Scientists for Labour

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COVID-19
Indirect Mortality

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Scientists for Labour

Scientists for Labour is a socialist society affiliated to the Labour Party. Our aims are to both promote good science in politics, and to promote Labour values in science. More information about Scientists for Labour, including how to join, can be found at www.scientistsforlabour.org.uk. You can follow us on Twitter @scientists4lab.

Throughout the COVID-19 crisis, Scientists for Labour are preparing briefings and summaries of the latest research into coronavirus for Labour Party representatives and their staff. If you would like to receive these briefings or have any other queries, please contact Benjamin Fernando: chair@sfl.org.uk.

Executive Summary

The effects of the COVID-19 pandemic are wide-ranging, reaching far beyond direct deaths attributable to viral infection. Within the UK, the level of excess deaths is such that for every 100 deaths associated with the disease, a further 19 have occurred which are not directly attributable to the pandemic.

The indirect effects of this pandemic will be felt differently by different sectors of the population. These will range from excess mortality induced by missed cancer screenings, reduced levels of vaccination for non-COVID diseases, and the reduction in face-to-face mental health support services. These burdens will also manifest themselves in non-medical ways, for example reduced life expectancy due to increases in child malnutrition, brought about the economic recession the UK is currently in.

The full consequences of the pandemic are unlikely to become clear for many years to come, and careful and directed study will be needed to ensure that its effects on different sectors of the global population, and the intersections with existing inequalities, are properly understood. As an example, the reduction in the amount of ongoing medical research and the cessation of many clinical trials may impact the release of new treatments and therapies for decades to come.

Whilst the world moves towards a 'new normal', it is important to take stock of what the full scale and sense of the pandemic's effects are; as only then we begin to mitigate against them.

*It should be noted that these considerations and this report should **not** be used as a justification for avoiding a tightening of national restrictions; rather what is needed is a comprehensive plan for reducing indirect mortality alongside COVID prevention measures.*

Contents

1. Access to Health Services

When lockdown measures were put in place, advice focused on people staying at home as much as possible to avoid the spread of the virus. **Since the start of the pandemic fewer people have attended accident and emergency (A&E) departments and general healthcare providers, including general practitioners (GPs)**. Amongst likely causes for this reduction are people being afraid of catching the virus, people shielding, trying to protect the stretched resources of the NHS, as well as reduced NHS services and cancellations of elective and non-emergency procedures (Kelly and Firth, 2020). On May 14, almost two months after the UK went into lockdown, A&E visits were 57% lower than in the same month in 2019, which equals 21,000 fewer patients per major emergency department (Kelly and Firth, 2020).

In its July 2020 report "The hidden impact of COVID-19 on patient care in the NHS in England", the British Medical Association (BMA) estimated that in April, May and June, compared to what would usually be expected, there were between (BMA, 2020):

- 1.32 and 1.50 million fewer elective admissions;
- 2.47 million and 2.60 million fewer first outpatient attendances;
- 274,000 and 286,000 fewer urgent cancer referrals;
- 20,800 and 25,900 fewer patients starting first cancer treatments following a decision to treat; and
- 12,000 and 15,000 fewer patients starting first cancer treatments following an urgent GP referral.

The larger fall in admissions in minor A&E units (71%) compared to major A&E units (48%) could suggest that patients with less severe conditions were being directed to other NHS services or chose not to attend A&E (Kelly and Firth, 2020). Additionally, Public Health England suggests that this reduction could, in part, be as a result of a **decline in the prevalence of other infectious diseases**, caused by the precautions taken to avoid the spread of SARS-CoV-2 (including hand washing and social distancing). There may be other reasons that play a role in the reduction of emergency department admissions, such as **reduced incidence of trauma** because lockdown restrictions reduce the opportunities for serious injuries, such as road accidents, violent crime and high falls (Thornton, 2020). Also, **many GPs have switched to video or phone consultation,** potentially keeping people out of hospitals by providing health services remotely (Thornton, 2020).

Emergency admissions to A&E have also fallen, although not as substantially as the overall attendance – a 37% reduction compared to April 2019. This fall in admissions could partly result from the efforts to reduce the risk of non-COVID-19 patients being infected and to protect capacity (Kelly and Firth, 2020).

