Case Department of Occupational and Environmental Safety

"SAFETY COMES FIRST"

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In this issue:

Swine Flu: What It Means for You—Sensible Reminders amidst Media Hype

We all know popular media serve an important purpose during times of infectious disease outbreaks. Because of important alerts transmitted through news agencies like the Associated Press, the general population is able to quickly absorb important facts about the disease and take appropriate preventative actions. And the media greatly assist health agencies like the World Health Organization (WHO) and the Centers for Disease Control (CDC) to more effectively communicate the message of caution. However, some of the side-effects of a media blitz can be confusion, misinformation, and even panic. In an attempt to "weed through" these potential side-effects of media hype, in this article DOES provides the essentials of what Swine Flu is and what it means to you.

According to the CDC, Swine Flu (a.k.a., H1N1 influenza 2009) is an strain of influenza "referred to as 'Swine Flu' because laboratory testing showed that many of the genes in this new virus were very similar to influenza viruses that normally occur in pigs in North America." Similar to other strains of influenza, H1N1 2009 is highly contagious. It is spread mainly from person to person through coughing or sneezing by people with influenza. Sometimes people may become infected by touching something with flu viruses on it and then touching their mouth or nose.

*Symptoms of **H1N1 2009** include (*but are not limited to*) the following*:

- Fever
- Cough
- Sore throat

(continued on page 2)

Swine Flu: What It Means for You—Sensible Reminders amidst Media Hype (con. from front page)

- Body aches
- Headache
- Nausea
- Vomiting
- Diarrhea

****You should call or go to the doctor **IF** you or someone you know has these swine flu symptoms.*

****If you are a student, you should contact your health care provider to determine proper treatment options or contact the University Health Service at 216-368-4539 or 216-368-6150.*

How is H1N1 2009 treated?

The new H1N1 2009 virus is sensitive to the antiviral drugs Tamiflu and Relenza. The CDC recommends those drugs to prevent or treat H1N1 2009; the drugs are most effective when taken within 48 hours of the start of flu symptoms. But not everyone needs those drugs; many of the first people in the U.S. with lab-confirmed H1N1 2009 recovered without treatment. The Department of Homeland Security has released 25% of its stockpile of Tamiflu and Relenza to states. Health officials have asked people not to hoard Tamiflu or Relenza.

Is there a vaccine against the new H1N1 2009 virus?

No. But the CDC and the World Health Organization are already taking the first steps toward making such a vaccine. That's a lengthy process—it takes months.

I had a flu vaccine this season. Am I protected against H1N1 2009?

No. This season's flu vaccine wasn't made with the flu virus in mind; no one saw this virus coming ahead of time.

If you were vaccinated against flu last fall or winter, that vaccination will go a long way toward protecting you against certain human flu virus strains. But the new H1N1 2009 virus is a whole other problem.

To minimize the risk of infection, we strongly recommended that you and others around you adhere to the following simple guidelines:

1. Wash your hands frequently with soap and warm water not alcohol-based cleaners. Alcohol-based cleaners are for temporary use only until you ...

(continued on page 6)

"To protect against H1N1 influenza, wash your hands frequently with soap and warm water not alcohol-based cleaners."

Putting Trash in Its Place: Some Key Reminders for Proper Laboratory Waste Disposal

One person's garbage is another person's treasure, so the saying goes. As we all know, however, some trash is potentially dangerous when disposed of improperly. While everyday, commonplace trash such as paper and beverage containers presents few logistic problems for disposal, "sharps," or anything that can puncture a person's body, can present obvious hazards. Moreover, many common chemicals and electrical devices have multiple toxins in them that must be disposed of properly. Here at Case Western Reserve University, there are specific guidelines in place to ensure the appropriate disposal of these potentially dangerous materials. Below are some of the key factors to remember before you decide to dispose of any refuse from your laboratory:

1) There are many items that cannot be disposed of in the trash. The following items SHOULD NEVER be thrown into the trash bins:

- Oil-based paints*
- Mineral spirits (paint thinners)*
- Latex paints*
- Fluorescent lamps/incandescent lamps*
- Ballasts (electronic and PCB)*
- Electronics (e-waste)*
- Batteries*
- Sharps (see extended instructions regarding these below)
- Oil
- Chemicals
- Pesticides
- Aerosol Cans
- Thermometers/Mercury thermostat switches/mercury switches

*Items that can be recycled through Plant Services.

