K4D | Knowledge, evidence and learning for development

COVID-19 Demography Evidence Summary No.12

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This is the 12th 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 Africa.

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 (October 2020)	Disparate on-site access to water, sanitation, and food storage heighten the risk of COVID-19 spread in Sub-Saharan Africa	Environmental Research / Volume 189	Ekumah, B., Armah, F.A., Yawson, D.A. et al.	About 46% of the sampled households in 24 sub-Saharan African countries did not have in-house access to basic necessities. The most vulnerable are practically missing from policy responses to limit the spread of COVID-19. Individuals in households without water, sanitation and food storage are more likely to violate lockdown regulations. Pre-existing inequalities in access to water, sanitation and food preservation compound layered vulnerabilities to COVID-19. Transdisciplinary research and multi-sectoral policy responses are required to address the societal impacts of COVID-19.	Spreading
*Forthcoming (October 2020)	Analysis of a mathematical model for COVID-19	Chaos, Solitons & Fractals / Volume 139	Okuonghae, D. & Omame, A.	This study looks at the impact of control measures on the population dynamics in Lagos, Nigeria. It uses a mathematical simulation model.	Policy, spreading

	population dynamics in Lagos, Nigeria			If at least 55% of the population comply with the social distancing regulation with about 55% of the population effectively making use of face masks while in public, the disease will eventually die out in the population. If case detection rate for symptomatic individuals can be stepped up to about 0.8 per day, with about 55% of the population complying with the social distancing regulations, it will lead to a great decrease in the incidence (and prevalence) of COVID-19.	
*26.08.2020	Mapping physical access to healthcare for older adults in sub-Saharan Africa: A cross-sectional analysis with implications for the COVID-19 response	MedRxiv (not peer reviewed)	Geldsetzer, P., Reinmuth, M., Ouma, P.O., et al.	This study assembled a dataset on healthcare facilities' geolocation, separately for hospitals and any type of healthcare facility (including primary care facilities) and including both private- and public-sector facilities, using data from the OpenStreetMap project and the KEMRI Wellcome Trust Programme. Population data at a 1km x 1km resolution was obtained from WorldPop. Travel time to the nearest healthcare facility for each 1km x 1km raster was estimated by using a cost-distance algorithm. 9.6% of adults aged 60 and older years had an estimated travel time to the nearest hospital of longer than six hours, varying from 0.0% in Burundi and The Gambia, to 40.9% in Sudan. 11.2% of adults aged 60 years and older had an estimated travel time to the nearest healthcare facility of any type (whether primary or secondary/tertiary care) of longer	Healthcare, age

| | | | | than three hours, with a range of 0.1% in Burundi to 55.5% in Sudan. Most countries in SSA contained populated areas in which adults aged 60 years and older had a travel time to the nearest hospital of more than 12 hours and to the nearest healthcare facility of any type of more than six hours. The median travel time to the nearest hospital for the fifth of adults aged 60 and older years with the longest travel times was 348 minutes for the entire SSA population, ranging from 41 minutes in Burundi to 1,655 minutes in Gabon. | |
| 26.08.2020 | Age-specific mortality and immunity patterns of SARS-CoV-2 infection in 45 countries | MedRxiv (not peer reviewed) | O'Driscoll, M., Ribeiro Dos Santos, G., Wang, L. et al. | Using age-specific death data from 45 countries, this study found that relative differences in the number of deaths by age amongst individuals aged <65 years old are highly consistent across locations. Combining these data with data from 15 seroprevalence surveys the researchers demonstrate how age-specific infection fatality ratios (IFRs) can be used to reconstruct infected population proportions. The study found notable heterogeneity in overall IFR estimates as suggested by individual serological studies and observe that for most European countries the reported number of deaths amongst ≥65s are significantly greater than expected, consistent with high infection attack rates experienced by nursing home populations in Europe. Age-specific COVID-19 death data in younger | Age structure, spreading |

