PROTOCOL FOR PROTECTING EMERGENCY RESPONDERS FROM COMMUNICABLE DISEASE

MINISTRY OF HEALTH AND MINISTRY RESPONSIBLE FOR SENIORS

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OFFICE OF THE PROVINCIAL HEALTH OFFICER
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This document has been developed with the assistance of many individuals, particularly the management and union from B.C. paramedics, B.C. firefighters, police forces, representatives of the Medical Health Officers, the Infection Control Practitioners, the B.C. Centre for Disease Control and an emergency room physician. A list of those who participated is included as Appendix III.

I would particularly like to thank Andrea Bazuik, RN, OHN(C), Occupational Health Consultant for her extensive work in developing this document.

FUTURE ACTION

This document is being circulated widely to management and unions of emergency responders, to emergency room staff, physicians and public health units. This is to ensure appropriate action if emergency responders are exposed to infectious agents during their work, and to prevent them from developing communicable diseases.

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Note: The information included here is current in June 1998. For any suggested changes please contact the Office of the Provincial Health Officer at:
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This document will be available on the Ministry of Health and Ministry Responsible for Seniors, Provincial Health Officer’s website: http://www.hlth.gov.bc.ca/pho, and will be updated with suggested changes.
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INTRODUCTION

The Protocol for Protecting Emergency Responders from Communicable Disease is directed to paramedics, firefighters, and police in British Columbia, but can apply to any worker or bystander (Good Samaritan) in the community exposed to infectious agents.

The National Consensus Guidelines for Establishment of a Post Exposure Notification Protocol for Emergency Responders was developed in 1995. (1) Provinces, territories or federal agencies were encouraged to use these guidelines to establish notification protocols for emergency responders. Using the notification protocols will ensure that emergency responders are in the loop of notification following potential occupational exposure to infectious agents.

Emergency responders, by nature of their duties, have the potential to be exposed to a variety of infectious agents. Most infectious agents do not pose a threat to the health of the worker. However, some infectious agents do, and therefore this protocol will include the following agents due to their potential to cause illness, ease of transmission and availability of post exposure intervention:

**Bloodborne agents:**
Human immunodeficiency virus (HIV), hepatitis B virus (HBV), and hepatitis C virus (HCV).

**Airborne / droplet agents:**
Mycobacterium tuberculosis (TB), meningococcal bacteria.

Other agents may be included in the future. For information about other agents please contact your local health region or community health service society.
DEFINITIONS

The following are commonly used definitions throughout the document.

**Airborne / droplet agents:**
Any agent which can be transmitted from one person to another via the air and cause disease. Such agents are transmissible by respiratory secretions from the source person coughing, sneezing or talking.

**Bloodborne agents:**
Any agents which can be transmitted from one person to another via blood. Such agents may also be transmissible by other body fluids, and this varies depending on the agents.

**Blood or body fluid exposure:**
An event where blood or other potentially infectious body fluids come into contact with non-intact skin, mucous membranes, or subcutaneous tissue (via percutaneous injury).

**Non-intact skin:**
Cut, chapped, or abraded skin, healing wound less than three days old.

**Percutaneous exposure:**
Blood or body fluid from one person is introduced to the bloodstream of another person through the skin, via needle stick or other “sharps” injury.

**Permucosal exposure:**
Blood or body fluid of one person comes into contact with the mucous membranes of another person (membranes lining the cavities exposed to the air; including the eyes, nose, mouth, vagina, rectum and urethra).
EXPOSURE AND TRANSMISSION
This section describes the four routes of potential exposure and transmission of the infectious agents as defined in the definitions.

- percutaneous
- non-intact skin
- permucosal
- airborne / droplet

TRANSMISSION

Mode of transmission refers to the method by which an infectious agent is spread. Mode of transmission is specific for each disease.

A. Human Immunodeficiency Virus (HIV)
   - blood and/or body fluid visibly contaminated with blood
   - saliva visibly contaminated with blood
   - pleural, amniotic, pericardial, peritoneal, synovial and cerebrospinal fluids
   - tissues and organs
   - uterine/vaginal secretions or semen
   - breast milk
   - inflammatory exudate
   - saliva*

B. Hepatitis B Virus (HBV)
   - blood and/or body fluid visibly contaminated with blood
   - saliva visibly contaminated with blood
   - pleural, amniotic, pericardial, peritoneal, synovial and cerebrospinal fluids
   - tissues and organs
   - uterine/vaginal secretions or semen
   - breast milk*
   - saliva

C. Hepatitis C Virus (HCV)
   - blood and/or body fluid visibly contaminated with blood
   - saliva visibly contaminated with blood
   - pleural, amniotic, pericardial, peritoneal, synovial and cerebrospinal fluids
   - tissues and organs
   - uterine/vaginal secretions or semen
   - breast milk
   - saliva*

* degree to which transmission of the virus can occur is uncertain
Feces, nasal secretions, tears, urine, sweat and vomitus are not implicated in the method of transmission for bloodborne infectious agents unless visibly contaminated with blood.

It is often difficult in an emergency situation to determine whether a body fluid contains blood - or even what type of fluid it is. For this reason all body fluids, whether blood is visible or not, should be treated as potentially infectious. Infection control precautions should be implemented. (see section 6)

D. Meningococcal Diseases

- respiratory secretions from coughing, sneezing
- direct contact with articles contaminated with respiratory secretions

E. Tuberculosis (TB)

- respiratory secretions from talking, sneezing and coughing

F. Other Conditions

- For concerns about other conditions – e.g. Whooping Cough (Pertussis) in employees – please contact your local health unit.
ROLES AND RESPONSIBILITIES
This section describes the roles and responsibilities of key players in the prevention and treatment of those persons exposed to infectious agents.

A. Employer

It is recommended that each organization (employer) appoint a designated officer who has the knowledge and skills necessary to fulfill the role. This appointment will be made in consultation with each emergency service’s occupational health and safety committee including union officials if applicable.

Creating a work environment that protects and promotes the health and safety of workers is one of the objectives of the Workers’ Compensation Board (WCB). This protocol encourages the employer to adopt, promote and support this document in conjunction with WCB requirements. WCB requirements and this document are key elements in improving the protection of employees from the hazards of infectious agents.

B. Applicable Sections of WCB Regulations

Organizations should follow their own policies and procedures related to occupational exposures as well as those listed from WCB.

