

COVID-19 and Noncommunicable Diseases (NCDs)

Media Q & A

June 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 NCD Alliance'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 stay-at-home guidelines during the COVID-19 pandemic illustrate 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 virus¹. COVID-19 is also causing a significant “disruption of services for the prevention and treatment of NCDs” in almost all countries, likely to lead to a “long-term upsurge in deaths from NCDs” according to WHO.²

¹ Information note COVID-19 and NCDs: WHO, March 2020

² Rapid assessment of service delivery for NCDs during the COVID-19 pandemic: WHO, May 2020

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%).³

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

Diseases	N	%
<i>schemic 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.”⁴ 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 are being hit the hardest and inequalities will be exacerbated. Although both COVID-19 and NCDs are indiscriminate killers, there are serious concerns that the harmful 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.

³ Istituto Superiore di Sanita, COVID-19 surveillance group, March 2020:

https://www.epicentro.iss.it/coronavirus/bollettino/Report-COVID-2019_20_marzo_eng.pdf

⁴ 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).

2. What is the impact of COVID-19 on NCD programme delivery and funding?

According to preliminary results from a rapid assessment of service delivery for NCDs during the COVID-19 pandemic, conducted by the World Health Organization, fewer lower income countries have included the continuity of NCD services in national COVID-19 plans: 42% of low-income countries report NCD service inclusion compared to 72% of high-income countries⁵. Low income to lower-middle income countries also reported lower use of mitigation strategies to overcome NCD service disruptions⁶, e.g. globally 58% of countries reporting service disruptions have increased use of telemedicine (advice by telephone or online means) to replace in-person consultations. However, in low income countries this figure is 42%.

As governments reorient health systems to respond to COVID-19, PLWNCs 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 PLWNCs are undiagnosed or cannot access treatment for their conditions, even under normal circumstances.

The WHO rapid assessment and analysis of data provided by 155 countries⁷ examined to what extent PLWNCs are unable to access NCD treatment and care during the COVID-19 pandemic. The findings saw a majority of responding countries (94%) where ministry of health staff working in the area of NCDs were partially or fully reassigned to support COVID-19.

NCD Service Delivery

- Almost half of countries (46%) in this assessment report disrupted services for cardiovascular emergencies (including heart attack and stroke).
- Over half of countries (54%) reported disruptions to cancer treatment;
- Almost two-thirds reported disrupted hypertension management (64%).
- 62% of countries reported disruptions to diabetes treatment.
- Rehabilitation services have been disrupted in almost two-thirds (61%) of countries.⁸ Rehabilitation services are key to a healthy recovery following severe illness from COVID-19 and in NCD care such as rehabilitation following stroke.

Diagnosis and prevention of NCDs is also critical in the response to prevent and upsurge in future demand for healthcare at a later stage of disease. The WHO assessment reported the postponement of public screening programmes (for example, for breast and cervical cancer) in more than 50% of countries.⁹

The COVID-19 pandemic and its response also pose a challenge to mental health and wellbeing. However, the WHO rapid assessment hasn't yet examined impact on mental health services, or other major NCDs, including 50 million people living with dementia worldwide. The impact of policy responses to COVID-19 outside of health systems, such as physical distancing and self-isolation may increase exposure to some NCD and mental health risk factors (e.g. increased alcohol and tobacco

⁵ Rapid assessment of service delivery for NCDs during the COVID-19 pandemic: WHO, May 2020

⁶ Ibid.

⁷ Ibid.

⁸ Ibid.

⁹ Ibid.

use as coping mechanisms, barriers to physical activity and healthy diet, stress, anxiety and loneliness). For more on COVID-19 and mental health, please see section 5 below.

Funding

As of May 2020, according to the WHO, 17% percent-of countries have started to allocate additional funding from the government budget to include the provision of NCD services in their national COVID-19 plan.¹⁰ It is clear that NCD prevention and control were already under-resourced and facing chronic shortage of investment even before the pandemic. While the impacts on health systems in high income countries are unprecedented, the worst impacts are expected to be felt in low income countries with already severely under-resourced health systems. There are growing calls for governments to 'build back better' and reconsider public spending for health in response to the pandemic. However, it is early to draw conclusions on government decisions on health funding during the COVID-19 response and recovery.

3. What are the causes of disruption to NCD programme delivery during COVID-19?

In the 120 countries reporting disruptions to NCD care, the most common reasons for disruptions during COVID-19 include:

- Decrease in inpatient volume due to cancellation of elective care (63%);
- Closure of population-level screening programmes (45%);
- Government or public transport lockdowns hindering access to health facilities (43%)¹¹.
- NCD related clinical staff redeployed to COVID-19 relief (38%).¹²

4 – 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), and difficulties in accessing medication and treatment when 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. *(Please refer to question two for detailed information on the impact of disrupted NCDs service delivery during COVID-19).*

¹⁰ Ibid.

¹¹ Ibid.

¹² Ibid.

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. In India, 30% **fewer** cardiac emergencies reached health facilities in rural areas in March 2020 compared to the previous year; and in Netherlands, the number of people newly diagnosed with cancer dropped by 25% as a result of disruption to screening and diagnosis services.¹³

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.”¹⁴ In Spain, among patients with severe COVID-19, “43% had existing cardiovascular disease”.¹⁵

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 COVID-19.

