

## **What To Do If You Are Injured in FLSC**

1. Notify your supervisor and the Occupational Health Coordinator, Director or Associate Director of the FLSC (1-6085). This includes bite wounds and needlesticks.
2. Minor injuries can be treated at the University Health Services Outpatient Clinic (1-7497) for students. Staff and Faculty must report to the Wellness Center at 100 Wellness Center at the corner of Bulla and Wilson (634-9355)
3. Significant injuries or health-related issues can be treated at the St. Joseph Medical Center Emergency Room, 5215 Holy Cross Parkway, Mishawaka (335-5000).
4. If you are inadvertently exposed to hazardous chemicals, biological agents, or radioisotopes, call the Risk Management and Safety Office (1-5037) for advisement.

**First Aid Kits are located in rooms 419, 514 and 518.**

**Eyewash Stations are located in FLSC in rooms:**

**401, 402, 403, 404, 405, 411, 412, 420, 421, 455, 456, 461, 463, 464, 465, 467, 514, 518**

**Safety and Data Sheets can be found at the MSDS - Right to Know Stations on the walls in the corridors outside rooms 419 (employee break room) and 514 in FLSC.**

## **What To Do If You Are Injured in RCH**

1. Notify your supervisor and the Animal Facility Manager of the RCH, Laura Arriaga (1-5044), of all injuries. This includes bite wounds and needlesticks.
2. Minor injuries can be treated at the University Health Services Outpatient Clinic (1-7497) for students. Staff and Faculty must report to the Wellness Center at 100 Wellness Center at the corner of Bulla and Wilson (634-9355)
3. Significant injuries or health-related issues can be treated at the St. Joseph Medical Center Emergency Room 5215 Holy Cross Parkway, Mishawaka (335-5000).
4. If you are inadvertently exposed to hazardous chemicals, biological agents, or radioisotopes, call the Risk Management and Safety Office (1-5037) for advisement.

**First Aid Kit is located in RCH between rooms 013 and 015 on top of the key lock box.**

**Eyewash Stations are located in RCH in rooms: 012, 021, 023, 025, 028, 029, 031, 032, 033.**

**Safety and Data Sheets can be found at the MSDS - Right to Know Station on the wall in the corridor outside room 013 (Animal Facility Manager's Office).**

# **FLSC & RCH Regulations, Policies and Procedures for Investigator Safety and Hygiene**

## **Introduction**

Many hazards exist within a research facility. These include zoonotic disease, risk of thermal injury, chemical exposure, radioisotope exposure and ergonomic injury. The regulations, policies and procedures described in this document serve to decrease these risks to people and animals and create a safe work environment.

## **Regulations, Policies and Procedures**

1. All users of the facilities **MUST** complete online animal training prior to using the facility. Contact Valerie Schroeder at vschroed@nd.edu for your account login and password.
2. Absolutely no visitors are allowed in the facility without special permission from the FLSC Director or Associate Director. This includes wives, husbands, children, students, and visiting scholars. Scheduled tours are provided by FLSC/RCH staff members, upon request.
3. New Investigators and laboratory personnel are required to complete an orientation tour. This tour will demonstrate the proper traffic flow, PPE, animal census, equipment needs and safety procedures.
4. No smoking is allowed anywhere in the facilities. Eating, chewing gum or applying cosmetics is only allowed in designated areas (break room, locker room, offices). Drinking is not permitted in any animal rooms.
5. Enter only those animal rooms that are assigned to you - **NO OTHERS**. Rooms are to be kept locked when not in use. Do not enter a "Biohazard" area unless you have been properly trained to handle such animals and have been instructed to do so.
6. Under no circumstances should animals from one room be taken into another animal room without specific permission and proper instruction to do so.
7. All carts from research laboratories are to be left in the corridors and will not be wheeled into the animal rooms unless permission is obtained otherwise from the Management.
8. No vertebrate is to be disposed of in the trash receptacle. There is a freezer in the FLSC basement for animal carcasses. There is a freezer in the RCH hallway outside room 025 (clean side cage washing) for animal carcasses.
9. The following areas and equipment are **OFF LIMITS TO ALL NON-FLSC PERSONNEL**:  
FLSC & RCH break-room and locker-room Autoclave, feed coolers , Mechanical and Storage Area, Clothes washer and dryer, Rack and cage washers, Temperature and lighting settings (alterations made by FLSC & RCH staff).
10. The FLSC/RCH staff must be informed of any animal deaths on the orange cards provided in each room. All animal card information and counts are entered into a database. This information is important to understand and all personnel using animals must go through a facility tour. This information is explained in detail.
11. A Procedure Request Form must be filled out and left in room FLSC main office room 400 or RCH office room 013 before any animal procedure is scheduled. Forms are available in these areas. All procedures which require the veterinarian and/or the veterinary technicians must be scheduled in advance according to the Technical Assistance Policy (request by noon on Friday for the following week).
12. Sandals and bare feet are prohibited in the animal facility. Shoe covers are required in designated areas. Shoe covers are not a replacement for closed toe shoes! Shoe covers must be removed and discarded in the

