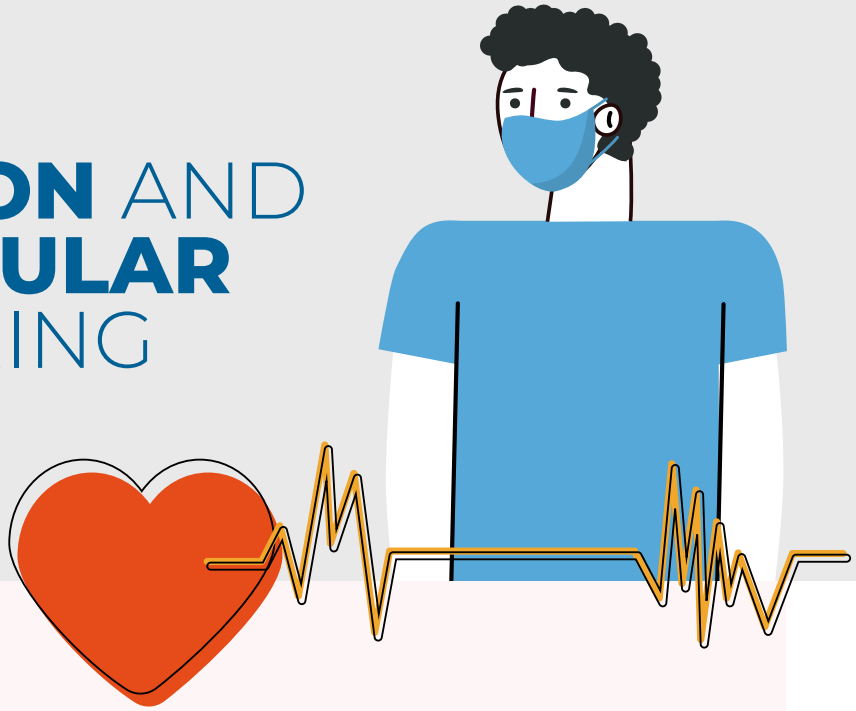
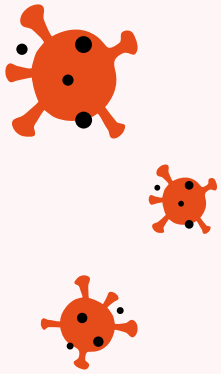
MANAGING PEOPLE WITH **HYPERTENSION** AND **CARDIOVASCULAR DISEASE** DURING **COVID-19**

CONSIDERATIONS FOR HEALTH PROVIDERS



INTRODUCTION

Individuals with hypertension and cardiovascular disease are at increased risk for severe disease and death from COVID-19. For example, some reviews note that approximately 10% of people with pre-existing cardiovascular disease who contract COVID-19 will die, compared with only 1% of patients who are otherwise healthy.[1,2]



At the same time, individuals with hypertension and cardiovascular disease are at increased risk of developing complications because of COVID-19-related restrictions and health service disruptions. These complications include hypertensive emergencies, acute coronary syndromes, heart failure exacerbations, and stroke. The increased risk of these complications is due to multiple factors: limited access to primary care services as a result of social distancing measures; disrupted access to chronic disease medications, as a result of challenges obtaining refill approvals, accessing pharmacies, and supply chain shortages. This is compounded by difficulty in adhering to a healthy lifestyle during COVID-19 restrictions, with limited physical activity and increased sedentary behavior, limited access to fruits and vegetables, and overall greater food insecurity.[3]

Primary care health centers and providers who care for individuals with hypertension and cardiovascular disease have an important role to play in ensuring continued access to care, reducing the risk of coronavirus infection, and appropriately managing people with these co-morbidities who acquire COVID-19. The following are considerations in this regard.

STRATEGIC CONTINUATION OF NCD SERVICES UNDER STRICT INFECTION CONTROL MEASURES

Due to COVID-19, primary health centers have limited or eliminated in-person clinic visits. Some countries/areas have the infrastructure to set up audio/phone consultations and tele-health visits. This has proven more limited in low-income settings where record-keeping (including phone numbers) is limited and phone access variable. To avoid complications of hypertension and cardiovascular disease, it is important to ensure continuation of essential services.

