



GENERAL GUIDANCE

When you are on the scene, wear usual PPE (gloves, masks) and practice social distancing.

REQUESTING A TEST FROM ISDH LABS

After reviewing the criteria to determine whether this patient is a coroner case, you will need to review the [COVID-19 Specimen Collection and Submission Guidelines for Coroners](#). It is strongly recommended that for fastest results, the coroner's office input the lab request into LimsNet. Using the paper form will delay the process for testing significantly. Coroners can work with their local hospital to assist with proper shipping of specimens. Hospitals can also help facilitate transportation of the specimens to ISDH labs. If the coroner is unable to work with the hospital to help facilitate transportation of specimen to ISDH labs, contact the ISDH district preparedness field staff at the list below.

Toxicology labs, AXIS and NMS, do not currently have COVID testing capabilities.

COLLECTION OF POSTMORTEM CLINICAL PATHOLOGIC SPECIMENS

For suspected COVID-19 cases, Centers for Disease Control and Prevention (CDC) recommends collecting and testing postmortem nasopharyngeal swabs (NP swabs), and lower respiratory specimens (lung swabs) if an autopsy is performed. If the diagnosis of COVID-19 was established before death, collection of these specimens for COVID-19 testing may not be necessary. Medical examiners, coroners and pathologists should work with their local or state health department to determine capacity for testing postmortem swab specimens.

NP specimen is the preferred choice for upper respiratory tract swab-based SARS-CoV-2 testing. When collection of a postmortem NP swab is not possible, each of the following is an acceptable alternative:

- An oropharyngeal (OP) specimen
- A nasal mid-turbinate (NMT) swab
- An anterior nares (nasal swab; NS) specimen
- Nasopharyngeal wash/aspirate or nasal aspirate (NA) specimen

Use only synthetic fiber swabs with plastic shafts. Do not use calcium alginate swabs or swabs with wooden shafts, as they may contain substances that inactivate some viruses and inhibit PCR testing. Place swabs immediately into sterile tubes containing 2-3 ml of viral transport media.

Nasal swabs (NS) or nasal mid-turbinate (NMT) swabs should be placed in a transport tube containing either viral transport medium, Amies transport medium, or sterile saline.

If both NP and OP swabs are collected, they should be combined in a single tube to maximize test sensitivity and limit use of testing resources.

COLLECTION OF POSTMORTEM CLINICAL PATHOLOGIC SPECIMENS

The following factors should be considered when determining if an autopsy will be performed for a deceased PUI: medicolegal jurisdiction, facility environmental controls, availability of recommended personal protective equipment (PPE), and family and cultural wishes.



If an autopsy is performed for a suspected COVID-19 case, collection of the following postmortem specimens is recommended:

- Postmortem clinical specimens for testing for SARS-CoV-2, the virus that causes COVID-19:
 - Upper respiratory tract swabs: In general, the CDC recommends collecting only the NP swab
 - Lower respiratory tract swab: Lung swab from each lung
- Separate clinical specimens for testing of other respiratory pathogens and other postmortem testing as indicated
- Formalin-fixed autopsy tissues from lung, upper airway and other major organs

If an autopsy is NOT performed for a suspected COVID-19 case, collection of the following postmortem specimens is recommended:

- Postmortem clinical specimens for testing for SARS-CoV-2, the virus that causes COVID-19, to include only upper respiratory tract swabs: Nasopharyngeal swab (NP swab).
- Separate NP swab specimens for testing of other respiratory pathogens.

If an autopsy is performed for a confirmed COVID-19 case, collection of the following postmortem specimens should be considered:

- Postmortem swab specimens for testing of other respiratory pathogens,
- Other postmortem microbiologic and infectious disease testing, as indicated
- Formalin-fixed autopsy tissues from lung, upper airway, and other major organs

In addition to postmortem specimens, any remaining specimens (e.g., NP swab, sputum, serum, stool) that may have been collected prior to death should be retained. Please refer to [Interim Guidelines for Collecting, Handling, and Testing Clinical Specimens from Persons for Coronavirus Disease 2019 \(COVID-19\)](#) for more information.

CONSIDERATIONS REGARDING POSTMORTEM SEROLOGIC TESTING

Serologic tests for SARS-CoV-2 look for the presence of antibodies. It typically takes one to two weeks after illness onset with COVID-19 for antibodies to develop; it may take longer for some people. Depending on when someone was infected and the timing of the test, the test may not find antibodies in someone with a current COVID-19 infection.

Per FDA guidance, antibody tests have not been validated for diagnosis of COVID-19 infection, and antibody tests by themselves are of limited value in the immediate diagnosis of a patient where COVID-19 infection is suspected. For more information, see: [FAQs on Diagnostic Testing for SARS-CoV-2](#)^{external icon}.