appropriate receptacle when leaving the area. A clean smock or lab coat should be worn when working with animals.

13. Do not take any animal and/or dirty cages into the clean cage prep area.

**For FLSC-** return all soiled cages to the dirty side of cage wash (room 421) or on the designated cart outside the spray down/laundry area.

**For RCH-** return all soiled cages to the dirty side of cage wash (room 023).

Do not cut through the cage washing area. Do not go from the dirty side of cage washing into the clean side.

**For FLSC -** Clean cages may be obtained from the storage closet across from clean side of cage wash (room 420) or by requesting them from FLSC personnel.

**For RCH -** Clean cages may be obtained from the bedding room 026 across from procedure room 027 or by requesting them from RCH personnel.

Animals, dirty cage and/or equipment are not to be transported through locker room areas.

14. The FLSC offices are not to be used as a short cut into the facility. No animals or cages are allowed in any offices at FLSC or RCH.

15. Do not attempt any procedure or handle any species with which you are unfamiliar. Proper assistance and training is required.

16. Absolutely no arthropods are to be brought into the facility without special permission from the Director.

17. No noxious or hazardous chemicals are to be stored by non-FLSC or RCH personnel in the animal rooms or hoods.

18. No radioactive material is allowed into the FLSC or RCH without prior permission from the IACUC and the Departmental Radiation Safety Officer.

19. No animals are to be left unattended in the corridors of the Galvin Life Science Building, FLSC, Raclin-Carmichael Hall, Harper Hall, or Keck Center for Transgene Research. No animals for research or teaching are to leave the University of Notre Dame or Indiana University School of Medicine/RCH grounds without permission from the Management.

20. Anesthetized animals are not to be left unattended when there is a possibility of cannibalization or escape. An escaped animal is considered vermin and can be returned to FLSC or RCH facilities, only to be euthanized by a FLSC/RCH staff member.

21. All animal orders must be approved by the Management. All orders are placed by FLSC. There must be an approved, current protocol on file in FLSC for all animals to be ordered. No animals will be ordered without a current approved IACUC protocol. An Animal Request Form, signed by the P.I. is required.

22. Only animals from approved sources will be allowed into the facility unless permission is obtained from the veterinarian prior to ordering.

23. Animal space assignments will be made and may be changed at the discretion of the Management, as required, to best accommodate all investigators and to maintain animal health.

24. Questions or complaints should be directed to the FLSC Director or Associate Director.

25. General clean-up, including sinks, floor, counter tops and fume hoods, is the responsibility of those using the room.

26. Wash hands before and after handling any animals to aid in animal disease control. Gloves must be worn when handling animals. Gloves are provided in all rooms. While wearing gloves- avoid touching phones, pagers, door handles, your face, eyes, mouth and hair following animal contacts and prior to hand washing.
27. The exterior doors of the FLSC are emergency exits only. Alarms will sound if these doors are used. The exit door between 032 and 035 of the RCH animal facility is an emergency exit only. Alarms will sound if this door is used.
28. NIH Guidelines restrict the number of animals allowed in each size cage. Do not exceed these numbers. If you are not sure of the maximum number allowed per cage, ask. Always make sure that the number of animals in the cage matches the number on the cage card.
29. Do not leave the access card keys, access codes or animal room keys accessible to unauthorized personnel.
30. Please remember that we must accommodate the needs of all investigators as best we can. Requests for animal rooms, animals, and tech time are to be made by Victoria Western, Vicki Mack or Kay Stewart.
31. FLSC & RCH- Use of the Procedure Rooms requires reservations to be made ahead of time. The sign-up is through Google calendars at flsccharts@gmail.com password: rmcharts. Be prompt when using the room and limit your use to your scheduled time. Charts will be printed and posted on procedure room doors.
32. All live animals being transported from FLSC or RCH must be contained in an opaque transport container approved by management. The containers must have a lid to reduce allergen exposure. All containers must be disinfected between animals.