While there has been almost **no change in the number of ambulance incidents**, the way patients are treated has shifted markedly. The number of patients transported to A&E has fallen by 29% compared to the previous year, while there has been a corresponding increase of patients being treated at the scene (Kelly and Firth, 2020).

As in other countries, there has been a reduction in people attending A&E for serious acute conditions, including heart attacks and strokes. An observational study in France found that there was a transient doubling in out-of-hospital cardiac arrests during the pandemic, compared to non-pandemic periods (Marijon et al., 2020), while the rates of new-onset heart

failure diagnoses and hospitalisation for worsening heart failure were significantly lower in 2020 (Andersson et al., 2020).

This finding raises concerns that people are not seeking or receiving the help they need. In the USA, there have been several studies showing a marked decline in acute cardiovascular hospitalisations (Bhatt et al., 2020), a significant increase in incidences of stress cardiomyopathy (Jabri et al., 2020) and a 3-fold increase in people undergoing resuscitation during the pandemic (Lai et al., 2020).

There is no reason to believe the UK is different in these regards and policy makers should consider efforts to mitigate the effects the pandemic might have on people needing urgent care, particularly given that data from the **Office of National Statistics also shows an increase in the number of weekly deaths, of which only 44% are attributed to COVID-19** (ONS, 2020). Of course, this increase could be due to a lack of testing and the underestimation of COVID-19 incidence, but the increase warrants further investigation (Vaughan, 2020).

2. Maternal and Child Health

One area where indirect mortality is likely to be significant is in maternal and child health. Globally, **indirect mortality in maternal and child health has been observed in previous public health emergencies,** such as the Ebola outbreak in West Africa in 2014-16, where indirect impacts were greater that the direct effects of Ebola disease (Elston, 2017). With COVID-19, modelling has estimated increased burdens within six months across 118 low- and lower-middle income (LMIC) countries (Roberton, 2020).

The least severe outcome of this modelling suggested 253,500 additional child deaths and 12,200 additional maternal deaths would be observed. The most severe outcome modelled 1,157,000 additional child deaths and 56,700 additional maternal deaths. This range reflects an increase of 9.8% – 44.7% in under-5 child deaths per month, and an 8.3% – 38.6% increase in maternal deaths per month. Global health advocates are urgently seeking to minimise these outcomes – for example, UNICEF has launched 'Generation COVID', described as their largest-ever appeal (UNICEF, 2020a), and on 8 September 2020 **UNICEF warned that 'COVID-19 could reverse decades of progress toward eliminating preventable child deaths'** (UNICEF, 2020b).

Many LMIC countries have halted routine vaccination programmes in order to direct a greater focus towards managing COVID-19. Measles is a particularly infectious virus, with a basic reproduction number (the R value) of around 15 (compared with this pandemic coronavirus, which has an R of about 3). Increases in measles deaths were observed in West Africa after the 2014-16 Ebola outbreak (Masresha et al., 2020). Around 140,000 people (overwhelmingly young children) die of measles each year (WHO, 2019). We can expect to see increases in mortality of vaccine-preventable disease across 2021 and beyond in many LMIC settings, despite analyses highlighting that continuing to run vaccine clinics during the pandemic will still have a net benefit effect (Abbas et al., 2020). In the case of Measles in Africa, childhood vaccination at 9 months is could avert 194,388 deaths from measles at the cost of 1,896 excess deaths from COVID-19 over 1 year (Abbas et al., 2020). There are also worrying estimates of mortality increases from the 'Big Three' infectious diseases; **HIV, tuberculosis, and malaria** deaths over the next five years could increase by up to 10%, 20%, and 36%, respectively (Hogan et al., 2020).

Preventable child deaths could also occur in the UK. Almost half of children eligible to access free school meals did not receive their meals in the month following lockdown (Parnham et al., 2020) and the number of **MMR vaccines delivered in England dropped by 20% during the first three weeks of lockdown** (McDonald et al., 2020). Further, over 60% of 752 health visitors surveyed by the Institute of Health Visiting in May 2020 reported contact with families that had considered cancelling or postponing their child's vaccinations (Saxena et al., 2020).

