In the event of an accidental exposure or injury, the protocol is as follows:

1. Modes of Transmission:
   - High Risk Exposures:
     i. Skin puncture or injection
     ii. Ingestion
     iii. Contact with mucous membranes (eyes, nose, mouth)
     iv. Contact with non-intact skin
   - Low Risk/Potential Exposure:
     i. Bite from a recently infected animal
     ii. Percutaneous contact with body fluids from a recently infected animal
     iii. Aerosols

2. First Aid:
   a. **Skin Exposure**, immediately go to the sink and thoroughly wash the wound with soap and water. Antiseptic scrub solutions should not be used.
   b. **Skin Wound**, immediately go to the sink and thoroughly wash the wound with soap and water and pat dry.
   c. **Splash to Eye(s), Nose or Mouth**, immediately flush the area with running water for at least 10 minutes.
   d. **Splash Affecting Garments**, remove garments that may have become soiled or contaminated and place them in a double red plastic bag.

3. Treatment:
   a. In the event of an acute injury resulting from a laboratory incident which requires immediate medical care, the injured employee should report to the emergency room for acute medical treatment. The injured employee must take a copy of this document to the emergency department as well as the “Viral Vector Exposure Risk Assessment Part 1” posted in the lab.
   b. In the event of an exposure, with or without an injury, call the Exposure Hotline pager in order to get access to medical care for the exposure.

4. Follow-up is needed in the event of any Laboratory Exposure:
   a. After first-aid is complete, immediately inform your supervisor of the exposure.
   b. In the event of a large spill, contact the emergency response team (9-911) for clean-up.
   c. Contact Occupational Health Services for employees (in case of a student exposure, Student Health Services), after first aid is complete for follow-up care.
1. **WORKERS’ RESPONSIBILITIES** (Worker Initial Self-Care)
   a. **First Aid:** Perform the recommended first aid and decontamination according to the posted instructions.
   b. **Treatment:** i) In the event of an acute injury resulting from a laboratory incident which requires immediate medical care, the injured employee should report to the emergency room for acute medical treatment. The employee must bring a copy of the “Viral Vector Risk Assessment Summary Part 1” as well as this document for review. ii) In the event of an exposure, with or without an injury, call the Exposure Hotline pager in order to get access to medical care for the exposure.
   c. **Access to the Exposure Hotline:** Call the Exposure Hotline pager in order to get access to medical care for the exposure. Dial 415/353-7842 (353-STIC) and provide your name and contact information to the operator. If there is no call back in 15 minutes, call again. If you do not receive a return call back the second time, proceed to the nearest Emergency Department with a copy of this protocol.
   d. **Reporting:** Inform your laboratory supervisor / principal investigator of the exposure.
   e. **Secure the laboratory:** Identify the equipment involved in the exposure and the mechanism of exposure. Make sure that the laboratory area has been secured and that notification of contamination has been posted to prevent other individuals from entering the area.
   f. **Follow up:** Contact Occupational Health Services (OHS) as soon as possible for any follow up care if needed. Call the main line at 415/885-7580.

2. **SUPERVISOR’S RESPONSIBILITIES**
   a. **Training:** Ensure that all lab personnel are trained in the use of safe laboratory procedures to prevent accidental exposure before assignment to any laboratory where concentrated lentivirus is used. The PI may request assistance from UCSF OEH&S in providing information about safe laboratory procedures. For assistance, the PI should call the UCSF Public Health Officer or Biosafety Officer.
   b. **First Aid and Decontamination:** Verify that the worker has washed and decontaminated himself/herself.
   c. **Secure the laboratory:** Confirm that the laboratory area has been secured and that notification of contamination has been posted to prevent other individuals from entering the area.
   d. **Laboratory clean-up (as needed):** Contact the Office of Environment, Health & Safety (OEH&S) through the UC Police Department Emergency Dispatch (from a campus telephone 9-911, from a non-campus phone 415/476-1414).
   e. **Report the exposure:** Call the Public Health Officer 415/514-3531 during regular business hours to discuss the exposure. A report summarizing any suspected HIV exposure needs to be submitted to the Biosafety Committee by the Principal Investigator (PI).
f. **Follow-Up:** Confirm that the employee has called for an appointment at the UCSF Occupational Health Clinic for evaluation on the next weekday the clinic is open. Later, confirm that the employee has been evaluated and coordinate a safe return to work.

g. **Report the Injury:** Within 24 hours, report the injury to the UCSF Human Resources Disability Management Services (HR DMS) Office on the Supervisor’s Report of Injury (SRI) form ([http://ucsfhr.ucsf.edu/files/SIR.pdf](http://ucsfhr.ucsf.edu/files/SIR.pdf)).
SECTION I – INFECTIOUS AGENT
Organism or Agent: LENTIVIRUS VECTORS

Synonym or Cross Reference: Retroviruses

Characteristics: single stranded RNA virus, enveloped icosahedral nucleocapsid, glycoprotein envelope, reverse transcriptase

SECTION II – RECOMMENDED PRECAUTIONS
Containment Requirements: Depends on agent: Usually biosafety level 2 or enhanced biosafety level 2 practices, containment equipment and facilities for all activities involving the manipulation of the virus; primary containment devices and biological safety cabinets are recommended. Biosafety level 3 recommended for production of large amounts of replication competent HIV.

