

National Vital Statistics System's Response to COVID-19

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COVID-19 Response Timeline

February

26 Decision made to develop certification guidance for COVID-19 deaths

March

4 Preliminary Guidance for Certifying COVID-19 Deaths Released

17-20 NCHS Cause of Death Coding System Updated

25 Launched COVID-19 Death Data and Reporting Guidance
<https://www.cdc.gov/nchs/nvss/covid-19.htm>

27 Prioritized manual coding of cause of death for jurisdictions with reported high volume of COVID-19 deaths.



COVID-19 Response Timeline – continued

April

- 2 Final Guidance for Certifying COVID-19 Deaths Released
- 3 First Provisional COVID-19 Death Counts Released
<https://www.cdc.gov/nchs/nvss/vsrr/covid19/index.htm>
- 16 Clinician Outreach and Communication Activity (COCA) webinar on Guidance for Certifying Deaths Due to Coronavirus Disease 2019 (COVID-19)
https://emergency.cdc.gov/coca/calls/2020/callinfo_041620.asp
- 29 Excess Deaths Associated with COVID-19 Visualization Released

May

- 1 Redesigned Provisional COVID-19 Death Counts

Guidance for Certifying COVID-19 Deaths

Vital Statistics Reporting Guidance

Report No. 3 • April 2020



Guidance for Certifying Deaths Due to Coronavirus Disease 2019 (COVID–19)

Introduction

In December 2019, an outbreak of a respiratory disease associated with a novel coronavirus was reported in the city of Wuhan in the Hubei province of the People's Republic of China (1). The virus has spread worldwide and on March 11, 2020, the World Health Organization declared Coronavirus Disease 2019 (COVID–19) a pandemic (2). The first case of COVID–19 in the

Cause-of-Death Reporting

When reporting cause of death on a death certificate, use any information available, such as medical history, medical records, laboratory tests, an autopsy report, or other sources of relevant information. Similar to many other diagnoses, a cause-of-death statement is an informed medical opinion that should be based on sound medical judgment drawn from clinical training and

<https://www.cdc.gov/nchs/data/nvss/vsrg/vsrg03-508.pdf>

Guidance for Certifying COVID-19 Deaths: Key Points

- If COVID–19 played a role in the death it should be mentioned on the death certificate
- Normally abbreviations and acronyms are discouraged, but COVID–19 is unambiguous and is acceptable
- Include pre-existing conditions that complicated death in Part 2 of the death certificate
- It is acceptable to report COVID–19 on a death certificate as “probable” or “presumed” – certifiers should use their best clinical judgement in determining if a COVID–19 infection was likely

Guidance for Certifying COVID-19 Deaths: Example 1

| CAUSE OF DEATH (See instructions and examples) | | Approximate interval: Onset to death |
|--|---|--|
| <p>32. PART I. Enter the <u>chain of events</u>—diseases, injuries, or complications—that directly caused the death. DO NOT enter terminal events such as cardiac arrest, respiratory arrest, or ventricular fibrillation without showing the etiology. DO NOT ABBREVIATE. Enter only one cause on a line. Add additional lines if necessary.</p> <p>IMMEDIATE CAUSE (Final disease or condition -----> resulting in death)</p> <p>a. <u>Acute respiratory acidosis</u> Due to (or as a consequence of):</p> <p>b. <u>COVID-19</u> Due to (or as a consequence of):</p> <p>c. _____ Due to (or as a consequence of):</p> <p>d. _____ Due to (or as a consequence of):</p> <p>Sequentially list conditions, if any, leading to the cause listed on line a. Enter the UNDERLYING CAUSE (disease or injury that initiated the events resulting in death) LAST</p> | | <p>3 days</p> <p>1 week</p> |
| <p>PART II. Enter other significant conditions contributing to death but not resulting in the underlying cause given in PART I</p> <p><u>Chronic obstructive pulmonary disease, hypertension</u></p> | | <p>33. WAS AN AUTOPSY PERFORMED? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</p> <p>34. WERE AUTOPSY FINDINGS AVAILABLE TO COMPLETE THE CAUSE OF DEATH? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</p> |
| <p>35. DID TOBACCO USE CONTRIBUTE TO DEATH?</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> Probably</p> <p><input checked="" type="checkbox"/> No <input type="checkbox"/> Unknown</p> | <p>36. IF FEMALE:</p> <p><input type="checkbox"/> Not pregnant within past year</p> <p><input type="checkbox"/> Pregnant at time of death</p> <p><input type="checkbox"/> Not pregnant, but pregnant within 42 days of death</p> <p><input type="checkbox"/> Not pregnant, but pregnant 43 days to 1 year before death</p> <p><input type="checkbox"/> Unknown if pregnant within the past year</p> | <p>37. MANNER OF DEATH</p> <p><input checked="" type="checkbox"/> Natural <input type="checkbox"/> Homicide</p> <p><input type="checkbox"/> Accident <input type="checkbox"/> Pending Investigation</p> <p><input type="checkbox"/> Suicide <input type="checkbox"/> Could not be determined</p> |

