

**UBC Department of Pathology and
Laboratory Medicine – UBC site**

**HEALTH AND SAFETY
POLICY MANUAL**

June 2004

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FIRE

POLICE

AMBULANCE

0000

Mobile First Aid (Hospital security) ... 604 822 - 7225

Local First Aid Attendants –	Phone No.
Our local first aid attendant is to call hospital security	2-7225
If you are at another part of campus the UBC first aid number is	2-4444

Hazardous Materials Response 0000 first then 911

Poison Control 604 682-5050

Patrol (Hospital) 604 822-7225

Patrol (UBC campus) 604 822-2222

Other:

Vancouver Fire Unit (non-emergency)..... 604 665-6010

Health, Safety and Environment..... 604 822-2029

Bio-Safety Officer..... 604 822-7596

Chemical Health and Safety Officer..... 604 822-5909

Emergency Planning Coordinator..... 604 822-1237

Occupational Hygiene Officer 604 822-2643

Personal Security Coordinator 604 822-6210

Radiation Safety Officer..... 604 822-7052

Environmental Services Facility 604 822-6306

Trouble calls (Hospital maintenance)..... 604 822-7523

Plant Operations (UBC Site Trouble Calls) 604 822-2173

R.C.M.P. (UBC campus) 604 224-1322

Student Health Services (UBC campus)..... 604 822-7011

Vancouver Hospital (UBC) Emergency Dept..... 604 822-7222

Disaster Preparedness Resources Centre..... 604 822-6002

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INTRODUCTION

YOUR HEALTH AND SAFETY PROGRAM MANUAL

UNIT REQUIREMENTS

- 1. Each administrative Unit shall have a Health and Safety Program Manual that specifies all the elements of its local Health and Safety program.**
- 2. The Unit's safety rules and safe work procedures shall be itemized in the document.**
- 3. The names of individuals responsible for the various program elements will be listed.**
- 4. The completed manual must be available to all Unit personnel (ensuring that they are aware of their responsibilities and safe work procedures).**
- 5. Fire plans and evacuation routes that are specific to the area(s) are to be included.**
- 6. The manual should be reviewed and updated *annually*.**

ADDITIONAL INFORMATION AND REFERENCES

If there are any questions regarding the development of your Unit's Health and Safety program manual, please contact the Health and Safety Programs Officer, Health and Safety and Environment (HS&E) Unit at (604) 822-2990

THE UNIVERSITY OF BRITISH COLUMBIA



**Department of Pathology and Laboratory Medicine
Faculty of Medicine
G227-2211 Wesbrook Mall
Vancouver, BC Canada V6T 2B5**

**Tel: 604-822-7111
Fax: 604-822-7635**

MESSAGE FROM THE DEPARTMENT HEAD

The UBC Department of Pathology is committed to ensuring that its faculty, staff and students have a safe place in which to work and study. It will provide information, monitor compliance with WCB codes and guidelines as well as those of the UBC Health Safety & Environment program; and co-ordinate efforts to 1) alleviate and reduce hazards and 2) provide additional safety equipment. As Acting Head of the UBC Department of Pathology, I fully support the department's Safety Program in its efforts to provide an environment that is free of disease, illness and injury.

Richard G. Hegele, MD, FRCPC, PhD
Associate Professor and Acting Head
Department of Pathology & Laboratory Medicine
University of British Columbia

YOUR HEALTH AND SAFETY PROGRAM ADMINISTRATOR (SPA)

Unit Heads have the primary responsibility for the safe and compliant operation of their area. This management function may be delegated (by the Head) to a Unit member or M&P (management and professional) staff member who will act as the area's Health and Safety Program Administrator (SPA).

UNIT REQUIREMENTS

1. All Units are to have a Health and Safety Program Administrator.

2. The Roles and Responsibilities of the Health and Safety Program Administrator are to:

1. Act with the authority of the Head in the day-to-day Health and Safety management of the Unit and act as the Unit's liaison with the HSE Office.
2. Develop, maintain and oversee the distribution of the Unit's Health and Safety Program Manual with the assistance of HSE staff.
3. Ensure that safe work procedures are developed and enforced.
4. Develop the Health and Safety inspection protocol for the Unit.
5. Define the inspection areas, prepare the inspection check sheets and develop reporting procedures.
6. Review all accident investigation reports and take measures to prevent reoccurrence.
7. Facilitate the formation of the local Health and Safety committee by assigning management staff, and by facilitating the selection of worker representatives.
8. Support the activities of the committee, monitor their effectiveness and on behalf of the Head respond to committee recommendations.
9. Monitor the overall Health and Safety program performance, including inspection frequency, quality and corrective actions.
10. Meet regularly with the Head to report activities and the status of the program.

For the Department of Pathology and Laboratory Medicine, there are two levels of SPA. On behalf of **Dr. Rick Hegele; Acting Head:**

Charles Ramey has agreed to fulfill the overseeing of the SPA role and responsibilities for all sites

Helen Dyck has agreed to fulfill the roles and responsibilities of a SPA for the local UBC-site.

ADDITIONAL INFORMATION AND REFERENCES

- "Health and Safety Program Roles and Responsibilities" see page 6
- "Due Diligence" see WCB pamphlet

Health and Safety Program – Roles and Responsibilities

Heads of Units:

- Assign responsibility for the development, implementation and maintenance of all elements of the Unit's Health and Safety Program that includes an effective functioning local health and safety committee.
- Act as or appoint a Health and Safety Program Administrator (SPA) for the unit.
- Select management representatives for the Committee, as per established Terms of Reference. Assign authority to management representatives.
- Provide the Health and Safety Committee with the tools and resources to function effectively.
- Ensure that accident and incident investigations are conducted and review the reports.
- Ensure that supervisors and managers are trained and know their responsibilities for preventing or minimizing safety and security risks.
- Monitor the Health and Safety Program for compliance with WCB and internal requirements.
- Communicate health and safety action plans, concerns and decisions to respective organizations.
- Review health and safety-related records and statistics at management meetings.
- Ensure that Health and Safety Program reviews are conducted as required and review the safety program review reports.

Health and Safety Program Administrators (SPA):

- Ensure the development, implementation and maintenance of all elements of the Health and Safety Program including an effective functioning local Health and Safety Committee.
- Monitor the Health and Safety Program for compliance with WCB and internal requirements.
- Attend and participate in all required safety committee and management meetings.
- Review and provide senior management with safety committee meeting minutes and recommendations.
- Provide supervisors with the tools and resources to ensure the success of all elements of the Safety Program.
- Communicate safety action plans and recommendations to management and staff.
- Ensure accidents and incidents are investigated and reported and review the reports.
- Ensure corrective action plans are implemented.
- Develop and monitor procedures for responding to and reporting personal security incidents (workplace violence program) following WCB guidelines.
- Ensure that Health and Safety Program Reviews are conducted as required.

Supervisors (Faculty, Managers, Principle Investigators, Technicians, Supervisors, etc.):

- Implement and monitor the Unit's Health and Safety Program in accordance to WCB compliance and UBC Safety Program Policy.
- Instruct, train and monitor employees in safe work practices and workplace violence procedures.
- Develop and implement safe work procedures.
- Communicate health and safety-related information to employees and help implement corrective actions and recommendations.
- Recommend safety and health topics for committee meetings.
- Orient new and transferred employees.
- Hold staff meetings regularly.
- Develop, implement and maintain hazard assessment and inspection programs.
- Conduct required regular workplace inspections, special inspections and accident investigations.
- Correct unsafe conditions or practices and ensure hazards are controlled until corrective action is taken.

- Complete proper WCB forms and forward copies of reports to the appropriate departments.
- Forward copies of accident/incident investigation reports to the local safety committee and the SPA for review.
- Develop, implement and maintain the Contractor Safety Program.
- Review Health and Safety Program records and statistics regularly.
- Review and inform employees of the Health and Safety Program Review results.

Local Health and Safety Committee Members:

- Hold regular meetings at least once a month for the review of:
 - Reports of current accidents, incidents or industrial diseases
 - Remedial action taken or required by the reports of investigations and inspections
 - Other safety and health matters.
- Review and monitor the effectiveness of the unit's safety and health program.
- Make recommendations directly to appropriate supervisor/manager and SPA.
- Assist management in local safety and health program development.
- Function within the set Terms of Reference.
- Post and distribute meeting minutes.
- Conduct formal workplace inspections.
- Assist as required in incident and or accident investigations.

Workers and Students:

- Work in a careful and safe manner.
- Follow departmental safe work procedures and practices.
- Report any real or potential safety/health hazard to the supervisor.
- Actively participate in orientation and training programs, reporting to the supervisors any lack of knowledge needed to perform duties.
- Conduct informal daily inspections of their own work area.
- Participate, when required, in scheduled workplace inspections and accident investigations.
- Report all accidents, incidents or near misses to the supervisor.
- Observe WCB regulations including established workplace violence prevention procedures.
- Report any real or potential risks to personal security and public safety to the supervisor.
- Cooperate with the Safety Committee in any Safety Program Review process.

ADDITIONAL INFORMATION AND REFERENCES

- "Due Diligence" see WCB pamphlet
- WCB Regulation

HEALTH AND SAFETY PROGRAM ELEMENTS

1. UNIT'S HEALTH AND SAFETY POLICY

The Health and Safety Policy defines commitment and responsibility. It formally expresses an employer's objective of providing a safe, healthy and secure environment for all UBC site staff, students and visitors.

UNIT REQUIREMENTS

- 1. The Unit is to develop and maintain a policy that describes management's commitment and goals to create a workplace free from disease, illness and injury.** Compliance with the Workers' Compensation Act and related legislation is the minimum standard acceptable.
- 2. This policy is to be endorsed and signed by the Unit Head and is reviewed annually by management, the local Health and Safety Program Administrator and the Local Health and Safety Committee.**
- 3. This policy is posted throughout the Unit and is communicated to all workers.**

ADDITIONAL INFORMATION AND REFERENCES

- "Due Diligence" see WCB pamphlet
- WCB Regulation, Part 3.4 (a)
- UBC Policy #7 – Health and Safety

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Faculty of Medicine
G227-2211 Wesbrook Mall
Vancouver, BC Canada V6T 2B5

Tel: 604-822-7111
Fax: 604-822-7635

UBC Department of Pathology & Laboratory Medicine Policy on Health & Safety

The UBC Department of Pathology is committed to maintaining a safe work environment for faculty, staff, students and visitors. Therefore, all possible preventive measures are taken to eliminate accidental injuries, occupational diseases and risks to personal security.

We work to achieve these objectives by providing information, ensuring that compliance with WCB and other applicable legislation is being maintained, and providing a prompt response to safety issues and concerns that are raised. The department also ensures that each laboratory facility is connected to the Health and Safety Committee responsible for addressing the concerns of the building in which they work.

Providing Information:

The distribution of departmental people across different work sites provides a challenge in making sure that the information delivered integrates the requirements of the UBC Health and Safety program with that of each of the building operators. Information needs to be tailored to meet each site's unique requirements and be reviewed annually.

