

COVID-19 and Noncommunicable Diseases Media Q & A April 2020

Note: This Q&A aims to give a brief summary of the linkages between COVID-19 and noncommunicable diseases (NCDs). It is not a comprehensive review. For more information, please visit NCDA's [resources page](#), and our page of [calls to action](#) from the NCD civil society movement in response to this new pandemic.

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1 – Are people living with NCDs at higher risk from COVID-19?

NCDs are recognised as the world's biggest killer and cause of disability, constituting a global health crisis that requires an urgent policy response. NCDs are responsible for 71% of deaths globally, which represents over 41 million people killed by them every year. 15 million of these people are under the age of 70, including 8.5 million people in lower and lower-middle income countries (LMICs).

Evidence from science, healthcare professionals, and government guidelines on self-isolation from the COVID-19 pandemic shows many intersections between COVID-19 and NCDs. People who are over 60 years of age and people living with noncommunicable diseases (PLWNCDs) and conditions including hypertension and obesity, have a substantially higher risk of becoming severely ill or dying from the virus.

A study of COVID-19 fatalities in Italy found that 98.8% of deceased patients had at least one comorbidity, and 48.6% had at least three comorbidities. The most common comorbidities are outlined in Table 1, with **hypertension** being the most prevalent (73.8%).¹

¹ Istituto Superiore di Sanita, COVID-19 surveillance group, March 2020:
https://www.epicentro.iss.it/coronavirus/bollettino/Report-COVID-2019_20_marzo_eng.pdf

Table 1. Most common comorbidities observed in COVID-19 positive deceased patients

Diseases	N	%
<i>ischemic heart disease</i>	145	30.1
<i>Atrial Fibrillation</i>	106	22.0
<i>Stroke</i>	54	11.2
<i>Hypertension</i>	355	73.8
<i>Diabetes</i>	163	33.9
<i>Dementia</i>	57	11.9
<i>COPD</i>	66	13.7
<i>Active cancer in the past 5 years</i>	94	19.5
<i>Chronic liver disease</i>	18	3.7
<i>Chronic renal failure</i>	97	20.2
Number of comorbidities		
<i>0 comorbidities</i>	6	1.2
<i>1 comorbidity</i>	113	23.5
<i>2 comorbidities</i>	128	26.6
<i>3 comorbidities and over</i>	234	48.6

Reference: Istituto Superiore di Sanita, [COVID-19 surveillance group](#), March 2020:

A cross-sectional analysis of all patients with laboratory-confirmed COVID-19 treated at an academic health system in New York City between 1 March 2020 and 1 April 2020 investigated factors associated with hospitalisation and critical illness. It found that 71.9% of hospitalised patients had at least one chronic disease. The analysis also found that “hospitalised patients were more likely to be male (62.6% vs. 39.0%) and had substantially more comorbidities than non-hospitalised patients, particularly with regard to cardiovascular disease (44.6% vs. 16.4%), diabetes (31.8% vs. 5.4%) and obesity (39.8% vs. 14.5%).” The study found “particularly strong associations of older age, obesity, heart failure and chronic kidney disease with hospitalisation risk.”² Research is urgently needed regarding evidence that COVID-19 and its treatments may also cause potentially life-threatening or long-lasting impacts, including cardiac injury, acute kidney disease, neurological malfunction, blood clots and damage to the liver and intestinal function.

Lower and lower-middle income countries (LMICs)

As is common during global health crises, the most vulnerable and poorest groups will be hit the hardest and inequalities will be exacerbated. Although both COVID-19 and NCDs are indiscriminate killers, there are serious concerns that the impact of COVID-19 will be even more extreme in LMICs, given the already under-resourced health systems and the existence of many other health challenges. The toll of COVID-19 is only now beginning to unfold in these countries, which are caught in the crosshairs of the two pandemics.

2 – Will there be an impact on funding and NCD programme delivery?

As governments reorient health systems to respond to COVID-19, PLWNCDs are experiencing disruptions in the continuity of chronic care, such as blockages in supplies of essential medicines and technologies, screening and diagnosis, and limited access to resources including health workers and support services critical for ongoing management of NCDs. Particularly in LMICs, vast numbers of PLWNCDs are undiagnosed or cannot access treatment to control their conditions, even under normal circumstances.

² Horwitz, L et al. Factors associated with hospitalization and critical illness among 4,103 patients with Covid-19 disease in New York City, medRxiv preprint doi: <https://doi.org/10.1101/2020.04.08.20057794>. (n.b. Pre-print, not peer-reviewed).

This is likely to put long-term strain on health systems. Many governments may choose to re-orient funding plans for NCDs in order to recover health system stability as a first priority, but it is difficult to know now how this will manifest in each country.

