

# COVID-19

## Demography Evidence Summary

### No.4

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*This is the fourth of a weekly COVID-19 Demography Evidence Summary (DES) 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 4 hours of work per week and 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 could refer to before making decisions.*

*This DES looks specifically to the demographic indicators that impact on transmission/spreading and mortality rate, and the emerging policy advice on tailoring such responses to account for demographic indicators.*

*\* Means a specific focus on Africa.*

## Academic journal articles and research papers

### Trends of SARS-CoV-2 infection worldwide: Role of population density, age structure, and climate on transmission and case fatality

Endailalu, T.B., & Hadgu, F.W. | *MedRxiv* (not peer reviewed) | May 22, 2020 |tags: population density, age structure, mortality

<https://doi.org/10.1101/2020.05.20.20104257>

**Abstract:** The purpose of this study was to examine the effects of different spatial and demographic factors on COVID-19 transmission and case fatality worldwide. They stay assessed SARS-CoV2-virus transmission and COVID-19 related fatalities in 50 countries in all continents of the globe. The study found no statistically significant association between disease spread and latitude or population density. The regression model analysis that accounted for age, population density and

latitude showed that age distribution remains an important driver shaping the current distribution of COVID-19 cases. An increase in the elderly population proportion by 1 percent was associated with an increase in CFR by 0.32. The study confirms that death and severity of COVID-19 are associated with age, in countries with the biggest outbreaks, strategies must be employed to ensure that high risk groups, such as old people received adequate protection from COVID-19.

## COVID-19 pandemic, socioeconomic crisis and human stress in resource-limited settings: A case from Bangladesh

Shammi, M., Bodrud-Doza, Towfiqul Islam, & Rahman, M. | *Heliyon*, Volume 6, Issue 5, May 2020 | May 20, 2020 | tags: population density, socioeconomic position, mental health

<https://doi.org/10.1016/j.heliyon.2020.e04063>

**Abstract:** This study shows that the community transmission of COVID-19 happens fast in Bangladesh considering the population density, healthcare capacity, limited resources and existing poverty, environmental factors, social structure, cultural norms. The spread of COVID-19 has increased the sense of fear in communities, in particular, in resource-limited settings. Proper risk assessment of the pandemic and dependable risk communications to risk groups, multi-sectoral management taskforce development, transparency, and good governance with inter-ministerial coordination is required along with strengthening healthcare capacity was suggested to reduce mental and social stress causing a socioeconomic crisis of COVID-19 outbreak. This assessment process could help the government and policymakers to judge the public perceptions to deal with COVID-19 pandemic in densely populated lower-middle-income and limited-resource countries like Bangladesh.

## Monitoring trends and differences in COVID-19 case fatality rates using decomposition methods: Contributions of age structure and age-specific fatality

Dudel, C., Riffe, T., Acosta, E., van Raalte, A.A., Strozza, C. & Myrskylä, M. | *MedRxiv* (not peer reviewed) | May 18, 2020 | tags: mortality, age structure

<https://doi.org/10.1101/2020.03.31.20048397>

**Abstract:** The population-level case-fatality rate (CFR) associated with COVID-19 varies substantially, both across countries time and within countries over time. This study analyses the contribution of two key determinants of the variation in the observed CFR: the age-structure of diagnosed infection cases and age-specific case-fatality rates. It uses data on diagnosed COVID-19 cases and death counts attributable to COVID-19 by age for China, Germany, Italy, South Korea, Spain, the United States, and New York City. Demographic decomposition is used to break the difference between CFRs into unique contributions arising from the age-structure of confirmed cases and the age-specific case-fatality. In late April 2020, CFRs varied from 2.2% in South Korea to 13.0% in Italy. The age-structure of detected cases

often explains more than two thirds of cross-country variation in the CFR. The importance of the age-structure of confirmed cases likely reflects several factors, including different testing regimes and differences in transmission trajectories.

