UNIVERSITY OF FLORIDA Environmental Health & Safety

Biological Safety

Animal Contact Medical Monitoring Program

Animal Contact Program Handbook
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Contents

1. OVERVIEW OF ANIMAL CONTACT PROGRAM

The University of Florida's Animal Contact Program for individuals who have animal contact includes a medical monitoring and an educational component. Medical monitoring is based on the type and frequency of exposure to animals and consists of a risk assessment, follow-up assessments and, tests/immunizations as needed. It is part of the University's Occupational Medicine Program. The educational section provides individuals with health information specific to animal contact and promotes safe working practices.

The Division of Environmental Health and Safety (EH&S) and the Institutional Animal Use and Care Committee (IACUC) jointly oversee the Animal Contact Program. The Student Health Care Center is the medical provider for the program and maintains the medical records.

This Animal Contact Program Handbook is intended to provide information for individuals working with or in proximity to animals.

Short term visitors from other institutions should provide to EH&S evidence of current participation in a medical surveillance program at their home institution. Without such documentation, visitors will be required to participate in the UF Animal Contact Program. Individuals involved in isolated one-time, non-recurrent exposures shall be informed of potential dangers and medical precautions, but are not required to participate in the program. The primary responsible party (principal investigator, research director, student research coordinator, etc.) shall be responsible for assuring compliance with the notification requirements for these individuals.

Exemption is granted to those who work with outdoor observation studies of animals, since these projects do not present a workplace hazard.

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2. MEDICAL MONITORING PROGRAM FOR ANIMAL CONTACT

The University of Florida's occupational medicine program is a comprehensive program for individuals having animal contact in association with University-sponsored activities. Individuals covered by the program include faculty, staff, students, and volunteers or visitors who work with vertebrate animals or in proximity to them, or who handle certain animal tissues, body fluids or wastes. The program is intended to comply with the recommendations made by the Committee on Occupational Safety and Health in Research Animal Facilities and the Institute for Laboratory Animal Resources. These recommendations have been published in the Guide for the Care and Use of Laboratory Animals, (National Research Council; National Academy Press; Washington DC; 1996) and Occupational Health and Safety in the Care and Use of Research Animals (National Research Council; National Academy Press; Washington DC; 1997).

The program requirements are based on the type of exposure to animals. Employee identification and tracking will be managed jointly by IACUC and the Division of Environmental Health and Safety.

Individuals with animal contact shall be provided the animal contact program handbook link. They shall be

included in a risk assessment program that covers contact information, immunization history and a health questionnaire. The risk assessment will be updated on a periodic basis. An exit evaluation upon termination of an employee's animal work will be offered by the Student Health Care Center.

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3. SUMMARY OF IMMUNIZATION/TEST REQUIREMENTS

Immunization/Tests		
Procedure	**Exposure Condition**	**Frequency**
Tetanus Immunization	All individuals with animal contact	Current within 10 years*
Rabies Immunization Series	All employees handling unvaccinated carnivores or their tissue	Immunization, booster, or positive rabies titer current within 2 years
Respirator Clearance And Fit Test	• All individuals meeting requirements of the Q-fever policy • When medically necessary to combat animal allergies	Clearance- before assignment Fit-test -annually
Serum Banking	• All who have contact with non-human primates or their blood/tissue • All who handle the blood or tissue of alligators or wild birds • All who meet this requirement under the Q Fever Policy • All pre-menopausal females in contact with cats or cat waste	Before assignment and upon any exposure incident
TB Screening	All persons who enter non-human primate facilities	Required every year
Medical Consultation	When deemed necessary by Occupational Medicine personnel	Before assignment and as determined by the SHCC medical personnel.

* The Public Health Service Advisory Committee on Immunization Practices recommends immunization against tetanus every 10 years. An immunization is also recommended if a particularly tetanus-prone injury occurs in an employee where more than five years has elapsed since the last immunization.

