K4D | Knowledge, evidence and learning for development

COVID-19
Health Evidence Summary No.100

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This weekly COVID-19 health evidence summary (HES) is based on 3.5 hours of desk-based research. The summary is not intended to be a comprehensive summary of available evidence on COVID-19 but aims to make original documents easily accessible to decision makers which, if relevant to them, they should go to before making decisions.

Clinical characteristics and management

Publication date	Title/URL	Journal/Article type	Summary	Keywords
02.11.2020	T cell immunity against SARS-CoV-2 is likely to be present within most adults six months after primary infection	bioRxiv | pre-print (non-peer reviewed)	• A robust T cell response at six months after SARS-CoV-2 infection in individuals who had experienced either mild/moderate symptoms or were asymptomatic • Study in 100 individuals, one of the largest reported in this field • The T cell response was directed against a range of proteins from the virus, including the spike protein used in most vaccine studies, but also comparably against other proteins, such as nucleoprotein, which could be considered in future vaccine protocols • The size of the T cell response was higher in people who had experienced symptomatic infection compared with asymptomatic cases six months previously • Cellular immunity was strongly correlated with the peak level of the antibody response, with larger cellular	T cell immunity

			responses appearing to protect against antibody 'waning' over time, suggesting the importance of vaccine-induced cellular immune responses	
28.10.2020	Robust neutralizing antibodies to SARS-CoV-2 infection persist for months	Science | Report	• This study reports that of 30,082 individuals screened at Mount Sinai Health Systems in New York City, the vast majority of infected individuals with mild-to-moderate COVID-19 have robust IgG antibodies against the viral spike protein that persist for at least 5 months and which correlate significantly with neutralising antibody responses • Data suggests that more than 90% of seroconverters make detectible neutralising antibody responses • Although this is not conclusive evidence that these antibody responses protect from reinfection, authors believe that is it is very likely that they will decrease the odds ratio of reinfection, and may attenuate disease in the case of breakthrough infection	Antibody response
27.10.2020	Declining prevalence of antibody positivity to SARS-CoV-2: a community study of 356,000 adults	medRxiv | pre-print (non-peer reviewed)	• A cross-sectional study of 365,104 adults between 20 June and 28 September using a self-administered lateral flow immunoassay test for IgG shows that antibody positivity to SARS-CoV-2 may not persist beyond about 3 months after infection • Antibody positivity was greater in those who reported a positive PCR and lower in older people and those with asymptomatic infection	Antibody response
26.10.2020	Longitudinal observation and decline of neutralizing antibody	Nature Microbiology | Article	• Using sequential serum samples from 65 SARS-CoV-2 infected individuals collected up to 94 days post onset of symptoms (POS), seroconversion (IgM, IgA, IgG) was shown in >95% of cases and neutralising	Antibody response

	responses in the three months following SARS-CoV-2 infection in humans		antibody responses when sampled beyond 8d POS • Kinetics of neutralising antibody responses is typical of an acute viral infection, with declining neutralising antibody titres observed after an initial peak, of which the peak is dependent on disease severity – noting that those who develop a low neutralising antibody response, titres can return to baseline over a relatively short period, whereas those with a high neutralising antibody response than maintain high titres, despite an initial decline • Further studies on samples at extended timepoints are needed to determine longevity of the neutralising antibody response and threshold for protection from reinfection and/or disease	

Epidemiology and modelling

Publication date	Title/URL	Journal/Article type	Summary	Keywords
31.10.2020	Excess mortality during the COVID-19 pandemic in Aden governorate, Yemen: a geospatial and statistical analysis	medRxiv | pre-print (non-peer reviewed)	• Burden of COVID-19 in low-income and conflict-affected countries remains unclear, largely reflecting low testing rates • To estimate excess mortality during the epidemic period, this study quantified through high-resolution satellite imagery activity across all identifiable cemeteries within Aden governorate in Yemen and compared estimates to Civil Registry office records from the city • Findings suggest a substantial under-ascertained impact of COVID-19	Burden, FCAS

