



BCIT Safety Manual
SARS VIRUS
EXPOSURE CONTROL PLAN



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1. Introduction

Severe Acute Respiratory Syndrome (SARS) is an infectious respiratory disease that is caused by the corona virus. The first case of SARS was found in Southern China in November 2002. From Hong Kong, it spread to more than two dozen countries in Asia, North America, South America, and Europe, killing 774 victims from 2002 to 2004. In Canada, a total of 251 cases were reported with 43 deaths. While SARS disappeared after 2004, nobody can eliminate the possibility of reoccurrence because the exact cause of the disease still remains unclear.

The majority of SARS cases began with flu-like symptoms. The earliest symptom is a sudden onset of high fever with or without muscle aches. Some patients may also have chills, headaches, shivering spells and cough. In about 20% of cases, patients developed diarrhea. After 3 to 7 days, patients may start to cough and experience shortness of breath. X-ray changes related to pneumonia were usually found after a further 3 to 4 days. A person may not be infectious during the incubation period which is about 3 to 7 days, but for some, it may be up to 10 days. A small number of serious SARS cases were very infectious in the initial stages following infection. SARS has harmful long-term effects on survivors' pulmonary function, exercise capacity, and health-related quality of life.

Currently, there is no specific medication that can cure SARS. Vaccination for prevention is under development and in phases of clinical trials.

2. Purpose

This control plan has been developed to:

- Prevent harmful exposure of BCIT employees, students, contractors and visitors to SARS virus
- Ensure a system of reporting on, and alerting against SARS virus on campus
- Provide awareness and educational information on SARS, the associated symptoms/illness, and corresponding preventive/control measures in case of the reoccurrence of SARS

The plan is applicable to all employees, students, contractors and visitors of BCIT.

3. Definitions

3.1 Severe Acute Respiratory Syndrome (SARS)

A severe and contagious viral infection of the lungs with unknown etiology; characterized by high fever, dry cough, and breathing difficulties.

3.2 Incubation Period

The time elapsed between exposure to SARS virus and when symptoms and signs are first apparent.

3.3 Occupational Exposure to SARS

Instructors or students who could reasonably be anticipated to be at risk of harmful contact with a person who has or is suspected to have SARS or with secretions from his/her nose, mouth/throat or other bodily fluids while caring for, or handling the patient or performing medical analyses.

3.4 Supervisor

A BCIT employee who instructs, directs, and controls employees and/or students in the performance of their duties and activities.

3.5 Employee

A person employed at BCIT fulltime, part time or auxiliary.

3.6 Student

A person enrolled in a full-time or part-time program or any courses in BCIT, including students in practicum and apprenticeships.

4. Applicable Legislation and Reference Materials

Public Health Agency of Canada - [SARS](#)

World Health Organization - [Severe Acute Respiratory Syndrome \(SARS\)](#)

BC Centre for Disease Control - [SARS: Severe Acute Respiratory Syndrome](#)

WorkSafeBC - [General Guide on Applying the OHS Regulation to Severe Acute Respiratory Syndrome \(SARS\)](#)

5. Roles & Responsibilities

BCIT is committed to protecting the health of employees, students, and visitors. Employees and students must be aware of the potential risks of SARS and protect themselves by following this Exposure Control Plan.

5.1 BCIT

- Support the Biological Safety Committee for the Institute
- Support this Exposure Control Plan by ensuring:
 - 1) awareness and education on prevention of SARS is given to employees and students by their supervisors, as needed
 - 2) medical services and first aid for health monitoring are provided

5.2 OHS Group

- Develop and maintain an effective SARS Exposure Control Plan
- Ensure compliance with this Exposure Control Plan
- Facilitate response to outbreaks of SARS and provide the appropriate communication to the BCIT community

- Act as an advisory resource for preventing/reducing transmission of SARS
- Arrange SARS awareness and education for employees and students, upon reoccurrence of SARS
- Ensure due diligence, accountability and reporting

5.3 Biosafety Occupational Health and Safety Special Committee

- Review the Exposure Control Plan when necessary
- Provide updated information regarding SARS, upon reoccurrence of SARS