Ensuring Compliance:

The department is responsible to ensure that supervisors are aware of their safety responsibilities for their staff, students and visitors, and that staff, students and visitors are clear about their own roles and responsibilities. There is a collective responsibility to ensure that regular inspections are conducted, and corrective actions taken.

Providing Prompt Responses to Safety Issues.

The department is responsible for communicating with the university and hospital community about events or situations when potentially harmful conditions arise or are discovered, and work with supervisors to resolve and improve unsafe working conditions. The department is responsible for addressing issues that are raised during environmental safety audits.

Richard G. Hegele, MD, FRCPC, PhD
Associate Professor and Acting Head
Department of Pathology & Laboratory Medicine
University of British Columbia

2. MANAGEMENT MEETINGS

UNIT REQUIREMENTS

Units must strive to take all reasonable care in the provision of a safe and healthy workplace. This requires management to be aware of all issues and activities that impact on that requirement. As a result:

1. All senior management and supervisors are required to participate in regularly scheduled management meetings.

The purposes of these meetings are to ensure that:

- Two-way communication between management and workers is established
- Management receives and considers recommendations from the Unit’s Health and Safety Program Administrator (SPA) and Health and Safety Committee,
- Important aspects of the Health and Safety Program such as inspections, accident investigations, and Health and Safety committee activities are monitored and evaluated.

2. The requirements for these meetings include:

- 1) *Meet at least monthly*
- 2) Having a prepared agenda (*which includes a section on Health and Safety*)
- 3) Discussing and making decisions on recommendations from the Health and Safety Program and Health and Safety Committee
- 4) Assigning responsibilities for required action and communicating management decisions
- 5) Documenting each meeting to meet due diligence requirements
- 6) Distributing minutes as required.

The effectiveness of these meetings depends on attendance and participation. It is the responsibility of those key persons and those who attend two levels of meetings to ensure that they communicate all important information and decisions at these meetings. It is this link that will complete the communication chain.

The management groups to meet will be structured as follows:

GROUP	DATE OF MEETING	ATTENDEES
Departmental Executive	Monthly	Dr. Jim Cullen, acting Head Site Heads, Program Directors
UBC- site Administration Directors and Coordinators)	Monthly	Maureen Barfoot, Director Administration Florida Pelignon, Finance Manager, Elena Bobyрева, Human Resources, Manager Helen Dyck, Educational ServicesManager

ADDITIONAL INFORMATION AND REFERENCES

- “Due Diligence” see WCB pamphlet
- “Local Health and Safety Committee” see page 12
- “Records, Documentation and Statistics” see page 29
- WCB Regulation, part 3.4 (d)

3. LOCAL HEALTH AND SAFETY COMMITTEE

UNIT REQUIREMENTS

1. All Units must have a functioning Local Health and Safety Committee.

A local Health and Safety Committee is *a joint committee made up of worker and employer representatives* working together to identify and resolve Health and Safety problems in their area. It is an organizational unit that can coordinate Health and Safety activities and monitor the status of the Health and Safety program.

The roles of the local Health and Safety Committees are to:

- Assist in creating a safe and healthy workplace,
- Recommend actions that will improve the effectiveness of the Health and Safety and health program
- Promote compliance with WCB and internal regulations.
- Their responsibility is to recommend changes to senior management.
- Senior management then, in turn, considers and makes decisions on these recommendations.

Management will provide all necessary resources to ensure that the Local Health and Safety Committee is able to function effectively. These include:

- Training for Health and Safety committee members
- Administrative support
- Adequate time for committee members to carry out responsibilities
- Open two-way communication channels.

2. All meeting discussions and decisions are to be recorded, and the minutes distributed to senior management, the local SPA and the Unit of Health, Health and Safety and Environment.

Health and Safety Committee Terms of Reference

Local Health and Safety Committees

The Local Health and Safety Committees of the University have been mandated in the University Health and Health and Safety policy to:

“Carry out the Health and Safety programs within their areas and make recommendations to ensure that the Health and Safety objectives of the University can be achieved.”

These Committees have been directed to consider issues of personal Health and Safety, Security and the Fire Safety of their work areas.

Committee Membership

All work areas of the University are to be covered by a local Health and Safety committee. Questions concerning appropriate areas of jurisdiction and organization of committees should be directed to the University Health and Safety and Environment Office.

Each committee consists of not fewer than four members who work in the area covered and are familiar with local operations. Committee members are designated as representing the University or the Unit and Staff. As required by WCB Regulations, University representatives should not outnumber Unit and Staff representatives on the committee. University representatives are appointed by the appropriate Unit Head. Unit or Staff representatives shall be elected or appointed by their peers. Efforts should be made to ensure all major work groups or areas are represented on each committee. Unit members may be appointed as University representatives.

The members of the committee then elect two co-chairs and a secretary. One co-chair will represent the Unit and staff and will be elected by the Unit and staff members while the other co-chair will represent the University and will be elected by the university representatives. The secretary is elected by all committee members and can be either a university or Unit and staff member.

Roles of the Local Health and Safety Committee

In order to monitor Health and Safety Programs each Health and Safety committee should:

1. Participate in regular work site inspections and report any hazardous conditions found;
2. Review written Health and Safety instructions and make recommendations for their improvement, particularly when new equipment or processes are introduced
3. Participate in Incident / Accident Investigations
4. Review, and make recommendations concerning all reported accidents or incidents which may have occurred in their unit
5. Ensure that accidents have been investigated and reported to the Health, Safety and Environment office
6. Staff representatives should accompany WCB officers on inspection tours as required by WCB Regulations
7. Review, and make recommendations concerning, inspection reports from WCB
8. Consider recommendations or suggestions from staff concerning Health and Safety issues and endorse them where warranted
9. Co-ordinate committee activities with the local Fire Health and Safety Director and cooperate with him or her to promote fire Health and Safety
10. Include in all its activities consideration of conditions or circumstances that may affect the personal security of students, Unit or staff
11. Conduct reviews of the health, safety and personal security programs in their units

Committee Meetings

Meetings are to be held at least once each month, preferably on the same day of each month and should follow an agenda that contains the following topics:

1. Roll Call or Attendance
2. Reading and acceptance of minutes of the last meeting
3. Report of actions taken as a result of items arising from the minutes
4. Reading of correspondence
5. Report of committee members who have conducted inspections
6. Inspection reports from WCB officers
7. Reports of accident or near miss incident investigations, causes and means of prevention
8. Recommendations for improvement in Health and Safety programs such as training needs awareness programs, hazard communication, or specific hazard abatement actions
9. New business
10. Time and place of next meeting
11. Adjournment.

Committee Minutes

The Secretary records the minutes of meetings and copies are distributed to:

1. All committee members
2. The Unit Head
3. The University Health, Health and Safety and Environment Office.

Copies of Minutes are to be posted on Unit Bulletin Boards.

Committee Recommendations

Committee recommendations concerning the control of hazards or the improvement of prevention programs shall be directed to the administrative head of the unit who has operational responsibility for that work group. The administrative head's response to these recommendations shall be delivered to the committee chair in time for the next committee meeting. Issues that have not been resolved to the satisfaction of the committee may be referred to the Director, Health, Health and Safety and Environment or to the University Health and Health and Safety Committee for their assistance.

Duties of Members and Officers

The duties of Health and Safety committee members are to:

1. Report unsafe conditions and practices
2. Attend all Health and Safety committee meetings
3. Report all accidents or near accidents
4. Conduct inspections
5. Investigate all serious accidents
6. Contribute ideas and suggestions for improvement of Health and Safety
7. Work safely, and influence others to work safely
8. Immediately advise anyone who may be affected by any unsafe act or condition
9. Attend Health and Safety courses or seminars that are made available to committee members
10. Promote and support personal security within a safe learning and working environment

Duties of Co-Chairs

1. Arrange for a time and place for meetings
2. Prepare and distribute agenda before the meetings
3. Review previous minutes and materials prior to each meeting
4. Report on the status of suggestions and recommendations
5. Guide committee discussions towards definite conclusions

Duties of the Secretary

1. Prepare minutes of the meeting
2. Distribute the minutes
3. Write reports and correspondence.

Review of the Terms of Reference

The terms of reference of the local Health and Safety committee shall be periodically reviewed and amended by the University as may be required.

THE HEALTH AND SAFETY COMMITTEE MEMBERS ARE

Name	Telephone	Unit
Helen Dyck -chair, Ergo rep	2-7114	Techs/ Education
Joanne Wourterse,p	2-7111	Office
Bill Godolphin	2-7701	Faculty
Changshi Xie	2-7112	Churg's lab
Andrew Leung	2-7579	Evans' lab
Julie Chow	2-7091	Histo lab

ADDITIONAL INFORMATION AND REFERENCES

- “Health and Safety Program Roles and Responsibilities” see page 6
- “Due Diligence” see WCB pamphlet
- “Hazard Assessments and Work Site Inspections” see page 19
- “Records, Documentation and Statistics” see page 29
- “Accident / Incident Investigations” see page 22
- “Program Review” see page 36
- WCB Regulation, parts 3.4 (g), 3.5 and 3.6

4. ORIENTATION, TRAINING AND SUPERVISION OF WORKERS

UNIT REQUIREMENTS

The WCB requires Units to provide proper direction and instruction to workers in the safe performance of their duties. Through training and supervision, employees are made aware of hazards and safe work procedures to follow in order to protect themselves.

To meet this requirement Units must provide:

1. **Worker job-orientation**
2. **On-the-job Training**
3. **Worker Supervision**
4. **Orientation and Training Records**

1. **WORKER JOB-ORIENTATION**

A. The University Human Resource Unit holds a general orientation session for new or transferred University employees.

The following general topics are covered during the orientation:

- UBC objectives
- Job description (including general limitations and authority)
- Performance expectations (general)
- Hours, benefits and pay period etc.

B. Units are also to hold an orientation session for all new or transferred employees.

Supervisors conduct lab orientation sessions for their areas in accordance with The UBC Department of Pathology Orientation and Training Guidelines (p 15). *An employee must receive orientation training within 10 working days of his/her start date.*

The following general topics must be addressed.

- Unit objectives
- Job description (including specific limitations and authority)
- Performance expectations (specific)
- Wages, and hours
- Training plan
- Department of Pathology Health and Safety Orientation Manual

2. **ON-THE-JOB TRAINING** – (This is particularly appropriate for students or staff who start at a junior level) – Other staff may just require a verification that they are using the appropriate procedures.

On-the-job training is to be provided by supervisors to new staff or when new procedures are introduced. This will include:

- Using written job procedures and job Health and Safety instructions to demonstrate the job
- Explaining Health and Safety aspects of conducting the particular task
- Explaining who to contact for help
- Gradually letting the employee perform the job, under supervision, until the employee demonstrates the knowledge and skills necessary for the job
- Verifying that the employee has learned the correct job procedure

3. **WORKER SUPERVISION**

A. Unit Supervisors are to ensure that work is carried out as expected by maintaining positive supervision over the work activities in his/her unit.

