**Biohazardous Agent Reference Document (BARD) and**

**Information for Healthcare Providers in the Event of an Exposure**

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| The BARD is an additional guidance tool. It is not a substitute for a risk assessment, biosafety training, lab-specific training, SOP as required by the IBC or a formal [IBC master protocol registration](https://www.uvm.edu/rpo/biosafety-oversight). This document must be readily available in the laboratory, and it is the responsibility of the Laboratory Supervisor or Principal Investigator to ensure that all personnel have read and understood the information. The BARD is not intended to be a substitute for professional medical advice, diagnosis, or treatment. Please bring this IBC-approved BARD with you to the UVMMC Emergency Department if there has been an exposure and someone requires medical assistance.  INSTRUCTIONS for BARD Preparation   1. Complete the blue Information for Healthcare Providers section. 2. Review the standard information contained in the green section of this document. 3. Add/revise information that is specific to your work in the laboratory (such as strain-specific information). Please be sure that the track changes function is turned on to indicate any changes that you make. 4. Submit the BARD along with your IBC master protocol registration or amendment. 5. Once approved by the IBC, all personnel must review this BARD. The PI will attest during the submission of the registration or amendment to add new personnel that each lab member has read and understands the material. | |
| **Information for Healthcare Providers**  Dear Healthcare Provider,  This individual works in a UVM research laboratory and has been exposed to a pathogen or toxin. Information about the materials this person may have been exposed to is listed below. You may also find useful additional information in subsequent pages of this reference document. | |
| **Pathogen Name:** | Coronavirus SARS-CoV-2 |
| **Pathogen/Toxin Classification:** |  |
| **List All Strains Used in the Laboratory:** |  |
| **List Resistant Genes Known to be Encoded:** |  |
| **Modes of Transmission *(mucous membranes, needle stick, inhalation)*:** | Inhalation of aerosols, contact with mucous membranes |
| **Known Medical Precautions and Treatment** | |

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| **Prophylaxis** | None available |
| **Vaccines** | A variety of SARS-CoV-2 vaccines are available that are highly protective against circulating SARS-CoV-2. |
| **Treatment and/or Post-exposure Intervention** | Supportive care is the primary treatment, most patients recover within 1-2 weeks. Antivirals including Nirmatrelvir with Ritonavir (Paxlovid), Remdesivir (Veklury), and Molnupiravir (Lagevrio) are available. For current list of treatments, please visit:  <https://www.cdc.gov/coronavirus/2019-ncov/your-health/treatments-for-severe-illness.html> |
| **Surveillance** | Monitor for symptoms and test using RT-PCR. |
| **Additional Medical Precautions (immunosuppression, pregnancy, allergies)** | Immunocompromised people, people with heart or lung disease, and older adults are at a higher risk for serious illness. |