29.10.2020	COVID-19 Infection Fatality Ratio estimates from seroprevalence	ICL | Report 34	• Infection fatality ratio is a key statistic for estimating the burden of COVID-19 • Previous estimates have relied on data early in the epidemic or which have not fully accounted for uncertainty in serological test characteristics • 10 representative antibody surveys were identified to obtain updated estimates of the IFR using a modelling framework addressing limitations as above • Findings include that age-specific IFRs follow an approx. log-linear pattern, with the risk of death doubling approx. every 8 years of age • In a typical low-income country, with a population structure skewed towards younger individuals, overall IFR was found to be 0.23% (0.14-0.42 95% prediction interval range)	Infection fatality ratio
27.10.2020	SARS-CoV-2 spike D614G variant confers enhanced replication and transmissibility	bioRxiv | pre-print (non-peer reviewed)	• During the evolution of SARS-CoV-2 in humans, a variant of SARS-CoV-2 with a D614G substitution in the spike protein became the predominant circulating variant (S-614G) of the Covid-19 pandemic • Based on animal work in this paper, data show that this variant provides a real competitive advantage in vivo (increased replication and transmissibility) providing an explanation for the global predominance of S614G variant among the SARS-CoV-2 viruses currently circulating • The development, improvement and characterisation of suitable animal models that together reflect	SARS-CoV-2 variant

			aspects of SARS-CoV-2 replication, transmission and pathogenicity in humans will provide a platform to assess the potential implications of future variants	

Therapeutics

Publication date	Title/URL	Journal/Article type	Summary	Keywords
28.10.2020	SARS-CoV-2 Neutralizing Antibody LY-CoV555 in outpatients with Covid-19	NEJM | Original article	• Interim analysis of a phase 2 trial, found that one of three doses of neutralising antibody LY-CoV555 appeared to accelerate the natural decline in viral load over time by day 11 • Patients who received LY-CoV555 had fewer hospitalizations and a lower symptom burden than those who received placebo, with greatest effect in high-risk cohorts	Neutralising antibody

Vaccines

Publication date	Title/URL	Journal/Article type	Summary	Keywords
23.10.2020	Social media and vaccine hesitancy	BMJ Global Health | Original research	• At national level, the use of social media to organise offline action is highly predictive of the belief that vaccinations are unsafe, with such beliefs mounting as more organisation occurs on social media • Foreign disinformation campaigns online are associated with a drop in both mean vaccination coverage over time and negative discussion of vaccines on social media • A one-point shift upwards in the five-point disinformation scale is associated with a two-	Vaccine hesitancy, social media

			• percentage point drop in mean vaccination coverage year over year and a 15% increase in negative tweets about vaccines • There is a significant relationship between organisation on social media and public doubts of vaccine safety • Also a substantial relationship between foreign disinformation campaigns and declining vaccination coverage	

Indirect impact of COVID-19

Publication date	Title/URL	Journal/Article type	Summary	Keywords
30.10.2020	Physical inactivity and sedentary behaviours in the Bangladeshi population during the COVID-19 pandemic: an online cross-sectional survey	Cell | Research Article	• Online survey among 2028 people over 10 days in June 2020 during lockdown in Bangladesh • During lockdown in response to the COVID-19 pandemic, a sizeable proportion of Bangladeshi people were physically inactive and reported sedentary behaviours >=8 h/day • Public campaigns and media-based interventions encouraging home-based physical activities should be promoted to attenuate the impact of lockdown	Lockdown, physical inactivity

Social Science

Publication date	Title/URL	Journal/Article type	Summary	Keywords
01.11.2020	Psychological and social impact of COVID-19 in	medRxiv | pre-print (non-	• Cross-sectional online survey with 1390 respondents • Compared to men, women experience a disproportional	Gendered response

	Pakistan: need for gender responsive policies	peer reviewed)	burden of the psychological and social impact of the pandemic • Involving doctors in healthcare communication targeting women, may help • Social media and radio messaging my help disseminated information among men	

Comments, Editorials, Opinions, Blogs, News

Publication date	Title/URL	Journal | Article type
02.11.2020	Harms of public health interventions against covid-19 must not be ignored	BMJ | Analysis
30.10.2020	Pandemic or not, experts need to be self-aware and humble	Forbes | Blog
30.10.2020	The science of superspreading	Science | Graphic
30.10.2020	Covid-19 trial begins as Kenya vaccinates its first volunteers	The Star, Kenya | News
30.10.2020	COVAX welcomes appointment of civil society representatives	CEPI | News
30.10.2020	COVID-19 human challenge studies in the UK	The Lancet Respiratory Medicine | News
29.10.2020	Build back stronger universal health coverage systems after the COVID-19 pandemic: the need for better governance and linkage with universal social protection	BMJ Global Health | Commentary
29.10.2020	COVID-19 transmission – up in the air	The Lancet Respiratory Medicine | Comment
29.10.2020	Dexamethasone in hospitalised patients with COVID-19: addressing uncertainties	The Lancet Respiratory Medicine | Comment

