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To: Wisconsin Healthcare Providers, Local and Tribal Health Departments, Laboratory Personnel, Medical Examiners and Coroners

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Guidance to Coroners and Medical Examiners on Postmortem COVID-19 Testing at the Wisconsin State Laboratory of Hygiene and the Milwaukee Health Department Laboratory

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Summary

The Department of Health Services (DHS) is providing guidance to coroners and medical examiners (MEs) in Wisconsin on the collection and submission of specimens for COVID-19 testing for persons who have died of unknown causes, and where COVID-19 is suspected. If testing would influence infection control considerations or inform the public health response, these specimens will be considered high priority for testing at the Wisconsin State Laboratory of Hygiene (WSLH) and the Milwaukee Health Department Laboratory (MHDL).

Background

Under Wisconsin State Statute 979.01 (3) and (3m), coroners and MEs have the authority to collect for analysis any and all specimens that will assist them in determining the cause of death. Wisconsin Statute 979.012 requires a coroner or ME to report the deaths of persons who had an illness known or suspected to be a “communicable disease of public health concern” to DHS. In most COVID-19-related deaths, the diagnosis will have already been well established through testing conducted while in a health care setting (e.g., hospital, medical clinic). However, some deaths of individuals with an undiagnosed respiratory disease may occur at home or in various congregate settings, such as long-term care facilities, jails, or homeless shelters. In deaths associated with an undiagnosed respiratory disease, DHS will authorize the testing of specimens for COVID-19 as high priority when they are submitted to WSLH or MHDL. This is especially important if the diagnosis of COVID-19 would inform the public health response. Prioritizing these postmortem specimens will likely reduce the need for unnecessary autopsies and the potential risk for further COVID-19 virus exposure.

Current Situation

At this time, WSLH and MHDL prioritizes COVID-19 testing for certain groups to ensure that specimens deemed to be a public health priority are processed with the quickest turn-around time. If COVID-19 testing would influence infection control interventions or inform a public health response, DHS considers postmortem testing a public health priority. Post-mortem testing is not required to be performed in a public health laboratory. This testing can also be pursued through commercial or other private laboratory testing.

Criteria for Specimen Submission to WSLH and MHDL

1. Decedents living in congregate settings (e.g., long-term care facilities, jails, homeless shelters)

- Testing to confirm COVID-19 as the cause of death in an individual who had symptoms consistent with an acute respiratory infection (e.g., onset of fever, cough, shortness of breath, fatigue, body/muscle aches, headache, new loss of taste or smell, and/or sore throat in the past 10 days) AND in the absence of a non-natural cause of death.
- Testing prior to autopsy to determine the appropriate PPE required in a patient with known symptoms consistent with COVID-19, or a person who is at high risk of having COVID-19 (e.g., exposure to a known COVID-19 case, recent travel to a restricted county or country).

2. Unattended Decedents

The limitations of postmortem testing are not defined at this time. An increased postmortem interval can interfere with the testing process, and may increase the possibility of a false negative result. Therefore, it may be necessary to collect specimens for COVID-19 testing on unattended decedents prior to an autopsy being completed, based on their risk of having COVID-19. DHS recommends prioritizing testing for the following categories of unattended decedents:

- Those who had symptoms consistent with an acute respiratory infection at the time of their death, without an alternate diagnosis, such as influenza or RSV. The symptoms suggestive of a possible COVID-19-related illness include: fever or chills, cough, shortness of breath, fatigue, body or muscle aches, headache, new loss of taste or smell, and/or sore throat.
- Those who had one or more significant co-morbidities that were likely their primary cause of death, but who also had symptoms consistent with an acute respiratory infection at the time of their death and had not yet been tested for COVID-19 or tested positive for another respiratory pathogen. An example of a comorbid medical condition would be heart failure due to cardiovascular disease, chronic alcoholism, and cerebral stroke.