## Global Access to Handwashing: Implications for COVID-19 Control in Low-Income Countries

Brauer, M., Zhao, J.T. & Stanaway, J.D. | *Environmental Health Perspectives*, Volume 128, Issue 5 | May 15, 2020 | tags: spreading, socioeconomic position

<https://doi.org/10.1289/EHP7200>

**Abstract:** Handwashing is a key component of guidance to reduce transmission of COVID-19. In low-income countries, reduction of transmission is of paramount importance, but social distancing is challenged by high population densities and access to handwashing facilities with soap and water is limited. For populations without handwashing access, immediate improvements in access or alternative strategies are urgently needed, and disparities in handwashing access should be incorporated into COVID-19 forecasting models when applied to low-income countries.

## Age-adjusted associations between comorbidity and outcomes of COVID-19: a review of the evidence

Mason, K.E., McHale, P., Pennington, A., Maudsley, G., Day, J., & Barr, B. | *MedRxiv* (not peer reviewed) | May 14, 2020 | tags: age structure, comorbidity

<https://doi.org/10.1101/2020.05.06.20093351>

**Abstract:** Current evidence suggests that older people and people with underlying comorbidities are at increased risk of severe disease and death following hospitalisation with COVID-19. As comorbidity increases with age, it is necessary to understand the age-adjusted relationship between comorbidity and COVID-19 outcomes, in order to enhance planning capabilities and our understanding of COVID-19. After screening 579 studies, we identified seven studies eligible for inclusion and these were synthesised narratively. All were from China. The emerging evidence base mostly indicates that after adjustment for age (and in some cases other potential confounders), obesity, hypertension, diabetes mellitus, chronic obstructive airways disease (COPD), and cancer are all associated with worse outcomes. Given the intersection of comorbidity with ethnicity and social disadvantage, these findings also have important implications for health inequalities.

## Equity in response to the COVID-19 pandemic: an assessment of the direct and indirect impacts on disadvantaged and vulnerable populations in low- and lower middle-income countries

Winskill, P., Whittaker, C., Walker, P., et al. | *Imperial College London*, Report 22 | May 12, 2020 | tags: socioeconomic position, mortality

<https://doi.org/10.25561/78965>

**Abstract:** This study explores the relationships by using large-scale household surveys to quantify the differences in handwashing access, occupation and hospital access with respect to wealth status in low-income settings. The findings demonstrate clear trends that the probability of death from COVID-19 increases with increasing poverty. On average, the study estimates a 32.0% (2.5th -97.5th centile 8.0%-72.5%) increase in the probability of death in the poorest quintile compared to the wealthiest quintile from these three factors alone. It further explores how risk mediators and the indirect impacts of COVID-19 may also hit these same disadvantaged and vulnerable the hardest. Furthermore, the study finds that larger, inter-generational households that may hamper efforts to protect the elderly if social distancing are associated with lower-income countries and, within LMICs, lower wealth status.

## The dynamics of COVID-19: weather, demographics and infection timeline

Renato H.L. Pedrosa | *MedRxiv* (not peer reviewed) | May 10, 2020 | tags: population density, mortality

<https://doi.org/10.1101/2020.04.21.20074450>

**Abstract:** This study looks at the effects of temperature, absolute humidity, population density and when countries reach 100 cases on early pace of COVID-19 expansion. When all variables are considered, only population density and the timeline variable show statistical significance. This has policy implications regarding how to control the pace of COVID-10 outbreak in a particular area. The study suggest that population density should be employed as a control variable and that analysis should have a local character in studies involving the dynamics of COVID-19.

## Importance of collecting data on socioeconomic determinants from the early stage of the COVID-19 outbreak onwards

Khalatbari-Soltani, S., Cumming, R.G., Delpierre, C., et al  
*Journal of Epidemiology & Community Health* | May 08, 2020 | tags: socioeconomic position, spreading

<http://dx.doi.org/10.1136/jech-2020-214297>

**Abstract:** To be able to understand the complex and interrelated influence of socioeconomic factors on COVID-19 transmission, incidence and its health outcomes, data sources with comprehensive socioeconomic measures are needed. This could be done by linking people's addresses or postcodes to area-based SEP through geo-localisation, which may offer some insight into the likelihood of exposure to certain health risks, including pollution or public transport. Indeed, these variables are often used as proxies for individual social-economic position (SEP); however, they are not an accurate reflection of individual circumstances, could underestimate the extent of social inequalities compared to individual social measures and are best used in parallel with individual-level variables to reflect geographical or aggregate-level exposures.

