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ANIMAL EXPOSURE SURVEILLANCE PROGRAM

1. SCOPE

1.1. Applicability - All faculty, staff, postdoctoral fellows, and students who work with animals and/or their body fluids, fresh tissues, bedding or caging must be enrolled in the Animal Exposure Surveillance Program. EH&S also requires enrollment of individuals who indicate contact with viable tissues, body fluids, or wastes from animals.

1.2. Purpose - The Animal Exposure Surveillance Program (AESP) provides:

- 1.2.1. Relevant occupational health and safety information related to use and care of animals.
- 1.2.2. Occupationally indicated immunizations and medical screenings.
- 1.2.3. Clinical evaluation and treatments for individuals with animal related injuries or illnesses.

2. PROGRAM ORGANIZATION

2.1. The AESP is subdivided into the following four broad categories:

- 2.1.1. Small animal and tissue users (e.g. rodents, rabbits)
- 2.1.2. Large animal and tissue users (e.g. cats, dogs, livestock)
- 2.1.3. Non-human primate users (e.g. marmosets, monkeys, apes)
- 2.1.4. Non-human primate tissue users

3. SERVICES OFFERED TO ALL AESP PARTICIPANTS, INCLUDING THOSE WORKING WITH SMALL ANIMALS AND/OR TISSUES

3.1. A medical evaluation, which includes an occupational medical history, safety and health counseling, and appropriate immunizations. The occupational medical history includes a review of:

- 3.1.1. The functional demands and environmental factors associated with the proposed position;
- 3.1.2. The species of animal(s) contacted;
- 3.1.3. Other potential work-site health hazards; and

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3.1.4. The individual's medical history.

3.2. The participant is counseled regarding:

3.2.1. The University Bloodborne Pathogen Exposure Control Program;

3.2.2. Medical evaluation and treatment for occupational injuries and illnesses, including applicable allergies;

3.2.3. Relevant zoonoses based upon the animals used at the work site;

3.2.4. Pertinent safety and health risks and other infection control guidelines; and

3.2.5. Reporting of any gastrointestinal, respiratory, or dermal illness with signs or symptoms which resemble those occurring in the animals for which they care.

3.2.6. Any of the agents responsible for infections in laboratory animals that may infect humans, including, but not limited to those zoonoses described below.

3.3. The participant is offered a booster dose of tetanus/diphtheria (Td) toxoid, if clinically indicated.

3.4. During the AESP enrollment, the University screens employees at risk for developing work related allergies by requesting a history of pre-existing allergies, asthma, seasonal rhinitis, or eczema. Enrollees are advised of the availability of clinical care through the University and are encouraged to seek evaluation and treatment through Employee Health Services if they develop symptoms suggestive of a work related allergy.

4. ADDITIONAL SERVICES FOR PARTICIPANTS WORKING WITH LARGE ANIMALS AND/OR TISSUES

In addition to those services listed for persons working with small animals, a participant with large animal contact receives the following services:

4.1. Rabies - Rabies immunization is required or offered to employees who work with rabies virus, have direct contact with quarantined animals potentially infected with rabies, have exposure to potentially infected tissues, and/or who have responsibility for capturing or destroying wild animals in accordance with the risk categories defined in EH&S Guideline 05-014: Rabies Protection Program.

4.2. Toxoplasmosis - A toxoplasmosis antibody titer is obtained for immunosuppressed workers and/or any female employee of childbearing capacity with anticipated occupational exposure to cats or cat feces. A titer of greater than or equal to 1: 16 by immunofluorescent testing is interpreted as protective.

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4.2.1. Immunocompromised individuals or any females of childbearing capacity who lack immunity to toxoplasmosis, and that plan to work with cats is informed of their susceptibility and is provided additional educational information. The employee and the employee's supervisor are advised to seek a reassignment of duties for the duration of the immunosuppression or pregnancy.

4.3. Q Fever – Employees at risk of exposure to Q fever include those who have direct involvement with the organism *Coxiella burnettii* in a research capacity; or those who handle or use products of parturition (or material contaminated by such material) including placentas, amniotic fluid, blood, or bedding from sheep, goats, cattle or cats.