There is also concern of a "secondary pandemic" of child neglect or abuse. With alcohol purchases rising by 22% in March 2020 (Ellson et al., 2020) and more being spent at time at home, the danger is that children cannot escape problematic households, where in pre-COVID-19 times schools may have acted as safe havens. This absence of routine contact with teachers, GPs, health visitors, and social workers also removes the opportunity for children to talk to someone outside their family on a regular basis, which can raise the alarm in cases of neglect or abuse (Green, 2020). **With an estimated 1 million – 2.3 million vulnerable children in the UK today (Children's Commissioner for England, 2020), there is an urgent need to develop plans for the future of child welfare to mitigate the effects of the pandemic**.

3. Cancer

Cancer patients have been hard hit by the coronavirus pandemic. There have been delays in diagnoses (Sud et al., 2020), treatment and clinical trials (Rosenbaum et al., 2020), as well as a decreased availability of support services and social interactions as cancer patients fall into the vulnerable group who were advised to shield during the pandemic (Constantinou et al., 2020). The UK government introduced specific guidelines for cancer patients on 21 March, strongly advising them to remain at home (Constantinou et al., 2020). Additionally, the NHS has moved the majority of its focus onto treating patients with COVID-19, often neglecting other services (Sud et al., 2020).

Routine screening was cancelled in late March (Maringe et al., 2020) and **throughout the UK, lockdown referrals via the urgent 2-week-wait pathway for suspected cancer fell by up to 84**% (Sud et al., 2020). There is significant concern noted in the literature (Maringe et al., 2020) that this reduction will lead to a number of excess deaths due to cancer in the years to come. 8,500 patients with positive colorectal screening tests, and a cancer risk of around 10%, remained uninvestigated (Lancet Gastroenterology & Hepatology, 2020). Additionally, very few endoscopies have taken place between mid-March and early July 2020 (Rees et al., 2020).

One numerical study (Constantinou et al., 2020) using data from patients with cancer predicts a 7.9% – 9.6% increase in the number of deaths after 5 years, leading to an additional 3,291 – 3,621 deaths in the UK. Heath Data Research UK predict there will be 18,000 extra cancer deaths, as a result of the COVID-19 pandemic (HDR-UK, 2020).

Three groups of cancer patients have been particularly affected with regards to their treatment modifications. Patients with lymphoma sometimes receive an immune therapy called chimeric antigen receptor T cell (CAR-T) therapy that is potentially curative. Unfortunately, more than half of these patients receive their therapy as part of a **clinical trial**, many of which have been paused during the pandemic.

Other cancer patients require bone marrow transplants, the which greatly increase risks of secondary infection. The third group of cancer patients that has been particularly affected are

those with refractory tumours who are nearing the end of their lives and for whom experimental therapies may still hold promise (Rosenbaum et al., 2020). Not only do phase I clinical trials provide a clinical benefit to about 20% of these patients, but can provide hope and a sense of fulfilment (in contributing to medical research) to recipients. In the UK individual trusts are making decisions around clinical trials following government advice and on a case by case basis. **Attempts were made to continue ongoing clinical trials, but many were prevented from starting or recruiting participants.**

Additionally, many cancer patients currently undergoing treatment have had their treatment plans delayed or modified after healthcare professionals had to make difficult decisions about the risks of stopping or delaying treatment versus the risk of infection. While in some cases medicine could be delivered to patients' homes, many cancer patients receive active treatment, such as radiotherapy, which cannot be conducted at home (NHS England, 2020).

Cancer is a disease that has to be identified and treated without delay. This has underpinned the NHS delivery of cancer treatment for many years (Sikora et al., 2005). National screening is available for breast, colorectal and cervical cancers (NHS, 2020). Patients that present to primary care providers with possible cancer symptoms are usually (in pre-COVID-19 times) offered investigation within **two weeks**, as recommended by the NICE guidance (NICE, 2020). **Most cancer screening has been suspended** in the UK since lockdown began, and routine diagnostic work deferred, leaving only urgent symptomatic cases to be processed.

COVID-19 has numerous other immediate associated effects that affect both cancer patients and others with long term conditions. These effects include limited visits from friends and family in healthcare settings, reduced access to **palliative care and supportive services such as physical therapy and organ donations**. Living organ donations, such as kidney donations, have declined in the US (Boyarsky et al., 2020).

Currently, the NHS has a large backlog – there are currently 2.1 million people waiting to have breast, bowel or cervical screening (NHE, 2020), on top of the treatment backlog. During the COVID-19 pandemic, 12,750 fewer patients received surgery while 6,000 fewer received chemotherapy and 2,800 radiotherapy (HDR-UK, 2020). **This backlog will need to be rapidly removed in order to prevent further risk to patients.**

The UK already has one of the worst cancer survival rates in the EU, with systems stretched even before the pandemic, requiring an urgent review of the resources available to cancer care on the NHS (Arnold et al., 2019).

