



## Non-communicable Diseases Surveillance: Challenged by COVID-19

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### Abstract

Non-communicable diseases as a leading cause of death have a surveillance system in most countries. This is disturbed by the emergence of coronavirus disease-2019 (COVID-19) in December 2019. In this regard, health system managers at decision-making levels tried to overcome this problem. Therefore, strategies to deal with this issue and bring the surveillance system to an ideal state were proposed and considered.

**Keywords:** Non-communicable Diseases, COVID-19, Surveillance

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Non-communicable diseases (NCDs) are the main cause of death and disability globally, accounting for 70% of fatalities and 80% of disabilities among people in low- and middle-income countries (LMICs) each year (1). Also, data from the global burden of disease show that 90% of the leading causes of years lived with disability are related to NCDs (2). Hence, its management, such as prevention and control measures, is of high importance.

Since late 2019, the emergence of coronavirus-2019 (COVID-19) has had a significant impact on morbidity, mortality, and the use of health care resources worldwide. Hence, with the announcement of the World Health Organization on March 11, 2020, as a pandemic, the need to organize programs to manage health was felt to be very necessary, to respond to both COVID-19 and NCDs in regard to periodic care and prevention measures (3). The patients with NCDs are more susceptible to severe infection and higher fatalities by COVID-19 (4). The term "syndemic" refers to the current scenario, which is accompanied by 2 pandemics of COVID-19 and NCDs that interact with one

another (5). The main impacts related to syndemic are as follows:

- According to the data of 163 countries, approximately 75% of NCDs services were disrupted (6), 62% for diabetes treatment and complications, 54% for cancer treatment, 64% for hypertension management, and 46% for cardiovascular emergencies (7);
- Reduction of 65% of inpatient volume of NCDs due to cancellation of elective care (8);
- Cancellation or postponement of approximately 2.3 million cancer surgeries during the Covid-19 peak period (9);
- Out-of-hospital deaths of patients with long-term complications of myocardial infarction increased (31%) due to reduced hospital admissions (42%) (10);
- More than one-third of reported COVID-19 deaths were due to NCDs (10);
- Significant reduction in cancer diagnosis due to impaired screening, case identification, and referral systems,

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### ↑What is "already known" in this topic:

Infectious disease pandemics such as COVID-19 can affect NCDs surveillance in the following ways:

- Higher susceptibility of these people to the infection of COVID-19;
- Delay in NCD diagnosis that leads to more advanced stages of the disease;
- Delayed, incomplete, or interrupted treatment of NCD; and
- Increase in behavioral risk factors, such as physical inactivity.

### →What this article adds:

In this study, we provided appropriate strategies for NCD surveillance during the COVID-19 pandemic.

while evidence has shown that a 3 to 6 months delay in cancer screening reduces life expectancy by 43% (11);

- Disruption of rehabilitation services for people with NCDs in different countries (Two-thirds) potentially affected their performance outcomes (12);

- Postponement of NCDs screening programs in more than 50% of countries (13);

- School closures had tremendous effects on students' access to preventive services. For example, many who were previously fed through school meal programs may have less access to food because school nutrition services, including weekly iron and folic acid supplements, were discontinued (14);

- Difficulty in accurate diagnosing myocardial infarction due to the association of COVID-19 with cardiovascular complications (14); and

- Directing approximately 40% of NCDs-related clinical staff to provide COVID-19 relief (8).

In addition to this disruption, the behavioral risk factors increased such as unhealthy diet, alcohol use, physical inactivity, and stress (15). There are 3 major challenges to managing NCDs in this situation. First, the majority of health care providers are assigned to serve COVID-19 patients and have fewer opportunities to care for NCDs. Second, lack of in-person referring for NCDs services due to the risk of COVID-19 and fear of it (16). Third, uncertain economic situation following the closure of some businesses, especially in low- and middle-income countries (17), has made problems for continuing physical activities and caused food safety threats (18); on the other hand, it should be noted that closure of exercise facilities and gyms have made opportunities to be physically active difficult. Therefore, the following operations can be helpful in responding to NCDs during the COVID-19 pandemic:

- Employing health care providers or volunteers to provide services;

- Allocating financial and nonfinancial incentives to increase the motivation of health care providers;

- Using telemedicine (telephone or online counseling), which can be effective in replacing in-person counseling, but in low resource setting or LMICs, access to such facilities is limited;

- Periodic visits and care at home: at a glance, it can be said that this form of service is very suitable, but depending on the health system, it will bring financial burden for the health system or patients;

- Allocating medical centers to provide services for NCDs (observing the principles of safety and health);

- Determining a healthy diet for NCDs patients and at-risk people through the media and health care providers;

- Encouraging and motivating people to promote their physical activity through at-home or safe options of outdoor physical activities; and

- Launching or increasing campaigns to encourage the public to provide consultation for possible cancer symptoms.

Hence, attention to priorities in NCDs care as one of the goals of sustainable development goals in various situa-

tions, including the emergence of COVID-19 in all countries, especially LMICs, is necessary. On the other hand, it is not enough to have NCDs service programs in the current situation, but its quantitative and qualitative evaluation is of high importance in order to correct the necessary measures in the health system.

### Conflict of Interests

The authors declare that they have no competing interests.

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