2) Make sure all refuse is disposed according to its proper designation in the color-coded trash disposal system. For example, it should be separated as Biohazardous or Infectious Wastes, Sharps, Uncontaminated Lab Waste, Chemical Waste, Radioactive Waste, and ordinary trash.

3) Anything that is a "sharp," such as broken glass, is capable of causing puncture wounds or cuts and thus should NOT be placed in the soft waste containers. *Biohazardous sharps*, i.e., discarded hypodermic needles, syringes, scalpel blades,

(continued on page 4)

"Many common chemicals and electrical devices have multiple toxins in them that must be disposed of properly."

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"All computers and most electronic equipment (lamps, etc.) contain a variety of toxic materials including lead, cadmium, and mercury."

(continued from page 3)...cannulas, coverslips, microscope slides, all pipettes (glass or plastic) and pipette tips, test tubes, glass Petri dishes, and other materials designed for use in biological, etiological, bacteriological, should also not be placed in the soft waste containers.

4) Any item(s) that can puncture the soft waste containers but is not considered a sharp (so-called "pseudosharps") should NOT be placed in the soft waste bags (This includes disposal auto pipette tips).

5) Custodial Services, as well as our two custodial contractors, WILL NOT PICK UP TRASH VIOLATING THESE FIRST TWO RULES. Custodial Services is being told not to touch bags or trash receptacles containing inappropriate trash.

6) In the case that these two rules are violated, the trash will remain at the offending laboratory and the Custodial Supervisor, Protective Services, and DOES will be notified. The problem will then be brought to the attention of the laboratory supervisor.

7) One of our most pressing concerns is the growing amount of electronic waste. All computers and most electronic equipment (lamps, etc.) contain a variety of toxic materials including lead, cadmium, and mercury. A lamp can contain from .06mg or more mercury depending upon its type. Moreover, the average computer may contain up to eight pounds of lead! When possible, recycle all computers. Do not place them with regular trash.

8) Fluorescent Bulbs: All fluorescent bulbs contain a small amount of mercury and lead; therefore, fluorescent bulbs should not be thrown in the ordinary trash. When plant services comes to replace the bulbs, they will pick up the used bulb. If a bulb has already broken, exercise some caution when cleaning it up (use gloves). Place the shards in an air tight container and notify DOES (368-2907). If Plant Services will not accept a lamp, then treat it as a chemical waste and follow chemical waste protocols.

9) Do not throw your trash from home in the dumpsters.

10) Solid waste can be discarded in the standard trash bins, if it is not judged to be "laboratory waste."

If you have any additional questions or concerns about proper waste disposal that are not addressed in this article, please contact DOES directly at x 2906 or visit us in the Service Building on the 1st floor.

Laboratory Safety—Electrical Equipment Safety Reminders

In our daily routines, we sometimes take our electrical equipment and the danger that electricity presents for granted. However, out of sight is not out of mind when it comes to the danger that seemingly "innocuous" electrical equipment can present if we take a lax approach to safety in the laboratory. In order to minimize the possibility of an incident with electrical equipment, please note the following precautions:

a. **ALL** electrical connections should be grounded.

b. Service cords for electrical equipment should be in good condition. Qualified personnel should repair frayed cords or exposed wires.

c. Avoid overloading circuits. Do not use multiple outlet plugs for additional connections.

d. **DO NOT** handle any electrical connections with wet hands or when standing in or near water.

e. **DO NOT** use electric equipment, such as mixers or hot plates, around flammable chemicals.

f. Do not try to repair equipment yourself unless you are qualified and fully understand the repairs required. Qualified personnel should do all repairs.

g. **NEVER** try to bypass any safety device on a piece of electric equipment.

h. In case of a fire on or near any electrical equipment, turn the equipment off if it can be done safely.

Accident prevention must be included in the performance of every task. It cannot be considered a separate entity but is an integral part of everyone's work. Safety is made possible by careful planning of all work based on an understanding of the hazards involved and a knowledge of the work area and safe working procedures. Accident prevention pays in the injuries it prevents, the research time it saves, and the healthy attitude it creates. Please keep these considerations in mind as the pertain to electrical equipment in the laboratory. If you have any questions regarding the safe use of electrical equipment in the lab, consult the DOES Laboratory Safety Manual online at <http://case.edu/finadmin/does/web/Forms/PDFdocs/ChemMan.PDF> or call DOES directly at ext. 2907 for clarification.