- B. Workers are kept up-to-date of management decisions and action plans through periodic staff meetings, unit memos and internal e-mail.
- C. All employees are expected to work according to established safe work procedures. Supervisors will immediately rectify any unsafe actions in accordance with proper corrective procedures.
- D. To effectively meet their responsibilities, **supervisors must be trained in the following areas:**
 - 1) **Techniques of effective supervision and instruction**, including motivation and communication,
 - 2) **Incident / Accident Reporting and Investigations** and how to take corrective and preventive action,
 - 3) **Work Site Health and Safety Inspections** of their area

This training can be obtained through HSE

4. ORIENTATION AND TRAINING RECORDS

- A. **Units are to maintain records of orientation and training** (to verify that employees have received adequate instruction to work safely).
- B. **Lab/ Area supervisor is to sign each record** (upon completion of an employee's training) **and will regularly follow up on that training to ensure consistency and competency.**

The Department of Pathology & Laboratory Medicine Training Guidelines:

- 1. **All new employees must receive an orientation manual which outlines the safety & training guidelines for their site and lab/ work unit.** This may be a formal manual put together by the site safety committee or one provided by the Faculty of Medicine, Research unit. It should include the appropriate site specific Emergency responses and numbers.
- 2. **Training:**
 - a. All new laboratory employees are expected to complete training of UBC HS&E courses in Chemical Safety, Biological Safety, and Radiation Safety, where applicable (When their lab deals with these types of hazards.)
 - b. All new employees will be trained in appropriate disposal procedures for the common and hazardous waste streams at their site.
 - c. All new members will be made aware of the departmental safety program and their responsibilities.
 - d. Each lab supervisor is responsible for making sure that the new employees are trained properly and are able to conduct their experiments in the safest manner possible, this includes training on equipment and the storage and handling of hazardous materials.
 - e. Each new employee is to have a training record which is kept up to date and periodically reviewed for updated training needs.

ADDITIONAL INFORMATION AND REFERENCES

- "Health and Safety Program Roles and Responsibilities" see page 6
- "Orientation Training Guidelines" see page 16; also orientation manual
- "Personal orientation and Training Record Form"
- "HSE Department Resources" see website
- UBC Policy #7 Health and Safety
- WCB Regulation, parts 3.4(h), 3.22, 3.23
- HSE Website <http://www.Health and Safety.ubc.ca/>

5. SAFE WORK RULES AND PROCEDURES

UNIT REQUIREMENTS

The WCB requires Units to provide appropriate written instructions for all tasks to workers. Written safe work rules and procedures are formulated to meet WCB, UBC and if applicable, the manufacturer's requirements, and should be developed to either eliminate or effectively control the hazards in the Unit.

To meet this requirement,

- **Senior management and supervisors are to formulate site-specific Health and Safety rules and safe work procedures**
- **Management will continually provide the necessary resources to ensure that Health and Safety rules and safe work procedures are effective**
- **Management, the Health and Safety Program Administrator, supervisors, and Health and Safety committee members are to review accident and injury statistics on a regular basis** to ensure that established rules and procedures are providing the Unit with the safest work practices.
- **Health and Safety rules are to be posted in the work areas and specific work procedures are made accessible to all employees** in the areas where they apply.

Lab and area Supervisors are to ensure that:

- **Health and Safety rules and safe work procedures are communicated initially to workers** during orientation and on-the-job training
- **Health and Safety rules and safe work procedures are reviewed regularly** during lab meetings.
- **Workers are aware of the hazards associated with their work** and that they understand how safe work procedures will prevent or minimize injury.
- **Rules and procedures are enforced** by immediately correcting any observed unsafe act or condition.

All employees are expected to follow established rules and procedures.

The Department of Pathology & Laboratory Medicine's Safe Work Procedures:

All employees are expected to follow the UBC HS&E safe work procedures when handling biological hazards, chemical hazards and radiological hazards.

It is recognized that each lab and work area needs to have its own specific Safe Work Procedures, which are applicable to that work area, which should be provided to the workers in that area.

It is expected that minimization of hazards and the safety of others will be stressed during new training as well as being an ongoing part of lab meetings.

A number of safe work procedures have been devised for commonly used equipment and processes and are included in Appendix A:

These include procedures for:

1. Centrifuge use
2. Autoclave use
3. Liquid nitrogen use
4. Dishwasher

ADDITIONAL INFORMATION AND REFERENCES

- "Health and Safety Program Roles and Responsibilities" see page 6
- "Due Diligence" see WCB pamphlet
- "Orientation Training Guidelines" see page 16
- WCB Regulation, part 3.4 (c)
- UBC Policy #7 Health and Safety

•6. HAZARD ASSESSMENTS AND WORK SITE INSPECTIONS

UNIT REQUIREMENTS

The WCB requires that Units ensure that hazards to the Health and Safety of workers are identified and brought to management's attention. It is management's responsibility to ensure that the identified hazards are eliminated and, where this is not practicable, to ensure the hazards are controlled and that workers are protected from the hazards.

Work site hazard assessments and inspections are key activities in the prevention of accidents. Their purposes are to:

- Identify existing and potential hazards
- Increase awareness leading to the prevention of workplace accidents and illnesses
- Ensure compliance with standards and regulations.

To meet this requirement,

1. Units are to conduct Hazard Assessments

- Prior to all new projects, jobs or processes
- Prior to the introduction of new equipment or hazardous materials

2. Units are to conduct regular Workplace Inspections.

- Labs are to complete the monthly inspection checklist and return copies to the SPA (Helen Dyck)
- Yearly in depth inspections are conducted by members of the local safety committee.
- Any hazards noted during the normal course of the work day should be documented and corrected as soon as possible.

3. All Units will provide all necessary resources to ensure that hazard assessments and workplace inspections are effective. These include:

- Hazard recognition and Health and Safety inspection training for inspectors
- Time for inspectors to complete their duties
- Established communication channels between inspectors, local Health and Safety committee and senior management
- Quick action on recommended corrections.

4. All assessments and inspections are to be documented (to demonstrate due diligence).

HAZARD ASSESSMENTS / JOB ANALYSES

A hazard assessment or job Health and Safety analysis is recommended prior to the start of any new project, task or job. Its purpose is to anticipate, as much as is reasonable, any hazards or hazardous conditions that are inherent or could arise out of a new project, task or job. Once the hazards have been identified, the controls for eliminating or minimizing these hazards can then be determined and implemented. Hazard assessments should also be undertaken when major modifications are made to a project, task or job.

The preliminary hazard analysis checklist that is included in the Appendix has been designed to anticipate any hazards that may be found in laboratory environments. A modified version of this form, or one designed to reflect the nature of the hazards found in other types of work, research and teaching environments may be used.

For assistance in developing a hazard assessment form or completing such an assessment, call Health and Safety and Environment at 604-822-2029.

PROJECT HAZARD AND CONTROL ANALYSIS

Department Name: _____

HAZARD GRADE: **High** () (potentially life threatening)
 Medium () (potential for significant equipment of building damage)
 Low () (minor equipment damage)

Equipment Type	
Previous Inspection Date	
Room No.	
Current Inspection Date	
Experimenter(s)	
Inspected By	
Advisor(s)	

Part I.

Potential Hazards	Y/N	Control Measures
High pressure or Vacuum		
High temperature		
High voltage		
Risk of explosion		
Toxic materials		
Reactive/oxidizing materials		
Cryogenics/compressed gases		
Solvents		
Loss of air		
Loss of water		
Loss of power		
Other		

Part II. Specify potential leak hazards:

Part III. Spill Control for the following types of spills is available:

Part IV. List principle hazardous chemicals used.

Location of MSDS:

Item	Quantity	MSDS Available (✓)	MSDS Reviewed (✓)

Part V. Waste generation information

Type of Waste	Quantity	Disposal Method Available (describe)

Part VI. Safety Information

Emergency Contact Information

Name:
 Phone number:
 Location:

Emergency Shutdown Procedures posted:

Yes () No () Location:

Emergency Safety Equipment

Fire extinguisher location:
 Eye wash fountain location:
 Emergency shower location:

First aid station location:

Required Personal Protective Equipment Available:

Eye protection: Yes () No () Location:
 Foot protection: Yes () No () Location:
 Hand protection: Yes () No () Location:
 Apron/lab coat: Yes () No () Location:
 Respirator: Yes () No () Location:

Part VII. Historical safety problems _____

Part VIII. Inspection Committee Recommendations

Mandatory: _____

Optional: _____

Other Remarks _____

Attachments: UBC Hazard Control Assessment Form and Standard Operating Procedures for project including safety features.

UBC HAZARD CONTROL ASSESSMENT GUIDE

If a hazard exists, there is a means of controlling it.

There are four (4) types of controls to evaluate in the order given: a) elimination or substitution; b) engineering controls; c) administrative (e.g. procedures, posters, work schedule, etc.); and d) personal protective equipment.

Note: Reference to procedures means specific procedures for materials/equipment/processes being used and includes relevant training.

- Legend for abbreviations at end of table on page 2

Type of Hazard	UBC Procedure or Relevant Reg.	Hazard Control
<p>1. Hazardous materials used and stored</p> <ul style="list-style-type: none"> - hazards identified (e.g. flammability, toxicity, reactivity) - Potential significant inhalation exposures assessed 	<p>BC WCB Occupational Health and Safety Regulation (WCB OHSR); WHMIS; BC Fire Code; UBC Laboratory Chemical Safety Course Manual</p>	<ul style="list-style-type: none"> - Substitute/minimize - Use of fume hoods - Install monitoring and alarm equipment - Use of appropriate containers & storage units; - Use of appropriate labels & MSDS available (WHMIS) - Develop appropriate handling, disposal and emergency procedures - Develop appropriate signage and training procedures - Use of appropriate PPE
<p>2. Compressed gas used or stored</p>	<p>BC WCB OHSR; BC Fire Code; BC Gas Safety Act</p>	<ul style="list-style-type: none"> - Use minimum quantities in lab or shop - Use appropriate means for securing and transporting - Install monitors, alarms and signage as required - Develop written work and emergency procedures; - Ensure appropriate training is conducted
<p>3. Potentially violent reaction via:</p> <ul style="list-style-type: none"> - Rapid decomposition - Impact sensitivity - Instability on storage to cold, heat, light, water, metals, etc. - Mischarge or wrong addition order - Quantity and rate of evolution of heat and gases - water or air contact 	<p>WCB OHSR</p>	<ul style="list-style-type: none"> - Use of fume hoods - Minimize quantities used; heat generated; other variables - Isolate or shield areas - Develop means of pressure relief - Use of redundant controls; automatic shutdown mechanism - Develop procedures to vent all parts of system before breaking any lines - Use of appropriate storage areas - Develop appropriate handling & emergency procedures - Use of appropriate PPE
<p>4. Radioactive material(s) or source(s) used?</p>	<p>CNSC Regulations ; BC WCB OHSR; UBC Radionuclide Safety and Methodology Course Manual</p>	<ul style="list-style-type: none"> - Use of fume hoods - Follow CNSC procedures - Follow UBC Radionuclide Safety and Methodology Course procedures - Develop appropriate emergency procedures - Use of appropriate PPE
<p>5. Infectious or biohazardous material(s) used or handled?</p>	<p>BC WCB OHSR; WHMIS; CIHR Guidelines; UBC Biosafety Manual</p>	<ul style="list-style-type: none"> - Use of Biosafety cabinets and fume hoods - Develop appropriate medical surveillance protocols - Follow UBC protocols & procedures including emergency procedures - Use of appropriate PPE
<p>6. Catalysts, inhibitors, or contaminants (like iron) affect reactions?</p>	<p>BC WCB OHSR; WHMIS</p>	<ul style="list-style-type: none"> - Use of engineering controls - Develop appropriate handling procedures - Develop written procedures & training - Develop appropriate emergency procedures