Guidance for Certifying COVID-19 Deaths: Example 2

| CAUSE OF DEATH (See instructions and examples) | | Approximate interval: Onset to death |
|--|--|--|
| <p>32. PART I. Enter the <u>chain of events</u>—diseases, injuries, or complications—that directly caused the death. DO NOT enter terminal events such as cardiac arrest, respiratory arrest, or ventricular fibrillation without showing the etiology. DO NOT ABBREVIATE. Enter only one cause on a line. Add additional lines if necessary.</p> <p>IMMEDIATE CAUSE (Final disease or condition -----> resulting in death)</p> <p>a. <u>Acute respiratory illness</u> Due to (or as a consequence of): _____</p> <p>b. <u>Probable COVID-19</u> Due to (or as a consequence of): _____</p> <p>c. _____ Due to (or as a consequence of): _____</p> <p>d. _____ Due to (or as a consequence of): _____</p> <p>Sequentially list conditions, if any, leading to the cause listed on line a. Enter the UNDERLYING CAUSE (disease or injury that initiated the events resulting in death) LAST</p> | | <p>1 day</p> <p>5 days</p> |
| <p>PART II. Enter other <u>significant conditions contributing to death</u> but not resulting in the underlying cause given in PART I</p> <p>Ischemic stroke</p> | | <p>33. WAS AN AUTOPSY PERFORMED? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</p> <p>34. WERE AUTOPSY FINDINGS AVAILABLE TO COMPLETE THE CAUSE OF DEATH? <input type="checkbox"/> Yes <input type="checkbox"/> No</p> |
| <p>35. DID TOBACCO USE CONTRIBUTE TO DEATH?</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> Probably</p> <p><input checked="" type="checkbox"/> No <input type="checkbox"/> Unknown</p> | <p>36. IF FEMALE:</p> <p><input checked="" type="checkbox"/> Not pregnant within past year</p> <p><input type="checkbox"/> Pregnant at time of death</p> <p><input type="checkbox"/> Not pregnant, but pregnant within 42 days of death</p> <p><input type="checkbox"/> Not pregnant, but pregnant 43 days to 1 year before death</p> <p><input type="checkbox"/> Unknown if pregnant within the past year</p> | <p>37. MANNER OF DEATH</p> <p><input checked="" type="checkbox"/> Natural <input type="checkbox"/> Homicide</p> <p><input type="checkbox"/> Accident <input type="checkbox"/> Pending Investigation</p> <p><input type="checkbox"/> Suicide <input type="checkbox"/> Could not be determined</p> |

COVID-19 Cause of Death Coding: ICD-10 Code

U07.1 -- COVID-19

Excludes: Coronavirus infection, unspecified site (B34.2) Severe acute respiratory syndrome [SARS], unspecified (U04.9)

The WHO has provided a second code, **U07.2**, for clinical or epidemiological diagnosis of COVID-19 where a laboratory confirmation is inconclusive or not available. Because laboratory test results are not typically reported on death certificates in the U.S., NCHS is not planning to implement U07.2 for mortality statistics.

The underlying cause depends upon what and where conditions are reported on the death certificate. However, the rules for coding and selection of the underlying cause of death are expected to result in COVID-19 being the underlying cause more often than not.

