

## PATHOGEN SAFETY DATA SHEET

### Influenza A

CHARACTERISTICS	
Morphology	Member of Family Orthomyxoviridae. Negative sense single-stranded RNA virus. Reassortment of strains of influenza A/H1N1 of avian, porcine and human origin. Virus capsid is enveloped. Virions are spherical to pleomorphic.
Disease	Flu, upper respiratory tract infection. Influenza can occur in pandemics and epidemics, localized outbreaks, and as sporadic cases. In temperate climates, epidemics of influenza typically occur during the late fall and winter seasons, whereas in tropical and subtropical regions influenza epidemics occur throughout the year. Historical evidence suggests that more severe, worldwide pandemics have occurred at 10 to 40 year intervals since the 16th century.
Zoonosis	Yes, from swine to humans.

HEALTH HAZARDS	
Host Range	Humans, birds and other mammals (vertebrates).
Modes of Transmission	Droplet infection, fomites, saliva, nasal secretions, feces, aerosol and blood.
Signs and Symptoms	Fever, runny nose, sore throat, diarrhea, coughing, vomiting, nausea, lethargy, myalgia, anorexia and dyspnea.
Infectious Dose	unknown
Incubation Period	Estimated incubation period is unknown and could range from 1-7 days.

MEDICAL PRECAUTIONS/TREATMENT	
Prophylaxis	Antiviral chemoprophylaxis with antiviral drugs.
Vaccines	Seasonal vaccine available.
Treatment	Oseltamivir, Zanamivir for seven days after exposure.
Surveillance	Daily temperature recording.
MSU Requirements	Report any exposures

LABORATORY HAZARDS	
Laboratory Acquired Infections (LAIs)	None reported to date.
Sources	Cultures, frozen stocks, other samples described in IBC protocol.

SUPPLEMENTAL REFERENCES	
Canadian MSDS:	<a href="http://www.phac-aspc.gc.ca/lab-bio/res/psds-ftss/index-eng.php">http://www.phac-aspc.gc.ca/lab-bio/res/psds-ftss/index-eng.php</a>
BMBL	<a href="https://www.cdc.gov/labs/BMBL.html">https://www.cdc.gov/labs/BMBL.html</a>
CDC	<a href="https://www.cdc.gov/flu/">https://www.cdc.gov/flu/</a>
NIH Guidelines	<a href="https://osp.od.nih.gov/wp-content/uploads/NIH_Guidelines.pdf">https://osp.od.nih.gov/wp-content/uploads/NIH_Guidelines.pdf</a>

RISK GROUP & CONTAINMENT REQUIREMENTS	
Risk Group 2	Agents that are associated with human disease which is rarely serious and for which preventive or therapeutic interventions are often available.
BSL2	For all procedures involving suspected or known infectious specimen or cultures.
ABSL2	For all procedures utilizing infected animals.

SPILL PROCEDURES	
Small	Notify others working in the lab. Remove PPE and don new PPE. Cover area of the spill with absorbent material and add fresh 1:10 bleach:water. Allow 20 minutes (or as directed) of contact time. After 20 minutes, cleanup and dispose of materials.
Large	<ul style="list-style-type: none"> <li>Immediately notify all personnel in the lab and clear all personnel from the area. Remove any contaminated PPE/clothing and leave the lab.</li> <li>Secure the area by locking doors, posting signage and guarding the area to keep people out of the space.</li> </ul> For assistance, contact MSU's Biosafety Officer (406-994-6733) or Safety and Risk Management (406-994-2711).

EXPOSURE PROCEDURES	
Mucous membrane	Flush eyes, mouth, or nose for 5 minutes at eyewash station.
Other Exposures	Wash area with soap and water for 5 minutes.
Reporting	Immediately report incident to supervisor, complete a <a href="#">First Report of Injury</a> form, and submit to Safety and Risk Management.
Medical Follow-up	<b>During business hours:</b> Bridger Occupational Health 3406 Laramie Drive Weekdays 8am -6pm. Weekends 9am-5pm  <b>After business hours:</b> Bozeman Deaconess Hospital Emergency Room 915 Highland Blvd

VIABILITY	
Disinfection	Susceptible to 1:10 bleach:water, 70 % ethanol and 5% Lysol
Inactivation	Influenza A is sensitive to treatment with heat, lipid solvents, non-ionic detergents, formaldehyde, oxidizing agents. The infectivity is reduced after exposure to irradiation.
Survival Outside Host	Influenza viruses can remain infectious for about one week at human body temperature, over 30 days at 0° C, and indefinitely at very low temperatures

PERSONAL PROTECTIVE EQUIPMENT (PPE)	
Minimum PPE Requirements	Lab coat, disposable gloves, safety glasses, closed toed shoes, long pants
Additional Precautions	Additional PPE may be required depending on lab specific SOPs and IBC Protocol.