COVID-19 as a global challenge: towards an inclusive and sustainable future

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COVID-19 is a global challenge that demands researchers, policy makers, and governments address multiple dimensions which go far beyond the implications of this pandemic for health and wellbeing. Just as the UN Sustainable Development Goals call for focus on the connections between development policy sectors, the pandemic has exposed the complex global interdependencies that underpin economies and highlighted fault lines in societal structures that perpetuate ethnic, economic, social, and gender inequalities. Here, we highlight the pandemic's emerging potential consequences for achieving sustainable development with respect to the six global challenge areas we collectively address at the UK Research and Innovation's Global Challenges Research Fund:[1] food systems; education; cities and sustainable infrastructure; security, protracted conflict, refugee crises, and forced displacement; environmental resilience; and global health. As the immediate health consequences of the pandemic unfold and begin to be superseded by the impact of public health containment measures, we call for a refocusing of research and action not only to mitigate these impacts but to build sustainability and strengthened resilience into future recovery.

In 2018, 820 million people worldwide were experiencing chronic hunger; by 2019, those living with acute, crisis-level food insecurity had increased from 113 million to 135 million. COVID-19 could almost double this number to 265 million by the end of 2020.[2] The poorest of the poor are the most vulnerable to the compounding impact of COVID-19 on the global food system, including its effects on food production (planting and harvest), transport, processing, and safe distribution to and from local markets. Without international collaboration, protectionist measures by national governments and disrupted supply chains could cause food shortages, increasing food prices worldwide. On top of the pandemic, agricultural and natural disasters such as extreme weather events (requiring years of recovery), plagues of locusts, and armyworms sweeping across continents are hurting food production and creating further stress on local, national, and regional food systems across the world.

COVID-19 is also creating an education crisis. Most governments around the world have temporarily shut schools in an effort to enforce social distancing and slow viral transmission. The UN Educational, Scientific and Cultural Organisation (UNESCO) estimates that 60% of the world's student population has been affected, with 1·19 billion learners out of school across 150 countries.[3] Loss of access to education not only diminishes learning in the short term but also increases long-term dropout rates and reduces future socioeconomic opportunities. The consequences of COVID-19 school closures are predicted to have a disproportionately negative impact on the most vulnerable and risk exacerbating existing global inequalities. Vulnerable children will have fewer opportunities to learn at home, face greater risk of exploitation, and may lack adequate food in the absence of access to free or subsidised school meals. The responses of education systems to COVID-19 need to be particularly cognisant of cultural and contextual factors, including gendered, socioeconomic, and geographical differences, in order to ensure that they do not exacerbate inequalities.

Even without a pandemic, conflict is often the ultimate social determinant of health, producing a wide variety of health challenges ranging from constraints on health systems to difficulties in delivering and accessing health services. COVID-19 amplifies governments' potential to exercise unlimited executive powers that might exacerbate conflicts and have a devastating impact on conflict-affected populations. The UN Security Council's call for a global ceasefire to allow access to vulnerable populations for prevention of and response to COVID-19 has not been heeded, and there is increasing exchange of artillery and shelling across some of the oldest conflict fault lines. International agreements, treaties, and peace agreements have been disregarded as the world focuses on COVID-19. Furthermore, as noted by the UN High Commissioner for Human Rights, there has been an alarming rise in police brutality and civil rights violations under the guise of exceptional or emergency measures.

One of the first manifestations of efforts to control the spread of COVID-19 has been to try to restrict people's movements; yet staying at home is a luxury only

some can afford. Restrictions on mobility could have devastating effects on the world's 79·5 million displaced persons, many of whom live in crowded conditions with limited access to employment or services. COVID-19 might be the first major challenge to the Global Compact on Refugees and the Global Compact on Safe, Orderly and Regular Migration, both of which promise a "whole of society approach". The pandemic brings a real danger that displaced populations will be excluded from access to health care, economic safety nets, and recovery efforts, and that their very status as migratory or displaced persons will lead to their being scapegoated as a threat to settled populations, reinforcing their isolation and exclusion.