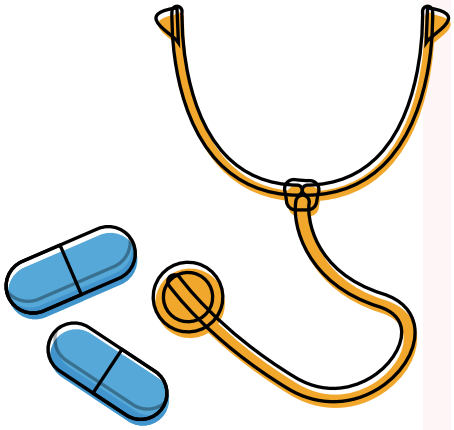
- If audio visits or tele-health visits are feasible, ensure they are accessible so people with hypertension or cardiovascular disease can continue to consult with their practitioner. Provide information on how to reach providers and how to schedule a phone consultation.

- When audio/tele-health visits are not feasible, make in-person care accessible while adhering to strict infection risk reduction procedures, as described below. Even when audio/tele-health visits are taking place, some people will still need to be seen in-person.

- Consider actively reaching out to the most vulnerable clients, those who are elderly, and those with multiple co-morbidities such as diabetes, or kidney disease. In addition, increased vulnerability may be a result of poverty, food insecurity, lack of education, and unemployment. These individuals should be considered at higher risk of developing complications related to their hypertension or cardiovascular disease.

- Work with local pharmacies to ensure uninterrupted access to essential medication for the management of hypertension and cardiovascular disease. Patients should have the ability to obtain a 90-day supply of medication to reduce likelihood of missed doses.

- Where available, community health workers, with appropriate personal protective equipment, can help deliver medication to individuals with chronic disease, and conduct home visits for patients in need.



REDUCING RISK OF INFECTION TO PATIENT AND PROVIDERS

Providing in-person care at primary health centers for individuals with chronic disease requires significant planning and preparation to minimize risk of exposure to the client and the provider.

- This starts before the client arrives at the clinic. Messaging needs to be conveyed that if they are experiencing COVID-19 like symptoms, they should come into the clinic only if they are feeling distressed and need to be seen in-person.

- For those who need to be seen in the clinic, the following measures should be put in place:

    - Triage of patients outside the clinic building to take advantage of air circulation. Triage can occur under a shaded area or tent without the side walls. People waiting to be triaged should stand/sit in line using 2m social distancing. Triage should entail a list of symptoms and an infrared temperature screen. If no concern for COVID-19, the client can be triaged into the clinic for primary health care services. Individuals triaging should have adequate personal protective equipment (PPE), and be trained on screening and triage based on the most recent WHO case definition for COVID-19.

    - If a patient does have COVID-19-related symptoms they should be triaged to a "COVID-19 rule out and management" area. This initial COVID-19 rule out area can also be outside the building. This part of the clinic should be clearly separated in space than the areas where patients without COVID-19 symptoms are being cared for.

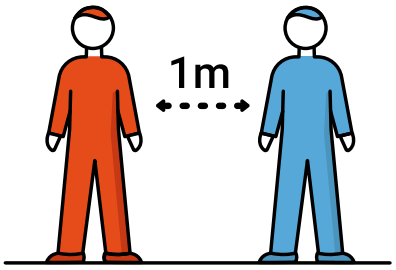
- Providers should be wearing appropriate PPE in triage, COVID-19, and non-COVID-19 areas. This entails at a minimum a surgical facemask and gloves. Providers caring for patients with COVID-19 (or suspected cases) should wear a face mask with shield, N95 when available, gown and gloves. All patients entering the clinic should be provided with a mask.

- If a provider or clinic staff tests positive for the COVID-19 virus, they can only return to work when: at least 3 days (72 hours) have passed since recovery, defined as resolution of fever without the use of fever-reducing medications, and improvement in respiratory symptoms (e.g., cough, shortness of breath); and at least 10 days have passed since symptoms first appeared.

