

BioSide Lines

July 2003

The Newsletter of the UW-Madison, Safety Department, Office of Biological Safety
www.fpm.wisc.edu/biosafety

Reminder From The Occupational Health Program

One of the responsibilities of the Occupational Health Program (OHP) is to assist the campus in complying with federal Occupational Safety and Health Administration (OSHA) regulations, especially when there is a medical component. This applies to the Bloodborne Pathogen Standard (29 CFR 1910.1030) and the Respirator Protection Standard (29 CFR 1910.134).

Bloodborne Pathogen training needs to occur annually for those persons identified with a reasonable expectation of exposure to blood or other potentially infectious material. This training is normally provided by the supervisor or principal investigator. OSHA requires documentation of the annual training be kept for three years. There are specific content topics OSHA requires in the training, including information on the availability of hepatitis B vaccine at no charge. A Bloodborne Pathogen training manual is available to assist with this requirement.

Another acceptable compliance option for the person needing training is to review the Bloodborne Pathogen tutorial at the Occupational Health website. The last page of the tutorial (after a quiz) is a Bloodborne Pathogen Training Checklist. This page needs to be printed off and completed jointly by the supervisor or PI and the person completing the training. After completing, both people sign and date the checklist. This becomes the documentation required by OSHA. Once again, you need to retain this documentation for three years. To access the website go to www.fpm.wisc.edu/safety and click on the occupational health icon. This will lead you to the Bloodborne Pathogen training section.

Personnel who require a respirator for protection against airborne particulates or microbes must complete a medical evaluation before respirator fit testing or training can take place. This medical clearance begins with completion of a special medical screening questionnaire (the questions in this questionnaire come directly from the OSHA standard). A copy of this questionnaire can be downloaded from the Safety Department website, www.fpm.wisc.edu/safety. Click on the general safety icon. This will lead you to a menu that includes respirator protection.

This medical screening questionnaire includes questions seeking personal health information. When this questionnaire is completed it should be placed in a sealed envelope to protect individual confidentiality and sent by campus mail to: Tom Kenney RN, Occupational Health Officer, Safety Department, 30 N. Murray St. A medical professional will review the questionnaire. Typically, the medical clearance will be provided immediately, but in some instances, more information or a physical exam may be required. The Occupational Health Program will keep the supervisor or PI informed of the status of their employees' clearance to wear a respirator while protecting each individual's privacy.

For more information on these or any other occupational health topic, or to request a Bloodborne Pathogen training manual, contact Tom Kenney RN at kenney@fpm.wisc.edu, or telephone 263-2177.

In vivo* and *in vitro* Use of Chemicals that are Potential Health Hazards

A question that we are frequently asked is, "Why are we concerned about the hazards posed by drugs that are routinely prescribed? The drug has been through Clinical Trials to ensure that is safe. So, what are you concerned about?"

Prescription drugs can pose a hazard to humans for whom they are not prescribed. Clinical trials demonstrate whether or not a chemical has an acceptable toxicity profile and is effective under specific circumstances, which assumes treatment of a disease. Here's a real life example with obvious significant consequences: A laboratory worker was accidentally exposed to oxytocin when she was 8 months pregnant. The contraindications that accompany drugs may significantly shift the risk/benefit balance for a person with no history of that disease.

Human subjects enrolled in clinical trials of experimental drugs are always given a detailed description of the potential risks posed by the treatment and they agree to accept those risks. Laboratory and animal care staff must also be informed of potential risks from exposure to drugs and other chemicals. This "Hazard Communication" is critical because it allows fully informed individuals to take the precautions determined to be appropriate to bring any potential risks to an acceptable level. Each person who is either directly involved in or who may be indirectly exposed to your research materials has a right to be informed of the hazards to which they may be exposed.