The COVID-19 pandemic and its response also pose a challenge to mental health and wellbeing. Some governments may increase access to mental health and psychosocial support services, which could potentially affect funding to NCD programmes. On the other hand, since responses to COVID-19 such as physical distancing and self-isolation may increase exposure to some NCD risk factors (e.g. increased alcohol and tobacco use as coping mechanisms, barriers to physical activity and healthy diet), some countries may invest in promoting healthy behaviours as part of the COVID-19 recovery.

As mentioned, it is difficult to predict how the COVID-19 pandemic will affect NCD funding and programmes, but this is likely to be influenced by governments' available resources. While the impacts on health systems in high-income countries are unprecedented, the worst impacts are expected to be felt in lower-income countries with already severely under-resourced health systems.

3 – How does COVID-19 affect people living with NCDs?

PLWNCDs are likely to be highly impacted by COVID-19, in many ways. Firstly, due to the stress of trying to avoid infection and respecting physical distancing recommendations and the associated mental health impacts. Following public health recommendations and self-isolation may not be possible for many; for example, in overcrowded homes or areas without clean water and sanitation, for those who are not able to work from home, and for those without a social safety net, sickness leave or health insurance.

Furthermore, PLWNCDs are impacted by disruptions in routine chronic care (including palliative care), difficulties in accessing medication and treatment if supplies are disrupted, appointments are postponed, or where health workers are diverted to the COVID-19 response. This is likely to put additional strain on health systems in the longer term. For example, the cancellation of screening programmes is likely to result in a wave of later-stage diagnoses as health systems emerge from the COVID-19 response phase, placing additional pressure on already weakened systems.

There are early indications of non-COVID-19 excess mortality, with speculation that people are anxious about presenting at hospital, even when experiencing serious symptoms, e.g. of stroke or heart attack.

Cardiovascular diseases

Cardiovascular diseases, or CVDs, are the number one cause of death globally, taking an estimated 17.9 million lives each year. CVDs are a group of disorders of the heart and blood vessels and include heart disease, cerebrovascular disease, and other conditions. Four out of five CVD deaths are due to heart attacks and strokes.

Both cardiovascular risk factors and CVDs are highly prevalent in hospitalised patients with COVID-19. For example, in a report on 191 hospitalised patients in Wuhan, 48% of patients had at least one comorbidity, with hypertension being the most common (30%), followed by diabetes (19%) and coronary heart disease (8%). The same study shows that people with coronavirus infection, cardiovascular disease, hypertension and diabetes are twice as likely to die as other patients. According to *Global Heart*, "Some small studies have shown that patients with cardiovascular



disease are at a higher risk of complications, such as myocarditis and myocardial infarction, but what are the most frequent cardiovascular complications and which are the patients with cardiovascular disease at a higher risk remain unknown.”³

You can access additional advice and information on COVID-19 and cardiovascular health through the following resource:

[World Heart Federation](#)

Cancer

Cancer is the second leading cause of death globally, being responsible for one in six deaths each year. People with cancer and their loved ones may be especially concerned about coronavirus.

People living with cancer who are in active chemotherapy or intensive radiotherapy, undergoing antibody treatments or other targeted treatments, or who have undergone bone marrow or stem cell transplants in the last six months, may be particularly vulnerable to infection as these treatments weaken the immune system.⁴

You can access additional advice and information on COVID-19 and cancer through the following resource:

[Union for International Cancer Control](#)

Chronic respiratory diseases

Chronic respiratory diseases, or CRDs, are diseases of the airways and other parts of the lung. They include chronic obstructive pulmonary disease (COPD), asthma, occupational lung diseases, and others. CRDs are not curable, but there are different treatments that help control symptoms.

However, people with CRDs are advised to take extra care in the current context of the coronavirus pandemic. If you have a CRD and you get infected with COVID-19, you are more likely to have severe or even life-threatening symptoms, as the virus affects the lungs and breathing.

You can access additional advice and information on COVID-19 and respiratory health through the following resources:

[The Union
Forum of International Respiratory Societies](#)

Diabetes

About 463 million people are estimated to be living with diabetes, the majority of whom live in low- and middle-income countries (LMICs). Some 4.2 million deaths are directly attributed to diabetes each

³ Perel P, Grobbee DE. The Heart in the Time of the ‘Coronavirus’. *Global Heart*. 2020;15(1):24. DOI: <http://doi.org/10.5334/gh.786>

