

Guidance for safe practices in UC Anatomical Donation Programs in the context of COVID-19*

Background

This guidance is provided for UC Anatomical Donation Program (ADP) locations and is intended for staff operations and Anatomical Material Review Committee consideration during the COVID-19 pandemic. This guidance is subject to change as new information becomes available.

Key points

- COVID-19 (caused by a corona virus named SARS-CoV-2) is an acute respiratory illness currently known to be transmitted through aerosols, droplets, and fomites. COVID-19 spreads easily from person to person, most commonly spreads while breathing in air when close to an infected person who is exhaling small droplets and particles that contain the virus. It is less commonly spread through contact with contaminated surfaces.
- To date, the WHO reports no evidence of infection by persons who have come in contact with decedents who have died from COVID-19. However, the Occupational Safety and Health Administration's (OSHA) occupational risk pyramid designates workers collecting/handling specimens from decedents known or suspected to be infected with COVID-19 at the time of death as the highest risk category among death care occupations.
- Out of an abundance of caution, eligibility criteria for decedents who have tested positive for COVID-19 have been restricted. As new information has become available, restrictions have been modified. See section on Donor Eligibility Criteria.
- The UC ADP provides a vital public service to California constituents while supporting the education of students and clinician training in the healthcare workforce and for scientific research at UC and in the CSU and CCC systems, as well as for educational and industry partners throughout California and beyond.
- The safety of all persons who work in the UC ADPs is a priority. Although there may be differences in regional recommendations, all required safety measures including hand hygiene, social distancing, the use of masks or face coverings in common areas and the appropriate use of Personal Protective Equipment (PPE) for laboratory procedures or in clinical settings, as applicable, must be followed. Additive measures, such as staggered work schedules, are encouraged (unless otherwise mandated) for essential operations when working from home is not possible.
- Each location should manage donation volume locally and regionally, balancing the health and safety of program staff, student, faculty and researcher end users and the capacity of their facilities with the university's missions in public service, education and research; and, priorities for health care and emergency operations; against the risks of exposure to infection.
- This guidance is scheduled for review every 6 months or as necessary.

Personal Protective Equipment

- 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 cut-resistant gloves over the nitrile gloves.
- Wear a clean, long-sleeved fluid-resistant or impermeable gown to protect the clothing.
- Use a plastic face shield or a surgical mask **AND** goggles without gaps between glasses and the face to protect the face, eyes, nose and mouth from potentially infectious body fluids. Goggles must be worn in addition to the face shield in order to adequately protect the eyes.
- If there is a risk of aerosol generation while handling human remains, use respiratory protection as part of a comprehensive respiratory protection program that meets the requirements of Cal-OSHA (8 CCR 5144) or OSHA's Respiratory Protection standard (29 CFR 1910.134), as applicable, and includes NIOSH-certified N95 or better respirators, medical exams, fit testing, and training. PAPRs with HEPA filters may provide increased worker comfort during extended procedures.

Donor Eligibility Criteria

Since March 10, 2020, the UC ADPs have implemented interim eligibility restrictions and additional screening criteria out of an abundance of caution. Criteria has been and may continue to be updated as new information becomes available.

- Decedents who have tested positive for SARS-CoV-2 in the proceeding 10 days* may be eligible for donation. Additional screening may also be necessary.
- If donors who have had a positive test in the proceeding 10 days are accepted, those bodies will be preserved with formaldehyde or another biocide-based solution.
- Preservation with formaldehyde or another biocide is also the preferred method of preparation when a decedent tests positive on a post-mortem test.
- Preservation should be strongly considered when Covid-19 is listed on the death certificate as a cause or contributing cause of death, see Preparation & Storage.
- Direct disposition is also an option for donors with a positive pre-mortem or post mortem test or when Covid-19 is listed on a death certificate.
- Locally, eligibility criteria may be modified as necessary according to facility, staff and capacity limitations or preferences. Some criteria to consider when creating additional restrictions may include decedents with untreated MRSA or Sepsis, those who have been incarcerated within the last 28 days, anatomical constrictions, death notifications beyond 24 hours, out-of-state deaths or body mass indicators.

COVID-19 Testing

- Diagnostic tests are available for post mortem testing of SARS-CoV-2; however, they are not yet validated for cadaveric use. As of January 2022, there are still no data currently available on detection of SARS-CoV-2 by antigen testing on postmortem swabs.
- Each location may collect swab samples for decedent testing for in-house rapid testing or external lab testing with supplies provided in the test kit or by the testing laboratory and collected according to the testing package insert. Samples must be tested within 48 hours of collection.
- Shipping protocols supplied by the testing laboratory must be followed.
- Personnel performing sample collections must do so under strict PPE requirements.
- Reporting of test results to the local health officer or others must be done according to applicable laws, rules and regulations and in consultation with the campus or health system compliance officer.

Preparation & Storage

UC ADP locations should limit preparations to those that will minimize staff contact and in-person interactions, avoid unnecessary manipulation of the body, adhere to inventory and tracking standards, promote health and safety standards and facilitate future requests.