Type of Hazard	UBC Procedure or Relevant Reg.	Hazard Control
7. Energy Sources/Failures - Heating/cooling systems - Power (high voltage) - Machinery - Water; air - Ventilation - Automatic controls or equipment - Pressure - Materials/equipment/container integrity	BC WCB OHSR; UBC Lock-Out procedures; BC Electrical Code; BC Boiler & Pressure Vessel Code	- Use of automatic shut-off system for: - power - temperature - HVAC; ventilation; - pressure, - water and air supply systems (back-up system) - Use of appropriate signage - Use of lock-out procedures - Develop appropriate handling & emergency procedures for fires/explosions and spills
8. Possible generation of : - Unacceptable odour - Air pollution, - Excessive noise, - Excessive heat, - Sewer contamination	WCB OHSR; BC Special Waste & other Environmental Regulations	- Consider substitution of hazardous materials - Use of engineering controls: - fume hoods - PPE - trap or back-flow preventor (1-way valve) - Use of noise testing and absorption materials - Use of a cooling system - Use of a waste trap - Develop appropriate emergency procedures
9. Hazardous waste(s) generated	BC WCB OHSR; BC Special Waste & other Environmental Regulations	- Use of appropriate containers for storage - Develop written procedures & training - Develop appropriate emergency procedures
10. Potential for impact of hazards of materials and process upset on neighbours, service, medical, emergency response personnel, etc.	BC WCB OHSR; BC Environmental Legislation	- Notification of relevant personnel & organizations prior to incident - Develop process for notification of relevant personnel & organizations post-incident - Develop appropriate emergency procedures
11. Space for equipment, materials and experimental set-ups	BC WCB OHSR	- Create adequate and appropriate space
12. Asbestos-containing material present.	BC WCB OHSR; UBC asbestos handling procedures	- Conduct awareness training - Develop reporting procedures - Develop removal/substitution measures

Legend:

- BC = British Columbia
- WCB = Workers' Compensation Board
- WHMIS -- Workplace Hazardous Materials Information System
- PPE = Personal protective equipment
- CNSC = Canadian Nuclear Safety Commission
- CIHR = Canadian Institutes of Health Research
- GVRD = Greater Vancouver Regional District
- OHSR = Occupational Health & Safety Regulation

WORKPLACE INSPECTIONS

The Workplace Inspection Program is comprised of four types of inspections that are structured as follows:

1. Informal Workplace Inspections

- **This is accomplished by supervisors conducting regular walk-through of their areas of authority and by workers checking their work areas prior to commencing work.**
- All employees are expected to maintain continual awareness of hazards in their work areas.
- No formal inspection report is required; however, any detected hazards must be corrected immediately if the task is within the employee's capabilities. If not, the hazard should be reported to the area supervisor or management for correction.

2. Monthly Inspections

- **Work areas will be *inspected monthly* (preferably on the same day each month) by the area supervisor or a designate.**
- See monthly inspection checklist. P:\safety\inspections & hazard awareness \ laboratory monthly inspection checklist
- The inspection checklists will be completed for each inspection and each supervisor must regularly review and update his/her checklist as required.
- The completed reports shall be forwarded to the SPA on a quarterly basis for review.
- The SPA will provide summaries for the head and the local Health and Safety Committee to review.
- The area supervisor must ensure that corrective action is taken so that the hazard is eliminated or controlled.

3. Health and Safety Committees Inspections

- Health and Safety Committee Inspections are workplace inspections that are conducted by local Health and Safety Committee members *at least annually*.
- An Inspection Report is completed and copies sent to the supervisor of the inspected area, the SPA and the Health and Safety Committee for review.
- The area supervisor must ensure that corrective action is taken so that the hazard is eliminated or controlled.

4. Special Inspections

- Special inspections take place immediately after a malfunction, accident or after a new work procedure or machinery is introduced.
- The area supervisor and a worker representative (preferably a Health and Safety committee member) conduct this type of inspection.
- An Inspection Report must be completed and distributed to the SPA and local Health and Safety committee for review.
- In addition, an Accident Investigation may be required for certain accidents (see Accident Investigation section of the manual).
- The area supervisor must ensure that any existing unsafe condition is effectively controlled before commencing an inspection or investigation.

Monthly inspections are to be carried out by the lab supervisor and or their designate. Use the monthly inspection form. P:\safety\inspections & hazard awareness \ laboratory monthly inspection checklist

Yearly inspections are to be carried out by two members of the safety committee, with at least one being from another lab area. Usually in July. Use yearly check list P:\safety\inspections & hazard awareness \ yearly lab inspection checklist

- ADDITIONAL INFORMATION AND REFERENCES
- APPENDIX "Health and Safety Forms and Check sheets"
- Hazard Assessment Guidelines
- Preliminary Hazard Analysis Checklist
- Inspection Procedures
- Laboratory Inspection Checklist
- Office Area Inspection Checklist
- Work Site Inspection and Hazard Assessment Guidelines see page 19
- "Due Diligence"
- "Inspection Report Form"
- "Accident Investigations"
- WCB Regulation, parts 3.4 (b), 3.6(2)(a), 3.15 to 3.19
- UBC Policy #7 Health and Safety
- Appendix "Ergonomics – MSI Prevention Program"

LABORATORY MONTHLY SAFETY CHECKLIST FOR ROOM _____

Supervisors name _____

Designates name (if appropriate) _____

Due Date/Time for monthly inspection _____

To ensure that this is always a safe workplace, it is a requirement to check the following items on this list at least once a month.

Month:			
Item	Yes	No	Action taken
1. Personal protective equipment available and used.			
2. Good housekeeping; food and drink never present.			
3. Aisles and doorways clear and free of tripping hazards			
4. Water hoses wired or clamped; gas cylinders clamped			
5. Fume hoods neat and functioning			
6. There is less than 25 L of flammables out in the open lab (not stored in flammable cupboards)			
7. Peroxidizable compounds dated upon opening and tested			
8. Chemicals: labels clear and legible; incompatibles separated.			
9. Free of electrical hazards			
10. Showers, eye wash stations accessible			
11. Sink traps, eye wash fountains flushed weekly.			
Checked by (initials)			

When this form is completed, return to Helen Dyck .

This form can be found at P\Safety\Inspections and Hazard Awareness\Laboratory Monthly Safety Checklist.doc

INSTRUCTIONS:

- Use the safety check form as a tool for identifying potential safety concerns.
- Set aside approximately an hour to perform the safety check with a partner from the inspection area (Safety Rep, Lab Supervisor or designate).
- Answer yes or no to questions by placing a check \checkmark in the appropriate column.
- Record the description of safety concerns in the "Comments" column. (e.g., location, severity hazard, conditions, footnotes, etc.)
- Discuss the findings with your Lab Supervisor and complete any needed follow-up.
- Submit the completed form and documentation to your local Safety Representative within two weeks of the inspection.

LAB ROOM #: _____

LAB SUPERVISOR: _____

SAFETY DELEGATE: _____

SAFETY DELEGATE: _____

DATE OF SAFETY CHECK: _____

INSPECTED BY: _____

ADDITIONAL COMMENTS: _____

LAB ROOM #: _____
 LAB SAFETY PERSON: _____
 DATE OF SAFETY CHECK: _____
 INSPECTED BY: _____
 ADDITIONAL COMMENTS: _____

	YES	NO	COMMENTS <small>(e.g. explanations, suggestions, praise) * indicates recurring violation</small>
<u>Emergency & Information Material</u>			
1. Emergency procedures posted, legible and up to date	_____	_____	(includes phone numbers, location of eye wash, shower, spill cart and safety manual)
2. MSDS accessible and location posted	_____	_____	
3. Chemical inventory current (< 1 yr.) and accessible	_____	_____	
4. Monthly inspections posted and up to date	_____	_____	
5. Shower, eyewash, first aid kit available and accessible	_____	_____	
6. Fire extinguisher present and accessible	_____	_____	
7. Fire extinguisher seal intact	_____	_____	(checked within 1 yr.)
<u>Personal Protection</u>			
8. Safety glasses worn	_____	_____	
9. Laboratory coats and gloves worn	_____	_____	
10. Facial shield available and in good condition	_____	_____	
11. Respirator available and in good condition	_____	_____	(can be borrowed from another lab when required)
12. Vacuum ballasts/Dewar flasks taped or meshed	_____	_____	
<u>Housekeeping</u>			
13. Bench tops and sink areas reasonably clear	_____	_____	(e.g. waste absent; sink accessible)
14. Tripping hazards absent, passageways clear	_____	_____	(e.g. clear of cords, machines, containers)
15. Laboratory exits clear and doors unlocked	_____	_____	
16. Food and drink absent	_____	_____	(areas where chemicals/contaminants are present)
17. Chipped or broken glassware absent	_____	_____	(exception-where glassware is stored for repair)
18. Friable asbestos absent	_____	_____	(e.g. gloves, Bunsen burner ring pads, clamp insulation; exceptions must be posted - e.g. Transite)
19. Step ladder available for out-of-reach items	_____	_____	(can be borrowed from another lab when required)
20. Chemicals/equipment stored low enough for safe retrieval	_____	_____	
<u>Waste Containers - General, Sharps, Chemical</u>			
21. Glass waste labelled and segregated from general waste	_____	_____	(general waste = paper & blunt objects)
22. Sharps labelled and segregated from general waste	_____	_____	
23. Solvent waste containers labelled and closed	_____	_____	(using red cans; label filled out; chlorinated and non-chlorinated chemicals separated)
<u>Compressed Gas Cylinders</u>			
24. Secured to wall or bench with belt or chain	_____	_____	
25. Stored upright (chained or in rack; not leaning freely against wall)	_____	_____	
<u>Rubber or Plastic Tubing</u>			
26. Cracked/brittle/pinched tubing absent	_____	_____	
27. Water hoses wired at all connections	_____	_____	
28. Water taps safeguarded against "suck-back"	_____	_____	(vacuum break installed or hoses not reaching into sink)