**Occupational Health Program  
For the University of Notre Dame's  
Institutional Animal Care and Use Committee and  
Freimann Life Science Center**

Health Issue Summary: Zoonotic Diseases

**Background**

Humans usually are not always susceptible to infectious diseases of animals. However, there are some important exceptions where infectious agents of animals can produce significant disease in humans. These infections are called **zoonotic diseases**. In many cases, the animals show little, if any, signs of disease. Therefore, one should always be aware of possible consequences when working with each type of animal and then take precautions to minimize the risk of infection. In the event that you become ill with a fever or some other sign of infection, it is important to let the physician caring for you know of the work you do with animals.

There are several easy, common-sense methods that can be taken to lessen the risk of infection with zoonotic agents. These include:

1. Always wear disposable gloves and particulate filter mask (or disposable/fitted respirator) when working with animals or animal tissues/fluids.
2. Always wash your hands with soap after handling animals or animal tissues/fluids.
3. When injecting animals with substances, use a two-person team - one individual to restrain the animal, and the other to safely inject the animal.
4. Discard needles and other sharp objects (including broken glass) into designated puncture-resistant "sharps" containers. **Do not recap needles**; rather, dispose of needles uncapped, directly into the sharps container or use a mechanical barrier system to prevent needle stick injuries.
5. For procedures such as necropsy, cage cleaning, and tissue and fluid sampling, use containment devices such as biological safety cabinets (when possible), face shields, particulate filter masks or disposable/fitted respirators, and other personal protective equipment as indicated by the situation.

Pregnant individuals may be at particular risk when working with animals or animal tissue/fluids. For example; *Toxoplasma gondii* is an infectious agent found primarily in cat feces. It can infect the unborn baby in women exposed during pregnancy. For this reason, cat feces should be avoided and gloves and mask worn when working in potentially infected areas. In addition, working with hazardous agents in general and toxic chemicals in particular is discouraged during the first trimester of pregnancy. The Occupational Health Program physician for Notre Dame at the Notre Dame Wellness Center can be contacted at (574) 634-WELL (9355).

**Species- Specific Zoonotic Concerns**

**Non-Human Primates**

Non-human primates pose a number of zoonotic risks. For example, the Tuberculosis bacterium may be transmitted both from animals to man and from man to animals. In all non-human primate colonies, regularly scheduled TB testing of the animals and the personnel must be done. Common human viruses such as measles and *Herpes simplex* may also pose particular risks for some non-human primates. *Cercopithicine Herpesvirus*

or “Herpes B”, is carried by Old World primates (especially macaques). It is the non-human primate virus of most concern to people who handle these animals. The virus is often carried asymptotically by monkeys, but some times ulcers on the tongue and lips can be seen. Humans are exposed through contact with the saliva, blood, urine, and possibly the feces of monkeys. Thus, anyone who is bitten or splashed with urine or other body fluids or experiences a puncture wound with an object that has been exposed to a monkey, is at risk. Initially, symptoms are flu-like, with muscle aches, fever, and lethargy being common. The disease progresses rapidly to an often-fatal encephalitis.

Non-human primates often carry gastrointestinal bacteria and parasites that pose a risk to man. For example, *Shigella*, *Campylobacter*, and *Salmonella* are bacteria that can cause dysentery in both non-human primates and man. Parasites such as *Entamoeba histolytica* can also be transferred to man and provide further reason for careful hand washing after exposure to primate feces.

Protective clothing such as outer garments, gloves, masks, and face shields must be worn when handling non-human primates. More detailed procedures are available from the Freimann Life Science Center office (1-6085).