- All persons handling human remains must wear the minimum required PPE for the procedure being performed. Campus EH&S may be consulted.
- Disinfect body bag/coverings with a CDC approved disinfectant (such as Dodge Dis-spray).
- If collecting a swab sample for SARS-CoV-2 testing, collect the sample prior to disinfection of the body and according to the testing laboratory or test kit requirements. All personnel must follow specimen handling, shipping and PPE requirements and best practices.
- Spray decedent, including the mouth, nasal passages and eyes with an EPA- approved disinfectant.
- Cover decedents face with a paper towel, mask or equivalent that has been sprayed with an [EPA- approved disinfectant for COVID-19](#).
- Obtain a serology sample.
- Generate and affix tag accordingly.
- Keep decedent face covered during preparation and wrapping.
- Follow dilution recommendations for formalin and other preservation chemicals (isopropanol, phenol), such as those found here: https://shop.dodgeco.com/content/files/PDFs/COVID-19_Statement_4.pdf
- If donors who have had a positive test in the proceeding 10 days are accepted, those bodies will be preserved with formaldehyde or another biocide-based solution.
- Preservation with formaldehyde or another biocide is also the preferred method of preparation when a decedent tests positive on a post-mortem test.
- Preservation should be strongly considered when Covid-19 is listed on the death certificate as a cause or contributing cause of death, see Preparation & Storage.

- Direct disposition is also an option for donors with a positive pre-mortem or post mortem test or when Covid-19 is listed on a death certificate.

Cleaning and Disinfection

- Ensure adequate ventilation in preparation and storage locations. Consult with an HVAC professional and building management to maintain relative humidity between 40-60%. Contact local EH&S for assistance. When changing filters, ensure workers wear appropriate personal protective equipment.
- Cleaning and disinfection procedures must be performed immediately following decedent preparation.
- Environmental surfaces and instrumentations should first be cleaned with soap and water or a commercially prepared detergent.
- After cleaning, use an [EPA approved disinfectant](#) or a solution with a minimum of 0.1% (1000 ppm) bleach or 70% ethanol.
- Restrict access to ancillary and vendor personnel during this time. Disinfect all touch points (door handles, switch plates, key pads, sign-in stations, etc.) each day per the location protocol and whenever the surface is visibly soiled or exposed to bodily fluids.

Ongoing considerations

- Capacity
 - Local programs have varying facility and capacity limitations. Donation eligibility criteria should be restricted further as appropriate for each facility. There may be options to store decedents on-site in temporary, rented facilities if deemed necessary. Donation acceptance may also be halted where appropriate.
- Notifications
 - UC ADPs have posted notices to websites and added inserts to mailings to notify donors and interested parties about additional restrictions due to the pandemic. Additional procedures for notification may be implemented.
- Donations accepted between at least December 1, 2019 and March 10, 2020.
 - Consideration must be made for donations accepted between the virus being detected in California and when UC ADPs instituted interim eligibility criteria restrictions.
 - Additional file review prior to allocation is prudent.
 - In some cases, direct disposition may be necessary.
 - Additional PPE requirements or disclosures for end-users may be considered.

*Reflective of current CDC guidance for isolation of a living person with positive test results for SARS-CoV-2.

Resources

1. CDC FAQ's about Coronavirus (COVID-19) for Laboratories:
<https://www.cdc.gov/csels/dls/preparedlabs/covid-19.html>
 2. CDC Guidance for collection and submission of post-mortem specimens from deceased persons under investigation (PUI) for COVID-19:
<https://www.cdc.gov/coronavirus/2019-ncov/hcp/guidance-postmortem-specimens.html>
 3. CDC Guidance Regarding COVID-19 and Funerals:
<https://www.cdc.gov/coronavirus/2019-ncov/faq.html#funerals>
 4. CDC Guidance How COVID-19 Spreads:
<https://www.cdc.gov/coronavirus/2019-ncov/prevent-getting-sick/how-covid-spreads.html>
 5. CDC COVID-19 Travel Notice <https://www.cdc.gov/coronavirus/2019-ncov/travelers/map-and-travel-notice.html>
 6. CDPH Guidance on infection prevention for funeral establishments handling deceased cases of COVID-19: <https://www.cdph.ca.gov/Programs/CID/DCDC/Pages/COVID-19/funerals.aspx> (outdated- included here for historical purposes only)
 7. CDPH Skilled Nursing Facilities: COVID-19:
https://www.cdph.ca.gov/Programs/CID/DCDC/Pages/COVID-19/SNFsCOVID_19.aspx
 8. Dodge Co. statement: https://shop.dodgeco.com/content/files/PDFs/COVID-19_Statement_4.pdf
 9. EPA current list of disinfectants that meet EPA's criteria for use against SARS-CoV-2, the cause of COVID-19: <https://www.epa.gov/pesticide-registration/list-n-disinfectants-coronavirus-covid-19>
 10. Quondametteo, Fabio, et al. Neutralisation of SARS-CoV-2 by anatomical embalming solutions, Journal of Anatomy, September 2021.
 11. US Dept. of Labor OSHA COVID-19 Control and Prevention Death Care:
<https://www.osha.gov/SLTC/covid-19/controlprevention.html#deathcare>
 12. US Dept. of Labor OSHA Guidance on Mitigating and Preventing the Spread of COVID-19 in the Workplace: <https://www.osha.gov/coronavirus/safework>
 13. Viruses, Propagation, Inactivation and Safety Testing of SARS-CoV-2:
<https://pubmed.ncbi.nlm.nih.gov/32517266/>
 14. WHO's Infection and Prevention Control for the safe management of a dead body in the context of COVID-19: <https://www.who.int/publications/i/item/infection-prevention-and-control-for-the-safe-management-of-a-dead-body-in-the-context-of-covid-19-interim-guidance>
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