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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, unfixed tissues, bedding or caging must be enrolled in the Animal Exposure Surveillance Program. EH&S also requires enrollment of individuals in laboratories who only handle unfixed 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. mice, rats, hamsters, guinea pigs)
 - 2.1.2. Large animal and tissue users (e.g. cats, dogs, ferrets, livestock, rabbits)
 - 2.1.3. Non-human primate users
 - 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
 - 3.1.4. The individual's medical history.

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- 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 allergy surveillance and/or treatment;
 - 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. Overview of 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 University affiliates 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.
- 3.5.** Other agent-or duty-specific services will be offered if indicated, including but not limited to:
- 3.5.1. [Serum surveillance program](#)
 - 3.5.2. [Measles protection program](#)
 - 3.5.3. [Tuberculosis protection in research](#)
 - 3.5.4. [Rabies protection program](#)
 - 3.5.5. [Vaccinia virus program](#)
 - 3.5.6. [Agent-specific required vaccinations](#)

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 as indicated for specific work duties:

- 4.1. Rabies** – Rabies immunization is required or offered to University affiliates 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](#).

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4.2. Toxoplasmosis – Personnel handling cultures of *Toxoplasma gondii*, or animals infected with *T. gondii* are strongly encouraged to enroll in the Toxoplasmosis serum surveillance program. In this program, a toxoplasmosis antibody titer is strongly recommended for personnel handling cultures or animals infected with *T. gondii*, immunosuppressed workers and/or any University affiliate of childbearing capacity with anticipated occupational exposure to cats not tested to be free of toxoplasmosis by vendor (non-SPF cats) or cat feces from non-SPF cats. A titer of greater than or equal to 1: 16 by immunofluorescent testing is interpreted as protective.

4.2.1. Immunocompromised individuals or any University affiliate of childbearing capacity who lack immunity to toxoplasmosis, and that plan to work with the agent, infected animals, or non-SPF cats is informed of their susceptibility and is provided additional educational information. The University affiliate and the University affiliate’s supervisor are advised to seek a reassignment of duties for the duration of the immunosuppression or pregnancy.

4.2.2. Personnel with continued contact with cultures of the agent, animals infected with toxoplasma, and non-SPF cats are strongly encouraged to participate in annual serum surveillance.

4.3. Q Fever – University affiliates at high risk of exposure to Q fever include those who handle cultures, animals, and/or samples from animals intentionally infected with *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. While sheep, goats and other large animals are acquired from vendors where they are purpose-bred for research and animals are tested for Q fever infection prior to release from quarantine, serologic surveillance of ungulates may not always identify infected animals. Therefore, potential exposure to Q fever cannot be completely eliminated for personnel handling sheep and goats, tissue or blood and body fluids, and/or bedding and other materials.

4.3.1. Upon hire personnel who will work with sheep and goats, tissue or blood and body fluids, and/or bedding and other materials will be strongly encouraged to enroll in a serum surveillance program where a baseline serum sample will be screened for previous exposure to *C. burnettii*, with additional serum surveillance strongly recommended annually for continued work.

4.3.2. During AESP enrollment, the participant is evaluated for the likelihood of developing chronic sequelae should they acquire Q fever. University affiliates with valvular or congenital heart defects or immunosuppression are advised of the potential risks involved, and medical clearance for duty will be determined by the Director of Employee Health Services.

4.3.3. Occupational Infection Signs, Symptoms, and Treatment:

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

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- 4.3.3.2. 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.
- 4.3.3.3. 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.
- 4.3.3.4. The University affiliate'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 and large 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, 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 University affiliates working directly with non-human primates and/or entering non-human primate housing facilities must have laboratory evidence of protection for rubeola (see [Measles Protection Program](#) for additional information).
- 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 to SIV, and experimental or colony acquired SIV infection may be fatal. To date, there have been at least 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 other non-SIV type D retroviruses.
 - 5.3.1. Individuals potentially exposed to SIV must enroll in the Bloodborne Pathogen Exposure Control Program. Individuals who sustain an exposure to material potentially containing SIV will be offered post exposure prophylaxis as indicated by CDC Guidelines.

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- 5.4. **Viral Hepatitis Screening** – Non-human primates (e.g., rhesus, cynomolgus, African green, tamarin, owl monkeys and chimpanzees) and other animal models (e.g. transgenic rodents) may be used in research on hepatitis A, B, C, D, E, and G. University affiliates working with intentionally exposed research animals, tissues, blood, or body fluids may be at risk for exposure to the virus used in the research. Participants working with non-human primates or other animal models experimentally infected with hepatitis A or B are offered the appropriate vaccine(s).
- 5.5. **Rabies** - Rabies immunization is offered to University affiliates working with non-human primates in quarantine.
- 5.6. ***Macacine alphaherpevirus 1 (Herpesvirus Simiae, Cercopithecine Herpes Virus 1, Herpes B Virus) Testing*** - Injuries involving rhesus, cynomolgus and other Cercopithecine monkeys (e.g., African green) very rarely result in human infection with herpes 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 herpes B virus.
- 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. University affiliates 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. Personnel working with non-fixed primary tissues are enrolled in the applicable portion of the University's Tuberculosis Protection Program as described in EH&S Guideline 05-13.
7. **CONTINUING ANIMAL EXPOSURE SURVEILLANCE PROGRAM (AESP) REQUIREMENTS**

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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 at a minimum of **every three years**.

- 7.1. **Initial AESP Enrollment** – Individuals must complete the [AESP Enrollment Form](#). The enrollment may be performed using the secure Microsoft Teams form which will automatically be submitted to Employee Health Services for the University of Pittsburgh. Alternatively personnel may fill out the PDF version of the form and submit to MyHealth@Work for the University of Pittsburgh, located in the Medical Arts Building, 3708 Fifth Avenue, Suite 505, by faxing the completed form to 412-647-5051 or hand delivering completed form.
- 7.2. **AESP Renewal** – Individuals must complete the [AESP Update Form](#) every three years. The renewal may be performed using the secure Microsoft Teams form which will automatically be submitted to MyHealth@Work for the University of Pittsburgh. Alternatively personnel may fill out the PDF version of the form and submit to MyHealth@Work for the University of Pittsburgh, located in the Medical Arts Building, 3708 Fifth Avenue, Suite 505, by faxing the completed form to 412-647-5051 or hand delivering completed form.
- 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 e-mail to return for tuberculosis (TB) screening.

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.

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- 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](#)).