28.10.2020	No-fault compensation for vaccine injury – the other side of equitable access to COVID-19 vaccines	NEJM | Perspective
28.10.2020	The 'very very bad look' of remdesivir, the first FDA-approved COVID-19 drug	Science mag | news
28.10.2020	We must stop flying blind: building on existing systems in low- and middle-income countries to improve the COVID-19 response	CGD | Blog
26.10.2020	Preventing the spread of SARS-CoV-2 with masks and other "low-tech" interventions	JAMA | Viewpoint
26.10.2020	How should we evaluate lockdowns? Disentangling effectiveness, context, and politics	CGD | Blog
19.10.2020	Shielding the vulnerable – a strategy for long-term pandemic response	IDS | Opinion

Guidelines, Statements & Tools

Publication Date	Title/URL	Source	Summary
Ongoing	COVID-19 and Urban Health	WHO	• Includes short case studies on how cities around the world have responded to COVID-19 challenges, WHO guidance and resources on COVID-19 relevant to cities and local governments

Dashboards & Trackers

Cases & deaths: Global	Cases & deaths: Regional	Cases & deaths: Country	Living evidence & policy maps	Current research including trials	Diagnostics	Treatments	Vaccines
WHO sitreps	WHO Africa	Ghana	COVID-NMA	WHO	FIND SARS-CoV-2 Test Tracker	Global COVID-19 Clinical Trial Tracker	CEPI
WHO dashboard	African Arguments	Indonesia	EPPI Centre	WHO International Clinical Trials Registry Platform (ICTRP)	FIND SARS-CoV-2 Diagnostics: performance data	US NIH registered clinical trials	Vaccine Centre LSHTM
Johns Hopkins University	European CDC	Nigeria CDC	Norwegian Institute of Public Health	Cytel	Serology-based tests for COVID-19	Solidarity trial	COVID-19 Oxford Vaccine Trial
WEF		Sierra Leone	Oxford C19 Government Response Tracker (OxCGRT)	US NIH	Our World in Data: C19 Testing	COVID-19 Therapeutics Accelerator	COVID-19 Vaccine Tracker

Our World in Data		Singapore	Our World in Data: C19 Policy responses	COVID-evidence			
Global 5050		UK	IFPRI COVID-19 Policy Response Portal	Cochrane			
CEBM, University of Oxford		US	COVID-19 Primer	Clinicaltrials.gov			
Humanitarian Data Exchange			NIH LitCovid	UKCDR			
Information is Beautiful			WHO COVID-19 Database				
LSHTM							
HealthMap (cases)							
The Commons Project							
SeroTracker							

C19 Resource Hubs

Global	Regional & Country	Academic journals & Publishers	Institutes/Centres/ Funders/Other	Health Topics	Social Sciences
WHO COVID-19 pandemic	Africa CDC	Annals of Internal Medicine	LSTM	Stop TB Partnership	SSHAP
WHO risk communication	African Union	BMJ	LSHTM		IDA
WHO Q&A	Nigeria CDC	Bulletin of the WHO	ICL MRC Centre for Global Infectious Disease Analysis	Global Menstrual Collective	Disability and inclusion
WHO Global research	GeoPoll: SSA	Cambridge University Press	ODI	SLH: Handwashing in low resource settings	Coregroup IDDC
COVID-19 Solidarity Response Fund	Global Health Network Africa	Cell Press	Johns Hopkins University	RBM Partnership	Ethics, health systems & COVID-19
UN	African Academy of Sciences	Cochrane	Center for Global Development	Epidemic Preparedness Innovations	Social Development Direct C19 blog series
UN Women	Africa Evidence Network	Elsevier	CMMID Repository		

UNOCHA	OCHA Southern and Eastern Africa COVID-19 Digest	Health Policy and Planning	Norwegian Institute of Public Health		
UNHCR	South African Government	JAMA Network	Oxford Centre for Evidence-based Medicine		
UNICEF		The Lancet	HEART		
UNESCO		medRxiv and bioRxiv (Preprints)	UKRI		
UN WFP		NEJM	Evidence Aid		
GOARN		Oxford University Press	NIH		
EPI-WIN		PLoS	IFPRI Resources and Analyses of C19 Impact		
World Bank		SAGE journals	Prevent Epidemics		
Our World in Data		Science			
COVID-19 Narratives by David Nabarro		Springer Nature			
Reliefweb		SSRN (Preprints)			