As of April 1998, pertinent sections of the WCB occupational health and safety regulation which are applicable to the employer with respect to bloodborne agents or other biohazardous materials as specified by WCB, include but are not limited to:

**Section 3.23**

“Every supervisor is responsible for the proper instruction of workers under the supervisor’s direction and control, and for ensuring their work is performed without undue risk”.

**Section 5.54**

(2) The exposure control plan must incorporate the following elements:
   (a) a statement of purpose and responsibilities;
   (b) risk identification, assessment and control;
   (c) education and training;
   (d) written work procedures, when required;
   (e) hygiene facilities and decontamination procedures, when required;
   (f) health monitoring, when required;
   (g) documentation, when required.

(3) The plan must be reviewed at least annually and updated as necessary by the employer, in consultation with the occupational health and safety committee, if any, or the worker health and safety representative, if any.
Section 5.55(3)
“The use of personal protective equipment as the primary means to control exposure is permitted only when:

a) substitution, or engineering or administrative controls are not practicable, or
b) additional protection is required because engineering or administrative controls are insufficient to reduce exposure below the applicable exposure limits, or
c) the exposure results from temporary or emergency conditions only”.

Section 6.34
“The employer must develop and implement an exposure control plan meeting the requirements of section 5.54, if a worker has or may have occupational exposure to a bloodborne pathogen, or to other biohazardous material as specified by the board”.

Section 6.35
“The employer must maintain a list of all job classifications and must identify all tasks and procedures in which there is a potential for occupational exposure to a bloodborne pathogen, or other biohazardous material specified by the board”.

Section 6.36
“(1) Engineering and work practice controls must be established to minimize or eliminate the potential for exposure to biohazardous material.
(2) Personal protective equipment must be worn to shield workers from biohazardous material.
(3) Housekeeping practices must be designed to keep the workplace clean and free from spills of biohazardous material.
(4) Work procedures must ensure that laundry contaminated with biohazardous material is isolated and bagged, and handled as little as possible.
(5) All regulated waste must be disposed of in accordance with federal, provincial and local regulations.
(6) For bloodborne pathogens, the employer must implement a system of universal precautions for all tasks and procedures identified as having a potential for occupational exposure under section 6.35”.

Section 6.37
“Work procedure must ensure contaminated laundry is isolated and bagged, and handled as little as possible”.*

Section 6.38
“The employer must inform workers about the contents of the exposure control plan and provide them with adequate education and training to work safely with and in proximity to potentially hazardous material”.

*It should be noted that normal laundering procedures are sufficient to reduce organisms to a non-infectious state.
Section 6.39
“Vaccination against hepatitis B virus must be made available at no cost to the worker, upon request, for all workers who have, or who may have, occupational exposure to hepatitis B virus”.

Section 6.40
“(1) A worker potentially exposed to hepatitis B virus or another bloodborne pathogen in an exposure incident must be advised to seek a medical evaluation at the time of the incident.
(2) The medical evaluation must be based on an assessment of the risks associated with the incident, and subsequent post-exposure health management must be provided as necessary”.

Section 6.41
“A record must be kept of all workers who are exposed to biohazardous or potentially biohazardous material while on the job, and of worker education and training sessions on biohazardous materials”.

Section 8.4
“When an evaluation of workplace conditions is required to determine appropriate personal protective equipment, the evaluation, where practicable, must be done in consultation with the occupational health and safety committee, if any, or the health and safety representative, if any, and with the worker who will use the equipment”.

When applicable, the employer is required to complete WCB form 7 “Employer’s Report of Injury or Occupational Disease”.

C. Employee

The emergency responder has an essential role in protecting his/her own health in the execution of all duties. He/she should:

- work in compliance with WCB regulations e.g. use engineering controls, safe work practices, wear personal protective equipment;
- work in compliance with occupational health and safety programs;
- ensure immunizations are up-to-date including tuberculosis screening;
- participate in education and training programs on prevention of transmission of infectious diseases;
- practice infection control precautions;
- report potential exposures of infectious agents specified in this manual, seek assessment and treatment;
- document potential exposure on the appropriate forms: WCB form 6A and 7A, first aid book, or accident/incident report;
- encourage and promote a safety attitude; and,
- report unsafe conditions.
D. **Designated Officer**

- be appointed by the employer with consultation with union if applicable;
- be knowledgeable of infectious disease transmission, symptoms and immunizations;
- be aware of the roles and responsibilities of other individuals or groups as listed in this protocol;
- ensure appropriate first aid has been delivered;
- be trained in crisis management;
- comply with all applicable legislation pertaining to confidentiality, including relevant provisions of the Freedom of Information and Protection of Privacy Act;
- educate or ensure the education of the employee regarding infection control precautions, reporting, assessment and treatment;
- provide support to the emergency responder;
- encourage the emergency responder with an obvious exposure to be assessed at an emergency department of a hospital if available;
- assess the emergency responder, if required;
- contact or receive information from the source person at the health care facility with the aid of an infection control practitioner, physician, or Registered Nurse;
- obtain advice and information from the hospital infection control practitioner and Medical Health Officer (MHO);
- provide follow-up counselling or ensure the emergency responder receives counselling from an alternate source;
- consult the (MHO) in the health unit where the emergency service is located and provide all details of the incident;
- work with the occupational health and safety committee of their organization;
- collect statistics regarding potential exposures;
- in the event of a dispute between the designated officer and the MHO concerning a possible exposure, the designated officer may refer the matter to the Provincial Health Officer; and,
- be aware of the documents reviewed and use them as a reference when required; refer to section 7.A “Information for the designated officer”.

E. **Occupational Health and Safety Committee**

- monitor compliance with WCB regulations and suggest recommendations to employer;
- endorse, support and promote this protocol;
- maintain the confidentiality of the emergency responder and primary case when an exposure has occurred;
- conduct workplace inspections and identify unsafe conditions; and
- review accident investigation and inspection reports and monitor follow-up activities.
F. Office of the Provincial Health Officer
   - work with the Medical Health Officers and B.C. Centre for Disease Control Society to assist in the development of this protocol; and
   - provide follow up information regarding this protocol, to organizations employing emergency responders.