*"A chemical is called a health hazard if there is statistically significant evidence based on at least one study that indicates that acute or chronic health effects may occur in exposed employees. Toxic chemicals used in labs can be of many types: allergens and sensitizers, irritants, corrosives, asphyxiants, anesthetics, hepatotoxic agents, nephrotoxic agents, neurotoxic agents, agents which affect the hematopoietic system, fibrosis-producing dusts, carcinogens, mutagens or teratogens." (UW-Chemical Safety and Disposal Guide)

The biosafety protocol can serve as a tool to organize and document your Standard Operating Procedures for handling hazardous materials safely. It also can be used for training staff about the risks and mitigating measures to be used for personal protection. The protocol further provides the Office of Biological Safety a means to ascertain that the hazards are recognized and that appropriate precautions are taken to reduce the risks to an acceptable level.

When filling out a Biosafety Protocol (Biological Materials and Recombinant DNA Protocol), you will come upon section IV.E. Chemicals Administered to Vertebrates, Invertebrates, Plants or OTCC (organ, tissue, and cell cultures). This is where you list the chemicals used in the research project to elicit a biological outcome.

In Section V.C you are asked to describe the precautions that you recommend for safe handling and disposal of these chemicals. It is important that you present the conclusion of your risk assessment for work with chemicals that are potential health hazards, even if it indicates that the risks are negligible and no special precautions are needed.

When completing section V.C of the Biosafety Protocol, you should consider all potentially involved/exposed groups, including but not limited to the research staff who make up the working solutions and the staff who will care for the animals and clean their cages. A fair amount of detail should be provided about the chemicals administered to animals. The method of administration of the chemicals to animals profoundly affects the risk assessment. If you indicate that a mask (respirator) is recommended, also indicate the type of mask and the procedures for which it is used. We forward information about recommended precautions to the animal care supervisors.

The Principal Investigator and/or the laboratory supervisor is responsible for understanding the hazards and exposure risks for the chemicals that are used, and for informing research staff and others. The Chemical Safety and Disposal Guide has a wealth of useful information. It should be readily available in every lab. Call 262-8769 to request a copy. The Chemical and Radiation Protection Program (265-5518) can help provide information on chemical hazards, handling, and disposal.

Information about specific chemicals can be found in Material Safety Data Sheets (MSDS), but that information may be marginally applicable to the research environment. An MSDS will not, for example, tell you whether animals will directly excrete a chemical or whether metabolites could pose a hazard, which is especially important for chemicals that are a health hazard at low concentrations, such as known or suspected carcinogens, mutagens, and teratogens. Bedding, excreta, and the cages themselves may need special handling. Relevant information may also be found in the literature. The National Toxicology Program's website (<http://ntp-server.niehs.nih.gov/>) and the National Library of Medicine ToxNet (<http://toxnet.nlm.nih.gov/>) are excellent resources. Staff at OBS may be able to direct you to others on campus who have relevant expertise.

Your research project and its risks do not end at the doorway of your laboratory. Each person who works with hazardous materials is responsible for ensuring that work is conducted in a safe manner and for informing other potentially affected persons about the hazards.

Basic Biosafety Class Offered

This class will give an overview of basic biological safety. Topics include: biosafety levels and biohazard containment, good microbiological techniques, waste disposal, risk assessment, and emergency preparedness. It is intended primarily for students and staff who are new to this institution and/or new to working with biological materials in a laboratory. Everyone is welcome to attend.

**Thursday, July 17, 2003, or
Wednesday, September 17, 2003
Union South 1:30 – 3:30 p.m.**

Registration is required. Contact Margy Lambert at 3-9013 or mlambert@fpm.wisc.edu.

Shipping Infectious Substances and Other Biological Materials

The Office of Biological Safety will provide training and certification for shipping infectious substances and other biological materials, with a focus on safety and regulatory compliance for research laboratories. The Department of Transportation requires that persons involved in shipping hazardous materials in commerce be trained and certified in proper handling of these materials.

**Thursday, July 10, 2003
Union South 1:30 to 3:30 p.m.
Refreshments will be served.**

Registration is required. Contact Margy Lambert at 3-9013 or mlambert@fpm.wisc.edu.

All staff are welcome to attend this class for initial or re-certification. Staff approaching their two-year expiration for certification will receive a notice in advance of that date. Computer-based training is available only for those who attended the class for their initial certification.

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