4.3.1. The participant is evaluated for the likelihood of developing chronic sequelae should they acquire Q fever. Employees with valvular or congenital heart defects or immunosuppression are advised of the potential risks involved, and medical clearance for duty will be determined.

4.3.2. Occupational Infection Signs, Symptoms, and Treatment:

4.3.2.1. The incubation period averages 20 days, with a range from 14 to 39 days.

4.3.2.2. Signs and symptoms of acute infection include the sudden onset of severe headache, high fever spiking to 104° F or greater, chills, and myalgia. The patient may present with pneumonitis or clinical hepatitis. Treatment is initiated as soon as diagnosis is suspected.

4.3.2.3. Serologic confirmation of the diagnosis is accomplished three months later using enzyme immunoassay (EIA), testing of serum samples obtained at the time of initial report, at two weeks and every 30 days from that day for three months.

4.3.2.4. The employee's work status depends upon the severity of symptoms. Human to human transmission of Q fever has not been documented.

5 ADDITIONAL SERVICES FOR PARTICIPANTS WORKING WITH NON-HUMAN PRIMATES AND/OR TISSUES

In addition to those services listed for persons working with small animals, a participant with non-human primate contact receives the following services:

5.1. Tuberculosis Screening - Tuberculosis is a zoonotic disease which is difficult to detect in non-human primates and spreads rapidly in non-human primate colonies. Because there is no effective treatment for this infection in non-human primates, infected animals are euthanized to control the spread of the infection. Due to the devastating consequences of tuberculosis for non-human primates and associated research projects,

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special precautions are taken to reduce the risk that workers involved in the use and care of these animals will infect the animals with *M. tuberculosis*.

5.1.1. All personnel involved in the use and care of non-human primates are required to enroll in the University's Tuberculosis Protection Program as described in EH&S Guideline 05-13.

5.2. Rubeola (Measles) Screening - Due to the potential personal and public health consequences associated with rubeola infection, all employees working directly with non-human primates (direct hands-on contact of intact animals) must have laboratory evidence of protection to rubeola.

5.3. Retrovirus Testing - Simian Immunodeficiency Virus (SIV) infections occur naturally in African Green monkeys, baboons, sooty mangabeys, and chimpanzees. The infection commonly persists without any clinical manifestations. Several species of the genus *Macaca* (e.g., rhesus, cynomolgus) are highly susceptible and die following experimental or colony acquired SIV infection. To date, there have been three documented occupational infections with SIV, and the medical significance of these infections is not yet clear. Type D retroviruses (simian retroviruses, SRVS) may infect rhesus, cynomolgus, squirrel, pig-tailed, bonnet, and langur monkeys. It has not been convincingly demonstrated whether humans have been infected with type D retroviruses.

5.3.1. Individuals potentially exposed to SIV/HIV-2 must be enrolled in the Bloodborne Pathogen Exposure Control Program. Individuals who sustain an exposure to material potentially containing SIV/HIV-2 will be offered Post Exposure Prophylaxis as indicated by CDC Guidelines.

5.4. Viral Hepatitis Screening – Non-human primates (e.g., rhesus, cynomolgus, African green, tamarin, and owl monkeys and chimpanzees) are used in research on hepatitis A, B, C, D, E, and G. Employees working with these research animals may be at risk for exposure to the virus used in the research. Participants working with non-human primates experimentally infected with hepatitis A or B are offered the appropriate vaccine(s).

5.5. Rabies - Rabies immunization is offered to employees working with non-human primates in quarantine.

5.6. B-virus (Cercopithecine Herpes Virus 1) Testing - Injuries involving neurologic tissue or either oral or ocular secretions of rhesus, cynomolgus and other macaque monkeys (e.g., pig-tail, and stump-tail monkeys) very rarely result in human infection with B-virus. However, due to the extreme morbidity and mortality of this infection in humans, special effort is taken to ensure prompt medical evaluation and first aid following a potential exposure to B-virus.