G. Medical Health Officers and Public Health Nurses
   - act as a consultant and resource for the designated officer;
   - act as an advocate to ensure issues are resolved;
   - participate when required in determining whether or not a significant occupational exposure occurred, and in the treatment and follow up of the exposed emergency responder;
   - raise awareness of preventive health measures;
   - ensure the availability of tuberculosis testing;
   - ensure the availability of most immunizations and prophylaxis for the prevention, screening and treatment of communicable diseases;
   - have the legal responsibility to prevent and control communicable diseases; and,
   - provide contact tracing for notifiable communicable diseases especially meningococcal diseases and tuberculosis (i.e. determine if there was a transport by an emergency responder).

H. Hospital Infection Control Practitioner or Designate
   - act as a resource to hospital staff for source testing and exposed emergency responder;
   - act as a liaison between the Medical Health Officer/Public Health Nurse and physician, and lab and physician; and,
   - may act as a resource for the designated officer.

I. Unions and/or Associations
   - endorse, support, and promote the implementation of this protocol; and,
   - raise awareness that employees and employers are meeting their responsibilities in regard to this protocol.

J. Health Care Facilities and Physicians (Emergency Departments, Clinics, Attending Physicians)
   - advise emergency responders of necessary precautions to be taken when transporting a person with a suspected or confirmed airborne / droplet infectious disease;
   - conduct initial or second risk assessment;
   - initiate appropriate laboratory testing;
   - provide treatment;
arrange for follow-up care by a physician;

- notify and report to the designated officer any suspected contact of infectious tuberculosis and meningococcal disease;
- provide counselling, and education to the emergency responder who has been exposed;
- document the exposure;
- advise the MHO of cases of reportable infectious diseases; and,

- health care facilities must continue to report notifiable diseases by the current mechanism in compliance with the appropriate public health legislation, e.g., if a facility health care provider makes a diagnosis that a client has an infectious airborne disease, the health care facility must review its records to determine if an emergency responder was involved in the transport of the client. If yes, the health care facility must notify the public health unit of a potential airborne pathogen exposure involving an emergency responder as soon as possible.

K. BC Centre for Disease Control Society

- develop blood and body fluid exposure protocols;
- support the legislated role of the Medical Health Officer;
- monitor the reported communicable diseases and assist in controlling outbreaks;
- provide up-to-date information on communicable diseases;
- provide specialists in epidemiology, HIV/AIDS, and TB; and,
- operate the provincial laboratory.

L. British Columbia Centre for Excellence in HIV/AIDS

- distribute up-to-date information regarding HIV/AIDS;
- distribute antiretrovirals to combat HIV/AIDS;
- carry out research related to HIV/AIDS;
- maintain updated version of “Management of Accidental Exposure to HIV”; and,
- provides a 24-hour phone information line for physicians.
CONFIDENTIALITY
This section describes the importance of maintaining confidentiality.

The requirement for confidentiality arises from the relationship between the patient and the health care professional and is older than the common law. The principle of privacy is well entrenched in the health care professions. The foundation of successful health care is the assurance to the general public that the information provided to a health care professional will be protected against any unauthorized use or disclosure. The public confidence in the protection of this information ensures that individuals are not dissuaded from seeking treatment because of fear that their health care information will be used or disclosed inappropriately.

In keeping with this duty to protect personal health care information, the issues of the storage and disposal of records need to be carefully reviewed. (5)

This protocol recommends the endorsement of and adherence to “A Code of Practice for Ensuring the Confidentiality and Security of Health Records in BC”.

*Every individual who creates, handles or destroys a health care record shall protect the privacy of the individual.*

The principal of every health care agency shall:

- establish management practices, including written policies, and procedures, to safeguard the collection, dissemination, storage and disposal of health care records;
- make available the written policies to the public on request;
- ensure that health records are protected by security safeguards against:
  - loss
  - access, use, modification, disclosure, and
  - misuse;
- be responsible for ensuring all staff are trained to implement the agency’s health record policies and procedures; and,
- any contract between the Ministry of Health or a health care agency and a provider, service provider, firm or another public body for services involving a health care record, shall include a storage and destruction clause within the contract that requires secure storage and disposal to protect the privacy of the individual to whom the health care record relates.

The Freedom of Information and Protection of Privacy legislation provide strict limits on the release of information that is subject to a report of an infectious disease. Any information provided to an emergency responder must respect this confidentiality. This will limit the specific information that a Medical Health Officer can release to an emergency responder. This implies that the Medical Health Officer will only release sufficient information to enable the emergency responder to take personal protective measure, and at the same time protect the privacy of the individual who has an infectious disease, or carries an infectious agent.
Infection Control Precautions
This section describes the infection control precautions that need to be observed by all emergency responders.

In the early 1990s challenges arose with health care providers regarding the interpretation of universal precautions. A synthesis of various infection control guidelines was required to address these concerns. This protocol contains two tiers of precautions. In the first, and most important tier, are those precautions designed for the care of all individuals. In the second tier are precautions to be used for individuals known or suspected to be infected with infectious agents that can be transmitted by airborne or droplet transmission. Hence, the development of standard precautions, airborne precautions, droplet precautions, and contact precautions. (4) This manual will address standard precautions, airborne precautions, and droplet precautions.

All emergency responders should be aware of and practice infection control precautions to protect themselves.

A. Administrative Controls

The following are administrative controls that will assist in ensuring that infection control precautions are carried out in an organization.

Education

The development of safe work practice standards to ensure employees are educated about use of precautions and their responsibilities for adherence to them. Refer to WCB Regulation Section 6.38.

Adherence to precautions

The periodic evaluation of adherence to precautions and use of the findings to direct improvements. Refer to WCB Regulation Sections 6.34, 5.54, and 3.23.

Recording mechanism

The establishment of a recording mechanism that identifies which emergency responder was involved in the response (for contact tracing).

B. Standard Precautions

Standard precautions should be used for the care of all individuals regardless of their diagnosis or presumed infection status.

Standard precautions apply to:
- blood;
- all body fluids, secretions and excretions except sweat, regardless of whether they contain visible blood; and,
- non-intact skin, and mucous membranes.
Handwashing

- Wash hands after touching blood, body fluids, secretions, excretions, and contaminated items, regardless of whether gloves are worn.
- Wash hands immediately after gloves are removed and between patient contacts, to avoid transfer of infectious agents.
- It may be necessary to wash hands between tasks and procedures on the same individual to prevent cross contamination of different body sites.
- Use a plain soap for routine handwashing.
- Use a waterless antiseptic agent if plain soap and running water is not available.