	YES	NO	COMMENTS (e.g. explanations, suggestions, praise) * indicates recurring violation
<u>Electrical Apparatus</u>			
29. Vacuum pumps stored safely and belts guarded	_____	_____	
30. Refrigerator spark-proof	_____	_____	
31. Frayed or cracked electrical cords absent	_____	_____	
32. Make-shift wiring absent	_____	_____	
33. All motor driven equipment (used in the same room as flammable liquids) approved for use in flammable vapours	_____	_____	
<u>Fume Hoods</u>			
34. Sash at recommended height and air flow on	_____	_____	
35. Area within hood tidy	_____	_____	(minimum chemical storage, air flow unobstructed)
36. Carcinogens permitted, permit posted	_____	_____	("No"= carcinogens not allowed but are present, "N/A"= carcinogens not allowed and not present)
37. Radioactive materials permitted, permit posted	_____	_____	("No"= radioactives not allowed but are present, "N/A"= radioactives not allowed and not present)
38. If semi-permanent experiments are being conducted, are the name of the person in charge, experiment title and possible hazards posted?	_____	_____	
<u>Chemicals</u>			
39. Solvent storage cabinet available and closed	_____	_____	
40. Solvent containers closed and labelled	_____	_____	
41. Solvent containers outside cabinet ≤ 25 L	_____	_____	(includes any solvents not stored in safety containers; count size of containers, not just contents)
42. Ethers stored and used out of direct sunlight	_____	_____	
43. Ether and peroxide containers display opening date	_____	_____	
44. Ethers checked for peroxides (3 to 12 months)	_____	_____	
45. Chemical containers intact and stored safely	_____	_____	(seal/container not corroded/cracked/broken; containers not piled up, not extending past shelf edge; old chemicals disposed of)
46. Chemical labels intact, legible, not overwritten	_____	_____	(loose/damaged/coded labelling absent)
47. Cleaning baths labelled	_____	_____	(e.g. water, chromic acid, HCl)
48. Carcinogens/corrosives/flammables labelled	_____	_____	
49. Incompatible materials separated	_____	_____	(e.g. acids/bases, corrosives/flammables, acids/oxidizers such as nitric, perchloric and sulphuric acid separated)
50. Perchlorates and other shock sensitive compounds properly stored	_____	_____	
<u>Radiation Safety</u>			
51. Operating licence posted	_____	_____	
52. Emergency contact names and numbers posted on door	_____	_____	
53. Radionuclide use areas clearly labelled	_____	_____	(e.g. outside door, hoods, fridge, bench)
54. Appropriate personal protection used	_____	_____	(wearing dosimeter [tld] if required)
55. Current radionuclide safety and methodology manual available	_____	_____	(contains handling, spill and decontamination procedures)
<u>Biological Safety</u>			
56. Operating licence posted	_____	_____	
57. Safe handling & spill and decontamination procedures posted	_____	_____	
58. Appropriate personal protection used	_____	_____	
59. Waste containers appropriately labelled and waste separated	_____	_____	

Please ensure that corrections are made by: _____

Signatures - Lab Safety Person: _____

(Please sign after violations have been acted upon)

Facu

7. ACCIDENT / INCIDENT INVESTIGATIONS

The purpose of incident/accident reporting and investigations is to prevent a recurrence of the hazardous condition causing the event.

UNIT REQUIREMENTS

The WCB requires Units to investigate any accident which:

- Resulted in injury requiring treatment by a medical practitioner
- Resulted in death or critical condition with a serious risk of death
- Involved a major structural failure or collapse
- Involved the major release of a toxic or hazardous substance
- Was a blasting or diving accident
- Did not result in an injury but had the potential for causing serious injury (near miss).

Units are also required to report to the Health and Safety and Environment (HSE) every:

- Work-related injury. The report must be made within 24 hours of the occurrence.
- Disabling occupational disease or allegations of an occupational disease. The report must be made within 24 hours of receiving the worker's report of the disease.
- Work-related death. The report must be made immediately.

The HSE Department is responsible for reporting this information to the WCB.

To meet these requirements, the UBC has developed and implemented a program for the reporting and investigation of accidents. The Program's focus is on finding solutions and not on placing blame.

The success of the program depends on:

- Accidents being reported by workers (see accident/incident report forms)
- Investigations being conducted in accordance with established investigation procedures
corrective action taken to prevent recurrence.

Management will provide all tools and resources necessary for the Program to be effective. These include:

- Accident investigation training for investigators
- Time made available to allow investigators to complete their duties
- Quick action on recommended changes to job procedures or physical conditions to prevent recurrence of similar situations.

INVESTIGATION TEAMS

- Must consist of an area supervisor and an employee representative
- Each investigator is required to be trained on investigation procedures as well as be knowledgeable of the work performed at the time of the accident.
- For information on Accident Investigation training, call Health and Safety & Environment at (604) 822-2029.

ACCIDENT / INCIDENT REPORTING AND INVESTIGATION FORMS:

1. **Must be promptly and fully completed for all applicable incidents or accidents**
2. **May be obtained from Helen Dyck's office or by calling Health, Safety and Environment at (604) 822-2029**

The supervisors and worker representatives assigned to conduct investigations are:

NAME	TITLE	UNIT
<i>Helen Dyck</i>	Educational Services Manager	

ADDITIONAL INFORMATION AND REFERENCES

- “Accident Investigation Procedures” see page 22 and pathology orientation manual
- “Due Diligence” see WCB pamphlet
- “Records, Documentation and Statistics” see page 29
- WCB Regulation, parts 3.4 (e), 3.6(2)(a), 3.7 to 3.14
- UBC Policy #7 Health and Safety

8. FIRST AID AND EMERGENCY SERVICES

First aid and emergency services are an important part of the Health and Safety Program.

The purposes of these services are to:

- Ensure prompt and effective emergency response
- Promote speedy recovery and to minimize the effects of injuries or exposures
- Provide workers with assistance when required

UNIT REQUIREMENTS

1. Units are to provide employees with a quick and effective response in the event of injuries or emergencies. The management is committed to meeting this requirement by providing first aid and emergency services.

2. Supervisors are required to communicate emergency numbers and procedures to workers during orientation training and to regularly bring up this information during staff meetings. The success of the First Aid and Emergency Services Programs depends on employees knowing what to do in minor and major emergency situations.

3. In addition, risks associated with the Unit's work process and their control measures must also be communicated and understood. Annual emergency and evacuation drills are practiced to ensure awareness and effectiveness of emergency routes and procedures.

4. All training, meetings and drills are documented to meet due diligence requirements.

5. Management will provide all tools and resources required for these programs to be effective. These include:

- Appropriate emergency response plans and equipment
- Training and annual retraining of Unit / Unit emergency responders
- Time made available to allow key players to complete their duties
- Established chain of command for emergency situations.

First Aid

- Dial "2-7225" – Security
- Identify yourself, the exact location and the nature of the injury
- Remain at the scene until first aid arrives

The designated First Aid attendant will:

- Proceed to accident scene on priority basis
- Administer first aid
- Arrange suitable transportation

Do not forget to fill out a UBC incident/accident report form, faxed to HSE and have the incident investigated by at least one member of the safety committee as well as the supervisor.

Local Emergency Plans and Procedures

The Unit has established and implemented plans and procedures for situations that have been identified where emergencies could arise. These plans and procedures deal with workplace accidents/injuries, fire prevention, emergency evacuation, personal security, earthquake and bomb threats.

See the **Department of Pathology and Laboratory Medicine UBC site Orientation manual** for the procedures for emergency responses. These are different than those in other UBC sites as we are part of the hospital building and fall under their regulations regarding notification.

The building's assigned fire wardens are: the Hospital security officers

See inside front cover for the UBC site Emergency Exit plan

ADDITIONAL INFORMATION AND REFERENCES

- "Orientation, Training and Supervision of Workers" see page 16
- UBC Emergency Procedures and Information Pamphlet (call (604) 822-1237)
- Local / Unit Fire Health and Safety Plan (Generic Version)
- WCB Act, Sections 70-72
- WCB Regulation, parts 4.13 to 4.18, 33.1 to 33.52

9. RETURN TO WORK

The intent of the Return to Work (RTW) Program is to facilitate reintegration of employees to the workplace in a fair and consistent manner. It is a confidential and voluntary Program. A joint union/management approach will be taken to ensure employees of the University have an equal opportunity to return to work after an illness or injury.

The objectives of the RTW Program are to:

- Maintain the employability of all UBC employees who become either temporarily or permanently disabled, where the cause is job related or not
- Minimize employees' financial hardship and emotional stress
- Provide meaningful productive employment within their capacity to employees who wish and are able to return to work
- Re-integrate employees to the workforce in a respectful manner, thereby minimizing the loss of expertise and resources and maintaining employee potential and self-worth.

UNIT REQUIREMENTS

The Unit will follow the return to work procedures as outlined in the University Return to Work Program document.

<u>ADDITIONAL INFORMATION AND REFERENCES</u>
--

- | |
|--|
| <ul style="list-style-type: none">• UBC Return to Work Program document• UBC Return to Work Program |
|--|

10. PERSONAL SECURITY AND PUBLIC SAFETY

To provide all members of the University Community including Unit, staff and students with an environment safe from violence or the threat of violence.

UNIT REQUIREMENTS

The University is committed to take appropriate action(s) whenever possible to eliminate or minimize the risk or threat of violence to Unit, staff, students and visitors. Where the risk or threat of violence exists, the WCB requires the University to develop a “Preventing Violence in the Workplace Program”.

To meet this requirement a risk assessment should be developed. This includes:

1. Risk Assessments

The Unit’s Health and Safety Program Administrator (SPA) must conduct a risk assessment in any workplace in which a risk of injury to workers from violence arising out of their employment may be present.

When conducting the risk assessments the SPA should consider:

- The nature of interactions between workers and the public
- The nature of the work environment
- The attributes of workers/clients
- Past history of incidents of violence in your workplace and in similar operations

This could include but is not limited to:

- A work site walk-about with affected staff
- An employee personal security survey
- Selected interviews with workers
- A review of crime or incident reports

Members of the Health and Safety Committee should review the risk assessment to ensure that they are properly conducted. The Head of Unit or delegate is responsible for the implementation of recommendations.

2. Policies and Procedures

Policies and procedures have been developed to address threats to personal security. These can be found in the Department of Pathology and Laboratory Medicine UBC site Orientation manual for the procedures for Aggressive behaviour. These are different then those in other UBC sites as we are part of the hospital building and fall under their regulations regarding notification.

SEE also APPENDIX C – Preventing Violence in the Workplace Program

3. Instruction of Workers

Supervisors inform workers of the nature and extent of the risk of violence that they may be exposed to. Supervisors provide appropriate training to enable workers to recognize the risk, to take preventative measures and to report incidents. This information is communicated during orientation and on-the-job training.

Workers who are faced with the imminent threat of violence should call Hospital security at 0000 This could include such situations as personal threats of violence, threatening letters and/or bomb threats.