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| **Health Hazards** | |
| **Host Range** | Humans. Research suggests a zoonotic origin. (https://pubmed.ncbi.nlm.nih.gov/35881005/) |
| **Signs and Symptoms** | Most cases have mild symptoms, including:  Cough, fever, sore throat, head or body aches, nasal congestion, and/or malaise. More serious cases may also include shortness of breath and abnormalities visible through imaging of the lungs. Severe cases may result in respiratory failure, septic shock, and/or organ failure. |
| **Infectious Dose** | Unknown |
| **Incubation Period** | 2 – 14 days |
| **Exposure Procedures** | |
| **Mucous membranes** | Flush eyes, mouth, or nose for 15 minutes at eyewash station. |
| **Other exposures** | Wash area with soap and water for 15 minutes |
| **Medical Follow-Up** | If you require medical follow-up, you must take this document with you to the UVMMC Emergency Department where you will hand this information to the clinician who is seeing you. |
| **Reporting** | Report all exposures or near misses to:   1. Your immediate Supervisor 2. SOS at 802-656-2560 and ask to have the EH&S team paged 3. Risk Management: <https://www.uvm.edu/riskmanagement/incident-claim-reporting-procedures> |
| **Laboratory Hazards** | |
| **Laboratory Acquired Infections** | None Reported |
| **Sources** | Respiratory droplets, nasopharyngeal and oropharyngeal secretions, lower respiratory sputum, laboratory cultures |
| **Characteristics** | |
| **Morphology** | Positive-stranded RNA virus with a crown-like appearance due to the presence of spike glycoproteins on the envelope |
| **Strain Specific Characteristics** | Novel coronavirus that causes the respiratory illness COVID-19 by infecting alveolar epithelial cells. Primary clinical isolates will be used, which could include variants of interest & variants of concern (i.e., B.1.17, P.1., B.1.351, B.1.427/B.1.429) and others circulating in the human population during the time of sample collection. |
| **Containment Requirements** | |
| **BSL - 2** | Manipulation or examination of clinical samples, fixed or inactivated specimens, molecular analysis of extracted nucleic acid preparations. Manipulation of infected samples must occur in a certified biosafety cabinet |
| **BSL - 3** | Virus isolation in cell culture and characterization of viral agents recovered from clinical specimens |
| **ABSL - 2** | Not applicable |
| **ABSL - 3** | All work with infected animals |
| **Aerosol generating activities** | Centrifugation, homogenizing, vortexing or stirring, pipetting, pouring liquids. |
| **Primary containment device (BSC)** | Use for all activities that have the potential to generate aerosols, all manipulation of potentially infected specimens or cultures |
| **Personal Protective Equipment (PPE)** | |
| ***Minimum PPE Requirements*** | Double nitrile gloves, lab coat or gown, eye/face protection. Wash hands after removing gloves. |
| ***Additional Precautions***  ***(Risk assessment dependent)*** | PAPR with full face shield, shoe covers, double nitrile gloves, and full-coverage protective clothing for BSL-3 work (Tyvek suit, waterproof apron with full sleeves). Medical clearance, fit testing and training is required annually per UVM’s Respiratory Protection Program: <https://www.uvm.edu/riskmanagement/personal-protective-equipment> |
| **Viability** | |
| **Disinfection** | 10% bleach, 70% alcohols, quaternary ammonium compounds, other EPA-registered disinfectants. Minimum contact time of 10 minutes. |
| **Inactivation** | Most coronaviruses are sensitive to UV radiation (60-minute contact time) and heat (above 60°C for 30 minutes). |
| **Survival Outside Host** | Capable of surviving on surfaces for up to 9 days at room temperature. May survive longer at 4°C. |
| **Spill Clean Up Procedures** | |
| **Spill inside of the BSC** | Cover area of the spill with paper towels and apply approved disinfectant, working from the perimeter towards the center. Allow 30 minutes of contact time before clean-up and disposal. Dispose in double biowaste bags and lab biowaste container. |
| **Spill Outside of the BSC** | Follow the emergency contact list to notify VDH and UVM Biosafety Officers after you safely doff PPE and leave the facility. |
| **References** | |
| **Canadian PSDS**  **(SARS-CoV)** | <https://www.canada.ca/en/public-health/services/laboratory-biosafety-biosecurity/pathogen-safety-data-sheets-risk-assessment/severe-acute-respiratory-syndrome-sars-associated-coronavirus.html>. |
| **BMBL** | <https://www.cdc.gov/labs/pdf/SF__19_308133-A_BMBL6_00-BOOK-WEB-final-3.pdf> |
| **CDC Guidelines** | <https://www.cdc.gov/labs/pdf/SF__19_308133-A_BMBL6_00-BOOK-WEB-final-3.pdf> |
| **EPA list of approved disinfectants** | <https://www.epa.gov/sites/production/files/2020-03/documents/sars-cov-2-list_03-03-2020.pdf> |
| **Journal of Hospital Infection** | <https://www.journalofhospitalinfection.com/article/S0195-6701(20)30046-3/pdf> |
| **Nature** | <https://www.ncbi.nlm.nih.gov/pubmed/32015507> |
| **International Society for Advancement of Cytometry** | <https://isac-net.org/news/news.asp?id=497501> |