



# COVID-19

## Demography Evidence Summary

### No.11

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*This is the 11<sup>th</sup> of a two-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 decisionmakers which, if relevant to them, they could refer to before making decisions.*

*The scope of DES includes emerging evidence on i) how COVID-19 impacts on demographic indicators, ii) how demographic indicators impact on transmission/spreading and mortality rate, and iii) policy advice on tailoring such responses to account for demographic indicators.*

*\* Means a specific focus on Afric*

## Academic journal articles and research papers

### Impact of demographic indicators on COVID-19 spreading and mortality

Publication date	Title/URL	Journal/Publication type	Authors	Summary	Tags
*forthcoming (November 2020)	How health inequality affect responses to the COVID-19 pandemic in Sub-Saharan Africa	World Development / Volume 135, 105067	Okoi, O. & Bwawa, T.	<ul style="list-style-type: none"> <li>This paper compiles evidence from the WHO-UNICEF data to show the health disparities that limit the capacity of African countries to effectively address the COVID-19 disease along with recommendations for addressing the challenge.</li> <li>Efforts to contain the spread of the disease would require developing and implementing public health interventions that take into consideration concerns about equity and social justice.</li> <li>The research agenda needs to move beyond documenting health inequalities to include efforts to support policy development to reduce inequality and improve healthy living conditions for the most vulnerable populations.</li> </ul>	Inequality, policy
*forthcoming (October 2020)	Modeling the transmission dynamics of the COVID-19 Pandemic in South Africa	Mathematical Biosciences / Volume 328, 108441	Garba, S.M. Lubuma, J.M.S., & Tsanou, B.	<ul style="list-style-type: none"> <li>This study is based on the use of a compartmental model to analyse the transmission dynamics of the disease in South Africa. A notable feature of the model is the incorporation of the role of</li> </ul>	Spreading, policy

				<p>environmental contamination by COVID-infected individuals. The model used cumulative mortality data from South Africa and is used to assess the impact of various control and mitigation strategies.</p> <ul style="list-style-type: none"> <li>• Analysis of the model reveals that its associated continuum of disease-free equilibria is globally-asymptotically stable whenever the control reproduction number is less than unity. The epidemiological implication of this result is that the disease will eventually die out, particularly if control measures are implemented early and for a sustainable period of time.</li> <li>• To illustrate the effectiveness of self-isolation in reducing the number of cases, the study emphasises the importance of surveillance testing and contact tracing of the contacts and confirmed cases in curtailing the pandemic in South Africa.</li> </ul>	
*forthcoming (October 2020)	Predicting COVID-19 spread in the face of control measures in West Africa	Mathematical Biosciences / Volume 328, 108431	Taboe, H.B., Salako, K.V., Tison, J.M., Ngonghala, C.N., & Kakaï, R.G.	<ul style="list-style-type: none"> <li>• This study formulated and used a deterministic compartmental model to (i) assess the current patterns of COVID-19 spread in West Africa, (ii) evaluate the impact of currently implemented control measures, and (iii) predict the future course of the pandemic with and without currently implemented and additional control measures in West Africa.</li> <li>• Considering currently applied health control measures, numerical simulations of the model using baseline parameter values estimated from West African COVID-19 data</li> </ul>	Spreading, policy

				<p>project a 67% reduction in the daily number of cases when the epidemic attains its peak. More reduction in the number of cases will be achieved if additional public health control measures that result in a reduction in the effective contact rate are implemented.</p> <ul style="list-style-type: none"> <li>• Disease elimination is difficult when more asymptomatic individuals contribute in transmission or are not identified and isolated in a timely manner. However, maintaining a baseline level of asymptomatic isolation and a low transmission rate will lead to a significant reduction in the number of daily cases when the pandemic peaks.</li> <li>• The study showed that the currently implemented measures triggered a 33% reduction in the time-dependent effective reproduction number between February 28 and June 26, 2020.</li> </ul>	
forthcoming (September 2020)	COVID-19 in people living with diabetes: An international consensus	Journal of Diabetes and its complications / Volume 34, Issue 9, 107671	Caballero, A.E., Ceriello, A., Misra, A., Aschner, P., M.E., McDonnell, Hassanein, M., Mbanya, J.C., Fonseca, V.A.	<ul style="list-style-type: none"> <li>• A large proportion of patients with COVID-19 requiring hospitalisation and/or succumbing to the disease have had diabetes and other chronic conditions as underlying risk factors. Multiple and complex socioeconomic factors have long played a role in increasing the risk for diabetes and now for COVID-19.</li> <li>• The current clinical management of diabetes is a work in progress, requiring a shift in patient-provider interaction beyond the walls of clinics and hospitals: the use of tele-medicine when feasible, innovative patient education programmes, strategies to ensure medication and glucose testing availability and</li> </ul>	Comorbidity