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4. OCCUPATIONAL INJURY REPORTING PROCEDURE

When an injury or illness occurs and medical treatment is necessary, the individual and/or the supervisor must phone the UF Workers' Compensation Office (UFWC) at (352) 392-4940 to complete a First Report of Injury or Illness form. UFWC then will assist in selecting an authorized medical provider and will fax a copy of your First Report form to the authorized medical provider selected for treatment. UF Worker's Compensation web site has more information: http://www.hr.ufl.edu/compensation/injuries.htm

Within 7 days of the injury, the Injury and Incident Investigation Report should be filled out and sent to EH&S. The Injury and Incident Investigation Report must be submitted whether the injured person receives medical treatment or not.

The Injury and Incident Report Form must be completed for all injuries that result in filing of a Workers Compensation Claim. The report should be completed within 7 calendar days of the occurrence/filing of the injury with the Workers Compensation office. The form, when completed, helps the University understand and analyze the causes of accidents and enhance the ability to take action to prevent recurrence.

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5. FORMS ASSOCIATED WITH THIS PROGRAM

Risk Assessment for Animal Contact

Renewal Risk Assessment for Animal Contact

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6. PROGRAM CONTACTS

Additional information may be obtained from the sources listed below.

Questions regarding risks and precautions to be followed should be directed to Environmental Health & Safety, Biosafety Office at 392-1591.

Questions regarding a specific situation should be directed to the principal investigator or employee supervisor.

Questions regarding the medical monitoring program should be directed to the Division of Environmental Health and Safety, Occupational Medicine at 392-1591.

Medical advice is available from the Student Health Care Center at 392-1161 X 4212.

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7. HEALTH INFORMATION

The Public Health Service of the U.S. Department of Health and Human Services directs research/teaching institutions to develop programs that promote the health and safety of employees who have animal contact. This document contains informational material about several specific conditions or practices with which animal workers should be familiar.

Any occupational injury, illness, or hazardous exposure must be reported at once to the immediate supervisor for instructions on procedures for obtaining medical treatment. Reporting all accidents and illness to the supervisor is necessary and must be prompt and accurate in order to assure proper handling of all claims. In the event of serious injury, medical assistance should be sought immediately.

Every person working with animals should be aware of the potential danger from animal bites. Although an animal scratch or bite might not seem serious, its occurrence should be reported to one's supervisor so that proper measures may be taken.

a. Personal Hygiene

There are a number of personal hygiene issues which apply to all workers with animal contact. Attention to personal hygiene protects not only the worker, but also prevents zoonotic diseases or allergens from being carried home whereby family members may be exposed.

1. There should be no eating, drinking, smoking, gum chewing, contact lens handling or applying of cosmetics in areas where animals are housed or used.

2. Laboratory coats or other protective clothing should be worn over street clothes when working with animals. This will minimize the contamination of street clothing. Protective clothing should be left in the lab or animal facility and should not be worn in common areas, lavatories, when eating, or in public eating areas.

3. Careful hand washing is required after handling of animals and prior to leaving the laboratory or animal facility.

4. All work surfaces should be decontaminated daily and after any spill of animal related material.

b. Tetanus

The Public Health Service Advisory Committee on Immunization Practices recommends immunization against tetanus every 10 years. An immunization is also recommended if a particularly tetanus-prone injury occurs in an employee where more than five years has elapsed since the last immunization. Every employee should have up-to-date tetanus immunizations. The current tetanus immunization given by the Student Health Care Center, Tdap, protects against tetanus, diphtheria and pertussis.

c. Leptospirosis

This is a contagious disease of animals and humans due to infection with Leptospira spp. The usual mode of

transmission is contact with infected urine or the ingestion of urine-contaminated food or water or through a skin break. Clinical symptoms may be severe, mild or absent and may cause a wide variety of symptoms including fever, jaundice and general discomfort. The disease can usually be treated successfully with antibiotics. Dogs, domestic livestock and wild rats are commonly infected.

