# DESIGNATED OFFICER MANUAL

FIRE

SERVICES

TORONTO

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♈

## *Acknowledgments*

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Toronto Public Health

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# INTRODUCTION

# TO THE DESIGNATED OFFICER

# PROTOCOL

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## INTRODUCTION

Firefighters face many occupational risks in the conduct of their duties. One area of risk is the possible occupational exposure to communicable diseases.

Reducing the risk of workplace exposure to communicable diseases involves adherence to the basic principles of infection control as outlined in Section 3. Infection Control training provides the Firefighter with an understanding of disease spread and how consistent use of PPE can help "break the chain of disease transmission". (also in Section 3)

If these measures fail, there must be a structured, efficient and confidential system in place to ensure that a Firefighter's health and concerns are dealt with properly. It is also the D.O.'s role to be an effective route of communication if notification of exposure originated elsewhere, i.e. The Public Health Department or Toronto Emergency Medical Services (TEMS).

### Purpose of this Manual

The purpose of this manual is to assist in educating Firefighters about disease transmission and methods to employ that will reduce chances of disease transmission.

To do this, firefighters must understand how different diseases are spread and understand the "chain of disease transmission" as it relates to specific communicable diseases.

Understanding how certain diseases are spread should allow a firefighter to better understand if a legitimate exposure to a specific disease has occurred.

The manual should also explain how the disease exposures are reported and investigated, when the program is initiated by the exposed firefighter, and how the system protects and informs firefighters who are unaware of an exposure.

The manual is divided into 12 sections:

**Section 1**

An introduction to the Designated Officer Program as set up by the Ontario Ministry of Health in 1994, and an introduction the manual itself.

**Section 2**

Defines the collective roles and responsibilities of all the stakeholders involved.
Specifically firefighter's
- how to reduce our risk of exposure
- how to determine an exposure
- how to report an exposure

Other Toronto Fire Service staff that may be required in the notification or assessment process including, Firefighter Captain, D.C., Communications and the Designated Officer. Other stakeholders include the Chief Medical Officer (TFS), Medical Officer of Health (Public Health), Infection Control at Acute Care Hospitals and other DO's at our allied emergency service agencies.

**Section 3**

Deals specifically with Personal Protection and Prevention. This section will discuss the chain of disease transmission, the use of Universal Precautions, Routing Practices and appropriate PPE/ Personal Protective Equipment. It will also discuss other prevention strategies as healthy lifestyle choices and immunization.

**Sections 4 through 10**

These sections are disease specific. These sections deal with individual diseases (4. HIV, Aids; 5. Hepatitis B; 6. Hepatitis C; 7. Meningitis; 8. Tuberculosis; 9. Viral hemorrhagic Fever; 10. Rabies) and are designed to provide a thorough background about each disease, transmission routes, prevention strategies, recognition through tests and treatment, (if available) for both exposures and active disease.

**Section 11**

A mini dictionary A (Anthrax) through Z (Zoster) quick reference guide that may assist with some general knowledge acquisition to other specific communicable diseases we may encounter.

**Section 12 This section is provided FYI ONLY.**

This section is used by the Designated Officer during the assessment and investigation phase. It is provided to educate the firefighter about some of the questions that may be asked and some of the resources that may be used by the Designated Officer. At no time should a firefighter contact anybody other than the Designated Officer when there is concern of a potential exposure. As explained throughout this manual the Designated Officer is the only person who can legally investigate and correspond with outside agencies relating to communicable disease exposures. Patient confidentiality laws are stringent and must be followed at all times.

The Protocol for Notification of Emergency Service Workers, who have or may have been exposed to communicable diseases, was established in 1994 by the Ontario Ministry of Health. The purpose of the protocol is to provide a system to ensure proper follow up after an exposure to selected communicable disease. The protocol covers the following diseases.

**Bloodborne Diseases:**

- Hepatitis B & C*
- HIV/AIDS

*Hepatitis C was not included in the original Protocol, but is an important bloodborne pathogen.

**Diseases spread through the Respiratory System:**

- Meningococcal disease
- Tuberculosis

**Viral Hemorrhagic Fevers**

This manual also includes Rabies due to risk of exposure and availability of effective treatment.

Note: The list of diseases will be reviewed periodically and amended to reflect new information on potentially hazardous communicable diseases as required.

## Introduction of the Protocol

### What is a *Designated Officer*?

A Designated Officer (D.O.) is a trained TFS staff member on call 24/7. They have received specific training to assist TFS members and investigate potential exposures to communicable diseases.

A Designated Officer (D.O.) is to be contacted *IMMEDIATELY* when T.F.S. personnel have a confirmed or suspected exposure to a communicable disease while on duty. The D.O. is responsible for determining the level of risk to the Firefighter following an exposure after completing an exposure risk assessment. The D.O. is then responsible for educating the Firefighter on treatment options, any necessary follow up care and, if applicable, precautions to take in their personal lives while they are being assessed, tested and if necessary treated following the exposure. The D.O. must be the sole route for information concerning an exposure as they work within a structure to maintain patient confidentiality. Patient confidentiality rules apply at all times and are quite stringent.

The D.O. can be of great assistance in a very stressful time. In addition to the above responsibilities, they will assist with all the necessary paper work and reporting forms, offer support, education, options and contacts for assistance (i.e. EAP) upon a Firefighter's request.

If a T.F.S. employee is concerned about a possible or known exposure to a communicable disease, he/she shall contact the Designated Officer through T.F.S. Communications Division. The Designated Officer will assess the situation and may seek assistance from the T.F.S. Chief Medical Officer and/or the Chief Medical Officer of Health (Toronto Public Health) or a designate as needed. Designated Officers will only be available through T.F.S. Communications. Communications can be reached @ 416-338-9000 / 416-338-9001

The Designated Officer for the Toronto Fire Services is Captain Randy Gwyn, EMS Section. Alternates are the officers within the EMS and Occupational Health and Safety Sections as follows:

| *NAME* | *TELEPHONE* | *E-MAIL ADDRESS* |
|---|---|---|
| District Chief Dennis Carter<br>EMS Section District Chief | 416-338-9563 | dwcarter@toronto.ca |
| District Chief David Ross<br>Occ. Health & Safety District Chief | 416-338-9559 | dross@toronto.ca |
| Captain Scott Andrews<br>Occ. Health & Safety Captain | 416-338-9557 | sandrews@toronto.ca |
| Captain Tom Karnas<br>Occ. Health & Safety Captain | 416-338-9558 | tkarnas@toronto.ca |
| Captain Tim Metcalfe, EMS Section | 416-338-9429 | tmetcal@toronto.ca |
| Captain Mike Nemeth, EMS Section | 416-338-9428 | mnemeth@toronto.ca |
| Captain Bill Sault, EMS Section | 416-667-2217 | bsault@socpc.ca |
| Captain Ken Webb, EMS Section | 416-338-8796 | kwebb@toronto.ca |
| Captain Randy Gwyn, EMS Section | 416-667-2200 x219 | rgwyn@toronto.ca |

The T.F.S. Chief Medical Officer, Dr. Noah Forman, provides medical oversight and delegation. Medical oversight has been provided during the creation of this program and input received regarding policy and procedure.

Delegation allows us to offer services on behalf of Dr. Forman in his absence. For example, following a legitimate bloodborne exposure with a demonstrated rash the D.O. may offer medication to the exposed Firefighter. This is only done after a thorough assessment, and contact with the Chief Medical Officer who may delegate the D.O. to offer the medication on his behalf.

The Designated Officer will pass contact information along to Toronto Public Health so that they can track and contact any other potential exposures to this patient. This is a vital role as Toronto Public Health may be our initial source of information, that a T.F.S employee may have had a potential exposure.

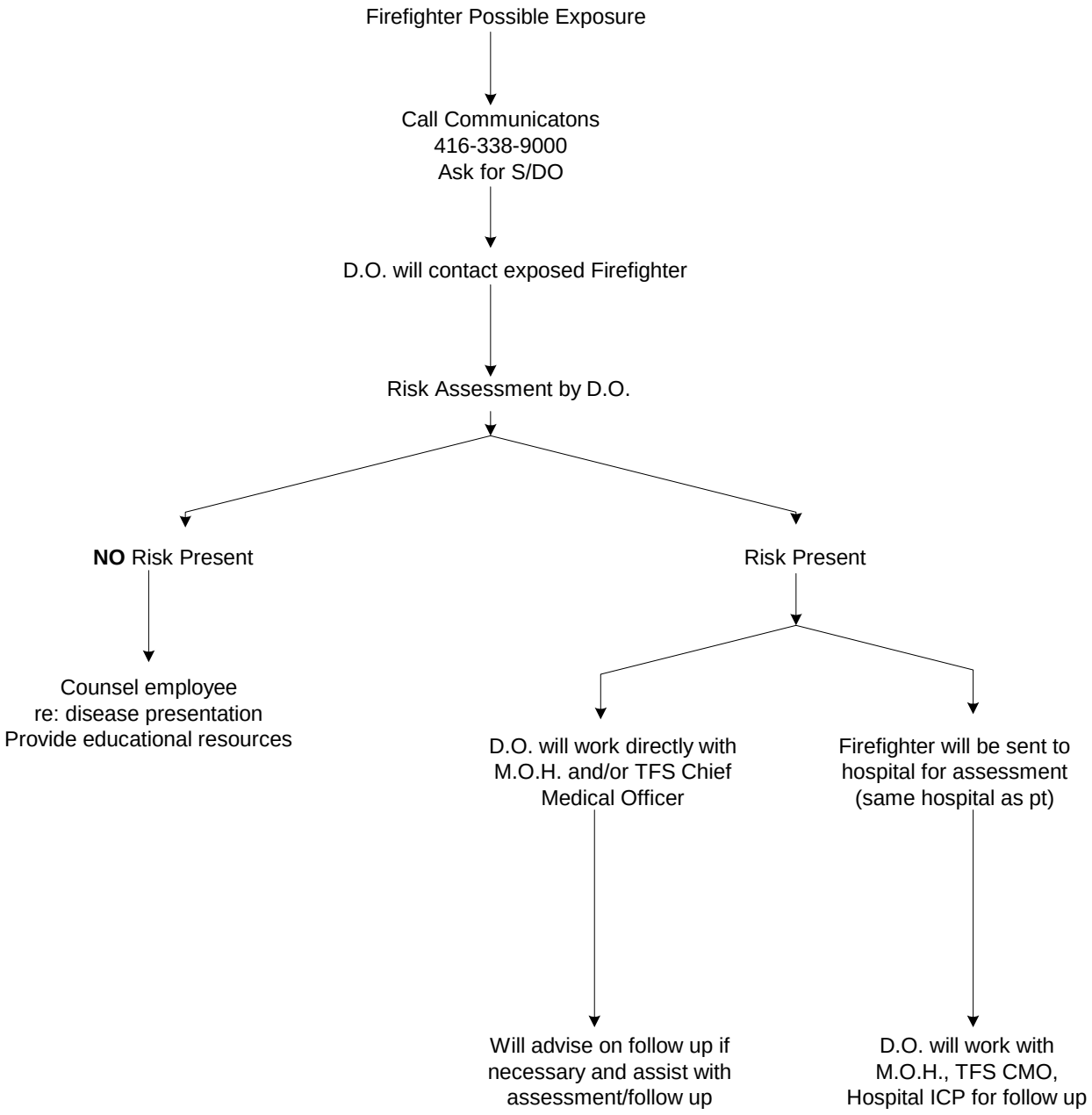
Upon notification that Firefighter may have been exposed to a selected disease, the Medical Officer of Health or designate shall notify the pertinent Designated Officer or their alternate of the exposure. Notification of the possible exposure may come from several different sources, i.e. physicians, laboratories, hospitals, or other health units. For example: TFS treats patient A, but is unaware of communicable disease status/risk. Patient A is admitted to a hospital and testing indicates patient A has meningitis. The admitting hospital is mandated to report this to Toronto Public Health (TPH). TPH is then required to do what is known as “contact tracing”. This would include investigating how the patient was transported to hospital, (911 – TEMS & TFS and/or TPS on scene?). TPH would then contact TFS and request a D.O. to report the potential exposure and enable the TFS D.O. to initiate an investigation of our staff members exposure risk.

In the event of a known or suspected Firefighter exposure, please refer to and follow TFS SOG-G-COMD included on next page of this manual.

Notification will include recommended actions to be taken. Paper documentation of the exposure is the responsibility of the Designated Officer.

## Introduction of the Protocol

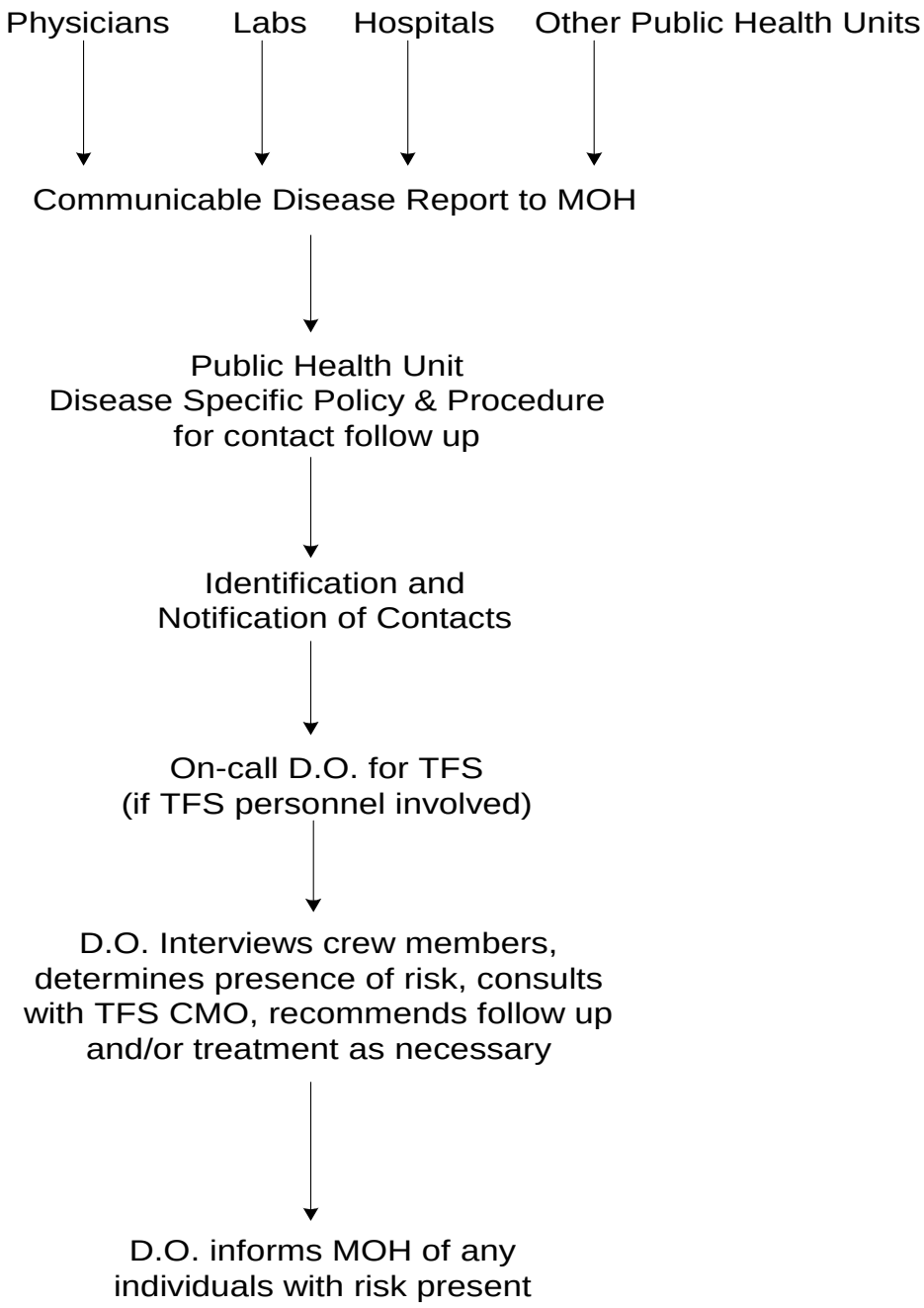
# Notification Process
# Initiated by Emergency Services Worker




F.F. = Firefighter
S.D.O. = Safety/Designated Officer
MOH = Medical Officer of Health
CMO = Chief Medical Officer
ICP = Infection Control Practitioner

## Introduction of the Protocol

**Notification Process**
**Initiated by Medical Officer of Health**




F.F. = Firefighter
S.D.O. = Safety/Designated Officer
MOH = Medical Officer of Health
CMO = Chief Medical Officer

## DECISION TREE

### Possible Exposure to HIV*, HBV** and HCV***

Exposure to Blood and/or Body Fluids

↓

Activate the S/DO Program via TFS Communications

↓

Report to **Designated Officer**
(See Disease information)

↓

A thorough risk assessment for occupational exposure to bloodborne diseases must take place. If Post Exposure Prophylaxis (PEP) is required due to possible exposure to HIV*, it should be started within 1-2 hours of exposure, preferably within <u>one</u> hour. **For this reason, the Designated Officer should be contacted immediately.**

| **Some Risk (High, Medium, Low)** | **No Risk Established** |
|---|---|
| ↓ | ↓ |
| Thorough risk assessment to be done at the nearest hospital; PEP may be recommended and offered in some cases. | **C**ounsel Employee:<br>Re: Bloodborne disease transmission;<br>**R**einforce positive behaviour;<br>**R**eview Infection Control procedures;<br>**R**eassure re: No Risk. |

** Hepatitis B is preventable. Three doses of HBV are recommended prior to assuming duties as a staff member. If reporting staff member is unvaccinated, post-exposure immunoprophylaxis for Hepatitis B would also be initiated within the emergency department as outlined in the Canadian Immunization Guidelines.

*** Currently there is no prophylaxis available for Hepatitis C disease.

# DECISION TREE

## Possible Exposure to Tuberculosis

Possible Exposure to a Potentially active TB case

↓

Report to **Designated Officer**
(See Disease info)

↓

**Significant Exposure**
(higher risk or unsure)

↓

Notify MOH

↓

MOH calls Hospital Infection Control Practitioner or Physician to confirm diagnosis of source

↓

Diagnosis is Active Pulmonary TB

↓

MOH informs DO of risk status

↓

Staff Member to have TB Skin Test at Physicians Office or at local health unit.

↓

Report skin test result to Medical Officer of Health

↓

Repeat Skin test in 3 months

↓

Report final skin test to Medical Officer of health

Diagnosis is <u>other than</u> Active Pulmonary TB

↓

MOH informs DO of risk status

↓

**C**ouncil Employee:
re: disease prevention;
**P**rovide education resources;
**R**einforce positive behaviour
and
Recommend baseline
Skin testing if status is unknown

**No Significant Exposure**
(very low risk)

↓

**C**ounsel Employee:
Re: disease prevention;
**P**rovide educational resources;
**R**einforce positive behaviour.

DO = Designated Officer
MOH = Medical Officer of Health

## DECISION TREE

### Possible Exposure to Meningococcal Disease

Exposure to possible case of Meningococcal Disease

↓

Report to **Designated Officer**
(See Disease info)

↓

Risk Assessment by DO: Identify "shared saliva" possibility

**Risk Established**

Notify MOH

↓

MOH calls Hospital Infection Control Practitioner or Physician to confirm diagnosis of source

↓

Diagnosis is Meningococcal Disease

↓

MOH informs DO
Of risk status and would recommend Medication (chemoprophylaxis)

Diagnosis is other than Meningococcal Disease

↓

MOH informs DO
No recommended steps to take

↓

DO informs Staff Member
**and**
**C**ounsel Employee:
Re: disease prevention;
**P**rovide educational resources;
**R**einforce positive behaviour.

**No Risk Established**

**C**ounsel Employee:
Re: disease prevention;
**P**rovide educational resources;
**R**einforce positive behaviour.

DO = Designated Officer
MOH = Medical Officer of Health

# NOTIFICATION PROCESS:

# ROLES &

# RESPONSIBILITIES

Captain Randy Gwyn, R.N.
Infection Control Practitioner
Program Developer, Firefighter Prehospital Care Program
rgwyn@socpc.ca or rgwyn@toronto.ca

## DETERMINING AN EXPOSURE

When contacting a Designated Officer through Communications, the exposed Firefighter will need to determine the following:

1. Did you have DIRECT CONTACT with the medium that carries this disease (see table on next page or refer to appropriate disease specific chapter in the D.O. manual).

2. Was there an appropriate "Route of Entry" for the disease in question? (See table on next page or refer to the appropriate disease specific chapter in the D.O. manual).

3. Were you wearing protective clothing and/or equipment appropriate for the situation (e.g. goggles, gloves, masks, etc)?

4. Is it reasonable to believe that the patient/person in question was/is infected with an infectious disease or a member of a high-risk group? It is best to discreetly and confidentially confirm any rumored or suspected disease with the patient or a member of his/her immediate family.

**5.** Hospital to which source patient was transported (if applicable). **When a potential exposure has occurred, DO NOT DELAY contacting the D.O. for any reason, even if all information is not immediately available.**

**Please note that any direct needle stick injury sustained by a Firefighter must be reported immediately regardless of the medical status of patient.**

## DETERMINING AN EXPOSURE RISK

| DISEASE | TRANSMISSION | ROUTE OF ENTRY | PPE/TREATMENT |
|---|---|---|---|
| HIV | Direct contact with infectious bodily fluids (excluding non-bloody urine, feces and saliva) combined with route to bloodstream; eg. needle stick, broken skin, mucosal exposure (eg. eye) | **Bloodstream** – eg. Blood to blood contact (needle sticks, broken skin)<br>**Mucosal exposures** - Eyes, nose, mouth when exposed to infectious bodily fluids | Gloves, goggles, N-95 mask, gown, faceshield<br>Post Exposure Prophylactic (PEP) cocktail if indicated |
| HEPATITIS B, C | Direct contact with infectious bodily fluids (note: include saliva) as above | **Bloodstream** – eg. Blood to blood contact (needle sticks, broken skin)<br>**Mucosal exposures** - Eyes, nose, mouth when exposed to infectious bodily fluids | Gloves, goggles, N-95 mask, gown<br>Hep B vaccination<br>PEP Immune globulin (Hep B) if indicated |
| HEPATITIS A | Fecal/oral route<br>Virus shed in feces of patient must be introduced orally | Contaminated fingers, food stuffs or water supply | Gloves, appropriate hand washing<br>PEP immune globulin if indicated |
| TUBERCULOSIS | Airborne (i.e. respiratory secretions, sputum or saliva) | Respiratory – inhale airborne bacteria in respiratory droplets from prolonged close contact with patient eg. in ambulance with a coughing/sneezing patient. | N-95 mask/gloves. Ask patient to cover mouth/nose if tolerable.<br>PEP– antibiotics/medication if indicated. |
| MENINGOCOCCAL MENINGITIS***** (Specifically Meningococcal disease) | Direct contact with secretions from nose and throat | Respiratory – close contact kissing, sharing food utensils, lipstick, cigarettes. | N-95 mask, gloves.<br>PEP – antibiotics. |

**Notes: High risk group**

Men who have sex with men, IV drug users or injection, drugs from an HIV endemic region such as Africa, hemophiliacs, and heterosexual individuals with multiple and/or high risk partners.

**PPE** - Personal Protective Equipment – Minimum PPE for TFS staff at <u>all</u> Medical calls will be gloves, goggles, bunker boots and pants.

**PEP** - Post Exposure Prophylaxis

***** - Concerns have been raised regarding exposure to meningitis. There are numerous bacterial and viral organisms that can cause meningitis. However, only one type of bacterial meningitis (meningococcal meningitis) poses an infectious risk and requires medical intervention. This chart lists only a few examples of diseases to which Firefighters may be exposed and require a D.O. It is not inclusive of all exposures requiring a D.O. (eg. Viral Hemorrhagic Fevers).

## NOTIFICATION PROCESS: ROLES AND RESPONSIBILITIES

Upon receiving a report of a potential communicable disease exposure, TFS Emergency Dispatch personnel will immediately contact the Designated Officer on call, who will directly review the situation with the exposed Firefighter and advise on appropriate action.

Should an exposure require immediate medical attention, arrangements shall be made for transport of the exposed Firefighter to an appropriate location, preferably the same facility to which the source patient was transported and then, for treatment by a physician. The D.O. can assist the concerned Firefighter with an authorized investigation, exposure risk evaluation and suggested medical follow up, if necessary. Follow-up care is offered through the T.F.S. Chief Medical Officer if the exposed Firefighter so wishes or any physician as chosen by the Firefighter. It is in the Firefighter's best medical interest to update the Chief Medical Officer at their earliest convenience if another physician is used for follow-up care. The Chief Medical Officer has worked directly with the City of Toronto Corporate Employee Health Services and has instituted protocols for specific infectious disease exposures. This will allow Occupational Health Nurses from the City to be directly involved in certain exposures such as Tuberculosis.

The D.O. has a duty to report the exposure risk through proper channels such as The Department of Public Health, and to the other agencies involved (eg. ambulance) so they may assess their personnel for exposure as well. These other agencies in return will notify us if they are informed of a possible infectious disease exposure. Such notification should occur through the on-call D.O. If you receive information from another agency regarding the potential exposure of other T.F.S. personnel, DO NOT contact these personnel directly. Contact Emergency Dispatch and ask for the on-call D.O. Experience indicates that very often, information "on the street" is incorrect, and the subsequent investigation and notification procedure becomes very complicated due to confidentiality concerns.

Following contact with the D.O., it will also be necessary for the Firefighter to complete a "Workers Report of Suspected Exposure (Hazmat or Pathogens) and forward it to the Office of the Chief Medical Officer as soon as possible. The completed "Workers Report of Suspected Exposure" will be deposited in your department personal medical file where it remains confidential.

On occasion, it may be necessary for the on-call D.O. to contact TFS members by their private residence telephone during off-duty periods. If the affected member is not available to speak directly with the D.O., a message will be left for the member to contact the D.O. by name directly and urgently. No other information will be left on any answering machine or with another person unless specifically directed to do so. This ensures confidentiality for the member.

If a significant exposure occurs, follow up testing for an infectious disease can take several months. It is appreciated that this can be very stressful on members and their loved ones.

## NOTIFICATION PROCESS: ROLES AND RESPONSIBILITIES

### Prevention is our First Priority

Through practices such as keeping vaccinations up to date, Universal Precautions with the provided medical Personal Protective Equipment such as gloves, goggles and face masks, and proper hand washing following all medical calls, the chances of actual exposure to, and contraction of an infectious disease are significantly reduced. If you are waiting for a test or laboratory results, practice precautions as recommended by the D.O. and your physician as part of your personal life.

For further information regarding the S/DO Program contact the Designated Officer for the Toronto Fire Services, Captain Randy Gwyn, RN. Alternates are the Officers of the EMS and Occupational Health and Safety Sections, and the Chief Medical Officer, as follows:

| ***NAME*** | ***DEPARTMENT*** | ***TELEPHONE*** |
|---|---|---|
| District Chief Dennis Carter | EMS Section | 416-338-9563 |
| District Chief David Ross | Occupational Health & Safety Section | 416-338-9559 |
| Captain Scott Andrews | Occupational Health & Safety Section | 416-338-9557 |
| Captain Tom Karnas | Occupational Health & Safety Section | 416-338-9558 |
| Captain Tim Metcalfe | EMS Section | 416-338-9429 |
| Captain Mike Nemeth | EMS Section | 416-338-9428 |
| Captain Bill Sault | EMS Section | 416-667-2217 |
| Captain Ken Webb | EMS Section | 416-338-8796 |
| Captain Paul Reynolds | EMS Section | 416-338-9430 |
| Captain Randy Gwyn | EMS Section | 416-667-2200, ext. 219 |
| Dr. Noah Forman | Chief Medical Officer | 416-338-9310 |

## NOTIFICATION PROCESS: ROLES AND RESPONSIBILITIES

### Emergency Service Agencies

Each Police, Fire and Ambulance service shall:

- Appoint one Designated Officer and alternates in consultation with the Joint Health and Safety Committee (where possible).
- Assess the risks of occupational exposure and set standards of practice, provide training, and appropriate protective equipment.
- Document exposure and complete Workers' Compensation forms as required.
- Advise Public Health Unit of any new appointments to the Designated Officer or alternates.

### Firefighter

Each individual Firefighter shall:

- Be aware of risks of exposure to the selected communicable diseases.
- Prevent exposure by using universal precautions and appropriate procedures and/or personal protective equipment (see Section 3).
- Comply with workplace health and safety policies (see Section 3).
- Report exposures.

### Designated Officer

The Designated Officer (or alternate) shall:

- Receive and document reports from emergency service workers who believe they may have been exposed to one of the specific diseases.
- Assess the situation and where an exposure has occurred:
    - Contact the Medical Officer of Health or designate and provide details of incident.
    - Notify any worker who has had contact with one of the specified diseases.
    - Advise worker to seek appropriate medical care, or offer care if appropriate.

### Infection Control Contacts – Acute Care Hospitals

The Infection Control Personnel or designate shall:

- Be contacted by the Medical Officer of Health, or designate, and provide further information as required on the source of the possible or confirmed exposure. In order to protect patient confidentiality, the information will be released only to the Public Health Unit.

## Medical Officer of Health

The Medical Officer of Health or designate shall:

- Be available to the Designated Officers in the City of Toronto.
- Review information or any incidents provided by the Designated Officer.
- Inform the Designated Officer as soon as possible, but not later than two working days, on any specific actions that should be taken.
- Continue to monitor cases of designated communicable diseases and actively seek possible contacts and advise appropriate actions, eg. contacts of Meningococcal disease, Tuberculosis, and Viral Hemorrhagic Fever.
- When required shall contact Infection Control at the hospital to confirm the source patient diagnosis without breaching confidentiality.

It is **NOT** the role of the Medical Officer of Health to:

- Assess whether an exposure could have occurred in a certain situation (Role of the Designated Officer).
- Gather information from the Emergency Service Worker (Role of Designated Officer).
- Provide treatment advice (Role of the Emergency Service Worker's Physician).
- Provide information on diagnosis of patient (Confidential).

# NOTIFICATION PROCESS:

# ROLES & RESPONSIBILITIES

# DESIGNATED OFFICER

Captain Randy Gwyn, R.N.
Infection Control Practitioner
Program Developer, Firefighter Prehospital Care Program
rgwyn@socpc.ca or rgwyn@toronto.ca

## NOTIFICATION PROCESS: ROLES & RESPONSIBILITIES - Designated Officer

**Components of the D.O. role are as follows:**

1. Encourage reporting;

2. Assess and document each reported incident;

3. Advise the reporting Firefighter regarding the probable risks and make appropriate referrals.

4. Assist with staff training.

### 1. Encourage reporting

This is a must. An unreported incident cannot be assessed and the Firefighter may not be aware of the need for treatment or follow up care. The Firefighter must be fully aware of these needs and understand that their concerns will be taken seriously and they will not be censured or criticized for their actions during the incident. A supportive approach by the D.O. is essential to facilitate this open communication and reporting.

The job of the D.O. is to assist and support the Firefighter, not to criticize actions taken at the time of the incident. Reinforcement of training and safety principles may be necessary but will be offered with support and understanding.

### 2. Assess and document each reported incident

Proper assessment can only take place when the D.O. has a thorough understanding of how certain diseases are spread. Some diseases are spread through specific types of exposure (eg. Hepatitis and HIV/AIDS through blood and body fluids) and some through respiratory exposures (eg. Meningococcal disease and Tuberculosis). With an understanding of the specific diseases and their modes of transmission, combined with active listening skills, the D.O. can determine the degree of risk to the reporting Firefighter in a particular circumstance.

When notified of a possible exposure the D.O. will contact the reporting Firefighter as soon as possible. This must be done for 3 reasons:

1. To reassure and support the Firefighter. This is a time of significant stress and concern usually for both his/her own health and that of their immediate family & co-workers.
2. Some exposures may merit that medication be offered in order to reduce the chance of infections (post exposure prophylaxis). These medications must be given within a working time frame (eg. HIV PEP 1-2 hours preferably under 1 hour).
3. Early reporting ensures a higher degree of accuracy of information.

When notified of an exposure the D.O. will contact the reporting Firefighter and using the applicable risk assessment forms will initiate the Post Exposure Procedures.

## NOTIFICATION PROCESS: ROLES & RESPONSIBILITIES - Designated Officer

When assessing an exposure risk, the health status of the source patient may never be known. Therefore, in keeping with the principles of infection control, all persons should be considered potentially infectious unless ruled otherwise.

When performing the risk assessment, it is the degree of the exposure that is most important and not necessarily the status of the source patient who was involved. Both the risk assessment forms as well as the decision tree in Section 1 can be utilized to establish risk.

If the D.O. concludes that there is a risk of exposure to a communicable disease, or is unsure of the level of risk, the D.O. may consult with the T.F.S. Chief Medical Officer, Dr. Noah Forman and/or the Medical Officer of Health or alternate with Toronto Public Health.

Documentation: the D.O. will assist the reporting Firefighter complete all necessary paperwork and forms. Some of this paperwork may need to be explained so the reporting Firefighter understands the need for documentation and possibly, informed consents. This includes the risk assessment form, WSIB forms, TFS Workers Report of Suspected Exposure (Hazmat or Pathogen), informed consents for P.E.P. and baseline blood work. In addition, the D.O. will have their own paperwork to complete. The Risk Assessment work sheet allows for information documentation to assist in following the exposure, the treatment, the contact numbers and ensure that documentation has all been completed allowing the file to be closed.

The file may be open for some time i.e. while awaiting results for blood work so do not wait until the file is closed to send paper work applicable to other agencies such as WSIB. Once the incident is considered closed by all parties, the D.O. will seal the file and it will be stored securely at the Sunnybrook Campus of the Sunnybrook – Osler Centre for Prehospital Care. The file can then only be opened with the permission of the Firefighter or their Designate.

### 3. Advise regarding potential risks:

Once the applicable risk assessment form has been completed and if, upon careful consideration of all the available information, it appears that a significant exposure to a communicable disease has not occurred, the D.O. will:

- Discuss and explain the reasons for this conclusion so that they are clear to the reporting Firefighter.
- Reinforce the positive actions taken by the reporting Firefighter to both minimize risks and properly report the exposure.
- Provide educational materials to specific diseases if necessary (to be included in sections specific to disease in manual).
- **NEVER** indicate, imply or dismiss a reporting Firefighters questions or concerns as either trivial or a nuisance.

If the reporting Firefighter disagrees with the D.O.'s conclusion, he/she should be encouraged to consult with their family physician, the T.F.S. Chief Medical Officer, or any other physician of their choice.

If an exposure to a communicable disease has occurred, the D.O. will refer to the Post Exposure Procedures checklist. This will ensure the proper risk assessment form is filled out and assist in completing all applicable paperwork.

**4. Staff training**

The D.O. will work with the EMS Section and utilize the EMS shift instructors to implement a training program directed at our frontline operational staff. This training program will be designed to include:

- Information on specific diseases and how they are spread.
- Universal Precautions and PPE (new normal).
- Hand washing and sharps handling.
- Information regarding the D.O. program and how to activate it.
- It will be the responsibility of the D.O./EMS Section to keep the EMS shift training instructors informed and up to date so that they can inform the operational staff of any changes to the program or specific diseases included.

**The D.O. will:**

- Be aware of what information should be obtained from Firefighters who believe they have been exposed to a communicable disease.

- Be able to assess whether or not an exposure has occurred.

- Understand the procedure to follow if a possible exposure had occurred.

- Be able to inform the Firefighter of the possible risks related to the communicable disease and advise them to seek appropriate medical care.

**D.O. Responsibilities:**

**Post Exposure Procedures**

- Familiarize themselves, remain current with infection control concepts (Section 3) and their workplace applications in order to effectively counsel the reporting firefighter on the use of appropriate precautions in regards to disease transmission and appropriate protective measures against secondary infections.
- Using both the provided decision tree approach, in conjunction with the applicable risk assessment form, determine the level of risk to the Firefighter. Decision trees and risk assessment forms are disease/exposure type specific. Choose accordingly and complete forms.
- Counsel the reporting Firefighter using the appropriate information found within this manual in regards to disease exposure type, level of risk, options for treatment (PEP), follow up care, and personal life precautions, if applicable. (For HIV check Post

**D.O. Responsibilities:**
**Post Exposure Procedures** Continued

Exposure checklist). Risks of infection statistics are included for each disease where applicable.