Gloves

- Wear gloves (clean non-sterile neoprene or latex gloves) when touching blood, body fluids, secretions, excretions and contaminated items.
- Put on clean gloves just before touching mucous membranes and non-intact skin;
- Change gloves between tasks and procedures on the same individual and after contact with material that may contain infectious agents.
- Remove gloves promptly after use, before touching non-contaminated items and environmental surfaces, and before going to another individual.
- Wash hands immediately after removing gloves to avoid transfer of infectious agents to other individuals and environments.

Refer to WCB Regulation Section 5.55(3)

Mask, eye protection, face shield

- Wear a mask and eye protection or a face shield to protect mucous membranes of the eyes, nose, and mouth during procedures and activities that are likely to generate splashes, sprays aerosolization of blood, body fluids, secretions and excretions.

Refer to WCB Regulation Section 5.55(3), 8.4

Protective clothing

- Wear clothing to protect skin and wear extra protective clothing to protect uniforms or personal clothing during procedures that are likely to generate splashes or sprays of blood, body fluids, secretions or excretions.
- Remove clothing or uniforms promptly and wash hands to decrease the risk of transmission of infectious agents to other individuals and environments.

It should be noted that normal laundering procedures are sufficient to reduce organisms to a non-infectious state.

Refer to WCB Regulation Section 5.55(3)
Equipment

- Used equipment which has been in contact with blood, body fluids, secretions and excrections should be handled in a manner that prevents skin and mucous membrane exposures, contamination of clothing, and transfer of infectious agents to other individuals and environments.
- Ensure that reusable equipment is not used on another individual until it has been appropriately cleaned.

Refer to WCB Regulation Section 6.37(5)

Environmental control

- Ensure your organization is following adequate procedures for the routine care, cleaning and disinfection of environmental surfaces, stretchers, beds, equipment and other frequently touched surfaces and that these procedures are being followed.
- Cleaning and disinfection of these environmental surfaces routinely are necessary. Hepatitis B virus is present in high titres in blood and other body fluids of infected individuals. Because the virus survives well in the environment, contaminated surfaces that are not routinely cleaned and disinfected represent a reservoir for transmission of hepatitis B virus.
- Ensure no eating, drinking, smoking or use of lip balms or cosmetics at locations used for venipuncture. These locations should be clearly identified as biohazardous sites.

Refer to WCB Regulation Section 6.36(6)

Disinfection and cleaning of spills

- Wipe visible material with a cloth or paper towel with gloved hands, and discard into a plastic bag.
- Decontaminate the area with either a commercially available chemical germicide, or a solution of household bleach diluted 1:10, prepared fresh daily.

Linen, clothing and uniforms

- Used clothing, bedding or uniforms which have been in contact with blood, body fluids, secretions and excrections should be handled, transported and processed in a manner that prevents skin and mucous membrane exposures, contamination of clothing and transfer of infectious agents to other individuals and environments.

Refer to WCB Regulation Section 6.36(4)


**Occupational health and bloodborne pathogens**

Place used syringes and needles and other sharp items in appropriate puncture-resistant containers located as close as practical to the area in which the items were used. Take care to prevent injuries when using needles and sharp devices; when handling sharp devices after procedure, when cleaning used devices and when disposing of used needles. Do not remove used needles from syringes by hand, and do not bend, break, or otherwise manipulate used needles by hand.

**Never recap used needles or otherwise manipulate them using both hands, or any other technique that involves directing the point of a needle toward any part of the body.**

If recapping is necessary, a one-handed “scoop” technique should be done by using the needle itself to pick up the cap, then pushing the cap and sharp together against a hard surface to ensure a tight fit. A mechanical device designed for holding the needle sheath may also be used to hold the cap while recapping.

**Use resuscitation bags and mask, when resuscitation is required**

Refer to WCB Regulation Section 6.36

**C. Airborne and Droplet Precautions**

In addition to standard precautions, use airborne precautions and droplet precautions for individuals known or suspected to have serious illness transmitted by respiratory droplets that can be generated by the individual during coughing, sneezing, talking or performance of procedures. Examples include meningococcal diseases and tuberculosis.

**Masks**

In addition to standard precautions, wear a mask when entering an enclosed area such as a vehicle, or room of an individual with known or suspected infectious pulmonary tuberculosis or meningococcal diseases.

**Transport of the individual**

When transport or movement of the individual is necessary, minimize dispersal of respiratory droplets by placing a surgical mask on the patient, if possible.
Information for the Designated Officer
This section describes important information for the designated officer.

A. Selecting/Training the Designated Officer

An employer will select an employee as the designated officer. In collaboration with the Medical Health Officer and an infection control practitioner, if available, the employer will ensure (in consultation with the union – if applicable) that the designated officer obtains the knowledge and skills required of the job.

To fulfill the role described in this protocol, the designated officer must have the following knowledge and skills:

1. Knowledge

   The most important part of the job is to understand how the specified agents are spread. The designated officer will be familiar with:

   The diseases, including:
   - the agents (e.g. virus)
   - where agents are commonly found (e.g. blood)
   - transmission of the disease
   - symptoms of the disease
   - incubation period (length of time to develop signs or symptoms)
   - period of communicability (length of time the disease can be transmitted to others)
   - susceptibility (ability to acquire the disease)

   Vaccines and immunizing agents that provide immunity to the specified diseases.

2. First Aid Skills

   The designated officer will have:
   - suitable training and experience in providing first aid.

3. Skills

   To effectively use knowledge about the diseases, how the infectious agents are transmitted, and how to prevent infections, the designated officer will need the following skills.

4. Assessment Skills

   The designated officer will be able to:
   - review verbal and written reports and ensure they have all the facts needed for assessment or analysis; and,
   - interview the emergency responder to ensure that critical information in the verbal or the written report is correct.
5. **Analytical skills**

The designated officer will be able to:

- evaluate both the written reports and their conversations with a worker to assess whether the emergency responder has been exposed to one of the specified infectious agents;
- act quickly and appropriately (based on the information the emergency responder has);
- use other resource material; and,
- ask for advice (when needed).

6. **Interpersonal skills**

The designated officer will be able to:

- provide the link from the clinical person to the emergency responder with health information;
- provide case management;
- communicate;
- provide counselling by explaining the result of their assessment in a reassuring way with the goal to decrease anxiety that emergency responders may be feeling, and provide emotional support to the worker who may have been exposed to an infectious agent;
- counsel in regards to lifestyle choices or required changes during testing period; and,
- maintain confidentiality of personal health records and health status.