COVID-19 Cause of Death Coding: Coding Process

- Coding systems not set up to code COVID-19 or to accept U07.1
- Establish coding rules
- Initially all COVID-19 records had to be manually coded
- Managing manual coding
 - Prioritization
 - Increase manual coding capacity
- Systems modified to automatically code some COVID-19 deaths
- Adjust coding rules

Provisional COVID-19 Death Counts by Week

(as of June 15, 2020)

| Week ending date in which the death occurred | All Deaths involving COVID-19 (U07.1) ¹ | Deaths from All Causes | Percent of Expected Deaths ² | Deaths involving Pneumonia, with or without COVID-19, excluding Influenza deaths (J12.0–J18.9) ³ | Deaths involving COVID-19 and Pneumonia, excluding Influenza (U07.1 and J12.0–J18.9) ³ | All Deaths involving Influenza, with or without COVID-19 or Pneumonia (J09–J11), includes COVID-19 or Pneumonia ⁴ | Deaths involving Pneumonia, Influenza, or COVID-19 (U07.1 or J09–J18.9) ⁵ |
|--|--|------------------------|---|---|---|--|--|
| Total Deaths | 100,303 | 1,134,398 | 102 | 110,865 | 43,574 | 6,406 | 173,072 |
| 2/1/2020 | 1 | 57,829 | 97 | 3,741 | 0 | 476 | 4,218 |
| 2/8/2020 | 1 | 58,359 | 98 | 3,729 | 0 | 514 | 4,244 |
| 2/15/2020 | 0 | 57,708 | 98 | 3,755 | 0 | 544 | 4,299 |
| 2/22/2020 | 4 | 57,804 | 100 | 3,633 | 1 | 557 | 4,193 |
| 2/29/2020 | 5 | 58,180 | 101 | 3,755 | 3 | 636 | 4,393 |
| 3/7/2020 | 32 | 58,444 | 101 | 3,887 | 16 | 619 | 4,521 |
| 3/14/2020 | 52 | 57,329 | 100 | 3,874 | 27 | 608 | 4,506 |
| 3/21/2020 | 547 | 57,949 | 102 | 4,454 | 245 | 540 | 5,290 |
| 3/28/2020 | 3,037 | 61,878 | 111 | 6,024 | 1,371 | 438 | 8,078 |

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Provisional COVID-19 Death Counts by Week - continued

(as of June 15, 2020)

| Week ending date in which the death occurred | All Deaths involving COVID-19 (U07.1) ¹ | Deaths from All Causes | Percent of Expected Deaths ² | Deaths involving Pneumonia, with or without COVID-19, excluding Influenza deaths (J12.0–J18.9) ³ | Deaths involving COVID-19 and Pneumonia, excluding Influenza (U07.1 and J12.0–J18.9) ³ | All Deaths involving Influenza, with or without COVID-19 or Pneumonia (J09–J11), includes COVID-19 or Pneumonia ⁴ | Deaths involving Pneumonia, Influenza, or COVID-19 (U07.1 or J09–J18.9) ⁵ |
|--|--|------------------------|---|---|---|--|--|
| 4/4/2020 | 9,468 | 70,329 | 126 | 9,576 | 4,531 | 460 | 14,750 |
| 4/11/2020 | 15,631 | 76,702 | 138 | 11,645 | 7,007 | 465 | 20,397 |
| 4/18/2020 | 16,229 | 73,869 | 137 | 10,890 | 6,947 | 258 | 20,246 |
| 4/25/2020 | 13,962 | 69,677 | 129 | 9,579 | 5,992 | 142 | 17,595 |
| 5/2/2020 | 11,428 | 64,281 | 120 | 8,064 | 4,857 | 57 | 14,673 |
| 5/9/2020 | 10,311 | 61,572 | 117 | 7,236 | 4,383 | 45 | 13,200 |
| 5/16/2020 | 8,163 | 57,665 | 110 | 6,071 | 3,409 | 18 | 10,841 |
| 5/23/2020 | 5,834 | 52,287 | 100 | 4,929 | 2,498 | 15 | 8,280 |
| 5/30/2020 | 4,077 | 45,178 | 87 | 3,701 | 1,631 | 7 | 6,154 |
| 6/6/2020 | 1,355 | 29,768 | 56 | 1,894 | 575 | 6 | 2,680 |
| 6/13/2020 | 166 | 7,590 | 15 | 428 | 81 | 1 | 514 |

See <https://www.cdc.gov/nchs/nvss/vsrr/covid19/index.htm> for latest data and technical notes.