5.4 BCIT First Aid

- Provide medical advice on preventing/reducing transmission of SARS
- Refer patients who have developed suspicious symptoms after travels or contact with human/animal carriers of SARS virus to medical practitioners
- File and keep relevant medical records
- Notify OHS manager in the event of SARS related symptoms

5.5 Supervisor

- In the event of the reoccurrence of SARS, ensure that this Exposure Control Plan is read and understood by employees and students
- Ensure that work practices eliminate or minimize the risk of unforeseen contact with SARS virus
- Monitor the workplace to ensure that safeguards are used, precautions are taken and work procedures are followed during practicum in healthcare settings
- Ensure that employees or students who develop suspicious symptoms after travel or contact with human/animal carriers of the SARS virus seek First Aid for medical assistance immediately

5.6 BCIT Employees and students

- Read and understand the Exposure Control Plan, as necessary
- Attend awareness and education sessions as provided
- Instructor and students in Health Science departments who are occupationally involved in contact with patients and/or human bodily fluid specimens during their practicum and/or experiments must follow the General Guide on Applying the OHS Regulation to Severe Acute Respiratory Syndrome (SARS) developed by WorkSafeBC. This includes use of personal protective equipment (PPE) and refusal of unsafe work
- Be aware of SARS warnings and follow the guidance from relevant jurisdictions and/or organizations
- Take corresponding preventive measures whenever necessary
 - Report suspicious symptoms to supervisors and First Aid Attendants immediately
 - Do NOT contact others who have suspicious symptoms and/or who are under medical observation
- DO NOT contact others while having suspicious symptoms and strictly follow the advice given by medical professionals during medical observations and/or treatments

6. Risk Identification, Assessment, Communication and Control

6.1 Risk Identification and Assessment

In the case of SARS reoccurrence, the BCIT Safety, Security and Emergency Management, Medical Services and the Biosafety Committee will hold a joint meeting to evaluate the risk for BCIT. The risk identification and exposure assessment would be based on the following factors:

Transmission Routes

The primary mode of transmission of SARS appears to be direct mucous membrane (eye, nose, and mouth) contact with infectious respiratory droplets from SARS patients. Contact with contaminated surfaces has occasionally resulted in infection.

People at Risk of Exposure

Should SARS reoccur, the following groups of people would be at risk:

- Individuals who have direct contact with a person who has been diagnosed with SARS are at the highest risk
- Instructors and students conducting practicum in hospitals will be at higher risk should SARS reoccur in British Columbia
- Health professionals such as First Aid Attendants and Medical Services staff are at greater risk if SARS were to re-emerge in British Columbia
- Everyone who will, or has traveled to a country or a city where SARS has re-emerged is at risk for contracting the disease

Work Environment

Handling or contacting SARS patients in environments that lack the controls to restrict transmission of the virus increase the risk of infection. Controls include appropriate ventilation, work procedures, and personal protective equipment.

Season

From the global experience in 2002-2004 it seems that, in the Northern Hemisphere, an outbreak of SARS has greater chance to occur during the winter and spring than in the summer.

Other Risk Factors

- Other risk factors that should be considered in the risk assessment may include:
 - The area(s)/region(s) where SARS cases have been identified
 - The distance and connections between British Columbia and the area(s)/region(s)
 - Whether any BCIT employee or student visited or came from the area(s)/region(s)
 - The information provided by external agencies (BCCDC, Health Canada, etc)
 - The number of cases and the trend (increasing/decreasing) of the incidence
 - The number of students and employees providing care in external health care institutions
 - Employee and student awareness
 - Effectiveness of preventative measures
 - Effectiveness of communication to address the BCIT community

- A risk assessment should be performed in accordance with the Risk Assessment Procedures described in Part 2 – Section 23, of BCIT Safety Manual. Departments and individuals should consult with physicians, the OHS Group or the Biosafety OHS Special Committee whenever necessary
- The outcome of this risk assessment may result in the activation of the BCIT Emergency Response Plan and the Emergency Operations Centre.

6.2 Risk Communication

In case SARS re-emerges, the Safety, Security and Emergency Management, Medical Services and BCIT Biosafety Committee will issue health alert notices for all staff and students based upon the Risk Assessment in order to maintain effective hazard communication.

6.3 Infection Control

BCIT employees and students should take the following measures to prevent SARS infection upon re-emergence.