7. **Accountability**

The designated officer will be accountable for ensuring the protocol is followed and, in his/her role will:

- take responsibility for contacting the Medical Health Officer;
- take responsibility for communicating to emergency responders; and,
- maintain confidentiality of personal health information;

In selecting people to act as designated officer, management of the emergency services (in consultation with the union – if applicable) should consider those individuals who demonstrate these skills in other situations.
B. Overview of Infectious Agents

1. Bloodborne Agents

HIV, Hepatitis B and Hepatitis C

Bloodborne agents, such as HIV and hepatitis B and C, are viruses that are carried in the blood and in other body fluids including tissues and organs, semen, vaginal secretions, breast milk, saliva and any body fluid contaminated with blood. People carrying these viruses may not show any signs of illness. For example, hepatitis B carriers are people who are infected with the hepatitis B virus and continue to carry the infectious agent (the virus) after their initial infection. They will carry the hepatitis B virus in their blood stream and other body fluids, perhaps for the rest of their lives and thus be able to pass the virus to others. The same is true of people with HIV (human immunodeficiency virus) infection, the virus that cause AIDS, and hepatitis C. Risks differ with particular organisms.

It is often difficult in an emergency situation to determine whether a body fluid contains blood - or even what type of fluid it is. For this reason all body fluids, whether blood is visible or not, should be treated as potentially infectious. There is greater risk of transmission with certain bloodborne diseases. The average risk of infection after an exposure to infected blood or body fluids due to a sharp puncturing the skin is:

- 3 in 1,000 (0.3%) for HIV
- Up to 10 in 100 (10%) for Hepatitis C
- Up to 30 in 100 (30%) for Hepatitis B

The average risk of HIV infection after mucous membrane (e.g., in the eyes, mouth and nose) or non-intact skin exposure (e.g., fresh cuts, nicks, wounds or skin abrasions) to infected blood or body fluids is 1 in 1,000 (0.1%). This means that there will be one infection for every 1,000 exposures to infected blood or body fluids.

Transmission of HIV, Hepatitis B and Hepatitis C

In an emergency situation, all workers are at potential risk of exposure to bloodborne agents through:

- a needle stick injury or puncture wound - if an emergency responder is pierced or stabbed with a needle or sharp instrument that has been contaminated with blood, there is a risk that he/she could be exposed to a bloodborne agent;
- broken skin - if an emergency responder has a cut or wound or his/her skin is chapped, abraded, weeping or covered with a rash or eruption and the cut or skin comes in contact with blood or body fluid, there is a risk that he/she could be exposed to a bloodborne agent;
mucous membranes of the eye, nose or mouth - if blood, body fluids or body fluids visibly contaminated with blood are splattered in an emergency responder’s eyes, nose or mouth, there is a risk that he/she could be exposed to a bloodborne agent; and,

surfaces contaminated with blood - there is a risk of exposure from infected blood spilled or splattered on floor or other surfaces. If a person has broken skin or the blood from the contaminated surface is splashed in the eye, or if saliva from an infected person gets on broken skin or in an emergency responders eyes or mouth, there is some risk of exposure to hepatitis B virus.

The risk will vary depending on the situation, the type of care provided and the type of contact. For example, the risk of a virus being passed from one person to another is much greater with a needle stick injury than with contact with broken skin or mucous membranes.

Specifically, paramedics who initiate intravenous therapy are at risk of exposure to bloodborne agents through needle stick injury. Police officers may risk skin injury and possible exposure to bloodborne agents when they search prisoners or people who have been arrested. Hypodermic needles or other sharp objects contaminated with blood may be hidden in pockets, purses, waistbands or garment linings. Police officers also risk exposure to hepatitis B virus if they are bitten by someone carrying this virus.

**Feces, nasal secretions, tears, urine, sweat and vomitus are not implicated in the transmission of bloodborne infectious agents unless visibly contaminated with blood.**

Bloodborne agents are not spread by casual contact, for example in the work place, in a swimming pool or on the subway. There is no risk of becoming infected by sharing a locker or toilet facilities, or by being in a care setting with someone with a bloodborne illness. These viruses are not spread through the air like flu viruses.

HIV, hepatitis B, and hepatitis C viruses can live outside the human body.

HIV is considered fragile and becomes inactive with drying and/or when chemical germicides are applied.

Hepatitis B and C viruses are much stronger than HIV. These infectious agents pose a greater risk to workers than HIV because they are found in greater concentrations in body fluids and can survive and remain infectious much longer outside the human body. Hepatitis B can survive in a dried state on surfaces at room temperature for at least one week. However, there is no documented evidence regarding the longevity of hepatitis C virus.
Incubation, Period of Communicability and Susceptibility and Symptoms of HIV, Hepatitis B and Hepatitis C

HIV

The incubation period is variable with HIV. Although the time from infection to the development of detectable antibodies is generally one to three months, the time from HIV infection to diagnosis of AIDS has been observed to range from two months to 10 years or longer. About half of the infected persons will have developed AIDS 10 years after infection in the absence of antiretroviral treatment. Treatment lengthens the incubation period.

Communicability begins early after onset of HIV infection and can extend throughout life but will vary according to the circulating “viral load”.

Degree of susceptibility is unknown. Presence of other sexually transmitted diseases, especially those with ulceration, may increase susceptibility.

Some infected people may develop flu-like symptoms (fatigue, night sweats, swollen glands) and recover and remain well for many years. Physicians use an antibody test to find out whether someone exposed to HIV has become infected - but this can take from one to three months before the antibody HIV can be detected. Emergency responders who may have had a possible exposure may have to wait several months to know whether or not they are infected.

Hepatitis B

Incubation is usually 45-180 days, average 60-90 days.

Communicability has been demonstrated on volunteers to be many weeks before the onset of the first symptoms and to remain communicable through the course of the disease and during the carrier state, which may persist for life.

Any emergency responder is susceptible depending on their immunization status. Degree of immunity is dependent on development of antibodies against hepatitis B.

People infected with hepatitis B will not necessarily develop symptoms of illness for some time. Approximately 50 percent of adults who become infected never feel sick and recover completely. Others experience symptoms such as tiredness, vomiting, headache, fever, loss of appetite and jaundice (yellowing of the skin and eyes).