				individuals can provide a robust indicator of population immunity.	
*26.08.2020	A call for strengthened evidence on targeted, non-pharmaceutical interventions against COVID-19 for the protection of vulnerable individuals in sub-Saharan Africa	International Journal of Infectious Diseases / Perspective	Colebunders, R., Fodjo, J.N.S., Vanham, G., & Van den Bergh, R.	Curbing COVID-19 transmission in sub-Saharan Africa may be difficult. Overall COVID-19 related mortality remains low because of the young population. Protecting vulnerable individuals from severe disease should be a priority. Researchers recommend investigating the feasibility, acceptability, and efficacy of distributing COVID-19 prevention kits to households with persons at increased risk for severe COVID-19 disease.	Policy, spreading
24.08.2020	COVID-19 prevalence and mortality in patients with cancer and the effect of primary tumour subtype and patient demographics: a prospective cohort study	The Lancet / Oncology / Peer reviewed	Lee, L.Y.W., Cazier, J-P., Starkey, T. et al.	This study used data from adult patients with cancer enrolled in the UK Coronavirus Cancer Monitoring Project cohort between March 18 and May 8, 2020 (1044 patients), and compared that with a parallel non-COVID-19 UK cancer control population from the UK Office for National Statistics (2017 data). The study found that patients with cancer with COVID-19 were significantly more likely to be men compared with the ONS control population, but the age distribution of patients with cancer who contracted COVID-19 did not differ between the two groups. Patients with haematological malignancies appeared to be at significantly increased risk of COVID-19 infection, including those with leukaemia, myeloma, and lymphoma.	Comorbidity

				Patients with lung cancer and prostate cancer were relatively under-represented in the UKCCMP population compared with the control ONS population. The all-cause case–fatality rate in patients with cancer after COVID-19 infection was significantly associated with increasing age and sex (35.6% of 595 male patients *vs* 23.6% of 445 female patients). The researchers observed a significantly higher risk of death from COVID-19 in patients with leukaemia. They found no increased case–fatality rate due to COVID-19 in patients with lung cancer compared with the rest of the UKCCMP population.	
*24.08.2020	A vulnerability index for COVID-19: spatial analysis at the subnational level in Kenya	BMJ Global Health / Volume 5, Issue 8	Macharia, P.M., Joseph, N.K., & Okiro, E.A.	Geospatial indicators were assembled to create three vulnerability indices; Social Vulnerability Index (SVI), Epidemiological Vulnerability Index (EVI) and a composite of the two, that is, Social Epidemiological Vulnerability Index (SEVI) resolved at 295 sub-counties in Kenya. The indices were classified into seven classes and the population within vulnerabilities classes was quantified. The spatial variation of each index was heterogeneous across Kenya. 49 north-western and partly eastern sub-counties (6.9 million people) were highly vulnerable, whereas 58 sub-counties (9.7 million people) in	Socioeconomic, comorbidity

				western and central Kenya were the least vulnerable for SVI. For EVI, 48 sub-counties (7.2 million people) in central and the adjacent areas and 81 sub-counties (13.2 million people) in northern Kenya were the most and least vulnerable, respectively. For SEVI, 46 sub-counties (7.0 million people) around central and south-eastern were more vulnerable, whereas 81 sub-counties (14.4 million people) were least vulnerable. The heterogeneous nature of the vulnerability indices underpins the need for targeted and prioritised actions based on the needs across the sub-counties.	
21.08.2020	Population age structure only partially explains the large number of COVID-19 deaths at the oldest ages	Demographic Research / Volume 43, Article 19	Medford, A. & Trias-Llimós, S.	This study estimated the distribution of deaths by 10-year age groups and the counterfactual age distribution under the assumption that all populations had the age structure of Italy. For this, we use 10-year age-grouped COVID-19 death counts and the corresponding population exposures for France, Italy, the Netherlands, Germany, Sweden, Spain, and China. All included European countries experienced a high proportion of deaths at older ages. The relative proportion of deaths at ages above 90 years is lowest in Italy when compared to the other countries in the study despite Italy having the oldest population in Europe.	Age structure, mortality

				Population age structure seems essential for understanding COVID-19-related mortality, but other factors may play an important role, particularly at older ages in European populations.	
21.08.2020	Susceptibility to and transmission of COVID-19 amongst children and adolescents compared with adults: a systematic review and meta-analysis	MedRxiv (not peer reviewed)	Viner, R.M., Mytton, O.T., Bonell, C. et al.	A rapid systematic review of 32 studies that address the question: what is the susceptibility to and transmission of Covid-19 by children and adolescents compared with adults? Included are studies which provided data on the prevalence of Covid-19 in children and young people (<20 years) compared with adults derived from contact-tracing or population-screening. Also, secondary infection rate (contact-tracing studies) or prevalence or seroprevalence (population-screening studies) amongst children and young people compared with adults were selected. The pooled odds ratio of being an infected contact in children compared with adults was 0.56 (0.37, 0.85) with substantial heterogeneity (95%). Three school contact tracing studies found minimal transmission by child or teacher index cases. Findings from population-screening studies were heterogenous and were not suitable for meta-analysis. The majority of studies were consistent with lower seroprevalence in children compared with adults, although	Youth, spreading