4. Response to Incidents

Workers are instructed to report all incidents of violence to the area supervisor. The area supervisor will then:

- Ensure that injured workers are attended to and that they are advised to consult a physician if needed
- Inform the SPA and Hospital Security of the situation
- Investigate the situation
- Take steps, if able, to prevent or minimize repeat occurrences; otherwise, report the situation to senior management for correction.

ADDITIONAL INFORMATION AND REFERENCES

- Personal Security Website
- APPENDIX C - Preventing Violence in the Workplace Program (not available)
- WCB Regulation, part 4.27- 4.31
- UBC Policy #7 Health and Safety, and Policy #14 Threatening Behaviour

11. RECORDS, DOCUMENTATION AND STATISTICS

UNIT REQUIREMENTS

To help verify and track the Health and Safety Program, *the types of records that Units maintain are:*

- Worker orientation and Training records
- Records of worker and supervisor training with the date, attendance, and general content of the program
- Records of meetings where Health and Safety issues were discussed
- Inspection reports and records of actions taken to solve problems
- Accident investigations reports
- Supervisors' notes and logs of Health and Safety contacts with workers
- Records showing the use of progressive discipline to enforce Health and Safety rules
- Subcontractor pre-qualification documents
- Local Health and Safety committee minutes, showing what steps have been taken to address Health and Safety issues
- Equipment log books and maintenance records
- Health and Safety forms and checklists
- Medical certificates, hearing tests, and first aid records
- Sampling and monitoring records of exposures to harmful substances
- Statistics on the frequency and severity of accidents.

Unit records are then used in developing statistics to identify:

- Types of injuries
- Total claims loss for each injury
- Total time loss for each injury

Trend analysis is produced from all data accumulated under the OSH program to identify patterns, which may lead to the identification of systematic problems not perceived when looking at isolated incidents.

Records and statistics are reviewed regularly at senior management and Health and Safety Committee meetings. This process is crucial to identifying:

- Trends and hazards not previously identified
- Outdated or ineffective control measures.

UNIVERSITY REPORTS

- All accidents and WCB claims must be reported to Health, Safety and Environment on a standard accident report and investigation form, within 24 hours.
- From this UBC information, and data from the WCB, HSE forwards relevant information to the WCB and compiles a monthly report that lists the number of accidents and classifies them by cause, injury, job classification and Unit.
- A brief narrative description of each accident is also produced and past year and year to date summaries are provided which are compared with previous year's data.
- The associated WCB costs of medical, wage loss, and pension amounts are also reported.
- This report is circulated to the University Health and Safety Committee, VP Admin & Finance, and AVP Human Resources. The report is published at:

ADDITIONAL INFORMATION AND REFERENCES

- “Due Diligence” see WCB pamphlet
- “Accident / Incident Investigations” see page 22
- “Management Meetings” see page 11
- “Local Health and Safety Committee” see page 12
- “Orientation, Training and Supervision of Workers” see page 16
- “Hazard Assessment and Work Site Inspections” see page 19
- “WCB Accident and Cost Report”
- WCB Regulation 3.4(f)

12. HAZARDOUS MATERIALS

The Workplace Hazardous Materials Information System (WHMIS) is a major response to the worker's right-to-know about safety and health hazards of materials used in the workplace.

WHMIS legislation provides employees, employers and suppliers nationwide with specific vital information about hazardous materials through the key elements of:

- Controlled product labeling
- Material Safety Data Sheets
- Worker education and training programs

UNIT REQUIREMENTS

On the basis of WHMIS and other workplace information, the Unit has developed work procedures that ensure worker health and safety.. Workers must be educated in hazards and trained in work procedures.

1. Annual Chemical Inventory

An annual inventory of hazardous materials must be maintained which identifies all hazardous substances and their quantities at the workplace. A chemical inventory includes the chemical name (formula) of the material and the size of its container. There is a sample chemical inventory form in the Appendix "Health and Safety Program -Forms and Check-sheets".

Annual inventories allow for the following:

1. To check ethers and other chemicals with limited shelf life.
2. To remove surplus hazardous chemicals
3. To remove chemicals that you would not or have not used in the past 1-3 years.
4. To correct incompatible storage.
5. To identify which chemicals are present.

2. Active WHMIS Program

The Unit implements the WHMIS program using information provided through WHMIS as well as other information from the workplace. WHMIS information is in the form of labeling and Material Safety Data Sheets (MSDS). Other workplace information includes knowledge of the hazards of the workplace, use of hazardous materials that depend upon factors such as quantities used, work processes and work location.

In order to implement a WHMIS program, the Unit will:

1. **Assign responsibility for program implementation.**

The WHMIS Coordinator for the Unit is Helen Dyck.

2. **Establish an inventory of controlled products**

- Contact suppliers for assistance with products supplied to the workplace.
- Collect data on products produced in the workplace and determine if they are controlled or not
- The Chemical Inventory Form may be obtained from the generic manual (see below).

3. **Ensure that WHMIS labeling and data sheets are in place**

- Have the purchasing Unit or agent request Material Health and Safety Data Sheets from suppliers.
- Have the shipper/receiver or other appropriate person check incoming labels and data sheets for compliance with WHMIS standards.

- Provide workplace labeling where required.
 - Prepare material Health and Safety data sheets and appropriate labels for controlled products produced in the workplace (Only if product is being sold).
 - Make MSDSs available to workers
- 4. Determine the hazards of controlled products in the workplace**
- Review the specific hazard of the storage, handling and use of controlled products in the workplace. Take into account the physical and health hazards of the product, quantities, work processes, location of use etc.
- 5. Establish workplace controls, based on hazard evaluations, which could include:**
- Engineering controls: i.e. ventilation, process modification and isolation of the source.
 - Administrative controls: i.e. work procedures, storage arrangements, maintenance and time scheduling.
 - Personal protective equipment used only in situations where other controls are not practicable.
- 6. Establish emergency procedures**
- First aid measures
 - Fire-fighting/evacuation measures (notify fire Units of hazardous materials).
 - Procedures to handle spills or accidental release.
- 7. Provide worker education and training**
- Educate workers in how WHMIS works and the hazards of controlled products
 - Train them in the necessary work procedures, emergency procedures and procedures to follow when using the product
 - The Unit of Health, Health and Safety & Environment offers a Chemical Health and Safety course that fulfills the worker education and training requirement.
- 8. Review and upgrade the program**
- Review the program of instruction at least once a year or more often if necessary.
 - Re-instruct workers when necessary.
 - Make sure no MSDS is no more than three years old.
 - Make sure labels are legible and complete.
 - Make sure all workplace controls are effective.

ADDITIONAL INFORMATION AND REFERENCES

- “Health and Safety Program Forms and Check Sheets” – see Chemical Inventory Form
- “Due Diligence” see WCB pamphlet
- “Record, Documentation and Statistics” see page 29
- “Orientation, Training and Supervision of Workers” see page 16
- Workplace Hazardous Materials Information System, Appendix III
- University of British Columbia Laboratory Chemical Health and Safety Manual
- University of British Columbia Hazardous Waste Disposal
- WCB Regulation, part 5
- UBC Policy #7 Health and Safety

13. ENVIRONMENTAL PROTECTION

UNIT REQUIREMENTS

The University is committed to developing an environmental management system that will ensure compliance with legislation, demonstrate due diligence, and establish a process of continuous improvement resulting in environmental stewardship.

There are five components of this system that are outlined below along with Unit responsibilities.

1) Policy #6 (Environmental Protection Compliance) states that:

“UBC will act responsibly and demonstrate accountable management of the property and affairs of UBC in protecting the environment. All individuals in the University community share the responsibility for protecting the environment. Administrative heads of unit are responsible for ensuring compliance with legislation and UBC procedures both on and off campus.”

Approved January 1994. Revised May 2000. See page viii for the policy document.

All individuals in Units are to be made aware of the policy on Environmental Protection Compliance and other relevant policies (e.g. policy #5 – Sustainability). It is a goal of the University that all administrative heads of unit, or their designates, attend the session on “Environmental Responsibilities at UBC”. For information on upcoming sessions contact the Manager Environmental Programs (822-9527).

All individuals within the Unit are responsible for reporting incidents, and serious issues immediately to the administrative head of unit. The administrative head of unit shall advise the Manager Environmental Programs immediately of any serious issues.

2) Planning

The administrative head of unit, or their designate, must conduct a legal review annually. The review will consist of:

- A review of the UBC Environmental Legislation Handbook and other resources to determine legislation, codes of practice, guidelines and UBC policies and procedures that are applicable to operations and activities within the Unit.
- Notification and distribution of applicable legislation, codes of practice, guidelines and UBC policies and procedures, to all affected Unit, Staff and Students in the Unit/Unit.
- Completion of the regulatory review form in appendix.

The principle investigator will assess the environmental impact of all new projects or activities. Where possible efforts will be taken to minimize any adverse impacts. For assistance or further information on conducting an assessment contact the Environmental Programs Advisory Committee, c/o the Manager Environmental Programs (822-9527).

3) Implementation and Operation

Disposal of hazardous wastes will be conducted in accordance with all applicable legislation and UBC procedures (contact the Environmental Programs Officer, 604-822-9280 for hazardous waste disposal procedures). All individuals handling hazardous materials are also referred to the UBC Spill Reporting Procedures.

All individuals must be trained prior to conducting activities that could impact the environment. Training records are to be documented and maintained up to date.

All individuals, where applicable, are encouraged to participate in the following programs:

- Solvent recovery (contact 822-1285)

- Photochemical Treatment and Recovery (contact 822-1285)
- Chemical Exchange (contact 822-6306)
- Waste Reduction (contact (822-3827)

Individuals are directed to the following resources to remain aware of environmental issues

- Waste Watchers newsletter (contact 822-9280)
- Environmental Programs web page:
(<http://www.Health and Safety.ubc.ca/Envprog/envhome.htm>)
- Environmental Programs Annual Reports (contact 822-9527)

Additional information regarding environmental issues and initiatives will be posted **on the safety bulletin board** or distributed by the local Health and Safety Program Administrator.

4) Monitoring and Corrective Action

Plans will be developed by the unit's Health and Safety Program Administrator for bringing all identified deficiencies into compliance with legislation. The local Health and Safety Program Administrator is responsible for ensuring issues identified through the UBC environmental audit program are addressed.

5) Management Review and Reporting

Environmental issues will be reviewed at the management meetings and during the annual safety awareness day. Serious issues are to be reported immediately to the Manager Environmental Programs and the unit's applicable Vice President.

ADDITIONAL INFORMATION AND REFERENCES

- UBC Policy #6 – Environmental Protection Compliance
- UBC Policy #5 – Sustainability
- UBC Waste Disposal Procedure Manual (Contact 604-822-9280)

14. CONTRACTOR HEALTH AND SAFETY

UNIT REQUIREMENTS

All work carried out at UBC must be in compliance with WCB regulation and UBC requirements. To ensure that contractors carry out work in a safe manner and meet these requirements, the University has developed and implemented a Contractor Safety Program. This program outlines:

1. Contractor Requirements

As a minimum, contractors must:

- Be experienced in all phases of work to be done
- Ensure their workers on the project are adequately trained in the work procedures to be used
- Exercise good site Health and Safety management
- Maintain acceptable housekeeping and material organization around the site.