Provisional COVID-19 Death Counts: Understanding the Numbers

Things to know about the data

- Provisional counts are not final and are subject to change
- Provisional data are not yet complete
- Death counts should not be compared across jurisdictions

Why these numbers are different

- Death certificates take time to be completed
- States report at different rates
- It takes extra time to code COVID-19 deaths
- Other reporting systems use different definitions or methods for counting deaths

<https://www.cdc.gov/nchs/nvss/covid-19.htm#understanding-the-numbers>

<https://www.cdc.gov/nchs/nvss/covid-19.htm#understanding-death-data-quality>

Provisional COVID-19 Death Counts: Demographic and Geographic Detail

Tabulated Data (counts and/or percentages)

- COVID-19
- Pneumonia and Influenza
- Other Causes of Death (with and without COVID-19)

Demographic Detail

- Sex
- Age
- Race/Hispanic origin

Geographic Detail

- National
 - Jurisdiction/state
 - County
- } Counts 1-9 suppressed

Provisional COVID-19 Death Counts: Race and Hispanic Origin

Data as of June 10, 2020

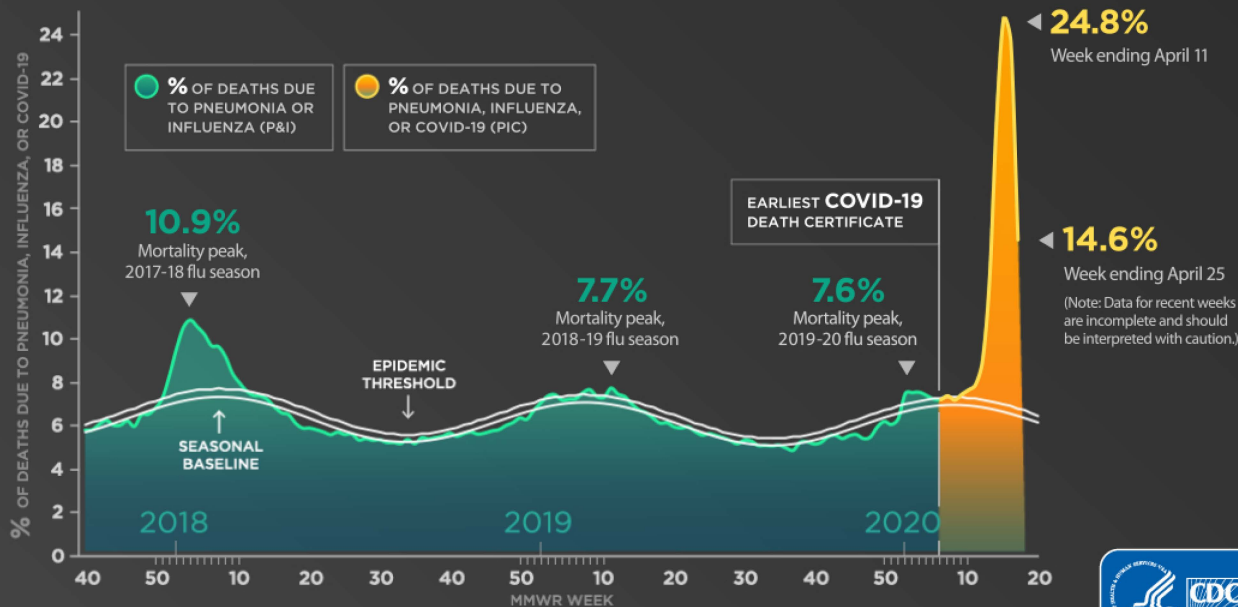
| State | Indicator | Non-Hispanic White | Non-Hispanic Black or African American | Non-Hispanic American Indian or Alaska Native ² | Non-Hispanic Asian ³ | Hispanic or Latino | Other ⁴ |
|---------------|---|--------------------|--|--|---------------------------------|--------------------|--------------------|
| United States | Count of COVID-19 deaths | 50,935 | 21,993 | 543 | 4,962 | 15,751 | 1,424 |
| | Distribution of COVID-19 deaths (%) | 53.3 | 23.0 | 0.6 | 5.2 | 16.5 | 1.5 |
| | Weighted distribution of population (%) | 42.2 | 17.5 | 0.3 | 10.9 | 27.3 | 1.9 |
| | Unweighted distribution of population (%) | 60.4 | 12.5 | 0.7 | 5.7 | 18.3 | 2.4 |
| New York City | Count of COVID-19 deaths | 5,008 | 5,423 | - | 1,771 | 5,498 | 930 |
| | Distribution of COVID-19 deaths (%) | 26.9 | 29.1 | - | 9.5 | 29.5 | 5.0 |
| | Weighted distribution of population (%) | 30.8 | 23.3 | 0.2 | 15.4 | 28.5 | 1.8 |
| | Unweighted distribution of population (%) | 32.1 | 22.0 | 0.2 | 14.7 | 29.2 | 1.8 |