- Advise Firefighter to complete necessary paperwork as follows: WSIB forms and Workers Report of Suspected Exposure (Hazardous materials or Pathogen). Advise on the option of enrolling in the National Surveillance Program of Occupational Exposure to HIV.
- Remember if a risk has been established or as the D.O., you are unsure, contact Chief Medical Officer and/or the Medical Officer of Health or communicable disease alternate at the health unit.

**Note:** I*t is important for the D.O. to remember that he/she must stay within the protocols. If there is concern regarding what action should be taken, they should call the Chief Medical Officer, the local health unit or infectious disease personnel at the closest hospital for advice.*

**The Firefighters shall:**

1. Familiarize themselves with and follow universal precautions.
2. Use appropriate barrier protection when potentially exposed to bloodborne/airborne pathogens.
3. Follow the appropriate procedure if an exposure occurs as follows:

    - Treat and cleanse exposed areas as appropriate eg. for needle stick injuries allow to bleed freely then clean & disinfect; mucous membrane exposure flush with large amounts of saline or water.

    - Wash hands.

    - If possible, note time of exposure.

    - Inform Captain of exposure so that he/she can contact T.F.S. Emergency Dispatch for the on-call D.O.

    - The D.O. will then make contact with Firefighter to perform risk assessment, educate and assist Firefighter as per D.O. responsibilities.

**NOTE:** *If exposure is secondary to an injury requiring medical attention the Firefighter will be sent to the closest hospital without delay.*

**Firefighter's Responsibilities**

The reporting Firefighter will be encouraged to seek medical follow-up once a risk has been established. Where this follow-up care and testing is done is the Firefighters choice. It is in the Firefighters best interest to utilize the T.F.S. Chief Medical Officer but he/she is not obligated to do so. Other options include the reporting Firefighters family physician or if they wish to protect their anonymity, testing and counseling can be provided at one of the anonymous testing centres listed on page 25.

Anonymous Testing centres in the G.T.A. and the rest of the province are listed. If the Firefighter chooses this route they may wish to deal with one closest to their residence. Also, all the contact numbers for all the public health units in Ontario are listed on page 26.

## ANONYMOUS HIV - TESTING SITES IN ONTARIO

| | |
|---|---|
| Algoma Health Unit | 705-759-5287 |
| Anishnawbe Health Toronto | 416-920-2605 |
| Bay Centre for Birth Control | 416-351-3700 |
| Birth Control & STD Information Centre | 416-789-4541 |
| Centre Medico-Social Communitaire | 416-922-2672 |
| Centretown Community Health Centre | 613-563-2437 |
| Elgin - St. Thomas Health Unit | 519-631-9900 |
| Hassle Free Clinic | 416-922-0566 (Women)<br>416-922-0603 (Men) |
| Health Services for Street Youth (SHOUT) | 416-927-8553 |
| Immigrants Women's Health Centre | 416-323-9986 |
| Kingston, Frontenac & Lennox<br>& Addington Health Unit | 1-800-267-7875<br>613-549-1232 |
| London Intercommunity Health Centre,<br>Options Clinic | <br>519-673-4427 |
| Peel Regional Health Unit | 905-840-1406<br>905-270-0587<br>905-820-3663 |
| Peterborough County Health Unit | 705-748-2021 |
| Queen West Community Health Centre | 416-703-8482 ext. 125 |
| Regional Municipality of Hamilton - Wentworth,<br>Department of Public Health Services, S.T.D. Clinic | <br>905-546-3541 |
| Regional Municipality of Waterloo Community<br>Health Department | <br>519-883-2006 |
| Regional Niagara Health Services Department | 905-688-3762<br>1-800-263-7248 |
| Rexdale Community Health Center | 416-744-0066 |
| Sandwich Community Health Centre | 519-254-6115 |
| Sandy Hill Community Health Centre | 613-563-2437 |
| Simcoe County District Health Unit | 705-721-7330 ext. 363 |
| SITE Clinic | 613-563-2437 |
| Somerset West Community Health Centre | 613-563-2437 |
| STD Clinic | 613-563-2437 |
| Sudbury and District Health Unit | 1-800-363-8388<br>705-522-9200 |
| The Gate (Flemington Health Centre) | 416-429-4991 |
| The House | 416-625-5981 |
| Toronto Public Health York Office | 416-394-2826 |
| Wellington-Dufferin-Guelph Health Unit | 519-821-2370 |
| Windsor Regional Hospital, Metropolitan Campus<br>HIV Care Program | <br>519-254-6115 |
| Windsor-Essex County health Unit | 519-258-2146 |
| **AIDS-Sexual Health Info Line | 1-800-668-2437 or<br>416-392-2437<br>Mon-Fri<br>9:00am - 11:30pm<br>Sat - Sun<br>11:00am-4:00pm |
| YORK REGION | York Region has no anonymous testing facility, but confidential testing can done by contacting:<br>1-800-461-2135 |

**For further information on Communicable diseases or to locate an anonymous testing centre in your area the following is a list of Public health Units across the province:**

## PUBLIC HEALTH AGENCIES IN ONTARIO

| | | |
|---|---|---|
| Algoma Health Unit | 705 | 759-5287 |
| Brant County Health Unit | 519 | 753-7377 |
| Bruce-Grey Owen Sound Health Unit | 519 | 376-9420 |
| Chatham-Kent Health Unit | 519 | 352-7270 |
| Durham Region Health Department | 905 | 723-8521 |
| Eastern Ontario Health Unit | 613 | 933-1375 |
| Elgin-St. Thomas Health Unit | 519 | 631-9900 |
| Haldimand-Norfolk Regional Health Unit | 519 | 426-6170 |
| Haliburton, Kawartha, Pine Ridge District Health Unit | 905 | 885-9100 |
| Halton Regional Health Department | 905 | 825-6060 |
| Hamilton-Wentworth Regional Dept. of Public Health Services | 905 | 546-3500 |
| Hastings and Prince Edward counties Health Unit | 613 | 966-5500 |
| Huron County Health Unit | 519 | 482-3416 |
| Kingston, Frontenac and Lennonx and Addington Health Unit | 613 | 549-1332 |
| Lambton Health Unit | 519 | 383-8331 |
| Leeds, Grenville and Lanark District Health Unit | 613 | 345-5685 |
| Middlesex - London Health Unit | 519 | 663-5317 |
| Muskoka-Parry Sound Health Unit | 705 | 645-4471 |
| Regional Niagara Public Health Department | 905 | 688-3762 |
| North Bay and District Health Unit | 705 | 474-1400 |
| Northwestern Health Unit | 807 | 468-3147 |
| Ottawa-Carleton Health Department (Region of) | 613 | 722-2328 |
| Oxford County Health Unit | 519 | 539-9800 |
| Regional Municipality of Peel. Health Department | 905 | 791-7800 |
| Perth District Health Unit | 519 | 271-7600 |
| Peterborough County-City Health Unit | 705 | 743-1000 |
| Porcupine Health Unit | 705 | 267-1181 |
| Renfrew County and District Health Unit | 613 | 732-3629 |
| Simcoe County District Health Unit | 705 | 721-7330 |
| Sudbury and District Health Unit | 705 | 522-9200 |
| Thunder Bay District Health Unit | 807 | 625-5900 |
| Timiskaming Health Unit | 705 | 647-4305 |
| Toronto Public Health Department | 416 | 392-7401 |
| Waterloo Region Community Health Department | 519 | 883-2000 |
| Wellington-Dufferin-Guelph Health Unit | 519 | 843-2460 |
| Windsor-Essex County Health Unit | 519 | 258-2146 |
| York Region Health Services Department | 905 | 895-4511 |

**Ministry of Health and Long Term Care Public Health Branch 416-327-7392**

## NOTIFICATION PROCESS: ROLES & RESPONSIBILITIES – Captain of Reporting Firefighter

### CAPTAIN

When an exposure is suspected, immediately inform the Company Officer;

1. Contact Communications and inform them of exposure risk requiring the on-call S.D.O.; if possible, provide Emergency Dispatch with a telephone number at the scene, or firehall for D.O. contact.

2. Relieve Firefighter of duties as soon as it's reasonably safe for both Firefighter and patient.

3. Update/confirm address and or location of incident with communications.

4. If possible check with attending TEMS personnel to determine which hospital is to receive source patient.

5. Fill out Supervisors Report of Injury Accident form and forward to Platoon Chief ASAP.

6. Ensure privacy for the exposed Firefighter while speaking with the S.D.O. (to maintain confidentiality)

* The Designated Officer Program was set up by the Ministry of Health and clearly identifies the appropriate contact person as the Designated Officer (D.O.) TFS has added responsibilities of a Safety Officer. Therefore the TFS program is multifunctional and internally may be identified as a Safety Designated Officer (S.D.O.), and externally as the Designated Officer.

## NOTIFICATION PROCESS: ROLES & RESPONSIBILITIES – Communications Staff

### COMMUNICATIONS

Upon receiving a request for the on-call S.D.O., Emergency Dispatch will immediately page the on-call S.D.O. The following information must be ready to convey to S.D.O. when the page is answered:

- Apparatus number of involved crew member
- Name of Company Officer on-scene
- Location of call
- Contact number at scene, if available or firehall
- Location of affected Firefighter, if different from call location
- Name of exposed Firefighter

* The Designated Officer Program was set up by the Ministry of Health and clearly identifies the appropriate contact person as the Designated Officer (D.O.) TFS has added responsibilities of a Safety Officer. Therefore the TFS program is multifunctional and internally may be identified as a Safety Designated Officer (S.D.O.), and externally as the Designated Officer.

## NOTIFICATION PROCESS: ROLES & RESPONSIBILITIES – District Chief

**DISTRICT CHIEF shall**:

- In the event the exposed Firefighter cannot be taken by his apparatus: the D.C. shall arrange transport for the Firefighter to the hospital where the source patient was transported. If the source patient was not transported, the DC will arrange transport for the Firefighter to the closest hospital.

- If the Firefighter is injured, arrange transport via TEMS to hospital.

* The Designated Officer Program was set up by the Ministry of Health and clearly identifies the appropriate contact person as the Designated Officer (D.O.) TFS has added responsibilities of a Safety Officer. Therefore the TFS program is multifunctional and internally may be identified as a Safety Designated Officer (S.D.O.), and externally as the Designated Officer.

# PERSONAL PROTECTION AND PREVENTION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## PERSONAL PROTECTION & PREVENTION

This section contains a brief overview of required knowledge and necessary practices to protect the Firefighter from communicable diseases and includes the following topics:

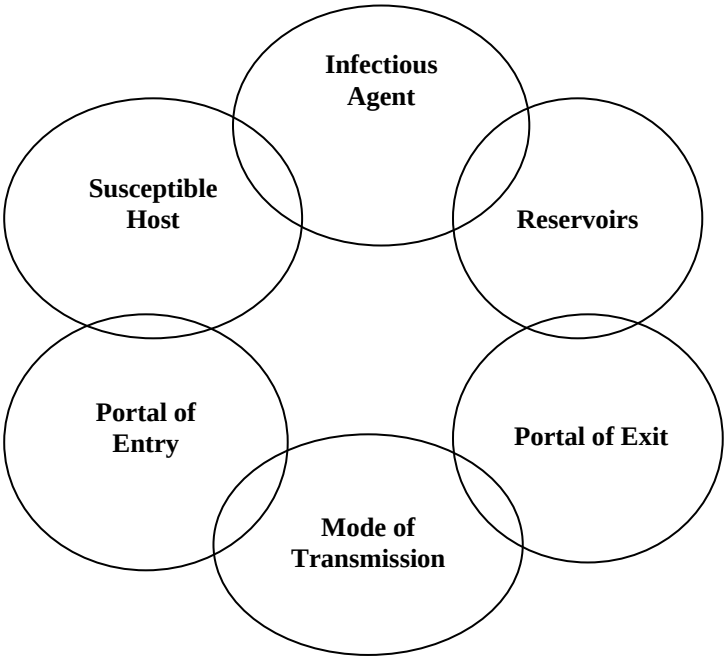
- Definitions/Disease Process
- Universal Precautions/Handwashing
- Personal Protective Equipment/PPE
- Sharps Handling/Disposal
- Immunization
- Cleaning Equipment
- Body Substance Spill Procedure

Exposure to an infectious substance is not always followed by disease.

The spread of infection requires several elements to be linked in a chain.

- Infectious agent
- Reservoirs
- Portal of exit
- Modes of Transmission
- Portal of Entry
- Susceptible Host

## SPREAD OF INFECTION




The relationship between these elements will determine if a disease will occur. When the chain is broken at **ANY** of the links, disease will not develop in a new host. The easiest way to prevent contracting an infectious disease is to break the chain of infection at the transmission link via the use of PPE.

## PERSONAL PROTECTION & PREVENTION: Definition & Disease Process

### Source

The Sources of an infectious agent may include persons with acute disease, persons in the incubation period of the disease or persons who carry the infectious agent but have no apparent disease. Other potential sources are objects in the environment such as equipment that has become contaminated.

### Infectious Agent

A biological or chemical agent capable of causing disease such as a bacteria, fungus or virus, i.e. the agent that causes AIDS is the HIV virus.

### Reservoir

Where an infectious agent can survive, i.e. HIV in blood, and bodily fluids.

### Portal of Exit

The path by which the infectious agent leaves the reservoir, i.e. HIV leaves the body via blood, and bodily fluids.

### Mode of Transmission

The mechanism for the transfer of an infectious agent from a reservoir to a susceptible host, i.e. unprotected sexual intercourse is one means that allows for a transmission of infected body fluids. There must be some sort of contact.

### Portal of Entry

The path by which an infectious agent enters the susceptible host, i.e. HIV requires a route into the bloodstream via broken skin or mucous membrane absorption.

### Susceptible Host

A host must be susceptible by lacking immunity or effective resistance to the infectious agent. Characteristics that may influence susceptibility to infections include: age, sex, ethnicity, socio-economic status, underlying disease, lifestyle factors, smoking, heredity, nutritional status, occupation, trauma, prior infection and of course immunization status. (i.e. if you have received the Hep B vaccine and responded to it, you are immune, therefore not a susceptible host to Hep B infection).

### Incubation Period

The time interval between initial contact with an infectious agent and the appearance of the first signs and symptoms, i.e. people who appear healthy, feel healthy and are unknowingly infected with HIV. They are capable of virus transmission but have not yet developed AIDS.

## PERSONAL PROTECTION & PREVENTION: Definitions & Disease Process

### Communicable Period

The time or times during which an infectious agent may be transferred directly or indirectly from an infected person to another person, from an infected animal to man or an infected person to animal, i.e. chickenpox is communicable before the onset of signs and symptoms and during signs and symptoms but in the later stages when signs and symptoms may still be present, the source host may not be communicable any longer.

### Contact (Mode of Transmission)

1. Direct

    a) Contact – person to person spread. There must be actual physical contact between source and person, i.e. kissing, hands, etc.

    b) Droplet Spread – spread through the air (3 feet or less) by means of talking, sneezing or coughing, resulting in direct contact with the expelled droplets.

2. Indirect Contact

    a) Vehicle – Inanimate objects such as food, blood exposure (i.e. contaminated equipment), water, medication, feces or contaminated objects in environment around source.

    b) Airborne – Light bacteria that are carried on air currents, i.e. tuberculosis, legionella.

    c) Vector – Animal transmission, usually biting the host or depositing the infectious agent on food or on the skin, i.e. dogs/rabies, mosquitoes/West Nile, ticks/lyme disease etc.

| Transmission of Infectious Agents | Hep B | Hep C | HIV |
|---|---|---|---|
| Blood, serum, plasma by needlestick* | Y | Y | Y |
| Semen | Y | ? | Y |
| Vaginal secretions | Y | ? | Y |
| Pleural, amniotic, pericardial, peritoneal, synovial and cerebrospinal fluids | Y | ? | Y |
| All body fluids visibly contaminated with blood* | Y | Y | Y |
| Laboratory specimens containing viral concentrations | Y | Y | Y |
| Saliva (bite) | Y | ? | ? |
| Screened donated blood and manufactured blood products (for transfusion) | a | a | a |
| Transplanted Organs | Y | Y | Y |
| Breast milk | N | ? | Y |

* Blood is the most important source of nosocomial transmission
Y Indicates fluid of transmitting bloodborne pathogen
? Indicates no well-documented cases reported
a Risk of Transmission minimal due to donor screening and processing of blood products
N Hep B in breast milk transmission unlikely

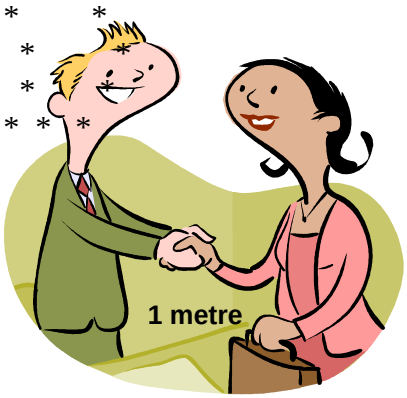
**NOTE**: The following body substances are not implicated in the transmission of HIV, Hep B and Hep C unless visibly contaminated with blood: feces, nasal secretions, sweat, tears, urine, and vomit.

Source: Laboratory Centre for Disease Control. (May, 1996). Preventing the transmission of bloodborne pathogens in health care and public service settings. Ottawa: Health Protection Branch, Health Canada.

## METHODS OF TRANSMISSION

### DIRECT Contact

CONTACT




DROPLET

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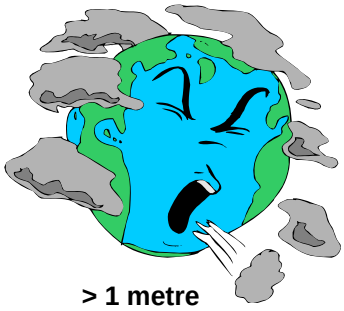
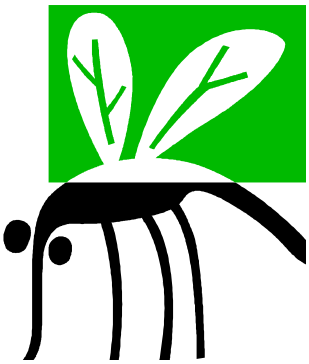
### INDIRECT Contact




AIRBORNE

VEHICLE



VECTORBORNE

## WORKPLACE APPLICATIONS

As well as following the general practices and precautions, firefighters and emergency medical services should consider the following:

a. Identification of high-risk areas and procedures followed by, development and implementation of protocols, surveillance, training and provision of equipment designed to decrease risk of exposure are critical in decreasing occupational exposures to blood borne pathogens.

b. Enhanced equipment safeguards are indicated for situations which broken glass and sharp edges are likely to be encountered (i.e. such as extricating a person from an automobile wreck). Gloves that meet the national requirements for use by Firefighters should be worn in any situation in which sharp or rough surfaces are likely to be encountered.

c. Mechanical respiratory assist devices (i.e. bag-valve-masks, oxygen-demand valve resuscitators) should be available on all emergency vehicles and to all emergency response personnel who may respond to medical emergencies or victim rescues.

d. Masks, eye wear, and gowns should be present in all emergency vehicles that respond to medical emergencies or victim rescues. These protective barriers should be used in accordance with the level of exposure encountered. Presence of small lacerations or small amounts of blood requires the use of gloves as an additional barrier. However, managing victims with massive bleeding requires the use of gowns, masks, eye protection and gloves as barrier protection.

e. Disposable gloves, appropriate to the task, should be a standard component of emergency response equipment, and should be donned by all personnel prior to initiating any emergency patient care tasks involving exposure to blood and fluid capable of transmitting bloodborne pathogens.

f. Gloves should be removed immediately after use. Hands must be washed after gloves are removed.

* Minimum PPE to be worn by TFS staff at all medical calls will include gloves, goggles, bunker boots and pants. Additional PPE (N-95 mask, gowns, faceshield) should be employed when necessary.

## UNIVERSAL PRECAUTIONS (UP)

Universal Precautions were first introduced in 1985 to reduce the risk of exposure to bloodborne diseases such as Hepatitis B, C and HIV. UP are basic work practices which emphasize the use of protective barriers such as gloves, gowns, masks and goggles when in contact with blood and other bodily fluids or when contact is likely. The primary assumption is that all blood and bodily fluids are potentially infectious. UP covers the following bodily fluids:

- Blood
- Semen
- Vaginal secretions
- Cerebrospinal fluid
- Synovial fluid
- Pleurel fluid
- Peritoneal fluid
- Pericardial fluid
- Amniotic fluid

Other bodily fluids (i.e. urine, saliva and feces) are also considered potentially infectious, if they are visibly contaminated with blood.

*NOTE: UP only addresses bloodborne diseases so does not eliminate urine, saliva & feces as exposure risks to other diseases (ie. Meningitis)

All Firefighters should be aware of UP and follow them even in difficult work situations. This is accomplished by using the provided personal protective equipment (PPE) when exposure to blood or bodily fluids is likely/possible.

Transmission is prevented when a barrier (PPE) is placed between the portal of exit and the portal of entry therefore breaking the "chain of infection". The items listed below provide suitable barriers and should be used at all times when exposure to blood/bodily fluids is likely.

1. **Gloves**
   The provided latex or nitrile gloves are an excellent barrier against disease transmission protecting both the Firefighter and the patient. *Note: to be worn at all medical calls attended by TFS staff.

2. **N-95 Masks**
   In addition to febrile, coughing patients, properly fitted N-95 masks should be worn if splashing of blood/bodily fluids is likely. This is to protect against mucosal exposure of the mouth and nose. *Note: TFS staff have discretion to don an N-95 mask at <u>any</u> time during a medical call, should they feel the need for additional protection.

3. **Goggles**
   Should be worn if splashing of blood/bodily fluids is likely, protecting the mucosal surfaces of the eyes. *Note: to be worn at all medical calls attended by TFS staff.

## PERSONAL PROTECTION & PREVENTION: Universal Precautions (UP) continued

**4. Gowns or bunker suits**

To protect against skin exposures in particular protecting any non intact skin from splashing exposures. *Note: bunker boot and pants to be worn at all medical calls attended by TFS staff.

**5. Handwashing**

Personal hygiene practices such as handwashing and washing of other exposed areas **AFTER EVERY CALL** cannot be stressed enough. Some infectious diseases, such as Chickenpox & HIV, are contagious before the onset of symptoms. This may leave both the Firefighter & patient unaware of the patient's disease status. For this reason UP and handwashing is advised for every call as handwashing reduces the spread of all infectious diseases.

Hand washing with plain soap and water is indicated in routine health care and for washing hands soiled with dirt, blood or other organic material. Plain soap & water will remove many transient organisms. Lather up and rub vigorously for 10 to 15 seconds. This should be done immediately after contact with body fluids.

When running water is not available use the supplied waterless hand washing or alcohol handwipes until you can get to running water and then rewash hands as above.

It must be understood that hands **MUST** be washed:

1. Immediately after unprotected exposure to blood or fluids capable of transmitting blood borne pathogens.

2. After a glove tear or suspected glove leak.

3. After removing gloves.

4. After handling materials that may be contaminated with blood or fluids capable of transmitting bloodborne pathogens.

5. After each patient contact. This protects both you and your next patient.

## PERSONAL PROTECTION & PREVENTION: Workplace Application

Examples of Recommended Personal Protective Equipment for Worker Protection against HIV, HBV Transmission in Prehospital Settings as per TFS protocols

| Task or Activity | Disposable Gloves | Gown | Mask | Protective Eyewear |
|---|---|---|---|---|
| Bleeding control with spurting blood | Yes | Yes | Yes | Yes |
| Bleeding control with minimal bleeding | Yes | No | No | Yes |
| Emergency childbirth | Yes | Yes | Yes | Yes |
| Starting an intravenous (IV) line | Yes | No | No | Yes |
| *****Endotracheal intubation, OPA installation | Yes | Yes | Yes | Yes |
| *****Oral/nasal suctioning, manually cleaning airway | Yes | Yes | Yes | Yes |
| Handling and cleaning instruments with microbial contamination | Yes | No, unless soiling is likely | No | Yes |
| Measuring blood pressure | Yes | No | No | Yes |
| Measuring temperature | Yes | No | No | Yes |

The examples provided in the above table are based on application of universal precautions. Universal precautions are intended to supplement rather than replace recommendations for routine infection control, such as hand washing and using gloves to prevent gross microbial contamination of hands (i.e. contact with urine or feces).

*****Indicates active airway management that requires the use of full PPE as per “the new normal”.

**NOTE: Bunker boots, pants, gloves and goggles to be worn at all calls.

## PERSONAL PROTECTION & PREVENTION: Sharps Handling & Disposal

### SHARPS HANDLING

While assisting TEMS staff at an emergency scene the following policy will be adhered to at all times.

Needles and lancets WILL NOT BE RECAPPED after use. Both needle shield and syringe with needle attached and lancets will be disposed of directly into a solid plastic container, not a paper or plastic bag. These plastic containers are supplied for all medically equipped apparatus and are to be disposed of as biomedical waste. TFS personnel WILL NOT transfer used sharps from one container to another. Sharps containers will be replaced when 2/3 full.

Most needle stick injuries occur when workers recap or dispose of needles. The risk of infection with HIV following a needle stick is approx. 0.3%. The risk of infection with Hep B virus from a needle stick is 6 - 30% (Aids guide for Health Care workers Aids Alert 1994).

Personnel must ensure during equipment checks that an appropriate sharps disposal container is available for use by the attending crew on scene.

**SHARP INJURY FOLLOW UP**

In the event that TFS personnel experience an injury due to a needlestick or other contaminated sharps that person will:

**IMMEDIATELY**

1. Encourage bleeding from the wound, and wash the area with soap/disinfectant and water.

2. Report the injury to their Captain/Communications so that a Designated Officer can be contacted.

3. The D.O. will then assist you with the following procedures:

**WITHIN 1 - 2 Hours**

1. Perform a risk assessment with the D.O. in regards to possible HIV / Hep B / Hep C exposure and start Post Exposure Prophylaxis medication if indicated.

   Note: Exposure to known HIV may warrant follow up by the Bureau of Infection Control, Ottawa.

**WITHIN 24 Hours**

1. Submit a WSIB "Workers Report of Injury" form as well as a "Workers Report of Suspected Exposure" (Hazardous Materials or Pathogen).

2. If not immunized against Hepatitis B, HBIG (Hepatitis B Immune Globulin) will be offered and given as soon as possible (preferable within 24hrs). The Firefighter can attend their own physician, the Emergency Department or have follow up care attended to by T.F.S Chief Medical Officer Dr. Noah Forman.
   * Note: HBIG is recommended again 1 month after the first dose.

3. If immunized, follow recommendations of Canadian Immunization Guide 6th Edition - 2002. The D.O. and Chief Medical Officer can assist with this.

**WITHIN 1 WEEK**

1. It is strongly recommended that the Firefighter attend his/her own physician or T.F.S. Chief Medical Officer, regarding further blood tests e.g. HIV, VDRL, Hep B/C.

**SIX - EIGHT WEEKS**

1. VDRL should be repeated in 6-8 weeks and HIV again at 14 weeks, 6 months and 12 months - Hepatitis B surface antigen should be tested in 6-8 weeks and again at 6 months.

## PERSONAL PROTECTION & PREVENTION: Immunizations

### Protection Against Communicable Disease

### Routine Immunization for Emergency Service Worker

Source: Health Canada, Canadian Immunization Guide. 6h ed. Ottawa: Laboratory Centre for Disease Control, 2002

Every Firefighter should ensure that their vaccinations are up-to-date. Keeping an immunization record at home may assist in keeping track of immunization status and dates for further doses. If you are updated or immunized off the job, you should contact the medical office so your file can be updated.

**Routine Immunization of Adults:**

| VACCINE OR TOXOID | INDICATION | FURTHER DOSES |
|---|---|---|
| Diphtheria (adult preparation) | All adults | Every 10 years, preferably given with tetanus toxoid (Td) |
| Tetanus | All adults | Every 10 years, preferably give as Td |
| Influenza | Adults ≥ 65 years; adults < 65 years at high risk of influenza-related complications and other select groups | Every year using current vaccine formulation |
| Pneumococcal | Adults ≥ 65 years; conditions with increased risk of pneumococcal diseases | See page 181 of Canadian Immunization Guide 6th edition |
| Measles | All adults born in 1970 or later who are susceptible to measles | May be given as MMR |
| Rubella | Susceptible women of child-bearing age and health care workers | May be given as MMR |
| Mumps | Adults born in 1970 or later with no history of mumps | May be given as MMR |

**Summary of Selected Immunization for Adults:**

| VACCINE | INDICATION |
|---|---|
| BCG | High-risk exposure |
| Hepatitis A | Occupational, life-style or environmental exposure |
| Hepatitis B | Universally recommended in Canada, especially for occupational, life-style or environmental exposure |
| Japanese encephalitis | Travel to endemic area or other exposure risk |
| Lyme Disease | Travel to endemic areas<br>Risk determination should determine high, moderate, low or no risk |
| Meningococcal | High-risk exposure or travel |
| Pertussis | See Pertussis chapter, page 171 of Canadian Immunization Guide 6th edition |
| Poliomyelitis | Travel to endemic area or other exposure risk |
| Rabies pre-exposure use | Occupational or other risk |
| Typhoid | High-risk exposure |
| Varicella | Occupational, household contacts of susceptible individuals and those susceptible because of underlying disease |
| Yellow fever | Travel to endemic area or if required for foreign travel |

**PERSONAL PROTECTION & PREVENTION: Body Spill/Body Substance Cleanup and Equipment Cleanup**

## Step 1

Choose appropriate personal protective equipment:

- Wear minimum level PPE – gloves, goggles, bunker boots & pants;
- If possibility of splashing, wear mask faceshield and gown;
- For large spills wear gown, and faceshield in addition to minimum level of PPE as described above.

## Step 2

Soak up excess blood and fluid with disposable towels and discard into plastic-lined waste receptacle.

## Step 3

Clean area with soap and water.

## Step 4

Disinfect area with 1/2 cup bleach per gallon of tap water or chemical germicide as per manufacturers directions. Leave undisturbed on surface for 10 minutes.

# Selected Communicable Diseases

# HIV / AIDS

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## SELECTED COMMUNICABLE DISEASES – HIV / AIDS

### Acquired Immune Deficiency Syndrome (AIDS)

**What is AIDS?**

The full name for AIDS - Acquired Immune Deficiency Syndrome, describes several of the characteristics of the disease.

Acquired - Indicates that it is not an inherited condition.

Immune Deficiency - Indicates that the body's immune system breaks down.

Syndrome - Indicates that the disease results in a variety of health problems.

AIDS is caused by a virus called the Human Immunodeficiency Virus, or HIV. HIV breaks down the body's immune system and leaves the patient susceptible to a variety of unusual infections and cancers. Unable to fight these infections the patient becomes ill and may die from those infections.

**Is there a difference between HIV+ and AIDS?**

**YES**. Many people are infected with the HIV virus but have no signs or symptoms of illness. They may be HIV positive but look & feel healthy. Because of this, some people may have the virus and not know it. Once a person becomes infected with the HIV virus it can take anywhere from a few months, up to 10 years to become ill with AIDS. As of April 15, 1997 the total number of reported AIDS cases in Canada was 14,836. Meanwhile the Federal Centre for AIDS estimated that by the end of 1996 there were an accumulative total of 50,000 - 54,000 HIV + Canadians. Within eight years about 50 percent of all infected people develop specific conditions characterized as AIDS. Most people who are HIV infected will eventually become ill and die.

**How is it spread?**

The virus is carried in blood and bodily fluids as follows: semen, vaginal secretions, pleural fluid, amniotic fluid, pericardial, and peritoneal, synovial and cerebrospinal fluids.

The transmission of the HIV virus occurs only when the virus has direct access to your bloodstream. Therefore the virus is not spread by ordinary everyday contact. The virus is not known to travel through air or to be transmitted by mosquitoes or other insects. Outside the body the virus is very fragile and several studies indicate that sharing of telephones, swimming pools, toilets or other household items and facilities with people infected with HIV poses no risk.

## SELECTED COMMUNICABLE DISEASES – HIV / AIDS

**The HIV virus can be transmitted from one person to another through:**

- Unprotected sexual intercourse with infected persons
- Sharing contaminated needles or accidental exposure to contaminated needles
- Transfusion of infected blood or blood products
- Prenatal infection
- Organ transplant from an infected donor or
- Exposure to an infected person's blood or bodily fluids

BUT remember AIDS is hard to get. Exposure has to be combined with a direct route to your blood system via a needle puncture, broken skin, mucosal absorption etc.

### Is there a test for AIDS?

**Yes.** Blood tests are used to confirm HIV infection. Once your body is infected with the HIV virus it will develop antibodies or AIDS markers. If antibodies are found, the test is positive for HIV. If no antibodies are found the test is negative for HIV. When someone is infected with HIV it can take up to 14 weeks, and in rare cases longer for these antibodies to appear. Seroconversion after 24 weeks is extremely unlikely, but because of this "window period" of possible negative result, testing is advised at the time of exposure - 6 weeks post exposure; 12 weeks post exposure; 24 weeks post exposure & 1 year. Once the presence of these antibodies have been confirmed, it means the person has been infected with HIV but no one can predict when and if they will get AIDS related symptoms.

### Is there a treatment for AIDS?

Currently, there is no cure for AIDS. Once you've seroconverted (had a positive HIV test) treatment is designed to delay the onset of AIDS by slowing the progression from HIV infection to AIDS. This therapy is called Antiretroviral therapy. Doctors have been administering drugs such as Zidovudine (ZDV) also known as AZT, Lamivudinc (3TC) Indinivar (IDV) Stavudine (D4T), Nelfinavir and others in a variety of combinations. While these drugs have been shown to prolong the life in AIDS patients, currently no AIDS patient has recovered.

## SELECTED COMMUNICABLE DISEASES – HIV / AIDS

### How to protect yourself.

By understanding how the virus is spread you can avoid the activities that put you at risk.

**In your personal life avoid:**

- Unprotected sexual intercourse (use latex condoms)
- Sexual intercourse with an infected person
- Sexual intercourse with a person at risk who are:
    - Men who have sex with men
    - I.V. drug users
    - Persons from an HIV endemic region such as Africa
    - Hemophiliacs or other people who had blood transfusion prior to November 1985
    - Heterosexuals who engage in sex with high risk and/or multiple partners
- *Do not share needles and syringes.*

**At work:**

- Understand and practice infection control procedures
- Employ Universal Precautions
- Use your Personal Protective Equipment (PPE)
- Hand washing and washing of other exposed areas
- Remember you can't tell who is infected by looking at the person so always protect yourself.

### Vaccination & PEP (Post Exposure Prophylaxis)

There is no vaccine available to protect us against HIV infection. Also there has been no natural or acquired immunity to the disease demonstrated. Therefore, EVERYBODY is susceptible to HIV infection. Post Exposure Prophylaxis (PEP) is a term used to describe available treatment that may reduce your chances of becoming infected after an exposure has occurred.

**YES,** there is PEP available for HIV exposure. PEP medications are the same as the drugs listed in the treatment section. It is believed that if these drugs are given immediately after an exposure (1-2hrs, preferably under 1 hour) they will prevent the virus from replicating and infecting the exposed person. Recent evidence shows that antiretroviral therapy can reduce the risk of transmission of HIV by 86%*. These drugs are given in a variety of combinations but are not without side effects, sometimes severe. These drugs are also contraindicated with use of some other mediations or pre-existing medical conditions.

Your D.O. will have further information on these drugs and will explain further the risk vs. benefit of these drugs.

***** Remember - these drugs require IMMEDIATE delivery, do not delay reporting.***

*Source: CDC Case Control Study of HIV Seroconversion in Healthcare Workers After Percutaneous Exposure to HIV Infected Blood, France, United Kingdom and US, Jan. 1988-Aug. 1994, MMWR, 44:929-933, 1955.

## HIV CHAIN OF INFECTION

**AGENT**
The HIV Virus

**RESERVOIRS**
HIV infected individuals. The virus will survive in blood and bodily fluid as follows: semen, vaginal secretions, pleural fluid, amniotic fluid, pericardial fluid, peritoneal, synovial and cerebrospinal fluids. Exclude: saliva, tears, vomitus, feces, and urine unless visibly stained with blood.

**PORTAL OF EXIT**
Any body opening or wound draining fluids that harbour the virus (above).

**MODE OF TRANSMISSION**
Direct contact with the medium (fluids) that harbour the virus (above).

**PORTAL OF ENTRY**
The virus must have a direct route to the bloodstream via an open wound, broken skin, needlestick or mucous membrane absorption.

**SUSCEPTIBLE HOST**
There is no vaccine and natural immunity has not been demonstrated, therefore we are all susceptible hosts.