4. Mental Health

The COVID-19 pandemic has had a significant impact on the country's mental health and well-being, with its effects likely to last for a long time after the pandemic is over.

Drawing on data from Hurricane Katrina, a team of US researchers reported that the factors which best predicted long-term mental distress are those common to the current situation. **Bereavement, lacking knowledge of children's and relative's safety, and having a relative who lacked medical care are predictors of post-traumatic stress (PTS), psychological distress, and/or physical symptoms 4 years post-disaster**. Believing one's life was in danger is associated with significantly higher odds of PTS 12 years later. These factors were more likely to impact on health than factors such as home or property damage, or neighborhood flooding (Raker et al., 2020).

Mental health services have also seen a stark decline in availability, with research by the charity *Mind* from May 2020 reporting that of the 8,200 people they surveyed, 20% had tried to access mental health services in the past 2 weeks, with a quarter of those unable to (Mind, 2020). They also found, in a study of 16,000 people found that half of the adults surveyed and three-quarters of the young people's mental health had deteriorated during the pandemic.

This study found that "Restrictions on seeing people, being able to go outside and worries about the health of family and friends are the key factors driving poor mental health. Boredom is also a major problem for young people". Additionally, this survey found that nearly three quarters (73%) of those with an eating disorder, PTSD (72%) or OCD (72%) said their mental health got worse during the pandemic. This figure rises to over three quarters (77%) of people with a personality disorder. More than 4 in 5 people (83%) with eating disorders or OCD had lower than average wellbeing scores during lockdown.

The first forecast by the Centre for Mental Health (CMH, 2020) predicts that at least half a million more people in the UK may experience a mental health problem as a result of the COVID-19 pandemic.

In addition to this forecast, numerous studies have shown that the pandemic has led to those with pre-existing mental health seeing their wellbeing deteriorating. There are a wide range of different common mental health conditions which the pandemic is likely to have exacerbated, including depression, generalised anxiety disorder (including obsessive compulsive disorder (OCD)), eating disorders (including anorexia nervosa and bulimia), bi-polar, and post-traumatic stress disorder (PTSD).

Many people did not feel entitled to seek help for mental health conditions during the pandemic (Mind, 2020), with 1 in 3 adults and more than 1 in 4 young people not accessing support during the pandemic because they did not believe they deserved it. **Alarmingly, one in 4 of adults and young adults who tried to seek help were unable to do so with many not feeling comfortable to use phone or video calls being a major reason** (Mind, 2020).

As part of the national lockdown in March, dramatic changes were made almost overnight to NHS mental health services (NHS Providers, 2020). **These changes included discharging patients from inpatient to community services, and moving to online services**. These changes have not, however, been without issue. For example, eye contact often plays an important role in cognitive behavioural therapy (CBT). If therapy is performed via video, the video camera can exasperate the heighted sense of body awareness in anorexia nervosa patients (Branley-Bell and Talbot, 2020).

In patients with severe anorexia nervosa, day or in-patient support is often required, with supported eating playing an important role in weight restoration and recovery (Bernardoni et al., 2016). Severe anorexia nervosa patients are highly physically compromised (Mehler and Brown, 2015), which has led to clinicians to only keeping the number of patients in eating disorder units to an absolute minimum in fear of COVID-19 infection.

Weighing in and accountability are often key parts of anorexia nervosa treatment and very difficult implement virtually, while ensuring patient confidentiality (Branley-Bell and Talbot, 2020). This complexity has led some clinicians to ask patients with an eating disorder to purchase scales to weight themselves to ensure patient safety, which is a step backwards in recovery for many (Branley-Bell and Talbot, 2020).

There is a huge body of evidence in the literature that the earlier eating disorders are treated the more likely that a patient will obtain a full and sustained recovery (Bernardoni et al., 2016). **Anorexia nervosa has the highest mortality rate of any mental health condition**, with a mortality rate as high as 10% (Mehler and Brown, 2015); much higher than many cancers. There is large concern in the literature that delays in treatment as a result of the COVID-19 pandemic will lead to an increase in anorexia nervosa patient mortality (Branley-Bell and Talbot, 2020).