2. Site Safety Management Plan

Each contractor must submit a written plan, which will

- Describe how Health and Safety will be managed throughout the project
- Identify the person who will be on site at all times to coordinate work activities and Health and Safety between trades and sub-contractors.

3. Hazard Identification and Assessment

Each contractor will complete a hazard identification and assessment of the project and work requirements prior to the start of work. The results of this survey must be communicated to all project workers and posted for reference.

4. Project Work

Contractors must ensure that work is planned and carried out in a manner that does not expose other workers, UBC staff, students or the public to any undue risk and the work must be carried out so that it has minimum impact on UBC activities.

No work may begin until proper authorization and/or work permits have been obtained. Management will monitor work activities on a periodic basis to determine and ensure compliance with WCB and internal requirements. Issues of non-compliance and consequences will be dealt directly with the contractor or principal contractor.

ADDITIONAL INFORMATION AND REFERENCES

- Orientation, Training and Supervision of Workers see page 16
- Hazard Assessments and Work Site Inspections see page 19
- UBC Contractor Health and Safety and Orientation Manual
- WCB Regulation, Parts 20.2, 20.3

15. PROGRAM REVIEW

A system for evaluating the operation of the Health and Safety program must be initiated. The purpose of a program review is to determine and implement changes needed to improve worker Health and Safety. The program review assesses the effectiveness of each element.

UNIT REQUIREMENTS

The Unit is to conduct a review of its Health and Safety Program on an annual basis.

The purposes of these reviews are to:

1. Identify the strengths of the Unit's Health and Safety Program
2. Identify areas of non-compliance (with the WCB Regulations)
3. Identify where the OSH Program could be further improved so as to achieve higher levels of health, Health and Safety as well as compliance
4. Assist the Unit's in reducing accidents and claims costs.

The unit's Health and Safety Program Administrator and members of the Health and Safety Committee are responsible for conducting these reviews in accordance with established program review procedures. All of the elements stated in the Health and Safety program manual are reviewed. The process considers the potential for future injury or loss and is a useful indicator of the Unit's current Health and Safety effort.

A written report is presented to the Unit Head and all levels of management upon completion of the review. Management then authorizes and implements measures to improve the Unit Health and Safety Program. The report is posted and available to all employees.

Management takes action on the evaluation report by:

1. Developing an action plan
2. Prioritizing recommendations
3. Assigning accountability
4. Conducting a follow up.

All program review activities are documented to meet due diligence requirements.

ADDITIONAL INFORMATION AND REFERENCES

- "Health and Safety Program Roles and Responsibilities" see page 6
- "Due Diligence" see WCB pamphlet
- WCB Occupational Health and Health and Safety Program Review Reference Guide and Workbook
- WCB Regulation 3.4(d)

Liquid Nitrogen Safety

Stock Liquid Nitrogen Containment

- ◆ Use only containers designed for holding low-temperature liquids.
- ◆ Use only the stopper supplied with the container.
- ◆ Where a special vented stopper/container is used, check the vent at regular intervals to make sure it is not plugged with ice.
- ◆ Do not move a container by "walking" or rolling on its lower rim.
- ◆ If a glass dewar flask is used as a container of small quantities of liquid nitrogen, the exposed glass part of the flask should be taped to minimize the flying glass hazards in case of implosion or explosion.
- ◆ If a domestic thermos flask is used as container of small quantities of liquid nitrogen, the integrity of the plastic sealing ring of the thermos should be checked regularly to ensure that no liquid nitrogen can get into the space between the thermos and the outside container.
- ◆ Never plug small containers of liquid - cover them with aluminum foil or cotton when not in use to prevent an accumulation of moisture and plugging of the outlet with ice.
- ◆ Make sure that there is no heat source near the container.

Precautions for Handling Liquid Nitrogen

- ◆ Always handle liquid nitrogen in well-ventilated areas to prevent excessive concentration of nitrogen which can cause asphyxiation.
- ◆ Avoid contact with the liquid nitrogen directly. Always wear gloves (leather or CRYO-GLOVES) when handling anything that is in contact with liquid nitrogen.
- ◆ Protect your eyes with safety glasses with side shields, safety goggles or face shield. Eyes can be damaged even by the cold gas issuing from liquid nitrogen.
- ◆ When charging a warm container or when inserting objects into the liquid, perform the operation slowly to minimize boiling and splashing.
- ◆ Use tongs to withdraw objects immersed in liquid.
- ◆ Do not expose liquid nitrogen to the air to minimize condensation of oxygen from air.

First Aid Procedure

- ◆ If any liquid nitrogen contacts the skin, remove any clothing that may constrict blood circulation to the frozen area. Immediately warm the areas affected by frostbite with water that is near normal body temperature.
- ◆ If the skin is blistered, or there is any chance that the eyes have been affected, get the affected person to a physician immediately for treatment.

Centrifuge Operation Protocol

1. Ensure that that centrifuge is on a firm, non-resonant surface
2. Open the centrifuge and ensure that an appropriate rotor is installed (as per centrifuge manual) – to install a rotor, set all controls to their OFF position then remove the knurled nut from the top of the motor shaft by turning counter-clockwise. Align the keyway in the rotor with the key on the shaft and place the empty rotor on the shaft. Replace the nut and tighten finger-tight.
3. Ensure that the rotor is balanced with the correct combination of accessories
**It is essential that matched sets of multi-carriers and tubes are placed symmetrically on the rotor. This can be determined by checking that the numbers on the carriers (catalog number found on top and weight in grams on underside) and tubes (catalog number and weight in grams printed on side) and ensuring that they are identical and within 0.5 grams of each other.
4. Place your samples into the tubes, again ensuring that they are balanced both in weight and their position in the centrifuge (weight A directly opposite weight A, weight B directly opposite weight B, etc.) Additionally, opposite samples should be loaded according to their centre of gravity. Centrifuge tubes should be selected which are alike in shape, thickness and distribution of glass or plastic. If samples are not in matched pairs, create appropriate balance tubes filled with water.
5. Close the lid completely and ensure that it is latched/locked and that the vent hole is unobstructed – DO NOT attempt to open the lid while the centrifuge is in operation!
6. Set the speed and the timer on the centrifuge and then turn it on.
7. **IF THE CENTRIFUGE VIBRATES CONSTANTLY DURING OPERATION, TURN IT OFF AND CHECK YOUR BALANCING.**
8. Once the spin has completed, the BRAKE switch can be held down to slow the centrifuge – Listen for a slowing effect and note the reduction in speed as shown on the tachometer. Hold the switch down until the tachometer reads 0 RPM and then release the switch. Further breaking can damage the motor.
9. If a spill occurs, clean the centrifuge IMMEDIATELY with mild soap and water – DO NOT use solvents.



Dishwasher Protocol

1. Close door, push in plug and push **pre-wash** button to attain dishwasher temperature of 60C.
2. Load the dishes onto racks or into cages, whichever is more suitable to keep them steady.
3. After pre-wash has finished and the water is 60C, open the door.
4. Lift the cover from the small hole nearest the door and add 1/3 tablespoon of soap powder.
5. Replace soap-hole cover and load the racks/cages into the dishwasher and close the door.
6. Push the **WASH** button and leave the dishwasher running for 10 minutes minimum.
Note: Check dishes are stable and not loose in the dishwasher.
7. To stop the wash cycle after 10 minutes push the **WASH** button again.
8. Next, rinse the dishes for 10 minutes minimum by pushing the **RINSE** button.
9. To stop the rinse cycle after 10 minutes push the **RINSE** button again.
10. Open door and remove dishes to a paper towel/benchkote-lined trolley and leave to dry.
11. Pull plug to allow water to drain away.

PROTOCOL: CO₂ CYLINDER REGULATOR REPLACEMENT

Cylinders are labeled Main and Back-up as one cylinder is always kept as a back-up. The back-up regulator is kept at a lower pressure than the main regulator. CO₂ diminishes quickly after 700 units are left.

TELEPHONE PRAXAIR: 604-527-0710 for CO₂ replacements.

1. When the CO₂ cylinder is empty tear off the IN USE tag around the neck of the cylinder.
2. Close the valve on top of the tank; read the instructions on the valve for direction.
3. Turn off the valve/knob by the v-shaped connector to shut off the valve CO₂.
4. Detach the regulator from the cylinder. Use a wrench (upwards motion) to unscrew the brass bolt of the regulator.

NOTE: Support the regulator with your hand so it does not fall.

5. Remove the regulator and store it in a safe place adjacent to the tanks.

NOTE: Do not lose the washer from the regulator.

6. Replace the metal cap on the empty CO₂ tank and leave it for collection, still chained up.
7. Call Praxair @ 604-527-0710 for a new delivery of medical CO₂ cylinders.
8. When the new full cylinder arrives remove the FULL tag so the tag displays IN USE.
9. Screw the regulator on to the tank by hand at first and then with a wrench once it is on straight. Ensure the regulator is straight to avoid damaging the thread.

Autoclave Instructions

Preparatory Steps:

1. Sign in on the book
2. Turn on Power Switch
3. Check the parameters for the cycle you wish to use by pressing the button once.
4. Turn HI/LOW valve to setting needed for your cycle.
5. Leave to warm up about 20-30 min if the autoclave is cold.

Starting the cycle:

1. Place things in the autoclave
2. Make sure that the door is closed securely
3. Press the button for your cycle twice within 5 seconds
4. Check the autoclave about 30 minutes after you start to make sure it has charged properly. **Alarm can be turned off by pressing RESET**. This usually means that the HI/LOW valve has not been properly set.

If you change the parameters, please change them back when finished.

Programmed Cycles:

1. Liquid

- Set HI/LOW valve to **LOW** (fully counterclockwise)
- Sterilization time has been set to **45** minutes
- Temp has been set to **250 F**

This cycle has a very slow venting time to prevent liquids from boiling over.

Opening the door too wide or quickly can cause liquid loss. Please use a tray to catch the liquids under your bottles/ flasks

2. Flash

- Set HI/LOW valve to **HIGH** (fully clockwise)
- Sterilization time has been set at **5** minutes
- Temp has been set to **270 F**
- Dry time has been set to **1** minute

This cycle is used for autoclaving unwrapped metal or glass where the wetness of the objects is not a factor in controlling sterility.

3. Gravity (Regular cycle)

- Set HI/LOW valve to **HIGH** (fully clockwise)
- Sterilization time has been set at **20** minutes
- Temp has been set to **270 F**
- Dry time has been set to **20** minutes

Most suitable for wrapped or objects not harmed by longer exposure to high temperature and steam

4. Gravity

- Set HI/LOW valve to **LOW** (fully counterclockwise)
- Sterilization time has been set at **30** minutes
- Temp has been set to **250 F**
- Dry time has been set to **15** minutes

Can be used for plastics such as pipet tips though the time should probably be decreased to 15 min.