****Remember: Break the Chain, Stop Infection !**

## SELECTED COMMUNICABLE DISEASES – HIV / AIDS

### DECISION TREE

### Possible Exposure to HIV*, HBV** and HCV***

Exposure to blood and/or Bodily Fluids

↓

Report to **Designated Officer**
(See Disease info)

↓

Thorough assessment of risk for occupational exposure to bloodborne diseases should take place. If Post Exposure Prophylaxis (PEP) is required due to possible exposure to HIV*, it should be started within hours of exposure, preferably within <u>one</u> hour. **For this reason, the Designated Officer should be contacted immediately.**

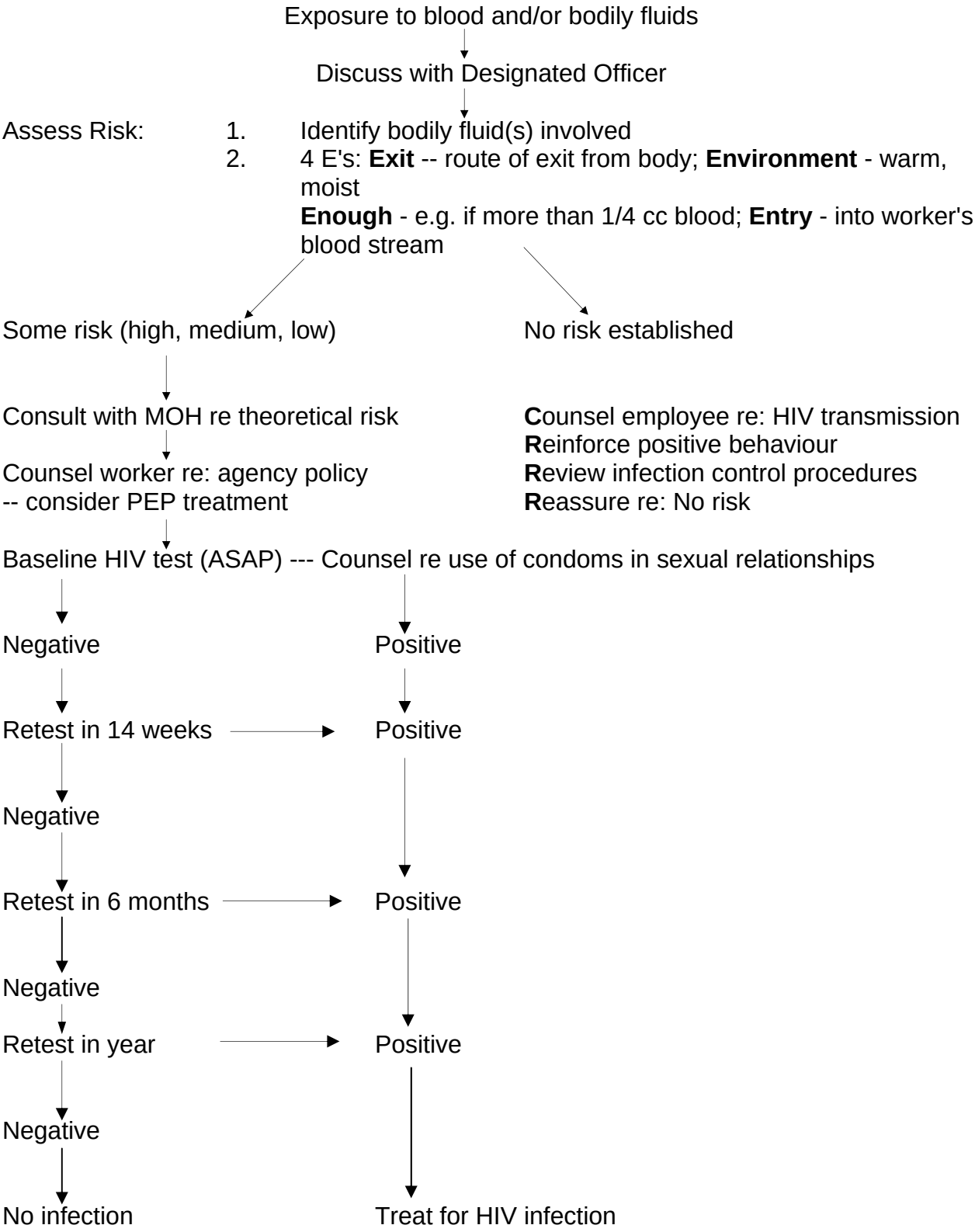
| **Some Risk (High, Medium, Low)** | **No Risk Established** |
|---|---|
| ↓ | ↓ |
| Thorough risk assessment to be done at the Nearest hospital or Command H.Q. And PEP may be recommended or offered in some cases. | **C**ounsel Employee:<br>re: Bloodborne disease Transmission;<br>**R**einforce positive behaviour;<br>**R**eview Infection Control Procedures;<br>**R**eassure re: No Risk. |

**Hepatitis B is preventable. Three doses of HBV are recommended prior to assuming duties as a Staff Member. If reporting staff member is unvaccinated, post-exposure immunoprophylaxis for hepatitis B would also be initiated within the emergency department as outlined in the Canadian Immunization Guidelines.

*** Currently there is no prophylaxis available for Hepatitis C disease.

## SELECTED COMMUNICABLE DISEASES – HIV / AIDS

### Acquired Immune Deficiency Disease (AIDS)



# Selected Communicable Diseases

# HEPATITIS B (Hep B)

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## Selected Communicable Diseases - HEP B VIRUS (HBV)

### *What is Hep B?*

Hepatitis is an infectious liver disease. Hepatitis B is one of several hepatitis viruses (A, B, C, D, E, F, G) which attack the liver. As with HIV it is a bloodborne pathogen carried in blood, bodily fluids and in addition, has been found in saliva. When the virus is able to enter the bloodstream and reach the liver the virus reproduces and releases large numbers of new Hep B viruses into the bloodstream. To combat the disease, the body's immune system produces antibodies, which circulate in the blood to destroy the virus and protect against future infections. As well, white blood cells attack and destroy infected liver cells. During the infection and recovery process, the liver may not function normally causing illness that affects the entire body. 90% of those infected recover completely. About 10% of people who develop Hepatitis B become carriers of the disease. This leaves their blood infected for years, sometimes for life. At present, there is no cure for carriers. Because the virus remains unresolved in these individuals, they may, in several years go on to develop permanent liver damage, cirrhosis of the liver or cancer of the liver.

The incubation period of HBV is 45 – 180 days with an average of 60 – 90 days. Only 50% of people who are infected have symptoms. They may or may not experience flu like symptoms lasting up to 3 months. These may include fever, jaundice, tiredness and tenderness in the upper abdomen.

About 3000 case of HB are reported annually in Canada but many cases probably remain unreported.

Note: The other Hepatitus viruses listed above A, C, D, E, F, G are not related to Hepatitis B even though they also affect the liver.

### *How is Hep B spread?*

Direct contact is required with blood, bodily fluids (semen, vaginal secretions, pleural, amniotic, pericardial peritoneal synovial and cerebrospinal fluids), saliva and breast milk. Contaminated blood or bodily fluids must be able to enter the body through cracks in the skin, the mucous membranes or directly into the bloodstream via an injury (i.e. needlestick). Hepatitis B is highly infectious. Only 1/1,000,000 of a cc of infected blood is required to spread the disease. Also the HBV is not as fragile as the HIV virus. So to a lesser extent, indirect contact with blood through contaminated surfaces can also transmit the HBV. The virus may remain stable in dried blood for up to 7 days at 25°C. Hand contact with these contaminated surfaces may transfer the virus to skin or mucous membranes. **Remember use PPE and wash hands after every call**. The HBV is also found in saliva in lower concentrations than blood. Injections of infected saliva can transmit the virus so bite injuries can also spread the disease. The virus can also be spread from mother to infant during breastfeeding. Anyone who comes in direct contact with blood or bodily fluids is at risk of contracting HBV.

## Selected Communicable Diseases - HEP B VIRUS (HBV)

### *Is there a test?*

**Yes.** There is a simple blood test available. It will determine if the virus is present in the body tissue or blood. It can also indicate how advanced the disease is and how infective the individual has become.

Other tests are available to detect the body's reaction to the viral infection or the body's reaction to vaccination against the virus. These tests are used to indicate if the person has developed immunity to the HBV.

### *Is there a treatment for HBV Infection?*

Currently there is no treatment for acute HBV infection. Physicians will commonly recommend that patients with the disease limit their physical activity, drink clear liquid, avoid high protein diets and alcohol which can place further demands on the liver. In some cases hospitalization is required to maintain adequate nutrition (due to severe vomiting) and/or to prevent the development of complications. As previously mentioned 90% of those infected recover completely from the disease. For the 10% who become chronic carriers, Interferon A may be offered for treatment, although this treatment is very costly and has limited effectiveness.

### HOW TO PROTECT YOURSELF

By understanding how the virus is spread you can avoid the activities that put you at risk. As with HIV infection, avoid any activities that would expose you to blood/bodily fluids (i.e. unprotected sexual intercourse, sharing needles etc.).

While at Work….

- Understand and practice infection control procedures
- Employ Universal Precautions
- Use your PPE
- Hand washing and washing of other exposed areas after every call
- Remember a carrier may not show signs of infection, always protect yourself

** There is a vaccine available to all TFS staff; it has been proven both very safe and effective (over 90% effective). All staff should be immunized. It is important that Firefighters protect themselves and their patient, against HBV infection.

## Selected Communicable Diseases - HEP B VIRUS (HBV)

### Vaccination

There is an effective vaccine (over 90% effective) it has been widely used and proven to be very safe. It is recommended that all Firefighters be vaccinated against (or have documented immunity) to HBV. This vaccine is given intra muscularly (by needle) in the deltoid muscle (shoulder). It is given in 3 doses at 0, 1, and 6 months. One to two months after the completion of the 3 dose vaccination series, you should be tested for antibody to hepatitis B surface antigen (anti HB's). Persons who do not respond to the primary vaccine series may need to complete a second three dose vaccine series. Revaccinated persons should be retested at the completion of the second vaccine series. If you do not respond (develop sufficient antibodies) following revaccination you may be a "non responder" to vaccination. This will leave you susceptible to HBV infection. See Definitions.

**Immune to HBV –** a Firefighter who has known documentation of an anti-HBs level >=10 IU/L when tested following the complete HB immunization series, or has an anti-HBs level >=10 IU/L, or is anti-HBc +, or is HBs Ag + from a previous Hepatitis B infection.

**Susceptible to HBV –** a Firefighter who after HBV immunization has an inadequate anti HBs Level (<10 IU/L) when done 4 to 8 weeks after completing the immunization and tests for anti HBs, anti HBc and HBs Ag are all negative.

**Non-responder –** a Firefighter who has had two complete series of H.B. vaccine and has tested anti- HB's negative (<10 IU/L) post HB immunization after each series.

**Unknown HBV status** – When there are no results available from previous testing for suitable HBV serological markers (anti-HBs for post vaccination response, anti HBc for natural infection) regardless of whether the Firefighter has received HB immunization or has a clinical history of Hepatitis.

**Susceptible/non-responder Firefighters** - should not delay reporting a blood or bodily fluid exposure as post exposure prophylaxis must be given in a timely manner (preferably within 24 - 48hrs). If you are immune to HBV the incident should still be reported immediately to follow up for possible HIV or Hep C exposure.

## Selected Communicable Diseases - HEP B VIRUS (HBV)

### PEP – Post Exposure Prophylaxis.

If you have received the vaccine and were tested for and demonstrated adequate antibody response, no treatment following an exposure to blood/bodily fluids would be necessary to prevent HBV infection. If you have not been vaccinated you may be offered Hepatitis B Immune Globulin (HBIG) and started on the vaccine. If you're status is unknown or you are a non-responder you will be offered HBIG, which will give you passive immunity for the present exposure only. HBIG should be given within 24 – 48 hours and its effectiveness if given later than 7 days is not known. Another dose is given to non-responders at 1-month post exposure. It should be noted that there has been documented cases of HBV infection even after the use of HBIG, but these are rare.

**Remember: You must have had your blood tested for antibody levels following the vaccine series to confirm immunity. If you did not do this you can't be sure that you are protected against HBV infection.**

## HEPATITIS B VIRUS

## CHAIN OF INFECTION

| | |
|---|---|
| AGENT | The Hepatitis B Virus |
| RESERVOIRS | Persons with the active HBV infection or carriers of HBV. The virus will survive in: blood, bodily fluids, semen, vaginal secretions, pleural, amniotic, pericardial, peritoneal, synovial and cerebrospinal fluids as well as saliva and breast milk. |
| PORTAL OF EXIT | Any body opening or wound draining fluids that harbour the virus (above). |
| MODE OF TRANSMISSION | DIRECT CONTACT with the medium (fluids) that harbour the virus. (see reservoirs). Remember, the virus may survive on contaminated surfaces for up to 7 days at 25°C. |
| PORTAL OF ENTRY | The virus requires a route into the bloodstream via broken skin, injury, (i.e. needlestick) or mucous membrane absorption (i.e. eye). |
| SUSCEPTIBLE HOST | Somebody who has not been vaccinated, who has not adequately responded to the vaccine; or has not developed a natural immunity through previous infection. |

****Remember: Break the Chain, Stop Infection !**

## Selected Communicable Diseases - HEP B VIRUS (HBV)

### DECISION TREE

Possible Exposure to HIV*, HBV** and HCV***

Exposure to blood and/or Bodily Fluids

↓

Report to **Designated Officer**
(See Disease info)

↓

Thorough assessment of risk for occupational exposure to bloodborne diseases should take place. If Post Exposure Prophylaxis (PEP) is required due to possible exposure to HIV*, it should started within hours of exposure, preferably within <u>one</u> hour. **For this reason, the Designated Officer should be contacted immediately.**

**Some Risk (High, Medium, Low)**

↓

Thorough risk assessment to be done at the nearest hospital or Command H.Q.
PEP may be recommended or offered in some cases.

**No Risk Established**

↓

**C**ounsel Employee:
re: Bloodborne disease
Transmission;
**R**einforce positive behaviour;
**R**eview Infection Control Procedures;
**R**eassure re: No Risk.

**Hepatitis B is preventable. Three doses of HBV are recommended prior to assuming duties as a Staff Member. If a reporting staff member is unvaccinated, post-exposure immunoprophylaxis for hepatitis B would also be initiated within the emergency department as outlined in the Canadian Immunization Guidelines.

*** Currently there is no prophylaxis available for Hepatitis C disease

# Selected Communicable Diseases

# HEPATITIS C

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## HEPATITIS C VIRUS - HCV

### *What is Hepatitis C?*

Hepatitis C is an infectious liver disease caused by the Hepatitis C virus (HCV). As with HIV and Hepatitis B (HBV) it is a bloodborne pathogen carried in blood and bodily fluids. At least one case is attributed to a human bite so this may indicate that saliva be included as a reservoir.

The incubation period (the time between initial contact with the virus and the onset of the disease) for Hepatitis C ranges from 2 weeks to 6 months, most commonly 6 to 9 weeks. As many as 90% of people newly infected with HVC remain healthy for some time, (it has been estimated that it may take up to 10 years to develop symptoms) but they continue to carry the virus and can infect others without knowing it.

When and if symptoms do develop, they may include fever, nausea and vomiting, loss of appetite, stomach pain, extreme fatigue and yellowing of the skin (jaundice).

Unlike the HBV there is a high level of chronicity with HCV. 60% - 80% of infected individuals develop chronic liver disease of varying severity, including cirrhosis (20%) and more rarely liver cancer. This high level of chronicity indicates that in most persons a protective immunity does not develop as it does with resolved Hepatitis B infections. It is important for Firefighters to note that since the introduction of the Hepatitis B vaccine over the past decade, HVC has replaced HBV as the most commonly identified cause of viral Hepatitis among health care workers.

### *How is it spread?*

The HCV has been identified in blood, semen, vaginal secretions and saliva. As with HIV and HBV direct contact with the infectious fluid is required and then the virus must be able to enter the body through broken skin, the mucous membranes or directly into the bloodstream via an injury (i.e. needlestick). The HCV is spread primarily by exposure to blood. The major mode of transmission in Canada is injection drug use. The risk of getting the virus from a blood transmission is minimal. All donated blood is now screened for the HCV. Exposure to blood in the work place is an identified transmission route. HCV transmission has also been documented between sex partners, among household members (perhaps by sharing toothbrushes or razor blades etc.) blood splash to the conjunctiva (eye) and from a human bite.

Although the risk of transmission when exposed to other bodily fluids has not been clearly defined, Firefighters should practice Universal Precautions when exposure to these fluids is likely, as this will also protect you from HBV and HIV transmission. Due to the circumstances we find these patients in and the uncontrolled environment we work in, these other fluids are often mixed with blood and should be treated as infectious, as they are with HBV and HIV.

## HEPATITIS C VIRUS - HCV

Universal precautions will be applied when there is a risk of exposure to blood and other bodily fluids including semen, vaginal secretions, synovial fluid, cerebrospinal fluid, pleural fluid, peritoneal fluid, pericardial fluid and amniotic fluid.

There is no evidence that HCV is spread by casual contact. Sneezing, coughing and hugging do not pose risks for HCV transmission. In addition, there is no evidence that HCV is spread by food or water.

Exposure to the following NON BLOODY body fluids is not considered a transmission-risk: Feces, nasal secretions, sputum, sweat, tears, urine and vomitus.

### *Is there a test?*

**Yes**. The screening tests for HCV only became available in 1990 and the sensitivity and specificity of the antibody detection by serological tests is still improving. Routine tests currently available cannot distinguish between acute, chronic and resolved infection. There are 2 main tests that can be used that detect different markers that indicate HCV infection. The first one abbreviated as an ELISA test checks for antibodies to the HCV and these can usually be detected in 6 - 8 weeks.

The other test abbreviated as PCR uses a different marker (RNA) and may be effective in as early as 1-2 weeks after infection.

### *Is there a cure for HCV?*

Currently there is no cure available for acute HCV infection. Treatment would be directed at controlling the symptoms the patient is experiencing (i.e. nausea and vomiting) but do nothing to help resolve the infection. Not all infected patients experience symptoms or become ill enough to seek medical attention. Treatment regimens and drugs are being investigated (i.e. interferon) but are either currently not approved or have not demonstrated effectiveness in resolving HCV infection.

### How to protect yourself

By understanding how the virus is spread you can avoid the activities that put you at risk. As with HIV and HBV infection avoid any activities in your personal life that would expose you to blood or bodily fluids (i.e. unprotected sex, sharing of needles, etc.)

## HEPATITIS C VIRUS - HCV

**While at work:**

- Understand and practice infection control procedures.
- Practice Universal Precautions.
- Use your P.P.E
- Hand washing and washing of all other exposed areas after every call.
- Remember a person infected with HCV may not show any signs or symptoms of infection, always protect yourself.

### Vaccination

Currently there is no vaccination available to prevent HCV infection. The fact that most infected persons do not develop a protective immunity combined with the existence of several HCV genotypes have presented a problem in the development of a vaccine.

### PEP

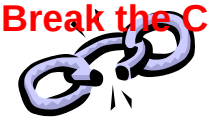
Currently there is no available PEP treatment to provide treatment or passive immunity to prevent against infection following an exposure to HCV. Unlike the HBV, available data regarding the prevention of HCV infection with immuneglobulin (IG) indicate that IG is not effective for Post Exposure Prophylaxis (PEP) of Hep C.

## HEPATITIS C VIRUS

## CHAIN OF INFECTION

| | |
|---|---|
| AGENT | The Hepatitis C Virus (HCV) |
| RESERVOIRS | Persons with the active HCV. The virus has been identified in blood, semen, vaginal fluid and saliva. As with HIV & HBV treat other bodily fluids as infectious; to include pleural, amniotic, pericardial, peritoneal, synovial and cerebrospinal fluids. |
| PORTAL OF EXIT | Any body opening or wound draining fluids that harbour the virus (above). |
| MODE OF TRANSMISSION | DIRECT CONTACT with the medium (fluids) that harbour the virus. (see reservoirs) |
| PORTAL OF ENTRY | The virus requires a route into the bloodstream via broken skin, injury, (i.e. needlestick) or mucous membrane absorption (i.e. eye). |
| SUSCEPTIBLE HOST | No available vaccine, no demonstrated natural immunity means we are all susceptible hosts. |

****Remember: Break the Chain, Stop Infection !**



Universal Precautions and PPE are effective chain breakers.

## HEPATITIS C VIRUS - HCV

### DECISION TREE

Possible Exposure to HIV*, HBV** and HCV***

Exposure to blood and/or Bodily Fluids

↓

Report to **Designated Officer**
(See Disease info)

↓

Thorough assessment of risk for occupational exposure to bloodborne diseases should take place. If Post Exposure Prophylaxis (PEP) is required due to possible exposure to HIV*, it should be started within hours of exposure, preferably within <u>one</u> hour. **For this reason, the Designated Officer should be contacted immediately.**

| **Some Risk (High, Medium, Low)** | **No Risk Established** |
|---|---|
| ↓ | ↓ |
| Thorough risk assessment to be done at the nearest hospital or Command H.Q. and PEP may be recommended or offered in some cases. | **C**ounsel Employee:<br>re: Bloodborne disease Transmission;<br>**R**einforce positive behaviour;<br>**R**eview Infection Control Procedures;<br>**R**eassure re: No Risk. |

**Hepatitis B is preventable. Three doses of HBV are recommended prior to assuming duties as a Staff Member. If a reporting staff member is unvaccinated, post-exposure immunoprophylaxis for Hepatitis B would also be initiated within the emergency department as outlined in the Canadian Immunization Guidelines.

*** Currently there is no prophylaxis available for Hepatitis C disease.

# Selected Communicable Diseases

# MENINGITIS
# (Meningococcal Disease)

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## Selected Communicable Diseases: MENINGITIS (Meningococcal Disease)

### *What is Meningitis (Meningoccal Disease)?*

Meningococcal Meningitis is an inflammation of the meninges (the covering of the brain and spinal cord), which is caused by the **bacteria** Neisseria Meningitides. Although approximately 10% of healthy people have the bacteria in their throat it is more likely to be transmitted by people who are actively sick with the disease. Exposure to these bacteria can result in meningitis or another serious illness called meningococcaemia, which is an infection of the blood.

Following exposure to the bacteria, symptoms usually appear within 2 - 10 days most commonly in less than 4 days. Symptoms will vary depending on the person but may include: fever, headache, vomiting, stiff neck, rash (red pin point), drowsiness, confusion, convulsions or seizures.

Meningococcal disease is quite rare with only 300 - 400 people affected in Canada each year (24 in Toronto). It can cause death in about 10% of cases. It can affect people of any age, however it is most common in teenagers and children specifically in infants under 1-year-old.

Note: **Viral** meningitis is another disease that causes inflammation of the lining of the brain. It may be referred to as "meningitis". Viral meningitis SHOULD NOT be confused with meningococcal meningitis which is a much more serious disease. Almost everyone recovers completely within a few days and no treatment is available for viral meningitis. If you are dealing with a patient who has meningitis it is important to ask whether it is known to be viral or bacterial (Meningococcal). More information on viral meningitis will be included in Section 11.

### *How is it spread?*

Meningococcal meningitis is spread by direct or droplet contact with saliva and or secretions of the nose and throat of infected persons. This can occur during kissing, sharing drinks, eating utensils, cigarettes and any other item that has been placed in the mouth of the infected person such as airway suctioning equipment etc. Coughing or sneezing directly at another person can also result in the spread of the disease.

## Selected Communicable Diseases: MENINGITIS (Meningococcal Disease)

***Is there a test?***

**YES**. A physician dealing with a suspected case of meningitis may perform a blood test and/or a spinal tap. The blood test requires a small sample similar to other blood tests. The spinal tap is a procedure where a needle is inserted into the lower back between the vertebrae (backbones) allowing a small sample of cerebrospinal fluid (CSF) to be collected. These tests are used to confirm a diagnosis and to differentiate between viral meningitis and meningoccal meningitis. These tests are performed on patients exhibiting symptoms of the disease. As a firefighter who has been exposed, it is unlikely these tests would need to be performed if the exposure is reported immediately as there are medications that can be given to prevent infection.

**Treatment** - People who are infected and become sick with meningoccal meningitis or meningococcaemia are treated in the hospital with antibiotics. These bacteria usually disappear within 24 hours once antibiotic therapy has been started.

**How to protect yourself**

By understanding how the disease is spread, you can avoid the activities that put you at risk. The disease requires direct contact, or droplet contact with the secretions of nose, mouth, and throat. To reduce exposure to the bacteria you must:

1. Use your PPE, gloves and masks, if your patient is coughing and/or sneezing.

2. Avoid sharing eating utensils, beverages or cigarettes.

3. Cover your mouth and nose when coughing or sneezing.

4. Wash your hands after every call.

5. If it can be tolerated by the patient, apply a mask to the patient or ask them to cover their mouth/nose if possible.

We often treat coughing/sneezing patients with unknown diagnosis. By being aware of the other signs & symptoms of meningitis it may help in getting treatment started early if you are exposed. By using PPE at all times we hope to reduce the chance of transmission of the bacteria.

## Selected Communicable Diseases: MENINGITIS (Meningococcal Disease)

### Vaccination

There is a vaccine for some types of meningoccal disease. It is usually used for military personnel and in travelers to countries where there is a high incidence of meningococcal disease. The vaccine may also be used if more than the expected number of meninggococcal cases are occurring. The vaccine may cause a sore red arm. More serious side effects are rare. Individuals who are allergic to thimersol (mercury) should not receive the vaccine. Although still rare, vaccination programs of higher risk target groups such as high school students have been implemented.

### PEP

Antibiotics are used to treat meningococcal meningitis. Rifampin, is used as a preventative treatment for close contacts of meningoccal disease. Close contacts are defined as people who may have "shared saliva" with a person who has meningococcal disease. These include:

- Household contacts.
- Those who share sleeping arrangements with the ill person.
- Children in the same day care/nursery as the ill person.
- Intimate contacts.
- Persons who have shared drinks, food, cigarettes, etc. or kissed the ill person within 2 - 10 days before the onset of symptoms and until 24 hours after treatment has begun.

When used as a chemophophylaxis treatment of meningoccal disease Rifampin is given by mouth twice a day, for two days. Be sure to take all four doses and take as directed by your physician. There are some side effects associated with Rifampin. They are as follows:

- Bodily fluids (urine, sweat, tears, saliva) may turn a reddish orange colour while on Rifampin. *Contact lenses should not be worn while taking Rifampin.
- Oral contraceptives (birth control pill) may fail, use other methods of contraception while on Rifampin.
- Gastro-Intestinal disturbances - loss of appetite, nausea, vomiting, gas cramps and diarrhea.
- Headache, fever, fatigue, dizziness, mental confusion, itching, skin rashes, sore mouth or tongue, excessive bruising.
- Disturbance of Menstruation, including spotting or absence of period.
- Severe side effects such as: anaphylaxis, including flushing, facial edema (swelling), hives, swollen lips & breathing difficulty.
- Anaphylaxis is a serious medical emergency. If you experience side effects they should be reported to your Doctor or you should be seen at an Emergency Department.

## Selected Communicable Diseases: MENINGITIS (Meningococcal Disease)

***People who should NOT take Rifampin may include:***

- People with liver disease.
- People with known hypersensitivity to Rifampin.
- Women in their first trimester of pregnancy or women who may become pregnant. (Other antibiotics such as Ceftrazone can be used during pregnancy).
- Premature or newborn infants.
- Cautions are recommended for elderly persons and patients taking drugs for tuberculosis.

These side effects and contraindications are listed for your information purposes only. Ultimately your physician will carefully weigh the potential benefits against the risks that may be involved and prescribe appropriate therapy, which may include an alternate drug therapy. Side effects of those drugs will be discussed with you by the prescribing physician.

## MENINGITIS

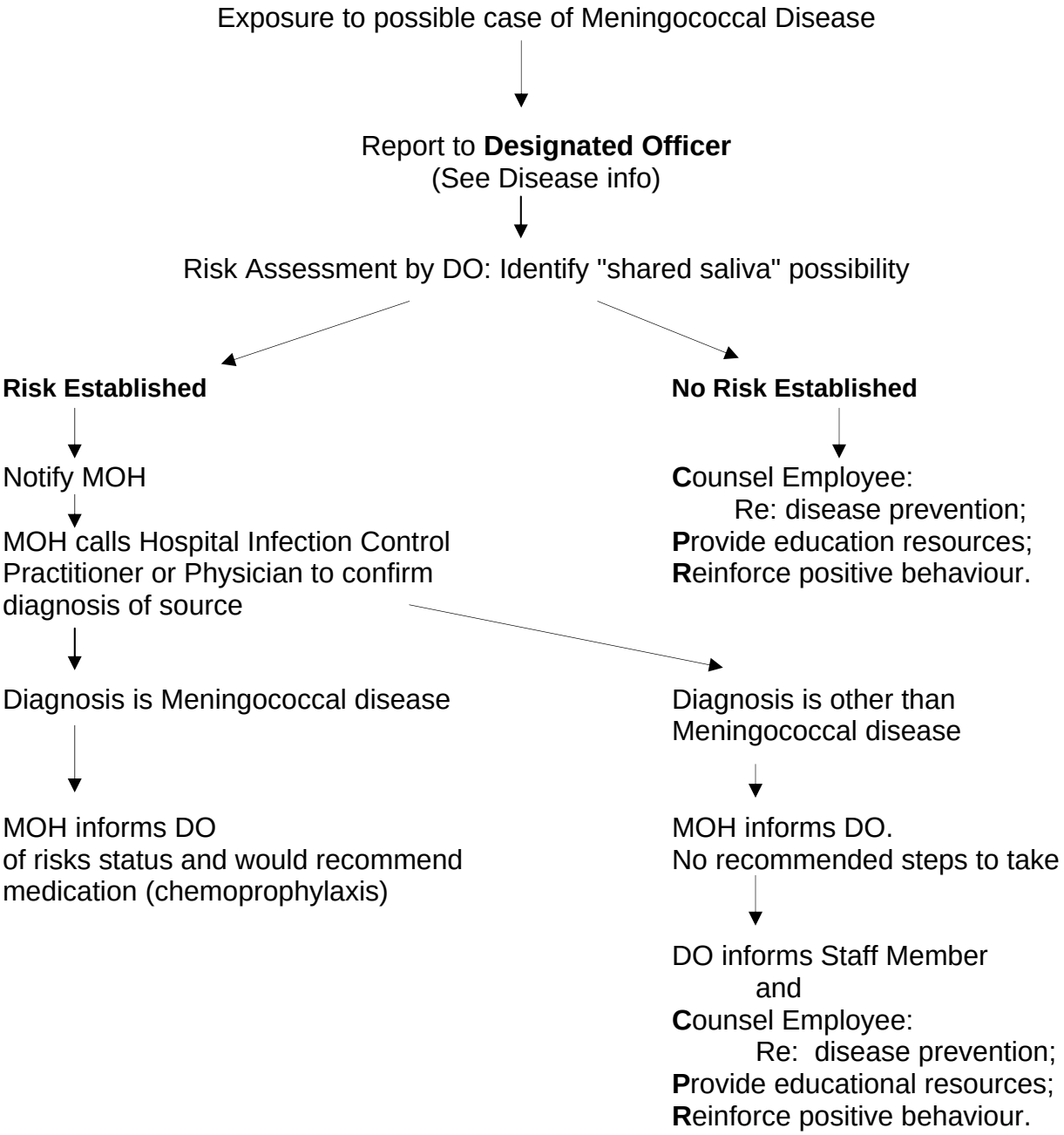
## CHAIN OF INFECTION

| | |
|---|---|
| AGENT | Bacterial agent called Neisseria Meningitidis |
| RESERVOIRS | Saliva and secretions from the mouth, nose and throat of infected persons. |
| PORTAL OF EXIT | Mouth and nose of infected person. |
| MODE OF TRANSMISSION | DIRECT CONTACT with the above secretions either by direct contact with the mouth or nose or droplet contact of the sneezing, coughing patient. Droplet contact usually occurs in contact with patient of less than 1 metre who is actively coughing/sneezing. |
| PORTAL OF ENTRY | Mouth/throat, nose. Inhalation of bacteria to lungs or transfer of organism from contaminated hands/gloves to face/mouth. |
| SUSCEPTIBLE HOST | It can affect anyone although approximately 10% of the population have the bacteria in their mouth/throat and do not become ill. Most common in children, particularly under 1 year of age. |

****Remember: Break the Chain, Stop Infection !**

## DECISION TREE

### Possible Exposure to Meningococcal Disease




**DO = Designated Officer**
**MOH = Medical Officer of Health**

# COMMUNICABLE DISEASES

# TUBERCULOSIS (T.B.)

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## Communicable Diseases – Tuberculosis

### *What is Tuberculosis?*

Tuberculosis is an infectious disease caused by a bacteria known as Mycobacterium Tuberculosis. The bacteria usually causes an infection in the lungs but can infect other parts of the body via the bloodstream. Once exposed to the T.B. bacteria there is a fairly long incubation period ranging from, 4-12 weeks. Within weeks of infection, the immune system reacts to the bacteria and usually prevents them from multiplying and spreading. The first infection often goes unnoticed, as most person's immune systems will create antibodies to eliminate the bacteria or wall it off within the lungs. These people will have a positive mantoux test. A positive mantoux skin test does not mean you have active disease. In fact, about 90% of infected persons remain infected for life, without having any symptoms. A person infected with the bacteria who does not develop the disease can not infect others because no bacterium is discharged in the sputum or saliva. Others may develop active disease later in life, when the T.B. bacteria that were walled off, start to grow again and cause damage in the body. This only happens in about 5-10% of infected persons. These persons can transmit tuberculosis because they discharge bacteria in their sputum or saliva.

Those exposed to the bacteria who go on to develop active disease may experience symptoms as follows:

- Initially a persistent cough with phlegm production (greater than 3 weeks)
- Fever
- Later chills, fatigue, weight loss, night sweats
- Coughing up blood (hemoptysis)
- If the infection were in parts of the body other than the lungs (via bloodstream) such as kidney, lymph nodes, bone, etc. symptoms would be related to those sites.

### *How is it spread?*

T.B. is not a highly infectious disease. Transmission usually requires close, frequent or prolonged exposure to a person with **active pulmonary tuberculosis**. T.B. is only infectious, if the disease is in the lungs (Pulmonary T.B.) and the person is coughing the bacteria into the air. Tuberculosis is transmitted through the air from exposure to the bacteria in the saliva of infected persons and sputum coughed up from their lungs. When an infected person coughs or sneezes, tiny droplets, which contain the bacteria, are released and can be inhaled by anyone in the area.

## Communicable Diseases – Tuberculosis

### *Is there a test?*

**Yes**. Medical tests such as skin test (Mantoux), chest x-rays and sputum test can determine if a person was exposed to the bacteria or whether the person has active disease.

For the skin test a small amount of protein from the tuberculosis bacteria is placed under the skin (usually the underside of the forearm) with a small needle. 72 hours later the area is examined. If the area is firm and raised over an area larger than 10 mm the patient is said to have converted. This is not a positive diagnosis of T.B. A chest x-ray and a sputum sample will be done to confirm the presence of T.B. infection.

A chest x-ray is performed to view lungs and verify the presence of the bacteria in the lungs. The diagnosis is then confirmed by growing the bacteria on special cultures obtained from a sputum sample. It often takes 4-6 weeks to culture the tuberculosis bacteria.

### Treatment

Tuberculosis is curable. T.B. can be treated very effectively through a combination of drugs. Treatment can be directed at treating active disease or directed to prevent positive skin converters from developing the disease some time later in their lives. In order to prevent positive skin converters from developing the disease at some time in their lives, a preventative medicine (usually Isoniazed (INH) pills) is prescribed for a minimum of 6 months for persons less than 35 years of age. Persons over 35 years of age often have side effects to the preventive medication and are usually not put on a course of therapy unless at high risk. The risk vs. benefit aspect of the drug therapy will be assessed by their physician.

Active T.B. can be treated utilizing a variety or a combination of drugs. People are usually treated at home under the supervision of their doctor. Usually after 2 weeks they are no longer contagious and can return to work or school.

Medication can be provided free of charge by the Ministry of Health for Pulmonary T.B. It must be taken daily for at least 6 to 12 months or as the doctor orders. The full treatment must be completed to prevent drug resistance from developing. Drug resistance means the drug is no longer capable of destroying the T.B. bacteria. This is becoming a problem of some concern with some strains of T.B. Therefore, your Doctor will decide on the type of drug therapy and its duration individually. They will provide you with a list of side effects applicable to the drug therapy that is employed.

