**Infectious Agent Exposure Protocol**

**Introduction:** Exposures to infectious agents in the laboratory involve both qualitative and often quantitative differences from exposures in the community. Many organisms that are not expected to be communicable in a community setting can cause airborne transmission in the laboratory. Laboratorians are often working with high concentrations of the agent under study. Laboratory workers typically have significantly more information concerning the organism, specific virulence factors, and concentration of possible inoculum than someone with non-laboratory exposure.

**Scope**: This protocol delineates response steps to be taken in the event of an exposure to infectious agents in a Brigham Young University laboratory.

**Exposure Incident**: The following will be considered an exposure incident

1. Inhalation of aerosol droplets – failure of aerosol containment during energetic processes such as centrifugation, sonication, spilling, splashing etc. outside the biosafety cabinet.
2. Mucous membrane contact
3. Contact with non-intact skin
4. Injection

**Immediate Response Procedures**:

1. **Wash it off, rinse it out**: Use eye-wash, sink, drench hose or shower to remove the infectious material as soon as possible following an exposure incident involving contact with skin or mucous membrane surfaces.
2. **Notify principal investigator (PI) of the accident**
3. **Notify Risk Management –** The PI should notify BYU Risk Management
4. **Seek medical attention** - Go to or call the Student Health Center during normal working hours. After normal working hours go to the Utah Valley Regional Medical Center emergency room.
5. **HIV exposures** (exposure to human blood or viral isolate or culture)- Brigham Young University expects the exposed person to **immediately** go to the Student Health Center during normal working hours, or to the Utah Valley Regional Medical Center emergency room when the student health center is closed. **Time is critical**. Time from initial exposure to completion of medical consultation and initiation of post exposure prophylaxis (if warranted) should be no more than 2 hours.

**Organism Data Sheet** (Provided to Medical Care Personnel) – Not all of the following information may be known; however, prior to work involving a human pathogen, each PI or student working in the laboratory should review literature to learn as much as possible about organisms used in the laboratory. The following information should be written down on a data sheet and included in the laboratory biosafety manual for each pathogen in use in the laboratory. In the event of an exposure incident, the data sheet should be taken to the MD doing the post-exposure evaluation:

1. **Agent identification** - genus, species, and type or strain. Example: *Staphylococcus aureus* type USA300
2. **Median infectious dose**
3. **Known virulence factors** – Examples: S. aureus expressing Panton-Valentine leucocidin or E. coli expressing Shiga toxin.
4. **Antimicrobial resistance patterns** - Examples*: Staphylococcus aureus* ATCC 25923 resistant to: methicillin, fluoroquinolones, vancomycin.

For certain organism’s antimicrobial resistance can be critical; for example, *Plasmodium falciparum* resistant to chloroquine, *Mycobacterium tuberculosis* resistant to rifampicin, HIV resistant to emtricitabine etc.

1. **Host Immune status** – Example: for an exposure involving H1N1 A/California/04/2009 the exposed person was vaccinated in October 2015 with a vaccine using the multivalent influenza vaccine containing antigen to H1N1 A/California.

The immune status of the surrounding population may also be important – when working with an H1N1A/WSN/1933 the physician should be informed that this particular influenza virus has not circulated in the general population for over 70 years and the level of community immunity will likely be very low.

1. **Concentration of the culture** – Example: Overnight broth cultures 108 organisms per ml. In an exposure incident, specific information regarding the level of exposure is valuable.
2. **Record of laboratory infections** – has this organism been associated with laboratory acquired infections in the past?