## The Potential Impact of the COVID-19 Epidemic on HIV, TB and Malaria in Low- and Middle-Income Countries

Hogan, A.B., Jewell, B., Sherrard-Smith, E., et al  
*Imperial College London, Report 19 | May 01, 2020 | tags: comorbidity*

<https://doi.org/10.25561/78670>

**Abstract:** This study aims to quantify the extent to which such disruptions in services for HIV, TB and malaria in high burden low- and middle-income countries could lead to additional loss of life. In high burden settings, HIV, TB and malaria related deaths over 5 years may be increased by up to 10%, 20% and 36%, respectively, compared to if there were no COVID-19 epidemic. The study estimates the greatest impact on HIV to be from interruption to ART, which may occur during a period of high or extremely high health system demand; for TB, the greatest impact is from reductions in timely diagnosis and treatment of new cases, which may result from a long period of COVID-19 suppression interventions; for malaria, the greatest impact could come from reduced prevention activities including interruption of planned net campaigns, through all phases of the COVID-19 epidemic. Maintaining the most critical prevention activities and healthcare services for HIV, TB and malaria could significantly reduce the overall impact of the COVID-19 epidemic.

## Policy briefs, statements, tools, guidelines

### COVID-19 and People on the Move

UN Policy Brief by *UNHCR* | June 03, 2020 | tags: policy, migration

<https://data2.unhcr.org/en/documents/details/76793>

## **Advocating for Sexual and Reproductive Health Services in COVID-19 Response**

Advocacy statement and social media toolkit by *Inter-Agency Working Group on Reproductive Health in Crises* | May 12, 2020 | tags: policy, SRH

<https://iawg.net/resources/advocating-for-sexual-and-reproductive-health-services-in-covid-19-response>

## **Asylum Trends and COVID-19**

*European Asylum Support Office* special report | May 07, 2020 | tags: policy, migration

<https://www.easo.europa.eu/sites/default/files/easo-special-report-asylum-COVID.pdf>

## **Webinars (recordings)**

### **Use versus protection: Data in the balance during COVID-19**

Organiser: *United Nations World Data Forum* | May 29, 2020 | tags: data

<https://unstats.un.org/unsd/undataforum/webinar/index.html>

### **Development Policy and COVID-19**

e-Seminar Series (still running and list of past recordings) | Organiser: *World Bank, Development Research Group*

<https://www.worldbank.org/en/research/brief/development-policy-covid-19-eseminar>

## **Comments, Editorials, Opinions, Blogs, News**

### **\* COVID-19 in Mauritius and other tourist paradises: A progress report**

Jaime de Melo (Senior Fellow FERDI, CEPR Research Fellow, Emeritus Professor at University of Geneva), Verena Tandrayen-Ragoobur (Associate Professor in Economics, University of Mauritius), Boopen Seetanah (Professor at University of Mauritius) | Published on *VoxEu* | May 28, 2020

<https://voxeu.org/article/COVID-19-mauritius-and-other-tourist-paradises>

## \* **A comparative look at Ghana and Tanzania's COVID-19 containment**

Isaac Haruna Ziaba (Ph.D. candidate at the LSE's International Development Department). | Published on *London School of Economics* | May 21, 2020

<https://blogs.lse.ac.uk/africaatlse/2020/05/21/comparative-look-at-ghana-and-tanzanias-COVID-19-containment-economy/>

## **Measuring excess mortality: England is the European outlier in the COVID-19 pandemic**

Janine Aron (Senior Research Fellow, Institute for New Economic Thinking; Associate Member, Nuffield College; Member of the Centre for the Study of African Economies, University of Oxford) and John Muellbauer (Senior Research Fellow, Nuffield College; Professor of Economics, Oxford University; Senior Fellow, Institute for New Economic Thinking) | Published on *VoxEu* | May 18, 2020

<https://voxeu.org/article/excess-mortality-england-european-outlier-COVID-19-pandemic>