d. Human Allergies to Animals

Allergy to animal hair and dander is common and therefore one of the most important occupational problems occurring in workers exposed to animals. Allergic reactions are expressed in a number of ways including allergic rhinitis (a condition characterized by runny nose and sneezing similar to hay fever); by allergic conjunctivitis (irritation and tearing of the eyes); by asthma, or by atopic dermatitis (a skin condition which is caused by contact with a substance to which an individual is allergic). Allergy to animals is particularly common in workers exposed to animals such as cats, rabbits, mice, rats, gerbils and guinea pigs. There is still some controversy regarding exactly what substance causes the allergy in a certain individual. Previously it had been thought that most allergies were caused by dander and debris from the skin and fur of an animal. More recent studies seem to suggest that exposure to animal urine, saliva and fecal matter may be equally or more important. Exposure to animal urine may occur either through direct urine contact with skin or more commonly by inhaling dust from the bottom of a cage which has been contaminated with urine or fecal material.

Various studies show that 15 to 20% of workers exposed to animals will develop symptoms of allergy. This percentage may be even higher since some people are forced to leave their jobs because of the severity of the allergies that develop. Most of these reactions are of the allergic rhinitis and allergic conjunctivitis type. Less than half of these will actually be asthma. People who have a prior personal history or family history of asthma, hay fever, or eczema will be more likely to develop asthma after contact with animals, but these people do not seem any more likely to develop rhinitis and conjunctivitis than do people without such personal or family history. Everyone should exercise certain precautions to attempt to prevent animal allergy. These attempts should not be focused only on people with atopic history. Symptoms can develop anywhere from months to years after a person begins working with animals. A majority of the individuals who are going to develop symptoms will do so within the first year. It is extremely unusual to develop symptoms after more than two years of animal contact. Certain procedures should be routinely followed in order to prevent the development of animal allergy. Animals should be handled in extremely well ventilated areas to prevent build up of various particles in the air. Workers may want to wear gloves to prevent direct exposure to the animals. This applies to animal urine as well as to animal dander. In order to prevent inhaling contaminated material, cages should be changed frequently and masks should be worn during the changing of cages.

Despite the best preventive techniques, some individuals will develop allergies after contact with laboratory animals. Rarely, this will be so severe that a person is forced to change his line of work. More commonly, this can be controlled with the increased use of masks or respirators while working with animals and the possible use of medications. Desensitization therapy has been done for some individuals but this is not as effective for animal allergies as it is for some other types of allergies. Anyone with significant symptoms related to animal exposure should obtain medical advice.

e. Ringworm (Dermatomycoses)

Many species of animals are susceptible to fungi that cause the condition known as ringworm. The skin lesion usually spreads in a circular manner from the original point of infection, giving rise to the term "ringworm." The complicating factor is that cats and rabbits may be asymptomatic carriers of the pathogens which can cause the condition in humans.

In humans, the disease usually consists of small, scaly, semi-bald, grayish patches with broken, lusterless hairs, with itching. Transmission of the disease is by direct contact with an infected animal. Personal hygiene is the best method of prevention and one should obtain medical assistance if the lesions are noted.

f. Toxoplasmosis

Toxoplasmosis is a disease which is caused by an organism called Toxoplasma gondii. Approximately 1/3 of the United States population has had this disease at some time. Usually this disease is quite mild and may be mistaken for a simple cold or viral infection. Swollen lymph nodes are common. In addition, it is common to have a mild fever, general tired feelings and mild headaches. Rarely, more serious illness can occur such that there can be an involvement of the tissues of the lungs, heart, brain or liver.

People acquire this disease by eating meat which is raw or has not been cooked properly or by contact with feces of an infected cat. At any one time, about 1% of all cats will be shedding the toxoplasma oocyst in their feces. In addition, this organism can be passed on to the fetus of a pregnant woman if she becomes infected during her pregnancy. **There are two situations in which toxoplasmosis can be extremely serious**. A person whose **immune system is not working** properly can contract a very severe form of the disease. This would include people with AIDS or a positive blood test for the AIDS virus, people on medications which suppress their immune systems, and people who have some other serious illness which affects their immune system in the same way. In addition, an infection with toxoplasma can **severely damage an unborn child.** This can only occur if the mother gets an acute infection during the time she is carrying this child. This can result in miscarriages, still births, or various congenital defects. The disease is more serious if passed on to the fetus early in pregnancy but it is more common for the illness to be passed on later in pregnancy. At UF, pre-menopausal women exposed to cats will be required to have serum banked. The serum sample will be stored and kept for possible future reference in the event of illness.

