

Standard Operating Procedure Spill Control Procedures			
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1.0 POLICY

The W. J. Henderson Centre for Patient Oriented Research (WJHCPOR) is responsible for protecting users, research participants, volunteers, visitors, Kingston Health Sciences Centre (KHSC) employees, and KHSC's equipment and facilities from hazardous spills. The WJHCPOR will provide a fast and safe means of containment and clean-up of hazardous spills.

2.0 PURPOSE

In the event of a spill, competent, prompt action is necessary for immediate clean-up to reduce and eliminate the hazards present.

3.0 PROCEDURE

User is responsible for:

- Cleaning up of all minor spills. KHSC's Environmental Services may act in a supportive role by either assisting in containing a spill or cleaning the area after the initial cleanup process has been completed. If the spill exceeds the scope of the user's experience, training, or willingness to respond, the user must notify **immediately** their manager/supervisor and the designated KGHRI staff member who will assist.
- Ensuring proper incident reporting procedures are followed in the event of a spill.
 - For Minor Spills (less than 4 Litres), users **MUST** complete a **Spill Incident Report Form** that is available in the binder on the shelf above the centrifuges. Completed forms must be submitted to the designated KGHRI staff member within twenty-four (24) hours of the spill.

- For Major Spills (more than 4 Litres) report **immediately** to their supervisor/manager, the designated KGHRI staff member, and the appropriate institutional occupational health, safety and wellness department. KHSC employees need to complete a KHSC Employee Incident Report through the online Safe Reporting tool for workplace incidents. Queen's University Faculty, employees, students and trainees need to complete a Queen's Incident Report located on Queen's Environmental Health & Safety website.

KGHRI is responsible for:

- Providing orientation and training to all users of the WJHCPOR related to proper handling of spills.
- Ensuring that users of the WJHCPOR are familiar with the materials used and stored in the WJHCPOR and the spill procedures to be used in the event of an incident.
- Ensuring that sufficient quantities and appropriate types of spill control materials, as prescribed in the MSDS, are available to contain and clean up a minor spill.
- Ensuring that Biohazard Spill Kits are readily available for all users of the WJHCPOR.
- Ensuring that spill control materials are located in a readily accessible location, close to the area where hazardous materials are handled.
- Ensuring that any required PPE is readily available for users of the WJHCPOR.
- Ensuring that all spills are safely and effectively cleaned up. This includes situations which involve the assistance of users of the WJHCPOR.
- Recording information regarding any spills and ensuring all major spill incidents (over 4 Litres) are reported to the appropriate institutional occupational health, safety and wellness department.
- Investigating the causes of minor and major spills and ensuring appropriate follow-up is conducted.

Decontamination of Minor Spills (less than 4 Litres)

Clean-up

- Communicate to others working in the area that there is a spill. Post Biohazard Spill Signs on the glass window of the Research Centrifuge Room door or Research Freezer Room door until the spill is cleaned up. The Biohazard Spill Signs are located in the cupboard under the dirty sink beside the lab fridge in the Research Centrifuge Room.
- Use appropriate personal protective equipment (PPE): laboratory coat, gloves, face shield or goggles, etc.

- Bring the Biohazard Spill Kit to the site of the spill.
- Cover spill with paper towels to avoid splashing during the addition of disinfectant. Pour disinfectant (Oxivir® solution) over the paper towels and immediate surrounding area.
- Apply Oxivir® solution beginning at the outer margin of the spill working toward the center.
- Let stand 30 minutes.
- If there is broken glass or other sharps involved, use a dustpan or a piece of stiff cardboard to collect the material and deposit into a puncture resistant container for disposal. Glass fragments should be handled with forceps. Dustpans should be autoclaved or placed in an effective disinfectant.
- Discard paper towel and spill material in appropriate leak proof yellow-coloured biohazardous waste bin/container.
- Decontaminate surface with Oxivir® solution.

Decontamination of Major Spills (greater than 4 Litres)

- Secure the area. Hold your breath and leave the spill area immediately closing the door behind you.
- Call 4444 to initiate **CODE BROWN** and give a detailed description of the location (wing and room number) and type of spill to the switchboard operator. Immediately notify the designated KGHRI staff member of the major spill. The switchboard operator will call KHSC's Maintenance Department and KHSC's Protection Services who will need to turn up/off/down ventilation systems and arrive the area. Let the switchboard operator and KHSC's Maintenance Department know if there is a particular aerosol hazard.
- Allow 10 to 30 minutes for potential aerosol to settle (if aerosols are expected) before you enter back into the room.

Clean-up

- The user of WJHCPOR and the designated KGHRI staff member are responsible for ensuring that any major spill is safely and effectively cleaned up with the assistance of KHSC's Maintenance, Protection Services and Environmental Services departments. If the spill exceeds the scope of the user's or KGHRI staff member's experience, KHSC's Maintenance, Protection Services and Environmental Services departments will assist with providing internal/external expertise and/or resources.

