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*** | Gram-positive, catalase positive, non- spore forming, nonmotile, cocci bacterium that usually form in clusters. |
| ***Strain Specific***  ***Characteristics*** | MRSA (methicillin resistant)  MSSA (methicillin sensitive)  VRSA (vancomycin resistant)  VISA (vancomycin intermediate) |

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| **health hazards** | |
| ***Host Range*** | Normal flora in humans, wild & domestic animals |
| ***Modes of Transmission*** | Ingestion, contact with non-intact skin, mucous membranes |
| ***Signs and Symptoms*** | Ingested: nausea, vomiting, abdominal pain, cramps, diarrhea  Deep Infection: endocarditis, peritonitis, necrotizing pneumonia, bacteremia, meningitis  Toxic Shock Syndrome: high fever, vascular collapse, vomiting diarrhea, muscle pain, hypotension, erythematous rash, peeling skin, death.  May also cause skin infections, bone, joint, or organ infections, “scalded skin” syndrome in neonates and young children. |
| ***Infectious Dose*** | 100,000 organisms |
| ***Incubation Period*** | 30 minutes – 8 hours (ingestion) |

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| **Medical precautions / treatment** | |
| ***Prophylaxis*** | None available |
| ***Vaccines*** | None available |
| ***Treatment*** | Appropriate antibiotics for serious infections, drainage of abscesses. |
| ***Surveillance*** | Monitor for symptoms and test using serology, PCR, microscopic examination, or microbiological isolation |
| ***UVM IBC Requirements*** | Report any exposures or signs and symptoms to your supervisor |
| ***Additional Medical Precautions*** | Opportunistic pathogen, may be resistant to multiple antibiotics. May cause necrotizing fasciitis in immunocompromised individuals |

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| **laboratory hazards** | |
| ***Laboratory Acquired Infections*** | 29 reported cases as of 1973, with 1 death |
| ***Sources*** | Cerebrospinal fluid, joint aspirates, tissues, blood, abscesses, aerosols, urine, & feces from infected humans and animals, 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) |
| ***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, animal surgeries, cell sorting, pipetting, pouring liquids, sonicating, loading syringes |
| ***Primary containment device (BSC)*** | Use for aerosol-generating activities, high concentrations, or large volumes |

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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*** | Nitrile gloves, lab coat, appropriate eye/face protection. Wash hands after removing gloves. |
| ***Additional Precautions (*Risk assessment dependent)** | Sharps use strictly limited. |

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| **Viability** | |
| ***Disinfection*** | Susceptible to 1% sodium hypochlorite, 2% glutaraldehyde, 70% ethanol, 0.25% benzalkonium chloride, chlorhexidine, and formaldehyde; with 10-minute contact time |
| ***Inactivation*** | Inactivated by dry heat of 160 – 170°C for at least an hour. Not sensitive to moist heat. |
| ***Survival Outside Host*** | Can grow in a pH of 4.2 – 9.3, and in salt concentrations up to 15%. Can survive up to 42 days on carcasses and organs, up to 7 days on floors or coins, 46 hours on glass, 17 hours in sunlight, 7 hours under UV light, 60 days on meat products, up to 38 days on skin, and days to months on fabrics. |

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| **References** | |
| Canadian PSDS | <https://www.canada.ca/en/public-health/services/laboratory-biosafety-biosecurity/pathogen-safety-data-sheets-risk-assessment/staphylococcus-aureus.html> |
| BMBL | <https://www.cdc.gov/biosafety/publications/bmbl5/> |
| CDC Guidelines | <https://www.cdc.gov/mrsa/lab/index.html> |
| Current Protocols in Microbiology | <https://www.ncbi.nlm.nih.gov/pubmed/23408135> |

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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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