Additionally, there is significant concern that the direct and in-direct consequences of the pandemic will lead to a rise in suicide rates. Major causes of expected increase in suicide rate include the large increase in unemployment rate due to the current recession. (Kawohl and Nordt, 2020). Increase in elderly suicide rates are also expected due to extensive social distancing measures and the increased isolation that this group has experienced (Sheffler et al., 2020). Finally, the increase in the number of people suffering from mental health conditions and the worsening of those with pre-existing mental health illnesses is likely to also lead to an increase in suicide rate (Sher, 2020).

5. Health Inequalities

Catastrophes and pandemics cause more damage in certain parts of societies than others. In 1931, Edgar Sydenstricker demarcated inequalities by socio-economic class in relation to the 1918 Spanish influenza epidemic in the US and found that there was a significantly higher incidence of cases among working classes (Bambra et al., 2020).

COVID-19 is no different. In terms of direct mortality, 22% of all deaths registered between 1 March and 17 April 2020 were COVID-19 related, **with deprived areas in England and Wales having death rates more than double those of more prosperous areas** (Lacobucci, 2020). **Additionally, UK COVID-19 mortality has been shown to be four times higher in unskilled and manual workers compared with professionals** (Anderson et al., 2020). Data from England and Wales revealed that people who are **Black, Asian or from a minority ethnic background accounted for 34.5% of critically ill COVID-19 patients, while they only constitute about 14% of the population.**

These issues are deeply rooted in our society and stem from existing social and economic inequalities, including disparities in housing, employment, and the known inequality in risk factors for severe COVID-19. Deprived neighbourhoods are more likely to have houses of multiple occupation, higher population densities, and smaller houses that lack outside space – all of which may increase COVID-19 transmission rates. They are also less likely to be able to work from home, and more likely to use public transport, further increasing the likelihood of them being exposed to the virus (Bambra et al., 2020).

In 2008, the authors of the report *Fair society, healthy lives: The Marmot Review* identified that people living in the poorest neighborhoods in England both die earlier and spend more of their lives in poor health, compared to the richest neighborhoods (Marmot et al., 2010). There was an economic as well as a human cost; the report stated that, at the time, inequality in illness was estimated to cause productivity losses of £31 billion – £33 billion per year, lost taxes and higher welfare payments in the range of £20 billion –32 billion per year, and additional NHS healthcare costs well in excess of £5.5 billion per year (Marmot et al., 2010). In February 2020, The Health Foundation published a follow-on report analyzing what had happened with health inequalities in the decade since *Fair society, healthy lives* was

published. The report – which captures the period before the impact of the COVID-19 pandemic – revealed that **since 2010, life expectancy increases in England have stalled, while years in ill-health have increased and inequalities in health have widened.** Similar slowdowns in life expectancy improvements since 2010 have been seen in Scotland, Northern Ireland and Wales (Marmot et al., 2020).

Given the alarming pre-pandemic findings that health inequalities were already widening in the UK, thought must urgently be given as to how COVID-19, the likely resulting economic downturn and the policy responses to both could exacerbate inequalities.

Using data from 12,527 adults, the University College London COVID-19 Social Study found that people within a lower socioeconomic group were 1.5 times more likely to experience loss of work compared with people of higher socioeconomic status, and their partners were twice as likely to experience loss of work. They were also 7.2 times more likely to be unable to pay bills in week 1 (rising to 8.7 times more likely by week 3), 4.1 times more likely to be unable to access sufficient food in week 1 (rising to 4.9 times more likely be week 3) and 2.5 times more likely to be unable to access required medication. Inequalities in financial stressors occurred after measures such as the furlough scheme and mortgage holidays were introduced (Wright et al., 2020). In addition to the direct consequences of this for indirect mortality (e.g. inability to properly heat homes or feed families), the added stress likely creates a significant decrease in wellbeing.

However, researchers have pointed to an overall lack of evidence regarding health inequalities during the COVID-19 pandemic, and how these inequalities may be created or deepened by the pandemic itself.

Previous research has found that sudden economic shocks lead to increased morbidity, and that health impacts are not shared equally. For example, following the global financial crisis of 2008, areas of the UK with higher unemployment rates had larger increases in suicide rates. People living in the most deprived areas also experienced the largest increases in psychiatric morbidity and self-harm (Bambra et al., 2020). COVID-19 and the resulting recession may have similar effects.