Certain simple precautions will prevent a person from acquiring toxoplasmosis. Obviously, meat should be thoroughly cooked before it is eaten, therefore preventing this form of transmission. Cats acquire the toxoplasma organism by eating raw meat or wild animals that have been infected with the organism. The cat then excretes an egg form in its feces. These do not become infective for approximately two days but after this they can persist for quite some time in the soil. Because of this, it is important that cats be fed only commercial cat food or well cooked meat. In addition, the litter box of a cat that goes outside should be changed daily. When a woman is pregnant, she should avoid any contact with cat litter and should avoid any close contact with any cats who have been allowed to roam outdoors.

Pregnant women should be cautioned about working with cats in the laboratory setting. Pregnant animal technicians who have been assigned to cat husbandry duties should be reassigned to other jobs during

pregnancy. Pregnant research technicians who are exposed to cats in other ways would be best to avoid this exposure. There is no vaccine to protect humans from this parasite.

g. **Q Fever**

Q Fever or coxiellosis is caused by a rickettsial organism called Coxiella burnetii. Large numbers of organisms (up to 10^9 organisms per gram of tissue) may be present in placenta, birth tissues and the amniotic fluids of infected animals. Sheep, goats and cattle, as well as wildlife infected with Coxiella burnetii, usually shed the agent with no outward signs of disease, although Q Fever sometimes causes abortion in animals. The agent may persist in the animal and be shed intermittently. In addition to birthing products, the organism may be shed in milk, feces, urine and can be present in blood. Human infection most commonly results from exposure to the amniotic fluid of infected ruminants, especially sheep.

Coxiella burnetii is highly resistant to heat, drying, many common disinfectants, and can persist for months in contaminated soils. Human infection usually occurs through inhalation of contaminated dusts and aerosols generated by infected animals, their waste products, placental tissues and fluids, and contaminated straw or bedding. Only a single inhaled organism may be sufficient to cause infection in a susceptible host. In addition to inhalation, the agent may enter the body by ingestion or contamination of wounds, for example, contaminated needle sticks. Consuming unpasteurized milk or milk products can be another source of human infection.

The disease in humans may appear 2-4 weeks after infection. In most individuals the disease manifests itself as an acute illness which could be mistaken for influenza. The person has high fevers up to 104o or 105o. These are accompanied by general malaise, significant muscle aches and pains, and very frequently by a cough. Up to half of the individuals who develop this acute disease will have a pneumonia which can be seen on chest x-rays. A large number of people will also develop hepatitis. In most patients the disease is self-limited and will resolve on its own after ten days to two weeks. In older or ill individuals this acute illness may take one to two months to resolve. Even though it will resolve on its own, it is generally better to treat the disease with tetracycline because this does reduce the duration of fever. It is extremely important that, should an employee who works with sheep or goats develop an influenza type infection, that he/she mention to their physician the possibility of Q fever. Q fever is something that would not routinely be thought of and this diagnosis is often missed. Rarely a person may develop a chronic infection with the Q fever organism. This will happen in less than 1% of infected individuals. This manifests itself as endocarditis which is an infection on the valves of the heart. This is virtually always fatal when it does occur. 90% of the people who develop this have some previous problem with their heart valves. Because of this, people who have congenital heart disease, prior valvular heart disease, or who have a chronic immunocompromised state should not work with infected animals at the time of animal parturition. It is best that these individuals not work with sheep, goats and cattle at all. This can be determined on a case by case basis. Immunocompromised individuals would include persons with AIDS or a positive blood test for the AIDS virus, people who are immunocompromised because of medications which they take, and people who are immunocompromised because of certain chronic diseases.