				affordability, as well as numerous ideas on how to improve meal plans and physical activity.	
13.08.2020	Factors Associated with Disease Severity and Mortality among Patients with Coronavirus Disease 2019: A Systematic Review and Meta-Analysis	MedXiv (not peer reviewed)	Chidambaram, V., Tun, N.L., Haque, W., Majella, M.G., Sivakumar, R.K., Kumar, A. et al.	<ul style="list-style-type: none"> <li>This study searched PubMed, Embase and WHO database for English language articles from inception until May 8, 2020. Included were observational studies with direct comparison of clinical characteristics between a) patients who died and those who survived or b) patients with severe disease and those without severe disease. 109 articles were included in the analysis.</li> <li>The risk of mortality was higher in patients with increasing age, male gender, dyspnea, diabetes, hypertension. Congestive heart failure, hilar lymphadenopathy, bilateral lung involvement and reticular pattern were associated with severe disease.</li> <li>Clinically relevant cut-offs for leukocytosis, lymphopenia, elevated C-reactive protein, LDH and D-dimer had higher odds of severe disease and greater risk of mortality.</li> </ul>	Mortality, comorbidity, age structure
*10.08.2020	Modelling spatial variations of coronavirus disease (COVID-19) in Africa	Science of Total Environment / Volume 729, 138998	Adekunle, I.A., Onanuga, A.T., Akinola, O.O., & Ogunbanjo, O.W.	<ul style="list-style-type: none"> <li>This study constructed spatial variations of clusters that examined the nexus between COVID-19 attributable deaths and confirmed cases. The study used publicly available data on confirmed cases and death across Africa to unravel the unobserved factors, that could be responsible for the spread of COVID-19.</li> <li>The study used the dynamic system generalised method of moment estimation procedure and found a</li> </ul>	Population density

				~0.045 Covid19 deaths as a result of confirmed cases in Africa. It accounted for cross-sectional dependence and found a basis for the strict orthogonal relationship.	
05.08.2020	Association of country-wide coronavirus mortality with demographics, testing, lockdowns, and public wearing of masks. Update August 4, 2020	MedRxiv (not peer reviewed)	Leffler, C.T., Ing, E.B., Lykins, J.D., Hogan, M.C., McKeown, C.A., & Grzybowski, A.	<ul style="list-style-type: none"> <li>• Potential predictors of per-capita coronavirus-related mortality in 200 countries by May 9, 2020 were examined, including age, sex, obesity prevalence, temperature, urbanisation, smoking, duration of infection, lockdowns, viral testing, contact tracing policies, and public mask-wearing norms and policies. Multivariable linear regression analysis was performed.</li> <li>• In univariate analyses, the prevalence of smoking, per-capita gross domestic product, urbanisation, and colder average country temperature were positively associated with coronavirus-related mortality.</li> <li>• In a multivariable analysis of 196 countries, the duration of infection in the country, and the proportion of the population 60 years of age or older were positively associated with per-capita mortality, while duration of mask-wearing by the public was negatively associated with mortality (all <math>p &lt; 0.001</math>).</li> <li>• Societal norms and government policies supporting the wearing of masks by the public, as well as international travel controls, are independently associated with lower per-capita mortality from COVID-19.</li> </ul>	Mortality, age structure, policy