## Communicable Diseases – Tuberculosis

### How to protect yourself

- By living a healthy lifestyle (proper diet, exercise, rest, etc.) It is easier to maintain good general health and a strong immune system. People in good health who are exposed to pulmonary T.B. have a significantly reduced chance of developing the disease.

- By understanding how the disease is spread, you can avoid the activities that put you at risk. The disease is spread in the air by a coughing or sneezing person who has active pulmonary T.B.

- Use your provided P.P.E.

- Use disposable gloves to avoid contact with bodily fluids.

- Use a disposable N-95 mask to prevent respiratory spread.

- Place a disposable mask on the patient, if it can be tolerated. If it cannot be tolerated ask the patient to cover their mouth when coughing.

- Open windows to allow maximum exchange of air.

- Avoid prolonged contact with the patient, especially in confined areas.

- Avoid contact with the sputum.

- Maintain good hygiene practices (i.e. hand-washing) after every call.

- If you have had frequent, close and prolonged contact with a person who has active Pulmonary T.B. and who is coughing, it is recommended that you have a Mantoux test to determine whether or not you have picked up the T.B. bacteria.

### Vaccination

There is a vaccine for T.B. but like the Meningitis vaccine it is not routinely used in this country due to the low numbers of reported disease.

## Communicable Diseases – Tuberculosis

### PEP

Post exposure treatment would start with testing to see if you have actually picked up the bacteria in your body. Once you have converted (had a positive skin test) your Doctor may prescribe a drug Isoniazid (INH) to act as a preventive treatment to kill the bacteria before active pulmonary T.B. begins. Remember even if untreated most people will not go on to develop active disease. INH is safe and most people can take it without problems. Some side effects you may experience are as follows:

- Loss of appetite
- Nausea
- Rash, itching
- Brown or dark urine
- Yellow skin

As with all side effects, these should be reported to your Doctor. INH is also discussed in the treatment section of this T.B. segment.

Rifampin is also used to treat T.B. and as a preventative measure if your skin test is positive. Rifampin and its side effects are discussed in the Meningitis section, as Rifampin is the preventative drug of choice for Meningococcal disease. Other drugs are also used to treat T.B. These drugs and side effects will be discussed with you by your Doctor, if they choose to use them. As with other diseases your physician will weigh the risks of treatment vs. the benefits and will determine what drug regime (if any) is best for you.

# TUBERCULOSIS (T.B.)

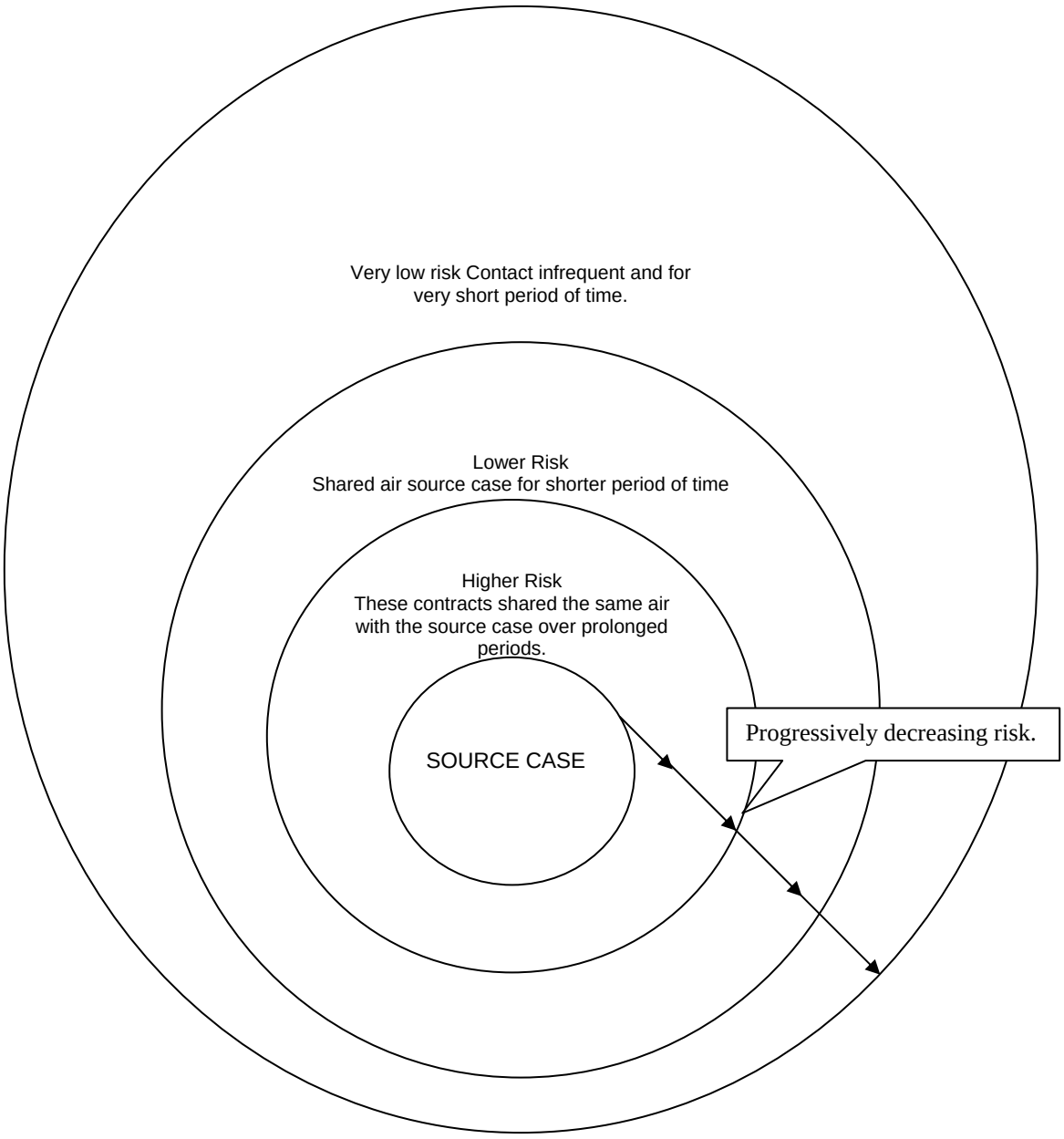
## CHAIN OF INFECTION

| | |
|---|---|
| AGENT | Bacteria – Myco bacterium Tuberculosis |
| RESERVOIRS | Lungs, can be found in other body parts, of primary concern is sputum and saliva. |
| PORTAL OF EXIT | Mouth and nose of the coughing, sneezing patient. |
| MODE OF TRANSMISSION | AIRBORNE, coughing, sneezing release bacteria into air. The bacteria can then be inhaled by others. |
| PORTAL OF ENTRY | Mouth & nose of people in the same room/area as the coughing/sneezing patient. Bacteria inhaled into lungs of new host. |
| SUSCEPTIBLE HOST | Theoretically anybody. At greater risk are the young, the elderly, the immuno compromised and those living in overcrowded conditions. |

****Remember: Break the Chain, Stop Infection !**

## Selected Communicable Diseases – Tuberculosis (TB)

# CIRCLE OF CONTACTS




Adapted from:
Alberta Tuberculosis Control Manual, 1992;
Communicable Disease and Epidemiology, Alberta
Social Services and Community Health, Edmonton, Alberta T5J 3E4

**Selected Communicable Diseases Tuberculosis (TB)** Continued

## Decision Tree
## Possible Exposure to Tuberculosis

Possible Exposure to a potentially active TB Case

Assess for risk - **D.O. refer to circle of contacts diagram**

Significant Exposure (high risk or low risk)

Notify MOH

MOH calls Hospital Infection Control Practitioner or Physician to confirm diagnosis of source patient

Diagnosis is active Pulmonary T.B.
MOH informs D.O. of risk status

F.F. should have Mantoux skin test if indicated

See next page for TB skin testing

No Significant Exposure (very low risk)

Counsel Employee re: disease prevention
Provide educational Resources
Reinforce positive behaviour

Diagnosis is **other than** Active Pulmonary TB
MOH informs D.O. of risk status

**C**ounsel employee re disease prevention
**P**rovide educational resources

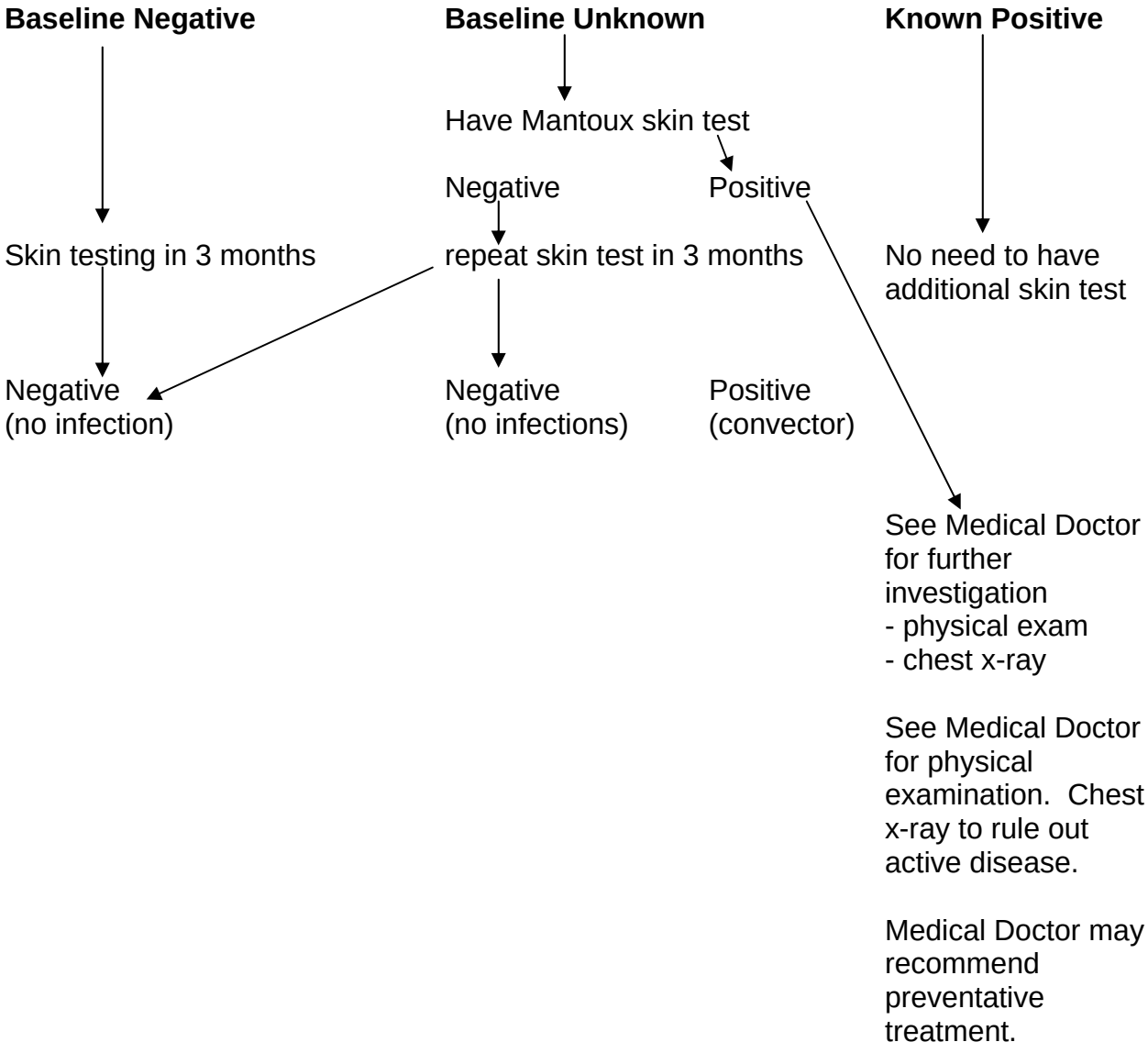
**R**einforce positive behaviour, and
**R**ecommend baseline skin testing if status is unknown

F.F. = Firefighter
D.O. = Designated Officer
MOH = Medical Officer of Health

## Selected Communicable Diseases Tuberculosis Continued

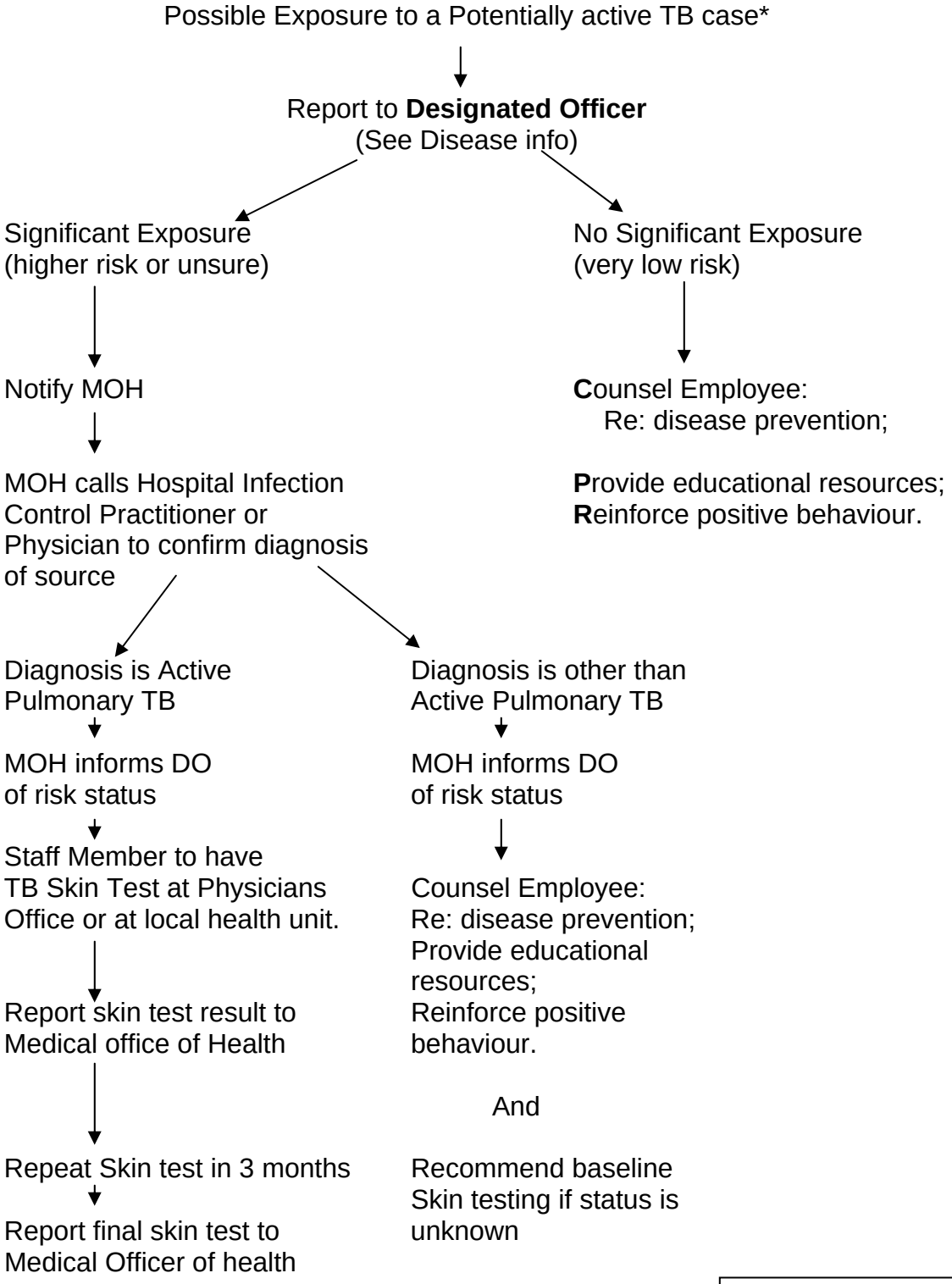
Screening for Tuberculosis in high risk groups is done to identify infected persons so preventive therapy or monitoring for active disease can be initiated.

A **positive** skin test may indicate infection, but does not determine active disease.



## DECISION TREE

### Possible Exposure to Tuberculosis




DO = Designated Officer
MOH = Medical Officer of Health

*This information may originate from the Firefighter or Public Health if a patient is reported to Public Health and we may have been involved with patient care.

# COMMUNICABLE DISEASES

# Viral Hemorrhagic Fever (VHF)

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## Viral Hemorrhagic Fever (VHF)

### *What is it?*

Viral Hemorrhagic fever (VHF) is a communicable disease caused by an infection with a virus. Although there are several different viral infections that cause Hemorrhage, there are five in particular that have caused significant outbreaks of disease with person to person spread. These five (5) VHF's are; Lassa fever, Ebola, Marburg, Crimean-Congo and Venezuelan. They are usually characterized by fever and in most cases shock and hemorrhage associated with high case fatality rates. The risk of exposure to these viruses is considered to be very low as these viruses are not indigenous to Canada.

Due to both the speed and volume of international travel there is an increasing risk that persons incubating these diseases may arrive in Ontario. As a result of this, risk contingency plans at the Provincial and Federal level of government (Public Health) have been put into place to deal with persons who may have imported these diseases and limit subsequent outbreaks.

Following an incubation period of 2 - 21 days initial symptoms of all 5 VHF's would be compatible with symptoms of the flu, including fever, muscle aches, headaches and sore throat. Later the infected person may develop conjunctivitis (swelling of the mucous membrane around the eyes), skin rashes, diarrhea, vomiting, followed by shock, hemorrhage and possibly death.

### *How is it spread?*

Direct contact with blood and/or bodily fluids of infected persons. Include all bodily fluids, secretions and excretions (urine, vomit, feces, etc.)

Studies of VHF in humans indicate that infection is not readily transmitted from person to person by the airborne route. Although airborne transmission has never been documented in humans it is considered a very rare possibility from persons with advanced stages of disease. Evidence shows that transmission of these viruses does not occur through casual contact. Persons at highest risk of secondary infection are those who are in closest contact with an infected person's blood/bodily fluids (all). Such persons include, the patients intimate contacts, those providing direct medical and nursing care, and laboratory workers who handle specimens. The natural sources of these viruses include mosquitoes, rodents and ticks. However, since these viruses are not found in Canada you will not get VHF through contact with animals or insects that live in Canada.

## Viral Hemorrhagic Fever (VHF) Continued

***Is there a test?***

**Yes**. A variety of blood tests will be performed to rule out other (more common) diseases as well as to confirm a diagnosis of VHF. Not all laboratories are equipped to test for VHF so transportation of blood samples may be required, which would delay a confirmation of VHF.

### Treatment

Treatment usually consists of supportive care for the patient, meaning the symptoms are treated to try and make the patient more comfortable during the course of the illness. This is done in hospital under strict isolation in a private room. A drug called Ribavirin may be used to treat certain VHF's, although its effectiveness is debatable. Ribavirin (injectable) is not a licensed drug in Canada and must be accessed from the Emergency Drug Release program, Bureau of Pharmaceutical Assessment, Drugs Directorate, Health Protection Branch, Health Canada. The physician in charge of treatment will decide on treatment and risk vs. benefit of drug therapy.

### How to protect yourself

Universal Precautions and use of appropriate P.P.E. Extensive experience in West Africa has shown that standard blood and bodily fluid precautions combined with routine barrier nursing, effectively prevents Lassa virus transmission in hospital. This may be true for other VHF's, however, their transmissibility in hospital settings has not been well described. Because most ill persons undergoing pre-hospital evaluation and transport are in the early stages of disease and would not be expected to have symptoms that increase the likelihood of contact with infectious fluids (e.g. vomiting, diarrhea or hemorrhage) universal precautions are generally sufficient. If a patient has respiratory symptoms (e.g. coughing, sneezing) eye protection and mask should be taken to prevent droplet contact. Care should be taken to prevent the inhalation of, or exposure of mucous membranes to the patient's blood, vomitus, urine or respiratory secretions. Exposure may occur during such procedures as intubation or suctioning or when TEMS are inserting an I.V. line. Following a call to a suspected VHF, ensure all equipment exposed to the patients blood, bodily fluids or respiratory secretions are properly disinfected before being put back into service. Supplied disinfectants are suitable for equipment cleaning.

## Viral Hamorrhagic Fever (VHF)

### Vaccination & PEP

Vaccination - there is no vaccine or immunization to protect you from VHF.

PEP - Ribavirin (see treatment) may be used for high risk contacts of VHF patients although its efficacy for Prophylaxis has not been demonstrated. Again, this drug in injectable form is not licensed in Canada and has to be accessed by the treating physician from Emergency Drug Release program. The best course of therapy is prevention. Use your P.P.E. and employ Universal Precautions at all calls.

## VHF

## CHAIN OF INFECTION

| | |
|---|---|
| AGENT | Virus – The five of greatest concern are: Lassa Fever, Ebola, Marburg, Venezuela, and Crimean-Congo |
| RESERVOIRS | Blood, bodily fluids including all fluids, secretions and excretions, i.e. blood, semen, vaginal fluids, pleural, amniotic, pericardial, peritoneal, synovial, cerebrospinal, saliva, urine, vomitus, feces. |
| PORTAL OF EXIT | Any body opening or wound that is draining fluids or causing droplet release (i.e. coughing, sneezing, etc.) |
| MODE OF TRANSMISSION | Usually direct contact with blood or bodily fuids, in addition, respiratory contact with droplets expelled by patient or during treatment (i.e. suctioning, IVs etc.) |
| PORTAL OF ENTRY | The virus can be absorbed through unprotected mucous membranes (nose, mouth) or through unprotected compromised skin, broken skin, needlestick, etc. |
| SUSCEPTIBLE HOST | Everybody is a susceptible host. |

****Remember: Break the Chain, Stop Infection !**

Universal Precautions and use your PPE

## Characteristic of Viral Hemorrhagic Fevers

| Characteristics | Lassa Fever | Ebola | Marburg | Venezuelan | Crimean-Congo |
|---|---|---|---|---|---|
| Endemic Area | West Africa | East Africa | East & South Africa | South America | Eastern Europe, Asia & Africa |
| Transmission | Rodent-Human | Person-Person | Person-Person | Mosquito-Human Person-Person | Tick Bite Person-Person |
| Incubation | 6 -21 days | 2 - 21 days | 3 -9 days | 2 - 6 days | 3 - 6 days |
| Recommended Precautions | Universal Precautions | | | | |
| Emergency Procedures | Contact the Safety Designated Officer (SDO) who will contact Toronto Public Health | | | | |

# COMMUNICABLE DISEASES

# RABIES

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## Rabies

### *What is it?*

Rabies is a preventable viral disease of mammals most often transmitted through the bite of a rabid animal. This virus when left untreated goes on to infect the (CNS) central nervous system, resulting in behaviour changes, aggression, anxiety, confusion, difficulty swallowing, hyper-salivation, poor muscle co-ordination, progressing to paralysis and ultimately death.

The principal rabies hosts today are wild carnivores and bats. These wild animals most notably raccoons, skunks, foxes and coyotes account for over 90% of reported rabies cases. Although the likelihood of contracting rabies from a domestic animal has greatly decreased, the number of possible exposures that result from frequent contact between domestic dogs and humans continue to be the basis of most anti-rabies treatments. As Firefighters we need to be aware of rabies, it's signs and symptoms and treatment options, for several reasons. First, the City of Toronto, although an urban environment, maintains a large wildlife population that includes, raccoons, skunks, bats, foxes and coyotes. We may encounter these animals in various locations ranging from parks and bush lots to attics and crawl spaces. Secondly, we often encounter dogs whose natural instinct may be to protect their injured or unconscious master. Thirdly, rabies is much more prevalent in areas outside North America in both the wild and domestic animal population. This is a concern as Firefighters have in the past, come in contact with wild or "exotic" animals kept as pets, while attending an emergency scene.

About 2,000 rabid animals are confirmed in Southern Ontario each year. Luckily, no human death from any strain of rabies has been reported in over 30 years. Modern day prophylaxis has proven nearly 100% successful. Any reported human fatality associated with rabies have occurred in people who fail to seek medical assistance, usually because they were unaware of their exposure.

### *How is it spread?*

The most common mode of rabies transmission is through the bite of an infected animal allowing the virus containing saliva a portal of entry into the bloodstream and nerve pathways. Various other routes of transmission have been documented and include contamination of mucous membranes (i.e. eyes, nose, mouth) via direct contact with infectious material (i.e. saliva, brain tissue), aerosol transmission and corneal transplantation. These exposures are usually divided into two categories, bite and non-bite exposure. Bites account for most of the exposures requiring PEP (Post Exposure Prophylaxis).

## Rabies

### *Is there a test?*

**Yes**. There are several tests that may be done to both the animal (if available) and the exposed person following a potential rabies exposure.

Rabies diagnosis in animals is usually accomplished using the direct fluorescent antibody test (dFA). Because rabies is present in nervous tissue (and not blood like many other viruses) the ideal tissue to test for the presence of rabies antigen is the brain. When the tissue is "stained" in the lab, rabies infected tissue will appear to glow under the microscope. Therefore the animal must be captured and destroyed to confirm a diagnosis. Without the animal available, the risk of exposure may be based on information about the animals appearance and behaviors including;

1. Did the animal appear healthy?
2. Was the attack provoked?
3. Was it frothing at the mouth?
4. Did the animal show signs of poor muscle co-ordination?
5. What time of day did the exposure occur? (i.e. bats & daytime exposures)
6. Where did the exposure occur?
7. The vaccination status of the animal.

Rabies diagnosis in humans requires several tests be done to confirm or rule out rabies in living humans. No single test can be used to rule out rabies in humans with certainty. Tests are performed on samples of serum, spinal fluid, skin biopsies from the nape of the neck and saliva. The fluids are tested for antibodies to the rabies virus. The skin biopsy is examined by dFA for the presence of rabies antigen and the saliva is tested for evidence of the actual virus.

These tests may or may not be used to determine the need for PEP. Your physician may feel that evidence presented about the exposure may be enough to warrant PEP. These tests and the decision to implement treatment must be done as soon as possible. Once clinical signs of rabies appear, the disease is nearly always fatal.

### Treatment

There is no treatment for rabies after symptoms of the disease appear. Treatment consists of identifying potential exposures, and implementing PEP as soon as possible after an exposure. There have been no vaccine failures in North America, when PEP was given promptly and appropriately.

## Rabies

### *What to do after exposure?*

If you are exposed to a potentially rabid animal, wash the wound thoroughly with soap and water, and seek medical attention as soon as possible. A health care provider should examine and care for the wound as well as assess the risk for rabies exposure. If the animal could not be safely captured your health care provider will ask you questions about the exposure as previously discussed in the testing section as part of the risk assessment.

### How to protect yourself

As with other diseases by understanding how the virus is transmitted you can avoid activities that put you at risk & identify the need to seek medical attention. Using PPE and practicing Universal Precautions, even around animal bodily fluids, may protect against non-bite exposures.

You can reduce the chances of being bitten by avoiding direct contact with unfamiliar animals.

- Enjoy wild animals from afar.
- Avoid contact with stray dogs or unfamiliar domestic animals.
- Prevent bats from entering your living quarters.
- As a pet owner keep your animals vaccinations up to date. This will protect both you and your pet, if your animal is bitten by a rabid animal.
- If traveling abroad avoid contact with wild animals and avoid dogs in developing countries. Consider talking with your doctor or local health unit about the risk of rabies pre-exposure prophylaxis and how to handle a potential exposure when out of the country.
- Finally remember post exposure prophylaxis must be started as soon as possible – if you suspect an exposure seek medical attention.

### Vaccination & PEP

Both pre-exposure vaccination and post exposure prophylaxis regimens have been developed for the prevention of rabies infection.

Vaccination/Pre Exposure Prophylaxis – Pre-exposure vaccination is recommended for persons in high risks groups, such as veterinarians, animal handlers and some lab workers. Firefighters are not considered high risk. It is also given to protect people traveling to developing countries. In these rabies endemic countries, dog rabies may be common and preventive treatment for rabies maybe difficult to obtain.

## Rabies

Pre-exposure prophylaxis consists of three doses of rabies vaccine given on days 0, 7 and 21 or 28. Pre-exposure prophylaxis DOES NOT eliminate the need for medical attention after a rabies exposure. What it does do is simplify the treatment following an exposure and secondly it may enhance immunity in persons whose post exposure therapy might be delayed.

Before traveling abroad, consult a health care provider, travel clinic or health department about your risk of exposure to rabies and how to handle an exposure should it arise.

Post-exposure prophylaxis – Post exposure prophylaxis (PEP) is recommended for persons possibly exposed to a rabid animal. Possible exposures include bites or mucous membrane contamination with infectious tissue such as saliva or brain tissue. PEP should be given as soon as possible after an exposure. There have been no documented vaccine failures when PEP was given promptly and appropriately after an exposure.

PEP consists of a regimen of one dose of Human Rabies Immune Globulin (HRIG) and 5 doses of rabies vaccine over a 28 day period. The HRIG and first dose of vaccine are given as soon as possible after an exposure. The HRIG is an intra muscular injection in the gluteal site (some may be infiltrated at the wound site) and all the vaccine doses are intramuscular injections given in the deltoid site on days 3, 7, 14 and 28 after the vaccination. Adverse reactions to rabies vaccine and immunoglobulin are rare. Mild local reactions to the rabies vaccine such as pain redness, swelling or itching at injection site have been reported. Rarely, symptoms such as headache, nausea, abdominal pain, muscle aches and dizziness have been reported. Local pain and low grade fever may follow injection of rabies immune globulin. As always, side effects should be reported to your doctor.

# RABIES

## CHAIN OF INFECTION

| | |
|---|---|
| AGENT | Virus - Rabies |
| RESERVOIRS | Saliva and nerve tissue (brain) |
| PORTAL OF EXIT | Usually from mouth of infected animal that is hyper salivating as part of disease process. |
| MODE OF TRANSMISSION | Usually a bite from an infected animal.<br>Non bite – saliva or brain tissue exposure to mucous membrane. |
| PORTAL OF ENTRY | Bite wound breaks skin, virus enters muscles and nerve pathways or unprotected mucous membranes. |
| SUSCEPTIBLE HOST | Everybody – pre-exposure vaccination does not eliminate the need for treatment. |

****Remember: Break the Chain, Stop Infection !**

Universal Precautions and use your PPE
Wash wound immediately with soap & water

# GENERAL INFORMATION

# OTHER COMMUNICABLE DISEASES

Acknowledgement to:
Toronto Public Health
for providing information contained
in this Section

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Program Developer, Firefighter Prehospital Care Program
rgwyn@socpc.ca or rgwyn@toronto.ca

## Table of Contents

**Amebiasis**
*(Entamoeba histolytica)*

---

**What is it?**

- A disease caused by a parasite called *Entamoeba histolytica*.
- The parasite is found in the feces of infected people

**How is it spread?**

- From person-to-person if the hands of an infected person are not washed properly after using the toilet.
- By drinking water or eating food contaminated with the parasite.
- Through oral/anal sexual activity.

**What are the symptoms of illness?**

- Chills, fever, cramps, bloody or mucoid diarrhea, diarrhea alternating with constipation.
- Many people may be asymptomatic, have no symptoms of illness, but still have the parasite in their feces and therefore are still contagious to others.

**How long before the illness starts?**

- Usually 2 to 4 weeks after swallowing the parasite, but it can take 1 week to 1 year for the illness to start.

**How long does the illness last?**

- Usually 3 weeks if the person is given medication. No medication will prolong the illness.

**How can you prevent Amebiasis?**

- Thorough hand washing:
    - *before* preparing any food
    - *after* using the toilet
    - *after* diapering or helping a child use the toilet
    - *after* helping someone who has diarrhea
    - *after* handling pets
    - *after* touching raw foods
- Avoid preparing food for anyone else if you have diarrhea. If you must prepare food, wash your hands very well before touching the food.
- Cook all meats, poultry and fish well.
- Drink safe water that is treated and/or tested. Surface water from lakes, streams and rivers should never be considered safe to drink.
- When camping or traveling if you suspect that a water supply is contaminated, boil the water for 5 minutes or use iodine tablets.
- Protect water supplies against contamination with human and animal feces.

…cont'd

- When traveling outside of North America avoid untreated water, ice and washed raw foods (unless it is fruit that can be peeled).
- Avoid swimming in contaminated waters.
- Control pests such as flies, cockroaches, mice or rats.
- Avoid anal/oral sexual contact, most bacteria/parasites can be transmitted sexually in this manner because they are found in the feces of infected people.
- Use separate towels for each person in your house.
- If you have been ill, once symptoms disappear, submit a follow-up fecal sample to your doctor to ensure you are clear from the infection.

**For further information please contact Toronto Public Health at 416-395-7666**

## Facts about Anthrax

Anthrax is an acute infectious disease caused by the spore-forming bacterium *Bacillus anthracis*. Anthrax most commonly occurs in hoofed mammals and can also infect humans.

Symptoms of disease vary depending on how the disease was contracted, but usually occur within 7 days after exposure. The serious forms of human anthrax are inhalation anthrax, cutaneous anthrax, and intestinal anthrax.

Initial symptoms of inhalation anthrax infection may resemble a common cold. After several days, the symptoms may progress to severe breathing problems and shock. Inhalation anthrax is often fatal.

The intestinal disease form of anthrax may follow the consumption of contaminated food and is characterized by an acute inflammation of the intestinal tract. Initial signs of nausea, loss of appetite, vomiting, and fever are followed by abdominal pain, vomiting of blood, and severe diarrhea.

Direct person-to-person spread of anthrax is extremely unlikely, if it occurs at all. Therefore, there is no need to immunize or treat contacts of persons ill with anthrax, such as household contacts, friends, or coworkers, unless they also were exposed to the same source of infection.

In persons exposed to anthrax, infection can be prevented with antibiotic treatment.

Early antibiotic treatment of anthrax is essential-delay lessen chances for survival. Anthrax usually is susceptible to penicillin, doxycycline, and fluoroquinolones.

An anthrax vaccine also can prevent infection. Vaccination against anthrax is not recommended for the general public to prevent disease and is not available.

Information updated September 2001.

## Botulism

Botulism is a muscle-paralyzing disease caused by a toxin made by a bacterium called *Clostridium botulinum.*

There are three main kinds of botulism:

1. Foodborne botulism occurs when a person ingests pre-formed toxin that leads to illness within a few hours to days. Foodborne botulism is a public health emergency because the contaminated food may still be available to other persons besides the patient.

2. Infant botulism occurs in a small number of susceptible infants each year who harbor *C. botulinum* in their intestinal tract.

3. Wound botulism occurs when wounds are infected with C. botulinum that secretes the toxin.

With foodborne botulism, symptoms begin within 6 hours to 2 weeks (most commonly between 12 and 36 hours) after eating toxin-containing food. Symptoms of botulism include double vision, blurred vision, drooping eyelids, slurred speech, difficulty swallowing, dry mouth, muscle weakness that always descends through the body: first shoulders are affected, then upper arms, lower arms, thighs, calves, etc. Paralysis of breathing muscles can cause a person to stop breathing and die, unless assistance with breathing (mechanical ventilation) is provided.

Botulism is not spread from one person to another. Foodborne botulism can occur in all age groups.

A supply of antitoxin against botulism is maintained by CDC. The antitoxin is effective in reducing the severity of symptoms if administered early in the course of the disease. Most patients eventually recover after weeks to months of supportive care.

Information updated September 2001.

## Campylobacter Infection

*(Campylobacter jejuni/spp.)*

**What is it?**

- A disease caused by bacteria called *Campylobacter.*

**How is it spread?**

- From person-to-person if the hands of an infected person are not washed properly after using the toilet.
- By drinking water or eating food contaminated with the bacteria.
- Found in the feces of infected people, pets (e.g. kitten, puppies), wild animals, poultry (e.g. chicken, turkey).

**What are the symptoms of illness?**

- Diarrhea, stomach cramps, fever, nausea, vomiting.
- Can mimic appendicitis.

**How long before the illness starts?**

- Usually 3 to 5 days, but could be 1 to 10 days after swallowing the bacteria.

**How long does the illness last?**

- Symptoms usually stop in 1 to 4 days, lasts no longer than 10 days without medication.
- A person can be asymptomatic – have no symptoms, but still have the bacteria in their feces for up to 11 weeks and therefore still can pass the bacteria to someone else.
- Can be treated with medication.