Of those infected with hepatitis B, about six to 10 percent will go on to become chronic carriers of the virus - that is, they will continue to carry the virus and can infect others.
Hepatitis C

Incubation period ranges from two weeks to six months, most commonly, within six to nine weeks.

Communicability is from one or more weeks before onset of the first symptoms and through the course of the disease and during the carrier state, which may persist for life.

Any emergency responder is susceptible to hepatitis C. The degree of immunity following infection in not known.

Symptoms for hepatitis C are similar to hepatitis B. An individual may become infected with the virus and feel well for many years. Others may develop tiredness, nausea and jaundice. The majority of hepatitis C infected individuals remain infected for life, with later development of complications in some individuals.

It is estimated that 10 percent of people with hepatitis C infection will develop cirrhosis of the liver about 20 years after being infected. One fourth (25 percent) of those with cirrhosis of the liver will develop cancer of the liver.

Prevention and Treatment of HIV, Hepatitis B and Hepatitis C

Emergency responders can prevent exposure to HIV, hepatitis B and C by following standard precautions principles, using safe work practices, and using required personal protective equipment.

There is no cure for HIV infection or for AIDS at this time. The virus remains in the body for life. Several drugs have been developed recently that taken in combination with other drugs slow the progress of HIV, so far none of them is a cure.

Prevention against hepatitis B involves immunization with a vaccine. There is no effective drug for the long-term treatment of hepatitis B.

Treatment for hepatitis C exists but is in the early stages of development. For people who have evidence of ongoing liver disease, some improvement has been seen with the use of interferon drugs. These are not effective in every case and do not always lead to a cure nor should they be used in all cases. Anyone with hepatitis C should take care to avoid any other causes of liver damage, such as that caused by alcohol use.
Immunization for Hepatitis B

Three doses of hepatitis B vaccine administered over a six-month period, following the National Advisory Committee on Immunization (NACI) guidelines, is the best available protection against infection with the hepatitis B virus. It is effective in over 95 percent of the recipients. This means the vast majority of workers who have been vaccinated are immune and will not become infected when exposed to the hepatitis B virus.

WCB Occupational Health and Safety Regulation, Section 6.39 states:

"Vaccination against hepatitis B virus must be made available at no cost to the worker, upon request, for all workers who have, or who may have, occupational exposure to hepatitis B virus."

Post-vaccination Serologic Tests for Hepatitis B

Post-vaccination serologic testing for anti-HBs in healthy persons are not normally recommended, provided the vaccine was administered properly. The seroconversion rate with hepatitis B vaccine in such people is usually 90 percent or more.

In considering whether post vaccination testing is required for persons who have been vaccinated by the employer, a careful assessment of the degree of occupational risk must be made (consult Medical Health Officer).

Post-vaccination testing, when indicated, should be performed one to six months after completion of the vaccine series. Testing should be for anti-HBs to check response to vaccine, and for HBsAg to ascertain whether infection has occurred.

Non-responders to vaccination are those individuals whose anti-HBs level is <10 IU/mL when the post vaccination testing is done one to six months after completion of a three-dose vaccine series. An additional three-dose series will produce a response in 50 to 70 percent of such non-responders. It is known that the greatest rate of seroconversion follows the first additional dose. Individuals who fail to respond after the second three-dose immunization series are unlikely to benefit from further immunization. The Ministry of Health will provide an additional free series of vaccine only to non-responder neonates of HbsAg positive mothers and dialysis/predialysis patients. Other non-responders must fund additional vaccines themselves or request it from their employer, except when a percutaneous or permucosal exposure has occurred. HBIG and one dose of vaccine will be provided by the ministry.

There is no vaccine yet for hepatitis C or for HIV.
2. **Airborne Agents**

**Tuberculosis (TB)**

Tuberculosis is caused by bacteria called *mycobacterium tuberculosis*. The bacteria are carried in the respiratory system of infected people and can be spread in respiratory droplets - from the person coughing, sneezing or even talking. The droplets can survive suspended in the air for several minutes. The organism is slow growing and it may take several weeks for the laboratory culture to demonstrate that an individual may have been infectious.

**Transmission**

TB is not a highly infectious disease. To be infected, people usually have to be exposed frequently over a long period of time to someone with active TB in the lungs who is not receiving treatment, whose sputum contains TB bacteria and who is coughing. Infection occurs when the person inhales the airborne bacteria and the bacteria take hold and grow in the person’s lungs. The bacteria are not spread through sharing dishes, drinking glasses or other objects.

Becoming infected with TB after an exposure is not the same as having active TB. It may just mean that the skin test became positive and the person has developed immunity. The individual themselves usually will not be infectious to others.

In an emergency situation (only in extenuating and legitimate circumstances) emergency responders are at risk of exposure to TB through:

- giving mouth-to-mouth resuscitation to a person with infectious pulmonary TB;
- close and prolonged contact with someone who is coughing uncontrollably - particularly in a confined or closed space, such as a car or ambulance, where there is poor air circulation if they have infectious pulmonary TB; and,
- contact with fellow workers who may be infected with pulmonary TB. When the infected worker coughs, sneezes and speaks at close range with a co-worker - particularly in a car or office with poor ventilation - there is risk of exposure to the bacteria.

**Symptoms**

The symptoms of TB are mild and can be easily ignored for week or months. People with the following symptoms should be evaluated to determine if they have active TB: cough with or without sputum for greater than four weeks, unexplained fever greater than one week, and pneumonia that failed to respond to antibiotics. General symptoms may include: malaise, fatigue, weight loss, sweating at night and a very late symptom of coughing up blood. It takes approximately four to 12 weeks after a worker is exposed to TB for a skin test or chest X-ray to show signs of infection.
Incubation, Period of Communicability and Susceptibility for TB

The incubation period is four to 12 weeks.

Communicability is dependent on factors such as treatment, virulence of the bacilli, and adequacy of ventilation. With effective treatment communicability is reduced to insignificant levels within days or weeks.

Susceptibility to develop TB is greatest in the first six to 12 months after infection. The risk of developing the disease is highest in children under three years old, lowest in later childhood and high again among adolescents, young adults and the very old. Reactivation of long latent infections account for a large portion of cases of clinical disease in older persons. For those infected, susceptibility to disease is markedly increased in those with HIV infection, underweight and undernourished persons, diabetes and among substance abusers.

