**PROTOCOL SUMMARY**

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

1. **Modes of Transmission:**
   a. Skin puncture or injection
   b. Ingestion
   c. Contact with mucous membranes (eyes, nose, mouth)
   d. Contact with non-intact skin
   e. Bite from an animal inoculated with vaccinia virus

2. **First Aid:**
   a. **Skin Exposure**, immediately go to the sink and thoroughly wash the skin wound with soap and water. Decontaminate any exposed skin surfaces with an antiseptic scrub solution.
   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 department for acute medical treatment. The injured individual 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 Needlestick Exposure Hotline pager in order to get access to medical care for the exposure. The needle stick hotline responder will provide guidance to the injured individual on necessary medical treatment and post exposure follow-up.

4. **Follow up is needed in the event of any Laboratory Exposure:**
   a. After first aid has been administered, 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, after first aid is complete, for follow-up care. In case of a student exposure, contact Student Health Services for follow-up care.
1. **WORKER’S RESPONSIBILITIES** (Employee/Student 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 individual should report to the emergency room for acute medical treatment. ii) In the event of an exposure, with or without an injury call the Needlestick Exposure Hotline pager in order to get access to medical care for the exposure.
   
   c. **Access to Needlestick Hotline:** Call the Needlestick Exposure Hotline pager in order to get access to medical care for the exposure. Dial 415/ 353-7842-; Do not leave, wait for the call back. If none in 15 minutes, call again. If there is no 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. **First Aid and Decontamination:** Verify that the worker has washed and decontaminated himself/herself. Ensure that appropriate medical treatment has been received.
   
   b. **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.
   
   c. **Laboratory clean-up (as needed):** Contact the Office of Environmental 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).
   
   d. **Report the exposure:** Call OHS at 415/885-7580 during regular hours. Briefly describe the circumstances of exposure. Provide employee/student identification information (name and home telephone number).
   
   e. **Follow Up:** Confirm that the worker has called for an appointment at the UCSF Occupational Health Clinic (if an employee), or Student Health Services for evaluation on the next weekday the clinic is open. Later, confirm that the worker has been evaluated and coordinate a safe return to work.
   
   f. **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, available here: [http://ucsfhr.uchsf.edu/dismgmt/forms/workcomp/claim/SRI.pdf](http://ucsfhr.uchsf.edu/dismgmt/forms/workcomp/claim/SRI.pdf)
SECTION I – Infectious Agent
Organism or Agent: VACCINIA VIRUS
Synonym or Cross Reference: POXVIRUS, SMALL POX VACCINE
Characteristics: Poxviridae; 230 x 400 nm, complex coat and capsid, dsDNA

SECTION II – Recommended Precautions
Containment Requirements: 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 required.
Manipulations of Vaccinia Virus: Must 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
Other Precautions: Immunization of staff working directly with vaccinia.

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 Vaccinia:
  a) 0.5% Sodium Hypochlorite (1:10 bleach/water) allow 10 minutes of contact time
  b) 75 ppm titratable Iodine (3 ounces Wescodyne/ 5 gallons water) allowing 10 minutes contact time
Disposal: Decontaminate before disposal; steam sterilization, incineration, chemical disinfection
Storage: Store in sealed containers that are appropriately labeled.

SECTION IV – Health Hazards
Pathogenicity: Vaccinia virus primarily causes a disease of the skin. Infections can cause a vesicular or pustular lesion, an area of induration or erythema surrounding a scab or ulcer at the inoculation site. Major complications are encephalitis, progressive vaccinia (immunocompromised individuals are most susceptible), eczema vaccinatum - a localized or systemic dissemination of vaccinia virus, or fetal vaccinia. Minor complications are generalized vaccinia with multiple lesions, benign rash, or secondary infection. Complications are serious for those with eczema or who are immunocompromised. Death is most often the result of post-vaccinial encephalitis or progressive vaccinia. Several infections of laboratory workers with recombinant vaccinia virus have been documented.
Epidemiology: Vaccinia vaccination or signed declination form is required every 3 years.
Infection Dose: Vaccines have potency of $10^8$ pock-forming units/mL; infectious dose unknown.
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) bite from an animal inoculated with vaccinia virus.
Incubation Period: 1 week after exposure (lesion at point of inoculation); generalized vaccinia 5-10 days.
Communicability: Communicable to unvaccinated contacts. It is possible to contract vaccinia from individuals who have recently been vaccinated.
FOR USE BY THE NEEDLESTICK EXPOSURE HOTLINE RESPONDER

SECTION V – Viability

Drug Susceptibility: Not Applicable
Susceptibility to Disinfectants: Susceptible to 1% sodium hypochlorite, 2% glutaraldehyde, formaldehyde
Physical Inactivation: Heat-labile antigen destroyed at 60°C, heat-stable antigen at 4-5°C (both may be present in infected tissue).
Survival Outside Host: Lyophilized vaccine virus maintains potency for 18 months at 4-6°C, may be stable when dried onto inanimate surfaces.

SECTION VI – Medical

Surveillance: Monitor for symptoms; confirmation by identification of vaccine pocks, isolation of virus, serology. Exposed workers need to be isolated from individuals who have eczema.
First Aid/Treatment: Vaccinia immune globulin and methisazone may be of value in treating complications.
Immunization: Smallpox vaccine is indicated for laboratory workers directly involved with vaccinia and vaccinia virus recombinants.
Prophylaxis: Not Applicable

SECTION VII – Laboratory Hazards

Laboratory-Acquired Infections: There have been reported variola laboratory infections and reported infections of laboratory workers with recombinant vaccinia virus.
Sources/Specimens: Lesion fluids or crusts, respiratory secretions or tissues of infected hosts.
Primary Hazards: Ingestion, parenteral inoculation, droplet or aerosol exposure of mucous membranes or broken skin with infectious fluids or tissues.
Special Hazards: Some poxviruses are stable when dried.

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 Needlestick 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 IX – References
