

COVID-19

Health Evidence Summary No.105

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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 |
|------------------|---|----------------------------|---|-------------------|
| 04.12.2020 | Untuned antiviral immunity in COVID-19 revealed by temporal type I/III interferon patterns and flu comparison | Nature Immunology Letter | <ul style="list-style-type: none"> • A central paradigm of immunity is that interferon-mediated antiviral responses precede pro-inflammatory ones optimising host protection and minimising collateral damage – here authors report that interferon-mediated antiviral responses are diminished and delayed and preceded by pro-inflammatory cytokines • Higher IFN-λ concentrations in patients with COVID-19 correlated with lower viral load in bronchial aspirates and faster viral clearance • Altered cytokine patterns in patients with COVID-19 correlated with longer hospitalisation and higher incidence of critical disease and mortality compared to flu | Cytokine response |

Epidemiology and modelling

| Publication date | Title/URL | Journal/Article type | Summary | Keywords |
|------------------|--|-----------------------------|--|--|
| 04.12.2020 | Infection and mortality of healthcare workers worldwide from COVID-19: a systematic review | BMJ Global Health Article | <ul style="list-style-type: none"> • A total of 152 888 infections and 1413 deaths were reported • Infections were mainly in women (71.6%) and nurses (38.6%) but deaths were mainly in men (70.8%) and doctors (51.4%) • Limited data suggested that general practitioners and mental health nurses were the highest risk specialities for death • Most cases and deaths were reported in the 50-59 age range, whilst the highest case fatality rate was reported in the group aged over 70 years • Europe had the highest number of infections and deaths • Eastern Mediterranean region had the highest number of reported deaths per 100 infections • Indian subcontinent and Africa reported a relatively low number of infections and deaths • Authors suggest that risks to healthcare workers, other than those with frequent exposure to oronasal secretions, should not be underestimated; | Infection, mortality, healthcare workers |

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| | | | elderly healthcare workers may require reassignment to less risky settings; and disparities between regions of the world may be a true differences or may reflect reporting and testing bias | |
| 01.12.2020 | Characterising COVID-19 epidemic dynamics and mortality under-ascertainment in Khartoum, Sudan | ICL Report 39 | <ul style="list-style-type: none"> • Authors estimate that 2% (sensitivity range 2% to 5%) of deaths due to COVID-19 were officially reported, estimating 16,090 (95% CI 14,300-17,990) undetected COVID-19 deaths up to 20 November • Reductions in COVID-19 incidence during the first wave were due to both the implemented interventions and increasing immunity • The ending of stringent suppression measures in July resulted in transmission increasing • In the absence of implementing new suppressive measures, continued shielding of high risk individuals is important to help reduce mortality during the second wave • The second wave is predicted to peak before the beginning of 2021 and to be similar in size to the first wave sustained in the summer if transmission is maintained at current levels, | Transmission, mortality under ascertainment, Khartoum, Sudan |

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| | | | <p>unless mortality under-ascertainment is at the upper end of the range (5%) in which case the authors estimate a smaller first wave</p> | |
| 24.11.2020 | <p>Transmission heterogeneities, kinetics, and controllability of SARS-CoV-2</p> | <p>Science Article</p> | <ul style="list-style-type: none"> • Based on detailed patient and contact tracing data in Hunan, China (1,178 SARS-CoV-2 infected individuals along with their 15,648 contacts), authors find 80% of secondary infections traced back to 15% of SARS-CoV-2 primary infections – this indicates substantial transmission heterogeneities • Transmission risk scales positively with the duration of exposure and the closeness of social interactions and is modulated by demographic and clinical factors • Lockdown increases transmission risk within the household while isolation and quarantine reduces risks across all types of contacts • Infectiousness in a SARS-CoV-2 infected person peaks just before symptom presentation challenging epidemic control • Modelling indicates SARS-CoV-2 control requires the synergistic efforts of case isolation, contact quarantine, and population-level | <p>Transmission, infectiousness</p> |

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| | | | interventions to respond to the specific transmission kinetics of SARS-CoV-2 | |
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Therapeutics

| Publication date | Title/URL | Journal/Article type | Summary | Keywords |
|------------------|---|---------------------------------------|---|---|
| 03.12.2020 | Metformin and risk of mortality in patients hospitalised with COVID-19: a retrospective cohort analysis | The Lancet Health Longevity Article | <ul style="list-style-type: none"> Retrospective cohort analysis of adult patients with type 2 diabetes or obesity, both risk factors for severe COVID-19, admitted to hospital with PCR-confirmed COVID-19 Study showed metformin was significantly associated with reduced mortality in women with obesity or type 2 diabetes hospitalised with COVID-19 with use of metformin before diagnosis with SARS-CoV-2 Prospective studies are needed to understand mechanism and causality but given previously demonstrated effects of metformin on inflammation in women more than men, the main mechanism of benefit could be from reduced inflammation. Also this study of home metformin use highlights the effect that medications can have early on in the disease course | Metformin, mortality, prevention, diabetes, obesity |

