**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:** | Poliovirus – vaccine strain |
| **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)*:** | Poliovirus is transmitted fecal orally (through ingestion of the virus). |
| **Known Medical Precautions and Treatment** | |

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| **Prophylaxis** | Only symptomatic treatment is available. |
| **Vaccines** | Oral Polio Vaccine (OPV), and Inactivated Polio Vaccine (IPV) |
| **Treatment and/or Post-exposure Intervention** | Only symptomatic treatment is available. |
| **Surveillance** | Monitor for symptoms and testing using serology or PCR. |
| **Additional Medical Precautions (immunosuppression, pregnancy, allergies)** | Unvaccinated children or persons with B cell immunodeficiencies are at higher risk of becoming infected if exposed. All individuals working with OPV are required to receive full Polio vaccination. |

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| **Health Hazards** | |
| **Host Range** | Humans are the only known host and reservoir. |
| **Signs and Symptoms** | Exposure to wild-type polio (in nature) causes asymptomatic infection in 90-95% of unvaccinated individuals.  Ingestion of OPV can rarely cause vaccine-associated paralytic polio (VAPP), which occurs only in unvaccinated persons (usually children) or those with B-cell immunodeficiencies. The risk is 1/900,000.  Paralytic polio manifests as a spectrum of weakness and asymmetric loss of muscle tone, which may progress over 3-5 days to paralysis and may include encephalitis. Major muscle groups including respiratory muscles may be involved. |
| **Infectious Dose** |  |
| **Incubation Period** | For non-paralytic polio: 3-6 days  For paralytic polio: 7 – 21 days. |
| **Exposure Procedures** | |
| **Mucous membranes** | Flush eyes, mouth or nose for 15 minutes at eyewash station. |
| **Other exposures** | Wash area with soap and water. |
| **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** | Wild type and vaccine strain polio has minimal or no risk to the immunized laboratory worker, but is a potential threat to the eradication effort.  There is potential risk to members of the household who are immunocompromised. Most vaccine-related polio has occurred when a person shedding the vaccine virus infected a household member with a predisposing immune defect. |
| **Sources** |  |
| **Characteristics** | |
| **Morphology** | Member of the Picornaviridae family. Small non-enveloped viruses with single strand RNA genome. |
| **Strain Specific Characteristics** | Three serotypes exist (Polio 1 – 3), wild type and attenuated strains, Oral Polio Vaccine (OPV), Inactivated Polio Vaccine (IPV) |
| **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)*** | Risk assessment dependent |
| **Viability** | |
| **Disinfection** | Susceptible to 1% sodium hypochlorite, 2% glutaraldehyde, 70% ethanol and formaldehyde |
| **Inactivation** | Inactivated by heat |
| **Survival Outside Host** | Capable of surviving outside of the host in feces, water, and food. |
| **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** | |
| **WHO** | Polio Laboratory Manual 4th Edition. 2004  <http://polioeradication.org/wp-content/uploads/2017/05/Polio_Lab_Manual04.pdf> |
| **CDC** | Travelers Health: The Yellow Book- Chapter 3 Poliomyelitis  <https://wwwnc.cdc.gov/travel/yellowbook/2020/travel-related-infectious-diseases/poliomyelitis> |
| **CDC** | The Pink Book: Epidemiology and prevention of vaccine preventable diseases – Chapter 18 Poliomyelitis  <https://www.cdc.gov/vaccines/pubs/pinkbook/polio.html> |
| **BMBL** | <https://www.cdc.gov/biosafety/publications/bmbl5/> |