

COVID-19

Health Evidence Summary No.109

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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.

Epidemiology and modelling

Publication date	Title/URL	Journal/Article type	Summary	Keywords
21.01.2021	Model-informed COVID-19 vaccine prioritization strategies by age and serostatus	Science Article	<ul style="list-style-type: none"> • A mathematical model to compare five age-stratified prioritization strategies • A highly effective transmission-blocking vaccine prioritised to adults ages 20-49 years minimised cumulative incidence but mortality and years of life lost were minimised with prioritisation given to adults over 60y, in most scenarios • Use of individual-level serological tests to redirect doses to seronegative individuals improved the impact of each dose while potentially reducing existing inequities in COVID-19 impact • Whilst maximum impact prioritisation strategies were broadly consistent across countries, this framework can be used 	Vaccine prioritisation

			to compare across contexts considering transmission rates, vaccine rollout speeds, and estimates of naturally acquired immunity	
20.01.2021	Quarantine and testing strategies in contact tracing for SARS-CoV-2: a modelling study	The Lancet Public Health Article	<ul style="list-style-type: none"> • A modelling study to assess the merit of testing contacts to avert onward transmission and to replace or reduce the length of quarantine for uninfected contacts • In most countries, contacts of confirmed COVID-19 cases are currently asked to quarantine for 14 days after exposure to limit onward transmission but at a social and economic cost to the individual and wider society and potentially reducing adherence and policy effectiveness • Findings are that quarantine until a PCR or lateral flow antigen (LFA) test on day 7 after exposure (with early release if negative) might avert as much transmission as the 14-day quarantine period • Also, daily repeated LFA testing of traced contacts for 5 days, with isolation only after a positive test, might allow for standard quarantine to be removed with a small increase in transmission risk offset by increased participation and adherence to isolation • Thus testing may allow for a substantial reduction in the length of, or replacement of quarantine with a small excess in transmission risk • Decreasing test and trace delays and increasing 	Quarantine, testing

			<p>adherence will further increase the effectiveness of these strategies</p> <ul style="list-style-type: none"> • But before policy change, further research is required to evaluate the potential costs (increased transmission risk, false reassurance) and benefits (reduction in the burden of quarantine, increased adherence) of such strategies 	
19.01.2021	<p>Insight into the practical performance of RT-PCR testing for SARS-CoV-2 using serological data: a cohort study</p>	<p>The Lancet Microbe Article</p>	<ul style="list-style-type: none"> • A cohort study to assess the practical performance of RT-PCR-based surveillance protocols and to determine the extent of undetected SARS-CoV-2 infection in Shenzhen, China • Approximately 4% of PCR-negative close contacts of cases of SARS-CoV-2 were seropositive for anti-SARS-CoV-2 antibodies on ELISA i.e. virological RT-PCR testing did not detect approximately 30-40% of infections among close contacts of confirmed cases • Seropositive contacts RT-PCR-negative were less likely to report symptoms than those who tested positive on RT-PCR • Even rigorous RT-PCR testing protocols might miss a substantial proportion of SARS-CoV-2 infections – maybe due to difficulties in determining the timing of testing in asymptomatic individuals for optimal sensitivity • Innovations to improve the accuracy of virological testing and allow for more frequent, 	<p>RT-PCR testing, surveillance</p>

			<p>less invasive testing are required</p> <ul style="list-style-type: none"> • The study did show that control of community spread in Shenzhen, China was possible through RT-PCR-based surveillance and control protocols that include rapid contact tracing, universal RT-PCR testing and mandatory 2-week quarantine, despite the limitations of virological testing 	
18.01.2021	Household transmission of SARS-CoV-2 and risk factors for susceptibility and infectivity in Wuhan: a retrospective observational study	The Lancet Infectious Diseases Article	<ul style="list-style-type: none"> • Retrospective cohort study of contact-tracing records from more than 27,000 households in Wuhan to assess household transmissibility of SARS-CoV-2 and risk factors associated with infectivity and susceptibility to infection in Wuhan • Within households, children and adolescents were less susceptible to SARS-CoV-2 infection, but were more infectious once infected than individuals aged 20 years or older • Study confirmed higher susceptibility of infants (aged 0-1 years) to infection than older children ($\geq 2y$) • Although children and adolescents were much less likely to have severe disease, they were as likely as adults to develop symptoms • Pre-symptomatic cases were more infectious and individuals with asymptomatic infection 80% less infectious than symptomatic cases • Isolation of cases and quarantining of household contacts away from home effectively 	Household transmission