- If a provider or clinic staff has had "contact" with a person infected with COVID-19,then the following recommendations may be considered if feasible: self-quarantine for 14 days; when self-quarantine for all potential contacts is not possible, then providers/staff should check their temperature twice a day and self-isolate if any temperature or symptoms develop.

    A significant contact is:

    - Face-to-face contact with a probable or confirmed case within 1 meter and for more than 15 minutes;
    - Direct physical contact with a probable or confirmed case;
    - Direct care for a patient with probable or confirmed COVID-19 disease without using proper PPE;
    - Other situations as indicated by local risk assessments.



SELF-MANAGEMENT SUPPORT

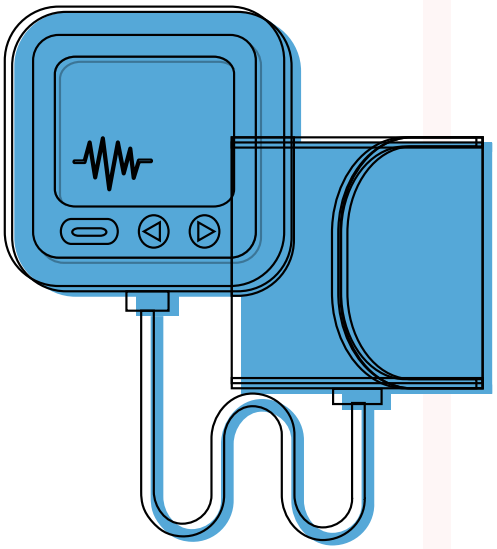
Provide helpful information to clients to help them manage their chronic disease during the COVID-19 restrictions, notably:

- encourage healthy eating and increased physical activity
- ensure access to refills for all medication
- encourage medication compliance
- encourage calling care providers with questions/concerns
- reassure that if in-person visits are needed they can keep safe

MANAGEMENT OF PEOPLE WITH HYPERTENSION AND CARDIOVASCULAR DISEASE WHO HAVE COVID-19

There is a high prevalence of hypertension and cardiovascular disease among patients who have COVID-19; in one study in China this was 38%.[4] Individuals with hypertension or cardiovascular disease and COVID-19 are more likely to experience severe disease than others. Clinical presentation often includes fever, cough, shortness of breath, and fatigue. Other symptoms include headache, gastrointestinal symptoms, and upper respiratory tract symptoms (rhinorrhea and sore throat) are less common. Some patients will develop smell and taste disorders. Severe COVID-19 results in acute respiratory distress syndrome (ARDS), respiratory failure, arrhythmias, acute cardiac injury, shock, multiple organ failure and death.

Laboratory examinations will often show decreased white blood cell counts, particularly lymphocytopenia. Patients with severe COVID-19 will have elevated neutrophil counts, inflammatory markers, positive D-dimer, raised blood urea and creatinine levels. Chest computed tomography most commonly shows ground-glass opacifications with or without consolidative abnormalities. They are also more likely to be bilateral, have a peripheral distribution and involve the lower lobes. This is the main reason that prone positioning of awake patients has shown improved ventilatory capacity.



It is important to note that having COVID-19 increases the risk of cardiovascular events. These include acute myocardial infarction, myocarditis, and arrhythmias. Cardiac injury as a result of COVID-19 is associated with higher mortality. It is not yet known whether there will be long-term elevated cardiovascular risk as a result of COVID-19.[5]

ANGIOTENSIN CONVERTING ENZYME INHIBITORS AND COVID-19

Coronavirus binds to target cells though angiotensin-converting enzyme 2 (ACE2), which is expressed by epithelial cells of the lung, intestine, kidney, and vessels. The expression of ACE2 is increased in patients with diabetes, especially those taking either ACE inhibitors or angiotensin II type-1 receptor blockers (ARBs). However, there is no evidence to support the discontinuation of angiotensin converting enzyme inhibitors or angiotensin receptor blockers in patients with hypertension or cardiovascular disease. Inappropriately discontinuing drugs with well-defined and scientifically proven health benefits would increase cardiovascular risk.[6,7]

ADDRESSING THE MENTAL HEALTH NEEDS OF PEOPLE WITH CHRONIC DISEASE

Individuals with cardiovascular risk factors and disease have higher rates of depression and other mental health conditions. This is compounded by the stress and anxiety imposed by the uncertainty and the social isolation of the COVID-19. Furthermore, social distancing regulations have kept these persons away from family and loved ones that often form a critical support group. It is important that providers continue to ask about and address mental health problems. Discussing with patients the importance of emotional wellbeing opens the space for candid conversation.