⁴ <https://www.uicc.org/news/cancer-and-coronavirus-coping-double-challenge>

year and half of the total number of people living with diabetes remain undiagnosed⁵. Both the number of cases and the prevalence of diabetes have been steadily increasing over the past few decades⁶. This chronic condition has to do with insulin, the hormone that regulates blood glucose, and it occurs either when the pancreas does not produce enough insulin – known as type 1 diabetes – or when the body cannot effectively use it – which is type 2 diabetes. When unmanaged, both types can be serious and lead to debilitating and life-threatening complications

In the context of coronavirus, people with diabetes may be more vulnerable to the severe effects of the virus. When people with diabetes develop a viral infection, it can be harder to treat due to fluctuations in blood glucose levels and, possibly, the presence of diabetes complications. Firstly, the immune system is compromised, making it harder to fight the virus and likely leading to a longer recovery period. Secondly, the virus may thrive in an environment of elevated blood glucose⁷.

You can access additional advice and information on COVID-19 and diabetes through the following resource:

[International Diabetes Federation](#)

Obesity

Overweight and obesity are defined as abnormal or excessive fat accumulation that may impair health. Worldwide obesity has nearly tripled since 1975, with 39% of adults being overweight in 2016, and 13% obese, equating to more than 1.9 billion overweight adults, including 650 million people living with obesity. Over 340 million children and adolescents aged 5-19 were overweight or obese in 2016.⁸

Emerging data suggests that obesity may be a risk factor for worse outcomes in those who are infected by COVID-19. A study of patients in New York City found that patients with body mass index (BMI) above 30 were significantly more likely to be admitted to acute and critical care than patients with BMI under 30, with the differential being considerably higher for patients under 60 years old.

Managing weight can be difficult in the context of the COVID-19 pandemic, as many people around the world are living with severe restrictions on movement. Restrictions on trade are also having an impact on the availability of fresh food, increasing food prices, and potentially increasing consumption of highly processed foods, which tend to be high in fats, sugars and salt.

You can access additional advice and information on COVID-19 and obesity through the following resource:

[World Obesity Federation](#)

⁵ International Diabetes Federation. IDF Diabetes Atlas, 9th edn. Brussels, Belgium: 2019. Available at: <https://www.diabetesatlas.org>

⁶ https://www.who.int/health-topics/diabetes#tab=tab_1

⁷ <https://diabetesvoice.org/en/news/covid-19-and-diabetes/>

⁸ <https://www.who.int/news-room/fact-sheets/detail/obesity-and-overweight>

Dementia

Dementia is a syndrome that mainly affects older people (with age being the biggest risk factor), causing a deterioration in the ability to process thought beyond what normally occurs with ageing. It is one of the major causes of dependency among older people, with about 50 million people affected worldwide. The current COVID-19 emergency has restricted movement and caused the cessation or reorientation of support services. While there is as yet little evidence on living with dementia and the risk of getting the coronavirus, there are important impacts on dementia care, particularly if there are barriers to access for carers or restrictions to visitors in care facilities. More specifically, there are concerns about people seeking out healthcare support and about access being stopped to the diagnosis process and participation in clinical trials. The situation can be particularly confusing or frustrating for people with dementia.

You can access additional advice and information on COVID-19 and dementia through the following resource:

[Alzheimer's Disease International](#)

4 – How does COVID-19 impact people living with or affected by mental health conditions?

The impact on mental health and wellbeing of populations raises serious concerns as people globally are forced to make radical changes in how we interact with each other and conduct our daily lives, with compounded concerns of financial security resulting from the decline of the global economy. In late February 2020, *The Lancet* published a review⁹ of 24 studies documenting the psychological impact of quarantine (the “restriction of movement of people who have potentially been exposed to a contagious disease”). It offers a view into millions of households around the world that are living with varying degrees of confinement.

Summarily, the findings show that people who are quarantined are very likely to develop a wide range of symptoms of psychological stress and disorder, including low mood, insomnia, stress, anxiety, anger, irritability, emotional exhaustion, depression and post-traumatic stress symptoms. Low mood and irritability were the symptoms reported most frequently. In China, these mental health effects are already being reported in the first research papers after the lockdown. In cases where parents were quarantined with children, the mental health toll became even steeper. In one study, 28% of quarantined parents were diagnosed with “trauma-related mental health disorder”.

Another study reporting on the long-term effects of SARS quarantine among healthcare workers found that almost 10% reported “high depressive symptoms” up to three years after being quarantined. It also found a long-term risk for alcohol abuse, self-medication and “avoidance” behaviour, which means that some hospital workers avoid being in close contact with patients simply by not showing up for work.

5 – What is the role of diet and physical activity during COVID-19?

