

COVID-19

and the social determinants of health and health equity

Evidence brief

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Executive summary

The social determinants of health are the conditions in which people are born, grow, work, live, and age and people's access to power, money and resources. The social determinants are the major drivers of health inequities – unfair, avoidable and remediable differences in health between social groups. This evidence brief examines the influence of the social determinants of health on the current COVID-19 pandemic, focusing on the inequities of impact. The findings are drawn from a rapid systematic review of global evidence.

Inequalities in the social determinants of health have been unmasked by the COVID-19 pandemic, and have led to glaring inequities in COVID-19 health outcomes between population groups, partly mediated through differences in capacity to adhere to public health and social measures that reduce viral transmission (such as handwashing, use of face-masks, physical distancing, and closure of workplace, schools and public events). In turn, the broader impacts of the COVID-19 pandemic have unequally impacted on the social determinants of health themselves, further exacerbating health inequities. These unacceptable and unjust outcomes highlight the need to take greater account of social determinants of health in pandemic preparedness and response efforts, including for the rest of the current COVID-19 pandemic.

COVID-19 infection, hospitalization and mortality have been grossly unequal between population groups – driven by inequalities in the social determinants of health.

Older people, men, people with chronic non-communicable diseases, and people with disabilities appear to have greater biological susceptibility to SARS-CoV-2 infection, and, or, propensity to develop harmful pulmonary inflammation from COVID-19. However, the wide inequities seen in infection, hospitalization and mortality rates between population groups are mostly driven by social factors overlaid on these biological risks.

Groups that have experienced increased rates of COVID-19 morbidity and mortality include:

- Poorer people
- Marginalised ethnic minorities, including Indigenous Peoples
- Low-paid essential workers
- Migrants
- Populations affected by emergencies, including conflicts
- Incarcerated populations
- Homeless people.

There are multiple mechanisms to explain the inequities for these groups, but in summary unfavourable social determinants of health for these groups have meant higher rates of chronic disease that increase their risk of poor outcomes from COVID-19, greater exposure to the COVID-19 virus, lesser capacity to adhere to public health and social measures, and poorer access to health services for treatment and vaccination. The specific social determinants that have driven these inequities include:

- Poverty and deprivation
- Imposed mobility of low-paid workers in precarious employment
- Lack of social protection
- Crowded housing
- Poor protection at work and low occupational health standards
- Unequal legal or residential status
- Stigmatization
- Unequal access to acceptable public health information
- Inequitable access to affordable treatment, prevention and vaccination.

Underlying these unfavourable social determinants are discrimination, such as racism and sexism, and classism, leading to inequitable access to resources and lack of legal protections. Many people suffer from multiple unfavourable social determinants: subject to institutional discrimination, being in poor health, low income, in insecure work and living in crowded conditions for instance, leading to being at much higher risk.

The COVID-19 pandemic has unequally itself led to deterioration of social determinants of health, worsening broader health inequities.

Public health and social measures that have been necessary to reduce exposure to and transmission from the virus and mortality (such as physical distancing, targeted closures and stay at home orders, avoiding gatherings, and reducing mobility) have led to significant and unequal health, social and economic damage. This damage has impacted more negatively on already disadvantaged populations.

These impacts include:

- COVID-19 has driven millions of people into poverty
- Job losses have been borne disproportionately by women and by workers who have less education and lower socio-economic position
- Social protection systems have been insufficient and most lacking for those already worst off
- COVID-19 has disrupted education, with broad social impacts for young people, and these impacts have been much greater for poorer children
- Food security has been compromised for the most marginalized communities
- COVID-19 has exacerbated gender inequality throughout society
- Discrimination and stigmatization, including ageism, have increased
- Public health and social measures have impacted mental health of already disadvantaged groups more acutely
- Health systems have been overwhelmed and have reduced services, leading to greater morbidity in non-COVID-19 conditions.

These impacts on the social determinants of health risk having generational effects, and increasing health inequities not only in the current pandemic but also many years into the future.

A social determinants approach should be integrated into pandemic prevention, preparedness, response and recovery – to manage COVID-19, to build back fairer and to prepare for future outbreaks.

The disturbing evidence in this brief on inequities in SARS-CoV-2 infection, hospitalization and mortality between population groups, and of the large and unequal social and economic impacts of the pandemic, make the case for integrating a social determinants approach into pandemic prevention, preparedness and response efforts. Where people have had better living and working conditions, better education, more social capital, and better access to health services, they have been less susceptible to COVID-19 infection and better able to implement public health and social measures to reduce their exposure. But this has not been the case in most settings and instead COVID-19 has unmasked stark weaknesses in societies across the globe.

As countries continue to address the pandemic, and as they emerge from it, it is vital to protect those most disadvantaged. There is a strong moral imperative for prioritizing equity in pandemic efforts, but there are also compelling practical reasons. COVID-19 has shown the simple truth that no one is protected unless everyone is protected. Concentration of infections in disadvantaged populations, combined with their inability to adhere to public health and social measures and their inequitable access to vaccines, means that the pandemic will continue for longer, with greater chances of the emergence of new viral variants.

A sustained, collaborative approach is needed that reaches across health, social and economic actors, across communities and countries, with health and social justice at its core, to manage the current pandemic and build back fairer for the future to ensure future outbreaks do not exact such a heavy and unequal toll on health, wellbeing and economic stability.

1. Unequal health impacts of the COVID-19 pandemic

Social determinants – the conditions in which people are born, grow, work, live and age and their access to power, money and resources – have important impacts on health differences across population groups. The social determinants have exacerbated health differences within and across countries and are exacerbating health inequities during the COVID-19 pandemic (1).

This brief summarizes evidence derived from a rapid systematic review on the main social determinants impacting health inequity during the COVID-19 pandemic and describes their effects on particular population groups. Health inequities refer to unfair, avoidable or remediable differences in health among population groups.