UF has a Q-Fever Policy (http://www.ehs.ufl.edu/bio/qfever/qmain.htm) to protect the health of workers and the general public. Laboratories using sheep or goats and animal care areas housing these animals should be strictly off limits to anyone who does not have a specific need to be there. Gloves should always be worn

when handling sheep and goats, their waste products and used bedding. Additional precautions and PPE are required when handling the placentas and newborns of these animals. It is important that animals be transported carefully to avoid infecting others besides laboratory personnel. Potentially contaminated surfaces should be decontaminated with 10% solutions of chlorine bleach or Lysol. These organisms are quite resistant to destruction and many ordinary methods of disinfecting will not be adequate. It is extremely important that laboratory doors be kept closed when experiments are in progress. Employees working with potentially infected tissue need to wear protective clothing that is not worn outside the area.

Regular cleaning and disinfection of animal facilities with particular care of lambing areas, surgery, and necropsy rooms will help reduce the amount of organism present in the environment. Because human infection is generally via the aerosol route, indoor housing or procedure rooms (where aerosols can concentrate) for sheep and goats are high risk areas. Abortions in animals are investigated to determine if Q fever was the cause. Although Q fever seronegative animals can still shed the organism, serologic testing to exclude known positives can reduce the risk of disease transmission.

For more information on the Q Fever Policy see http://www.ehs.ufl.edu/bio/qfever/qmain.htm or http://www.cdc.gov/ncidod/dvrd/qfever/

h. Rabies

Rabies is a relatively rare and devastating viral disease which results in severe neurological problems and death. Most cases of rabies occur in wild carnivores although any mammal can contract the disease. The disease is virtually unheard of in common laboratory animals. The exception to this is with dogs and cats. At UF, research dogs and cats are vaccinated against rabies on the first day they enter the facility and are quarantined for 7 to 10 days. Theoretically, these animals could be infectious for the first several days before the vaccine has taken effect. The chances of this are very small. All bites of any type should be reported immediately to one's supervisor.

Rabies is an endemic disease in Florida, especially in skunks, foxes and bats. Note that up to 30% of the bats found on the ground are positive for rabies. Sporadic cases have been well-documented in other species of wildlife, as well as domestic animals. Animals and animal tissues field-collected in Florida should be handled with care. Precautions should take into account the fact that infected animals may shed the virus in the saliva before visible signs of illness appear and that rabies virus can remain viable in frozen tissues for an extended period. Persons handling neurologic tissues from unvaccinated carnivores or wild animals are at greatest risk. There is a human vaccine that offers protection for those persons working with this material or with unvaccinated animals. Vaccine titers are checked periodically to ensure adequate vaccine protection.

i. Diseases of Non-Human Primates

A large number of illnesses can be passed from non-human primates to humans and from humans to non-human primates. Because of this it is extremely important that employees exposed to monkeys and apes exercise particular caution in the handling of the animals. Protective clothing should always be worn. This clothing should not be worn outside the animal areas. Surgical masks which cover the nose and mouth should be worn in primate areas. Awake animals (not used to being handled) should be handled only while wearing bite proof gloves. Ideally, animals should be sedated before procedures are done. Employees should

not work with monkeys when they are ill since this may cause them to be more susceptible to illnesses transmitted from the monkey and also increases the likelihood that the monkeys could contract illnesses from the worker. Careful personal hygiene must be scrupulously maintained by all those exposed to non-human primates. Any scratch or bite must be immediately reported to the laboratory supervisor.

There are two specific illnesses which deserve attention, but these are by no means the only illnesses that can be contracted from monkeys. Non-human primates are very susceptible to tuberculosis and it can be quite devastating. All individuals who work with non-human primates must be tested for tuberculosis every year. This involves a skin test for most individuals and a symptom review and/or chest x-ray for individuals who have previously been found to be positive on the skin test. All primates at UF are tuberculosis tested on a regular basis. Monkeys testing positive are usually euthanized.