Manipulations of Lentivirus: Depending on the vector, work may need to be performed within a biosafety cabinet, and the use of sharps including needles, blades and glassware should be minimized.

UCSF Required Personal Protective Equipment: gloves, safety goggles, lab coat

SECTION III – HANDLING INFORMATION
Spills: Allow aerosols to settle; wear protective clothing, gently cover spill with paper towel and apply 1% sodium hypochlorite, starting at perimeter and working towards the center; allow sufficient contact time before clean-up (30 min).

Biohazardous Waste: Collect in double red bags and transport in a rigid container.

Approved Disinfectants for Lentiviruses:
a) 0.05% Sodium Hypochlorite (1:10 bleach/water) allow 10 minutes of contact time
b) Other approved hospital disinfectants

Disposal: Decontaminate before disposal; steam sterilization, incineration, chemical disinfection

Storage: Store in sealed containers that are appropriately labeled.

SECTION IV – HEALTH HAZARDS
Pathogenicity: Hazards depend on multiple factors: whether the vector is capable of infecting human cells, whether the vector is replication competent, how many viral genes are contained in the vector, and the specific transgenes present in the vector. On an emergent basis, the PI should be the best source of information regarding potential health hazards.

Modes of Transmission: Virus may be transmitted in the following ways: 1) a skin puncture or injection, 2) ingestion, 3) contact with mucous membranes (eyes, nose, or mouth), 4) contact with
non-intact skin, and 5) low risk exposures include bites from an animal inoculated with lentivirus, percutaneous contact with body fluids from an animal inoculated with lentivirus and aerosols.

**Incubation Period:** Variable, may be months to years

**Communicability:** Replication incompetent vectors: Not communicable.

**Stability:** If backbone is stable, risk is lowered. If backbone is new, the PI must be engaged during the exposure investigation.

**FOR THE USE OF THE EXPOSURE HOTLINE**

**SECTION V – VIABILITY**

**Drug Susceptibility:** Not Available

**Susceptibility to Disinfectants:** Susceptible to 1% sodium hypochlorite, 2% gultaraldehyde, formaldehyde, ethanol, other hospital approved disinfectants

**Physical Inactivation:** Heating small volumes of serum for 30 minutes to 56°C results in residual infectivity below detectable levels.

**Survival Outside Host:** Rapidly inactivated when exposed to drying/environmental conditions.

**SECTION VI – MEDICAL TREATMENT**

**Surveillance:** Monitor for symptoms based on viral construct.

**First Aid/Treatment:** Immediate decontamination.

**Immunization:** Not Available

**Prophylaxis:** Prophylaxis for replication competent HIV is recommended.

**SECTION VII – LABORATORY HAZARDS**

**Laboratory-Acquired Infections:** There have been no reported adverse health outcomes from lentiviral vector exposure in a laboratory setting. There have been reports of cases of lymphoproliferative diseases after use as a gene therapy agent.

**Primary Hazards:** Parenteral inoculation, ingestion, droplet or aerosol exposure of mucous membranes or broken skin with infectious fluids or tissues.

**FOR THE USE OF THE EMERGENCY DEPARTMENT**

**SECTION VIII – EMERGENCY MEDICAL TREATMENT**

**Treatment Indications:** Emergency department treatment will be required for immediate treatment. The treatment needs to consist of the following: 1) decontamination and debridement, 2) wound repair, 3) evaluation for post exposure prophylaxis and 4) follow up with OHS.

**Exposure Indications:** In the event of an exposure, with or without an injury, the Exposure Hotline must be called.

**Decontamination:** Ensure that the wound has been adequately decontaminated.

**Review the “Viral Vector Exposure Risk Assessment Part 1”:** Each PI must develop an emergency response plan in case of exposure to viral vectors. It is the responsibility of the PI to provide risk assessment information if emergency department providers have any questions.
regarding health hazards. The exposed worker should have a copy of the “Viral Vector Exposure Risk Assessment Part 1” for your review. If you have any questions, please have the on-call infectious disease consultant assist in the evaluation of the injured worker.

SECTION VIII – REFERENCES
Content adapted From the Public Health Agency of Canada SDS