NC DEPARTMENT OF HEALTH AND HUMAN SERVICES

# Overview of COVID-19 Surveillance in North Carolina

Epidemiologists are public health professionals who investigate patterns and causes of disease and injury in humans. The term “surveillance” refers broadly to all the ways epidemiologists track disease in a community. For communicable diseases, those that spread from one person to another, surveillance can include both counting individual cases through testing and using other strategies to monitor trends.

Using data from all surveillance strategies and tools at our disposal will allow us to better understand the spread of COVID-19 across communities and provide the best possible information to guide planning and mitigation strategies.

## Individual Case Counting

Recognizing the threat posed by COVID-19, North Carolina acted in early February to add COVID-19 to the lists of conditions that physicians and laboratories are required to report to the state. This means that all positive tests results must be reported to the state. The number of laboratory-confirmed cases has been tracked since that time and is updated daily at www.ncdhhs.gov.

Health providers determine to which lab they send their COVID-19 tests. There are multiple hospital and commercial labs that conduct tests. These labs manage their own supplies and operate independently from the Department of Health and Human Services and the North Carolina State Laboratory of Public Health.

North Carolina will continue to track and post the number of laboratory-confirmed COVID-19 cases. However, it is important to recognize that there are many people with COVID-19 who will not be included in daily counts of laboratory-confirmed cases, including:

1. People who had minimal or no symptoms and were not tested
2. People who had symptoms but did not seek medical care
3. People who sought medical care but were not tested
4. People with COVID-19 in whom the virus was not detected by testing

Therefore, the number of laboratory-confirmed cases through testing will increasingly provide a limited picture of the spread of infections in the state as COVID-19 becomes more widespread and the number of people in the first three groups above increases.

## Surveillance Strategies

To get a more complete picture of COVID-19 in our state, North Carolina plans to use evidence-based surveillance tools, including what is known as “syndromic surveillance”. Syndromic surveillance refers to tools that gather information about patients' symptoms (e.g., cough, fever, or shortness of breath) and do not rely only on laboratory testing.

In North Carolina, as well as in other states and at the Centers for Disease Control and Prevention (CDC), public health scientists are modifying existing surveillance tools for COVID-19. These tools have been

used for decades to track influenza annually and during seasonal epidemics and pandemics. These include the following:

- The Influenza-Like Illness Surveillance Network (ILINet). ILINet is a network of clinical sites across the country, including in North Carolina, that is coordinated by CDC. ILINet sites report data each week on fever and respiratory illness in their patients. They also submit samples (swabs) from a subset of patients for laboratory testing at the North Carolina State Laboratory of Public Health. This network will now test for COVID-19 in addition to influenza.
- Emergency department (ED) surveillance based on symptoms (syndromic). In North Carolina, we receive ED data in near real-time from all 126 hospitals in the state using the North Carolina Disease Event Tracking and Epidemiologic Collection Tool (NC DETECT). This is an effective way to track respiratory illness, including COVID-19. Specifically, we will use NC DETECT to track trends in respiratory illness across the state and over time.
- Data on severe illnesses. Public health scientists will use a variety of sources to track hospitalizations related to COVID-19. These include data reported directly by hospitals (including current numbers of patients hospitalized with COVID-19) and more detailed data from a network of epidemiologists in the state's largest healthcare systems (including total hospitalizations and intensive care unit admissions for respiratory illness). Deaths due to COVID-19 have also been added to the list of conditions that physicians are required to report in North Carolina.

Public health scientists are learning more every day about answers to important questions about COVID-19, like what percentage of people have no symptoms and what percentage do not present for medical care. This information is coming from a variety of studies conducted around the world including phone and on-line surveys to measure symptoms of COVID-19 in people who did not seek medical care, repeated sampling over time of people with and without symptoms, and other methods. Researchers in North Carolina will employ similar methods in our state. These answers will help us better interpret data from our surveillance systems and understand the true number of COVID-19 infections in our state.