*24.07.2020	High variation expected in the pace and burden of SARS-CoV-2 outbreaks across sub-Saharan Africa	MedRxiv (not peer reviewed)	Rice, B.L., Annapragada, A.V., Baker, R.E., Bruijning, M., Dotse-Gborgbortsi, W., Mensah, K. et al.	<ul style="list-style-type: none"> <li>This study synthesised factors hypothesised to shape the pace of this pandemic and its burden as it moves across sub-Saharan Africa (SSA), encompassing demographic, comorbidity, climatic, healthcare and intervention capacity, and human mobility dimensions of risk.</li> <li>The study finds large scale diversity in probable drivers, such that outcomes are likely to be highly variable among SSA countries. While simulation shows that extensive climatic variation among SSA population centres has little effect on early outbreak trajectories, heterogeneity in connectivity is likely to play a large role in shaping the pace of viral spread. The prolonged, asynchronous outbreaks expected in weakly connected settings may result in extended stress to health systems.</li> <li>The observed variability in comorbidities and access to care will likely modulate the severity of infection. The study shows that even small shifts in the infection fatality ratio towards younger ages, which are likely in high risk settings, can eliminate the protective effect of younger populations.</li> </ul>	Mortality, age structure, comorbidity
22.07.2020	A retrospective cross-national examination of COVID-19 outbreak in 175 countries: a multiscale geographically weighted regression analysis (January 11-June 28, 2020)	Journal of Infection and Public Health / Corrected Proof	Emmanuelyanda, A., Adeleke, R., Lu, Y., Osayomi, T., Adaralegbe, A., Lasode, M., Chima-Adaralegbe, N.J., Osundina, A.M.	<ul style="list-style-type: none"> <li>This study used spatial analysis to examine the cross-national determinants of confirmed cases of COVID-19 based on the World Health Organization official COVID-19 data and the World Bank Indicators of Interest to the COVID-19 outbreak. All models controlled for COVID-19 government measures.</li> </ul>	Age structure, spreading

				<ul style="list-style-type: none"> <li>• The percentage of the population age between 15-64 years, percentage smokers, and out-of-pocket expenditure significantly explained global variation in the current COVID-19 outbreak in 175 countries.</li> <li>• The percentage population age group 15-64 and out of pocket expenditure were positively associated with COVID-19. Conversely, the percentage of the total population who smoke was inversely associated with COVID-19 at the global level.</li> </ul>	
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## Impact of COVID-19 on demography

Publication date	Title/URL	Journal/Publication type	Authors	Summary	Tags
*Forthcoming (September 2020)	Covid-19 lockdowns, income distribution, and food security: An analysis for South Africa	Global Food Security / Volume 26, 100410	Arndt, C., Davies, R., Gabriel, S., Harris, L., Makrelov, K. et al.	<ul style="list-style-type: none"> <li>• The distancing measures deployed by South Africa impose large economic costs and have negative implications for the factor distribution of income. Households with low levels of educational attainment and high dependence on labour income would experience an enormous real income shock that would clearly jeopardise the food security of these households.</li> <li>• In South Africa, total incomes for low income households are significantly insulated by government transfer payments, illustrating the value of</li> </ul>	Poverty, food security, policy



				having in place transfer policies that support vulnerable households in the event of 'black swan' type shocks.	
*31.07.2020	Understanding the impact of interruptions to HIV services during the COVID-19 pandemic: A modelling study	E-Clinical Medicine (Published by The Lancet) / Corrected Proof	Jewell, B.L., Smith, J.A., & Hallett, T.B.	<ul style="list-style-type: none"> <li>• This study explored the impact of disruptions on HIV outcomes in South Africa, Malawi, Zimbabwe, and Uganda using a mathematical model, examine how impact is affected by model assumptions, and compare potential HIV deaths to those that may be caused by COVID-19 in the same settings.</li> <li>• The most important determinant of HIV-related mortality is an interruption to antiretroviral treatment (ART) supply. A three-month interruption for 40% of those on ART could cause a similar number of additional deaths as those that might be saved from COVID-19 through social distancing.</li> <li>• An interruption for more than 6–90% of individuals on ART for nine months could cause the number of HIV deaths to exceed the number of COVID-19 deaths, depending on the COVID-19 projection.</li> <li>• If ART supply is maintained, but new treatment, voluntary medical male circumcision, and pre-exposure prophylaxis initiations cease for 3 months and condom use is reduced, increases in HIV deaths would be limited to &lt;2% over five years, although this could still be accompanied by a 7% increase in new HIV infections.</li> </ul>	HIV services