### **Birds, Rabbits, Reptiles, and Amphibians**

Unusual research species also carry zoonotic risk. Birds have diseases such as psittacosis and avian tuberculosis which can be transmitted to man. Only birds which have undergone an appropriate quarantine should be used in research or teaching.

Rabbits pose few risks of infectious disease. Although some rabbits carry the bacteria, *Pasturella multocida*, the rabbits at FLSC are tested to be free of these bacteria. In addition, no human cases of Pasturellosis attributed to contact with rabbits have been documented. Those working with rabbits should be aware, however, of possible allergy to the dander of rabbits.

*Salmonella* is a bacterium that may be harbored in birds, reptiles and amphibians. In humans, infection may result in mild to severe, chronic diarrhea. For this reason, gloves should always be worn when handling animals and hands washed with an antiseptic soap after handling.

### **Fish and Aquatics**

There are no reported parasitic, viral or fungal zoonoses that are derived from aquatic species exclusively through handling. Bacteria are the primary causative agents for zoonoses. These agents include *Aeromonas*, *Vibrio*, *Edwardsiella*, *Escherichia*, *Salmonella*, and *Klebsiella* ssp. of gram-negative bacteria. Additionally, aquatic *Mycobacterium* ssp, *Streptococcus iniae*, and *Erysipelothrix rhusiopathiae* are gram-positive bacteria implicated as zoonotic agents. In all cases the primary route of infection is through puncture wounds and contamination of existing abrasions and cuts.

The severity of disease varies from localized wound swelling from *Aeromonas*, *Vibrio*, and granulomatous nodules from *Mycobacterium* ssp, and necrotic lesions from *Edwardsiella*, *Escherichia*, *Salmonella*, and *Klebsiella* ssp to systemic arthritis, endocarditis and meningitis from *Streptococcus iniae* and *Erysipelothrix rhusiopathiae*.

The most effective way to prevent infections is to minimize direct contact with fish and their water. Because it is likely that contact with the fish, water or both will occur during the course of the experiments, basic hygiene measures need to be taken. Wearing vinyl, latex, or nitrile gloves will reduce exposure of cuts and abrasions on the hands. Canvas or heavy gloves worn over water-proof gloves will protect against cuts from fins or spines. When contact occurs, thorough hand washing is essential. All wounds from fish should be reported and appropriate first aid administered. Gloves should always be worn when cleaning tanks and equipment. \*

## **Rodents**

Contact with rodents requires taking precautions against such diseases as Toxoplasmosis, tapeworm infection, Lymphocytic Choriomeningitis (LCM), and Salmonellosis. While most of the rodents used in the FLSC are purchased to be free of these pathogens, it is possible for infections to occur. Of course, wild rodents are at a much greater likelihood of carrying such agents, thus personnel participating in studies using wild-caught animals should be particularly diligent in taking precautions. As with other species, personnel should wear gloves and a particulate filter face mask or disposable/fitted respirator when handling these animals or their tissues. In addition, personnel should thoroughly wash their hands with an antiseptic soap after handling animals.

Risk of bite wounds, and to a lesser extent scratch wounds, exists when handling rodents. Such wounds should be thoroughly washed with an antiseptic soap. Signs of infection such as redness, swelling, and warmth of the wound site, or discharge from the site should be reported to the employee's supervisor and to a physician if noted. Typically such signs might be seen within 24-72 hours after the injury. With some rodents, particularly rats, bite wounds may become infected with either *Streptobacillus moniformis* or *Spirillum minus*, bacteria which may cause "rat bite fever" in man. This disease is characterized by fever, headache, nausea, joint pain, and an erythematous rash on the hands and feet. Severe cases may progress to enlargement of the lymph nodes and endocarditis. The disease can be effectively treated with penicillin under the oversight of a physician.

## **Summary**

A number of zoonotic agents are associated with species used at the FLSC. For this reason, personnel working directly with such animals or with tissues or fluids derived from them should take the precautions described above.

For further information, personnel may contact the Director or Associate Director of FLSC at 1-6085 or the Occupational Health Program physician for UND at (574) 634-WELL (9355).