Herpes B or Herpes simiae causes a very minor illness in old world monkeys, but causes a fatal illness in humans. In man it causes severe neurologic disease which is most frequently followed by death. Fortunately, transmission of this disease to humans is quite rare. As mentioned above, it is mandatory that caution be exercised and that a supervisor be notified regarding any bites or scratches. Medical care must be obtained. Any wound should be carefully cleaned. Once a wound has been acutely managed, any unusual manifestations which develop later also need to be promptly reported. Symptoms of herpes B infection at a wound include pain radiating away from the bite wound or blisters at the site of the wound. Again, it must be emphasized that careful adherence to safe handling procedures is the most important step in preventing illnesses.

All persons working with primates at the University of Florida should have regularly scheduled tuberculosis tests and a pre-exposure serum sample. The serum sample will be stored and kept for possible future reference in the event of illness.

Instructions concerning monkey bites are available in all monkey rooms. There are extra copies for you to take with you when you go to the emergency room. Attending physicians need this information.

(1) Guidelines for Prevention of B-Virus (Herpesvirus Simiae) Infection in Monkey Handlers

1. Macaque monkeys should be used for research purposes only when clearly indicated.

2. When feasible, monkeys that are required for research purposes should be free of B virus infection and should be maintained under conditions that are appropriate to assure their B virus-free status. The possibility of acquiring and maintaining such a B virus-free colony should be explored by each animal facility.

3. All macaque monkeys not known to be free of B virus infection should be regarded as infected because viral shedding is intermittent and can occur in the absence of visible lesions. Direct handling of macaques should be minimized as much as possible. Capturing, restraining, or otherwise handling fully awake macaques by hand is not recommended. Rather, such procedures should be accomplished using acceptable physical and chemical restraint methods. Macaques that are handled regularly should

be housed in squeeze back cages that permit physical restraint of the animal before handling. When a number of animals are caged together, tunnels or chutes should be provided whenever feasible so that individual monkeys can be separated and restrained before handling. When feasible, chemical restraining by injection (e.g., ketamine HCl) may be used before removing the animal from the cage, particularly for larger animals or for animals that are otherwise difficult to handle. Behavioral conditioning of macaques is a practical and useful adjunct to the application of these restraint procedures and is particularly recommended where several animals are caged together

4. Macaque handlers should remove physically active animals from cages only with arm-length reinforced leather gloves. Handlers should be additionally protected with long-sleeved garments to prevent scratches and a face shield (or surgical mask and goggles or glasses) to prevent exposure of eyes and mucous membranes to macaque secretions. In warm climates, where use of long-sleeved garments and leather gloves may be uncomfortable, supervisors may wish to rotate work schedules or have workers handle animals at cooler times of the day to minimize such discomfort in the daily work routine. If macaque handlers choose not to handle chemically restrained animals with arm-length leather gloves (not recommended), latex or vinyl gloves should be worn to prevent direct contact with macaque secretions.

5. Cages and other equipment that may be contaminated with virus should be free of sharp edges and corners that may cause scratches or wounds to workers. Cages should be designed and arranged in animal housing areas so that the risk of workers being accidentally grabbed or scratched is minimized. Access to areas where macaques are maintained and used should be limited either to workers who are properly trained in procedures to avoid risk of infection or to those accompanied by such workers.

6. The routine screening of macaques for evidence of B virus infection is not recommended. Even animals previously found to be negative for virus or antibody might be positive at the time of a human exposure. Also, screening may increase the risk of infection to workers. In situations in which laboratory studies may cause immunosuppression of the animals, the investigator may elect to determine the infection status of the animals to be used, since virus shedding might be enhanced under such circumstances. Macaques with oral lesions suggestive of B virus infection should be quarantined until the lesions have healed to reduce the risk of virus transmission to workers and other macaques.