Humanitarian OpenStreetMap Team		Wiley			
Global Partnership for Sustainable Development Data					
WorldPop					
Flowminder					
COVID-END					
Premise COVID-19 Global Impact Study					
GISAID					

Online learning & events

Date	Title/URL	Online learning/event	Duration	Lead
10.11.2020	COVID-19 vaccine predictions part 2: estimating the time before we approve efficacious COVID-19 vaccines	Online event	1h30	CGD
16.10.2020	Financing a Global Public Health Response	Online event	1h30	CGD

02.10.2020	Understanding and Improving COVID-19 Vaccine Portfolio	Online event	1h30	CGD
21.09.2020	Mitigating the Economic and Health Impact of COVID-19 across Africa	Online event	1h30	CGD, GF, AU
June 2020	OpenWHO, the free, open-access learning platform for health emergencies, now offers 10 online courses related to COVID19.	Online courses	Varies	WHO
Available now	Standard precautions: Environmental cleaning and disinfection	Online course	1 hour	WHO
Available now	COVID-19: Effective Nursing in Times of Crisis	Online course	2 weeks – 2 hours per week	Johns Hopkins School of Nursing
Available now	WHO Academy and WHO Info mobile applications	Mobile app		WHO
Available now	COVID-19: Pandemics, Modelling and Policy	Online learning	2 weeks | 2 hours weekly study	FutureLearn UNESCO UNITWIN Complex Systems Digital Campus/Open University
11.5.2020	COVID-19 Contact Tracing course	Online learning	5 hours	Johns Hopkins Bloomberg School of Health
7-28 May 2020	Virtual Evidence Weeks	5 sessions	1h 30	International Initiative for Impact Evaluation (3ie)

Tuesdays at 1700 CEST (Geneva time) & Thursdays 0830 CEST (Geneva time)	COVID-19 Open online brief with Dr David Nabarro	Event	1h	4SD
Available now	Emerging respiratory viruses, including COVID-19: methods for detection, prevention, response and control	Online learning	3 hours	WHO
Available now	Responding to COVID-19: Real-time training for the coronavirus disease outbreak	Online learning	Multiple self-paced course	WHO
25 May 2020	COVID-19: Tackling the Novel Coronavirus	Online learning	3 weeks | 4 hours weekly study	FutureLearn LSHTM/UK PHRST
Available online now without mentors. Updated version will commence early June 2020	COVID-19 Diagnostics and Testing	Online learning	3 weeks | 3 hours weekly study	FutureLearn FIND/LSHTM/ASLM
6 April 2020	COVID-19 Critical Care: Understanding and Application	Online learning	5 weeks | 1 hour weekly study	FutureLearn University of Edinburgh & Royal College of Physicians of Edinburgh
Available now	COVID-19 supporting online courses	Online learning	Multiple self-paced course	BMJ Learning

Suggested citation

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Rapid review methodology

The rapid weekly search for peer-reviewed literature is carried out through a PubMed search with the following keywords ("COVID-19" OR "severe acute respiratory syndrome coronavirus 2" OR "2019-nCoV" OR "SARS-CoV-2" OR "2019nCoV" OR "coronavirus") AND ("Africa" OR "South Asia" OR "Developing" OR "low-income" OR "low income" OR "lower-middle income" OR "low and middle income" OR "LMIC" OR "LIC" OR "global south") OR ("poverty") OR ("equity" OR "equities"), restricted to articles published in the previous 2 to 3 days, in English. This is complemented by a search of the homepage of the following high-impact global health journals: The Lancet journals, New England Journal of Medicine, Nature, JAMA, Annals of Internal Medicine, Cochrane Reviews, BMJ Global Health, the PLoS journals and a Twitter search of their Twitter pages. A search also of preprints from bioRxiv and medRxiv. Please note that papers that have not been peer-reviewed are highlighted in red. All primary research papers that relate to the primary and secondary impacts of the COVID-19 response in LMICs, and disease control and health system responses are included. Articles related to tackling the secondary impacts on other sectors are not included. Additional commentaries, opinions, and commissioned pieces are selected based on relevance.

The search for dashboards, guidelines, tools, editorials, comments, blogs, opinions and news is through the academic journals listed above, C19 resource hubs and following lead academics and professionals on Twitter.

About this report

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