## **Smart containment: How low-income countries can tailor their COVID-19 response**

Jushnu Das (Professor at Georgetown University) and Carolina Sánchez-Páramo (World Bank Group Global Director, Poverty) | Published on *World Bank* | May 14, 2020

<https://blogs.worldbank.org/voices/smart-containment-how-low-income-countries-can-tailor-their-COVID-19-response>

## **COVID-19 Data hubs relevant for Demography**

### **Coronavirus (COVID-19) Data Resource Hub**

**Data resource hub by *Data World***

<https://data.world/resources/coronavirus/>

### **Demographic and Social Statistics: countries with a census in 2020 and the impact of COVID-19**

Updates on census 2020 and COVID-19 by the *UN Statistics Division*

<https://unstats.un.org/unsd/demographic-social/census/COVID-19/>

### **Migration Data Portal**

Migration data relevant for COVID-19 pandemic

<https://migrationdataportal.org/themes/migration-data-relevant-COVID-19-pandemic>

## Understanding the Coronavirus (COVID-19) pandemic through data

Data centre on COVID-19 by the *World Bank Group*

<http://datatopics.worldbank.org/universal-health-coverage/coronavirus/>

## Using mobile operator data

Data portal by *Flowminder*

<https://COVID19.flowminder.org/>

## WorldPop global demographic data

Portal with localised demographic data on sex and age accessible to tailor COVID-19 responses by *Southampton University*

<https://www.southampton.ac.uk/publicpolicy/COVID19/tatem-worldpop.page>

## COVID-19 Resource hubs relevant for Demography

### \*African Population and Health Research Centre

APHRC COVID-19 Situation updates in Sub-Saharan Africa

<https://aphrc.org/COVID-19-situation-updates/>

### \*Africa Centres for Disease Control and Prevention

COVID-19 Resource hub

<https://africacdc.org/COVID-19/COVID-19-resources/>

### \*Africa UN Knowledge Hub for COVID-19

One-stop knowledge information centre of all UN agencies on COVID-19 by *UN Development System in Africa*

<https://knowledge.uneca.org/COVID19/>

## Family Planning & COVID-19

Family Planning 2020 COVID-19 resource hub

<http://familyplanning2020.org/COVID-19>

## Global Partnership for Sustainable Development Data

COVID-19 resources hub on data and mapping

<http://www.data4sdgs.org/resources/COVID-19-resources>



## International Conference on Family Planning

COVID-19 and reproductive health

<https://icfp2021.org/COVID19>

## International Union for the Scientific Study of Population

Demographers' contributions to the understanding of the COVID-19 pandemic

<https://iussp.org/fr/node/11297>

## Population Council

Responding to the COVID-19 pandemic

<https://www.popcouncil.org/research/responding-to-the-COVID-19-pandemic>

## Population Europe: The Network of Europe's leading Demographic Research Centres

Demography and COVID-19

<https://population-europe.eu/news/demography-coronavirus>

## UNFPA

United Nations Population Funds COVID-19 knowledge hub

<https://www.unfpa.org/COVID19>

## Suggested citation

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## Methodology

The rapid weekly search looks for peer-reviewed academic articles, however, due to rapid developments most academic literature is not peer-reviewed (yet). Therefore, the literature is complemented by a search of the homepage of high-impact global health, demography and population journals and a Twitter search of their Twitter pages. A search also of preprints, for example from medRxiv. Additional commentaries, opinions, and commissioned pieces are selected based on relevance. The search for dashboards, guidelines, tools, editorials, comments, blogs, opinions and news is mostly through academic institutions, journals, C19 resource hubs and following lead academics and professionals on Twitter.

## About this report

The weekly Demography Evidence Summaries are not intended to replace professional advice and the researcher or the K4D consortium cannot be held responsible for any decisions made about COVID-19 on the basis of the summaries alone.

K4D services are provided by a consortium of leading organisations working in international development, led by the Institute of Development Studies (IDS), with Education Development Trust, Itad, University of Leeds Nuffield Centre for International Health and Development, Liverpool School of Tropical Medicine (LSTM), University of Birmingham International Development Department (IDD) and the University of Manchester Humanitarian and Conflict Response Institute (HCRI).

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