			<p>reduced household transmission</p> <ul style="list-style-type: none"> • Findings have implications for intervention design for blocking household transmission of SARS-CoV-2, such as timely vaccination of eligible children when resources are available • High infectivity of children with SARS-CoV-2 infection highlights the need for careful planning of school reopening 	
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Therapeutics

Publication date	Title/URL	Journal/Article type	Summary	Keywords
22.01.2021	Effect of anakinra versus usual care in adults in hospital with COVID-19 and mild-to-moderate pneumonia (CORIMUNO-ANA-1): a randomised controlled trial	The Lancet Respiratory Medicine Article	<ul style="list-style-type: none"> • Patients with COVID-19 pneumonia have an excess of inflammation and increased concentrations of cytokines including interleukin (IL-1) • A multicentre, open-label, Bayesian randomised clinical trial to determine whether anakinra, a recombinant human IL-1 receptor antagonist, could improve outcomes in patients in hospital with mild-to-moderate COVID-19 pneumonia • 153 patients were screened but recruitment was stopped after 116 patients by the DSMB • Anakinra did not improve outcomes in patients with mild-to-moderate COVID-19 pneumonia • Efficacy of anakinra needs to be assessed 	Anakinra, IL-1 receptor antagonist, mild-to-moderate COVID-19

			in other selected groups of patients with more severe COVID-19	
21.01.2021	Effect of bamlanivimab as monotherapy or in combination with etesevimab on viral load in patients with mild to moderate COVID-19	JAMA Original Investigation	<ul style="list-style-type: none"> • A phase 2 portion of a randomised phase 2/3 clinical trial with 577 patients to assess the effect of early treatment with anti-spike neutralising antibodies on SARS-CoV-2 viral load in outpatients with mild to moderate COVID-19 • No significant difference in change in viral load with 3 different doses of bamlanivimab monotherapy compared with placebo • Treatment with a combination of bamlanivimab and etesevimab significantly decreased SARS-CoV-2 log viral load at day 11 compared with placebo 	Bamlanivimab, etesevimab, mild-to-moderate COVID-19

Vaccines

Publication date	Title/URL	Journal/Article type	Summary	Keywords
25.01.2021	mRNA-1273 vaccine induces neutralizing antibodies against spike mutants from global SARS-CoV-2 variants	bioRxiv pre-print (not peer reviewed)	<ul style="list-style-type: none"> • In vitro neutralization study of sera from individuals vaccinated with Moderna mRNA-1273 vaccine • No significant impact on neutralizing titres against the B.1.1.7 (UK) variant relative to prior variants • Six-fold reduction in neutralizing titres against the B.1.351 (SA) variant relative to prior variants, but remained above levels that are expected to be protective • See press release below for Moderna's plans to 	Moderna vaccine, variants