See https://www.cdc.gov/nchs/nvss/vsrr/covid_weekly/index.htm for latest data and technical notes.

NATIONAL CENTER FOR HEALTH STATISTICS (NCHS) MORTALITY REPORTING SYSTEM

U.S. Mortality: Death Certificates Listing Pneumonia, Influenza, and COVID-19

DATA THROUGH WEEK ENDING APRIL 24, 2020*



cdc.gov/coronavirus

For more NCHS COVID-19 mortality info, see <https://www.cdc.gov/nchs/nvss/vsrr/covid19/index.htm>



CS316472

Available from <https://www.cdc.gov/coronavirus/2019-ncov/covid-data/data-visualization.htm>.

Provisional COVID-19 Death Counts: Where to Find Them

Webpages

- COVID-19 Data from the National Center for Health Statistics
<https://www.cdc.gov/nchs/covid19/index.htm>
- COVID-19 Death Data and Resources (including links to certification guidance)
<https://www.cdc.gov/nchs/nvss/covid-19.htm>
- Provisional Death Counts for Coronavirus Disease (COVID-19)
<https://www.cdc.gov/nchs/nvss/vsrr/covid19/>
https://www.cdc.gov/nchs/nvss/vsrr/covid_weekly/index.htm

Download and API Access

- All data is simultaneously posted on data.cdc.gov
 - Export in a variety of formats
 - API for automated access

Provisional COVID-19 Death Counts: Modeling and Visualizations

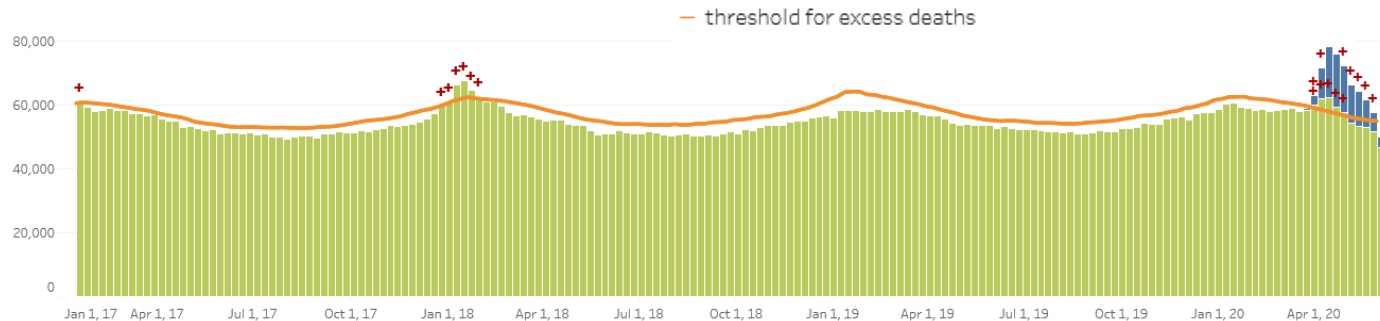
Excess Deaths Associated with COVID-19 - Visualization

https://www.cdc.gov/nchs/nvss/vsrr/covid19/excess_deaths.htm

United States

Weekly number of deaths

Comparing excess deaths including/excluding COVID-19



New York City

Weekly number of deaths
Comparing excess deaths including/excluding COVID-19

- + indicates observed count above threshold
- Predicted number of deaths from all causes, including COVID-19
- Predicted number of deaths from all causes, excluding COVID-19
- threshold for excess deaths