The studies of the mechanisms of COVID-19 have it well established that older populations throughout the world are at higher risk of severe disease and death. Furthermore, underlying health conditions, particularly hypertension, diabetes type 2, respiratory disease and obesity, increase the severity and the risk of death from COVID-19, with higher risks of death for males than females (2-7). This medical or biological vulnerability also extends to people living with disabilities (8) as well as under treatment for cancer.

Comorbid conditions follow a social pattern, meaning they themselves are partially determined by socioeconomic status or ethnic and cultural factors affecting access to power, money or resources. Noncommunicable diseases are more prevalent in low socioeconomic groups (9, 10). This higher prevalence in disadvantaged groups arises because of inequality in important determinants of health, due to biases in health, social and economic systems and institutions (11, 12). Lower-income populations usually have higher burdens of disabilities. As knowledge of the epidemiology of COVID-19 advances, additional causes of medical susceptibility are being identified,

as is our understanding of the social epidemiology of the disease. Worldwide, the COVID-19 pandemic has revealed alarming inequalities in infection, hospitalization and mortality among populations within and between countries.

While existing predisposing susceptibility to COVID-19 is a product of pre-existing social determinants of health, there is growing evidence that the ability of disadvantaged groups to adhere to public health and social measures that reduce viral transmission (such as wearing of masks and other personal protection measures; environmental measures; physical distancing; targeted school and business closures; stay at home orders; movement restrictions; and travel restrictions), and to deal with the aftermath of the pandemic, is also linked to social determinants. Difficult living and working conditions make adherence to preventive measures more difficult for disadvantaged populations, thus increasing their exposure to risk of infection. And the economic fall-outs from the pandemic are hitting disadvantaged population groups harder (1, 13, 14).

These within-country patterns of interaction between social disadvantage and COVID-19 are exacerbating health inequities in low- and middle-income countries which already have higher rates of poverty and fewer government resources to respond. Low- and middle-income countries also have the majority of the global population over 60 years (69%) and bear 85% of premature deaths from noncommunicable diseases (15, 16).

The next four sections of the brief set forth the evidence on how disadvantaged population groups are experiencing worse health impacts of the COVID-19 pandemic. The final section concludes with a call to heed this evidence in recovery and in current and future pandemics and crises responses.

2. The burden of infection and death from COVID-19: heavily affected social groups

The differences in SARS-CoV-2 infection, morbidity and mortality rates arise from socially determined differences in exposure and susceptibility to COVID-19. This section presents evidence on the extent of COVID-19 outcome inequities for specific socially defined population groups.

2.1 Poorer populations

Poor people have had higher rates of COVID-19 infection and mortality, and income inequality itself also worsens outcomes. A review of many studies showed that lower regional income, income inequality, deprivation and poverty are associated with a higher incidence of hospitalization (including intensive care) and mortality (17). Household poverty was shown in many studies to be significantly associated with worse COVID-19 outcomes, independently of or in addition to other factors, such as household density, age, health status (pre-existing health conditions), occupation, access to hand-washing facilities and health services. Single-parent households and older people living alone have been particularly affected in some countries.

Poorer populations have been shown to have higher rates of infection with SARS-CoV-2 and higher mortality

rates from COVID-19 in England (14, 18), France (19), India (20), Mexico (21), Peru (22), Sweden (23) and the United States of America (USA) (24-27). In New York City (USA), the most deprived areas had more ethnic minorities with comorbid conditions (28).

Analysis of income inequality rates across Brazil showed an association between the Gini coefficient (a measure of the distribution of income in a population) and COVID-19: neighbourhoods with greater income inequality had higher COVID-19 incidence and mortality (29).

BOX 1

Socioeconomic status and COVID-19 mortality

In Santiago, Chile, a high-income country with high income inequality, an in-depth study of COVID-19-attributed mortality showed mortality rates per 10 000 were three to four times higher in the lowest than in the highest income quintile (30).

2.2 Disadvantaged ethnic groups

Disadvantaged ethnic groups have had higher rates of infection with SARS-CoV-2 and of mortality from COVID-19. Systematic reviews comprising almost 19 million patients in 26 studies show higher rates of infection and mortality in disadvantaged ethnic groups. In the United Kingdom of Great Britain and Northern Ireland and the USA, the risk ratios for infection were twice as high for “Black” people and 1.5 times as high for “Asian” people than “White” people (31). Disadvantaged ethnic groups were also found to have more severe outcomes (e.g. respiratory difficulties, kidney failure) in studies in Brazil (32) and England (33) and in another systematic review (34). Higher infection rates of COVID-19 were also reported for disadvantaged ethnic groups in a global study covering results from 37 national or sub-national studies (35).

Higher SARS-CoV-2 infection rates have been recorded in many Indigenous communities. In a nationwide study in Brazil, Indigenous people had a four times (95% CI: 3.65; 6.08) higher antibody prevalence than “White” people (36), and inequitable COVID-19 outcomes were reported for Indigenous people in Mexico (37), Canada (38) and the USA (39-41).



BOX 2

Indigenous communities and COVID-19

In Mexico, people who spoke an Indigenous language were more likely to be hospitalized for COVID-19 (odds ratio, 1.64) than those who did not, and they had a much higher risk of dying from COVID-19 (37).

BOX 3

Ethnic discrimination and COVID-19

In an examination of a large biobank of more than 400 000 records in the United Kingdom, adjustment for the Townsend Deprivation Index (a composite measure of socioeconomic deprivation) and cardiorespiratory comorbidity resulted in only a modest reduction of the increased risk for hospitalization of “Black” participants, which remained more than two-fold higher (2.4; 95% CI, 1.5 - 3.7) (42).