ENGINEERING CONTROL AND PPE RECOMMENDATIONS

PPE Recommendations: Double surgical gloves interposed with a layer of cut-proof synthetic mesh gloves, fluid-resistant or impermeable gown, waterproof apron, goggles or face shield, and NIOSH-certified disposable N-95 respirator or higher. Powered, air-purifying respirators (PAPRs) with HEPA filters may provide increased worker comfort during extended autopsy procedures. When respirators are necessary to protect workers, employers must implement a

comprehensive respiratory protection program in accordance with the OSHA Respiratory Protection standard (29 CFR 1910.134^{external icon}) that includes medical exams, fit-testing, and training.

Surgical scrubs, shoe covers, and surgical cap should be used per routine protocols.

If the PPE supply is low, see [Strategies for Optimizing the Supply of PPE](#).

PPE Recommendations for NP Swab Collection:

Since collection of nasopharyngeal swab specimens from deceased persons will not induce coughing or sneezing, NIOSH-certified disposable N-95 respirator or higher is **not** required if **only** a NP swab is being collected from the decedent.

The following PPE should be worn at a minimum:

- Wear nonsterile, nitrile gloves when handling potentially infectious materials.
- If there is a risk of cuts, puncture wounds, or other injuries that break the skin, wear heavy-duty gloves over the nitrile gloves.
- Wear a clean, long-sleeved fluid-resistant or impermeable gown to protect skin and clothing.
- Use a plastic face shield or a face mask and goggles to protect the face, eyes, nose, and mouth from splashes of potentially infectious bodily fluids.

AUTOPSY PROCEDURES

Standard precautions, contact precautions and airborne precautions with eye protection (e.g., goggles or a face shield) should be followed during autopsy for someone with COVID-19. Many of the procedures are consistent with existing guidelines for safe work practices in the autopsy setting; see Guidelines for Safe Work Practices in Human and Animal Medical Diagnostic Laboratories (<https://www.cdc.gov/mmwr/preview/mmwrhtml/su6101a1.htm>).

CDC Interim Guidance for Collection and Submission of Postmortem Specimens from Deceased Persons Under Investigation (PUI) for COVID-19, February 2020: <https://www.cdc.gov/coronavirus/2019-ncov/hcp/guidance-postmortem-specimens.html>.

SAFELY PREPARING THE SPECIMENS FOR SHIPMENT

After collecting and properly securing and labeling specimens in primary containers with the appropriate media/solution, they must be transferred from the autopsy suite in a safe manner to laboratory staff who can process them for shipping.

1. Within the autopsy suite, primary containers should be placed into a larger secondary container.
2. If possible, the secondary container should then be placed into a resealable plastic bag that was not in the autopsy suite when the specimens were collected.
3. The resealable plastic bag should then be placed into a biological specimen bag with absorbent material; and then can be transferred outside of the autopsy suite.
 - a. Workers receiving the biological specimen bag outside the autopsy suite or anteroom should wear disposable nitrile gloves.

Coroners can work with their local hospital to assist with proper shipping of specimens. Hospitals can also help facilitate transportation of the specimens to ISDH labs. If the coroner is unable to work with the hospital to help facilitate transportation of specimen to ISDH labs, contact the ISDH district preparedness field staff listed below.

CLEANING AND WASTE DISPOSAL RECOMMENDATIONS

Follow the general guidelines for cleaning and waste disposal following an autopsy of a decedent with confirmed or suspected COVID-19. The surface persistence of SARS-CoV-2 is uncertain at this time. Other coronaviruses such as those that cause MERS and SARS can persist on nonporous surfaces for 24 hours or more.

Routine cleaning and disinfection procedures (e.g., using cleaners and water to pre-clean surfaces prior to applying an Environmental Protection Agency (EPA)-registered, hospital-grade disinfectant for appropriate contact times as indicated on the product's label) are appropriate for COVID-19 in these settings.

After an autopsy of a decedent with confirmed or suspected COVID-19, follow CDC recommendations when cleaning the autopsy room (and anteroom, if applicable).