**How can you prevent *Campylobacter* infection?**

- Thorough handwashing:
    - *before* preparing any food
    - *after* using the toilet
    - *after* diapering or help a child use the toilet
    - *after* helping someone who has diarrhea
    - *after* handling pets
    - *after* touching raw foods

- Avoid preparing food for anyone else if you have diarrhea. If you must prepare food, wash your hands very well before touching the food.
- Drink safe water that is treated and/or tested. Surface water from lakes, streams and rivers should never be considered safe to drink.
- When camping or traveling if you suspect that a water supply is contaminated, boil the water for 5 minutes or use iodine tablets.

…cont'd

*(Campylobacter jejuni/spp.)*

- Protect water supplies against contamination with human and animal feces.
- When traveling outside of North America avoid untreated water, ice and washed raw foods (unless it is fruit that can be peeled).
- Avoid raw shellfish and swimming in contaminated waters.
- Cook all meats, poultry and fish well.
- Keep meat, poultry, fish, eggs and dairy products cold (5°C/40°F or colder) or hot (60°C/140°F or hotter).
- Put cooked food on a clean plate. Avoid using the same plate used for raw food.
- After cutting raw foods, wash counters, cutting boards and utensils with hot soapy water, rinse with a mixture of one part bleach and ten parts water, then let them air dry.
- Defrost foods safely under cold water or on a plate in the refrigerator or in a microwave over. Avoid thawing food on the counter, especially for a long period of time.
- Avoid using raw eggs in food that is not cooked (e.g. fresh egg nog, caesar salad dressing, icings or ice cream). If raw eggs are needed, use pasteurized raw eggs.
- Drink only pasteurized milk.
- Buy food from premises inspected by Public Health. Avoid unknown food trucks, stands or stalls.
- Control pests such as flies, cockroaches, mice or rats.
- Avoid anal/oral sexual contact, most bacteria/parasites can be transmitted sexually in this manner because they are found in the feces of infected people.
- Use separate towels for each person in your house.
- If you have been ill, once symptoms disappear, submit a follow-up fecal sample to your doctor to ensure you are clear from the infection.

**For further information please call Toronto Public Health, North York Office at 416-395-7666.**

## Chickenpox

**Fact Sheet**

Chickenpox is an illness caused by the varicella virus. Most people have chickenpox as children. It is rare for a person to have chickenpox a second time. If it does occur, the second illness is usually very mild. For some people the virus can become active again later in their life and cause a painful rash called "shingles".

**What are the symptoms of Chickenpox?**

- Chickenpox is usually a mild disease, with a characteristic itchy rash that progresses from red bumps to blisters that break, crust over and heal.

**How is Chickenpox spread?**

- The chickenpox virus is easily spread to those who have never had it through coughing, sneezing, or through the fluid of the blisters. A person with chickenpox is infectious from a few days before the fever or rash begins up to five days after the blisters appear.

**What should I do if my child or I get Chickenpox?**

- For most people, chickenpox is a mild disease and the best things to do are those that help you, or your child feel better. For example:
    - Drink plenty of liquids, especially if there is a fever
    - Use acetaminophen (e.g. Tylenol) to bring a fever down. Do not use medicines that contain salicylates (e.g. Aspirin)

**Note: Children who are well enough to participate in regular activities do not need to stay away from childcare or school as people are more contagious before the rash appears.**

**Should I see my doctor?**

- If you or your child have more severe symptoms, contact your doctor's office.
- Any person who has contact with chickenpox and is in any of the following groups should see their doctor as soon as possible:
    - Pregnant women
    - Newborns less than one month of age or born prematurely
    - People taking medications after an organ transplant
    - People taking medications called steroids
    - People with cancer, AIDS or HIV infection or other problems with the immune system

**Is there a vaccine to protect again Chickenpox?**

- A chickenpox vaccine was recently licensed in Canada. Please contact your family doctor for further information about this.

…cont'd

If you have any questions, contact Toronto Public Health at one of the following numbers:

| | |
|---|---|
| East Region (Scarborough and East York) | 416 396-7454 |
| North Region (North York) | 416 395-7666 |
| West Region (Etobicoke and York) | 416 394-8312 |
| South Region (former Toronto) | 416 392-7420 |

## C Difficile (*Clostridium Difficile)*

**(pronounced klo-STRID-ee-um dif-uh-seel)**

**What is *Clostridium difficile*?**
*Clostridium difficile* is a spore forming bacteria that has been associated with outbreaks of diarrhea and colitis in hospital patients and long term care facility residents. Almost all patients at greater risk of acquiring *Clostridium difficile* diarrhea are elderly or have other illnesses or conditions requiring prolonged use of antibiotics.

**Symptoms and Duration:** Watery diarrhea is the most common symptom, but abdominal pain, fever, loss of appetite, nausea and abdominal pain may also occur. Some patients may be asymptomatic until exposed to antibiotic treatment.

**Incubation Period:** There is no incubation period. People in good health usually don't get *Clostridium difficile* disease, only people that are hospitalized or on antibiotics are most likely to become ill.

**Recovery, Long Term Effects & Immunity:** In the majority of patients, the illness is mild and full recovery is usual, although, elderly patients may become seriously ill with dehydration as a consequence of diarrhea. Treatment is not recommended if there are no symptoms. In people with mild diarrhea, stopping the use of antibiotics together with fluid replacement usually results in rapid improvements. Sometimes, however, it is necessary to give specific therapy against *Clostridium Difficile* itself. Antidiarrheal agents such as Imodium or Lomotil have been shown to increase the severity of symptoms and should be avoided.

**How is *Clostridium difficile* Spread?**
People with *C. difficile* infections carry the bacteria in their intestines. The bacteria produce a spore, which is shed in the feces of an infected person. The bacteria can be passed from person to person through direct contact, environmental contamination (bedding, commodes, bedpans, sinks, anal thermometers, handrails, etc) and can be carried on the hands of health care workers as they move from patient to patient. The spore can survive in the environment for up to 70 days. They prefer to live in dry, dusty areas.

**How do you prevent *Clostridium difficile* Infection?**
- **Thorough hand washing is the best prevention**. Hands should be washed after handling contaminated waste (including diapers) and prior to eating, feeding, or providing personal care.

- Follow enteric precautions with known cases of *C. difficile* in health care facilities to limit the spread of the illness to others.

**For more information contact your Public Health Department.** **August 2004**

## Croup

Croup is an infection of the throat and vocal cords (or larynx). The infection is caused by a virus. When children younger than 5 years of age have the infection, it is called croup. In those older than 5 years of age, it is called laryngitis.

Croup often begins like a cold, but then fever, cough and difficulty breathing develop. The infection causes the lining of the throat and larynx to become red and swollen. The child develops a hoarse voice and a cough that sounds like a bark. The air passage below the vocal cords may narrow, making it difficult for the child to move air in and out. Breathing may then become very rapid, and noisy.

In most cases, croup sounds worse than it actually is. However, the child may become very tired because of the extra work it takes to breathe. In severe cases, the child's breathing can be obstructed. Some children become so sick, in fact, that they have to be treated in hospital. Antibiotics do not work on croup because the infection is caused by a virus.

**Things parents can do:**

- If you suspect your child has croup, contact your physician.
- Watch for the following signs and if any appears, take your child to see a physician immediately:
    - Fever higher than 39C (102F)
    - Rapid or difficult breathing
    - Severe sore throat
    - New or increased amount of drooling
    - Refusal to swallow or discomfort when lying down

- Make sure to follow the directions if the physician prescribes medication.
- For cases of very mild croup, your child may continue attending the child care facility if feeling well enough to take part in the activities.

This information has been prepared and approved by the Canadian Pediatric Society, 1992

## E. Coli Infection

*(Escherichia coli 0157:H7, including other diarrhea producing strains)*

**What is it?**

- A disease cause by bacteria called *Esherichia coli.*
- *E. coli* 0157:H7 bacteria are the most virulent strain of E. coli bacteria currently known.

**How is it spread?**

- From person-to-person if the hands of an infected person are not washed properly after using the toilet.
- By drinking water or eating food contaminated with the bacteria (e.g. unpasteurized milk and ground beef).
- Found in the feces of infected people and animals.

**What are the symptoms of illness?**

- Watery diarrhea, which sometimes changes to bloody diarrhea, stomach cramps, vomiting, with little or no fever.
- Children and the elderly can get very sick from the bacteria.
- Some people are asymptomatic – they have no symptoms, but still have the bacteria in their feces and therefore are still contagious to others.
- Can lead to haemorrhagic colitis or haemolytic uremic syndrome (acute kidney failure) in all ages, but especially the very young and the elderly.
- Can lead to thrombotic thrombocytopenic purpura in adults (a reduction in platelets, clotting agents, circulating in the blood).

**How long before the illness starts?**

- Usually a few days but can take up to two week after swallowing the bacteria.

**How long does the illness last?**

- In children, lasts approximately 7 to 11 days. In adults, lasts about 5 to 7 days.

**How can you prevent *E. coli* infection?**

- Thorough hand washing:
    - *before* preparing any food
    - *after* using the toilet
    - *after* diapering or helping a child use the toilet
    - *after* helping someone who has diarrhea
    - *after* handling pets
    - *after* touching raw foods
- Avoid preparing food for anyone else if you have diarrhea. If you must prepare food, wash your hands very well before touching the food.

…cont'd

*(Escherichia coli 0157:H7, including other diarrhea producing strains)*

- Drink safe water that is treated and/or tested. Surface water from lakes, streams and rivers should never be considered safe to drink.
- When camping or traveling if you suspect that a water supply is contaminated, boil the water for 5 minutes or use iodine tablets.
- Protect water supplies against contamination with human and animal feces.
- When traveling outside of North America avoid untreated water, ice and washed raw foods (unless it is fruit that can be peeled).
- Avoid raw shellfish and swimming in contaminated waters.
- Cook all meats, poultry and fish well.
- Keep meat, poultry, fish, eggs and dairy products cold (5°C/40°F or colder) or hot (60°C/140°F or hotter).
- Put cooked food on a clean plate. Avoid using the same plate used for raw food.
- After cutting raw foods, wash counters, cutting boards and utensils with hot soapy water, rinse with a mixture of one part bleach and ten parts water, then let them air dry.
- Defrost foods safely under cold water or on a plate in the refrigerator or in a microwave over. Avoid thawing food on the counter, especially for a long period of time.
- Avoid using raw eggs in food that is not cooked (e.g. fresh egg nog, caesar salad dressing, icings or ice cream). If raw eggs are needed, use pasteurized raw eggs.
- Drink only pasteurized milk.
- Buy food from premises inspected by Public Health. Avoid unknown food trucks, stands or stalls.
- Control pests such as flies, cockroaches, mice or rats.
- Avoid anal/oral sexual contact, most bacteria/parasites can be transmitted sexually in this manner because they are found in the feces of infected people.
- Use separate towels for each person in your house.
- If you have been ill, once symptoms disappear, submit a follow-up fecal sample to your doctor to ensure you are clear from the infection.

cont’d

*(Escherichia coli 0157:H7, including other diarrhea producing strains)*

## The facts about E. coli

### What is E. coli?

- E. coli are bacteria that are commonly found in the intestines of humans and animals. There are different types of E. coli, some not harmful to people and some which cause serious illnesses such as E. coli O157:H7.

### How can you get sick from the harmful type of E. coli?

- E. coli infections can be spread by many food sources such as undercooked ground beef, unpasteurized apple cider and mil, ham, turkey, roast beef, sandwich meats, raw vegetables, cheese and water.
- Once someone has consumed contaminated food or water, this infection can be passed from person-to-person by hand to mouth contact.
- E. coli do not survive in the air, on surfaces like tables or counters and is not spread by coughing, kissing or normal, everyday interactions with friends or neighbours.
- Poor had washing and improper food handling are factors that lead to the spread of this illness.

### How do you prevent E. coli infections?

- Cook ground beef thoroughly to an internal temperature of 70°C or until the juices run clear and the meat is no longer pink.
- Drink only pasteurized apple cider and milk. Never let youngsters sample milk produced directly from the animal.
- Wash all fruits and vegetables before eating.
- Thorough hand washing is always a good practice. Make sure hands are washed with soap and water after using the toilet, handling diapers, pets, and livestock or before preparing food.
- Clean and sanitize counter tops and utensils after these have been in contact with raw meats or poultry.
- Use separate work surfaces and utensils for preparing raw and cooked foods.
- Keep cold foods at 4°C or lower. Keep hot foods at 60°C or higher.
- Drink water from a supply intended for human consumption.
- Do not drink water from open streams and lakes.
- If ill with diarrhea, avoid preparing or handling food that others will be eating. If employed as a food handler or a health care worker, report any symptoms to your manager.

cont'd

*(Escherichia coli 0157:H7, including other diarrhea producing strains)*

## Frequently Asked Questions

***What are the symptoms of infection?***
Stomach cramps, diarrhea (possibly bloody), fever, nausea, vomiting. If you or a family member have any of the symptoms, it is important to wash your hands after going to the bathroom and before preparing food for others. If possible, have someone who has not been infected prepare the meals.

***Can I get if from shaking hands with, or by kissing an infected person?***
E. coli is not spread by coughing, kissing, or through normal, everyday interactions with friends or neighbours. However, once someone has consumed contaminated food or water, this infection can be passed from person-to-person by hand to mouth contact. Poor hand washing and improper food handling are factors that lead to the spread of this illness.

***What should I do if symptoms persist?***
Anyone who shows symptoms of E. coli should see their physician immediately. Under 10 per cent of individuals with E. coli infection will develop Hemolytic Uremic Syndrome (HUS). HUS is a serious complication of E. coli infection that may lead to kidney failure. Symptoms of HUS may include a decrease in the amount of urine produced, swelling in the face, hands, and feet, paleness of the skin, irritability and fatigue. Young children (especially under five years of age) and the elderly are most at risk for HUS. It is important to watch for the signs of HUS even after diarrhea has stopped. Anyone with these symptoms should see their physician immediately.

***What is the treatment?***
Generally, an E. coli infection must run its course. Antibiotics and antimotility medications are not recommended and may increase the risk of complications.

This information produced by the Government of Ontario in partnership with the Bruce-Grey-Owen Sound Public Health Unit. For more information you can call the Ministry of Health and Long-Term Care INFOline at 1-800-268-1154, visit our Web site at www.gov.on.ca/health or the Bruce-Grey-Owen Sound Public Health Unit, Web site at http://www.srhip.on.ca/bgoshu

## Fever

Fever is very common in childhood. Most often, fever is caused by an infection, but it may also result from some other illness. The degree (or height) of a fever does not tell you how serious the illness is; the child's behaviour is generally the most important factor. A child with a mild infection could have a very high fever, while a child with a very severe infection might have not fever at all.

Parents can check for fever by taking their child's rectal, oral or auxillary (under the armpit) temperature. You child has a fever when:

- the rectal temperature is 38.5 C (101.3 F) or higher
- the oral temperature is 38 C (100.4 F) or higher
- the auxillary temperature is 38 C (100.4 F) or higher

If your child has a fever higher than 39 C (102 F), it is important to contact your physician. When a child has a fever, medication is not always needed to reduce the temperature. In fact, the best reason for giving your child medication is not to reduce the fever but to relieve the associated aches and pains.

Acetaminophen (Tylenol, Tempra, Panadol and others) is the best medication to give for a fever. Unless your physician says otherwise, parents can give the dose recommended on the package every four hours until the child's temperature has come down. The temperature usually comes down in 1½ to 2 hours and then rises again, in which case the medication may have to be repeated.

**A child or teenager with a fever should not be given aspirin [acetylsalicylic acid (ASA)].** If the fever is due to chickenpox, influenza or certain other viral infections, taking aspirin can increase the risk of Reye's syndrome. This is a very serious condition that can damage the liver and brain.

**THINGS PARENTS CAN DO:**

- If your child has a fever, make sure the child is comfortable. Remove extra blankets and clothing so heat can leave the child's body and help lower the body temperature. Do not take off all your child's clothes, however, because the child may become too cold and start shivering, which produces more body heat, causing the temperature to rise again. Although sponging the child with tepid (lukewarm) water may help reduce the fever, it can make the child feel uncomfortable. Alcohol baths and rubs are not recommended.

- Consult your physician for advice on how and when to take your child's temperature. Be especially careful if you are using a glass thermometer to avoid breakage in the child's rectum or mouth. There are two types of glass thermometers: one for the oral and auxillary temperatures, and one with a larger bulb for rectal temperatures. cont'd

A digital thermometer can be used for rectal and oral temperatures. It is made of unbreakable plastic, is easy to read and measures temperature faster than glass. When using a digital thermometer, hold it in place until it gives its signal.

A fever strip is not recommended because it does not give an accurate temperature reading.

- Contact a physician if your child:
    - is excessively cranky, fussy or irritable
    - is excessively sleepy, lethargic, or unresponsive
    - is persistently wheezing or coughing
    - has a fever and is less than 6 months old
    - has a fever higher than 39 C (102F)
    - has a fever and a rash
    - has any other signs of illness that worry you

- Your child may continue attending the child care facility if feeling well enough to take part in the activities.

  Any child younger than 6 months of age with a fever or any child with a fever and any of the symptoms listed above, should be seen by a physician. Your child may return to the child care facility after your physician has made a diagnosis and started therapy and if feeling well enough to take part in the activities.

## Fifth Disease

*(Erythem Infectiosum)*

Fifth disease is an infection of the respiratory system. It is caused by a virus called parvovirus B19. This virus spreads the same way as a cold virus does:

- on the hands of someone who has the infection
- on something that has been touched by someone who has the infection
- in the air, after an infected person has breathed or sneezed

The infection starts as a very red rash on the cheeks, making the face look like it has been slapped. One to 4 days later, a red, lace-like rash appears, first on the arms, and then on the rest of the body. The rash may last from 1 to 3 weeks and may be accompanied by fever.

The illness is often very mild. Sometimes, the child may not even feel sick. Adults usually get a more severe case, with fever and painful joints. At least 50 percent of adults have had fifth disease in childhood and will not get it again if exposed to a child with the infection.

The infection may be more serious for:

- Children with sickle cell anemia or certain other chronic forms of anemia. Fifth disease can make the anemia more severe.
- Pregnant women, because there is a very small risk that their unborn children may develop anemia before birth.

**THINGS PARENTS CAN DO:**

- Watch your child for signs of fifth disease if another child has it.
- Contact your physician if your child becomes ill with fifth disease and you are pregnant.
- Your child may continue attending the child care facility/school if feeling well enough to take part in the activities. (by the time the rash develops, the child is no longer infectious).

This information has been prepared and approved by the Canadian Pediatric Society, 1992

## Giardia

***(pronounced jar-deeya)***

### What is giardia?

Giardia (pronounced jar-deeya) is a tiny parasite that causes an intestinal infection called giardiasis. You can't see the parasite without a microscope but you can feel its symptoms – the worst being severe diarrhea.

The giardia parasite is found around the world, and is widespread in Canada. One in every 25 people in Ontario carries giardia, often with no symptoms.

### How giardia infections happen

Giardia is picked up from touching human or animal feces or from drinking contaminated water.

Day-care centres are places where giardia outbreaks often occur. The parasite can spread quickly from an infected child if hands are not properly washed after diaper changes.

Giardia can also spread quickly through a family when one member has been infected. Schools and homes for the aged are other places where giardia outbreaks occur.

Infected food handlers in restaurants can contaminate food with the giardia parasite.

Drinking untreated or poorly treated water is another way giardia is spread. Take care when camping, canoeing or hiking in the wilderness. Just because water looks clear doesn't mean it's free of giardia. It is not safe to drink water in the wilderness or at a cottage unless it has been properly treated.

When you travel outside Canada be extra cautious. Drinking impure water or eating food that's been washed in it can lead to infection. Even brushing teeth with tap water is unsafe. Many cases of "traveler's diarrhea" turn out to be giardiasis.

### Symptoms and treatment

Symptoms may take one to three weeks to show up. Some people can carry the parasite without developing symptoms.

***(pronounced jar-deeya)***

An acute attack of giardiasis causes severe diarrhea and often nausea and vomiting. You may also have chills, headache, fatigue, stomach cramps and severe gas.

Since diarrhea can result in rapid fluid loss, it's critical that children with these symptoms be seen by a doctor. All others who suspect they have giardia should get treatment too.

**Prevention**

The best way to prevent giardiasis is to wash your hands very well after using the toilet or changing a diaper, and always before handling food.

## Giardia

Giardia is a parasite that causes a bowel infection. It is quite common in children in child care centres, especially where children are in diapers.

Giardia can affect children differently. Some children have no symptoms while others may have:

- diarrhea or mushy bowel movements (which may have a very bad smell)
- gas
- loss of appetite
- loss of weight

Giardia may be spread on the hands of someone who has changed a diaper or used a toilet. The spread of the parasite can be prevented by carefully washing hands after changing a diaper and going to the toilet, and before preparing and eating food.

The Giardia parasite may be present in a child's bowel movement without causing illness. Routine hand washing is very important for preventing the spread of Giardia even when no one has diarrhea.

Medications are available for treatment of children and adults who are ill with a Giardia infection.

**THINGS PARENTS CAN DO:**

- Watch your child for signs of Giardia infection if another child has it.

- Contact your physician if you think your child has a Giardia infection. The physician may have to take three stool samples on different days to confirm the diagnosis.

- Ensure all members of your household wash their hands after changing a diaper and using the toilet, and before preparing and eating foods.

- If your child has been diagnosed with a Giardia infection and is ill, he or she should not return to the child care facility until the diarrhea has stopped.

## Giardiasis

***(Giardia lamblia)***

**What is it?**

- A disease caused by a parasite called Giardia lamblia.
- The parasite is found in the feces of infected people, pet animals and wild animals (e.g. beavers, bears)

**How is it spread?**

- From person to person if the hands of the infected person are not washed properly after using the toilet.
- By drinking water or eating food contaminated with the parasite.
- Unfiltered stream or lake water contaminated by feces.

**What are the symptoms of the illness?**

- Diarrhea, loose greasy, bad smelling feces, stomach cramps, tiredness, weight loss.
- Many people have no symptoms, but still have the parasite in their feces and therefore are contagious to others.

**How long before the illness starts?**

- Symptoms usually appear between 7 to 10 days, but can take up to 5 to 25 days or longer after swallowing the parasite.

**How long does the illness last?**

- Illness will usually clear up on its own in about one month. Medication speeds recovery.

**How can you prevent Giardiasis?**

- Through hand washing:
    - *before* preparing any food
    - *after* using the toilet
    - *after* diapering or helping a child use the toilet
    - *after* helping someone who has diarrhea
    - *after* handling pets
    - *after* touching raw foods

- Avoid preparing food for anyone else if you have diarrhea. If you must prepare food, wash your hands very well before touching the food.
- Drink safe water that is treated and/or tested. Surface water from lakes, streams and rivers should never be considered safe to drink.

cont'd

***(Giardia lamblia)***

- When camping or traveling if you suspect that a water supply is contaminated, boil the water for 5 minutes or use iodine tablets. Standard chlorination alone will not kill Giardia cysts.
- Protect water supplies against contamination with human and animal feces.

- When traveling outside of North America avoid untreated water, ice and washed raw foods.

- Avoid raw shellfish and swimming in contaminated waters.

- Cook all meats, poultry and fish well.

- Keep meat, poultry, fish, eggs and dairy products cold (5°C/40°F or colder) or hot (60°C/140°F or hotter).

- Put cooked food on a clean plate. Avoid using the same plate used for raw food.

- After cutting raw foods, wash counters, cutting boards and utensils with hot soapy water, rinse with a mixture of one part bleach and ten parts water, then let them air dry.

- Avoid using raw eggs in food that is not cooked (e.g. fresh egg nog, caesar salad dressing, icings or ice cream). If raw eggs are needed, use pasteurized raw eggs.

- Drink only pasteurized milk.

- Avoid anal/oral sexual contact, most bacteria/parasites can be transmitted sexually in this manner because they are found in the feces of infected people.

**For further information call 416.395.7666**

## Hand, Foot and Mouth Disease

Hand, foot and mouth disease is an infection caused by a virus. The infection can occur at any age, but it is most likely to affect young children. It usually occurs in the summer and fall.

Hand, foot and mouth disease is usually not a severe illness. It may cause:

- Fever
- Sore throat
- Lack of energy
- A skin rash
- Headache
- Loss of appetite
- Small, painful ulcers in the mouth

The skin rash consists of red spots, often topped by small blisters. It usually appears on the hands and feet but can affect other parts of the body as well.

The virus that causes the infection is found in saliva and spreads from person to person through the air or by touch, as do cold viruses. It is not related to the virus that causes diseases in animals. There is no treatment for the infection.

**THINGS PARENTS CAN DO:**

- Watch your child for symptoms of hand, foot and mouth disease, if another child has it. If symptoms appear, contact your physician immediately. The physician can determine if the rash is due to hand, foot and mouth disease. If your child has a more severe infection, it is important for the physician to diagnose it as soon as possible.

- Make sure you wash your hands after wiping the child's nose, changing a diaper, and using the toilet, and before preparing food.

- Your child may continue attending the child care facility if feeling well enough to take part in the activities.

**This information has been prepared and approved by the Canadian Paediatric Society, 1992**

## Hantavirus

***(Hantavirus Pulmonary Syndrome)***

### What is Hantavirus?

It's a virus that can cause a rare but very serious lung disease called hantavirus pulmonary syndrome (HPS). The virus was first found in people in 1993 but has probably existed for many years.

The first cases were in rural areas of the southwest United States. The U.S. reported 103 cases in 21 states as of February 1, 1995. Canada reported seven cases – three in British Columbia and four in Alberta. Two of those seven people died.

### How is hantavirus spread?

Rodents may carry the virus, especially deer mice. Infected rodents shed the virus in their urine, saliva and droppings (feces).

Deer mice are pale grey, with white fur on their stomachs. They live mainly in rural and semi-rural wooded areas. They are not generally found in urban areas.

Health Canada found the virus in two of 43 deer mice collected in Algonquin Park in the summer of 1994.

Your chances of getting HPS are very low. Only rarely do people exposed to the virus become infected.

People can be exposed to the virus in several ways:

- Most often by breathing in infected dust from deer mice droppings or urine.
- Being bitten by an infected deer mouse.
- Touching any broken skin after contact with infected material.

The virus does not pass from person to person. It is not spread through food, water or insects, such as ticks, blackflies and mosquitoes. Pets and livestock do not catch the virus so these animals cannot pass it to people.

### Am I at risk?

Most people in Ontario will never be exposed to hantavirus. People who are in very close contact with deer mice may increase their chances of getting the disease.

cont'd

***(Hantavirus Pulmonary Syndrome)***

Spending time where deer mice live may increase the chance of exposure. These areas include hiking trails, vacant buildings or cottages, barns and fields.

**What are the symptoms of HPS?**

HPS starts with fever, chills, headache and muscle pain. As the disease gets worse it becomes harder to breathe.

If you get these symptoms and shortness of breath within six days of exposure to deer mice, see your doctor right away. Symptoms usually start within 2 weeks. But they can start as early as three days or as late as six weeks after infection.

**How is HPS treated?**

Early diagnosis helps in successful treatment of symptoms. Research for a vaccine is under way.

**How can I protect myself from HPS?**

The easiest way is to limit your contact with deer mice and their droppings, urine or saliva. They are attracted to areas where they can find food, water and shelter. It's wise to follow the following tips **anywhere** there are large numbers of mice.

**OUTDOORS**

- Always store food, water and garbage in metal or heavy plastic containers with tight-fitting lids. Do not leave pet food or water out overnight.
- Seal holes around doors, windows and roofs with steel wool or cement. To discourage digging and nesting, place gravel around the base of the building.
- Remove any abandoned vehicles, old tires or cast-off furniture from your property. Cut back thick bush and keep grass short. Keep woodpiles, hay and trash cans off the ground and away from your home.
- When hiking or camping, use a ground cover or a tent with a floor. Try to avoid areas where there are rodent burrows or droppings. It's always wise to use bottled or disinfected water.

cont'd

***(Hantavirus Pulmonary Syndrome)***

**INDOORS**

- Set traps indoors. Douse dead mice, used traps and nests with household disinfectant or diluted bleach.
- Always use rubber or plastic gloves when handling dead rodents and other materials. Put them inside a plastic bag. Seal the bag, then put it in a sealed garbage can. Or bury it.
- Rinse gloves in disinfectant or diluted bleach before you remove them. Wash gloves and hands in hot soapy water.
- Always wear rubber gloves when cleaning up signs of mice. Open windows/doors for a half hour before and after cleaning to air out the area.
- Wet floors to minimize dust. Damp-mop and wash floors with soap, water and disinfectant. Do not vacuum or sweep bare floors before mopping.
- Wear a breathing mask if the area is poorly ventilated. Wash countertops, drawers and cupboards with disinfectant. Wash any clothing or bedding contaminated with droppings. Dry them in the sun or in a hot dryer.
- After clean-up, wash hands and face well before eating, drinking or smoking.

Don’t attract mice. Always clean up spilled food, and wash dishes right away.

**For more information, please contact your local health department.**

**Head Lice** ***Head lice crawl easily from person to person. Do something about them quickly.***

Head lice are a nuisance. But they are not health hazards and they have nothing to do with lack of cleanliness.

Anyone can get head lice. School children are more likely to get them because they are in head-to-head contact more often than adults. Parents can get them from close contact with their children.

Head lice multiply quickly and crawl easily from person to person. Do something about them quickly.

**What to look for**

Head lice are tiny insects with no wings. They live mostly on the hair and head, usually behind the ears or at the back of the neck. They can also live in eyebrows, eyelashes and beards.

Lice are hard to see. Adult lice are small and change color to match the hair to which they are often attached. Their nits (eggs) are half the size of a pinhead and yellowish-white. Both nits and adults are firmly attached to hair and can't be shaken off.

Adult lice live only 10 days but in those 10 days a female can produce 50 to 150 nits – the sooner you take action the better.

The first sign of lice is usually a lot of itching and scratching. Other signs are scratch marks on the neck and scalp or what looks like a rash. Most times there are no symptoms at all.

Other scalp conditions can cause itchy skin. The only way to be sure lice are present is to look for nits.

Nits may look like dandruff. Unlike dandruff, they can't be flicked off the hair shaft.

**How to get rid of head lice**

1. Get a head lice shampoo, cream rinse or lotion from your drugstore. You don't need a prescription. Ask your druggist if you have any questions.

2. These head lice products do not prevent lice. Use them only when lice or nits are present. When choosing a product, read the list of contents and keep this in mind:

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- Head lice products available in Ontario contain one of three types of chemicals – lindane, pyrethrins or permethrin.
- Anyone allergic to ragweed should not use a product that contains permethrin.
- Do not use products that contain lindane on children under 6 years.
- Pregnant or breastfeeding women should consult their doctors before using a lindane product.

Talk with your doctor before using any head lice product on broken or infected skin.

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Head lice are tiny insects that live on the scalp. These insects lay eggs, called nits, which stick to hair very close to the scalp. Head lice do not spread disease.

Head lice are common in child care centres because the lice spread easily among children who are together in one place. Head lice are not spread because children have not washed properly.

Head lice spread from person to person by direct contact among children or on items such as hats, combs, hairbrushes and headphones. Head lice may or may not make a child's scalp itchy.

There are a number of very effective treatments for head lice. All the treatments contain an insecticide that kills the lice. If a child has head lice parents can contact their physician or the local public health agency for advice about treatment.

**Where to look:**

- Close to the scalp
- Behind the ears
- The back of the neck
- Top of the head

**What to look for:**

- One of the first signs is itching and scratching the head
- Adult lice – 1mm (1/8") long – are hard to see
- Nits are firmly attached to the hair close to the scalp
- Nits are grayish white in colour and are oval in shape
- Nits may look like dandruff but they cannot be flicked off

**How to check:**

- Spend a few minutes every week checking your child's head
- Good lighting is important
- Look for nits by parting hair in small sections going from one side of the head to the other
- Check carefully, looking close to the scalp

**THINGS PARENTS CAN DO:**

- Check your child's hair for nits immediately, after one week, and then again after two weeks if another child has head lice.

- Do not treat anyone with a head lice product unless you find lice or nits in their hair. All family members (adults and children) must be checked if one member has head lice.

cont'd

- Get a treatment for head lice. A prescription in not needed. Many physicians recommend NIX, a cream rinse. This and other new products are the most effective.

- Follow the directions of the product. Do not leave the shampoo or rinse in hair longer than directed. Rinse hair well after the treatment.

- Remove nits from hair after treatment by running hair strands between your thumb and finger nail. Put the nits in a bag, tie it up and throw it out.

- Consult your physician about whether to repeat the treatment or what other steps to take if live lice or new nits are found at least seven days after the first treatment.

- If anyone in your family has head lice, do the following on the same day that you give the treatment:
    - Collect all clothes, towels and bed linens used by the person with head lice in the last two days. Wash these items in hot water and dry in a dryer at the hottest setting.
    - Clothes that cannot be washed may be dry cleaned or put in a clothes dryer at the hottest setting for at least 20 minutes. Non-washable items should be put in a sealed plastic bag for two weeks.
    - Put pillows and non-washable furry toys in a clothes dryer at the hottest setting for at least 20 minutes.
    - Clean combs and brushes by soaking them overnight in the head lice treatment. Never share combs, brushes or hats.
    - Vacuum carpets, mattresses, upholstered furniture and car seats thoroughly.
    - Check all family members daily for the next two weeks.
    - Avoid using insecticide sprays to get rid of lice; they may be harmful to people and pets.

- If your child has head lice, treatment must be given before he or she returns to the child care facility.

- Consider establishing a regular routine of checking your children for nits. This could be done, for example, when shampooing hair.

**This information has been prepared and approved by the Canadian Paediatric Society, 1992.**

## Hepatitis A

### What is Hepatitis A?

Hepatitis A is a virus that causes an infection in the liver. It is commonly known as “infectious hepatitis”. After the virus enters the body, it can take anywhere from 15 to 50 days before you may feel sick. The symptoms can be so mild that many people are not aware that they have the disease. A high percentage of children never show any symptoms of Hepatitis A. Symptoms include loss of appetite, fever, dark urine, a tired feeling, vomiting, clay or ash colour bowel movements, jaundice (yellowing) of the skin and eyeballs and a sore feeling in the upper-right stomach area.

Symptoms may last from 1-2 weeks to several months. Most people recover completely and are then immune to reinfection.

### How is Hepatitis A spread?

People are the only source for Hepatitis A. The virus is found in the bowel movements of infected persons, even though they may not know they are ill.

People who go to the bathroom and then don’t wash their hands properly can pass the disease to others through food preparation or other hand/mouth contacts. Once infected, a person can pass the virus onto others for two weeks or more before they even know they are sick themselves. They remain infectious for up to 1 week after they get sick. Hepatitis A can also be spread by drinking water contaminated with sewage or eating shellfish such as crabs, clams, oysters or mussels that have been exposed to sewage. Many seaport cities world wide let the tides carry their sewage out into the ocean where shellfish become contaminated.

Large outbreaks have been linked to uncooked foods (salads and sandwiches) that have been contaminated by infected food handlers.

Hepatitis A can also be spread through anal-oral sexual contact. If you have had close contact with the person with Hepatitis A, a needle is available that can help prevent you from getting sick, if given within 14 days of contact.

### How is Hepatitis A prevented?

- Thorough hand washing is the best prevention. Make sure hands are washed after using the toilet and changing diapers. Children usually do not have symptoms.
- Do not eat raw shellfish.
- If traveling to an area where Hepatitis A is common, immunization should be obtained. A vaccine is available that will protect you for up to 3 years.

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- Drink water from a safe supply. Have well water tested to ensure it is safe to drink. Boil water for at least 1 minute or drink bottled water when traveling and unsure of the supply. Remember that ice cubes could also be contaminated.

**For more information contact your Public Health Department.**

**A Fact Sheet for Teachers**

## What is Hepatitis B?

Hepatitis B is an infection of the liver caused by the Hepatitis B virus (HBV)6.

## What are the symptoms?

The degree and severity of symptoms associated with Hepatitis B may vary drastically. Affected individuals may present with little or no symptoms indicative of illness to symptoms requiring hospitalization.

Symptoms:
- fever
- itchy skin
- nausea
- fatigue
- jaundice
- muscle aches
- loss of appetite
- dark urine
- vomiting

## How is Hepatitis B spread?

Transmission or spread occurs when the circulating virus, in the blood and body fluids of an infected person, enters the bloodstream of a susceptible person (person without antibodies to Hepatitis B). The Hepatitis B virus can be isolated from blood, vaginal secretions, semen, saliva, sweat, tears, breast milk and other body fluids of which exposure to the first four accounts for the majority of spread from person to person. Hepatitis B is not spread by casual contact (e.g. shaking hands, hugging, coughing, water or food). It is not spread in a regular classroom setting.