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| | | | <ul style="list-style-type: none"> If results are reproducible, metformin could be widely used before infection with SARS-CoV-2 to prevent severe COVID-19 in patients with diabetes or obesity as it is safe and inexpensive | |
| 02.12.2020 | Repurposed antiviral drugs for Covid-19 – Interim WHO Solidarity Trial Results | NEJM Article | <ul style="list-style-type: none"> Results of SOLIDARITY trial now published WHO expert groups recommended mortality trials of 4 repurposed antiviral drugs – remdesivir, hydroxychloroquine, lopinavir and interferon beta-1a in patients hospitalised with COVID-19 At 405 hospitals in 30 countries, 11,330 adults underwent randomisation to one of five options (four drugs listed and the local standard of care) None of the antivirals reduced overall mortality, initiation of ventilation and duration of hospital stay in patients hospitalised with Covid-19 | Solidarity trial, remdesivir, hydroxychloroquine, lopinavir, interferon beta-1a |

Vaccines

| Publication date | Title/URL | Journal/Article type | Summary | Keywords |
|------------------|--|----------------------|---|--|
| 04.12.2020 | Correlates of protection against SARS-CoV-2 in rhesus macaques | Nature Article | <ul style="list-style-type: none"> Recent studies have reported protective efficacy of both natural immunity and vaccine-induced immunity against severe SARS-CoV-2 challenge in rhesus macaques but protection against infection is yet to be determined Here data show relatively low antibody titres are sufficient for protection against SARS-CoV-2 in rhesus macaques and that cellular immune responses may also contribute to protection if antibody responses are suboptimal | Correlates of protection, SARS-CoV-2 infection |

Comments, Editorials, Opinions, Blogs, News

| Publication date | Title/URL | Journal Article type |
|------------------|--|------------------------------|
| 07.12.2020 | COVID-19: what health experts could and could not predict | Nature Medicine World view |
| 05.12.2020 | An African plan to control COVID-19 is urgently needed | The Lancet Editorial |
| 05.12.2020 | South Africa and India push for COVID-19 patents ban | The Lancet World Report |
| 03.12.2020 | WHO at the Special Session of the United Nations General Assembly in Response to the Coronavirus Disease (COVID-19) Pandemic | WHO News |
| 03.12.2020 | Antibody testing could lend a hand to global vaccine programs crippled by COVID-19 | PLOS Blog |

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| 03.12.2020 | COVID-19 vaccine trial ethics once we have efficacious vaccines | Science Policy forum |
| 02.12.2020 | Could COVID delirium bring on dementia? | Nature News |
| 30.11.2020 | Incentivising wealthy nations to participate in the COVID-19 Vaccine Global Access Facility (COVAX): a game theory perspective | BMJ Global Health Commentary |
| 30.11.2020 | Accelerating progress of low-income countries towards the SDGs: balancing realism and ambition in a post-COVID-19 world | CGD Policy Paper |
| 30.11.2020 | Sustaining low-income countries' progress towards the SDGs in a post-CoVID-19 world: what is achievable? | CGD Blog |
| 30.11.2020 | Afro-European Partnerships in Health: Accelerating better efficiency of health spending | CGD Blog |
| 30.11.2020 | Where are women and girls especially vulnerable to the COVID-19 pandemic? | CGD Blog |
| 30.11.2020 | We are facing an unprecedented global challenge to protect every country from COVID-19 | World Bank Blog |

Guidelines, Statements & Tools

| Publication Date | Title/URL | Source | Summary |
|------------------|---|---------------------------------|---|
| 07.12.2020 | Antigen rapid tests: training package | FIND Training materials | <ul style="list-style-type: none"> • Training package for COVID-19 antigen rapid diagnostic tests developed by FIND with WHO • Materials are free to download and can be adapted based on national guidelines |
| 15.10.2020 | Behavioural considerations for acceptance and | WHO Technical Advisory Group on | <ul style="list-style-type: none"> • The report follows a meeting and subsequent iterative process between the WHO TAG on Behavioural Insights and Sciences for Health with the |

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| | uptake of COVID-19 vaccines | Behavioural Insights and Science for Health Meeting Report | <p>WHO Department of Immunization, Vaccines and Biologicals to discuss behavioural considerations in relation to COVID-19 vaccine acceptance and uptake</p> <ul style="list-style-type: none">• Behavioural research has shown that vaccine acceptance and uptake can be increased by adopting three strategies (1) creating an enabling environment; (2) harnessing social influences; and (3) increasing motivation• A common theme is engagement with local community |
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Dashboards & Trackers

| Cases & deaths: Global | Cases & deaths: Regional | Cases & deaths: Country | Living evidence & policy maps | Current research including trials | Diagnostics | Treatments | Vaccines |
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| 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 |

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| 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 | Health Policy and Planning | Norwegian Institute of Public Health | | |

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| | 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 | | | |

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| 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 |
|------------|--|---|----------|---|
| 04.12.2020 | COVID-19, supply chain resilience and global trade | Webinar | 1h | CGD |
| 03.12.2020 | More money for health services: What is the role of PFM in the “new normal”? | WHO & CGD Health systems Governance & Financing | 1h 30 | Joe Kutzin |
| 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 |

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| 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 |

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| 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, | Online learning | 3 hours | WHO |

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| | prevention, response and control | | | |
| 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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