Personal Hygiene

Good personal hygiene is the key to reduce the risk of infection and spreading SARS from an infected person to a healthy individual. The following hygiene practices are recommended:

- Wash hands often and well, especially after contact with fluid from your nose, mouth, throat or eyes (i.e. coughing or sneezing or blowing the nose). Hand washing should be done using soap and warm water for a minimum of 20 seconds. Alcohol-based waterless hand rinses may be substituted for hand washing.
- Cover mouth and nose with a tissue when sneezing or coughing
- Properly dispose of used tissues or other articles that have come in contact with fluid from your nose, throat, mouth or eyes
- Avoid sharing eating and drinking utensils
- Avoid direct contact with ill persons
- Avoid contact with those animals that have been suspected to carry the SARS virus
- Clean all surfaces that are possibly contaminated with SARS virus

Ventilation

Ventilation is a type of engineering control which can help reduce airborne concentrations of virus and filter out some other microbes.

- Whenever practicable, classrooms, laboratories, libraries, workshops, offices, and cafeterias at BCIT should be appropriately and sufficiently ventilated to ensure a supply of clean air
- Should a suspicious SARS case be identified/reported on campus, the ventilation system providing HVAC to the room where the carrier has stayed may be shut down for disinfection

Surveillance and Reporting

Epidemiological surveillance and early reporting play important roles in the prevention and limiting the spread of SARS. If there is another SARS outbreak, screening measures may be implemented at



BCIT if necessary.

- Individuals who have a fever over 38.0°C (100.4°F), and one or more of the following respiratory symptoms: cough, shortness of breath or difficulty breathing occur, headache, muscle aches, sore throat and fatigue after visiting an area with SARS cases or contacting animals must report to their family physician or local health authority immediately and seek medical advice as soon as possible
- These individuals should inform their family physician or Medical Services of when and where they traveled and indicate whether there was contact with anyone who had SARS symptoms
- All suspected SARS cases on campus should be immediately reported to the Supervisor, First Aid Attendant/Medical Services, and the Director of Safety, Security and Emergency Management
- The Director of Safety, Security and Emergency Management /Medical Services will report suspect case(s) at BCIT to local health authority immediately

The Table in Appendix A summarizes the criteria of SARS cases for surveillance purposes.

International Students

- International students coming from a country where SARS has re-emerged may attend BCIT and work on campuses if no suspicious symptoms have been developed
- These students must inform their instructors/supervisors and monitor their health for 10 days after departure from their countries
- All international students must abide by the stipulations in Surveillance and Reporting section

Social Distancing

- Individuals who experience the flu-like symptoms that were mentioned above after traveling to an area/country with SARS cases should NOT attend BCIT until evaluated and cleared by public health officials and should minimize close contact with other persons
- The individual or his/her family members should contact their community health center, or their family physicians by phone prior to going for assessment to ensure that the proper precautions are taken in order to minimize the risk of spread to others
- If symptoms do not meet SARS criteria within 72 hours, the employee/student may be allowed to return to BCIT
- All suspected SARS cases reported on campus should be appropriately quarantined as soon as possible
- Staff and/or students who have had contact with the individual(s) who are suspected SARS cases will be notified/alerted and monitored and may need to be quarantined
- If the Emergency Response Plan and Emergency Operation Centre is activated the institute will follow the Institute's Emergency Response plan
- Should a SARS epidemic occur near/on campus, BCIT may be closed or partially closed

Personal Protective Measures

Use of personal protective measures is an effective approach to prevent SARS transmission. Personal protective measures include respiratory protection, eye protection and skin protection and will be

assigned based upon the results of the Risk Assessment. Students and instructors conducting practicum and/or working in healthcare settings shall follow the established guidelines for the setting including established work procedures and the Universal Precaution.

7. Education

Education is crucial for awareness, early detection and prevention.