BOX 4

SARS-CoV-2 infection rates in the health workforce

A large-scale investigation of 2 135 190 people in communities and about 100 000 health-care workers in the United Kingdom and the USA between March and April 2020 found that front-line workers had at least a three times greater risk of a positive COVID-19 test and predicted infection than the general community. Minority ethnic health-care workers were at especially high risk, with a risk of COVID-19 at least five times that of the non-minority general community (44).

2.3 Low-paid essential workers including health workers

Low-paid essential workers have had higher rates of infection with SARS-CoV-2 and mortality from COVID-19. Front-line health-care workers are highly exposed to SARS-CoV-2 virus. Large-scale investigations suggest that 10–20% of SARS-CoV-2 infections occur among health-care workers, and they are at higher risk of infection than the general community (adjusted HR 11.6, 95% CI: 10.93; 12.33) (43,44). People in essential occupations have frequently been unable to protect themselves at work and are required to be present at their work places regardless of their medical vulnerability and lack of protection (45). The availability of personal protective equipment varies significantly, with health workers in less-resourced health facilities having less access to equipment, supplies, information and safe facilities (46–48).

Investigations also indicate that health and social care workers in certain social and ethnic groups are more adversely affected by COVID-19. This applies specifically to low-paid, female nursing and other front-line health care staff, as reported in Italy (49), Nicaragua (50) and Spain (51). Worse impacts are reported in the informal care sector, in which many more women than men work (52).

In sectors other than health and social care, people in many jobs, predominantly in the service, food, and transport industries, are significantly more exposed to the risk of SARS-CoV-2 infection, due mainly to the difficulty or impossibility of working from home (53). The occupations of workers with higher exposure include: protective services (e.g. police officers, firefighters), the food sector (e.g. vendors, manufacture (54)), office and administrative support (e.g. couriers and messengers), education, community and social services (e.g. community health workers, social workers) and construction (e.g. plumbers) and transport. In England and Wales, the Office for National Statistics confirmed higher death rates among workers in elementary, caring and leisure occupations for men and in process, plant and machine operatives, caring and leisure occupations for women (55). In the study of six Asian countries (see Box 5), 15% of cases were possibly related to occupation (56). SARS-CoV-2 infection and COVID-19 death rates by occupation worldwide should continue to be studied further. In a study of COVID-19 case records in Brazil, occupation was reported on only 4% of records and on fewer than 4% of death records (56). In Texas (USA), construction workers

aged 18–64 years had a five times higher relative risk of hospitalization than other occupational categories (57). In Pakistan, it was estimated that only 10% of workers could work from home (58).

BOX 5

Occupation and inequities in hospitalization for COVID-19

A study in six Asian countries and areas (Hong Kong [China], Japan, Singapore, Taiwan [China], Thailand and Viet Nam) found that the five occupational groups with the highest frequency of COVID-19 cases were: health workers (22%), drivers and transport workers (18%), service workers and salespeople (18%), cleaning staff and housekeepers (9%) and public security workers (7%). It estimated 15% of cases were possibly related to occupation (56).

Front-line occupations in many societies are often filled by minority ethnic groups and migrant workers reflecting the intersectional nature of COVID-19 inequities (59). In the USA, an analysis of outbreaks of COVID-19 among workers in meat and poultry processing plants in 2020 showed that when ethnicity or race was recorded, 87% of deaths were in racial or ethnic minorities (60).

2.4 Migrants and populations affected by emergencies

Populations affected by emergencies, including humanitarian emergencies and conflict, and migrants, in particular forced migrants, have higher risks of infection and severity from COVID-19. Migrant, refugee and internally displaced populations are at high risk because of their occupations and living conditions (61–63). The International Organization for Migration has estimated that immigrants account for a high percentage of the population (at least 3.7%) in 14 of the 20 countries with the most COVID-19 cases (64). Early outbreaks in Singapore were concentrated in migrant worker housing (65). A study in Kuwait showed that the odds ratios for admission to an intensive care unit for COVID-19 and death were two to three times higher for non-Kuwaitis than for Kuwaitis after adjustment for age, smoking and certain co-morbid conditions (66).

2.5 Older people living in residential care homes

Older people have borne a disproportionate burden of deaths from COVID-19 for several key biological reasons, but social drivers as regards the organization and management of old age homes are also at play. COVID-19 has disproportionately affected older people living in care homes during the first wave of the pandemic. In a study of data from Australia, Belgium, Canada, England and Wales, France, Germany, Spain and the USA, care home residents accounted for 19–72% of all COVID-19 deaths (67, 68). In most countries with second and subsequent waves of the pandemic, these rates have decreased relative to the rates for the general community, and the toll on younger populations has increased (69).

2.6 Incarcerated populations

Large cluster outbreaks of COVID-19 have occurred in prisons. Globally, about 11 million people are incarcerated, and higher rates of COVID-19 have been documented in custodial facilities in England and Wales (70). This population is at much higher risk of infection because of overcrowding, poor ventilation, poor sanitation, inadequate medical services and other institutional factors that compound the risk of disease transmission (71). In the USA, by August 2020, the 15 largest known clusters of COVID-19 cases had occurred in prisons and jails, where roughly two thirds of the population are people of colour (71). Amnesty International reported that the mortality rate recorded by the National Commission on COVID-19 and Criminal Justice in the USA was double that of the general population (72).

2.7 Homeless people

Homeless people have a higher risk of COVID-19. Studies of the seroprevalence of SARS-CoV-2 among homeless people in France provided evidence that these populations are more exposed to SARS-CoV-2 than the general population (73, 74). In Belgium, the hospitalization rate of homeless people for COVID-19 was three times that of the general population (75). Studies of homeless populations in the USA also indicated higher rates of infection (76, 77).