TRANSPORTATION OF HUMAN REMAINS

When preparing a deceased person for removal to a morgue or funeral home from a hospital, nursing or long-term care facility, residence, etc., [standard precautions](#) shall be taken to ensure the safety of hospital, nursing and coroner staff. Given the varying weights of decedents and variety, construction, and conditions of body bag materials, postmortem care workers should use prudent judgement determining if risks for puncture, tearing, or failure of body bags could occur and whether a second body bag or a body bag of thicker, stronger material (e.g. minimum of 6 mil thickness) is necessary. Risk factors include but are not limited to:

- Presence of sharp objects on the decedent that could cause punctures or tears (e.g. jewelry, piercings, medical instruments)
 - Weight of the decedent that could cause the bag/bag handle to fail during transport (if available, verify body bag weight capacities as provided by the manufacturer)
 - Bodily fluids posing exposure risks to workers transporting the body should a puncture, tear, or failure occur (e.g. SARS-CoV-2 has been detected in the feces of some patients diagnosed with COVID-19, though whether the virus in stool is infectious is unknown, [Standard Precautions](#) for bloodborne pathogens should always be taken.)
 - Damage or degradation to the body bag that may have occurred in shipment or storage (e.g. the bag is broken or brittle)
1. It is desired that testing for COVID-19 in a deceased person shall take place prior to placing the body in the body bag. However, it is understood that test kits may not be available during this time. Testing at a morgue or funeral home should be completed in the safest manner possible.
 2. Prior to moving the body to the body bag, the person(s) responsible will use a barrier-type material to cover the decedent's entire body. This may consist of, but is not limited to, any bed sheet, towel or any material available that will inhibit the release of potentially infectious matter as a result of moving the deceased person.

3. The body will be placed in the body bag and after proper identification has been applied, the bag shall be sealed and the secondary identification tag shall be placed on the dual zipper closures.
4. The body bag shall then be cleaned with a hospital-grade disinfectant prior to being placed on the appropriate transportation table, cot, etc. before being transferred to the morgue or funeral home.

Follow standard routine procedures when transporting the body after specimens have been collected and the body has been bagged. Disinfect the outside of the bag [with Environmental Protection Agency \(EPA\)-approved disinfectants](#) that meet the criteria for use against SARS-CoV-2, the virus that causes COVID-19, applied according to the manufacturer’s recommendations. Wear disposable nitrile gloves when handling the body bag.

REPORTING A DEATH

When the test results come back, the coroner is expected to put the death into the Indiana Death Registration System immediately.

It is important to emphasize that Coronavirus Disease 2019 or COVID-19 should be reported on the death certificate for all decedents where the disease caused or is assumed to have caused or contributed to death. Other terminology, e.g., SARS-CoV-2, can be used as long as it is clear that it indicates the 2019 coronavirus strain, but we would prefer use of WHO’s standard terminology, e.g., COVID-19. Specification of the causal pathway leading to death in Part I of the certificate is also important.

For example, in cases when COVID-19 causes pneumonia and fatal respiratory distress, both pneumonia and respiratory distress should be included along with COVID-19 in Part I. Certifiers should include as much detail as possible based on their knowledge of the case, medical records, laboratory testing, etc. If the decedent had other chronic conditions such as COPD or asthma that may have also contributed, these conditions can be reported in Part II. Here is an example:

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) → a. <u>Acute respiratory distress syndrome</u> 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>b. <u>Pneumonia</u> Due to (or as a consequence of):</p> <p>c. <u>COVID-19</u> Due to (or as a consequence of):</p> <p>d. _____</p>		<p><u>2 days</u></p> <p><u>10 days</u></p> <p><u>10 days</u></p>
<p>PART II. Enter other significant conditions contributing to death but not resulting in the underlying cause given in PART I.</p>		<p>33. WAS AN AUTOPSY PERFORMED? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</p>
<p>35. DID TOBACCO USE CONTRIBUTE TO DEATH? <input type="checkbox"/> Yes <input type="checkbox"/> Probably <input checked="" type="checkbox"/> No <input type="checkbox"/> Unknown</p>		<p>34. WERE AUTOPSY FINDINGS AVAILABLE TO COMPLETE THE CAUSE OF DEATH? <input type="checkbox"/> Yes <input type="checkbox"/> No</p>
<p>36. IF FEMALE: <input checked="" type="checkbox"/> Not pregnant within past year <input type="checkbox"/> Pregnant at time of death <input type="checkbox"/> Not pregnant, but pregnant within 42 days of death <input type="checkbox"/> Not pregnant, but pregnant 43 days to 1 year before death <input type="checkbox"/> Unknown if pregnant within the past year</p>		<p>37. MANNER OF DEATH <input checked="" type="checkbox"/> Natural <input type="checkbox"/> Homicide <input type="checkbox"/> Accident <input type="checkbox"/> Pending Investigation <input type="checkbox"/> Suicide <input type="checkbox"/> Could not be determined</p>

NEW ICD CODE INTRODUCED FOR COVID-19 DEATHS

A newly-introduced ICD code has been implemented to accurately capture mortality data for novel coronavirus (COVID-19) on death certificates.