The use of postmortem testing does NOT include:

- Testing to supplant the routine use of PPE as appropriate in the handling of decedents by coroners and MEs, funeral homes, body transport services, or others in contact with the decedent. Guidelines for handling deceased individuals can be found here:
 - <https://www.nfda.org/COVID-19>
 - <https://www.cdc.gov/coronavirus/2019-ncov/hcp/guidance-postmortem-specimens.html>

- Testing to supplant risk assessment guidelines and internal policy for suspected COVID-19 exposure. [CDC guidance for risk assessment for healthcare personnel](#) should be followed for persons who may have been exposed to COVID-19 during the handling of human remains.
- Re-testing of a person who is known to be positive for COVID-19.
- Testing a person with a known COVID-19 contact who was not tested for COVID-19 and dies during their 14 day self-quarantine; these individuals should be considered positive, and appropriate precautions taken as per CDC guidelines.

Acquisition of Kits for COVID-19 Testing

Swabs used for testing specimens for COVID-19 are identical to swabs used for other respiratory viruses (e.g., influenza, RSV). The availability of swabs and viral media by the public health laboratories is currently limited. Coroners and MEs should obtain the swabs through their routine methods, as they would for other viral testing. Those coroners and MEs who do not have swab kits in their routine practice should coordinate with their local emergency management, public health, and hospital resources.

Specimen Collection

If an autopsy is NOT performed, collection of the following specimens is recommended:

- Postmortem nasopharyngeal (NP) swab specimen for COVID-19 testing.

If an autopsy is performed, collection of the following specimens is recommended:

- Postmortem swab specimens for COVID-19 testing:
 - Upper respiratory tract swab: NP swab
 - Lower respiratory tract swab: swab the bronchioles of each lung with one swab
- Separate swab 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. COVID-19 testing of fixed tissues is not necessary if swabs are available for testing.

How to Collect a Nasopharyngeal Swab

The procedure utilizes a long dacron tipped swab with a plastic shaft inserted into the nostril, along the wall off the nasal septum, to the back of the throat. Hold the swab in lace for a few seconds to absorb the liquid then slowly remove the swab while twisting. This swab is then placed in a tube of viral transport medium. Use the side of the tube to break the swab at the weak point and leave the dacron tip in the media. Discard the remaining shaft. Securely tighten the lid onto the tube and place it in a biohazard bag.

A video of the nasopharyngeal swab procedure can be found here:

<https://www.youtube.com/watch?v=DVJNWefmHjE>

How to Store and Transport Samples

Appropriate storage of collected specimen is vital to obtaining successful laboratory results. Swabs should be submerged in viral transport medium as soon as possible after collection. Swabs which cannot immediately be delivered to a laboratory should be stored in a refrigerator, and delivered to the laboratory in refrigerated conditions within 72 hours. Any sample which cannot be delivered and tested in that time should be frozen at -70°C.

At no time should these samples be stored in personal refrigerators or coolers, or be in contact with refrigerators used for the storage of food. Separate storage facilities are required for any infectious agents.

Samples should be packaged and shipped as Category B hazardous material with frozen cold packs. Coroners and MEs are encouraged to work with their local hospitals for storage and transport of samples if they do not have adequate means of storing or transporting samples in their individual offices.

Instructions for packaging and shipping can be found here: <http://www.slh.wisc.edu/wp-content/uploads/2020/03/Packaging-and-Shipping-Pictorial-for-Category-B-Biological-Substances.pdf>

Sample Submission

Samples submitted to WSLH or MHDL must be accompanied by the proper documentation in order to be accepted. In addition to the proper storage and sample labeling, a completed requisition form for the appropriate lab must accompany all specimens:

- Wisconsin State Laboratory of Hygiene: [CDD Requisition Form A \(#4105\)](#)
Please write "COVID-19" under the Other Tests section of the form along with specific risk factors)
- Milwaukee Health Department Laboratory: [Microbiology Requisition H-455](#)

Detailed instructions and links for sample submission forms can be found here:

- <http://www.slh.wisc.edu/clinical/diseases/covid-19/>
- <https://city.milwaukee.gov/ImageLibrary/Groups/healthAuthors/LAB/PDFs/MHDLCOVID-19testinginstructions.pdf>

Specimens collected from decedents will be rejected for testing if:

- Swabs are submitted with no media (dry swabs)
- Specimens do not contain two patient identifiers
- Specimens are received at room temperature