\* Lowry, T., Smith, S.A. Aquatic zoonoses associated with food, bait, ornamental, and tropical fish, JAVMA, Vol 231, No.6, pp876-880

**Occupational Health Program  
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**Health Issue Summary: Miscellaneous Hazards**

**Background**

When thinking of occupational health issues that affect users of animals and their tissues, one typically considers those of an infectious nature or those related to allergic reactions. Yet, animal facilities and the types of procedures generally conducted may expose personnel to additional risks that need to be addressed. These risks include those related to chemical, radiological, and physical hazards.

**Radiological Hazards**

Studies involving the use of radioisotopes in animals are sometimes conducted at the FLSC. Under such circumstances, studies must be carried out, and materials handled in accordance with the requirements of the Nuclear Regulatory Commission (NRC). For example, specific procedures should be developed for administration of radioisotopes to animals, housing of animals, and disposal of wastes. Any such use of animals may be conducted only after approval from the Risk Management and Safety office (1-5037).

**Chemical Hazards**

Studies involving hazardous chemicals are sometimes conducted in animals in FLSC. It is important that all involved, including the principal investigator, laboratory personnel and FLSC staff are all aware of the hazardous agent being used and procedures to safely work with the chemical, the exposed animals, and animal wastes. The principal investigator should contact the Risk Management and Safety office (1-5037) and FLSC (1-6085) to develop appropriate handling procedures. Once procedures have been developed, all personnel with potential exposure to the chemical, the exposed animals and their wastes should be provided this specific information.

Animal facilities such as the FLSC also generally have additional chemical hazards associated with disinfection procedures. Many of the chemicals used in disinfection of cages are toxic and/or irritating. Personnel handling these agents should wear goggles or safety glasses with a full face shield, nitrile or neoprene gloves, and a lab coat/garment which covers the arms or a rubberized apron. Contact with disinfectant chemicals may result in chemical burns or hypersensitivity reactions. Affected individuals should contact their supervisor and consult the SDS (located in the FLSC hallway next to the employee break room, in the basement hall near room 514, or in RCH next to room 013 in the hallway), for specific recommendations to effectively deal with the exposure.

## Physical Hazards

Work within a typical animal facility exposes personnel to various types of physical hazard risks. These hazards with the appropriate protective steps include:

1. Thermal hazards - High temperatures are generated by equipment including cage washers, autoclaves, and glass-bead sterilizers for surgical instruments. When near such equipment, personnel should take precautions to avoid direct contact with heated materials. For example, insulated gloves should be worn when removing items from the autoclave. The use of liquid nitrogen or dry ice can be a potential thermal hazard as well. The use of insulated cryogloves is recommended. Individuals suffering a thermal burn should contact their supervisor and the FLSC Technical Services and Training Coordinator (1-6087) for appropriate action.
2. Sharps hazard - Risk of puncture injury exists from a variety of objects, including broken glass, scalpel blades, hypodermic needles and glass Pasteur pipettes. To minimize this risk, sharp objects should be disposed of into designated puncture-resistant containers. **Do not recap needles**; rather, dispose of needles uncapped directly into the sharps container or use a mechanical barrier system to prevent needle stick injuries. Needle stick injuries are an OSHA reportable event and **MUST** be reported to your supervisor and the FLSC Technical Services and Training Coordinator (1-6087) for appropriate action.
3. Ergonomic hazards - Ergonomic hazards exist such as those from injuries incurred during lifting or from repetitive motions. Individuals desiring aid devices to help reduce the risk of such injuries, such as back braces or wrist braces, should contact the FLSC office (1-6085) or the Risk Management and Safety office (1-5037).
4. Auditory hazards - Significant noise is generated by certain equipment within the typical animal facility. For example, the operation of cage washers generates noise levels which could be injurious. For this reason, individuals should wear hearing protection when exposed to this equipment. Ear plugs are available in the west-side (clean) cage wash area.

## Summary

A number of significant risks exist within animal facilities such as FLSC. Simple precaution to minimize the risk should be taken by personnel. In all cases, if questions or concerns arise, personnel should contact the Director or Associate Director of FLSC (1-6085) or the Risk Management and Safety office (1-5037).