				seroprevalence in adolescents appeared similar to adults. There is preliminary evidence that children and young people have lower susceptibility to Covid-19, with a 43% lower odds of being an infected contact. There is weak evidence that children and young people play a lesser role in transmission of Covid-19 at a population level. Our study provides no information on the infectivity of children.	
20.08.2020	Economic, social and political issues raised by the COVID-19 pandemic	Economic Analysis and Policy / Journal Pre-proof	Tisdell, C.A.	This article contributes to the assessment of public policies to control the incidence of COVID-19. In particular, it specifies a model to evaluate desired social choices involving the trade-off between the severity of social restrictions (taking into account their impact on the incidence of COVID-19) and the level of economic activity. It also examines the proposition that the isolation (lockdown) of social groups is a desirable method of limiting the incidence of COVID-19. This leads onto the consideration of the extent to which personal freedom of choice (liberty) ought to be restricted in response to the COVID-19 pandemic. Particular attention is paid to the moral and ethical questions raised by policies to control COVID-19. These appear to have received little attention in the relevant economic literature.	Policy, social disparity

17.08.2020	COVID-19: risk accumulation among biologically and socially vulnerable older populations	Aging Research Review / Journal Pre-proof	Calderón-Larrañaga, A., Dekhtyar, S., Vetrano, D.L., Bellander, T., & Fratiglioni, L.	There is already some evidence showing large social disparities in the prevention, treatment, prognosis and/or long-term consequences of COVID-19. The remaining question is to what extent these affect older adults specifically. This study provides a conceptual model and reviews literature on this topic. Interdisciplinary collaboration and biological, clinical and social data integration will be crucial to guide actions aimed at reducing older adults' vulnerability to COVID-19.	Age structure, mortality, social disparity
17.08.2020	Descriptive Epidemiological Assessment of the Relationship between the Global Burden of Influenza from 2017-2019 and COVID-19	MedRxiv (not peer reviewed)	Baral, S.D., Rucinski, K.B., Rwema, J.O.T. et al.	Covid-19 and influenza are lipid-enveloped viruses with differential morbidity and mortality but shared modes of transmission. With a descriptive epidemiological framing, this study assessed whether historical patterns of regional influenza burden are reflected in the observed heterogeneity in COVID-19 cases across regions of the world. Data reported in FluNet from January 2017-December 2019 for influenza and World Health Organization for COVID-19 (to May 31, 2020) across the seven World Bank regions were used to assess the total and annual number of influenza and COVID-19 cases per country, within and across all regions, to generate comparative descending ranks from highest to lowest burden of disease. Across regions, rankings of influenza and COVID-19 were	Spreading

relatively consistent. Europe and Central Asia and North America ranked first and second for COVID-19 and second and first for influenza, respectively. East Asia and the Pacific traditionally ranked higher for influenza with recent increases in COVID-19 consistent with influenza season. Across regions, Sub-Saharan Africa ranked amongst the least affected by both influenza and COVID-19.	

Impact of COVID-19 on demography

Publication date	Title/URL	Journal/Publication type	Authors	Summary	Tags
*July-September 2020	Oncology and COVID-19: Perspectives on cancer patients and oncologists in Africa	Ethics, Medicine and Public Health / Volume 14	Okeke, M.D, Oderinde, O., Liu, L.M.D, & Kabula, D.	This article outlines the challenges that frontline health workers face in the management of cancer patients, as the entire health sector calls for effective policy formulation and implementation by the government in their role in ensuring the sound health of their citizenry. In order to win the fight against COVID-19 and future occurrences, enhanced teamwork is required and with the underlying reality of the health care system in Africa, negligence should be avoided.	Cancer treatment