3. Socially determined causes of inequities in COVID-19 outcomes

Disadvantaged populations face daily living and working conditions that result in heightened susceptibility and exposure to SARS-CoV-2 as well as obstacles to implementation of public health and social measures. Structuring these daily living and working conditions are weak social contracts (e.g. weak commitments by employers to maintaining or guaranteeing employment in the face of financial difficulties), regressive public policies (e.g. education systems that favour more privileged geographic areas with higher quality facilities), exclusionary policies (e.g. lack of health coverage for migrants) and institutions (e.g. organizational practices that value particular ethnic groups less), unequal legal status, discrimination and stigmatisation. These structures underpin key pathways in generating inequities in COVID-19 as summarized below.

3.1 Poverty and deprivation

Mortality rates from all causes are usually higher in deprived areas, and a growing number of studies show that COVID-19 has increased these inequalities further (78). Poverty and deprivation associated with reduced household resources, crowding (crowded housing discussed below), reduced access to services and other support in times of crisis or illness, are significant factors increasing inequities.

In deprived areas even the most basic prevention measures are unfeasible or unaffordable. Poverty and deprivation affect migrant and refugee populations' resources to avoid infection. In Bangladesh, the actions identified as critical deficits for these populations included enabling physical distancing in crowded settings, provision of masks and soap and additional testing sites (79).

An ecological analysis (as part of the Oxford Poverty and Human Development Index) identified three poverty-related factors associated with SARS-CoV-2 infection: unsafe drinking-water, unclean cooking fuel and undernutrition (80). The poorest people are more likely to have inadequate access to the basic amenities essential for adherence to public health and social measures, increasing inequity in exposure to SARS-CoV-2. People living in peri-urban Tamil Nadu, India, were found to be less likely to change their sanitation practices (hand-washing, distancing) if they used communal public toilets than those with access to private toilets (81).

A study of households in 25 sub-Saharan countries defined three basic amenities essential for adherence to public health and social measures: in-house sanitation, water and refrigeration for food. These were not available in about 46% of households and were more likely to be unavailable in poor, rural, female-headed



households (82, 83). A study in the USA highlighted the persistent challenges associated with inferior health infrastructure: 49% of lowest-income communities and only 3% of highest-income communities had no intensive care beds in their communities (84), with poorer quality services in rural areas (85).

3.2 Crowded housing

Crowded housing is associated with increased incidence of and mortality from COVID-19 among the most disadvantaged people. Household transmission is a substantial source of SARS-CoV-2 infection (86), as crowding and poor ventilation increase exposure to infectious respiratory droplets and aerosols. WHO has found strong global evidence for recommending that governments prevent and reduce crowding on health grounds (87). A study of counties in the USA showed that for each 5% increase in percentage of households with poor housing conditions, there was a 50% higher risk of COVID-19 incidence and a 42% higher risk of COVID-19 mortality (88). As one billion people worldwide live in slums, crowding can be categorized as one of five indicators of deprivation. Studies of influenza in slums in Delhi, India, indicate that a slum resident has 50% more contact with other individuals than a non-slum resident due to crowding, leading to higher rates of disease infection and transmission (89). In a study in Chennai, India, SARS-CoV-2 infection rates were much higher in higher-density areas (20).

In poor households, large families are frequently crowded into small dwellings, obviating self-isolation and physical distancing. In Medellin, Colombia residents of slums and informal settlements had higher mortality rates due to COVID-19 than those of other areas in the city (90). Over half of Africa's population live in overcrowded informal settlements (91). In the Cape Town metropolitan area of South Africa, two areas with high concentration of informal settlements, Khayelitsha and Klipfontein, had more than 2000 COVID-19 cases per 100 000 residents, while the rate was 1639 in the rest of Cape Town (92). In the United Kingdom, people in larger households had higher rates of SARS-CoV-2-positive tests (86). Crowded multigenerational households, which are partly culturally defined, have also had elevated risks. A cross-sectional analysis of deaths in England found that relative mortality from COVID-19 was five times higher in households consisting of nine or more members (93).

3.3 Imposed mobility of low-paid and precarious workers

The greater mobility of low-paid workers in precarious employment has increased their risk of exposure to SARS-CoV-2. Precarious employment refers to a job that may be easily lost, short-term, poorly-paid and with no or few 'benefits' such as paid sick leave or paid annual leave. Increased mobility, whether in low-paid jobs or for those who depend on daily wages, increases the risk of exposure to SARS-CoV-2 because of more frequent contact. Greater food insecurity reduces the feasibility of adhering to public health and social measures (94) and increases mobility and through increased mobility exposure to SARS-CoV-2 infection (95). A study from the USA showed poorer adherence to home confinement in low-paid households (96). An analysis of data on mobility in 3140 counties in the USA found that the effects of a social distancing policy were smaller in lower-income than in upper-income groups by as much as 54%. Workers with low wages were less able to reduce trips for work and daily shopping and had higher rates of SARS-CoV-2 infection (94, 97). Research on adherence to mask-wearing and social distancing in public transport in Ghana also showed poor adherence, increasing the risk of SARS-CoV-2 infection for frequent users of public transport (98). Studies on poverty and mobility in Israel and the USA further documented poorer adherence and greater mobility in low-paid and poorer households (99).

3.4 Poor work safety for essential workers

Poor protection at work and precarious work arrangements for many essential workers have increased the risk for SARS-CoV-2 infection. People in essential occupations have frequently been unable to protect themselves at work and are required to be present at their work places regardless of their medical vulnerability and lack of protection (45). Access to personal protective equipment, an effective means for reducing occupational risk, is one determinant of the exposure of workers. A scoping review of work safety and health impacts of COVID-19 identified lack of access to protective equipment in studies of the agricultural sector, in addition to the health and care sector, highlighting that in these cases minority, migrant and female workers were most affected (100). In a scoping review of population-based prevalence surveys of COVID-19, studies in Stockholm, Sweden, and Mumbai, India, reported higher COVID-19 infection in disadvantaged areas due in part to the

public-facing occupations of the majority of residents (35). The best data available are for health worker occupations, and studies have shown that the availability of personal protective equipment varies significantly. Health workers in less-resourced health facilities having less access to equipment, supplies, information and safe facilities (46, 47). In the USA, fewer workplace protective measures were in place in rural locations (48).