"DO NOT use electric equipment, such as mixers or hot plates, around flammable chemicals."

Swine Flu: What It Means for You—Sensible Reminders amidst Media Hype (con. from page 2)

Alcohol-based cleaners are for temporary use only until you are able to wash with soap and water.

2. Cover your mouth and nose with your arm as opposed to your hand when you cough or sneeze. Coughing and/or sneezing in your hand spreads germs since most people tend to shake hands or touch things frequently.

3. Please encourage those that are sick to stay at home so as not to spread the germ to others. Coming to work sick will spread the germ quicker.

As this newsletter goes to press, only a few US citizens have died from H1N1 2009. For comparison, the CDC notes that between 30,000 and 40,000 people die in the US each year from influenza. THIS DOES NOT MEAN THAT H1N1 SHOULD BE TAKEN LIGHTLY. However, perspective is necessary. Following the guidelines provided in this article will minimize infection risk.

The University's Response

It is important to note that CWRU has been exercising a plan for a possible influenza pandemic for some time and has many special communications, training, and administrative responses already in place. Furthermore, the Influenza and Emerging Diseases Task Force Committee that includes the front line of service (i.e., administrative and academic response leaders) has been meeting on a frequent basis to ensure all response elements are in place since the emergence of the H1N1 2009 as a possible pandemic threat.

At this time, the H1N1 epidemic has progressed to the point that it is likely that symptomatic individuals could have acquired the infection from a variety of contacts within the United States. Therefore, connection with H1N1 2009 origin in Mexico is becoming rapidly less relevant. Moreover, this strain of H1N1 is likely to arise again during the coming flu season in late fall and could present with different infective virulence and antibiotic sensitivity properties at that time. Therefore, it will be important for everyone to take advantage of all available protective measures as the fall approaches.

For more details on the University's response to H1N1 2009, please go to <http://www.case.edu/news/flu/faqs/swinefaq.html>.

Your best defense against H1N1 2009 is to be proactive and responsible. Again, you can do this best by following the sensible precautions outlined in this article. Be safe!!!

Sources: Centers for Disease Control and Prevention (http://www.cdc.gov/)
World Health Organization (WHO) (http://www.who.int/en/)

From the Fireplace Hearth to the Laboratory Fume Hood: A Short History and a Few Reminders of Safety and Energy Conservation

Long ago, alchemists conducted experiments in the fireplace hearth to avoid being overcome by heat, smoke and foul smelling vapors. Today, we use a state-of-the-art fume hood which comes in traditional and low flow varieties. The traditional types include the conventional, bypass and auxiliary air hoods which differ in how the air enters the hood with a face velocity between 80 to 100 feet per minute (fpm). The low flow variety is basically just that, a fume hood with face velocities between 60 to 80 fpm.

The systems that control the air flow have progressed from the heat generated convection draw of the chimney to the air handler or fan that pulls the air through the hoods and conditions the air. We have controls that can keep the exhaust volume of the hood constant by varying the face velocity as sash positions changes known as Controlled Air Volume. There are also the newer Variable Air Volume controls that keep the face velocity of the hood constant by varying the exhaust volume of the hood using valves and baffles.

Warning systems have come a long way from the of the alchemist to the rather sophisticated, albeit annoying, alarm of the hood monitor. Now there are a plethora of air flow monitors that trigger an alarm when the air flow falls outside a safe range. The monitors and motion sensors indicate the flow into the hood in response to sash position or operator presence.

Overall, the hood designs and control systems aim to balance hood containment capability with energy efficiency. Unfortunately, many times these two requirements are at odds. Recent data from several university studies aimed at determining just how much it costs to operate a fume hood resulted in figures that surprised many people. It was estimated that it costs about $4000 per year to run a standard six foot hood at 100 fpm or as much energy used by 3.5 average sized homes per year. However, these estimates were calculated in 2006-2007 before the increase in oil prices.