- The user of WJHCPOR and the designated KGHRI staff member are responsible for ensuring that information about the material/biospecimen spilled is available for those involved in the clean-up to ensure proper classification, appropriate equipment is available, necessary precautions are taken, appropriate expertise is available to assist and internal/external resources are requested, if needed.

Spill inside a Biological Safety Cabinet (BSC)

- The size of the spill is determined by how far it spreads, and less by its volume. When a small spill occurs inside a BSC, the user is not considered contaminated unless a splash or spillage has escaped the BSC; however, the gloves and sleeves may be contaminated.
- A large spill in a BSC may result in material escaping the BSC and the user becoming contaminated. In this case, the outer layer of PPE is considered potentially contaminated and should be removed at the BSC.

The following general procedure is recommended for spills inside a BSC:

- Remove gloves and discard within the BSC. If two pairs are worn, discard the outermost layer. If sleeves are potentially contaminated, the laboratory coat or gown should also be removed and placed in the laundry bin behind the research centrifuge room door. Fresh gloves should be donned and if necessary, also a fresh laboratory coat or gown.
- Leave the BSC blower on and the sash at the appropriate level.
- Follow the instructions outlined in the orientation and training session for general spill clean-up of BSC, keeping head outside the BSC at all times. See Biological Safety Cabinet SOP.
- Remove any debris using forceps, tweezers or tongs and place in the yellow Sharps waste bin/container inside BSC.
- Surface disinfect all objects within the BSC (e.g. pipettes, tube holders, etc.) using Oxivir® wipes before removing them from the BSC.
- If material has spilled through the grill of the BSC, pour some disinfectant (Oxivir® solution) through the grill to flood the catch tray underneath.
- Wipe all inside surfaces of BSC with disinfectant (Oxivir® wipes).
- Raise the work surface, clean the catch tray (you may need to soak up the Oxivir® solution in the catch tray with paper towels), and then replace the work surface.
- All used paper towels soaked in Oxivir® and/or Oxivir® wipes and contaminated gloves are to be discarded in the yellow biohazard waste bin/container.
- Allow BSC to run for at least 10 minutes before resuming work or shutting down.

Spill Inside a Centrifuge

- If a breakage occurs or is suspected while a centrifuge is running, the motor should be switched off and the centrifuge lid left closed for 30 minutes to allow aerosols to settle. Should a breakage be discovered only after the centrifuge lid has been opened, the lid should be closed immediately and left closed for 30 minutes to allow aerosols to settle.
- Inform the designated KGHRI staff member.
- Follow the instructions outlined in for general spill clean-up. See Centrifuge Safety SOP.
- Use Oxivir® solution to clean centrifuges. Obtain Oxivir® solution and Oxivir® wipes located in the cabinet under the dirty sink.
- Open centrifuge carefully to avoid disturbing the contents which may be up against the lid. Assess the extent of the spill and damage of the tubes, buckets, rotor and inner surfaces of the centrifuge.
- Remove any debris using forceps, tweezers or tongs and place in the yellow Sharps waste bin/container.
- Carefully remove rotors and buckets and place in the plastic centrifuge tub located under the dirty sink. Move the centrifuge tub to the biological safety cabinet (BSC) for further cleaning. Pour contents of disinfectant (Oxivir®) into centrifuge tub allowing the rotors and buckets to soak in the BSC. Ensure all reusable items used in the cleanup (e.g. forceps, dustpans, etc.) are also soaked in disinfectant (Oxivir®).
- After the recommended contact time with Oxivir® solution (5 minutes), remove the centrifuge tub from BSC and place contents into dirty sink. Rinse contents thoroughly with water in the dirty sink. Wash contents with soap and water using cleaning tub located in the cabinet under the dirty sink. Rinse contents and lay out to dry using paper towels on bench. Return contents to the centrifuge or storage bin when dry.
- Dispose spent disinfectant (Oxivir®) from centrifuge tub and soapy water from cleaning tub down the dirty sink with running water.
- Wipe the inside of the centrifuge with disinfectant (Oxivir®). Take steps to inactivate any contamination on surfaces before touching the surfaces. If needed, use paper towel dampened with disinfectant (Oxivir®) to clean the inside of the centrifuge.
- All used paper towels soaked in Oxivir® and/or Oxivir® wipes are to be discarded in the yellow biohazard waste bin/container.
- Remember to wipe out the BSC with Oxivir® wipes as per normal cleaning procedures outlined in Biological Safety Cabinet SOP.
- Place all other waste (e.g. paper towels used to dry centrifuge parts that were not soaked in Oxivir®) into regular waste bin/container.

4.0 CONTACTS

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5.0 REFERENCES

- Queen's University Environmental Health & Safety Spill Response Procedures SOP-HAZMAT-01 Generic Spill Response.
- Public Health Agency of Canada Spill Procedures document.
- KHSC's Clinical Laboratory Services Safety Manual, SF 6-50.01 6, Biological Spill Control.
- Canadian Biosafety Handbook(CBH)-2nd Edition (March 2016).

6.0 SOP HISTORY

SOP Number	Date Issued	Summary of Revisions
SOP-SCP-01	01-DEC-2017	Original version.