*17.07.2020	Routine childhood immunisation during the COVID-19 pandemic in Africa: a benefit–risk analysis of health benefits versus excess risk of SARS-CoV-2 infection	The Lancet, Global Health / Corrected Proof article	Abbas, K., Procter, S.R., Van Zandvoort, K., Funk, S., Clark, A., Funk, S., et al.	<ul style="list-style-type: none"> <li>• This study considered a high-impact scenario and a low-impact scenario to approximate the child deaths that could be caused by immunisation coverage reductions during COVID-19 outbreaks. Country-specific household age structure estimates and age-dependent infection-fatality rates were applied to calculate the number of deaths attributable to the vaccination clinic visits.</li> <li>• The study finds that in the high-impact scenario, for everyone excess COVID-19 death attributable to SARS-CoV-2 infections acquired during routine vaccination clinic visits, 84 deaths in children could be prevented by sustaining routine childhood immunisation in Africa. The benefit–risk ratio for the vaccinated children is 85 000 (4900–546 000), for their siblings (&lt;20 years) is 75 000 (4400–483 000), for their parents or adult carers (aged 20–60 years) is 769 (148–2700), and for older adults (&gt;60 years) is 96 (14–307).</li> <li>• In the low-impact scenario that approximates the health benefits to only the child deaths averted from measles outbreaks, the benefit–risk ratio to the households of vaccinated children is 3 (0–10); if the risk to only the vaccinated children is considered, the benefit–risk ratio is 3000 (182–21 000).</li> </ul>	Immunisation
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## Policy briefs, statements, tools, guidelines

Publication date	Title/URL	Publication organisation/type	Authors	Tags
04.08.2020	Estimating mortality from Covid-19	Scientific brief, World Health Organization (WHO)	WHO	Mortality
04.08.2020	<b>Covid-19 RCCE Strategies for Cross-Border Movement in Eastern and Southern Africa</b>	Brief, Social Science in Humanitarian Action Platform (SSHAP)	Leslie Jones (Anthrologica) and Megan Schmidt-Sane (IDS)	Transborder movement
August 2020	<b>Education during Covid-19 and beyond</b>	Policy brief, United Nations (UN)	UN	Education

## Comments, Editorials, Opinions, Blogs, News

Publication date	Title/URL	Article type	Authors
13.08.2020	How to stop COVID-19 fuelling a resurgence of AIDS, malaria and tuberculosis	Nature / Editorial	Nature
*11.08.2020	The pandemic appears to have spared Africa so far. Scientists are struggling to explain why	Science magazine, news article	Linda Nordling (journalist based in Cape Town)
*07.08.2020	SARS-CoV-2 epidemic in African countries—are we losing perspective?	The Lancet, Infectious Disease / Correspondence to academic article	Andreas Kalk (Deutsche Gesellschaft für Internationale Zusammenarbeit, Kinshasa, DR Congo) and Andreas Schultz (College of Medicine, Department of Paediatrics, University of Malawi, Lilongwe, Malawi)
01.08.2020	As the pandemic recedes, let migrants move again	The Economist, news article	The Economist
01.08.2020	COVID-19 has “devastating” effect on women and girls	The Lancet, news article	Sophie Cousins

15.06.2020	Migrants in Africa & COVID-19: From Emergency Measures to Inclusive Social Protection Systems	Migration Policy Institute (MPI) podcast	MPI
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## COVID-19 Data hubs relevant for Demography