3.5 Lack of social protection

Lack of social protection has increased the risks of exposure to SARS-CoV-2. In India, the lack of social assistance programmes has prevented large groups of people living in slums from adhering to public health and social measures (101, 102). A study of paid sick leave in 193 countries found that 27% of countries did not guarantee paid sick leave from the first day of illness and 58% had no explicit provisions to ensure access to paid sick leave for self-employed and informal workers (103). In a global study of COVID-19 inequity, 85% of the population in sub-Saharan Africa were found to be employed in the informal sector, depended on daily income and had limited or no access to social protection (104).

3.6 Inaccessible public health communication and stigmatising beliefs

Unequal access to accurate and acceptable public health information has increased inequity associated with COVID-19. Information on the measures to be taken to prevent COVID-19 change frequently, as to instructions for navigation of health systems, and often require both digital and health literacy. There is indirect evidence that access to telehealth has been a barrier for many disadvantaged groups. A study of 148 402 patients scheduled for telemedicine visits during the early phase of the COVID-19 pandemic in the USA showed that older age, “Asian” ethnicity, a language other than English as the patient’s preferred language and lower insurance coverage (Medicaid) were associated with fewer completed telemedicine visits (105). The contribution of telemedicine to resolving challenges of access to information and to safer social distancing has been highlighted but so have the potential problems of the digital divide (106).

Studies in refugee camps cite access to public health information about COVID-19 as a key challenge (107). In a community study in Cuba, one of the most

common reasons (50% of respondents) cited for being at higher risk was lack of sufficient information (108). Access to relevant information was a barrier particularly for older, poorer, rural, female and migrant populations. In Indonesia, where schools were required to adapt the Government’s information on COVID-19, the greatest difficulty was making the information available to students with limited information technology (109).

Public health communication has not been sufficiently appropriate for minority communities or information has not been translated into minority languages, including Indigenous languages (110). A rapid review in June 2020 of COVID-19 communications in Member States of the Council of Europe found that 48% of States (23/47) translated information into at least one migrant language but that information on testing or health-care entitlements was translated in only 6% (3/47) (111).

Inaccurate health beliefs and poor information has resulted in increased stigmatization of people with COVID-19, decreased trust and dissuaded people from COVID-19 testing or vaccination, or from acknowledging test results and adhering to quarantine. An online survey in the USA showed that anticipating stigmatization because of COVID-19 made respondents less likely to seek a COVID-19 test (112). In studies of undocumented migrants in Turkey, fear of stigmatization and loss of residential status due to testing positive for COVID-19 was a real concern, which should be addressed through both policy and communication on testing (113). In some regions, criminalization of transgender people has increased their exposure to COVID-19 (114).

3.7 Inequitable access to affordable health care prevention, treatment and vaccination

Inequitable access to affordable prevention tools, treatment and vaccination remains a major threat to health equity overall, but particularly in the face of addressing the COVID-19 pandemic. Studies in the USA showed that people who had no or low health coverage were up to twice as likely to require admission to hospital for COVID-19 than those with more extensive insurance (17). In countries with strong universal health coverage, such as the Republic of Korea, inequities in COVID-19 outcomes were related more closely to inequities in pre-existing health status in different socioeconomic groups than to health care coverage or access (115).

As national vaccination programmes are implemented, the WHO leadership has denounced global inequity

in access to global vaccine supplies. In the World Health Assembly in May, the Director-General reported to Member States that 10 countries had administered 75% of all COVID-19 vaccines (116). Live databases tracking immunization rates (Our World in Data, accessed 8 July 2021, and the WHO Coronavirus (COVID-19) Dashboard) report 25% of the world population having received at least one dose of a COVID-19 vaccine but only 1% of people in low-income countries. Emerging studies are

indicating further potential barriers to vaccination within countries due to geographical barriers, poor health facilities, lack of transport and storage networks for cold-chain maintenance and vaccine hesitancy (116). Studies of vaccination inequities in Israel and the US are reporting lower uptake in less educated populations, ethnic minority, geographically remote, and otherwise socially disadvantaged populations, even when these populations have experienced higher death and transmission rates (117-119).

4. Additional health impacts due to overstretched health services, service disruptions, and isolation

National data systems are recording excess mortality over and above deaths registered as due to COVID-19. Disruption of services and deferred treatment have had additional direct health effects as people avoid seeking treatment for other ailments. The pandemic and associated public health and social measures have also had specific effects on a range of health conditions, mental health and well-being, adding to the burden on socially disadvantaged groups. Overall, at a system level, the high death rates of health workers are a tragedy on their own but have also increased the strain on health systems and exacerbate the projected global shortage of 15 million health-care workers by 2030 (120). Early reports from global WHO programmes warn of set-backs in controlling diseases such as tuberculosis, measles and polio, which will increase demands on public health systems in the future (121).

4.1 Decreased use of health services gives rise to an increased burden for other illnesses, particularly for disadvantaged communities

Decreased use of health services because of fear of infection and service disruptions have particularly affected disadvantaged communities. Health-care facilities, staff capacity, equipment and resources have been overstretched by the pandemic. A WHO survey as early as August 2020 (and backed up by further repeat surveys) indicated widespread global disruption of a range of health services, greater disruptions being reported in low- and middle-income countries (122). A survey of 860 people working and living in slum communities in Bangladesh, Kenya,



Nigeria and Pakistan between March and May 2020 found reduced use of several health-care services (mental health, immunization and screening) (123). In the United Kingdom, analysis of data on primary care for deprived populations between 1 January and 31 May 2020 found fewer diagnoses of common health problems than in the previous year, with decreases of 43% in diagnoses of circulatory system disease and 49% in diagnoses of type 2 diabetes (124). Researchers are modelling the indirect effects of the pandemic on mortality. For example, one model predicted continuing increased child mortality associated with reduced health service use (125). Services disruptions have been shown to increase inequity in care for both noncommunicable and communicable diseases (121, 126) and also for populations living with HIV/AIDS. Innovative methods have been used by health workers to reach these and other populations (e.g. drug users) (114).