## What is Hepatitis B carrier?

Persons classified as carriers do not show symptoms, otherwise look well, and remain infectious to those susceptible. Roughly 1 in 10 people become carriers for the rest of their lives. Carriers usually take the appropriate actions to protect their families and those at risk.

## Can staff and students who are Hepatitis B carriers participate in regular school activities?

**YES**. Unless physically unable to, Hepatitis B carriers are able to participate in any school activity (e.g. swimming, showering, gym classes, drinking from fountains, preparing food, etc.). Regardless of an individual's Hepatitis B status, those with open sores or bleeding from their hands should not prepare food.

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**A Fact Sheet for Teachers**

## Can Hepatitis B be prevented?

**YES**. The obvious method of prevention is to avoid exposure to contaminated blood or body fluids (cuts, needle sticks, and sexual contact). If you are at risk, either through occupation or activity, a vaccine is available. If exposure is definite and you are at risk, Hepatitis B immunoglobulin (HBIG) is given in addition to the vaccine.

Persons with contaminated puncture wound(s) (needle sticks or human bites) should consult a physician immediately for HBIG and Hepatitis B vaccine.

## Are there risks associated with getting the vaccine?

There may be minor risks associated with vaccination. Common side effects associated with vaccination are sore arm, mild fever and tiredness. Serious reactions requiring hospitalization are very rare.

## Who should get Hepatitis B vaccine?

The Canadian Immunization Guide recommends that individuals in the following high risk group receive vaccination:

- Health care workers with daily exposure to blood
- Emergency service personnel (Fire, Police & Ambulance)
- Staff of institutional facilities for the developmentally disabled
- Those with high social activities (needle use, multiple partners)
- Those with kidney or immune system disorders
- Household contacts of cases or carriers
- Children <7 years of age from high endemic areas

Some workplace insurance plans may cover the cost of the vaccination if prescribed by a physician. Check your employee coverage and insurance company.

## What should I do if I have to administer first aid in an emergency?

If possible, place a barrier between yourself and the blood of the injured person (gloves, dressings). Treat any body fluid containing blood as potentially infected and keep these points in mind:

- Wear disposable gloves where possible to assist someone who is bleeding.
- Place blood soaked materials in double plastic bags for disposal.

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- Spills or pools of blood should be soaked up, wash the area with soap and water, then follow the disinfection of the area (1 part bleach to 9 parts water).
- Remove disposable gloves by pulling the glove over itself then wash your hands thoroughly with soap and water.

Gloves may not be readily available in an emergency. Should this be the case, wash your hands with soap and water as soon as possible.

Should sharps (needles, broken glass) be around the patient, carefully place these items in a puncture proof container for disposal. Use tongs or a small shovel to eliminate direct handling of these items.

**Please call the Toronto Public Health, North York Office at 416.395.7666 for additional information.**

## Immunization Recommended for Ontario Students (and Pre-school Children)

Ontario Legislation requires that all children, entering Ontario schools, to be up to date with primary immunizations (Diphtheria, Pertussis, Tetanus, Polio and Measles, Mumps and Rubella). In addition, children receive vaccination against Haemophilus b (Hib) vaccine between the ages of 2 to 18 months.

Families may seek exemption from immunizations on the basis of medical, religious and/or conscientious grounds. Exemptions forms may be obtained by calling the Toronto Public Health Department – North York Office, Immunization and Tuberculosis Section at 416-395-7664.

### Recommended Immunization Schedule (Beginning at Infancy)

| AGE | VACCINE |
|---|---|
| 2 months | DPTP + Hib (Pentacel Vaccine™) |
| 4 months | DPTP + Hib |
| 6 months | DPTP + Hib |
| after 1st birthday (12 months) | MMR (Measles, Mumps and Rubella) |
| 18 months | DPTP + Hib |
| 4 – 6 years | DPTP, MMR |
| 14 – 16 years | Td Polio |

Students/children with unknown or incomplete vaccination history can be brought up to date by using an abbreviated or altered schedule.

***It is the responsibility of the parent(s) or guardian(s) to maintain records of their child's (children's) immunization. Records must contain the date of administration of the vaccine, name of the vaccine and the doctor's name.***

If the student/child requires immunization and does not have a health card number, call the Immunization Nurse at 416.395.7664.

**For information about specific communicable diseases, please call the Disease Surveillance Section at 416.395.7666.**

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| DISEASE | Children should remain at home & away from others until… |
|---|---|
| Diarrhea | Symptom of diarrhea has stopped for 24 hours |
| Fifth Disease | No need to remain home unless fever is present |
| Hand, Foot and Mouth (Coxsackie) | Symptoms are absent and the child feels well enough to return to program or class |
| Head Lice/Scabies | Child has received and completed appropriate treatment |
| Hepatitis A | 5 days from the onset of jaundice or other symptoms of disease |
| Impetigo | The prescribed medication has been taken for at least 48 hours |
| Measles | 4 days after the first signs of rash |
| Mumps | 9 days from the first signs of swelling |
| Pertussis (Whooping Cough) | Until the appropriately prescribed medication has been taken for a minimum of 5 days of if not treated…3 weeks from onset (start) of cough |
| Pink-eye | The prescribed medication has been taken for at least 48 hours without discharge from the eye |
| Ringworm (fungal infection) | The antifungal medication has been applied/taken for 24 hours and continues the course of antifungal until the lesion(s) is gone |
| Rubella (German measles) | 7 days from the first sign of rash |
| Scarlet Fever or Strep Throat | The prescribed medication has been taken for at least 24 hours |

Impetigo is a skin infection caused by Streptococcus (strep) and Staphylococcus (staph) bacteria. The infection is common in children and occurs when the bacteria gets into scrapes and insect bites. The infection is most common in the summer. Some people think that children get impetigo because they have not been washed properly. However, impetigo does not result from a lack of cleanliness.

Impetigo is a skin rash that is characterized by a cluster of blisters or red bumps. The blisters may ooze or be covered with a honey-coloured crust. The rash usually appears around the nose, mouth, and parts of the skin not covered by clothes.

The infection is spread when someone touches an impetigo rash and then touches another person. The spread can be prevented by washing hands after touching infected skin. Treatment of impetigo with antibiotics can also prevent the spread of infection.

A physician can diagnose impetigo by examining the child. The specific germ causing the infection can be found when a culture (or swab) is taken by a physician. The infection is treated with antibiotics, which may be given my mouth or applied on the skin in form of an ointment.

**THINGS PARENTS CAN DO:**

- Watch your child for signs of impetigo if another child has it.
- If you think your child has impetigo, contact your physician for diagnosis and treatment.
- Make sure that all household members wash their hands thoroughly with soap and water after touching infected skin. Family members should not share face cloths or hand and bath towels.
- If your child has impetigo, he or she should not return to the child care facility until the antibiotic prescribed by your physician has been taken for at least one full day. It is important for the child to take all the medication prescribed by the physician, even after the signs of infection have gone away.

**This information has been prepared and approved by the Canadian Paediatric Society, 1992.**

## What is group A streptococcal disease?

Group A streptococcus (group A strep) causes a variety of infections. The most frequent conditions include: sore throats (commonly referred to as "strep" throat), ear infections, scarlet fever and skin infections.

## How common is group A strep bacteria in the general population?

Group A strep is commonly found in the nose and throat of about 5-15% of healthy children and 1% of healthy adults who have no signs or symptoms of illness.

## Can group A strep infections be serious?

In rare cases, the same strep bacteria can cause a severe form of illness called invasive group A strep. Two of the most severe, but least common, forms of invasive disease are called toxic shock syndrome (a rapidly progressing infection causing low blood pressure/shock and injury to organs such as the kidneys, liver and lungs) and necrotizing fasciitis (infection of muscle and fat tissue).

## How does group A strep spread?

Group A strep is spread through close, personal contact with an infected person, for example, through kissing or sharing cutlery, or through direct contact with infected sores on the skin. The risk of spread is greatest when an individual is ill. Persons who carry the bacteria but have no symptoms are much less contagious. Your best protection against group A strep infection is good personal hygiene, especially frequent and thorough hand washing, and covering of your mouth and nose when coughing or sneezing.

## Who is most at risk of invasive group A strep?

Few people who come in contact with invasive group A strep develop invasive disease. Although healthy people can get invasive disease, people with chronic illnesses like cancer, diabetes and kidney dialysis, and those who use medications such as steroids, are a higher risk. In addition, breaks in the skin, like cuts, surgical wounds or chickenpox may provide an opportunity for the bacteria to enter the body.

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### What are the signs and symptoms of invasive group A strep disease?

Early signs and symptoms of necrotizing fasciitis include fever, severe pain and swelling, and redness at the wound site. Early signs and symptoms of streptococcal toxic shock syndrome include fever, dizziness, confusion, diffuse red rash and abdominal pain. Unfortunately no sign or symptom is particular only to streptococcal toxic shock syndrome, making it sometimes difficult to differentiate from other illnesses.

Measles is a serious infection caused by a virus. It used to be a very common childhood infection. Now, the measles vaccine has virtually stopped all outbreaks of the infection in Canada, especially in provinces with compulsory immunization programs.

Children with measles usually have a high fever, cough, runny nose, and red eyes. After a few days, they get a rash. The rash starts out as a few red spots, which soon join together and cover the body.

The infection can make children very ill and they may need to be hospitalized. One in 10 children may get an ear infection or pneumonia. On rare occasions measles causes brain damage. Adults who get measles are usually very sick; the infection often leads to complications such as pneumonia.

The measles virus is very infectious and spreads easily from person to person through the air. It is infectious from about 3 to 5 days before the rash appears, and up to four days after that. Almost everyone who has not been immunized or has not already had measles and is then exposed will get the infection.

If a child has not been immunized and is exposed to measles, the infection can be prevented with an injection of immune globulin. Immune globulin contains antibodies, substances that can prevent infection. The measles vaccine should be given about three months after the immune globulin to children who are at least 12 months old.

There is no medication to cure measles. Antibiotics have no effect because measles is caused by a virus.

**THINGS PARENTS CAN DO:**

- If another child has been diagnosed with measles, check your child's immunization record to see if he or she has had the measles or MMR (Measles, Mumps, Rubella) vaccine. If so, it is very unlikely that your child will develop measles if exposed to another child with the infection.

- Do not take your child for a vaccination if the child has already had measles diagnosed with a blood test by a physician.

- Contact your physician or the local public health agency if your child has not had the measles of MMR (Measles, Mumps, Rubella) vaccine. They will tell you if your child needs a measles vaccination or an injection of immune globulin. Your child must get one of these before returning to the child care facility. If the child gets neither, he or she will have to remain

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out of child care for two weeks after the last case of measles in the child care facility has occurred.

- If your child has measles, he or she should not return to the child care facility until at least four days after the rash begins.

- Measles can be prevented by immunization.

**This information has been prepared and approved by the Canadian Paediatric Society, 1992.**

## Introduction

Meningococcal disease is an infectious disease caused by the bacteria *Neisseria meningitides*. Often healthy persons have these bacteria in their throat without feeling sick. However, a few people do become sick and have to go to hospital for treatment. The two serious forms of the disease are a brain infection called "meningococcal meningitis" and a blood infection called "meningococcemia".

Meningococcal disease is quite rate, with only 300 to 400 people affected in Canada (24 in Toronto) every year. Meningococcal disease can affect people of any age, however it is most common in teenagers and children, especially babies less than one year old.

## Symptoms

People who are sick with this disease may have several of the following symptoms:

- Fever
- Headache
- Vomiting (throwing up)
- Stiff neck
- Rash
- Drowsiness, confusion, state of excitement
- Convulsions or seizures

The symptoms will usually show up within 2-10 days of exposure to the bacteria. If you have any of these symptoms, **see your doctor right away.**

## How is it spread?

The disease is spread through saliva, usually kissing or sharing food, drink, cigarettes or other things that have been in the mouth of a person with the disease.

## Who is at risk?

Some people who have been with the sick person need to have treatment to prevent getting the disease. They are as follows:

- People who live in the same house
- Children at the same childcare centre of kindergarten class
- Persons who perform mouth-to-mouth resuscitation, intubation or suctioning of anyone with meningococcal disease
- Anyone who has had direct contact with the nose or mouth of the ill person (e.g. through kissing, sharing of food/drink/cigarettes/musical instrument mouth pieces etc.)

These people only need treatment if they had contact with the sick person in the period seven days before the person got sick up to 24 hours after the person's treatment was started.

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Other people such as school classmates or co-workers and health care workers are not at increased risk and do not need treatment to prevent the disease. No special measures need to be taken among the general student population to prevent infection. Usually it is not necessary to stop any recreational or social activities such as sports, parties, movies or shopping.

### Those at risk of infection

When a person becomes sick with meningococcal disease, close contacts may need medicine right away so they will not get sick. The medicine is called revamping. The medicine stops the spread of infection. Public health staff will let you know if you need medicine. As well, if you have any symptoms of the disease within 10 days of last seeing the sick person, **see your doctor right away**.

**If you have any questions, please telephone Toronto Public Health at 416.395.7666.**

Although a serious disease, mumps is now very uncommon. The vaccine that children receive at 1 year of age prevents almost all cases of mumps.

When children have the infection, it is usually very mild. Some may seem completely normal and not even have swollen glands. Others may have swollen glands at the jaw line on one or both sides of the face. Sometimes the child's testicles, joints, kidneys, and the lining of the brain are mildly affected. Mumps rarely causes deafness. The infection is usually much more severe in adults. A blood test is required in order for a physician to make the diagnosis.

Mumps spreads from person-to-person through the air. People with mumps may spread the virus up to seven days before the glands start to swell until as long as nine days later. It takes about 2 to 3 weeks to come down with mumps after being in contact with someone who has the disease.

The vaccine should be given to everyone over 1 year of age who has not previously received the vaccine. Although it will not necessarily prevent mumps if given at the time of exposure, the vaccine will prevent the disease the next time the person is exposed to the infection.

There is no treatment for mumps. Since the infection is caused by a virus, antibiotics have no effect.

**THINGS PARENTS CAN DO:**

- Check your child's immunization record to see if he or she has had the mumps of MMR (Measles, Mumps, Rubella) vaccine if another child has mumps.
- If your child has not had the mumps of MMR (Measles, Mumps, Rubella) vaccine and is 1 year of age or older, contact your physician or the local public health agency to have your child vaccinated as soon as possible.
- Contact your physician if you think your child has mumps. Although the infections cannot be cured, a physician can suggest ways to make your child feel better.
- If your child has mumps, he or she should not return to the childcare facility until at least nine days after the swollen glands first appeared. In comes cases, the child may return sooner if the illness is mild and if feeling well enough to take part in the activities.
- **Mumps can be prevented by immunization.**

**This information has been prepared and approved by the Canadian Paediatric Society, 1992.**

## Methicillin Resistant Staphylococcus Aureus (MRSA)

**What is Methicillin Resistant Staphylococcus aureus (MRSA)?**
Staphylococcus aureus are bacteria that normally live on the skin and mucous membranes of people without causing infection. Studies have shown that between 30 to 80% of the population may harbour the bacteria in the nose at one time or other.

Some exposures to the bacteria in the community can lead to boils and impetigo exposures in the hospital setting can lead to wound and blood stream infections.

**Methicillin Resistant Staphylococcus aureus infections are <u>not</u> more severe or more common than other Staphylococcus aureus infections.**

**MRSA** is a strain of Staphylococcus aureus that is resistant to many antibiotics such as methicillin, oxacillin, cloxacillin, etc. therefore it is difficult to treat an infection.

**Why is MRSA important?**
Residents who develop an infection caused by MRSA need to be treated with vancomycin. This antibiotic must be given by IV and has greater potential for side effects.

It is possible for the MRSA to develop a resistance to vancomycin in the near future. Once MRSA strains have become established in a facility, prevention and control can be difficult.

**What causes antibiotic resistance in MRSA?**
The bacteria produces a unique protein that stops the antibiotic from attaching to the bacteria and destroying it.

**Which Residents are most likely to get MRSA?**
Residents with open wounds, invasive devices such as gastrotomy tubes or indwelling catheters, recent antimicrobial therapy, diabetes, severe debilitation, malnutrition, and other medical complications.

**How is MRSA transmitted or spread?**
MRSA is most frequently spread from one resident to another on the hands of health care workers by direct contact. The length of time the bacteria is carried on the hands varies. The hand of staff may become transiently colonized while performing resident care activities on residents colonized or infected with MRSA.

Staff may become nasal carriers of MRSA, however, the extent to which such carriage contributes to transmission in unclear. Boyce et al (1194) suggest that

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staff with persistent nasal carriage are more likely to have colonization of their hands and are therefore more likely to transmit MRSA to multiple residents.

Airborne transmission and environmental contamination have not been found to be significant in the spread of MRSA.

**What is a reservoir of MRSA?**
The major reservoir of MRSA is colonized and infected residents. (Colonized individuals do not have an infection but have the bacteria present on their skin or in their urine, sputum, stool or open wound).

Colonized staff serve as a second possible reservoir.

Contaminated environmental surfaces are not a significant reservoir of MRSA>

**What can be done to prevent the transmission of MRSA?**
The transmission MRSA can be prevented by the use of precautions for multi-drug resistant organisms.

- Resident to be in a single or private room
- Provide gloves for direct care of MRSA positive residents
- Provide gowns if gross contamination is expected.
- **HAND WASHING !!!**

**Adapted from the Baycrest Centre for Geriatric Care MRSA Fact Sheet 1998**

## What is Pertussis?

Pertussis is a bacterial infection of the respiratory tract. It is also called "whooping cough". The disease is more common in young children, however, adolescents and adults can also develop pertussis. Whooping cough gets its name from the high pitched gasp or whooping sound the child makes when trying to breath after a coughing spell. Pertussis often starts with a runny nose and cough that gradually worsens over 1 to 2 weeks. Violent coughing spells frequently end in a whooping sound, vomiting or loss of breath. The cough can last for 1 to 2 months. The disease is most severe in infants under 1 year of age.

## How is pertussis spread?

Pertussis is spread very easily from infected persons to others through coughing or sneezing. Persons can spread the germ from the time they get the infection until 3 weeks after the coughing attacks start or until they have taken the medication erythromycin for 5 days. It takes between 6 to 20 days to come down with pertussis after coming in contact with someone else who has it.

## What is the treatment for pertussis?

Pertussis can be treated with the antibiotic erythromycin. The antibiotic is taken for 10 days.

How can pertussis be prevented?

The most important way to prevent pertussis is through immunization. A vaccine against pertussis has been available for many years. It is usually given to children at 2, 4, 6 and 18 months of age combined with vaccines against other childhood illnesses. A booster dose is given when the child is between 4 and 6 years of age. All children should be kept up-to-date on their vaccinations.

**For more information, call Toronto Public Health, North York Office at 416.395.7666**

## Pinkeye (Conjunctivitis)

Pinkeye is an infection of the covering of the eyeball. It is usually caused by a virus, but it can also be due to bacteria. Pinkeye can also be caused by allergy or by rubbing the eyes excessively.

Children with pinkeye complain of a scratchy feeling or pain in their eyes and may have a lot of tears and pus discharge. The infection turns the whites of the eyes pink or red. When the child wakes up after a sleep, pus or discharge often makes the eyelids stick together.

Pinkeye is easily spread when:

- A child with the infection touches the discharge and then touches another child.
- An uninfected child touches an infected child's eye discharge and then touches his or her own eyes.
- An adult wipes an infected child's eyes and then touches his or her or another person's eyes.

Pinkeye that is caused by bacteria can be treated and cured with an antibiotic. Antibiotics can also stop the infection from spreading to others. There is no treatment for pinkeye that is caused by a virus.

**THINGS PARENTS CAN DO:**

- Watch your child for signs of pinkeye if another child has it.
- Contact your physician if your child has pinkeye. It is not easy to tell whether the infection is caused by bacteria or a virus. It may be necessary for the physician to prescribe antibiotics for the child.
- Ensure you and your child wash your hands very carefully after touching or wiping the child's eyes.
- Do not let your child share towels or wash cloths with anyone else, because this could spread the infection.
- If your child's eyes have pus (yellow, thick) or a discharge, he or she should not return to the child care facility until after taking an antibiotic for one full day.

**This information has been prepared and approved by the Canadian Paediatric Society, 1992.**

**Pinworms** **Facts about….**

Pinworms are tiny, white thread-like worms that live in the intestines. The worms crawl out of the anus at night and lay their eggs on nearby skin. Usually, children with pinworms have not symptoms. However, some children can get very itchy around the anus and vagina.

Pinworms are a nuisance, not a disease. They are very common in children and spread easily among children and staff in child care facilities.

Pinworms are spread when:

- An infected person scratches the itchy area and gets pinworm eggs on the fingers or under the fingernails and then touches another person.
- An uninfected person picks up pinworm eggs from an infected person's clothes, pajamas, sheets or surroundings. These eggs can survive for several weeks outside the body.

A physician can do a simple test to check for pinworms. If found the pinworms can be treated with medication. However, the pinworms can recur if the child again comes into contact with pinworm eggs. To prevent the child from getting repeated infections, all child care staff and children may need to be treated.

**THINGS PATENTS CAN DO:**

- Watch your child for signs of pinworm infection, especially scratching the anus if another child has pinworms.
- Make sure that all household members wash their hands carefully after going to the toilet or changing diapers and before preparing or eating food.
- If your child has a pinworm infection, ask your physician if all members of your household should be treated. Inform child care staff if your child has pinworms.
- If your child is infected with pinworms, he or she may need treatment prescribed by a physician. Your child may continue to attend the child care facility.

**This information has been prepared and approved by the Canadian Paediatric Society, 1992.**

**Pneumonic Plague** **Facts about…**

Plague is an infectious disease of animals and humans caused by the bacterium *Yersinia pestis. Y. pestis*, is found in rodents and their fleas in many areas around the world.

Pneumonic plague occurs when *Y. pestis* infects the lungs. The first signs of illness in pneumonic plague are fever, headache, weakness, and cough productive of bloody or watery sputum. The pneumonia progresses over 2 to 4 days and may cause septic shock and, without early treatment, death.

Person-to-person transmission of pneumonic plague occurs through respiratory droplets, which can only infect those who have face-to-face contact with the ill patient.

Early treatment of pneumonic plague is essential. Several antibiotics are effective, including streptomycin, tetracycline, and chloramphenicol.

There is no vaccine against plague.

Prophylactic antibiotic treatment for 7 days will protect persons who have had face-to-face contact with infected patients.

**Ringworm** **Facts about…**

Ringworm is a skin infection caused by a fungus. The infection causes a rash that may have a ring-shape with a raised edge. It is usually quite itchy and flaky. When the scalp is infected, there is often an area of baldness. Fungal infections of the feet are usually very itchy and cause cracking between the toes.

Ringworm spreads from person-to-person by touch. When someone with ringworm touches or scratches the rash, the fungus sticks to the fingers or gets under the fingernails. The fungus is then spread when that person touches someone else. Ringworm of the scalp can also spread if combs and hairbrushes are shared.

Ringworm can be acquired from animals. Should this be a concern in your household, consult your local veterinarian.

Ringworm can be cured with medication. Some medications are taken by mouth. Others are ointments or creams that are spread on the infected area.

**THINGS PARENTS CAN DO:**

- Check your child for signs of ringworm if another child has it. Look for the typical circular rash on the child's head or skin.
- Contact your physician if you think your child has ringworm.
- If your child has ringworm, make sure his or her hands are washed after touching the infected skin. If your child has ringworm on the scalp, make sure that no one uses the child's comb, hairbrush, face cloths and towels. Have your child wear a protective cap at night to avoid transmitting the fungus to bedding.
- If your child has ringworm, he or she should not return to the child care facility until after treatment has started.

**This information has been prepared and approved by the Canadian Paediatric Society, 1992.**
**Revised by Toronto Public Health, North York office, 10/98.**

**Roseola** **Facts about…**

Roseola is an infection caused by a virus. The infection is common in children aged 6 to 24 months. It is rare in children younger than 4 months or older than 4 years.

Roseola starts out with a fever. After several days, the fever disappears and a rash appears, mainly on the child's face and body. The rash consists of small red spots which last for a day or two.

Most children are not very sick during the fever stage of the infection. In some children the fever is very high and causes febrile seizures (or convulsions).

It is difficult to diagnose roseola until the rash has appeared. A physician can tell if the child's fever is due to roseola or some other more serious infection.

Roseola is not very infectious. It is not known how it spreads from person-to-person. Children with roseola get better without any treatment and complications are very rare.

**THINGS PARENTS CAN DO:**

- Watch your child for signs of roseola if another child has it.
- Contact your physician if your child develops a fever.
- Your child may continue attending the child care facility if feeling well enough to take part in the activities. If your child has roseola, make sure you tell the staff.

**This information has been prepared and approved by the Canadian Paediatric Society, l992.**

**Rubella (German Measles)** **Facts about…**

Rubella (German measles) is an infection caused by a virus. Due to a very good vaccine that prevents most cases, rubella is no longer very common. Children are given this vaccine when they are 1 year old.

Rubella may cause a mild illness with a low fever, swelling of the glands in the neck and behind the ears, and a rash with small red spots.

Rubella spreads from person-to-person through the air or by touch. People with rubella can spread it from a few days before the rash starts until 5 to 7 days after.

Children usually get a mild form of the infection, so mild that they do not show any signs of illness. The infection may also be very mild in adults, although it can create serious problems for pregnant women. If a woman gets rubella in the first three months of pregnancy there is a very high chance of the unborn child dying or developing serious defects.

A physician can diagnose rubella by doing a blood test. If the infection is found, there is no medication to cure it. Antibiotics are ineffective because rubella is caused by a virus.

**THINGS PARENTS CAN DO:**

- Check immunization records to see if you and your child have had the rubella or MMR (Measles, Mumps, Rubella) vaccine if another child has rubella.
- If your child has not been vaccinated and is 1 year of age or older, contact your physician or the local public health agency to arrange for a vaccination as soon as possible.
- Contract your physician if you are a woman of child-bearing age and do not know if you have had a rubella vaccine. The physician can tell if you are immune (vaccinated or have had the disease) by doing a blood test. If you are not immune and not pregnant, the physician will vaccinate you. **The rubella vaccine of the MMR (Measles, Mumps, Rubella) vaccine should not be given to pregnant women.**
- If your child has rubella, contact your physician, who may want to arrange vaccinations for others who have been in contact with your child.
- If your child has rubella, he or she should not return to the child care facility until at least seven days after the rash first appeared. Pregnant women should **not** have contact with your child during that period.
- **Rubella can be prevented by immunization.**

**This information has been prepared and approved by the Canadian Paediatric Society, I992.**

**Salmonellosis (*Salmonella spp.*)** **Fact Sheet**

**What is it?**

- A disease caused by bacteria called *Salmonella*.

**How is it spread?**

- From person-to-person if the hands of an infected person are not washed properly after using the toilet.
- By drinking water or eating food contaminated with the bacteria.
- The bacteria is found in the feces of infected people, farm animals (e.g. chicken, turkey, pigs, cows), wild animals and pets (e.g. dogs, cats, turtles or other reptiles).

**What are the symptoms of illness?**

- Diarrhea, stomach cramps, nausea, fever and sometimes vomiting.
- Some people are asymptomatic, have no symptoms, but sill have the bacteria in their feces.
- The illness may be more severe for the very young, the elderly and those with other illnesses such as diabetes, HIV or AIDS.
- Dehydration is a concern for infants.

**How long before the illness starts?**

- Usually 12 to 36 hours but can take 7 to 72 hours after swallowing the bacteria.

**How long does the illness last?**

- Several days to several weeks.
- Even after symptoms stop, a person (especially infants) may still have the bacteria in their feces for months and therefore still be contagious to others.
- Submission of follow-up stool samples until the individual is clear of the infection is highly recommended.
- Treatment with antibiotics *may prolong* the time the bacteria stays in the bowel.

**Scabies** **Facts about…**

Scabies is a condition caused by tiny insects called mites. Scabies is a nuisance, not an infection. The condition is common in children. Some people think children get scabies because they have not been washed properly. However, scabies has nothing to do with cleanliness.

The mites that cause scabies burrow into the skin and cause a very itchy rash. The rash looks like curvy white threads, tiny red bumps, or scratches, and it can appear anywhere on the body. It usually appears between fingers around wrists or elbows. On an infant, it can appear on the head, face, neck and body.

Scabies spreads from person-to-person by touch or by contact with clothing or other personal items of someone else who has had it. The mites can live on clothing, other objects and skin for four days. The mites die after four days if the clothes are not touched. Washing the clothes in hot water and then putting them in a hot dryer also gets rid of the mites.

Scabies can be treated with medication recommended by a physician. A child may still be itchy for a few weeks after the treatment has gotten rid of the mites. This means that the child is reacting to the mites, not that the treatment has failed to get rid of them.

**THINGS PARENTS CAN DO:**

- Watch your child closely for signs of scabies if another child has it.
- Contact your physician if you think your child has scabies. If the physician determines that your child has scabies, every member of your household will probably have to be treated with medication. Be sure to follow the instructions on the bottle.
- If your child has scabies, wash the child's bed linen, towels, and clothes in hot water and dry in a clothes dryer at the hottest setting.
- If your child has scabies, he or she should not return to the child care facility until treatment has been given.

**This information has been prepared and approved by the Canadian Paediatric Society, 1992.**

**What is it?**

- A disease caused by bacteria called *Shigella*.
- Bacillary dysentery is another name for this disease.

**How is it spread?**

- From person-to-person if the hands of an infected person are not washed properly after using the toilet.
- By drinking water or eating food contaminated with the bacteria.
- It is found in the feces of infected people, not animals.
- Very infectious/contagious organism which is most often associated with children under 10 years of age.

**What are the symptoms of illness?**

- Chills, fever, cramps, vomiting, and watery, bloody diarrhea.
- Young children may have convulsions.

**How long before the illness starts?**

- Usually 1 to 3 days after swallowing the bacteria, but can take 1 to 7 days for the illness to start.

**How long does the illness last?**

- Usually 3 to 5 days, but can last for several days to several weeks.
- Even after symptoms stop, a person may still have the bacteria in their feces for about four week and can pass it on to others during that time.
- Illness may clear up on its own but is usually treated with antibiotics.

**PREVENTION**

**How can you prevent Shigellosis?**

- Thorough hand washing:
    - before preparing any food
    - after using the toilet
    - after diapering or helping a child use the toilet
    - after helping someone who has diarrhea
    - after handling pets
    - after touching raw foods

- Avoid preparing food for anyone else if you have diarrhea. If you must prepare food, wash your hands very well before touching the food.
- Cook meat, poultry, fish and eggs thoroughly.
- Drink safe water that is treated and/or tested. Surface water from lakes, streams and rivers should never be considered safe to drink.

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- When camping or traveling if you suspect that a water supply is contaminated, boil the water for 5 minutes or use iodine tablets.
- Protect water supplies against contamination with human and animal feces.
- When traveling outside of North America avoid untreated water, ice and washed raw foods (unless it is fruit that can be peeled).
- Avoid swimming in contaminated waters.
- Control pests such as flies, cockroaches, mice or rats.
- Avoid anal/oral sexual contact, most bacteria/parasites can be transmitted sexually in this manner because they are found in the feces of infected people.
- Use separate towels for each person in your house.
- If you have been ill, once symptoms disappear, submit a follow-up fecal sample to your doctor to ensure you are clear from the infection.

**For further information please contact Toronto Public Health at 416.395.7666**

**Smallpox** **Fact about…**

Smallpox infection was eliminated from the world in 1977.

Smallpox is caused by variola virus. The incubation period is about 12 days (range: 7 to 17 days) following exposure. Initial symptoms include high fever, fatigue, and head and back aches. A characteristic rash, most prominent on the face, arms and legs, follows in 2-3 days. The rash starts with flat red lesions that evolve at the same rate. Lesions become pus-filled and begin to crust early in the second week. Scabs develop and then separate and fall off after about 3-4 weeks. The majority of patients with smallpox recover, but death occurs in up to 30% of cases.

Smallpox is spread from one person to another by infected saliva droplets that expose a susceptible person having face-to-face contact with the ill person. Persons with smallpox are most infectious during the first week of illness, because that is when the largest amount of virus is present in saliva. However, some risk of transmission lasts until all scabs have fallen off.

Routine vaccination against smallpox ended in 1972. The level of immunity, if any, among persons who were vaccinated before 1972 is uncertain; therefore, these persons are assumed to be susceptible.

Vaccination against smallpox is not recommended to prevent the disease in the general public and therefore is not available.

In people exposed to smallpox, the vaccine can lessen the severity of or even prevent illness if given within 4 days after exposure. Vaccine against smallpox contains another live virus called vaccinia. The vaccine does not contain smallpox virus.

The United States currently has an emergency supply of smallpox vaccine.

There is no proven treatment for smallpox but research to evaluate new antiviral agents is ongoing. Patients with smallpox can benefit from supportive therapy (intravenous fluids, medicine to control fever or pain, etc.) and antibiotics for any secondary bacterial infections that occur.

## Strep Throat

Strep throat is an infection caused by the Streptococcus pyogenes (strep) bacteria. The infection is more common in children than in adults.

Children with strep throat often have a fever and complain of sore throat, headache and stomach-ache. They may also have swollen, tender glands in the neck, or sores around the nose. Scarlet fever, a rare form of strep infection, is characterized by a sore throat, more general symptoms, such as fatigue, and a red rash on the body that feels like sandpaper. Some children can get very serious complications, such as rheumatic fever, if the infection is not treated completely with antibiotics.

The strep bacteria are found in an infected person's saliva. The infection spreads through the air when the infected person talks, coughs or sneezes. The spread of infection can be stopped by treating the infected person with an antibiotic.

It is difficult to diagnose strep throat just by looking at the throat. The physician has to take a culture (or swab) of the throat to see if strep bacteria are present. If strep throat is diagnosed, the physician will prescribe an antibiotic, usually penicillin. This medication comes in the form of a pill, a liquid or an injection. If treatment is begun soon after the infection has started, the child will feel better very soon. This treatment may also prevent the serious complications that can result from strep throat.

**THINGS PARENTS CAN DO:**

- Watch you child for signs of strep throat if another child has it.

- If you suspect your child has strep throat, contact your physician. If your child has strep throat, your physician will start antibiotic treatment as soon as possible. Be sure you give your child all the antibiotic; otherwise the infection may not be completely cured.

- Remember, hand washing is important to prevent spread of the infection, especially after wiping the child's nose and before eating or preparing food. Teach your child to cover his or her mouth when sneezing or coughing.

- If your child has strep throat, he or she should not return to the child care facility until antibiotic treatment has been taken for at least one full day.

**This information has been prepared and approved by the Canadian Paediatric Society, 1992**

**Typhoid Fever (Salmonella typhi.)** **Fact Sheet**

**What is it?**

- A disease caused by bacteria call *Salmonella typhi.*
- Typhoid fever is another name for this disease.

**How is it spread?**

- From person-to-person if the hands of an infected person are not washed properly after using the toilet.
- By drinking water or eating food contaminated with the bacteria.
- It can be found in the blood, urine and feces of infected people, not animals.

**What are the symptoms of illness?**

- Chills, fever, body aches, headache, malaise, anorexia, rose-coloured spots on the body, dry cough, constipation more than diarrhea.

**How long before the illness starts?**

- Usually 8 to 14 days after swallowing the bacteria, but can take 3 days to 1 month for the illness to start.

**How long does the illness last?**

- Approximately 2 to 3 weeks with treatment and 4 weeks without treatment.
- 3% of the people infected with typhoid fever still have the bacteria in their feces for more than 1 year after symptoms have gone away. These people are called chronic carrier and are able to pass the disease in their feces to other people.

**PREVENTION:**

**How can you prevent Salmonella typhi?**

- Thorough hand washing:
    - before preparing any food
    - after using the toilet
    - after diapering or helping a child use the toilet
    - after helping someone who has diarrhea
    - after handling pets
    - after touching raw foods

- Avoid preparing food for anyone else if you have diarrhea. If you must prepare food, wash your hands very well before touching the food.
- Thoroughly cook all meat, poultry, fish and egg dishes.
- Drink safe water that is treated and/or tested. Surface water from lakes, streams and rivers should never be considered safe to drink.