It is noteworthy that many of the most prevalent comorbidities in COVID-19 patients are diet-related, including hypertension, diabetes and obesity, which underscores the importance of healthy food

⁹ [https://www.thelancet.com/journals/lancet/article/PIIS0140-6736\(20\)30460-8/fulltext](https://www.thelancet.com/journals/lancet/article/PIIS0140-6736(20)30460-8/fulltext)

systems. The pandemic response poses serious challenges for children and adults to eat healthily, with the world's food system under strain during this global emergency. It is having an impact upon the availability of fresh food, increasing food prices, and potentially increasing consumption of highly processed foods, which tend to be high in fats, sugars and salt. This may be the case particularly for the most vulnerable communities.

Staying at home for prolonged periods of time can also pose a significant challenge for remaining physically active. Sedentary behaviour and low levels of physical activity can have negative effects on the health, well-being and quality of life of individuals. Physical activity and relaxation techniques can be valuable tools to help remain calm and continue to protect your health during this time.

6 – Does air pollution increase the risk of COVID-19?

According to WHO, over 90% of the global population lives in areas with unhealthy levels of air pollution, which causes seven million deaths each year¹⁰. These deaths are largely a result of higher mortality from stroke, heart disease, chronic obstructive pulmonary disease, lung cancer and acute respiratory infections – all pre-existing conditions that increase the risk of death from COVID-19. Early studies have also indicated that high levels of air pollution correlate with a higher death rate from COVID-19. For example, a study¹¹ published on 7 April looked at fine particle pollution in the US and found that even small increases in levels in the years before the pandemic were associated with higher COVID-19 death rates. Another recent paper¹² compared nitrogen dioxide (NO₂) levels from January and February in 66 administrative regions with COVID-19 deaths recorded up to 19 March. It found that 78% of the 4,443 deaths were in four regions in northern Italy and one around Madrid in Spain. These five regions had elevated NO₂ levels and airflow conditions that prevented dispersal of air pollution. These studies echo similar findings regarding air pollution and the severe effects of SARS.

Ambient air pollution as well as household air pollution are both serious risk factors for COVID-19, and both are more prevalent in LMICs. Household air pollution especially affects women and children in these countries, as the pollutants come from burning fuels such as dung, wood and coal in inefficient stoves or open hearths, often inside the home.

7 – Does smoking and tobacco use increase the risk of COVID-19?

The data are still emerging, but [evidence already demonstrates the negative impact of tobacco use on lung health](#) and its causal association with a large range of respiratory diseases. Smoking weakens the immune system and its responsiveness to infections, making smokers more vulnerable to infectious diseases. This includes COVID-19.

In February, the [New England Journal of Medicine](#) published a study of 1,099 COVID-19 patients. It found that smokers fared comparatively poorly among hospitalised COVID-19 patients in China. Smokers represented 12.6% of the patient sample, but 16.9% of those with severe symptoms and 25% of those who died, were admitted to intensive care or required mechanical ventilation¹³.

¹⁰ https://www.who.int/health-topics/air-pollution#tab=tab_1

¹¹ Exposure to air pollution and COVID-19 mortality in the United States. Xiao Wu, Rachel C. Nethery, Benjamin M. Sabath, Danielle Braun, Francesca Dominici. medRxiv 2020.04.05.20054502; doi: <https://doi.org/10.1101/2020.04.05.20054502>

¹² <https://www.sciencedirect.com/science/article/pii/S0048969720321215>

¹³ Clinical Characteristics of Coronavirus Disease 2019 in China. Wei-jie Guan, Ph.D. et al. NEJM. February 28, 2020, DOI: 10.1056/NEJMoa2002032, <https://www.nejm.org/doi/full/10.1056/NEJMoa2002032>

8 – What preparedness steps could be taken to reduce the impact of COVID-19 on people living with or affected by NCDs?

In light of COVID-19, tackling NCDs must be understood as fundamental to health security. Pandemic preparedness - today and in the future - depends on Universal Health Coverage, healthy populations, and a resilient, qualified, well-resourced health workforce. Governments must act urgently to mitigate the impact of NCDs both in their own right and recognising the compounding severity of other diseases like coronavirus.

- **Leadership:** Needed to prioritise health and integrate NCD prevention and control into strengthening health and economic security.
- **Community engagement:** Involving civil society and people most affected and at risk is fundamental to effective health responses.
- **Accountability:** The emergency pandemic response has illuminated the need for robust data, monitoring, surveillance and transparency, including the causal relationship with pre-existing health conditions and risk factors.
- **Care:** The COVID-19 pandemic brings home the urgency and self-interest to all governments of delivering on the commitment to Universal Health Coverage. All countries are only as safe as the weakest health system.
- **Investment in health:** This must be an ongoing priority for governments to build stronger, resilient health systems that can better respond to health emergencies while continuing to provide essential health services to people living with NCDs and other underlying conditions.