4.2 Isolation worsens mental health and deteriorates health behaviours of disadvantaged groups

Isolation has worsened the general health and well-being of disadvantaged groups. The mental and other health impacts of adherence to public health and social measures are being felt more keenly by disadvantaged populations (127).

Studies in Brazil showed greater reductions in physical exercise among women than men and in households with children, and the prevalence of disrupted exercise was 50% among people with low education and 10% among those with higher education (128, 129).

A survey of students in Italy found more depressive symptoms associated with living in crowded, poor housing (130). Living in an apartment of < 60 m², with a poor view and poor indoor quality was associated with a twofold increase in risk of severe depressive symptoms. Studies of children's mental health during lockdown also showed strong associations with the area in which they lived (131). Studies of migrants, such as Venezuelan migrants in Chile (132) and Haitian migrants in Brazil (133), indicated more anxiety and depression than in the general population.

Studies of older people and people living with disabilities have indicated more abuse and neglect during confinement (88), and older people and people living with HIV/AIDS have reduced their use of social and health care. A study of people living with HIV in Argentina and the USA found that practising social distancing was similar but there were higher rates

of depression in the USA than in Argentina, possibly because of less social support (134).

Families with a history of mental health problems or suicide are reported to be at higher risk of suicide because of isolation, stigmatization and abuse. Stress, boredom or isolation resulting from social distancing and closures has increased drug-taking. Studies of mental health during COVID-19 in a large, nationally representative, cross-sectional survey in the United Kingdom found that women and young people had higher risks of general psychiatric disorders and loneliness (135). A longitudinal study confirmed both these findings and also found a greater impact in minority ethnic groups (127, 136).

An analysis of data from child helplines around the world showed an increase in the total number of contacts (137, 138). A study in Belgium found that greater consumption of alcohol during lockdown was associated with younger age, more children at home and being unemployed because of COVID-19 (139).

4.3 Mental health and well-being of lower-educated, female front-line workers is particularly impacted

The mental health and well-being of female front-line health workers with lower professional grades has deteriorated as the strain of the workload due to the pandemic in many settings has directly affected their mental health and well-being (140). Several reviews have documented increased affective disorders among health workers, with differences by gender and occupation (141-144). Although a systematic review of the psychological consequences of COVID-19 showed a similar prevalence of mental health problems in the general population and in the health workforce overall (144), there is evidence that nursing and support staff, frequently women with fewer years of education, have a higher incidence of associated health problems than medical staff (46, 50, 140, 145-147). Other studies show that female front-line health-care workers and nurses have higher rates of depression and insomnia than male medical staff (e.g. in China (148) and Spain (149)). Before the COVID-19 pandemic, the World Medical Association reported that violence against health-care workers was an extensive problem (140), with worse rates of violence in some countries (e.g. India) (150). A survey in Nepal found that fear of stigmatization undermined health workers' mental health (151).

5. Unequal negative effects on the broader social determinants of health

Beyond its direct effect on health and disruptions to the health sector, COVID-19 has had dramatic and unequal social and economic consequences for individuals, families and nations. These will exacerbate future health inequities. The consequences arise from the disease itself (e.g. families with multiple deaths losing bread-winners, increased poverty due to health expenditure) but also because people have changed their behaviour due to fear of contracting the virus or of stigmatization. Public health and social measures have also required businesses and schools to close and restricted cultural and social gatherings and travel. People have changed their behaviour because of fear of contracting the virus or of stigmatization. Unequal changes in these circumstances have implications for health inequity. The digital gap, for example, has further negative impacts on equity, whereby some groups can telework, continue schooling or seek medical advice, including for domestic violence (152), while others cannot (153). According to the International Telecommunication Union, about half of all people globally are offline, and more women than men have restricted or no access to online information (154). The impacts of the COVID-19 pandemic on several of these important social determinants of health equity have been highlighted in the literature.

5.1 COVID-19 has driven millions of people into poverty and social protection has not been able to keep up

Economic disruptions, accompanied by growing unemployment, have caused the global economy to contract by more than 3%, reducing the income of billions of people and driving close to 95 million people into extreme poverty (155). Sizeable decreases in income have been reported. For example, a study of 2424 mothers in Bangladesh showed that the median family income fell by more than half during lockdown, and severe poverty increased (156). Sizeable decreases in income affect low-income families first. In Indonesia, it was estimated that an additional 1.3 million people were pushed into poverty, returning the level of poverty in the country to that in 2004 (157). A study in 29 European countries indicated an average doubling of the poverty index, to over 9%, a rate of mean loss of earnings for poor workers of 10–16%

and an average increase in the Gini coefficient of 3–7% (158).

The challenge of increased poverty has reinvigorated a focus on social protection but in general, social protection measures have benefitted those already more advantaged, who are generally already in formal sector employment (159, 160). There is a growing concern that temporary social protection measures will fail to prevent people from falling into poverty (159–162). In sub-Saharan Africa, there is evidence that such measures have not reached workers in the informal sector as readily (163). A study in China of the positive use of social protection to support households during the pandemic called attention to the common problem of groups that do not qualify for protection, such as undocumented or unregistered migrants and homeless populations (164). Social protection is important for health by ensuring income stability and security in crises and reducing social inequality (165, 166). A cohort study of low- and middle-income households in the USA that lost work during the COVID-19 pandemic showed that receipt of unemployment insurance resulted in a 4% decrease in food insecurity (167).