- When camping or traveling if you suspect that a water supply is contaminated, boil the water for 5 minutes or use iodine tablets.
- Protect water supplies against contamination with human and animal feces.
- When traveling outside of North America avoid untreated water, ice and washed raw foods (unless it is fruit that can be peeled).
- Avoid swimming in contaminated waters.
- Control pests such as flies, cockroaches, mice or rats.
- Avoid anal/oral sexual contact, most bacteria/parasites can be transmitted sexually in this manner because they are found in the feces of infected people.
- Use separate towels for each person in your house.
- All typhoid cases must be cleared of the infection with 3 negative stool samples, collected at least 24 hours apart. The first specimen should be taken 24 hours after symptoms have stopped or 48 hours after the completion of antibiotics and no earlier than one month from the onset of symptoms.
- Public Health will consult with you and your doctor regarding specimen collection and screening.
- Individuals working in high-risk occupations (with children, the elderly or food handlers) or attending a day care, should not return to work until they are cleared of the infection.

**For further information please contact Toronto Public Health at 416.395.7666**

## Vancomycin Resistant Enterococci (VRE)

**What are Vancomycin Resistant Enterococci (VRE)?**
Enterococci are bacteria that normally live in the human bowel and the female genital tract without causing infection. Studies have shown that almost all people carry E. faecalis in their intestines and approximately 25% of people will carry E. faecium. Only persons in acute care hospitals with serious illnesses or compromised immune systems are likely to get enterococcal infections. The most common enterococcal infection is in the urinary tract. Seriously ill patients may develop bloodstream infections or intra-abdominal abscesses. VRE is a strain of Enterococcus that is resistant to most antibiotics including vancomycin therefore it is difficult to treat an infection

**Why is VRE important?**
An effective antimicrobial treatment may not exist for resident who develop an infection caused by VRE. VRE is capable of surviving on inanimate objects for a prolonged period of time therefore environmental spread of this bacteria is a concern in the long term care facility where many residents are cognitively impaired. Once VRE strains have become established in a facility, prevention and control of spread can be difficult.

**What causes antibiotic resistance in VRE?**
The bacteria has a gene that allows it to produce a unique protein that stops the antibiotic from attaching to the bacteria and destroying it.

**Which Residents are most likely to get VRE?**
Residents with open wounds, invasive devices such as gastrotomy tubes or indwelling catheters, recent multi-antimicrobial therapy and/or vancomycin therapy, severe debilitation, and other medical complications are most likely to get VRE.

**How is VRE transmitted or spread?**
VRE is spread on the hands of individuals who have been in direct contact with a colonized/infected resident or their environment as well as indirect contact with fomites (inanimate objects). Enterococci grow well on hands and can survive for weeks to months on various inanimate objects such as bed rails, call bells, thermometers, blood pressure cuffs, etc. one study showed that vancomycin resistant E. faecium on hands survived for up to 30 minutes (Wade et al, 1991).

Airborne transmission has not been found to be significant in the spread of VRE.

**What is a reservoir of VRE?**
The major reservoir of VRE is colonized and infected residents (colonized individuals do not have an infection but have the bacteria present in their intestines and in their stool).

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In long term care facilities residents are more likely to carry VRE than become infected with VRE. Colonized staff serve as a second possible reservoir mainly through improper hand washing. Staff carriers of VRE are uncommon since the bacteria cannot establish itself in the presence of normal flora in a healthy bowel. Contaminated environmental surfaces are also a significant reservoir of VRE.

**What can be done to prevent the transmission of VRE?**
The transmission of VRE can be prevented by the use of precautions for multi-drug resistant organisms.

- Resident to be in a single or private room.
- **HAND WASHING!!!** Hands must be washed after every contact with the VRE resident or their environment using **antibacterial soap**.
- Provide gloves for **direct** care of VRE positive residents.
- Provide gowns for personal care. Discard after each use. (Masks are not required since VRE is not transmitted through the air).
- Dedicate equipment and washroom facilities to the VRE resident. **Extensive** cleaning is required to prevent indirect spread of VRE.

(Consult with the Infection Control practitioner for the appropriate cleaning measures).

**Strict room isolation of the VRE resident is not required unless the risk of transmission is very high through poor personal hygiene, incontinence, or colonization of a wound that is draining and can't be covered properly.**

**Adapted from the Ontario Nursing Home Association's VRE Guidelines, Dec. 1996.**
**Toronto Public Health Department, North York District**

**What is viral meningitis?**
Viral meningitis is an illness which can be caused by several different viruses. Meningitis is the inflammation of the lining of the brain and spinal cord. While many people are exposed to the viruses that cause viral meningitis almost every day, it is extremely rare for a person to get the illness.

**What are the symptoms?**
The patient has a sudden onset of fever together with one or more of the following: headache, vomiting, stiffness of the neck or unusual drowsiness. Occasionally there is also a rash, diarrhea or sore throat.

**Is viral meningitis a serious illness?**
Viral meningitis is not common in the summer and almost everyone recovers completely within a few days. Viral meningitis should not be confused with meningococcal meningitis, a much more serious disease which is caused by bacteria and is not spread in the same way.

**How can I prevent getting viral meningitis?**
The best way to avoid getting viral meningitis is to wash your hands, especially when handling food, and to cover your nose and mouth when coughing or sneezing. It is not a good idea to share a drink from the same glass with other people.

**What should I do if I have been in contact with a case?**
Adults and children who have been in contact with a case should be particularly careful about good personal hygiene. If you develop a fever with vomiting, drowsiness or stiff neck, you should consult a physician. Because early symptoms may resemble more serious kinds of meningitis, the doctor may order special tests to be sure of the diagnosis.

Unlike meningococcal meningitis, there is no medicine or treatment to take if you have been in contact with viral meningitis.

**For more information about viral meningitis, consult your family physician or call Toronto Public Health, North York Office at 416.395.7666.**

## Yersiniosis (Yersinia spp)

**What is it?**

- A disease caused by a bacteria called Yersinia
- It is spread:
    1) from person-to-person if the hands of an infected person are not washed properly after using the toilet.

    2) by drinking water or eating food contaminated with the bacteria.

- It is found in the feces of infected people (mostly children and infants) and animals (especially pets)
- Occurs mostly in the winter months

**Signs and symptoms of illness**

- Watery diarrhea, fever, headache, sore throat, cramps

**How long before illness starts?**

- Three to seven days, but could be up to ten days after bacteria are swallowed

**How long does illness last?**

- One to three weeks. Untreated people can have the bacteria in their feces for two to three months.

**PREVENTION:**

To prevent disease you must:

- **WASH HANDS** before preparing food
  after using the toilet
  after diapering
  after helping children who have used the toilet
  after helping someone who has diarrhea
  after handling pets
  after touching raw foods
- Try not to prepare food for anyone else if you have diarrhea. If you must prepared food, wash your hands very well before you touch the food.
- Drank safe water (treated and/or tested).
- Cook all meat, poultry (chicken, turkey), and fish well.
- Keep meat, poultry, fish, dairy products, and eggs COLD (5°C or colder) or HOT (60°C or hotter).
- Always put cooked food on a clean plate. Don't reuse the one used for raw food.

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## Yersiniosis (Yersinia spp)

- After cutting raw foods, wash counters, cutting boards, and utensils with hot soapy water; rinse with a mixture of one part bleach and ten parts water, then let them air dry.
- Defrost foods safely under cold water or on a plate in the fridge or in a microwave oven. Do not thaw on the counter.
- Drink only pasteurized milk.
- Avoid using raw eggs in foods that are not cooked (e.g., fresh egg nog, ice cream, Caesar salad).
- Buy foods from places inspected by Public Health. Avoid unknown food trucks, stands or stalls.
- When traveling outside North America drink boiled or treated water only, preferably filtered as well; avoid ice and washed raw foods. Don't swim in contaminated waters.
- Control pests (flies, cockroaches, mice, rats).
- If you have been sick with one of the listed illnesses, once symptoms disappear submit fecal samples to your doctor to make sure the bacteria/parasite is gone.
- Avoid anal/oral sexual contact. These bacteria/parasites can be transmitted sexually in this manner.
- Use separate towels for each person in your house.

**For more information call 416.396.7431**

## Household Bleach Based Sanitizer

1:100 solution
Mix 50ml bleach in 4L water

OR

Mix ¼ cup bleach in 1 gallon water
(for a smaller quantity mix 5ml (1 tsp.) in 500ml (2 cups) of water)

This standard solution can be mixed daily and used for disinfecting items and surfaces such as diapering areas and toys.

---

1:10 solution

One part bleach in nine parts water

This strong bleach/water solution should be used to decontaminate areas following contact with body substances. Such situations include:

- All blood spills or blood contaminated items.
- Large amounts of vomit or feces. It is not intended to remove traces of urine or feces from a change table or small amounts of spit up.
- Regular disinfecting of surfaces if the location is experiencing an outbreak of infectious disease.

## Universal Blood & Body Fluid Precautions

***Universal Precautions*** refer to practices that must be applied to the exposure, handling, and clean up of blood and other body fluids such as semen, vaginal secretions and/or pathological specimens that may contain visible blood.

Other body products such as feces, urine, nasal secretions, sputum, sweat, tears, breast milk, and vomitus need not be handled in this fashion unless they contain visible blood.

Universal Precautions are intended to minimize the risk and prevent the transmission of bloodborne disease (Hepatitis B, HIV & Aids).

Articles such as disposable gloves and gowns are considered barriers. When used appropriately barriers reduce the risk of transmission of bloodborne diseases.

Proper use of barriers requires the user to ***wash hands thoroughly with soap and water*** prior to putting on the barriers and after removing them.

**Barriers are not a substitute for handwashing.**

**SPILLS** of potentially infective material should be handled in the following manner:

- Wash hands and put on protective barriers (gloves and/or gowns);
- Wipe up or absorb the spill (minimize direct contact with the spill);
- Wash down the contaminated area with soap and water;
- Disinfect the area with a 1 in 10 bleach solution (solution on following page) allowing it to soak the area for 20 minutes;
- Dispose of any contaminated articles in a plastic bag, tie the bag and place it into a second plastic bag, tie it down and discard;
- **Wash hands** thoroughly after cleaning up a spill and/or after removing the protective barrier(s).

**Handwashing** is the easiest and most convenient means used to protect against the spread and acquisition of a majority of diseases.

**For additional information, call Toronto Public health, North York office at 416.395.7666**

# DESIGNATED OFFICER INFECTIOUS DISEASE PROGRAM

# ADMINISTRATION

*This section is to be utilized only by the D.O. and is provided on an FYI basis.

Captain Randy Gwyn, R.N.
Infection Control Practitioner
Program Developer, Firefighter Prehospital Care Program
rgwyn@socpc.ca or rgwyn@toronto.ca

## Procedures for Assessment and Management of Exposures to Blood/Bodily Fluids

Firefighters accidentally exposed to blood or bodily fluids should report the incident immediately so that they can be assessed by a D.O. and seen at an Emergency Department as soon as possible. If Post Exposure Prophylaxis (PEP) is indicated, there are definitive time frames, clearly stated by the Ministry of Health, that must be met (i.e. HIV PEP within 1-2 hours of exposure, preferably under one hour). Delays in presenting to a D.O. and/or E.R. should be avoided.

The D.O. and/or Health care provider (E.R. staff) should complete a risk assessment of the exposure soon after the exposure incident.

## Assessment of the Infectivity of the Source

Assume exposure has occurred if:

Material to which exposure has occurred is a potentially infectious bodily fluid capable of transmitting HIV/Hep B or Hep C.

Infectious bodily fluids:

1) Blood
2) Any bodily fluid visibly contaminated with blood
3) Semen
4) CSF, amniotic, pleural, pericardial peritoneal, synovial fluids, and inflammatory exudates
5) Tissue or organs
6) Breast milk
7) Vaginal secretions

Exclude non-bloody stool, urine, tears, nasal secretions, vomitus and saliva for HIV assessment only.

**AND**

Source is known to be HIV positive or Hep B or Hep C positive or at a high risk for Hep B/C infections.

**High Risk**

1) Injection drug users
2) Men who have sex with men
3) Persons who have had multiple transfusions of blood or blood products i.e. hemophiliacs prior to Nov/89 HIV, 1990 Hep C.
4) Sexual partners of any of the above and persons known to be HIV + or Hep B + or Hep C +.

## Procedures for Assessment and Management of Exposures to Blood/Bodily Fluids

### Assessment of the Infectivity of the Source Continued

If the source person is in a high-risk group consider them positive until the results of testing are available. If they are not in a high-risk group consider them negative until the results of testing are available.

If a source with a previous negative HIV / Hep B / Hep C test has continued to engage in high-risk behaviour in the 12 weeks before the test, or any time since the most recent test, they should be considered a high risk and further evaluation is necessary.

### Unknown Source

The risk of infection from unknown sources i.e. discarded needles, appears to be low and we are not aware of a transmission of HIV having been documented in this setting in Canada. Hep B and Hep C viruses have proven to remain stable for some time in ideal circumstances (i.e. Hep B in dried blood stable for 7 days at 25°C.) When the source is unknown, each individual exposure should be carefully evaluated for the risk of HIV, Hep B/Hep C infection, considering the vehicle (i.e. large bore needle) in that community and in that particular setting. If the risk appears to be high proceed as one would for a high-risk source.

### Source Who Refuses Testing

If the source refuses testing, carefully consider the reasons for refusal. If there is no reason to suspect that the source is in a high-risk group and that the refusal is based on other factors than fear of disclosure, then consider this a low risk source. It is no longer appropriate to consider all persons who refuse testing as positive.

### PEP Administration

Once the D.O has completed the risk assessment with the Firefighter, duties may include the implementation of HIV PEP by providing the Firefighter with the informed consent and medications as prescribed by Dr. Forman. Administration of HIV post exposure prophylaxis will only take place under direct orders from Dr. Forman. Otherwise, all PEP medications for any and all exposures will be the responsibility of the attending physician in the ER. At this time, HIV PEP is the only treatment being considered outside the hospital environment due to the very tight time constraints (1-2 hours preferably under one hour) as recommended by the Ministry of Health.

cont'd

## Procedures for Assessment and Management of Exposures to Blood/Bodily Fluids

### PEP Administration Continued

If PEP is initiated outside of the hospital environment, the Firefighter should still be taken to the same ER as the patient. Confirm this through TEMS dispatch if necessary. This will allow for baseline blood tests to be done and any other treatment that may be required (i.e. HBIG). Here the D.O will act as a liaison with ER staff, providing applicable information about the exposure, and ensuring the Firefighter is treated appropriately, in a timely manner. Having the Firefighter attend the same ER as the source patient may help in obtaining the source patient's consent to have their blood screened for bloodborne diseases.

If possible, meet with the hospitals infection control practitioner, designate, or E.D. Physician and inquire/suggest the possibility that our Firefighter be treated under their own in-house policy for Occupational exposures. Share the information received during your risk assessment to ensure proper treatment.

If the patient and/or guardian agree to be tested inquire about having the P-24 antigen test added. This HIV test is not part of the normal HIV screening tests. The P-24 antigen test reduces and/or eliminates the patient from being in the "window period" of infection where the normal HIV screening tests may show a negative result.

NOTE: Confirm with the emergency department physician that they have identified the source patient's blood work as an "occupational exposure". This ensures a quick turn around time allowing our Firefighter to discontinue HIV PEP therapy as soon as possible if applicable.

If the source patient has volunteered to have their blood screened for disease, it should be confirmed that the source patient's blood is screened for all of the following:

1) HIV
2) Hep B
3) Hep C

and that both the source patient's and Firefighters blood samples are tagged/labeled as an occupational exposure. This should facilitate a quick turnaround time on the results of those samples (24-72 hours).

Failure to identify the samples as an occupational exposure will result in the samples being tested in the general pool of samples resulting in extended wait times (weeks).

## MANAGEMENT OF OCCUPATIONAL EXPOSURE TO BLOODBORNE PATHOGENS

### Table 1

**Recommendations for Post-Exposure Prophylaxis according to type of exposure and source material** (as per CDC recommendations for chemoprophylaxis after occupational exposure to HIV)

| ***Type of Exposure*** | ***Source Material*** | ***Antiretroviral Prophylaxis*** | ***Antiretroviral Regimen**** |
|---|---|---|---|
| Percutaneous | Blood | | |
| | a) Highest Risk υ | Recommended | ZDV + 3TC + IDV |
| | b) Increased Risk + | Recommended | ZDV + 3TC ± IDV** |
| | c) No increased Risk | Offer | ZDV + 3TC |
| | Fluid containing visible blood, other potentially infectious fluid #, or tissue | Offer | ZDV + 3TC |
| | Other body fluid (e.g. urine) | Not offer | |

- ZDV = Zidovudine

3TC = Iamivudine
IDV = Indinavir

υ **Highest Risk – Both** larger volume of blood (e.g. deep injury with LARGE diameter hollow needle previously in source patient's vein or artery, especially involving an injection of source-patient's blood) **AND** blood containing a high titer of HIV (e.g. source patient with acute retroviral illness or end-stage AIDS – e.g. multiple opportunistic infections, CD4<50 cells/$mm^3$, duration of HIV infection > 10 years.)

**+** **Increased Risk – EITHER** exposure to larger volume of blood **OR** blood with titer of HIV. **No Increased Risk – NEITHER** exposure to larger volume of blood **NOR** blood with a high titer of HIV (e.g. solid suture needle injury from source patient with asymptomatic HIV infection.)

****** May consider adding additional antiretroviral agent if ZDV – resistant and/or 3TC – resistant strains likely (e.g. source patient exposed to agent for prolonged period of time (e.g. 6-12 months or longer.) In general, resistance develops more readily in persons with more advanced HIV infection (CD4<200 cells/$mm^3$.)

# Includes semen, vaginal secretions, cerebrospinal, synovial, pleural, peritoneal, pericardial, and amniotic fluids, breast milk, intravenous fluids (potentially contaminated with blood.)

cont'd

## MANAGEMENT OF OCCUPATIONAL EXPOSURE TO BLOODBORNE PATHOGENS

**Recommendations for Post-Exposure Prophylaxis according to type of exposure and source material** continued

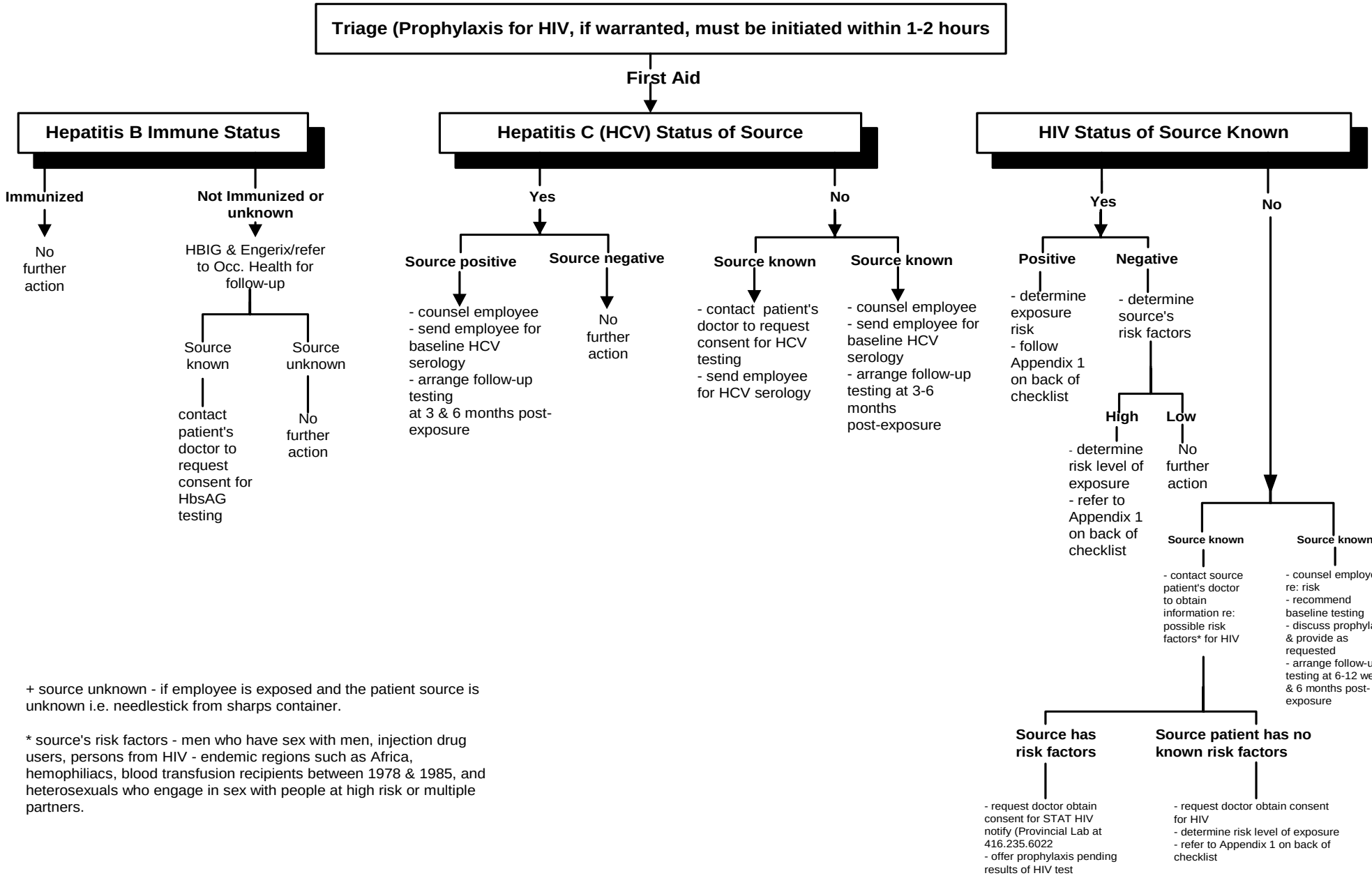
| ***Type of Exposure*** | ***Source Material*** | ***Antiretroviral Prophylaxis*** | ***Antiretroviral Regimen**** |
|---|---|---|---|
| Mucous Membrane | Blood | Offer | ZDV + 3TC + IDV** |
| | Fluid containing visible blood, other potentially infectious fluid #, or tissue | Offer | ZDV + 3TC** |
| | Other body fluid (e.g., urine) | Not offer | |
| Skin, Increased Risk ⁂ | Blood | Offer | ZDV + 3TC + IDV |
| | Fluid containing visible blood, other potentially infectious fluid #, or tissue | Offer | ZDV + 3TC** |
| | Other body fluid (e.g. urine) | Not offer | |

****** May consider adding additional antiretroviral agent if ZDV - resistant and/or 3TC - resistant strains likely (e.g., source patient exposed to agent for prolonged period of time (e.g., 6-12 months or longer.) In general, resistance develops more readily in persons with more advanced HIV infection (CD4<200 cells/$mm^3$.)

⁂ For skin, risk is increased for exposures involving a high titer of HIV, prolonged contact, an extensive area, or an area in which skin integrity is visibly compromised. For skin exposures without increased risk, the risk for drug toxicity outweighs the benefits of PEP.

**#** Includes semen, vaginal secretions, cerebrospinal, synovial, pleural, peritoneal, pericardial, and amniotic fluids, breast milk, intravenous fluids (potentially contaminated with blood.)

# GUIDELINES FOR MANAGEMENT OF CLIENT WITH EXPOSURE TO BLOODBORNE PATHOGENS




+ source unknown - if employee is exposed and the patient source is unknown i.e. needlestick from sharps container.

* source's risk factors - men who have sex with men, injection drug users, persons from HIV - endemic regions such as Africa, hemophiliacs, blood transfusion recipients between 1978 & 1985, and heterosexuals who engage in sex with people at high risk or multiple partners.

## Appendix 1

## Prophylaxis after exposure to Human Immunodeficiency Virus

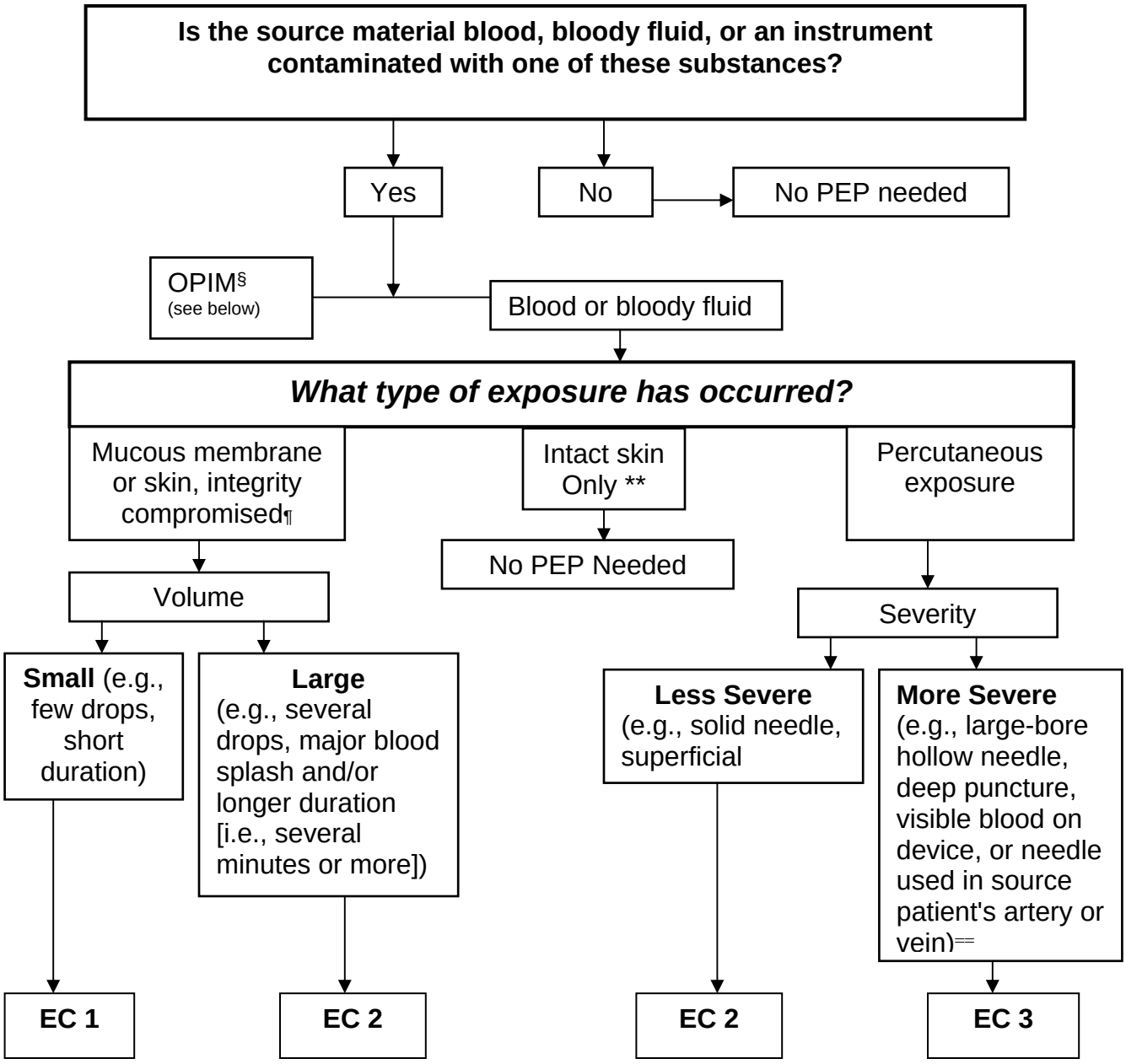
| Attributes of the exposure | Attributes of the source patient | | Antiretroviral regimen | |
|---|---|---|---|---|
| | Asymptomatic, known low titer, high risk but unknown HIV status | AIDS, symptomatic infection | Preterminal AIDS, acute infection, known high titer | |
| **Percutaneous Injuries** | | | | |
| • Superficially injury | Offer | Recommended | Strongly encourage | ZDV +3TC |
| • Visibly bloody device used in artery or vein | Recommend | Recommended | Strongly encourage | ZDV +3TC +/-IDV |
| • Deep intramuscular injury or actual injection | Strongly encourage | Strongly encourage | Strongly encourage | ZDV +3TC + IDV |
| **Mucosal Contacts** | | | | |
| • Small volume and brief contact | Offer | Offer | Offer | ZDV +3TC |
| • Large volume or prolonged contact | Recommended | Recommended | Recommended | ZDV +3TC +/-IDV |
| • Large volume and prolonged contact | Recommended | Recommended | Strongly encourage | ZDV +3TC + IDV |
| **Cutaneous Contacts** | | | | |
| • Small volume and brief contact | Offer only if obvious Portal of entry | Offer only if obvious portal of entry | Offer only if obvious portal of entry | ZDV +3TC |
| • Large volume or prolonged contact | Offer (recommended if obvious portal of entry) | Offer (recommended if obvious portal of entry) | Offer (recommended if obvious portal of entry) | ZDV +3TC +/-IDV |
| • Large volume and prolonged contact | Offer (recommended if obvious portal of entry) | Offer (recommended if obvious portal of entry) | Recommended (especially with portal of entry) | ZDV +3TC +/-IDV |

**Fluid containing visible blood, other potentially infectious fluid (semen, vaginal secretions, CSF, synovial, pleural, peritoneal, pericardial, amniotic fluid and inflammatory exudates) - Offer**

**Other body fluids - urine, sputum, stool, tears, saliva and vomitus - Don't offer**
**ZDV = zidovudine 200 mg tld**
**3TC = lamivudine 150 mg bld**
**IDV = Indinavir 800 mg q8h**

Printed from Gerberding JL Ann Intern Med 1996; 125:497-501
MMWR 1996:45:468-472

**STEP 1: Determine the Exposure Code (EC)**




\+ This algorithm is intended to guide initial decisions about PEP and should be used in conjunction with other guidance provided in this report.

§ Exposure to OPIM must be evaluated on a case-by-case basis. In general, these body substances are considered a low risk for transmission in health-care settings. Any unprotected contact to concentrated HIV in a research laboratory or production facility is considered an occupational exposure that requires clinical evaluation to determine the need for PEP.

¶ Skin Integrity is considered compromised if there is evidence of chapped skin, dermatitis, abrasion, or open wound.

** Contact with intact skin is not normally considered a risk for HIV transmission. However, if the exposure was to blood, and the circumstances suggests a higher volume exposure (e.g. an extensive area of skin was exposed or there was prolonged contact with blood), the risk for HIV transmission should be considered.

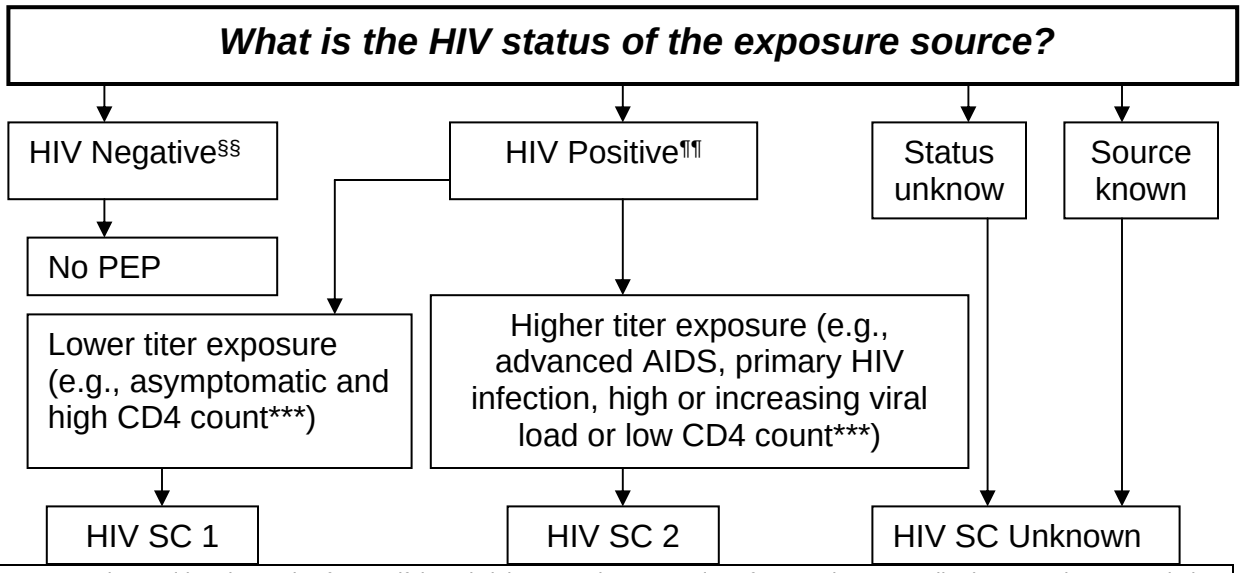
== The combination of these severity factors (e.g. large-bore hollow needle and deep puncture) contribute to an elevated risk for transmission if the source person is HIV-positive.

Figure 1. Determining the need for HIV postexposure prophylaxis (PEP) after an occupational exposure.*

* From Centres for Disease Control and Prevention. Public Health Service Guidelines for the Management of Health-Care Worker Exposures to HIV and Recommendations for Postexposure prophylaxis. Morb Mortal Wkly Re.1998;47 (RR-7):14-15.

OPIM§ - other potentially infectious material ie. amniotic fluid, CSF, semen etc.

## STEP 2: Determine the HIV Status Code (HIV SC)




§§ A source is considered negative for HIV if there is laboratory documentation of a negative HIV antibody, HIV polymerase chain reaction (PCR), or HIV p24 antigen test result from a specimen collected at or near the time of exposure and there is no clinical evidence of recent retroviral-like illness.

¶¶ A source is considered infected with HIV (HIV positive) if there has been a positive laboratory result for HIV antibody, HIV PCR, or HIV p24 antigen or physician-diagnosed AIDS.

*** Examples are used as surrogates to estimate the HIV titer in an exposure source for purpose of considering PEP regimes and do not reflect all clinical situations that may be observed. Although a high HIV titer (HIV SC 2) in as exposure source has been associated with an increased risk for transmission, the possibility of transmission from a source with a low HIV titer also must be considered.

## STEP 3: Determine the PEP Recommendation

| EC | HIV SC | PEP Recommendation |
|---|---|---|
| 1 | 1 | **PEP may not be warranted.** Exposure type does not pose a known risk for HIV transmission. Whether the risk for drug toxicity outweighs the benefit of PEP should be decided by the exposed FIREFIGHTER and treating clinician. |
| 1 | 2 | **Consider basic regimen.**[===] Exposure type poses a negligible risk for HIV transmission. A high HIV titer in the source may justify consideration of PEP. Whether the risk for drug toxicity outweighs the benefit of PEP should be decided by the exposed HWC and treating clinician. |
| 2 | 1 | **Recommended basic regimen.** Most HIV exposures are in this category; no increased risk for HIV transmission has been observed but use of PEP is appropriate. |
| 2 | 2 | **Recommended expanded regimen.** [§§§] Exposure type represents n increase HIV transmission risk. |
| 3 | 1 or 2 | **Recommended expanded regimen.** Exposure type represents an increased HIV transmission risk. |
| Unknown | | If the source or, in the case of an unknown source, the setting where the exposure occurred suggests a possible risk for HIV exposure and the EC is 2 or 3, considered PEP basic regimen. |

[===] Basic regimen is four weeks or zidovudine, 600 mg per day in two or three divided doses, and lamivudine. 150 mg twice daily.

§§§ Expanded regimen is the basic regimen plus either **Indinavir, 800 mg every 8 hours, or** Nelfinavir, 750 mg.

## POST INCIDENT PATIENT REPORT

DATE:

TO:

FROM: Dr. _____, TFS Chief Medical Officer

SUBJECT: **HIV POST-EXPOSURE PROPHYLAXIS**

---

Please be advised that your patient _____ has been assessed for a possible occupational exposure to HIV.

Post-exposure prophylaxis has been initiated on ____/____/____. A ___ day supply of medication has been provided. Your patient has been given a prescription for an additional _____ days supply. Instructions have been given to contact you for follow up assessment and treatment.

Baseline HIV screen, complete blood count, and renal and hepatic function tests have been performed. Hep B and Hep C screening may have been initiated due to the nature of exposure.

Recommended follow up assessment and treatment include:

- HIV antibody tests at 6 weeks, 12 weeks, and 6 months.
- Complete blood count, ALT, AST, ALK phosphates, bilirubin, (total and direct), and creatinine at 2 weeks after start of treatment.
- Follow up screening for Hep B & Hep C exposure if warranted

If subjective or objective toxicity is noted, dose reduction or drug substitution should be considered with expert consultation and further diagnostic tests maybe indicated.

If you require any further assistance regarding this incident, you can contact Dr. Forman at 416.338.9310. For general HIV consultation please call the Sunnybrook Medical Centre HIV Clinic, at 416-480-6044.

