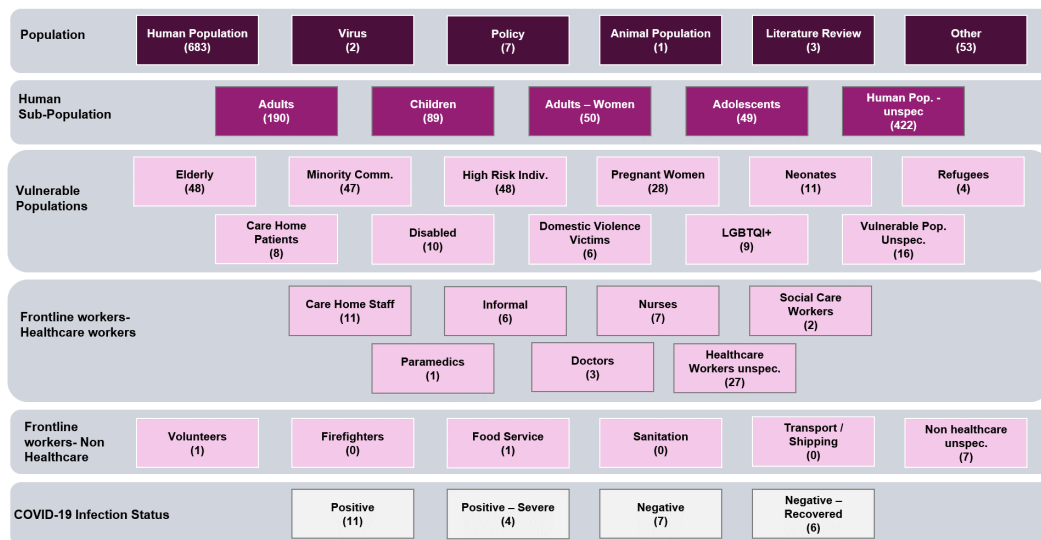

Some projects fall under multiple priority areas

Figure 6: COVID-19 research projects classified using study population categorisation system (number of projects indicated in brackets)

Population	Human Population (683)	Virus (2)	Policy (7)	Animal Population (1)	Literature Review (3)	Other (53)

Human Sub-Population	Adults (190)	Children (89)	Adults – Women (50)	Adolescents (49)	Human Pop. - unspec (422)

Vulnerable Populations	Elderly (48)	Minority Comm. (47)	High Risk Indiv. (48)	Pregnant Women (28)	Neonates (11)	Refugees (4)
	Care Home Patients (8)	Disabled (10)	Domestic Violence Victims (6)	LGBTQI+ (9)	Vulnerable Pop. Unspec. (16)	

Frontline workers- Healthcare workers	Care Home Staff (11)	Informal (6)	Nurses (7)	Social Care Workers (2)
	Paramedics (1)	Doctors (3)	Healthcare Workers unspec. (27)	

Frontline workers- Non Healthcare	Volunteers (1)	Firefighters (0)	Food Service (1)	Sanitation (0)	Transport / Shipping (0)	Non healthcare unspec. (7)

COVID-19 Infection Status	Positive (11)	Positive – Severe (4)	Negative (7)	Negative – Recovered (6)

Individual research projects may be classified against multiple categories/sub-categories

Discussion and conclusion

This analysis found a limited representation of less-resourced countries in research projects investigating the indirect health impacts of COVID-19. Given the projected devastating implications of COVID-19 in these countries, this area may be a potential gap in funded projects which requires prioritisation for research investment.

A significant number of mental health projects fell outside the sub-priority areas under "social sciences in the outbreak response" and indirect health impacts were underemphasised in the initial WHO research roadmap which was developed very early in the pandemic.

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

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

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