			address emerging variants	
21.01.2021	Safety and immunogenicity of an inactivated SARS-CoV-2 vaccine, BBV152: a double-blind, randomised, phase 1 trial	The Lancet Infectious Diseases Article	<ul style="list-style-type: none"> As of 15 Jan 2021, 9 vaccines have received emergency use authorisation to be administered to prevent COVID-19 Preliminary analyses for the safety and immunogenicity of the vaccine candidate BBV152, manufactured and produced in India, in 375 vaccinated healthy adults in India All vaccines groups had similar reactogenicity and serological outcomes to the control group First report of an inactivated COVID-19 vaccine candidate inducing cell-mediated responses and humoral neutralising responses 	SARS-CoV-2, COVID-19, vaccine, clinical trial
20.01.2021	Impact of SARS-CoV-2 B.1.1.7 spike variant on neutralisation potency of sera from individuals vaccinated with Pfizer vaccine BNT 162b2	medRxiv pre-print (not peer reviewed)	<ul style="list-style-type: none"> Study testing immune responses in patients 3 weeks following their first dose of the Pfizer BioNTech vaccine BNT162b2 Also tested neutralising antibody responses against the B.1.1.7 (UK) variant compared to wild type There was a range of neutralisation titres against wild type A lower proportion of participants over 80y achieved threshold of neutralisation titre compared to those under 80y after the first dose Neutralisation titres were reduced against UK variant Further work required to establish the impact of these observations on real life vaccine efficacy 	Pfizer BioNTech vaccine, variants

Social Science

Publication date	Title/URL	Journal/Article type	Summary	Keywords
21.01.2021	Navigating inequities: a roadmap out of the pandemic	BMJ Global Health Analysis	<ul style="list-style-type: none"> • Presentation of an equity framework applied to COVID-19 that sheds light on the full spectrum of health inequities, navigates their sources and intersections, and directs ethically just interventions • This equity map guides surveillance and research to reveal epidemiological uncertainties of novel diseases like COVID-19, recognising that inequities may exist where evidence is currently insufficient • This roadmap can steer global leadership towards equitable allocation with diverse strategies for diverse inequities 	Equity framework

Comments, Editorials, Opinions, Blogs, News

Publication date	Title/URL	Journal Article type
25.01.2021	In a major setback, Merck to stop developing its two Covid-19 vaccines and focus on therapies	Stat news
25.01.2021	Moderna COVID-19 vaccine retains neutralizing activity against emerging variants first identified in the U.K. and the Republic of South Africa	Moderna Press release
23.01.2021	COVID-19: the intersection for education and health	The Lancet Editorial
22.01.2021	Do not repeat mistakes from HIV in COVID-19 response	The Lancet HIV Editorial

22.01.2021	Face masks in the post-COVID-19 era: a silver lining for the damaged tuberculosis public health response?	The Lancet Respiratory Medicine
22.01.2021	Full-dose blood thinners decreased need for life support and improved outcome in hospitalized COVID-19 patients	NIH News release
21.02.2021	Optimism and caution for an inactivated COVID-19 vaccine	The Lancet Infectious Diseases Comment
21.01.2021	Covid: How a £20 gadget could save lives	BBC News
20.01.2021	Vaccinating children against Covid-19 – the lessons of measles	NEJM Perspective
15.01.2021	Herd immunity by infection is not an option	Science Perspective
08.01.2021	SARS-CoV-2 spillover events	Science Perspective

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	Health Policy and Planning	Norwegian Institute of Public Health		

	Eastern Africa COVID-19 Digest				
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
14.01.2021	Evidence to impact in crisis: how have we measured up during the COVID-19 pandemic?	Webinar	1h 30	CGD
04.12.2020	COVID-19, supply chain resilience and global trade	Webinar	1h	CGD
03.12.2020	More money for health services: What	WHO & CGD Health systems	1h 30	Joe Kutzin

	is the role of PFM in the “new normal”?	Governance & Financing		
01.12.2020	Solutions and support for the mental wellbeing of community health workers on the COVID-19 frontline	Webinar		HSG TWG on CHWs with The George Institute for Global Health
19.11.2020	Looking at the pandemic with a gender lens	Live Twitter conversation		SSHAP
16.11.2020	HIFA and WHO collaborate to promote sharing of experience and expertise around the maintenance of essential health services during (and after) the pandemic	4-week discussion starting 16 Nov		HIFA
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	COVID-19 Open online brief with Dr David Nabarro	Event	1h	4SD

(Geneva time)				
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

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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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