K4D | Knowledge, evidence and learning for development

COVID-19 Health Evidence Summary No.4

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This daily COVID-19 Health Evidence Summary is to signpost DFID and other UK government departments to the latest relevant evidence and discourse on COVID-19 to inform and support their response. It is a result of 2-2.5 hours of work and is not intended to be a comprehensive summary of evidence.

1. Health Evidence Summary

The Global impact of COVID-19 and strategies for mitigation and suppression

Walker, PGT, Whittaker, C et al. | WHO Collaborating Centre for Infectious Disease Modelling, MRC Centre for Global Infectious Disease Analysis, Abdul Latif Jameel Institute for Disease and Emergency Analytics, Imperial College London | 26 March 2020 | Report 12

https://www.imperial.ac.uk/media/imperial-college/medicine/sph/ide/gida-fellowships/Imperial-College-COVID19-Global-Impact-26-03-2020.pdf

In the absence of interventions, this study estimates that COVID-19 would have resulted in 7.0 billion infections and 40 million deaths globally this year. Considering mitigation scenarios, social distancing to reduce the rate of social contacts by 40% and with a 60% reduction in the elderly population at highest risk could reduce this burden by approximately half. However, even at this level, health systems in all countries would be rapidly overwhelmed where "peak demand for critical care beds in a typical low-income setting outstripping supply by a factor of 25, in contrast to a typical high-income setting where this factor is 7". Healthcare demand can only be kept within manageable levels through rapid implementation of public health measures to suppress transmission. Early implementation of a suppression strategy (at 0.2 deaths per 100,000 population per week) – including testing and isolation of cases and wider social distancing to prevent onward transmission - could avert 95% of deaths saving 38.7 million lives. Adopted later (at 1.6 deaths per 100,000 population per week) 30.7 million lives could be saved. Individual country outputs are now being shared to enable figures to guide planning. Note model outputs are not predictions of what will happen but rather to illustrate the magnitude of the problem and benefits of rapid, decisive and collective action. Wider social and economic costs of suppression are not considered in this analysis but are likely to be high and disproportionately so in lower income settings.

The effect of control strategies to reduce social mixing on outcomes of the COVID-19 epidemic in Wuhan, China: a modelling study

Estimates of the effects of physical distancing measures on the progression of the COVID-19 epidemic in Wuhan, China found that changes to contact patterns are likely to have substantially delayed the epidemic peak and reduced the number of COVID-19 cases here. Projections suggest that premature and sudden lifting of interventions (in March 2020) could lead to an earlier second peak in late August 2020, which could be delayed by 2 months to October and the height of the peak reduced if restrictions are relaxed a month later, in April 2020. This would also buy time for health systems to respond and expand. The authors hope these results provide some insights for policymakers in the rest of the world but do highlight the limitations to their analysis, including large uncertainties around estimates of R_0 and the duration of infectiousness.

COVID-19: extending or relaxing distancing control measures

This Comment discusses the study by Prem and colleagues (above) – an additional month of physical distancing measures (or other methods, such as widespread testing) would provide 2 additional months before such measures would need to be reinstated to prevent health system overload. Note the potential epidemic resurgence reflects that shown in the model developed by Ferguson and colleagues. Safe ways out of lockdown need to be identified given that many countries with increasing epidemics now potentially face their first lockdown. Country-specific modelling should compare lockdown measures to the main alternative – testing, contact tracing, and localised quarantine of suspected cases at either the start of the epidemic or after relaxation of lockdown measures. Such modelling would guide when lockdown measures could be relaxed i.e. at what proportion of the population tested (and how regularly given asymptomatic and pre-symptomatic transmission) would there be confidence that the epidemic is being sufficiently controlled to considerably delay or even prevent resurgence. Emerging data from South Korea, which adopted an early widespread testing strategy and has so far avoided the need for widespread lockdown, and Italy, now attempting this strategy as a way out of lockdown, will prove useful. As more data become available on the transmissibility of this novel coronavirus, models can more accurately predict the success or failure of different strategies to control the epidemic and limit mortality.

Clinical and epidemiological features of 36 children with coronavirus disease 2019 (COVID-19) in Zhejiang China: an observational cohort study

Qiu H., Wu, J. et al | The Lancet | 25 March 2020 | Article

https://doi.org/10.1016/S1473-3099(20)30198-5

Between 17 Jan and 1 March 2020, only 36 of 661 cases of COVID-19 reported in Ningbo and Wenzhou, Zhejiang province, China were in children. All 36 had been infected either by close contact with adults infected with SARS-CoV-2 or by exposure to the epidemic area. Nearly half were asymptomatic (i.e. no fever or no cough) and where symptoms presented, they were milder than in adults. Given the large proportion of asymptomatic children, identifying them in the absence of clear epidemiological information presents a challenge in preventing community-acquired infection.

Fundamental principles of epidemic spread highlight the immediate need for large-scale serological surveys to assess the stage of the SARS-COV-2 epidemic

Lourenco J, Paton R, Ghafari M, et al. | University of Oxford | Unpublished draft COVID-19 model

https://www.dropbox.com/s/oxmu2rwsnhi9j9c/Draft-COVID-19- Model%20%2813%29.pdf

Note: includes a disclaimer that "(a) material is not final and is subject to be updated any time and (b) Code used will be made available as soon as possible.

This susceptible-infected-recovered model suggests that half the UK population might already have been infected with COVID-19.

Covid-19: experts question analysis suggesting half UK population has been infected

Sayburn A. | BMJ | 25 March 2020 | News

https://doi.org/10.1136/bmj.m1216

If the University of Oxford hypothesis that large numbers of the UK population have already been infected but remain asymptomatic proves correct, this would not change the current public health advice to reduce the spread of the virus in the UK but would change long term expectations.