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5.6.1. Non-human primate exposure response kits containing first aid supplies, a chlorhexidine gluconate scrub brush for wound cleansing, and wound-care instructions are available in all facilities housing non-human primates.

5.6.2. Employees are directed to report immediately to Employee Health Services (during normal business hours) or to the UPMC Presbyterian Hospital Emergency Room (during non-business hours) for treatment.

5.6.3. Employee Health Services counsels the individual regarding appropriate testing and post-exposure prophylaxis according to nationally recognized standards for treatment of non-human primate-associated injuries.

6 ADDITIONAL SERVICES FOR PARTICIPANTS ONLY WORKING WITH NON-HUMAN PRIMATE TISSUES

In addition to those services listed for persons working with small animals, a participant with only contact with unfixed non-human primate tissues or body fluids receives the following services:

6.1 Individuals are enrolled in the University Bloodborne Pathogen Exposure Control Program and offered hepatitis B vaccination.

6.2 Baseline and periodic tuberculin skin testing every six months is required for participants working with non-fixed primary tissues.

7 CONTINUING ANIMAL EXPOSURE SURVEILLANCE PROGRAM (AESP) REQUIREMENTS

All University faculty, staff, postdoctoral fellows and students who work with animals and/or their body fluids, fresh tissues, bedding or caging must be enrolled in the Animal Exposure Surveillance Program prior to beginning to work with animals. All individuals must submit a completed Animal Exposure Surveillance Update form to Employee Health Services upon any significant change in health status, or a minimum of **every three years**

7.1 **Initial AESP Enrollment** – Individuals must complete the AESP Enrollment Form (<http://www.ehs.pitt.edu/assets/docs/AESPenroll.pdf>) and submit to Employee Health Services, located in the Medical Arts Building, 3708 Fifth Avenue, Suite 500.59, or by faxing or e-mailing the completed form to Dr. Yolanda Lang (Fax 412-647-5051 or langyc@upmc.edu).

7.2 **AESP Renewal** – Individuals must complete the AESP Update Form (<http://ehs.pitt.edu/assets/docs/AESPUupdate.pdf>) every three years, and submit to Employee Health Services, located in the Medical Arts Building, 3708 Fifth

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Avenue, Suite 500.59, or by faxing or e-mailing the completed form to Dr. Yolanda Lang (Fax 412-647-5051 or langyc@upmc.edu).

- 7.3 Participants working with small and large animals are advised to return for tetanus/diphtheria (Td) immunization boosting 10 years from the date of their last booster dose.
- 7.4 Participants working with live non-human primates or un-fixed non-human primate tissue are reminded by letter to return for tuberculosis (TB) testing:
 - 7.4.1 If the prior tuberculin skin test (TST) was negative, the test is repeated every six months.
 - 7.4.2 If the prior TST was positive, regardless of whether chemoprophylaxis or treatment was received, the employee will be sent an informational TB health review with a letter asking the worker if he or she has any symptoms suggestive of active tuberculosis. The form *must be* submitted to the medical director *every six months*.

8 IMPLEMENTATION

- 8.1 All employees of the Division of Laboratory Animal Resources that work with animals as described above are enrolled in the Animal Exposure Surveillance Program upon hire.
- 8.2 Investigators are required to list all individuals working with animals in their application to the University of Pittsburgh's Institutional Animal Care and Use Committee (IACUC) via the Animal Research Online (ARO) registration system.
 - 8.2.1 Environmental Health and Safety (EH&S) reviews all new IACUC ARO submissions and all protocol modifications, and requires that all animal users listed on IACUC protocols present for clinical evaluation at Employee Health Services and enrollment in the AESP prior to approval of the protocol.
 - 8.2.2 EH&S will not approve new IACUC protocols or modifications to existing protocols until all personnel have completed all required training and medical surveillance requirements, including enrollment in the AESP.
- 8.3 Additional pathogen -specific and/or facility-specific medical surveillance and vaccinations are required for personnel working in University of Pittsburgh ABSL-3 facilities (See EH&S Guideline 05-023).