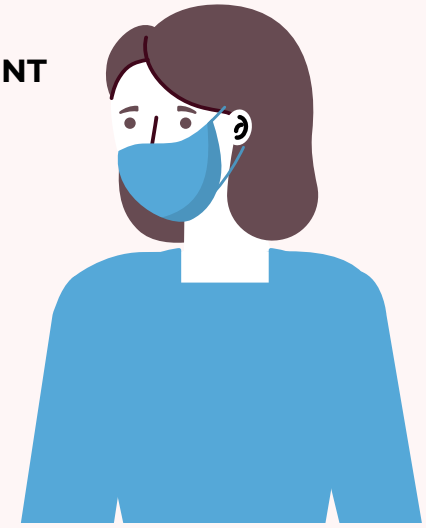
Management of People with CVD in the Time of COVID-19

PREVENTION OF INFECTION IN PATIENTS AND PROVIDERS

- pre-arrival screening
- on-arrival screening outside the clinic
- separated areas for COVID symptoms versus no COVID symptoms

SELF-MANAGEMENT SUPPORT

- importance of continuing medication
- reasons to seek care
- mental health needs
- maintaining healthy lifestyle



MANAGEMENT OF CVD DURING COVID-19

- control hypertension
- be aware of cardiac damage secondary to COVID-19 infection
- no evidence to support discontinuation of ACE-I or ARB

HEALTHY INDIVIDUAL WITH CVD

- in-person services should be strategically continued
- vulnerable and elderly patients should be identified and targeted for care
- process for uninterrupted refill of medications should be instituted
- address mental health needs

STRATEGIC CONTINUATION OF HEALTH SERVICES

REFERENCES

1. Clerkin Kevin J, Fried Justin A, Raikhelkar J, et al. **Coronavirus disease 2019 (COVID-19) and cardiovascular disease.** *Circulation.* 2020;141:1648–55

2. Schiffrin EL, Flack JM, Ito S, Muntner P, Webb RC. **Hypertension and COVID-19.** *American Journal of Hypertension.* 2020;33(5):373-–4.

3. World Health Organization. **Information note on COVID-19 and NCDs.** https://www.who.int/who-documents-detail/covid-19-and-ncds. Accessed May 15, 2020.

4. Zhou F, Yu T, Du R, et al. **Clinical course and risk factors for mortality of adult inpatients with COVID-19 in Wuhan, China: a retrospective cohort study.** *Lancet.* 2020;395(10229):1054–62.

5. European Society of Cardiology. **ESC Guidance for the diagnosis and management of CV disease during the COVID-19 pandemic.** https://www.escardio.org/Education/COVID-19-and-Cardiology/ESC-COVID-19-Guidance. Published 2020. Accessed May 15, 2020.

6. American Heart Association. **Patients taking ACE-i and ARBs who contract COVID-19 should continue treatment, unless otherwise advised by their physician.** https://newsroom.heart.org/news/patients-taking-ace-i-and-arbs-who-contract-covid-19-should-continue-treatment-unless-otherwise-advised-by-their-physician. Published 2020. Accessed May 15, 2020.

7. World Health Organization. **COVID-19 and the use of angiotensin-converting enzyme inhibitors and receptor blockers.** https://www.who.int/news-room/commentaries/detail/covid-19-and-the-use-of-angiotensin-converting-enzyme-inhibitors-and-receptor-blockers. Published 2020. Accessed May 15, 20208.

8. Kroenke K, Spitzer RL, Williams JB. **The patient health questionnaire-2: validity of a two-item depression screener.** *Med Care.* 2003;41(11):1284–92.

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