5.2 Job losses have been borne disproportionately by low-educated workers in the informal sector and by women

Unemployment is increasing in all countries and is significantly affected by the pandemic. In January 2021, the International Labour Organization estimated that global unemployment had increased by 33 million in 2020, that the unemployment rate had risen by 1.1 percentage points to 6.5% and that sector-specific workplace non-pharmaceutical measures were still affecting 77% of workers worldwide (168). These estimates indicate that the loss of working hours during the pandemic is four times greater than during the global financial crisis of 2009. The ILO reports consistently show that job losses are affecting women more than men with more women dropping out of the workforce entirely, thus threatening advances in gender equality in the workplace (168).

The highest working hour losses in 2020 were in the Americas (13,7%). In Europe, working hour losses were among the lowest, where job retention schemes supported working hour reductions for women and young workers (168). The crisis is having a disproportionate effect on low-skilled workers in the informal sector and on self-employed workers and small businesses. An analysis of 50 countries showed larger job losses among low-skilled workers (11%) than medium-skilled workers (7.5%) or highly skilled workers (2%). A study in 17 low- and middle-income countries found that, in 71% of the lowest-income households, one member had lost their job and 61% had closed their business (169). Large inequality in the ability to work from home, and thus the ability to maintain productivity and employment or share household work (e.g. child care), is correlated inversely with income (170, 171).

Persistent unemployment, work insecurity and unequal employment conditions are associated with worse health outcomes. Studies of these relations during COVID-19 provide similar results. For example, in a survey of Canadian workers temporarily laid-off early in the pandemic, marginalized workers (e.g. women, migrants) reported less job security, lower well-being scores and high levels of distress (172). Another study showed that people on furlough (unpaid leave of absence) had higher measures of distress than those who were unemployed before the pandemic (173).

5.3 COVID-19 has disrupted education, with broader social impacts and for the young people

COVID-19 has led to massive disruptions in education. Educational facilities have been closed in over 200 countries and many still are closed, affecting 94% of all enrolled learners and 1.58 billion children and young people (174). In countries with low human development, 86% of children in primary education have been effectively out of school, whereas the proportion in countries with very high human development is 20% (174).

Closures have had differential impacts on socially disadvantaged families. A survey of children in poor households in 37 countries found that < 1% have access to the Internet and 40% reported that they needed help with their schoolwork but had no one to help them (175). In June 2020, the World Food Programme stated that 368 million children were not receiving school meals (176). Poorly resourced schools with inadequate hygiene and physical distancing opportunities are at a disadvantage for reopening. The United Nations Educational, Scientific and Cultural Organization estimated that 24 million learners, half in southern, West and sub-Saharan Africa, were at risk of not returning to school in 2020, which could increase the socioeconomic gap in skills by more than 30% (177).

A systematic review of epidemics suggested that they result in high levels of toxic stress and the more adverse the experiences, the greater the risk of harm to child development and health and well-being in adolescence and adulthood (178). Missing meals that are usually available in national school programmes has undermined child nutrition, especially for those who are already at greatest disadvantage. The largest school feeding programme in the world, the “mid-day meal” programme in India (serving approximately 144 million children) was suspended (179). In England and Wales, 49% of eligible children lost access to free school meals (180). Access to health care and supportive social services are also frequently offered to children in disadvantaged families by schools, and access to these services has been interrupted (181, 182). In the longer term, disrupted education and worse educational outcomes will affect a generation, potentially harming their prospects over a life time (183). Girls have been more negatively affected by school closures than boys owing to the expectation that they will do household chores and greater exposure to domestic violence (184).

5.4 Food security has been further compromised for already marginalized communities

Food security has been worsened by the pandemic, especially in low- and middle-income countries. As of June 2020, the food security of 135 million people was categorized as critical; the World Food Programme predicted that COVID-19 will push an additional 130 million people to the brink of starvation (185) and reported that up to 600 000 more people in northeast Nigeria are food insecure due to COVID-19.

In Somalia, 7000 malnourished children under 5 years and pregnant and breastfeeding women were provided with assistance by the International Committee of the Red Cross in the first 6 months of 2020 as compared with 11 900 in all of 2019. A survey in August 2020 in 11 municipalities in Burkina Faso found that 11% of children under 5 years and pregnant and breastfeeding women were suffering from moderately acute malnutrition (186). Food insecurity and undernourishment have also increased in high-income countries. In the USA, food insecurity is increasing significantly during the COVID-19 pandemic: 33% of unemployed adults have high food insecurity and a further 24% moderate food insecurity; one in three families with children had high food insecurity, and another 20% were moderately food insecure (187). In Tasmania, Australia, food insecurity doubled in households in which income had decreased by more than 25% (188). In another study in the USA, heightened food insecurity was particular concern for at-risk populations that could not be assessed or assisted by health services (189).

5.5 COVID-19 has exacerbated gender inequality throughout society

Women and girls are experiencing disproportionate effects of COVID-19, including in unemployment, closure of educational institutions, reduced health care access, reduced income, lack of social protection and gender-based violence (190).

The United Nations Population Fund estimated that there may be an additional 31 million cases of gender-based violence and about 13 million child marriages between 2020 and 2030 because of the pandemic (191), and in February 2020, Brazil reported that domestic abuse incidents had increased three times as compared with February 2019 (192). A survey in Bangladesh in April 2020 found that, of 4249 women

who had undergone domestic violence, 39% had faced violence for the first time (193).

Unpaid domestic and caretaking work due to school closure and household members ill with COVID-19 or another cause is frequently assigned to women and girls, increasing their mental and physical stress and making it difficult for them to maintain their health (190). In the United Kingdom, two thirds of the extra 40 hours a week of caring for adults and children required during the pandemic was done by mothers. Physical harm resulting from domestic violence has also increased, disproportionately affecting people living in poverty (193-195).

5.6 Discrimination and stigmatization, including ageism, have increased

COVID-19 is exacerbating xenophobia and racism, which have also given rise to attacks against refugees and migrants. There is a risk that COVID-19 will entrench restrictions on international movement, curtail the rights of people on the move and fuel racism and related social inequality (196).