Contact Peter Easthope or Helen Dyck if there are any problems or questions.

<http://www.universitycounsel.ubc.ca/policies/health.html>

<http://www.hse.ubc.ca/>

[..\appendixes\Safety Manual - Appendix D Ergonomics.doc](#)

Musculoskeletal Injury (MSI) Prevention Program

Introduction

The implementation of the Occupational Health and Safety Regulation has given new responsibilities to all employers in British Columbia. One of the new provisions introduced by the Regulation is that of the Ergonomics Musculoskeletal Injury (MSI) requirements, Section 4.46 – 4.53.

The regulation prescribes specific high risk work activities which the University has to give due consideration to when undertaking risk assessments of the workplace and work activities. These requirements are designed to eliminate as far as is practicable, the development of MSIs in the workforce. Overall responsibility for the implementation of these provisions rests with administrative heads of unit as per UBC safety policy #7. Information, instruction, training and on-going support will be provided to these departments until knowledge and levels of experience are brought up to a satisfactory level (i.e., moving from an expert driven to a culture driven process).

Ergonomic injuries account for more than half of all injuries arising from the work activities at UBC. The implementation program will provide a framework for management/unions and safety committees to address the ergonomic risks within their areas of responsibility and to take appropriate action to reduce those risks when identified.

The following document gives an outline of the University's strategy of not only achieving statutory compliance but working towards best practices in the reduction of MSIs.

How UBC’s Ergonomics Program Meets WCB Regulations:

WCB Ergonomic Regulation	UBC Ergonomics Program
<p>4.46 Definition Musculoskeletal injury or MSI means an injury or disorder of the muscles, tendons, ligaments, joints, nerves, blood vessels or related soft tissue including a sprain, strain and inflammation, that may be caused or aggravated by work.</p>	<p>It is important that first aid attendants are trained in the signs and symptoms of MSIs and that detailed description of the injury are included in the injury stats to ensure accurate statistics regarding MSIs.</p>
<p>4.47 Risk Identification The employer must identify factors in the workplace that may expose workers to a risk of musculoskeletal injury (MSI).</p>	<p>This regulation places a general duty on employers to undertake an assessment of the workplace (and those activities that occur within it) in order to eliminate/minimize the risk of MSIs. This assessment is to be carried out by competent personnel who are familiar with the work activities and who have received instruction and training in the identification and significance of risk of those activities. The departmental Office Ergo Representative(s) can complete office workstation assessments. The University Ergonomics Program Officer can perform assessments outside of office tasks.</p>
<p>4.48 Risk Assessment When factors that may expose workers to a risk of MSI have been identified the employer must ensure that the risk to workers is assessed.</p>	<p>The University has a statutory duty, via the administrative heads of departments, to conduct an adequate assessment of the tasks undertaken within their operational area, to ensure that such risks are minimized. The departmental Office Ergo Representative(s) can complete office workstation assessments. The University Ergonomics Program Officer can perform assessments outside of office tasks. The WCB also has ergonomic checklists that can be used to aid in risk assessments. This method of risk assessments may be considered to departments outside of the high risk areas.</p>
<p>4.49 Risk Factors</p>	

WCB Ergonomic Regulation	UBC Ergonomics Program
<p>The following factors must be considered, where applicable, in the identification and assessment of the risk of MSI:</p> <ul style="list-style-type: none"> a) the physical demands of work activities including: force, repetition, duration, work postures, and local contact stresses b) aspects of the layout and condition of the workplace or workstation, including: working reaches, working heights, seating, and floor surfaces c) the characteristics of objects handled, including: size and shape, load condition and weight distribution, and container, tool and equipment handles d) the environmental conditions, including cold temperature e) the following characteristics of the organization of work: work recovery cycles, task variability and work rate 	<p>A risk factor checklist has been developed and used during the assessments performed by the UBC Ergonomics Program Officer to ensure that all risk factors are considered. This checklist is available on the Health, Safety and Environment website www.hse.ubc.ca</p> <p>Office Ergo Representatives use a comprehensive Computer Workstation Set-up Checklist to ensure that all risk factors associated with office work are considered during the assessment.</p>
<p>4.50 Risk Control</p> <ul style="list-style-type: none"> 1) The employer must eliminate or, if that is not practicable, minimize the risk of MSI to workers. 2) Personal protective equipment may only be used as a substitute for engineering or administrative controls if it is used in circumstances in which those controls are not practicable. 3) The employer must, without delay, implement interim control measures when the introduction of permanent control measures will be delayed. 	<p>Recommendations as a result of an ergonomics assessment will be implemented to help protect workers against MSIs. A detailed action plan is developed for each job assessed in cooperation with management, supervisors, and workers. Implementation of recommendations is the responsibility of the individual departments. Follow-up on the action plan is scheduled in correlation with the timelines indicated within the action plan.</p>
<p>4.51 Education and Training</p> <ul style="list-style-type: none"> 1) The employer must ensure that a worker who may be exposed to a risk of MSI is educated in risk identification related to the work, including the recognition of early signs and symptoms of MSIs and their potential health effects. 2) The employer must ensure that a worker to be assigned to work which requires specific measures to control the risk of MSI is trained in the use of those measures, including, where 	<p>Along with every ergonomic assessment completed on campus are two training sessions. The first one provides ergonomics awareness and meets the requirements of item (1). The second session discusses risk controls including work practices which meets the requirements of item (2).</p> <p>The Office Ergo Rep is required to take a 4-hour training session, which enables them to provide resources and training to their departments regarding office ergonomics.</p>

Appendix D – MSI Prevention Program

WCB Ergonomic Regulation	UBC Ergonomics Program
<p>applicable, work procedures, mechanical aids and personal protective equipment.</p>	<p>Other avenues of education and training are through Safety Committees, Orientation Training, Departmental Awareness Sessions, and Website Resources.</p>
<p>4.52 Evaluation</p> <ol style="list-style-type: none"> 1) The employer must monitor the effectiveness of the measures taken to comply with the Ergonomics (MSI) Requirements and ensure they are reviewed at least annually 2) When the monitoring required by subsection (1) identifies deficiencies, they must be corrected without undue delay. 	<p>A formal evaluation process has been developed to ensure that the effectiveness of the control measures is monitored, this occurs 1-year after the initial assessment. This process includes reviewing injury stats, discomfort survey information if available, worker interviews, work practice checklist, and risk factor checklist. If risk factors are still present, recommendations are implemented to reduce risk further.</p>
<p>4.53 Consultation</p> <ol style="list-style-type: none"> 1) The employer must consult with the joint committee or the worker health and safety representative, as applicable, with respect to the following when they are required by the Ergonomics (MSI) Requirements: <ol style="list-style-type: none"> a) risk identification, assessment and control; b) the content an provision of worker education and training; c) the evaluation of the compliance measures taken 2) The employer must, when performing a risk assessment, consult with <ol style="list-style-type: none"> a) workers with signs and symptoms of MSI, and b) a representative sample of the workers who are required to carry out the work being assessed. 	<p>A proactive method of receiving feedback from workers who are experiencing signs and symptoms of MSIs, is to use a discomfort survey. This ensures that not only individuals that have reported injuries to first aid are consulted but individuals with the early onset of signs and symptoms are consulted as well.</p> <p>During an assessment of a particular work area or job position, workers are interviewed to receive feedback. Best practice includes feedback from all workers affected by the implementation of ergonomic improvements.</p>

Ergonomic Issues dealt with through Safety Committees:

Ensuring that ergonomic concerns are a focus of Safety Committees is one goal of the Ergonomics Program here at UBC. Presently the program is more expert driven than culture driven. Meaning that at the present time, implementation of ergonomic recommendations is facilitated by either the Ergonomics Program Officer or Departmental Office Ergonomic Representatives. As the momentum changes towards a culture driven program, Safety Committee Members will be trained in risk identification and basic risk assessment. Safety Committees should discuss and document ergonomic concerns and bring in the appropriate resources to aid in the prevention and reduction of MSIs.

UBC Office Ergonomics Program:

Why Does Your Department Need an Office Ergonomics Representative?

- Over 50% of all injuries on campus are related to ergonomics
- Discomfort can lead to musculoskeletal injury (MSI's) early intervention can prevent this
- Your department will have an easily accessible ergonomics resource that will aid in early intervention therefore reducing the number of musculoskeletal injuries
- The Office Ergo Rep will help workers set-up their computer workstations to minimize risk factors.
- Your Office Ergo Rep will be your department's liaison to the UBC Ergonomics Program Officer in the Health, Safety and Environment Department
- WCB requires that each department educate workers about risk factors, signs and symptoms of injury and prevention strategies. At UBC, in our Safety Policy #7, it is the "responsibility of...administrative heads of unit to provide a safe, healthy and secure working environment"

Workstation Review Process:

1. Distribute the "Computer Workstation Set-up Checklist" to your co-workers. Assist your co-workers to optimize their workstations. Make any changes that can be done immediately. Keep the completed checklists in your files.
2. Document discussions with those who refuse assistance. Keep this documentation in your files.
3. If you encounter a workstation that requires further action, send the completed checklist to the supervisor as well as to the Chair of the Health and Safety Committee for follow-up.
4. Send a summary of the ergonomics activity within your department to the UBC Ergonomics Program Officer every 3 months. Include in this summary:
 - The names of the individuals that have been educated about MSIs and Risk Factors in the work place
 - Individuals whose workstations have been assessed using the checklist
 - Number of workstations that require action
 - Number of actions that were implemented

If you are interested or have been assigned by your department to become an Office Ergo Rep you will need to take a 4 hour-training course, which will provide you with the skills to ergonomically assess office workstations. A list of all the current Office Ergonomics Representatives is available on the HSE website at www.hse.ubc.ca under the section of Office Ergonomics.

Please contact the UBC Ergonomics Program Officer at ergonomics @safety.ubc.ca to find out about up coming courses.

Reference Materials

For links to the following UBC resource documents, go to the following website address:

<http://www.hse.ubc.ca/v.2/inner.php?scid=18&pid=0>

- Computer Workstation Set-up Checklist
- Office Stretch Sheets
- Warm-up, Upper Body, and Lower Body Stretch Sheets
- Risk Factor Checklist
- Office Ergo Rep – Contact Poster

For links to the following WCB resource documents, go to the following website address:

www.worksafebc.com/publications/health_and_safety_information/by_topic/ergonomics/default.asp

- Back Talk: An Owner’s Manual for Backs
- How to Make Your Computer Workstation Fit You
- Preventing Musculoskeletal Injury (MSI): A Guide for Employers and Joint Committees
- Understanding the Risks of Musculoskeletal Injury (MSI): An Educational Guide for Workers on Sprains, Strains, and Other MSIs
- Ergonomics Commentary 1 – Back Belts
- Ergonomics Commentary 2 – Wrist Braces
- Ergonomics Commentary 3 – PC Mouse