Tackling two pandemics: a plea on World Tuberculosis Day

Wingfield at al. | The Lancet Respiratory Medicine | 24 March 2020 | Comment

https://doi.org/10.1016/S2213-2600(20)30151-X

Reflecting on the similarities, differences and unknowns of the TB and COVID-19 pandemics and a plea to not forget the TB pandemic.

COVID-19 in Europe: the Italian lesson

Saglietto et al. | The Lancet | 24 March 2020 | Correspondence

https://doi.org/10.1016/S0140-6736(20)30690-5

Projections from data trends before 8 March predicted more than 30,000 cases by 15 March 2020. A recorded number of 24,747 cases by 15 March 2020, suggests that measures introduced by 11 March 2020 began reducing the number of new cases within 3 to 4 days. Authors urge all countries to "acknowledge the Italian lesson" and immediately adopt very restrictive measures to limit virus spread, ensure appropriate health system response, and reduce mortality. Includes a figure of epidemic curves for European countries, with estimated lag time from Italy's situation, as of 15 March 2020 (source: Center for Systems Science and Engineering, Johns Hopkins University).

Sex, gender and COVID-19: Disaggregated data and health disparities

Purdie et al. | BMJ GH Blogs | 24 March 2020 | Blog

https://blogs.bmj.com/bmjgh/2020/03/24/sex-gender-and-covid-19-disaggregated-data-and-health-disparities/

Male sex was associated with worse clinical outcomes due to SARS in Hong Kong, and a higher risk of dying from MERS. Not all countries, including the UK, are yet publishing data (cases and deaths) disaggregated by sex. This is important to determine if sex and gender, along with age, influence acquisition, transmission and health outcomes associated with COVID-19 which would guide clinical care. Data from countries that have reported confirmed cases by sex (13 countries) show a mixed picture but data show a higher proportion of deaths in men than women (ranging from 9% to 89% higher in men than women) in four out of six countries that report mortality by sex. Risky behaviours consistently found to be more common among men than women worldwide e.g. rates of smoking tobacco are higher in men than women. These behaviours are associated with both the risk of developing co-morbidities now found to be associated with adverse outcomes in COVID-19, and with behaviours that are intimately bound up with gender norms.

2. Tracking COVID-19 cases

Global

WHO COVID-19 daily situation reports

https://www.who.int/emergencies/diseases/novel-coronavirus-2019/situation-reports

An interactive web-based dashboard to track COVID-19 in real time

https://gisanddata.maps.arcgis.com/apps/opsdashboard/index.html#/bda7594740fd4029942
3467b48e9ecf6

Live data tracker: sex-disaggregated COVID-19 data from the 25 most-affected countries

http://globalhealth5050.org/covid19

Africa

Africa Centres for Disease Control and Prevention (Africa CDC)

http://www.africacdc.org/covid-19-and-resources

Coronavirus in Africa Tracker: How many covid-19 cases & where?

https://africanarguments.org/2020/03/23/coronavirus-in-africa-tracker-how-many-cases-and-
where-latest/

South African Government COVID-19

https://www.gov.za/Coronavirus

UK

COVID-19: PHE track coronavirus cases in the UK

https://www.gov.uk/government/publications/covid-19-track-coronavirus-cases

UK case tracing infographic

https://www.arcgis.com/apps/opsdashboard/index.html#/f94c3c90da5b4e9f9a0b19484dd4b
b14

3. Online course

COVID-19: Tackling the Novel Coronavirus

LSHTM | FutureLearn course | Starts 23 March 2020 | 3 weeks | 4 hours weekly study | Free

https://www.futurelearn.com/courses/covid19-novel-coronavirus

A reminder that this course is currently running. On this course you will learn what is known about the outbreak of COVID-19 (week 1); what the practical implications for responding to COVID-19 are (week 2); and what we need to find out about COVID-19 (week 3).

4. Resource Hubs

NICE UK: Rapid guidelines and evidence reviews

https://www.nice.org.uk/covid-19

Imperial College London MRC Centre for Global Infectious Disease Analysis COVID-19 reports

https://www.imperial.ac.uk/mrc-global-infectious-disease-analysis/news--wuhan-coronavirus/

Global research on COVID-19

https://www.who.int/emergencies/diseases/novel-coronavirus-2019/global-research-on-novel-coronavirus-2019-ncov

WHO R&D Blueprint

https://www.who.int/blueprint/priority-diseases/key-action/novel-coronavirus/en/

WHO: Coronavirus disease (COVID-19) outbreak resources

https://www.who.int/emergencies/diseases/novel-coronavirus-2019

Latest information and advice from the UK Government

https://www.gov.uk/guidance/coronavirus-covid-19-information-for-the-public

CDC COVID-19 Resources

https://www.cdc.gov/coronavirus/2019-ncov/index.html

The Lancet COVID-19 Resource Centre

https://www.thelancet.com/coronavirus

Elsevier's Novel Coronavirus Information Center

https://www.elsevier.com/connect/coronavirus-information-center

Cell Press Coronavirus Resource Hub

https://www.cell.com/2019-nCOV

Cochrane Special Collections - COVID-19: infection control and prevention measures

https://www.cochranelibrary.com/collections/doi/SC000040/full

The BMJ Coronavirus (covid-19): Latest news and resources

https://www.bmj.com/coronavirus?int_source=wisepops&int_medium=wisepops&int_campaign=DAA_CoronaVirus_Jan24

Johns Hopkins Coronavirus Resource Centre

https://coronavirus.jhu.edu

Global Partnership for Sustainable Development – COVID-19 resources

http://www.data4sdgs.org/resources/covid-19-resources

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