- Supervisors must ensure that employees and students have read and understood this control plan if SARS re-emerge. After education, employees and students should have sufficient awareness and be able to answer seven key questions:
 - 1) What is SARS?
 - 2) How is SARS transmitted?
 - 3) What are the typical symptoms of SARS infection?
 - 4) What precautions and control/protective measures are required to prevent SARS?
 - 5) What should you do when you (or others) have suspicious symptoms?
 - 6) Where can you obtain further information and help?
- Upon re-emergence, BCIT Safety, Security and Emergency Management, Medical Services and Biosafety Committee will provide education on SARS prevention by means of bulletins, websites, brochures and seminars
- Records of education such as signed training forms will be kept by in Dean/Directors Office.

BCIT Employees and students are also encouraged to use the website provided by [Health Canada](#) to acquire general information on SARS.

8. Work Procedures

Students and instructors conducting practicum in healthcare settings and/or performing analyses of human specimens in medical laboratories are required to strictly follow the work procedures, prevention guidelines and precautions established by health authorities in Canada and WHO. These include:

- WHO: [Hospital Infection Control Guidance for Severe Acute Respiratory Syndrome \(SARS\)](#)
- WHO: [Hospital discharge and follow-up policy for patients who have been diagnosed with Severe Acute Respiratory Syndrome \(SARS\)](#)
- Public Health Agency of Canada: [Office of Laboratory Security - Biosafety Advisory Severe Acute Respiratory Syndrome: Interim Guidelines](#)
- Public Health Agency of Canada: [Fact Sheets for Health Care Facilities and Outpatient Settings](#)
- Public Health Agency of Canada: [Management of Severe Acute Respiratory Syndrome \(SARS\) in Adults: Interim Guidance for Health Care Providers](#)

9. Hygiene Facilities and Decontamination Procedures

Hygiene facilities for SARS prevention and control include, but are not limited to, general ventilation for biosafety, local exhaust/fume hoods, wards for quarantine, ventilator with HEPA filter for SARS patients, hand washer, eye washer, changing rooms, biosafety containers, and facilities for disinfection.

- Students and instructors conducting practicum in healthcare settings and/or performing analyses of human specimens in medical laboratories are required to use hygiene facilities provided whenever applicable
- Areas and surfaces in the workplace or on campuses that are contaminated or possibly contaminated should be thoroughly cleaned, disinfected and ventilated
- Contaminated waste must be handled in accordance with BCIT Biosafety policies (BCIT Safety Manual Part 4, Section 54) and other corresponding waste disposal guidelines for prevention of SARS transmission

10. Health Monitoring

- Individuals who have visited an area/country where SARS has re-emerged should monitor their health for 10 days after departure from the area/country
- International students who come from any countries where SARS have re-merged must inform their instructors/supervisors and monitor their health for 10 days after departure from their countries
- Individuals who have flu-like symptoms within 10 days after traveling to or coming from an area/country with SARS cases must be monitored by their family physicians or local health authorities for at least 72 hours to see whether the conditions meet SARS criteria
- All recovered SARS patients should be monitored by their family physicians or local health authorities for appropriate period of time for their health and virus-carrying status

11. Documentation

Records of education on SARS and prevention will be kept as outlined in Section 6 of this document. Copies of records will be forwarded to Biological Safety Committee and Director of Safety, Security and Emergency Department when necessary.

12. Program Review

This Control Plan will be reviewed annually for the following:

- the most updated information on SARS
- the effectiveness of this Exposure Control Plan
- documentation for awareness and education



The annual review will be done in consultation with BCIT Joint Occupational Health and Safety Committee and BCIT Biological Safety Occupational Health and Safety Special Committee.

Appendix A- Criteria of SARS cases for surveillance purposes

SARS Suspect

1. Travel history to an area/country where SARS re-emerges OR close contact with an identified suspect or probable SARS patient
 2. Fever $\geq 38^{\circ}$ C
 3. Any respiratory symptom such as cough, difficulty in breathing
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Probable SARS

1. SARS suspect AND
 2. Chest X-ray findings consistent with pneumonia
-

Clinical SARS

1. A history of fever, or documented fever $\geq 38^{\circ}$ C (100.4 °F) AND
 2. One or more symptoms of lower respiratory tract illness (cough, difficulty breathing, shortness of breath) AND
 3. Radiographic evidence of lung infiltrates consistent with pneumonia or ARDS or autopsy findings consistent with the pathology of pneumonia or ARDS without an identifiable cause AND
 4. No alternative diagnosis can fully explain the illness
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