Indeed, a study modelling the effect of unemployment on suicide during 2000 – 2011 using global public data from 63 countries observed that **suicide risk, when associated with unemployment, was elevated by 20–30%.** When this model was applied to the International Labor Organization's March 2020 (ILO, 2020) projections of between 5.3 million (low scenario) and 24.7 million job losses (high scenario), they predicted that, in the low scenario, worldwide unemployment would increase from 4.9% to 5.1%, associated with an increase of about 2,135 suicides per year. In the high scenario, worldwide unemployment would increase to 5.6%, associated with an increase in suicides to approximately 9,570 per year (Kawohl and Nordt, 2020) – compounded by the fact that for each death by suicide, the WHO believes there are at least 20 suicide attempts (WHO Mental Health, 2020).

Following the 2008 crisis, countries which imposed austerity (such as the UK, Greece, Italy, and Spain), had more significant population health effects than countries such as Germany and Iceland which maintained public spending levels and social safety nets. Countries with better social security programs, such as Sweden, did not experience the same increase in health inequalities during the 1990s economic recession as the UK did (Copeland et al., 2015). Equally, **infant mortality rates declined as child poverty decreased in a period of public**

sector and welfare state expansion in the UK (2000 – 2010) and increased again when austerity was implemented and child poverty rates increased (2010 – 2017; Taylor-Robinson et al., 2019).

Whilst measures to both limit the direct mortality and morbidity of the virus and its financial harms are critical, they must not be made without consideration of existing inequalities and the risk of exacerbating them.

6. Public-facing workers

Public-facing workers have experience elevated safety and financial risks. As COVID-19 spreads, frontline healthcare workers have been found to be 11 times more likely to be infected and test positive. When these figures are corrected to account for increased testing, estimates still place these workers at 3 to 4 times more likely to be infected (Nguyen et al., 2020). Similar trends are predicted for other public-facing vocations, including emergency service personnel, as well as workers in hospitality, public transport, childcare, adult care, and the education sector (Sim, 2020; Kakimoto et al., 2020).

Such infection has clear direct and indirect effects in the immediate term. The high-risk working conditions of frontline staff, which includes the need to enforce social distancing and hygiene rules, has been found to significantly increase burnout in staff. This burnout is not negligible – its associated mental health effects have been found to reduce work efficiency in even veteran workers, posing a serious risk to patient health in the context of healthcare workers (Hu et al., 2020). Working in these conditions has been identified to significantly increase are fatigue and stress. These factors are well established in literature as strongly associated with preventable hospital errors and patient deaths, with the World Health Organisation recommending measures to avoid them (WHO Occupational Health, 2020).

The most effective method of mitigating these immediate-term concerns is to provide a safer working environment for frontline healthcare and other public facing industries. Crowded places such as shopping malls and restaurants, and closed environments such as transportation vehicles, are noted in the literature as high-risk areas where mask use significantly reduces spread (Wang et al., 2020). Universal masking policies have been repeatedly found to be one of the most effective methods of reducing spread between individuals, and stronger efforts and enforcement of these policies are required (Seidelman et al., 2020). **Government measures to increase compliance can greatly support frontline workers by off-loading their current enforcement responsibilities and reducing their concerns of public non-compliance.**

7. Global Health

The cessation of routine vaccination programmes will result in significant in mortality of vaccine-preventable disease across 2021 and beyond in many LMIC settings. In line with observations made in the aftermath of Ebola disease, modelling has also suggested that child and maternal deaths will rise substantially. These topics are discussed in more detail in section 2 (Maternal and Child Health) of this document.

7.1. The WHO Pulse Survey

The WHO surveyed Ministries of Health across 159 countries as part of their 'Pulse Survey', asking about essential health services in their settings and which core services would be prioritised during the pandemic (WHO, 2020). Almost all countries reported interruptions to their core services, more so in LMICs than high-income countries. All usual services were impacted, including antenatal and postnatal care, nutrition clinics and surgery. Attendance at open and functioning health centres was reported to be much lower than usual. It will take time to fully explore the impact of disruptions to these services, but there is plenty of emerging evidence, as well as modelled estimates, that demonstrate the difficult circumstances health services and vulnerable populations are facing worldwide.