7. Persons who handle macaques, including primate veterinarians and scientific investigators, should be trained in proper methods of restraint and in the use of protective clothing to help prevent bites and scratches. Such persons should be acquainted with standard operating procedures and other available training materials before handling animals. Training should be followed up with continual observation for lapses in these procedures as they occur. Macaque handlers should also be educated concerning the nature of B virus infection; the need to prevent bites, scratches, and other exposure to macaque secretions; and the need to clean wounds immediately. They should be educated concerning the early symptoms of B virus infection and the need to report injuries and/or symptoms suggestive of B virus infection to supervisors immediately. Animal handlers should be advised that persons who are

immunosuppressed because of medication or underlying medical conditions may be at higher risk for B virus infection. A pre-employment serum sample should be obtained from all persons who work with macaques to serve as a baseline for retrospective studies in the event of a suspected B virus infection. Such specimens should be aliquoted and frozen, preferable at -70*C.

(Source: Guidelines for Prevention of Herpesvirus simiae (B Virus) Infection in Monkey Handlers, Morbidity and Mortality Weekly Report, Vol. 36 (No. 41) : 680-89, October 23, 1987.)

(2) Care of Non-human Primate Bites, Scratches, Cuts, Abrasions, etc.

1. For small wounds – allow to bleed freely. If necessary, control bleeding by applying direct pressure with a sterile gauze or bandage.

2. Immediately, or within 5 minutes of the injury, disinfect the wound by washing with copious quantities of soap and water. Wash for at least 15 minutes. A chlorhexidine soap such as Nolvason is recommended. Povidone – iodine or Betadine surgical soap may be used, too, but is more likely to cause skin irritation and cellular damage. Any resulting irritation may cause confusion regarding whether any vesicles are virus related or disinfectant trauma.

3. If eyes or mucous membranes are exposed, irrigate the area for at least 15 minutes with water.

4. Secure medical attention.

   a. Weekdays between 8 a.m. and 5 p.m. report to the UF Student Health Care Center and ask to see the “Occupational Medicine Group”.

   b. After hours and on weekends go to Shands Emergency Room. Inform them of the circumstances and ask them to contact one of the listed physicians.

Physician	**Work Telephone**	**Pager**
Dr. Reuben Ramphal	352 392-4058	352-413-7837
Dr. Kenneth Rand	352 392-5621	888-553-2503

The physicians will evaluate the injury and may decide to culture the wound for B-virus (Herpesvirus simiae) or collect blood for a baseline titer against B-virus, or use prescription drugs for preventative therapy.

The physician directing the care of the patient will contact the Director of Animal Care Services for instructions regarding the need for cultures or serology from the monkey inflicting the injury upon the patient.

Following a bite or scratch, the animal handler should be instructed to report immediately any skin lesions or neurologic symptoms (such as itching, pain, or numbness) near the site of the wound or any other unusual illness. It is the responsibility of the supervisor, when no illness is reported, to determine the clinical status of the handler at weekly intervals for 1 month after the exposure. Symptoms suggestive of B virus infection should be reported immediately to the medical consultant. When the possibility of B virus illness is seriously entertained, appropriate diagnostic studies should be performed and specific antiviral therapy should be instituted. The physician may wish to consult the Viral Exanthems and Herpesvirus Branch, Division of Viral and Rickettsial Diseases, CDC (Dr. Scott Schmitt, (404) 639-0066 or cell 404-725-5652 or Terri Hyde (404) 639-2696, for laboratory assistance, the National B Virus Resource Center at GSU, (Dr. Julia Hilliard, (404) 651-0808).

(3) Outside Contractors in Non-human Primate Facilities

The above procedures also apply to the employees of private contractors.

1. Private contractors will provide their employees with the appropriate training and protective clothing to work in areas where macaque monkeys are housed or utilized for research. Animal Care Services and EH&S will serve as an additional resource if assistance in requested.

2. In the event of exposure the contractor’s employee will be referred to the UF Student Health Care Center or Shands Hospital Emergency Room for assistance as outlined above. The cost of emergency care, medicines, viral cultures and serology will be provided by the employee or his employer.