Prevention and Treatment of TB

Emergency responders who are exposed to people known or suspected to have TB can prevent transmission by using appropriate precautions as advised by infection control officers. For example, when transporting someone with active or suspected active TB in their lungs, the emergency responders should request the person to wear a mask, and if they cough, cough into tissues and place the tissues in a covered container. The emergency responder may also wear a mask.

Physicians use a combination of drugs over a period of six to nine months to treat active TB. This treatment is effective and will cure TB in most cases. Most patients become non-infectious within three week of beginning treatment. If a worker suspects that they have been exposed to TB, they should have a skin test and be examined by a physician. Anyone who converts to a positive skin test (and therefore has possibly been recently infected) and who has not developed active TB can be given medication that will prevent TB from developing.

Meningococcal Disease

Meningococcal disease is caused by the bacteria *neisseria meningitidis*. Invasive forms of meningococcal disease include meningitis and meningococcaemia. Meningococcal meningitis occurs when the bacteria infects the membrane that surrounds the brain and spinal cord and causes inflammation. Meningococcaemia occurs when the bacteria enters the bloodstream.
Transmission of Meningococcal disease

About five percent of the population carry the bacteria that causes meningococcal disease in their nose and throat without becoming ill. The agent (bacteria) is usually transmitted by people who are carriers, not people who are ill, and it is spread through direct contact with the discharges from the nose and throat of a carrier. The bacteria can be transmitted through sharing saliva by kissing, or sharing a drinking cup, a cigarette, food or lipstick. There is no risk from sitting next to someone who carries the bacteria. The disease occurs most often in winter and spring. It is not known why some people become ill as a result of transmission of the bacteria and some do not become ill even though the bacteria has been transmitted to them.

Meningococcal disease occurs at all ages. About one-third of cases are in adults, and the spread of the disease is more common among adults living in crowded conditions, such as prisons and military barracks. However, most adults have acquired a natural immunity to the disease. In most people, the chances of becoming infected are low and it usually decreases with age. Emergency responders are more at risk if there has been transmission of saliva.

In an emergency situation (only in extenuating and legitimate circumstances), emergency responders may be exposed to the bacteria through mouth-to-mouth resuscitation without a mouthpiece, but there is no known case of an emergency worker being infected in this way.

Incubation, Period of Communicability and Susceptibility and Symptoms of Meningococcal Disease

Varies from two to 10 days, commonly three to four days.

Communicability lasts until the bacteria are no longer present in the discharges from the nose and mouth.

Susceptibility to the disease is low and decreases with age.

Once infected with meningococcal bacteria, it takes between one and 10 days - usually less than four days - to develop symptoms. These include fever, intense headache, nausea, vomiting, stiff neck and often a rash. The person may become delirious or lapse into a coma.

Prevention and Treatment of Meningococcal Disease

Emergency Responders who have close contact with a case of meningococcal disease (e.g. given mouth-to-mouth resuscitation without a mouthpiece) are given a two-day course of antibiotics. This will prevent them from developing the disease. There are several vaccines for meningococcal disease, but they are usually made available only to travelers going to parts of the world where the disease is common or to control outbreaks of the disease.
C. Immunizations for Tetanus/Diphtheria, Polio, Rubella (German Measles), Measles, Hepatitis B and Influenza

Emergency responders can prevent or reduce the risk of occupational transmission of the specified infectious agents if exposure occurs, by having up-to-date immunizations.

The following are guidelines for immunizations against communicable diseases. When appropriate, employers should ask emergency responders to show their record of immunization and encourage anyone who has not been appropriately immunized to get the necessary vaccines. Except for the hepatitis B vaccine, all are provided free to public health departments and primary care physicians from the Ministry of Health.

**Tetanus-Diphtheria**

Like all adults, emergency responders should have undergone a primary series of tetanus-diphtheria immunization and have a booster dose once every 10 years.

For a clean minor wound: receive a booster dose if it has been more than 10 years since the last dose, or if the emergency responder is uncertain of their tetanus immunization history, or if they received less than three doses of tetanus-diphtheria toxoid. All other wounds: the emergency responder will receive a booster dose of tetanus-diphtheria and tetanus immune globulin (which provides immediate immunity) if they are uncertain of their tetanus immunization history, or if they received less than three doses of tetanus-diphtheria toxoid. The emergency responder will receive a booster dose if it has been more than five years since the last dose.

**Polio**

Routine immunization against polio is not considered necessary for adults in Canada. Most adults are already immune and have a very low risk of exposure to wild polio viruses in North America. Primary immunization with IVP is indicated for all emergency responders who may be exposed to polio virus and have not had a primary course of poliovirus vaccine. Two doses are given at intervals of one to two months with a further dose six months to one year later. Emergency responders who are incompletely immunized should receive the remaining dose(s) of vaccine, regardless of the interval since the last dose.

**Rubella (German Measles)**

Female emergency responders who have no documented history of vaccination with rubella vaccine or who test negative for rubella antibody should receive measles, mumps, and rubella vaccine if there are no contraindications. Female workers should be advised to avoid pregnancy for three months after vaccination.
Measles

People born after 1956 and who have no documented record of measles immunization or who are known to be seronegative should receive measles vaccine (given as MMR). Females should be advised to avoid pregnancy for three months after vaccination.

Hepatitis B

It is recommended that emergency responders who, in the course of their duties, are exposed to blood or at risk of sharps injury receive a primary course (three inoculations) of hepatitis B vaccine. Vaccine should be provided by the employer and is not provided by the Ministry of Health for emergency responders.

Emergency responders who have sustained a percutaneous or mucous membrane exposure from a source that is known or likely to be HBsAg positive should be assessed for the need for hepatitis B vaccine and HBIG. Refer to the recommendations outlined by British Columbia Centre for Disease Control Society in the document “Blood and Body Fluid Exposure Management”.

Influenza Vaccine

Influenza vaccine is recommended for all emergency responders who have extensive contact with individuals in high risk groups, or who have a high risk condition themselves.

D. Assessing a Possible Exposure to an Infectious Agent

See Appendix I for sample form “Record of Incident and Assessment Form”.

Immediately have an assessment made of the emergency responder’s risk of transmission of an infectious agent. This will be accomplished by either:

◆ Presenting at the emergency department or health care facility.
◆ Contacting the designated officer.