Organisation	Title	URL
*African Arguments	Coronavirus in Africa Tracker: Data on confirmed cases in Africa	<a href="https://africanarguments.org/2020/06/11/coronavirus-in-africa-tracker-how-many-cases-and-where-latest/">https://africanarguments.org/2020/06/11/coronavirus-in-africa-tracker-how-many-cases-and-where-latest/</a>
Data World	COVID-19 Data Resource Hub	<a href="https://data.world/resources/coronavirus/">https://data.world/resources/coronavirus/</a>
UN statistics division	Updates on census 2020 and COVID-19	<a href="https://unstats.un.org/unsd/demographic-social/census/COVID-19/">https://unstats.un.org/unsd/demographic-social/census/COVID-19/</a>
*GeoPoll	Data dashboard on COVID-19 impact on Africa	<a href="https://www.geopoll.com/blog/coronavirus-in-sub-saharan-africa-food-security-covid-testing/#dashboard">https://www.geopoll.com/blog/coronavirus-in-sub-saharan-africa-food-security-covid-testing/#dashboard</a>
Migration Data Portal	Migration data relevant for COVID-19 pandemic	<a href="https://migrationdataportal.org/themes/migration-data-relevant-COVID-19-pandemic">https://migrationdataportal.org/themes/migration-data-relevant-COVID-19-pandemic</a>
World Bank Group	Understanding the COVID-19 pandemic through data: Data centre on COVID-19	<a href="http://datatopics.worldbank.org/universal-health-coverage/coronavirus/">http://datatopics.worldbank.org/universal-health-coverage/coronavirus/</a>
Flowminder	Using mobile operator data to track COVID-19	<a href="https://COVID19.flowminder.org/">https://COVID19.flowminder.org/</a>
University of Southampton	WorldPop global demographic data: Portal with localised demographic data on sex and age accessible to tailor COVID-19 responses	<a href="https://www.southampton.ac.uk/publicpolicy/COVID19/tatem-worldpop.page">https://www.southampton.ac.uk/publicpolicy/COVID19/tatem-worldpop.page</a>

## COVID-19 Resource hubs relevant for Demography

Organisation	Title	URL
*African Population and Health Research Centre (APHRC)	APHRC COVID-19 Situation updates in Sub-Saharan Africa	<a href="https://aphrc.org/COVID-19-situation-updates/">https://aphrc.org/COVID-19-situation-updates/</a>
*Africa Centres for Disease Control and	Africa CDC COVID-19 Resource hub	<a href="https://africacdc.org/COVID-19/COVID-19-resources/">https://africacdc.org/COVID-19/COVID-19-resources/</a>

Prevention (Africa CDC)		
*UN Development System in Africa	One-stop knowledge information centre of all UN agencies on COVID-19	<a href="https://knowledge.uneca.org/COVID19/">https://knowledge.uneca.org/COVID19/</a>
Family Planning 2020	Family Planning and COVID-19 resource hub	<a href="http://familyplanning2020.org/COVID-19">http://familyplanning2020.org/COVID-19</a>
Global Partnership for Sustainable Development Data	COVID-19 resources hub on data and mapping	<a href="http://www.data4sdgs.org/resources/COVID-19-resources">http://www.data4sdgs.org/resources/COVID-19-resources</a>
*INCLUDE Knowledge Platform	COVID-19: Challenging Inclusive Development in Africa	<a href="https://includeplatform.net/inclusive-development-covid-19-pandemic/">https://includeplatform.net/inclusive-development-covid-19-pandemic/</a>
International Conference on Family Planning	COVID-19 and reproductive health	<a href="https://icfp2021.org/COVID19">https://icfp2021.org/COVID19</a>
International Union for the Scientific Study of Population	Demographers' contributions to the understanding of the COVID-19 pandemic	<a href="https://iussp.org/fr/node/11297">https://iussp.org/fr/node/11297</a>
*ONE	The ONE Africa COVID-19 Tracker	<a href="https://www.one.org/africa/about/policy-analysis/covid-19-tracker/">https://www.one.org/africa/about/policy-analysis/covid-19-tracker/</a>
Population Council	Research hub on the COVID-19 pandemic	<a href="https://www.popcouncil.org/research/responding-to-the-COVID-19-pandemic">https://www.popcouncil.org/research/responding-to-the-COVID-19-pandemic</a>
Population Europe	The Network of Europe's leading Demographic Research Centres on Demography and COVID-19	<a href="https://population-europe.eu/news/demography-coronavirus">https://population-europe.eu/news/demography-coronavirus</a>
REACH Initiative	Supporting the Humanitarian Response to COVID-19	<a href="https://www.reach-initiative.org/what-we-do/news/updates-on-ongoing-research-and-activities-linked-to-covid-19-pandemic/">https://www.reach-initiative.org/what-we-do/news/updates-on-ongoing-research-and-activities-linked-to-covid-19-pandemic/</a>
UNFPA	United Nations Population Funds COVID-19 knowledge hub	<a href="https://www.unfpa.org/COVID19">https://www.unfpa.org/COVID19</a>

## Suggested citation

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## Methodology

The rapid two-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

This two-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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