Stigmatization of particular higher-risk social groups has emerged as a darker side of COVID-19 (197), pitting different ethnic groups and generations against each other. Not even health workers have been spared (198).

There has been growing stereotyping by age (both older and younger adults) during the COVID-19 pandemic (199). The WHO report on ageism estimated higher rates of ageism are present in lower-income countries and notes that ageism shortens life spans, hinders recovery from disability and accelerates cognitive decline (200).

Discrimination and stigmatization lead to social exclusion and negatively affect people's physical and mental health and well-being. Groups with certain health conditions, such as physical and mental disability, HIV/AIDS, diabetes, cardiovascular disease, obesity and drug addiction, and older populations seem to have been more affected (61, 201). Research is called for to understand the role played by stigma and discrimination experienced by lesbian, gay, bisexual, trans and queer (LGBTQ) communities during and emerging from the COVID-19 pandemic. The mental health of people living with obesity (202) and other groups with greater actual or perceived susceptibility to COVID-19 has been harshly affected.

6. The place of social determinants in a holistic, fair response to COVID-19 and future pandemics

This evidence brief shows how the health, social and economic impacts of COVID-19 have unequal consequences for the social determinants of health and how the equally stark pre-existing inequalities in the world have amplified death, illness and suffering from COVID-19. Before the pandemic, there was clear evidence that overall development was unjust and that inequality was increasing (203). COVID-19 has affected people unequally because of unequal pre-existing health, and unequal living and working conditions, which mean that they have unequal exposure and vulnerability to the virus. Disadvantaged population groups have therefore borne the greatest burden of the epidemic, which has exacerbated poverty, deprivation and discrimination. COVID-19 has also had unequal and potentially much longer-lasting social and economic impacts. Together, these trends mean that COVID-19 is having significant negative impacts on health equity – and the pandemic is far from over.

There is a strong case for increased recognition of the significant impact of the social determinants of health on equity in the response to COVID-19. We must prioritize equity in “building back fairer” and in ensuring preparedness for future pandemics. Evidence shows that people with better living and working conditions, better education, more social capital and better access to health services have been better able

to implement containment measures. Progressive, universal health and welfare systems have been better equipped to mitigate the negative consequences of the pandemic.

There is a strong moral imperative for considering the social determinants of health equity in pandemic prevention and preparedness, and there is also a strong pragmatic imperative. COVID-19 has shown the simple truth that no one is protected unless everyone is protected. Concentration of infections in disadvantaged populations, combined with their inability to adhere to public health and social measures and the egregiously inequitable access to vaccines, mean that the pandemic will continue for longer, with greater chances of the emergence of new viral variants.

As countries continue to address the pandemic and as they emerge from it, the most disadvantaged must be protected. A collective approach is required that reaches across health, social and economic actors, across communities and countries, with health and social justice at its core, to build a fairer, safer world (204). Otherwise the pandemic risks further widening long-standing social and economic divides, which will further exacerbate health inequity and the pandemic itself (1, 174, 205).



Useful resources on COVID-19, equity and addressing the social determinants of health

Case studies and news for actions on the social determinants of health to advance health equity during COVID-19

- [Example of a Framework for Equitable Allocation of COVID-19 Vaccine – National Academy of Sciences](#)
- [IMF COVID Policy Tracker – https://www.imf.org/en/Topics/imf-and-covid19/Policy-Responses-to-COVID-19](https://www.imf.org/en/Topics/imf-and-covid19/Policy-Responses-to-COVID-19)
- [Preparing for pandemics – Canadian example: https://www.canada.ca/en/public-health/corporate/publications/chief-public-health-officer-reports-state-public-health-canada/from-risk-resilience-equity-approach-covid-19.html](https://www.canada.ca/en/public-health/corporate/publications/chief-public-health-officer-reports-state-public-health-canada/from-risk-resilience-equity-approach-covid-19.html)
- [Urban health – Marginalized populations – https://www.who.int/teams/social-determinants-of-health/urban-health/covid-19/cities-responses-through-covid-19-marginalised-populations](https://www.who.int/teams/social-determinants-of-health/urban-health/covid-19/cities-responses-through-covid-19-marginalised-populations)
- [World Health Day 2021 campaign site – Building a healthier, fairer world](#)

Guidance for COVID-19 for advancing health equity

- [Guidance for implementing non-pharmacological public health measures in populations in situations of vulnerability in the context of COVID-19](#)
- [Inequalities and building back better. Policy brief by the UN High Level Committee on Programmes Inequalities Task Team](#)
- [Infection prevention and control guidance for long-term care facilities in the context of COVID-19 update](#)
- [Maintaining essential health services: operational guidance for the COVID-19 context](#)
- [Operational considerations for multisectoral mental health and psychosocial support programmes during the COVID-19 pandemic](#)
- [Preparedness, prevention and control of COVID-19 in prisons and other places of detention](#)
- [Preparedness, prevention and control of coronavirus disease \(COVID-19\) for refugees and migrants in non-camp settings](#)
- [Promoting health equity, gender and ethnic equality, and human rights in COVID-19 responses: Key considerations](#)
- [Scaling up COVID-19 outbreak readiness and response in camps and camp based settings](#)
- [The ACT-Accelerator for diagnostics, treatment, vaccines and health system strengthening](#)
- [A guide to preventing and addressing social stigma in the context of COVID-19](#)
- [COVID-19 and violence against women. What the health sector/system can do](#)
- [COVID-19: How to include marginalized and vulnerable people in risk communication and community engagement](#)

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**World Health
Organization**

For more information:

World Health Organization

20, avenue Appia

1211 Geneva 27

Switzerland

<https://www.who.int/health-topics/social-determinants-of-health>

<https://www.who.int/health-topics/health-equity>