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.¹⁶

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

[Union for International Cancer Control](#)

¹³ Rapid assessment of service delivery for NCDs during the COVID-19 pandemic: WHO, May 2020

¹⁴ 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>

¹⁵ Rapid assessment of service delivery for NCDs during the COVID-19 pandemic: WHO, May 2020, p6

¹⁶ <https://www.uicc.org/news/cancer-and-coronavirus-coping-double-challenge>

Chronic respiratory diseases

Chronic respiratory diseases (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. People living with CRDs are more likely to have severe or even life-threatening symptoms of COVID-19, 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 LMICs. Some 4.2 million deaths globally are directly attributed to diabetes each year and half of the total number of people living with diabetes remain undiagnosed.¹⁷ Both the number of cases and the prevalence of diabetes have been steadily increasing over the past few decades.¹⁸ This chronic condition relates to insulin, the hormone that regulates blood glucose, and it occurs either when the pancreas does not produce enough insulin –type 1 diabetes – or when the body cannot effectively use it –type 2 diabetes. When unmanaged, both types can lead to debilitating and life-threatening complications.

In the context of COVID-19, 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 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 glucose.¹⁹ In the context of Italy, the WHO reported that “among those dying from COVID-19 in hospital”, “31% had type 2 diabetes”.²⁰

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

[International Diabetes Federation](#)

¹⁷ International Diabetes Federation. IDF Diabetes Atlas, 9th edn. Brussels, Belgium: 2019. Available at: <https://www.diabetesatlas.org>

¹⁸ https://www.who.int/health-topics/diabetes#tab=tab_1

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

²⁰ Rapid assessment of service delivery for NCDs during the COVID-19 pandemic: WHO, May 2020.

Obesity

Overweight and obesity are defined as 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 2016.²¹

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](#)

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 to the diagnosis process and participation in clinical trials being stopped. 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](#)

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

The impact on the 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

²¹ <https://www.who.int/news-room/fact-sheets/detail/obesity-and-overweight>

economy. In late February 2020, *The Lancet* published a review²² 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 by simply not showing up for work.

6 – 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 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.

7 – 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 year.²³ 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 study²⁴ 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 paper²⁵ compared nitrogen dioxide (NO₂) levels from January and February in 66 administrative regions with COVID-19 deaths recorded up to 19 March. It

²² [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)

²³ https://www.who.int/health-topics/air-pollution#tab=tab_1

²⁴ 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>

²⁵ <https://www.sciencedirect.com/science/article/pii/S0048969720321215>

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.

8 – 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.²⁶ 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 ventilation.²⁷

The use of tobacco and smoking products such as cigarettes, waterpipes, bidis, cigars and heated tobacco products may increase the risk of contracting COVID-19. “The act of smoking involves contact of fingers (and possibly contaminated cigarettes) with the lips, which increases the possibility of transmission of viruses from hand to mouth”.²⁸ This is applicable to smoking waterpipes such as shisha due to the sharing of mouth pieces and hoses, which could facilitate the transmission of COVID-19.²⁹

9 – How are unhealthy industries influencing behaviour and practices during COVID-19?

Halting the spread of COVID-19 is of paramount importance, as is protecting people particularly susceptible to the virus and ensuring continuity of care for those living with NCDs. In addition, as mentioned above, it is important to recognize how PLWNCDs and people at risk of NCDs, are impacted by exposure to major risk factors – in particular tobacco, alcohol, foods high in fat, sugar and salt, air pollution – during the pandemic. NCD Alliance is working with academic partners to gather examples of unhealthy industry practices in response to COVID-19. Many examples have been submitted across different sectors, for example ultra-processed food and beverage companies using the current crisis to increase their outreach, for example, with more intensive digital marketing campaigns targeting people staying at home and aggressive pricing strategies to appeal to people with lower budgets. Practices which promote convenience and snack foods which are high in salt, sugar and fat, may displace nutritious foods such as fresh fruit, vegetables and legumes within the food system and have negative impacts on nutrition and public health.

Unhealthy food and beverage businesses in similar ways to tactics observed from the alcohol and tobacco lobbies, appear to be attempting to position themselves as crucial to the COVID-19

²⁶ <https://www.who.int/news-room/q-a-detail/q-a-on-tobacco-and-covid-19>

²⁷ 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>

²⁸ <https://www.who.int/news-room/q-a-detail/q-a-on-tobacco-and-covid-19>

²⁹ *ibid.*

response³⁰. They have undertaken this by pivoting production lines and logistics support, and showcasing how they are donating high fat, sugar and salt 'comfort' foods to show gratitude for frontline health workers. We observe that unhealthy industry lobbies are also meeting with ministries of health (places they not ordinarily have access to due to their conflicts of interest) as well as Treasuries to offer some of their services and products, and presumably requesting policy decisions favourable to their sectors in return.

These lobbying meetings buy favour and increase governments' susceptibility to influence when policies to reduce the same diet-related NCDs that are risk factors for more severe cases of COVID-19 may compromise their profit-making potential. For example, the fossil fuel industry appears to have successfully lobbied for bail-outs and government subsidies in many countries in the context of the economic recovery from COVID-19, despite having potentially increased vulnerability to the pandemic by contributing to dangerous levels of air pollution.

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

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.

As of May 2020, two-thirds of countries globally have reported that they had included NCD services in their national COVID-19 preparedness and response plans; 72% of high-income countries reported inclusion compared to 42% of low-income countries. Services to address cardiovascular disease, cancer, diabetes and chronic respiratory disease were the most frequently included.³¹

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. The NCD Alliance includes the following principles to support preparedness steps to be taken to reduce the impact of COVID-19 on PLWNCDs:

- **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.

³⁰ https://ifballiance.org/uploads/ifbaResource/report/5eaffe8356e7f_IFBA%20COVID19%20response.pdf

³¹ Rapid assessment of service delivery for NCDs during the COVID-19 pandemic: WHO, May 2020