It is also important to note that the cost of the hoods that are controlled by VAV systems can be reduced by at least 60% or $2400/yr, ***just by closing the sash***. That's good news and a lot of savings. It is also true for any hood and or hood system that closing the sash will increase safety 100%. In summary, **closing the sash is a win-win proposition.**

All the above fume hood designs and systems have their particular Achilles heel, but the traditional hoods with a higher face velocity can be somewhat forgiving if the sash is above design limit for a limited time. The low flow hoods are not so forgiving even with the most recent improvements and fail...

(continued on page 8)

From the Fireplace Hearth to the Laboratory Fume Hood: A Short History and a Few Reminders of Safety and Energy Conservation (con. from page 7)

(continued from page 7) ...containment because they are more vulnerable to traffic in front of the hood, placement of items in the hood, the number of hoods in the room and sash position.

Our annual laboratory inspections suggest that the use of the hoods on campus can be improved by remembering the following "Keepsafes:"

Keep the hood surface free of stored chemicals and paper towels/chemwipes
Keep instruments 2" above the hood surface to allow air flow under the item
Keep work 6" behind the sash and do not let items block sash closure
Keep items from blocking the back baffles
Keep the sash lower than the current certification tag when working in the hood
Keep the sash closed when not working in front of the hood
Keep Safety informed when the hood monitor in is alarm—Call 368-2907 immediately

Following these simple "Keepsafes" will greatly improve fume hood safety and efficiency. If you have any questions on fume hood use in general, please call DOES at 368-2907.

Where is DOES?

If you're new to Case (or simply haven't been to visit us yet), we are located in the Service Building on the 1st floor just off Circle Drive between the Health Sciences Library to the east and the Powerhouse Building to the west. For clarity, call x2906/2907 or check our website (http://does.case.edu.) for an interactive map before your visit. Keep in mind that much of the information and services (e.g., Safety Services manuals and forms, upcoming training sessions, online training sessions, past newsletters, etc.) that DOES provides can be found conveniently online at (http://does.case.edu) at any time.

*Upcoming Training Sessions**

IMPORTANT NOTE: While all laboratories must attend training at DOES, labs must hold specific training in the CHP and ECP as it pertains to the actual work they do. Labs will also need an outline of the CHP and ECP training and a sign in sheet to accompany. Store the sign-in sheet and outline with the CHP and ECP. IT will be asked for during lab inspections.

*Upcoming Training Sessions**

New Hazard Communication (Right-to-Know) Training
Retraining is required annually.
DOES Small Meeting Room - Service Building 1st Floor
PREREGISTRATION IS REQUIRED! - Please call 368-2907

New Radiation Safety Training
Retraining is required annually.
DOES conference room - Service Building 1st Floor
PREREGISTRATION IS *REQUIRED* ! - Please call 368-2906

New Laser Safety Training
Retraining is required annually.
DOES conference room - Service Building 1st Floor
PREREGISTRATION IS *REQUIRED* ! - Please call 368-2906

FOR THE FOLLOWING CLASSES:

Laboratory Safety Retraining
Regulated Chemical Retraining
Hazard Communication (Right-to-Know) Retraining
Bloodborne Pathogen Retraining
Radiation Safety Retraining
Laser Safety Retraining
Respirator Safety Retraining

Please retrain on the Internet at <http://does.case.edu> and click on Training.
Print test and fax or mail it to the DOES office.
If your training is more that one year overdue, then you must attend
the training class in person and cannot retrain online.

FOR THE FOLLOWING CLASSES:

New Laboratory Safety Training
New Regulated Chemical Training (Formaldehyde, Benzene, Methylene Chloride, Vinyl Chloride, etc.)
New Bloodborne Pathogen Training
New Respirator Safety Training
New BSL-3 Safety Training

Retraining is required annually.
DOES Conference Room - Service Building 1st Floor
PREREGISTRATION IS REQUIRED! - Please call 368-2907

***As always, consult our website (http://does.case.edu) for a full schedule of training sessions**

(continued on page 10)

Please remember that our updated DOES website provides many resources to meet your safety needs. The DOES website (http://does.case.edu/) includes all of the following resources:

- Safety Services Manuals and Forms
- Archived DOES Newsletters
- Training Class Schedules
- Staff Information
- MSDS
- Important Safety Links
- Our Mission Statement
- Contact Information

If you have any questions about our web-site, please feel free to contact us at ext. 2906/2907

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