

BIOHAZARDOUS AGENT REFERENCE DOCUMENT

Influenza A Virus

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](#). 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.**
- 4. Submit the BARD along with your IBC master protocol registration, amendment, or continuing review.**

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CHARACTERISTICS

Morphology	Member of the Orthomyxoviridae family, enveloped virus, influenza A
Strain Specific Characteristics	Avian flu & 1918 strain are select agents PR8 is a mouse-adapted strain

HEALTH HAZARDS

Host Range	Humans, swine, horses, birds, and other mammals
Modes of Transmission	Inhalation, mucous membrane contact
Signs and Symptoms	Fever, headache, muscle pain, malaise, sore throat, non-productive cough, sneezing, nasal discharge. Children may also experience middle ear infection, nausea, or vomiting. May lead to pulmonary or cardiac complications, secondary bacterial pneumonia.
Infectious Dose	Unknown
Incubation Period	1 – 3 days

MEDICAL PRECAUTIONS / TREATMENT

Prophylaxis	Antivirals within 3 days of detected illness may be prescribed
Vaccines	Flu vaccines available
Treatment	Fluids and rest. Antivirals (oseltamivir, zanamivir) may be used in combination with antibiotics to prevent or treat secondary bacterial pneumonia.
Surveillance	Monitor for symptoms and test using RT-PCR
UVM IBC Requirements	Report any exposures or signs and symptoms to your supervisor
Additional Medical Precautions	Highly communicable, shedding may begin before symptoms and may continue for up to 7 days

LABORATORY HAZARDS

Laboratory Acquired Infections	15 reported cases for influenza type A up until 1974. No reports of animal-associated infections, however, risk is high from infected ferrets
Sources	Respiratory tissues or secretions from infected humans or animals, digestive tract of infected birds, organs of infected animals, laboratory cultures.

CONTAINMENT REQUIREMENTS

BSL - 2	Manipulation of known or potentially infected clinical samples and cell cultures of laboratory adapted strains (RG2)
BSL - 2+	All viral isolations
ABSL - 2	All work with infected animals
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 all work with samples, aerosol-generating activities, high concentrations, or large volumes

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 UVMCC Infectious Disease Dept. directly at (802) 847-2700 for immediate assistance
Reporting	Report all exposures or near misses to: <ol style="list-style-type: none"> Your immediate Supervisor The UVM Biosafety Officer at (802) 777-9471 and Risk Management at 6-3242 Risk Management and Safety; https://www.uvm.edu/riskmanagement/incident-claim-reporting-procedures

PERSONAL PROTECTIVE EQUIPMENT (PPE)

Minimum PPE Requirements	Nitrile gloves, closed toed shoes, lab coat, appropriate eye/face protection. Wash hands after removing gloves.
Additional Precautions (risk assessment dependent)	Sharps use strictly limited. Due to modes of transmission, respirators may be required when working with influenza. Medical clearance, fit testing and training is required annually per UVM's Respiratory Protection Program; https://www.uvm.edu/riskmanagement/personal-protective-equipment

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VIABILITY	
Disinfection	Susceptible to 1% sodium hypochlorite, 2% alkaline glutaraldehyde, 60 – 95 % ethanol, 5% phenol, and 5 – 8% formaldehyde; with 10 minute contact time
Inactivation	Inactivated by steam autoclaving, or dry heat at 170°C for 1 hour, 160°C for 2 hours, or 121°C for at least 16 hours
Survival Outside Host	Capable of surviving 24 – 48 hours on hard, nonporous surfaces. 8 – 12 hours on cloth, paper, or tissue.

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	<p>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.</p> <p>Outside of a lab: Pull the nearest fire alarm and evacuate the building. Wait out front of the building for emergency responders to arrive.</p>

REFERENCES	
Canadian PSDS	https://www.canada.ca/en/public-health/services/laboratory-biosafety-biosecurity/pathogen-safety-data-sheets-risk-assessment/influenza-virus-type-a.html
BMBL	https://www.cdc.gov/biosafety/publications/bmb15/
CDC H1N1 2009 Guidelines	https://www.cdc.gov/h1n1flu/guidelines_lab_workers.htm
WHO	http://www.who.int/influenza/human_animal_interface/en/

STUDENT / EMPLOYEE NAME	SIGNATURE	DATE

Biosafety Review:

 Jeff LaBossiere, Biological Safety Officer

 Date

Principal Investigator: _____

IBC Registration #: _____