If the emergency responder contacts the designated officer, the designated officer will assess the emergency responder using the “Record of Incident Form”.

It is then expected that the emergency responder will assist the designated officer to obtain information needed to complete the assessment.

If “Management of Percutaneous or Permucosal Exposure to Blood and Body Fluid” form has been completed by a health care facility, the emergency responder will provide a copy to the designated officer.
E. Exposure to HIV

It is imperative the emergency responder seek assessment and receive treatment within two hours of exposure if possible.

If the emergency responder is suspected to have been exposed to HIV, the designated officer should recommend treatment, provide advice, and counselling. The BC Centre for Excellence in HIV/AIDS provides a document “Management of Accidental Exposure to HIV.” This document provides guidelines for recommendations for the use of antiretroviral therapy to prevent HIV infection in the exposed person.

The emergency responder should be informed about the National Surveillance of Occupational Exposure to the Human Immunodeficiency Virus (HIV). The surveillance program is designed to monitor the occurrence of occupational exposures and determine the risk of acquiring HIV infection in an occupational setting. To register in the program, an emergency responder who has had a possible exposure to HIV must be tested for antibodies to HIV within one week of the incident, and then monitored over the next six months.

As of January 1, 1997 a total of 656 Canadian health care workers had registered with the program. There have been two workers identified who have acquired HIV - one in Ontario and one in B.C. as a result of an occupational exposure. For more information, contact the BC Centre for Excellence in HIV/AIDS Hotline: 1-800-665-7677. Emergency responders who do not want to participate in the national surveillance program should be monitored by their physician.

F. Working with the Medical Health Officer (MHO)

The designated officer may contact the Medical Health Officer for consultation purposes. The MHO may participate when required in determining whether or not a significant exposure occurred, and in the treatment and follow-up of the exposed emergency responder.

G. Notifying the Emergency Responder of a Possible Exposure

The designated officer has a responsibility to notify the emergency responder of the possible exposure, advise them about the steps they should take, answer any questions they have and encourage them to seek medical care and counselling.

If the source person has been tested for HIV/AIDS consent from the source person is required in order to release this information to the emergency responder. The source’s physician will receive the results of any testing, not the infection control practitioner in the hospital. It is therefore important not to request information from the infection control practitioner regarding source testing.
APPENDICES
Suggested Record of Incident and Assessment Form

Name: ________________________________
Address: ________________________________
Date of Birth: ________________________________
Personal Health Number: ________________________________
Name of Employer: ________________________________
Work Title/Position: ________________________________
Employee Number: ________________________________

1. How did the exposure occur?
   - Needle stick/puncture by sharp object.
   - Splashed in the eye by ________________________________ (type of fluid).
   - Laceration of the skin contaminated with ________________________________ (type of fluid).
   - Splashed in the mouth by ________________________________ (type of fluid).
   - Non-intact skin exposed to ________________________________ (type of fluid).
   - Close contact with someone with a cough, possibly TB.
   - Close mouth contact with someone suspected of having meningococcal disease.
   - Confined in an enclosed area (e.g. vehicle, aircraft) with someone who was coughing.
   - Giving mouth-to-mouth resuscitation to someone without using a mouthpiece.
   - Human, animal or insect bite.
   - Sharing drinking glasses and other utensils.
   - Other (describe in detail). ________________________________

2. What is the worker’s immunization status? Are his/her immunizations up-to-date for:
   - Tetanus and Diphtheria
   - Polio
   - Rubella
   - Measles

Has she/he received a full course of hepatitis B vaccine? O Yes O No
When did she/he receive the last dose of hepatitis B vaccine ________________________________
Was the serology testing done to determine if she/he responded to the vaccine? O Yes O No
When was the last testing done for antibodies? ________________________________
Result of antibody test. ________________________________
APPENDIX I

Suggested Record of Incident and Assessment Form
(continued)

3. What barrier precautions did the worker wear or use during the incident?
   o goggles
   o gloves
   o apron or protective clothing
   o mask
   o others (describe in detail)

Are the barriers intact? (e.g. were the gloves torn? Did any body fluids soak through the apron?).
If the worker did not use barrier precautions, why not?

4. What body fluids was the worker exposed to?
   o blood
   o wound drainage
   o vomitus
   o saliva
   o feces
   o urine

5. How long was the contact/exposure? (e.g., the worker was in the same aircraft or vehicle for # of minutes/ hours; the worker is soaked with (type of body fluid) for at least (length of time) before washing it off.

6. What other information is available that will help assess exposure? (e.g., suspected diagnosis of the contact; location of the exposure, such as a crack house, shooting gallery, homeless shelter, centre for the developmentally challenged, animal shelter or place with pets, school for children, rock concert hall).

Information collect by: ________________________________________

/designated officer)

One copy to be forward to the Medical Health Officer
One copy for employee
One copy for employer (confidential record)
Summary of Documents Reviewed


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Chris Monson
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<td>Division Staff Relations</td>
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<td>Dr. Mary Stewart-Moore</td>
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<td>RCMP Health Services</td>
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<td>657 West 37th Ave</td>
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<tr>
<td>Fire Chief Alan Still</td>
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<tr>
<td>Director of Public Safety</td>
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<tr>
<td>Bowen Island Fire Dept</td>
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<tr>
<td>PO Box 124</td>
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<tr>
<td>Fire Chief Dave Shefley</td>
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<td>Port Moody Fire Department</td>
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<tr>
<td>Bob Breiter</td>
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<tr>
<td>B.C. Ambulance Service</td>
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<tr>
<td>2nd Fl, 1810 Blanshard Street</td>
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<tr>
<td>Victoria, BC V8V 1X4</td>
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<tr>
<td>John F. Curry</td>
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<td>Fire Chief’s Association of BC</td>
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<tr>
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<tr>
<td>Allison Cutler, Chair</td>
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<td>Public Health Nurses Council</td>
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<td>Central Vancouver Island Health Region</td>
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<tr>
<td>Fern Davey</td>
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<tr>
<td>Infection Control Practitioner</td>
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<td>Victoria General Hospital</td>
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<tr>
<td>Dr. Patty Daly</td>
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<tr>
<td>Vancouver Health Department</td>
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<td>1060 West 8th Ave</td>
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<tr>
<td>Lianne Delaney, Nurse Consultant</td>
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<td>B.C. Centre for Disease Control</td>
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