7.2. Mass Drug Administrations

Another routine health service activity that has been stopped in many settings are mass drug administrations (MDA). These are typically annual or biannual distributions of medicines covering entire neighbourhoods and communities, and are especially important in some tropical settings where they can be combined with highly effective interventions such as the distribution of insecticidal mosquito nets. The drugs are used as a prophylactic i.e. given to the healthy to prevent disease before exposure. MDAs are used against malaria and several neglected tropical diseases (NTDs) such as African trypanosomiasis, lymphatic filariasis, or scabies. MDAs are credited with greatly reducing incidence and mortality of mosquito- or mite-driven disease (Webster et al., 2014). With fewer MDAs taking place, it is likely that LMICs will see increases in these infectious diseases. In Nigeria alone, modelling has shown that reducing malarial case management for 6 months and delaying mosquito net campaigns could result in between 44,000 and 119,000 additional deaths (Sherrard-Smith et al., 2020).

7.3. Food Security, Nutrition and Economic Disruption

The Global Nutrition Report estimates that globally, 1 in 9 children is malnourished and 25% of all under 5 children have stunted growth (GNR, 2020). Disruption to agriculture, trade, the food chain and local and national economies may combine to exacerbate these numbers (Lancet Global Health, 2020).

A report from the World Food Programme (WFP, 2020) states that 135 million people in 55 countries suffer from acute hunger globally, but their projections show that without intervention, the effects of COVID-19 could almost double this number to 265 million people.

Provisional findings from a University of Southampton study working with partners in Ghana suggests that 55% of Ghanaians are not able to meet, or are only just meeting, their basic needs and that only 4.6% of people had not noticed any financial impact. Mental health can also be affected by declining economic conditions and disruptions to everyday life, and there are concerns around further epidemics of anxiety, depression, loneliness and increases in cases of suicide (Kola, 2020). Ultimately, economic and social consequences will combine to create further excess mortality, and as detailed by the UN, this effect is especially true in vulnerable groups such as women, children, migrant workers, and displaced persons (UNSDG, 2020a-c).

7.4. Access to Surgical Care

Typically, LMICs have access to 6% of the global surgical volume, despite their surgery needs being much greater than this (Ma et al., 2020). Clearly, any interruptions to this already limited service can have significant impacts upon quality of life and mortality. Trauma incidence may be lower due to reduced travel and local lockdowns, but other surgical needs that are likely to remain high (yet unmet) will include obstetrics, stroke, burns, and cardiac complications. The focus on COVID-19 response has been such that surgical staff are often reallocated to A&E, acute medicine, and intensive care wards.

7.5. Global Health Conclusions

Some LMIC settings have been badly hit directly by COVID-19, such as Brazil, India, Mexico and South Africa. In contrast, many countries have not had as many cases as might be expected, for example across much of sub-Saharan Africa, where there are currently no significant indicators for unexplained excess mortality that could be attributed to COVID-19. **However, the acute direct impact of COVID-19 can and does evolve rapidly. In response to its spread, redistribution of limited LMIC healthcare resources must be considered in the context of the potential for large negative impacts on other areas of health and associated indirect COVID-19 mortality.**

Most countries are not on track to meet many of their sustainable development goal (SDG) milestones, and the pandemic will certainly worsen the situation. **The UK can support LMIC health systems and progression towards SDG targets, through financing from the Foreign and Commonwealth Office (now incorporating the Department for International Development), and through funding for global health research**. Even when the pandemic is considered to be fully under control, the indirect effects on mortality and other health metrics will reverberate for many years to come.

8. Research Shutdown

The first wave of the COVID-19 crisis has had profound impacts on medical research, both in terms of its financial sustainability and its activity. Medical research charities do not generally provide frontline services, meaning that they would not benefit from the Chancellor's £750 million coronavirus support package (AMRC, 2020a).

The Association of Medical Research Charities (AMRC), whose 152 members in 2019 spent £1.9 billion on research, making up 51% of the UK's medical research spend, reported that their members, on average, **furloughed 34% of their staff and cut or cancelled 18% of their research in universities.** On average, medical research charities experienced a 38% loss of fundraising income from March to May in 2020 compared with same period last year. More than two-thirds of AMRC members were forced into deferring upcoming grant rounds and withdrawing future funding (AMRC, 2020b). Beyond this short-term, the AMRC predicts a £310 million shortfall in medical research funding in 2021, which will take 4-5 years for medical research spending to recover to previous normal levels. These projections are the basis for the AMRC's request for a government matched support scheme targeted to the medical research charity sector, which they have termed the Life Sciences-Charity Partnership Fund.