(4) Questions and Answers Regarding Monkey B Virus

Q. What is B-virus?

A. B-virus is a member of the herpes group of viruses that occurs naturally in macaque monkeys and possibly in Old World monkeys. Most have no obvious evidence of infection. Some may have ulcers in the mouth, on the face, lips, or genitals and or eye infections. These lesions spontaneously heal after a few days but the virus resides permanently in the monkey and may reactivate and cause ulcerative lesions periodically, not unlike "cold sores" in humans. During these periods, the virus is shed by the monkey in the environment. However, the virus may also be shed by monkeys without visible lesions or symptoms.

Q. How does transmission of the B-virus from monkeys to humans occur?

A. Transmission to humans occurs by exposure to contaminated monkey saliva, secretions, or tissues. The most likely routes of transmission are bites and scratches. There has been a single case report of person to person transmission.

Q. Who is a risk for infection with B-virus?

A. Those at risk include animal caretakers, laboratory personnel, or anyone who is exposed to monkeys or monkey tissues. Persons who are immunocompromised because of medication or underlying medical

conditions may be at higher risk for infection. The risk of acquiring B virus infections from macaques is probably very low. Thousands of persons have handled macaques since human infection with B-virus was first reported in 1932, yet only 40 cases of human infection have been described.

Q. Can there be serious complications from B-virus infection?

A. The CDC reports the death rate for B-virus infection before the availability of antiviral therapy was>70%. Neurologic sequelae are common in survivors. Treatment with antiviral medication may decrease the death rate, but rapid diagnosis and initiation of therapy are essential in controlling the spread of the virus in the central nervous system and limiting neurologic sequelae.

Q. How can I protect myself from infection?

A. Proper working practices markedly reduce the chances of infection. When working with non-human primates:

1. Be cautious at all times, remembering these are wild animals. They can and will bite and are capable of transmitting several diseases to humans including B-virus.

2. Wear appropriate protective clothing! These include thick leather gloves designed for primate handling, latex surgeon's gloves or disposable vinyl gloves for handling tissues and other primate specimens; face mask and visor, safety glasses or other eye protection; and clothing which covers the trunk, arms, legs, and feet.

3. Before attempting to handle monkeys, receive training in the proper and safe techniques of handling them and understand the nature and risks of B-virus infection.

4. Wash hands thoroughly after working with monkeys. Also, its advisable to take a shower.

5. Work together with at least one other person when handling primates. Minimize direct handling.

6. Report any observed facial, lip, or oral lesions primates to the staff veterinarian.

7. Report bite or scratch injuries involving a macaque monkey or scratches with cages or equipment that might be contaminated with their secretions IMMEDIATELY to your supervisor and to the University Infirmary or Shands Hospital Emergency room. FOLLOW THE PROCEDURES FOR WOUND CARE AS OUTLINED PREVIOUSLY IN THIS DOCUMENT!

Q. What are the signs and symptoms of B-virus infection in humans?

A. B-virus related disease is characterized by a variety of signs and symptoms which generally occur within one month of exposure- sure. These include:

1. Vesicular (small blister) skin lesions at or near the site of injury.

2. Localized neurologic symptoms such as pain, numbness, or itching near the wound site.
3. Flu-like aches and pains.
4. Fever and chills.
5. Headaches lasting more than 24 hours.
6. Fatigue.
7. Muscular incoordination, and/or
8. Shortness of breath.

If such symptoms occur following an injury involving a macaque or equipment contaminated with their secretions or tissues, IMMEDIATELY tell your supervisor and call the University Infirmary (392-1161) or Shands Emergency Room (395-0049).

Q. Since this is a virus infection are there any drugs which are effective in treatment?

A. Currently, Acyclovir is the mainstay for post-exposure prophylaxis and has been effective in interrupting the progression of the disease. It is crucially important, therefore, to seek EARLY treatment. Two other drugs, Valacyclovir and Famciclovir have been approved for the oral treatment of the virus.

For more information on Monkey B virus see www.cdc.gov/nicdod/diseases/bvirus.htm

For more information on zoonotic diseases (diseases spread from animals to humans) see http://www.cdc.gov/healthypets/resources/cdc_resources.htm

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