**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:** | Coxsackievirus |
| **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)*:** | Mucous membrane contact with infective secretions or excretions, ingestion, inhalation |
| **Known Medical Precautions and Treatment** | |

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| **Prophylaxis** | None available |
| **Vaccines** | None available |
| **Treatment and/or Post-exposure Intervention** | None available |
| **Surveillance** | Monitor for symptoms and test using PCR, serology, or viral isolation |
| **Additional Medical Precautions (immunosuppression, pregnancy, allergies)** |  |

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| **Health Hazards** | |
| **Host Range** | Humans, monkeys, mice |
| **Signs and Symptoms** | The majority of infections are asymptomatic and self-limiting, but may lead to a variety of rare associated conditions:  Coxsackievirus group A associated conditions: hand-foot-and-mouth disease, herpangina, acute lymphatic or nodular pharyngitis, aseptic meningitis, paralysis, rash, pneumonitis of infants, common cold, hepatitis, infantile diarrhea, acute hemorrhagic conjunctivitis.  Coxsackievirus group B associated conditions:  diabetes, pleurodynia, aseptic meningitis, paralysis, severe systemic infection in infants, meningoencephalitis, myocarditis, pericarditis, upper respiratory illness/pneumonia, rash, hepatitis, pancreatitis. |
| **Infectious Dose** | Unknown |
| **Incubation Period** | Varies greatly from days (hand-foot-and-mouth disease) to years (myocarditis) |
| **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** | Contact UVMMC Infectious Disease Dept. directly at **(802) 847-2700** for immediate assistance. Bring this document with you if seeking medical care. |
| **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** | 39 reported cases of lab-acquired infections up to 2006 |
| **Sources** | Respiratory secretions or fluids, feces, and CSF from infected humans & animals, and laboratory cultures. |
| **Characteristics** | |
| **Morphology** | Member of the Picornaviridae family,  non-enveloped virus. |
| **Strain Specific Characteristics** | Group A (serotypes 1 -22 and 24)  Group B (serotypes 1-6) |
| **Containment Requirements** | |
| **BSL - 2** | Manipulation of known or potentially infected clinical samples and cell cultures of laboratory adapted strains (RG2) |
| **BSL - 3** |  |
| **ABSL - 2** | Work with animals infected with risk group 2 strains |
| **ABSL - 3** |  |
| **Aerosol generating activities** | Centrifugation, homogenizing, vortexing or stirring, changing of animal cages, cell sorting, pipetting, pouring liquids, sonicating, loading syringes |
| **Primary containment device (BSC)** | Use for aerosol-generating activities, high concentrations, or large volumes |
| **Personal Protective Equipment (PPE)** | |
| ***Minimum PPE Requirements*** | Nitrile gloves, lab coat, appropriate eye/face protection. Wash hands after removing gloves. |
| ***Additional Precautions***  ***(Risk assessment dependent)*** | Sharps use strictly limited. Due to risk of inhalation, respirators may be required when working with Coxsackie. Medical clearance, fit testing and training is required annually per UVM’s Respiratory Protection Program |
| **Viability** | |
| **Disinfection** | Sensitive to formaldehyde, glutaraldehyde, 10% bleach; with 15 minutes contact time. May be resistant to many common disinfectants (such as 70% ethanol, isopropanol, quaternary ammonium compounds). |
| **Inactivation** | Most are inactivated by heat above 42°C, sensitive to UV, drying reduces viral titers. |
| **Survival Outside Host** | Capable of surviving for months in neutral pH, moisture, and low temperature; survival enhanced by the presence of organic matter |
| **Spill Clean-Up Procedures** | |
| **Small Spill** | Notify others working in the lab. Allow aerosols to settle. Don appropriate PPE. 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 biobox. |
| **Large Spill** | **Inside of a lab:** Call UVM Service Operations at 656-2560 and ask to speak to a dispatcher. Ask them to page Risk Management and Safety.  **Outside of the lab:** Pull the nearest fire alarm and evacuate the building. Wait out front of the building for emergency responders to arrive. |
| **References** | |
| **Canadian PSDS** | <https://www.canada.ca/en/public-health/services/laboratory-biosafety-biosecurity/pathogen-safety-data-sheets-risk-assessment/coxsackievirus-pathogen-safety-data-sheet.html> |
| **BMBL** | <https://www.cdc.gov/biosafety/publications/bmbl5/> |
| **CDC HFMD Guidelines** | <https://www.cdc.gov/hand-foot-mouth/about/index.html> |