Another indication of the financial difficulties facing the medical research charity sector is that since May, over 5,500 charity redundancies have been announced, with health being the

second hardest hit (NPC, 2020). 60,000 redundancies are expected across the charity sector by the end of the year (Weakley, 2020).

A decline in research activity (with long-term impacts on mortality and wellbeing) is already been seen, due to both the lockdown and the economic climate. Further to the figures above, analysis of the Edge database (used to manage NHS research) revealed that approximately 15,000 UK clinical trials were in progress at the start of 2020, but 60% of them – about 9,000 trials (McKie, 2020) – were paused or suspended due to COVID-19. A further 1,500 clinical trials, into conditions such as cancer and heart disease, have been stopped altogether. 70% of clinical trials and studies funded by AMRC charities have been stopped, paused or delayed, with nearly 40% of members concerned that over half of their trials will not be able to restart.

It is difficult to quantify exactly how long it will be before the impact of reductions in clinical research is felt, as time lag between research and implementation is difficult to measure. 17 years is often estimated as the time it takes for health research to translate into clinical benefit (Morris et al., 2011).

Healthcare research brings many benefits to the UK. In addition to the human costs of failing to find better treatments, to improve quality of life, and reduce the burden on the NHS, there will be economic implications. A study into the economic benefit of cardiovascular disease research in the UK between 1975 and 2005 concluded that a £1.00 investment in public/charitable research produced a stream of benefits equivalent to earning £0.39 per year in perpetuity (Morris et al., 2011).

Finally, there is a concern that medical research progress will not simply be delayed by the COVID-19, but that many areas of research – such as the clinical trials mentioned above – will not restart, and knowledge gaps will remain unfilled.

9. Policy Suggestions

9.1. Getting non-COVID care back on track

The impacts of the pandemic are likely to be felt for many years to come, both in terms of direct as well as indirect care. **Labour should push for**:

- A comprehensive plan for restoring levels of service in health and social care
- This plan should include a thorough assessment of what the changes in demand for services will be (for example, noting that with many cancer cases having been missed in early screenings, so more intensive treatments may be required).
- This plan should include consideration of the increased demand for mental health services which is likely to result from the pandemic, and that these demands may not occur uniformly across the country due to differing population dynamics.
- In the intervening time, the Government should provide a thorough and independent assessment of how well non-COVID care has fared during the pandemic, for example evaluating the provision of remote mental health services.
- Care should also be taken to ensure that those who are unable to receive care that is currently on offer (for example, on account of being immunocompromised) are able to access treatments in other ways where possible.

9.2. Social Safety Nets

It is clear that austerity measures put in place under successive conservative governments have significantly impacted the ability of frontline services to cope with increased demand. **Labour should push for:**

- Increased and highly targeted funding directed at addressing some of the causes indirect mortality which have been exacerbated by the pandemic.
- This should include ensuring that adequate social safety nets are in place for those with no recourse to public funds, for example.
- The Government should urgently seek to restore funding to those causes of indirect mortality whose effects are not immediately apparent, as well as those which are. The former may include in-patient mental health services.
- Urgent investigations are also needed into the impacts of COVID on various minority and underprivileged groups, to ensure that a comprehensive understanding of indirect mortality is available.

9.3. Restart Research

Significant damage in the long-term will be done by a failure to restart research efforts into non-COVID conditions. **Labour should push for:**

- A comprehensive and independent assessment on the impacts of COVID-19 on the UK bioscience research community
- This assessment should include consideration of how many trials and tests of new treatments and products have been delayed, and what the impact on patients both inside and out of the UK will be.

9.4. Understanding the impacts on the international community

It is clear that the impact of the pandemic will not be felt equally by all nations. The Government should continue to evaluate the impact of the pandemic on developing countries, and to ensure that future funding and support programs are designed to address any shortcomings identified. **Labour should push for:**

- A clear and logical analysis of the changes in UK international development priorities as a result of the pandemic
- An open and honest discussion about which UK international development projects may no longer be feasible
- Consideration of how UK funding and programme strategies may have to be altered to increase the likelihood of sustainable development goals being met.

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