26.08.2020	Impact of Covid-19 on Children's Education in Africa	Submission from Human Right Watch to The African Committee of Experts on the Rights and Welfare of the Child for the 35th Ordinary Session 31 August – 4 September 2020 / Research and testimonies based on interviews.	Human Right Watch	Testimonies from children from several African countries on receiving education/teaching during Covid-19, including discussion on gender disparities and digital divide on distance learning.	Education
20.08.2020	The impact of COVID-19 on refugees and migrants: data and observations from MMC's 4Mi program	Report from Mixed Migration Centre	Litzkow, J.	Between April and July, the researchers conducted almost 7,000 interviews with refugees and migrants in 13 different countries across Africa, Latin America and Asia, capturing the immediate impact of the COVID-19 crisis on refugees and migrants. The initial findings show that the coronavirus and measures to contain it have impacted the lives of refugees and migrants, as well as their journeys, in a myriad of ways. The lives of refugees and migrants travelling along mixed migration routes were already precarious before the COVID-19 pandemic, but the virus and measures to contain it have exacerbated vulnerabilities and multiplied risks for people on the move. As refugees and migrants report limited ability to take protective measures and various barriers to accessing health services across regions, their worry about catching the virus remains high.	Migration

				The largest initial impact beyond health concerns appears to be socioeconomic, as refugees and migrants are faced with income losses, difficulties meeting basic needs, and inability to continue their journey. The pandemic has impacted refugees and migrants journeys by limiting options for mobility within and between countries, stranding them in transit, causing some to opt to return home and rendering onward journeys for others more challenging, costly and uncertain.	

Policy briefs, statements, tools, guidelines

Publication date	Title/URL	Publication organisation/type	Authors	Tags
*August 2020	Informal traders and COVID-19 in Africa: An opportunity to strengthen the social contract	Policy Brief by International Growth Centre	Danielle Resnick, Ella Spencer, and Twivwe Siwale	Informal sector, indirect impacts
August 2020	COVID-19 and Transforming Tourism	Policy Brief by UN	UN WTO	Tourism
*11.08.2020	Experiences of vulnerable urban youth under covid-19: the case of youth with disabilities	Policy Brief on Ethiopia by GAGE (Gender and Adolescence Global Evidence)	Emirie, G., Iyasu, A. & Gezahegne, K.	Youth, Disability
*11.08.2020	Experiences of vulnerable urban youth under covid-19: the case of youth living with HIV	Policy Brief on Ethiopia by GAGE (Gender and Adolescence Global Evidence)	Emirie, G., Iyasu, A. & Gezahegne, K.	Youth, HIV

Comments, Editorials, Opinions, Blogs, News

Publication date	Title/URL	Article type	Authors
*Forthcomng (October 2020)	COVID-19 palaver: Ending rights violations of vulnerable groups in Africa	World Development / Volume 134 / Letter on Urgent Issues	Amadasun, S.
*Forthcoming (September 2020)	Improving handwashing habits and household air quality in Africa after COVID-19	The Lancet / Global Health / Volume 8,	Amegah, A.K.

		Issue 9 / Commentary	
*13.08.2020	Impact of Covid-19 on Young African Women	Pod-cast published by Mix-cloud / Talking Africa	Nurudeen Alhassan (AFIDEP)
13.08.2020	Stronger partnerships and investment needed to support women's recovery from COVID-19 in the Global South	News article on UN Women	UN Women
*03.08.2020	Flaws in the collection of African population statistics block COVID-19 insights	Blog post on The Conversation	Olamijuwon, E. (University of Eswatini), Dake, F.A.A. (Regional Institute for Population Studies, University of Ghana), Somefun, O.D. (University of the Western Cape)

COVID-19 Data hubs relevant for Demography

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

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	https://aphrc.org/COVID-19-situation-updates/
*Africa Centres for Disease Control and Prevention (Africa CDC)	Africa CDC COVID-19 Resource hub	https://africacdc.org/COVID-19/COVID-19-resources/
*UN Development System in Africa	One-stop knowledge information centre of all UN agencies on COVID-19	https://knowledge.uneca.org/COVID19/
Family Planning 2020	Family Planning and 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
*INCLUDE Knowledge Platform	COVID-19: Challenging Inclusive Development in Africa	https://includeplatform.net/inclusive-development-covid-19-pandemic/
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
*ONE	The ONE Africa COVID-19 Tracker	https://www.one.org/africa/about/policy-analysis/covid-19-tracker/
Population Council	Research hub on 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 on Demography and COVID-19	https://population-europe.eu/news/demography-coronavirus

REACH Initiative	Supporting the Humanitarian Response to COVID-19	https://www.reach-initiative.org/what-we-do/news/updates-on-ongoing-research-and-activities-linked-to-covid-19-pandemic/
UNFPA	United Nations Population Funds COVID-19 knowledge hub	https://www.unfpa.org/COVID19

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.