The common pathogen exchange pathways and mechanisms of COVID-19 transmission are intensified in dense urban environments, so it is no surprise that 95% of all COVID-19 cases globally have occurred in urban areas.[4] Epidemic control is therefore also a key consideration in urban planning. Nearly one billion people live and work in informal, under-serviced, and precarious urban conditions worldwide, while billions more rely on patchy and unreliable piped water, electricity, and health-care access in cities with deteriorating infrastructures. Limitations of the precarious spaces in which people live and work mean it is virtually impossible to isolate those with symptoms, while reliance on informal providers of medicines and health-care services means there is limited evidence of disease burdens. High-risk essential work, such as cleaning and waste processing, constitutes some of the lowest paid work. Furthermore, urban lockdowns have led to substantial job losses and economic hardship for both domestic and international migrant workers and their families. Globally, there have been sharp falls in the remittances that support millions in low-income countries; in sub-saharan Africa, inward remittances in 2018 amounted to US$46 billion, dwarfing foreign direct investment at $32 billion for that year.[5] Up to 16% of GDP across Africa is from remittances, much of which comes from European countries currently in lockdown. Rapid imposition of movement restrictions has also left migrant labourers stranded while facing sudden unemployment.

COVID-19 brings a short-term climate dividend with benefits including cleaner urban air, but a post-pandemic economic recession could divert attention from the underlying climate crisis. Renewal packages might miss opportunities for restructuring towards greener technologies; many countries are planning big investments in fossil fuel industries. In Europe and the USA, governments have agreed financial aid to the aviation sector with no binding environmental conditions.[6] Equally, countries already at risk from humanitarian crises and natural disasters could face a threefold greater risk of exposure to COVID-19, while having six times less access to health care, than the countries at lowest risk.[7] Simultaneously, the pandemic elevates the likelihood of compound disaster events, especially for the nearly one billion people exposed to flooding.[8] June is the start of the hurricane season in the Caribbean and the monsoon in south Asia; summer heat in North America and Europe will also disproportionately affect the elderly and those with underlying health conditions. Health, social, and humanitarian sectors will be stretched to cope with overlapping events, especially under the global economic recession.

Beyond COVID-19 itself, public health measures to contain the pandemic have produced alarming increases in domestic violence and mental health problems. Further adverse effects are likely to include rising childhood malnutrition and potentially rickets and, in the longer term, increased incidence of chronic conditions due to reductions in physical activity and income. Reorientation of health facilities to deal with COVID-19 in already overstretched and underfunded health systems has reduced capacity to manage existing disease burdens; cessation of routine surgeries, health checks, and immunisation programmes might produce outbreaks of preventable communicable diseases, rising cancer rates, and increasing numbers of late-stage complex medical conditions. The global economic recession will produce increases in suicide rates among those hit hardest.[9] Antimicrobial resistance could increase following extensive antibiotic use for patients with COVID-19 and interrupted treatment of existing conditions.[10] However, previous experiences with tuberculosis, HIV, Ebola virus, and severe acute respiratory syndrome coronavirus (SARS) are producing more rapid and effective responses to COVID-19 in some countries than elsewhere. Temporary gains include fewer road accident injuries and respiratory problems from air pollution, and reductions in

diarrhoeal and other communicable diseases during social distancing.

Agile and urgent responses to specific needs arising from the complex emergency of the current pandemic are clearly crucial. Mitigation measures that are affordable and appropriate for diverse resource-poor environments are urgently required. Yet as the multiple impacts of both the pandemic and public health responses to it continue to unfold, the complex interlinkages between these impacts challenge the global community to move beyond sector-specific crisis reactions. Reconceiving the scenarios presented above in terms of risks, consequences, and opportunities provides new ways to consider responses that cut across specific domains. Thus pandemic-induced lockdowns leading to economic crises, or reorientation of health services to COVID-19 care producing subsequent rises in morbidity and mortality from other conditions, can be understood as cascading risks associated with dynamic vulnerability, whereas disruption to food supply chains compounded by the coming monsoon, or refugee camps having heightened vulnerability to COVID-19 mortality, exemplify overlapping risks.

This reframing enables identification of potential responses to best address different intersecting risk scenarios and to consider their consequences for resilience, such as what COVID-19 means for future urban planning or food supply chains. Finally, it invites us to identify transformative opportunities, such as the impetus provided by temporary shifts in working practices and transport patterns for longer-term changes to mitigate future crises of planetary health and personal wellbeing. The pandemic has offered us a collective glimpse of alternative possible futures and opportunities. Tackling the persistent root causes of risk that are reproduced through inequitable development processes and persistent poverty will allow the Sustainable Development Goal of equitable and sustainable development to be realised for all.

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