The Biohazardous Agent Reference Document (BARD) is a general guidance resource that reviews and summarizes the nature of a pathogen or biotoxin, and offers safety requirements for work with the agent

in the laboratory. The BARD may replace the formal SOPs used in conjunction with some IBC registrations.

The BARD is provided as an additional guidance tool, and is not a substitute for a risk assessment, biosafety training, lab-specific training, or a formal [IBC master protocol registration](https://www.uvm.edu/rpo/biosafety-oversight). This document should 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, understood, and signed the document. The BARD is for informational purposes only, and is not intended to be a substitute for professional medical advice, diagnosis, or treatment.

Please consult a health care provider for any medical questions or concerns.

**INSTRUCTIONS**

1. **Review the information contained in this document.**
2. **Add any necessary 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.**
3. **Instruct all personnel to review the BARD and sign the last page, indicating that they have**

**read and understood the information.**

1. **Submit the BARD along with your IBC master protocol registration, amendment, or continuing review.**

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| **Characteristics** | |
| ***Morphology*** | Member of the Rhabdoviridae family, enveloped virus. Livestock pathogen. |
| ***Strain Specific***  ***Characteristics*** | 8 main serotypes: Indiana, New Jersey, Cocal, Alagoas, Isfahan, Chandipura, Maraba, Piry |

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| **health hazards** | |
| ***Host Range*** | Humans (except for Maraba and Cocal serotypes), horses, cattle, pigs, mules, sand flies, grasshoppers, rodents |
| ***Modes of Transmission*** | Contact with non-intact skin, inhalation, bite from an infected sand fly |
| ***Signs and Symptoms*** | Infections with Indiana, New Jersey, Alagoas serotypes: Flu-like symptoms including severe malaise, headaches, muscle and joint pain, retrosternal pain, eye aches, nausea, vesicle formation on oral mucosa (rare)  Infections with Chandipura: fever, sensory disorders, convulsions, vomiting, diarrhea, and encephalitis leading to coma and death |
| ***Infectious Dose*** | Unknown |
| ***Incubation Period*** | 30 hours – 6 days |

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| **Medical precautions / treatment** | |
| ***Prophylaxis*** | None available |
| ***Vaccines*** | None available |
| ***Treatment*** | Symptomatic treatment to prevent secondary infections |
| ***Surveillance*** | Monitor for symptoms and test using viral isolation, PCR, or ELISA |
| ***UVM IBC Requirements*** | Report any exposures or signs and symptoms to your supervisor |
| ***Additional Medical Precautions*** |  |

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| **laboratory hazards** | |
| ***Laboratory Acquired Infections*** | As of 1980, 46 recorded cases with New Jersey and Indiana serotypes, 13 cases with Piry serotype |
| ***Sources*** | Infected human or animal blood, throat secretions, saliva, exudates, open wounds, and laboratory cultures. |

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| **Containment Requirements** | |
| ***BSL - 2*** | Manipulation of known or potentially infected clinical samples and cell cultures of laboratory adapted strains (RG2: Indiana, Cocal, Alagoas, New Jersey, Isfahan, Maraba) |
| ***BSL - 3*** | Manipulation of known or potentially infected clinical samples and cell cultures of laboratory adapted strains (RG3: Chandipura, Piry) |
| ***ABSL - 2*** | Work with animals infected with risk group 2 strains |
| ***ABSL - 3*** | Work with animals infected with risk group 3 strains |
| ***Aerosol generating activities*** | Centrifugation, homogenizing, vortexing or stirring, changing of animal cages, animal surgeries, cell sorting, pipetting, pouring liquids, sonicating, loading syringes |
| ***Primary containment device (BSC)*** | Use for aerosol-generating activities, high concentrations, or large volumes.  Use for all activities at BSL-3. |

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| **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 |
| ***Reporting*** | Report all exposures or near misses to:   1. Your immediate Supervisor 2. The UVM Biosafety Officer at **(802) 777-9471** and Risk Management at **6-3242** 3. Risk Management and Safety; <https://www.uvm.edu/riskmanagement/incident-claim-reporting-procedures> |

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| **Personal protective equipment (PPE)** | |
| ***Minimum PPE Requirements*** | BSL-2: Nitrile gloves, lab coat, appropriate eye/face protection.  BSL-3: full coverage protective clothing, solid-front gown with tight-fitting wrists, gloves, respiratory protection, shoe covers, appropriate eye/face protection.  Wash hands after removing all PPE. |
| ***Additional Precautions***  ***(Risk assessment dependent)*** | Sharps use strictly limited. |

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| **Viability** | |
| ***Disinfection*** | Susceptible to 10% bleach, 2.5% phenol, 0.4% HCl, 1% cresylic acid, chlorinated phenol, 2% sodium orthophenylphenate; with 20-minute contact time |
| ***Inactivation*** | Inactivated by pH at or below 1.5, heat above 60°C |
| ***Survival Outside Host*** | Capable of surviving outside of host 3 – 4 days in infected saliva |

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| **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 press option 1 to speak to a dispatcher. Ask them to page Risk Management and Safety.  **Outside of a lab:** Pull the nearest fire alarm and evacuate the building. Wait out front of the building for emergency responders to arrive. |

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| **Student / Employee Name SIGNATURE DATE** |
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***Biosafety Review:***

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Jeff LaBossiere, Biological Safety Officer

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| **References** | |
| Canadian PSDS | <https://www.canada.ca/en/public-health/services/laboratory-biosafety-biosecurity/pathogen-safety-data-sheets-risk-assessment/vesicular-stomatitis-virus.html> |
| BMBL | <https://www.cdc.gov/biosafety/publications/bmbl5/> |
| Journal of Virological Methods | <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2956192/> |
| Frontiers in Microbiology | <http://journal.frontiersin.org/article/10.3389/fmicb.2011.00272/full> |

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