What is the new code?

The new ICD code for Coronavirus Disease 2019 (COVID-19) is U07.1, and below is how it will appear in formal tabular list format.

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.

When will it be implemented?

Immediately.

Will COVID-19 be the underlying cause?

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.

What happens if certifiers report terms other than the suggested terms?

If a death certificate reports coronavirus without identifying a specific strain or explicitly specifying that it is not COVID-19, NCHS will ask the states to follow up to verify whether or not the coronavirus was COVID-19.

As long as the phrase used indicates the 2019 coronavirus strain, NCHS expects to assign the new code.

However, it is preferable and more straightforward for certifiers to use the standard terminology (COVID-19).

What happens if the terms reported on the death certificate indicate uncertainty?

If the death certificate reports terms such as “probable COVID-19” or “likely COVID-19,” these terms would be assigned the new ICD code. It is not likely that NCHS will follow up on these cases.

If “pending COVID-19 testing” is reported on the death certificate, this would be considered a pending record. In this scenario, NCHS would expect to receive an updated record, since the code will likely result in R99. In this case, NCHS will ask the states to follow up to verify if test results confirmed that the decedent had COVID-19.

Do I need to make any changes at the jurisdictional level to accommodate the new ICD code?

Not necessarily, but you will want to confirm that your systems and programs do not behave as if U07.1 is an unknown code.

Should “COVID-19” be reported on the death certificate only with a confirmed test?

COVID-19 should be reported on the death certificate for all decedents where the disease caused **or is assumed to have caused or contributed to death**. Certifiers should include as much detail as possible based on their knowledge of the case, medical records, laboratory testing, etc. If the decedent had other chronic conditions



such as COPD or asthma that may have also contributed, these conditions can be reported in Part II. (See guidance below for certifying COVID-19 deaths.)

For more general guidance and training on cause-of-death reporting, certifiers can be referred to the Cause of Death mobile app available through <https://www.cdc.gov/nchs/nvss/mobile-app.htm> and the Improving Cause of Death Reporting online training module, which can be found at: https://www.cdc.gov/nchs/nvss/improving_cause_of_death_reporting.htm.

FREQUENTLY ASKED QUESTIONS

How do I access LimsNet?

Visit <https://eportal.isdh.in.gov/limsnet/login.aspx>, which has links for both phone and email support. Email signups are preferred. Please include the name of your organization and the names and email addresses of the individual who should be granted access. Links are also available on this [page](#).

How can I get testing kits?

If you have swabs, you can test the deceased and submit that through LimsNet. The sample should go to ISDH labs for processing. If you do not have swabs, contact your local hospital or local health department. You can also email ISDHdeplagnostics@isdh.in.gov to request swabs or contact your local preparedness field staff member listed below.

Do I test every body I receive in the coroner's office?

To determine if you test for COVID-19:

During a coroner investigation, ask their close family and friends, over the last two weeks:

- Fever
- Difficulty breathing
- What medications they were taking
- Cough
- Respiratory problems

Are COVID-19 cases coroner's cases or will an attending physician or county health officer sign the death certificate?

Per IC 36-2-14-6, Investigation of death of person; certificate of death; autopsy Sec. 6. (a) Whenever the coroner is notified that a person in the county:

- (1) has died from violence;
- (2) has died by casualty;
- (3) has died when apparently in good health;
- (4) has died in an apparently suspicious, unusual, or unnatural manner; or
- (5) has been found dead;

he shall, before the scene of the death is disturbed, notify a law enforcement agency having jurisdiction in that area. The agency shall assist the coroner in conducting an investigation of how the person died and a medical investigation of the cause of death.

- If the patient has died in the hospital and the hospital is waiting for COVID-19 test results, wait until the results come back before proceeding as a coroner case. If the test for COVID-19 is positive, this would not be a coroner case.



ADDITIONAL INFORMATION

Questions about COVID-19 may be directed to the ISDH COVID-19 Call Center at the toll-free number 877-826-0011 (available 8 a.m. to midnight). Providers should please call the epidemiologist on call at 317-233-1325, option 1, with emergent issues after hours that need immediate attention.

- ISDH COVID-19 webpage: <https://coronavirus.IN.gov>.
- CDC guidance: <https://www.cdc.gov/coronavirus/2019-ncov/hcp/guidance-postmortem-specimens.html>.
- Learn more about COVID-19 from the New Mexico ECHO <https://omi.unm.edu/> :
https://www.dropbox.com/s/pc4m4dw5oeodxan/zoom_0.mp4?dl=0.

Division of Emergency Preparedness and EPI Field Staff

Updated 4/14/2020

District 1	District 2	District 3
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