Yours truly,

Dr. _____
TFS Chief Medical Officer

**Lamivudine and Zidovudine**
(la mi' vyoo deen) (zye doe' vyoo deen)

**BRAND NAME: Combivir**

**OTHER NAMES: 3TC and ZDV, 3TC and AZT**

**IMPORTANT WARNING:**
Zidovudine can cause severe side effects, such as liver damage, blood toxicities, and muscle disorders. If you experience any of the following symptoms, call your doctor immediately: unusual breathing, shortness of breath, unusual bruising or bleeding, unusual tiredness or weakness, pale skin, fever, chills, sore throat, fatigue, loss of appetite, upset stomach, vomiting, dark urine, yellowing of the skin, pale stools, muscle weakness, lack of strength, or muscle pain. The effect of lamivudine and zidovudine on the progression of HIV infection, including the effect on incidence of opportunistic infections or on overall survival, remains to be established. Keep all appointments with your doctor and the laboratory. Your doctor will order certain lab tests to check your response to lamivudine and zidovudine.

**WHY is this medicine prescribed?**
This medication (a combination of two antiviral medications, lamivudine and zidovudine) is used to treat human immunodeficiency virus (HIV) infection in patients with acquired immunodeficiency syndrome (AIDS). This medication slows the spread of HIV infection in the body, but it is not a cure and may not decrease the number of HIV-related illnesses. It does not prevent the spread of HIV to other people.

This medication is sometimes prescribed for other uses; ask your doctor or pharmacist for more information.

**HOW should this medicine be used?**
Lamivudine and zidovudine come as a tablet to take by mouth. It usually is taken twice a day with or without food. Follow the directions on your prescription label carefully, and ask your doctor or pharmacist to explain any part you do not understand. Take lamivudine and zidovudine exactly as directed. Do not take more or less of it or take it more often that prescribed by your doctor.

Continue to take lamivudine and zidovudine even if you feel well. Do not stop taking lamivudine and zidovudine without talking to your doctor.

**What SPECIAL PRECAUTIONS should I follow?**
Before taking lamivudine and zidovudine,

- Tell your doctor and pharmacist if you are allergic to lamivudine, zidovudine, or any other drugs.
- Tell your doctor and pharmacist what prescription and nonprescription medications you are taking, especially acetaminophen, acyclovir (Zovirax), aspirin, atovaquone (Mepron), cidofovir (Vistide), cancer chemotherapy, cimetidine (Tagamet), dapsone, didanosine (ddl, Videx), fluconazole (Diflucan),

cont'd

**Lamivudine and Zidovudine** Continued
(la mi' vyoo deen) (zye doe' vyoo deen)

**BRAND NAME: Combivir**

**OTHER NAMES: 3TC and ZDV, 3TC and AZT**

foscarnet (Foscavir), ganciclovir (Cytovene), indomethacin (Indocin), interferon alfa (Roferon-A, Intron A, Alferon N, Infergen), interferon beta-1b (Betaseron), lorasepam (Ativan), methadone, oxazepam (Serax), phenytoin (Dilantin), probenecid (Benemid), rifampin (Rifadin, Rimactane), rifabutin (Mycobutin), stavudine (Zerit), trimethoprim-sulfamethoxazole (Bactrim, Septra, Cotrim), trimethoprim (Trimpex, Proloprim), valproic acid (Depakene, Depakote) zalcitabine (ddC, Hivid), zidovudine (Retrovir), and vitamins.

- Tell your doctor if you have or have ever had liver or kidney disease, pancreas disease (in children only), any disease or swelling of the muscles, anemia, a history of alcohol abuse, or bleeding or other blood problems.
- Tell your doctor if you are pregnant, plan to become pregnant, or are breast-feeding. If you become pregnant while taking lamivudine and zidovudine, call your doctor.
- If you are having surgery, including dental surgery, tell the doctor or dentist that you are taking lamivudine and zidovudine.

**What should I do IF I FORGET to take a dose?**
Take the missed dose as soon as you remember it. However, if it is almost time for the next dose, skip the missed dose and continue your regular dosing schedule. Do not take a double dose to make up for a missed one.

**What SIDE EFFECTS can this medicine cause?**
Side effects are common with lamivudine and zidovudine. Tell your doctor if any of these symptoms are severe or do not go away:

- Diarrhea or loose stools
- Headache
- Sleepiness
- Fatigue
- Stuffy nose
- Constipation
- Dizziness
- Difficulty sleeping
- Depression
- Cough

If you experience any of the following symptoms, or any of those listed in the IMPORTANT WARNING section, call your doctor immediately:

- Foul-smelling, fatty stools
- Stomach pain
- Swollen face, lips, or tongue
- Rash
- Seizures
- Numbness, tingling, or burning in the fingers or toes

cont'd

**Lamivudine and Zidovudine** Continued
(la mi' vyoo deen) (zye doe' vyoo deen)

**BRAND NAME: Combivir**

**OTHER NAMES: 3TC and ZDV, 3TC and AZT**

**What STORAGE CONDITIONS are needed for this medicine?**
Keep this medication in the container it came in, tightly closed, and out of reach of children. Store it at room temperature and away from excess heat and moisture (not in the bathroom). Throw away any medication that is outdated or no longer needed. Talk to your pharmacist about the proper disposal of your medication.

**What OTHER INFORMATION should I know?**
Do not let anyone else take your medication. Ask your pharmacist any questions you have about refilling your prescription.

Last Revised – 9/98.

# Nelfinavir

(nel fin' a veer)

**BRAND NAME: Viracept**

**IMPORTANT WARNING:**
The effect of nelfinavir on the clinical progression of HIV infection, including the effect on the incidence of opportunistic infections or on overall survival, remains to be established. Keep all appointments with your doctor and the laboratory. Your doctor will order certain lab tests to check your response to nelfinavir.

**WHY is this medicine prescribed?**
Nelfinavir is used in combination with other drugs, such as zidovudine (AZT), to treat immunodeficiency virus (HIV) infections in patients with or without acquired immunodeficiency syndrome (AIDS). Nelfinavir is one of a class of drugs called protease (pro'tee ace) inhibitors, which slow the spread of HIV infection in the body.

**HOW should this medicine be used?**
Nelfinavir comes as a tablet and a powder to take by mouth. It usually is taken three times a day with a meal or light snack. Follow the directions on your prescription label carefully, and ask your doctor or pharmacist to explain any part you do not understand. Take nelfinavir exactly as directed. Do not take more or less of it or take it more often than prescribed by your doctor.

Nelfinavir powder may be added to water, milk, formula, soy milk, or dietary supplements. Your prescription label tells you how many scoops of powder to add to the liquid. Drink the entire mixture to get the full dose.

**What SPECIAL PRECAUTIONS should I follow?**
Before taking nelfinavir,

- Tell your doctor and pharmacist if you are allergic to nelfinavir or any other drugs.
- Tell your doctor if you have or have ever had liver disease.
- Tell your doctor and pharmacist what prescription and nonprescription medications you are taking, especially astemizole (Hismanal), carbamazepine (Tegretol), cisapride (Propulsid), didanosine (Videx), indinavir (Crixivan), ketoconazole (Nizoral), midazolam (Versed), Phenobarbital, phenytoin (Dilantin), rifabutin (Mycobutin), refampin (Rifadin), ritonavir (Norvir), saquinavir (Invirase), terfenadine (Seldane), triazolam (Halcion), and vitamins.
- Tell your doctor if you are taking birth control pills. Nelfinavir can decrease the effectiveness of oral contraceptives. You should use another method of birth control while taking this medication.
- Tell your doctor if you are pregnant, plan to become pregnant, or are breast-feeding. If you become pregnant while taking nelfinavir, call your doctor.
- If you are having surgery, including dental surgery, tell the doctor or dentist that you are taking nelfinavir.

cont'd

## Nelfinavir Continued
(nel fin' a veer)

**BRAND NAME: Viracept**

**What should I do IF I FORGET to take a dose?**
Take the missed dose as soon as you remember it. However, if it is almost time for the next dose, skip the missed dose and continue your regular dosing schedule. Do not take a double dose to make up for a missed one.

**What SIDE EFFECTS can this medicine cause?**
Although side effects from nelfinavir are not common, they can occur. Most symptoms are mild and improve with time. Tell your doctor if any of these symptoms are severe or do not go away:

- Diarrhea
- Upset stomach
- Gas
- Stomach pain

If you experience either of the following symptoms, call your doctor immediately:

- Rash
- Weakness

Nelfanivir may increase the sugar level in your blood. If you experience any of the following symptoms, call your doctor immediately:

- Frequent urination
- Increased thirst
- Weakness
- Dizziness
- Headache

**What STORAGE CONDITIONS are needed for this medicine?**
Keep this medication in the container it came in, tightly closed, and out of reach of children. Store it at room temperature and away from excess heat and moisture (not in the bathroom). After nelfinavir powder has been added to liquid, the mixture may be kept at room temperature for up to 6 hours. Throw away any medication that is outdated or no longer needed. Talk to your pharmacist about the proper disposal of your medication.

**What OTHER INFORMATION should I know?**
Nelfinavir is not a cure and does not prevent the spread of HIV infection to other people, so use precautions to avoid the spread of this infection.

Do not let anyone else take your medication. Ask your pharmacist any questions you have about refilling your prescription.

Last Revised – 6/98

## INFORMED CONSENT TO PEP THERAPY

During the fulfillment of your duties as a Firefighter with the Toronto Fire Services, you have had a confirmed or suspected exposure to a bloodborne communicable disease. You have reported your exposure and the D.O. feels that the level of risk to you at this time warrants that you be offered or recommended to take HIV Post Exposure Chemoprophylaxis.

Please read in full the following and ask any questions you may have. The D.O. will be available to help you understand the risk vs. benefit of taking these medications. Once you have read the provided information on the following medication and understand the information, sign the Informed Consent and take the medication as directed.

### The risk of HIV Infection after exposure

Based on the type of exposure and the estimated probability that the source person is HIV positive; the risk of HIV seroconversion can be roughly estimated in some circumstances.

The average risk of HIV transmission after accidental percutaneous exposure to infected blood or body fluids is estimated @ 0.3%. This figure was derived from a metanalysis of 21 prospective studies examining the risk of HIV transmission following accidental percutaneous exposures in occupational settings. Accidental mucosal exposures risk were estimated to be .09%.

The same metanalysis found the risk of transmission include:

- High viral load in the source. Source in seroconversion illness or late stages AIDS.
    - Visible blood on the device and/or device previously in a source patient's artery or vein.
    - Depth of wound.
    - Volume of Blood.
    - Gauge of needle in needlestick exposures (larger bore)
    - Larger volume = larger risk.

### Reasons for taking Antiretroviral Therapy

Some persons may be reluctant to take antiretroviral therapy after a seemingly minor event. They must understand that:

- If HIV transmission occurs, it will almost certainly lead to AIDS, which is fatal.
- Drug therapy taken soon after exposure may prevent infection.
- Recent evidence shows that antiretroviral therapy can reduce the risk of transmission by 86%.
- Two or more drugs may be used to provide increased protection and to overcome the risk of the source virus being resistant to one drug.
- Antiretroviral drugs taken for one month are considered highly unlikely to have long term side effects.
- If antiretrovirals are taken and HIV infection still occurs, the early use of antiretrovirals may favourably alter the course of the infection.

cont'd

**Reasons for NOT taking Antiretroviral Therapy**

- As with any medication, there are side effects and contraindications to be carefully considered before initiating drug therapy.
- As part of a risk vs. benefit analysis a full medical history should be disclosed.
- Carefully read the supplied drug information in this Informed Consent before signing consent and starting HIV PEP therapy.

I have read the above information and understood what has been read and explained by the Designated Officer.

After reviewing the risk vs. benefit, and both the medical and drug contraindications to me, I feel at this time, that the benefits of taking the PEP therapy outweigh the potential side effects from taking these medications.

| | |
|---|---|
| _____ | _____ |
| Firefighter's Signature | Witness / S.D.O. |

If the Firefighter is exposed to a bloodborne pathogen, the Firefighter should not donate blood, semen, organs or tissues for 6 months, and should not share razors or toothbrushes. The Firefighter should be followed medically.

**Post-exposure counseling recommendations for the Firefighter with a potential risk for bloodborne pathogens**

| Bloodborne Pathogens | COUNSELLING RECOMMENDATIONS |
|---|---|
| **HBV** | • No further precautions are necessary if the Firefighter is *immune* [+] to HBV.<br>• No clear guidance can be given on issues related to safer sex practices and notifying sexual partner(s) for Firefighters who are receiving HBIG and/or the HB vaccine series. |
| **HCV** | • The Firefighter exposed to HCV should advise their sexual partner(s) of the potential risk, although the risk of sexual transmission appears to be lower than that of HIV or HBV. The Firefighter should be provided with information on safer sex practices<br>• Current data indicate that transmission from mother to infant is rare. Specific recommendations for or against pregnancy and breast feeding cannot be made. |
| **HIV** | • The Firefighter should practice safer sex for a 6-month period and notify sexual partner(s) of the potential exposure to HIV.<br>• Pregnancy should be avoided for 6 months.<br>• Breast feeding should be stopped, unless an HIV antibody test in a known low risk source is expected to be available in the next few days. In this case, breast milk can be temporarily expressed or pumped and breast feeding resumed if the result is negative. |

| Post-exposure prophylaxis for the Firefighter, if the source is positive or status is unknown or is negative but has risk factors | |
|---|---|
| **Bloodborne Pathogens** | **PROPHYLAXIS FOR THE FIREFIGHTER** |
| **HBV** | • No further action is needed if the Firefighter is *immune* [±] to HBV (**This is presently under review by NACI**.)<br>• Give hepatitis B immune globulin (HBIG), preferably within 48 hours of exposure (efficacy decreases with time and is unknown after 7 days) if the Firefighter is *susceptible* [±] to HBV or has an *unknown* [±] status. In addition, start HB vaccine for Firefighters who are *susceptible* [±] to HBV and have not received HB vaccine. Provide a single dose of vaccine for Firefighters who have an *unknown* [±] status after HB vaccine [++] .<br>• Give one dose of HBIG, preferably within 48 hours and another in 1 month if the Firefighter is a known *non-responder* [±] to the HB immunization series.<br>Draw blood for testing before HBIG or immunization is given. |
| **HCV** | • Effective post-exposure prophylaxis is not available at this time. Immunoglobulin is not effective. |
| **HIV** | • Consider immediate post-exposure chemoprophylaxis |

[++] Note: Testing an exposed Firefighter (of "*unknown* [±] HBV status" at the time of exposure but who has received a complete series of HB vaccine or who has a history of unspecified clinical hepatitis) for HBV markers on an urgent basis may clarify the status of such a Firefighter regarding HBV and this may, in some cases, alter the post-exposure prophylaxis used. While not necessary in this protocol, individual agencies could consider such testing for these specific Firefighters if they are able to know the test results and provide applicable post-exposure prophylaxis within 48 hours of exposure. Otherwise, post-exposure prophylaxis will need to be based on information about the Firefighter's status available at the time of exposure.

For further information on communicable diseases or to locate an anonymous testing centre in your area the following is a list of Public Health Units across the province:

## PUBLIC HEALTH AGENCIES IN ONTARIO

| | | |
|---|---|---|
| Algoma Health Unit | 705 | 759-5287 |
| Brant County Health Unit | 519 | 753-7377 |
| Bruce-Grey Owen Sound Health Unit | 519 | 376-9420 |
| Chatham-Kent Health Unit | 519 | 3527270 |
| Durham Region Health Department | 905 | 723-8521 |
| Eastern Ontario Health Unit | 613 | 933-1375 |
| Elgin-St. Thomas Health Unit | 519 | 631-9900 |
| Haldimand-Norfolk Regional Health Unit | 519 | 426-6170 |
| Haliburton, Kawartha, Pine Ridge District Health Unit | 905 | 885-9100 |
| Halton Regional Health Department | 905 | 825-6060 |
| Hamilton-Wentworth Regional Dept. of Public Health Services | 905 | 546-3500 |
| Hastings and Prince Edward Counties Health Unit | 613 | 966-5500 |
| Huron County Health Unit | 519 | 482-3416 |
| Kingston, Frontenac and Lennox and Addington Health Unit | 613 | 549-1232 |
| Lambton Health Unit | 519 | 383-8331 |
| Leeds, Grenville and Lanark District Health Unit | 613 | 345-5686 |
| Middlesex – London Health Unit | 519 | 633-5317 |
| Muskoka-Parry Sound Health Unit | 705 | 645-4471 |
| Regional Niagara Public Health Department | 905 | 688-3762 |
| North Bay and District Health Unit | 705 | 474-1400 |
| Northwestern Health Unit | 807 | 468-3147 |
| Ottawa-Carleton Health Department (Region of) | 613 | 722-2328 |
| Oxford County Health Unit | 519 | 539-9800 |
| Regional Municipality of Peel Health Department | 905 | 799-7700 |
| Perth District Health Unit | 519 | 271-7600 |
| Peterborough County-City Health Unit | 705 | 743-1000 |
| Porcupine Health Unit | 705 | 267-1181 |
| Renfrew County and District Health Unit | 613 | 732-3629 |
| Simcoe County District Health Unit | 705 | 721-7330 |
| Sudbury and District Health Unit | 705 | 522-9200 |
| Thunder Bay District Health Unit | 807 | 625-5900 |
| Timiskaming Health Unit | 705 | 647-4305 |
| Toronto Public Health Department | 416 | 392-7401 |
| Waterloo Region Community Health Department | 519 | 883-2000 |
| Wellington-Duffering-Guelph Health Unit | 519 | 843-2460 |
| Windsor-Essex County Health Unit | 519 | 258-2146 |
| York Region Health Services Department | 905 | 895-4511 |

Ministry of Health and Long Term Care Public Health Branch 416-327-7392

## ANONYMOUS HIV TESTING SITES IN ONTARIO

| | | |
|---|---|---|
| Algoma Health Unit | 705 | 759-5287 |
| Anishnawbe Health Toronto | 416 | 920-2605 |
| Bay Centre for Birth Control | 416 | 351-3700 |
| Birth Control & STD Information Centre | 416 | 789-4541 |
| Centre medico-social communitaire | 416 | 922-2672 |
| Centretown Community Health Centre | 613 | 563-2437 |
| Toronto Public Health York Office | 416 | 394-2826 |
| Elgin-St. Thomas Health Unit | 519 | 631-9900 |
| Hassle Free Clinic | 416<br>416 | 922-0566 (Women)<br>922-0603 (Men) |
| Health Services for Street Youth | 416 | 927-8553 |
| Kingston, Frontenac & Lennox & Addington Health Unit | 1-800<br>613 | 267-7875<br>549-1232 |
| London Intercommunity Health Centre, Options Clinic | 519 | 673-4427 |
| Peel Regional Health Unit | 905<br>905<br>905 | 840-1406<br>270-0587<br>820-3663 |
| Peterborough County Health Unit | 705 | 748-2021 |
| Queen West Community Health Centre | 416 | 703-8482 ext.125 |
| Regional Municipality of Hamilton-Wentworth, Dept. of Public Health Services, ST.D. Clinic | 905 | 546-3541 |
| Regional Municipality of Waterloo Community Health Dept. | 519 | 883-2006 |
| Regional Niagara Health Services Department | 905<br>1-800 | 688-3762<br>263-7248 |
| Rexdale Community Health Centre | 416 | 744-0066 |
| Sandwich Community Health Centre | 519 | 254-6115 |
| Sandy Hill Community Health Centre | 613 | 563-2437 |
| Simcoe County District Health Unit | 705 | 721-7330 ext.363 |
| SITE Clinic | 613 | 563-2437 |
| Somerset West Community Health Centre | 613 | 563-2437 |
| STD Clinic | 613 | 563-2437 |
| Sudbury and District Health Unit | 1-800<br>705 | 363-8388<br>522-9200 |
| Thunder Bay and District Health Unit | 807 | 625-5981 |
| Wellington-Dufferin-Guelph Health Unit | 519 | 821-2370 |
| Windsor Regional Hospital, Metropolitan Campus, HIV Care Program | 519 | 254-6115 |
| Windsor-Essex County Health Unit | 519 | 258-2146 |
| AIDS-Sexual Health Info Line<br>Mon-Fri 9:00 a.m. – 11:30 p.m.<br>Sat-Sun 11:00 a.m. – 4:00 p.m. | 1-800<br>416 | 668-2437<br>392-2437 |
| YORK REGION<br>Has no anonymous testing facility, but confidential testing can be done by contacting the number listed. | 1-800 | 461-2135 |

**PEP INFORMATION FOR DESIGNATED OFFICER (D.O.) PACKAGE**

## HIV / AIDS Blood Bodily Fluid Exposure

**D.O. Package to include:**

1. Blood Bodily Fluid Exposure Risk Assessment Form
2. Aids Exposure Flow Chart to be used in conjunction with Risk Assessment Form
3. HIV Exposure / PEP Checklist
4. PEP Information – Drugs to be given and side effects
5. Information Consent to be signed by Firefighter
6. Public Health Information Pamphlets on HIV / Hep B / Hep C
7. D.O. Worksheet
8. List of Hospitals with numbers for Infection Control contact personnel
9. Toronto Public Health List of contact numbers, also include numbers at TEMS & Police
10. WSIB Forms to be filled out by Firefighter – Incident/Accident package
11. Toronto Fire Services Workers Report of Suspected Exposure Hazmat or Pathogen

## Occupational Exposure to HIV

## Checklist for HIV PEP Candidates

To be completed by D.O. following a blood/bodily fluid exposure. Risk Assessment Form indicates possible need for HIV PEP. Should be completed once Blood/Bodily Fluids Exposure Form has been completed and risk of a legitimate exposure has been demonstrated.

- ❒ Review with Firefighter the nature of exposure using the appropriate Risk Assessment Form.

- ❒ Review with Firefighter the evidence for PEP.

- ❒ Discuss the drugs to be used and ensure the Firefighter has reviewed side effects.

- ❒ Assist in understanding drugs, side effects etc., and help to formulate questions for hospital staff.

- ❒ Explain the importance of contraindications to the use of these drugs (pregnancy, liver, renal or hematological disease or concurrent medications) thus requiring a complete medical history be disclosed to the attending physician.

- ❒ Discuss the effects of alcohol use while taking these drugs.

- ❒ Explain the need to draw blood for baseline studies for pre-existing disease and repercussions for future claims if refused.
    - Also, patient's blood may not be tested if Firefighter refuses baseline tests (as per Bill 105 requirements)

- ❒ Explain the repercussions of a positive test result from these baseline studies.

- ❒ Initiate counseling regarding changes in life style/personal life to prevent secondary infection while being investigated.

- ❒ Discuss need for follow-up appointments and testing schedules to be done by physician of their choice and/or Toronto Fire Services Chief Medical Officer, Dr. Noah Forman.

- ❒ Educate Firefighter about possible results of source patient's blood tests and the possibility of a "window" exposure even if patient's tests are negative.

- ❒ Discuss possibility of risk to contracting other bloodborne diseases, in particular Hep B (if not immunized) and Hep C.

- ❒ Explain testing procedures and schedules for these diseases and PEP for Hep B if not immunized.
    - Currently there is no PEP available for Hep C.

- ❒ Discuss the Toronto Fire Services EAP Program and provide members names and numbers for future counseling if required.

- ❒ Document event, complete all pertinent paperwork and forward to Chief Medical Officer.

- ❒ Provided hospital/infectious disease nurse/personnel with contact numbers for future correspondence of Firefighter and patient test results.

- ❒ Obtain contact numbers for physician ordering blood tests.

- ❒ Discuss the option of enrolling in the National/Surveillance Program administered by the Bureau of HIV / Aids, STD and Tuberculosis Laboratory Centre for Disease Control, Health Canada at 613-957-1813.

- ❒ Provide list of anonymous testing centres if Firefighter chooses to be tested anonymously.

## Acquired Immune Deficiency Disease (AIDS)

Exposure to blood and/or body fluids

↓

Discuss with **Designated Officer**

↓

Assess Risk:

1. Identify body fluid(s) involved
2. 4 E's: **Exit** -- route of exit from body; **Environment** - warm, moist
   **Enough** - e.g.: if more than 1/4 cc blood; **Entry** - into worker's blood stream

| Some risk (high, medium, low) | No risk established |
|---|---|
| ↓ | |
| Consult with MOH re theoretical risk | **C**ounsel employee re HIV transmission |
| ↓ | **R**einforce positive behaviour |
| Counsel worker re agency policy | **R**eview infection control procedures |
| -- consider Zidovudine treatment | **R**eassure re no risk |
| ↓ | |
| Baseline HIV test (ASAP) --- Counsel re use of condoms in sexual relationships | |
| ↓ | ↓ |
| Negative | Positive |
| ↓ | ↓ |
| Retest in 14 weeks → | Positive |
| ↓ | ↓ |
| Negative | |
| ↓ | ↓ |
| Retest in 6 months → | Positive |
| ↓ | ↓ |
| Negative | |
| ↓ | ↓ |
| Retest in year → | Positive |
| ↓ | ↓ |
| Negative | |
| ↓ | ↓ |
| No infection | Treat for HIV infection |

## Post Exposure Risk Assessment

## Blood/Bodily Fluids Exposure Form

To be filled out by exposed Fire fighter and/or Designated Officer after D.O. has determined a legitimate exposure to blood and/or bodily fluids as listed below has occurred.

1. Blood and or fluids with visible blood.

2. Potentially infectious fluids as follows: semen, vaginal secretions, cerebrospinal fluid (CSF), synovial, pleural, peritoneal, pericardial, amniotic fluids and inflammatory exudate.

3. Other bodily fluids - urine, sputum, stool, tears, saliva, vomitus (not included unless visibly contaminated with blood for HIV exposure).

While assessing potential for HIV exposure the following patients will be considered to be a high-risk source of the virus. As follows:

- Men who have sex with men
- Injection drug users
- Persons from an HIV+ endemic region (i.e. Africa)
- Hemophiliacs
- Blood transfusion recipients between 1978 - 1985
- Heterosexual individuals who engage in sex with high risk or multiple partners

The purpose of the risk assessment form is to assist the physician with his/her assessment of the exposure risk. This will help determine the need for PEP (Post Exposure Prophylaxis) if available, immunization updates, any follow up treatment required and the necessary contacts with the Department of Public Health. In some exposure cases time is of the essence so the Worker's Report of Suspected Exposure and other WSIB documents may be filled out later but must be done at the earliest possible convenience.

***As always, all medical files are kept strictly confidential.***

**TO BE COMPLETED BY DESIGNATED OFFICER**

## DESIGNATED OFFICER REPORT FORM

### Toronto Fire Services – Exposure to Communicable Disease

### Blood/Body Fluid Exposure Risk Assessment Form

## A - General Information

| | |
|---|---|
| Name of Firefighter: | Phone #: |
| Command/Apparatus: / | Hall Phone #: |
| Platoon/Employee #: / | Incident #: |
| Designated Officer: | Phone #: |
| Date of Possible Exposure: **mm/dd/yyyy** | Time: |
| Date Incident Reported: **mm/dd/yyyy** | Time: |
| Name of Public Health Unit Contact: | Phone #: |
| Name of Hospital (If Applicable): | Phone #: |
| Name of Infection Control Personnel: | Phone #: |

## B - Details of exposure

1. Was there Direct Contact with blood/bodily fluid? ☐ Yes ☐ No

2. Describe location of exposure (i.e. Crackhouse, shelter, etc.)

3. Describe the exposure medium (type of fluid).

4. If body fluid was “other bodily fluids” (i.e. urine) was there visible blood in urine, etc.?

5. Was the bodily fluid exposed to air for any length of time before exposure? ☐ Yes ☐ No

6. Describe the type of exposure, was it:

a) Needlestick/puncture ☐ Yes ☐ No

If yes, is it known if needle had been previously introduced directly into source patient? ☐ Yes ☐ No

b) Splash involving mucous membranes and/or bodily openings: mouth, nose, eyes, ears, genital/anal region
Describe ☐ Yes ☐ No

c) Splash involving skin exposure? ☐ Yes ☐ No
Was skin intact? ☐ Yes ☐ No

If no describe, i.e. Abrasions, lacerations, punctures, blisters, etc.

7. Describe volume/amount of exposure medium

8. Were preventive measures taken at time of exposure? (ie.needlestick,allow to bleed then wash)
☐ Yes ☐ No

Describe

9. How long until these measures were taken? Hrs/min.

10. How long was Firefighter exposed to blood/fluids? Hrs/min.

11. What protective barrier devices did Firefighter wear during incident?

☐ Gloves
☐ Apron or Protective Clothing
☐ Bunker Suit
☐ Goggles
☐ Mask
☐ Other _____

12. Was there a failure of the PPE that resulted in exposure?

13. Is source patient's medical history known (HIV+, hepatitis, etc.)?

☐ Yes ☐ No

14. If history is known, describe the source of this information.

15. If confirmed HIV+, is patient?

| | | | |
|---|---|---|---|
| a) | Asymptomatic (no symptoms) | Yes ☐ | No ☐ |
| b) | Advanced HIV disease (visible symptoms) | Yes ☐ | No ☐ |
| c) | On any antiviral therapy | Yes ☐ | No ☐ |
| d) | Unknown | Yes ☐ | No ☐ |

16. If patient history is unknown is it known if patient is from a high-risk group as previously described? Yes ☐ No ☐

17. Please describe any other information you feel is applicable to the exposure.

## C - Firefighter Immune/Medical Status

18. What is the Firefighters' immune status? Immunizations update for:

☐ Tetanus and Diphtheria ☐ Polio
☐ Rubella ☐ Measles
☐ Unknown

19. Has Firefighter received a full course of Hep B vaccine? Yes ☐ No ☐
If yes, complete the following. ☐ Unknown

a) When was the last dose of Hep B Vaccine received (year/month/unknown)?

---

b) Was Serology testing done to determine if Firefighter responded to the vaccine? Yes ☐ No ☐ ☐ Unknown

c) When was last testing done for antibody levels (year/month/unknown)?

---

20. Is Firefighter pregnant or trying to become pregnant? Yes ☐ No ☐

## D - Firefighter Consent

21. Will Firefighter consent to baseline blood testing or his/her blood to screen for any existing disease? Yes ☐ No ☐

## E - Source of Exposure

| | |
|---|---|
| **Name of Source:** | **Birthdate:** |
| **Address of Source:** | **Phone No.: ( )** |
| **Physician of Source:** | **Phone No.: ( )** |
| **Receiving Facility (If applicable):** | |

## F - Reportable Disease Information System (RDIS)

Results of search on RDIS to determine if source has a disease that was previously reported to the Public Health Unit:

Date & Time of RDIS Search:

Conducted by:

## G - Source – Hospitalized

If the source patient is hospitalized contact hospital and ask to speak to the Infection Control Practitioner (ICP) or charge nurse.

**Name of (ICP) or Charge Nurse:**

**Date & Time ICP/Charge Nurse contacted:**

**Was a blood sample examined for bloodborne, illness Yes ☐ No ☐**

**If Yes, results:**

## H - Assessment Results

| | | | | | |
|---|---|---|---|---|---|
| 1. | Was exposure significant? | ☐ | Yes | ☐ | No |
| | If yes, and bloodborne: | | | | |
| 2. | Advised to seek medical attention for Hep B exposure | ☐ | Yes | ☐ | No |
| 3. | Advised to seek medical attention for Hep C exposure | ☐ | Yes | ☐ | No |
| 4. | Advised to seek medical attention for HIV exposure | ☐ | Yes | ☐ | No |
| 5. | Advised to practice bloodborne disease precautions | ☐ | Yes | ☐ | No |
| 6. | Advised of HIV PEP availability | ☐ | Yes | ☐ | No |

**SECTION 12**

| | | | | | |
|---|---|---|---|---|---|
| 7. | If Firefighter option is to take PEP therapy | ☐ | Yes | ☐ | No |
| 8. | Advised of side effects? risk/vs. benefits | ☐ | Yes | ☐ | No |
| 9. | Has Firefighter signed informed consent for PEP? | ☐ | Yes | ☐ | No |
| 10. | Has Firefighter agreed to follow up care to receive the full regimen of PEP therapy if necessary | ☐ | Yes | ☐ | No |

**Designated Officer**

| |
|---|
| **Name of Designated Officer:** |
| **Date & Time Notified:** |
| **Signature & Date:** |

**I – Post Incident D.O. Notes:**

## POST EXPOSURE RISK ASSESSMENT
## RESPIRATORY EXPOSURE

To be filled out by exposed Firefighter and/or Designated Officer following a possible exposure to an airborne pathogen, usually T.B. or Bacterial Meningitis (but not restricted to those exposures exclusively, as other diseases are spread by respiratory secretions (i.e. Viral Hemorrhagic Fevers).

The purpose of the risk assessment form is to help assess the need for a physician examination and to assist the physician with his/her assessment of the exposure risk. This will help to determine the need for PEP (Post Exposure Prophylaxis) if available, updating of necessary immunizations, any follow up treatment if required and necessary contacts with the Department of Public Health. In some exposure cases time is of the essence so the Workers Report of Suspected Exposure and other WSIB documents may be filled out later, but must be completed at the earliest possible convenience. ***As always, all medical files are kept strictly confidential.***

***TO BE COMPLETED BY DESIGNATED OFFICER***

# DESIGNATED OFFICER REPORT FORM

## Toronto Fire Services – Exposure to Communicable Disease

## Respiratory Exposure Risk Assessment Form

### A - General Information

| | |
|---|---|
| Name of Firefighter: | Phone #: |
| Command/Apparatus: / | Hall Phone #: |
| Platoon/Employee #: / | Incident #: |
| Designated Officer: | Phone #: |
| Date of Possible Exposure: **mm/dd/yyyy** | Time: |
| Date Incident Reported: **mm/dd/yyyy** | Time: |
| Name of Public Health Unit Contact: | Phone #: |
| Name of Hospital (If Applicable): | Phone #: |
| Name of Infection Control Personnel: | Phone #: |

## POST EXPOSURE RISK ASSESSMENT

### Respiratory Exposure

### B - Details of Exposure

1. Was there direct patient contact: ☐ Yes ☐ No
   Describe:

2. Does patient have a confirmed or suspected medical diagnosis:
   Describe ☐ Yes ☐ No

3. Did the patient have a cough: ☐ Yes ☐ No

4. What was the duration of exposure (i.e. Time- Hrs/min):

5. Was the exposure in a confined area (i.e. inside a vehicle):
   Describe: ☐ Yes ☐ No

6. Was PPE in place (i.e. masks worn by firefighter and/or patient):
   Describe ☐ Yes ☐ No

7. Was mouth-to-mouth contact involved (i.e. resuscitation, kissing):
   Describe: ☐ Yes ☐ No

8. Did contact involve other direct physical exposure (i.e. shared drinking/eating utensils, lipstick, cigarettes etc.): ☐ Yes ☐ No
   Describe:

9. Is Firefighter pregnant or trying to become pregnant: ☐ Yes ☐ No

10. Please describe any other information you feel is applicable to the exposure.

## C - Firefighter Immune/Medical Status

11. What is Firefighter's Immune Status? Immunizations up-to-date for:

☐ Tetanus and Diphtheria ☐ Polio
☐ Rubella ☐ Measles
☐ Unknown

Other immunizations, i.e. Meningococcal, chicken pox, etc.

_____

_____

## D - Firefighter Consent

12. Will Firefighter consent to testing to screen for any existing disease?

☐ Yes ☐ No

## E - Source of Exposure

| | |
|---|---|
| **Name of Source:** | **Birthdate:** |
| **Address of Source:** | **Phone No.: ( )** |
| **Physician of Source:** | **Phone No.: ( )** |
| **Receiving Facility (If applicable):** | |

## F. Reportable Disease Information System (RDIS)

Results of search on RDIS to determine if source has a disease that was previously reported to the Public Health Unit:

Date & Time of RDIS Search:

Conducted by:

## G - Source – Hospitalized

If the source patient is hospitalized contact hospital and ask to speak to the Infection Control Practitioner (ICP) or charge nurse.

| |
|---|
| **Name of (ICP) or Charge Nurse:** |
| **Date & Time ICP/Charge Nurse contacted:** |
| **Was an applicable sample examined for respiratory/meningoccal illness?** **Yes** ☐ **No** ☐<br>**If Yes, results:** |

## H - Assessment Results

| | | | | | |
|---|---|---|---|---|---|
| 1. | Was exposure significant?<br>If Yes and respiratory in nature. | ☐ | Yes | ☐ | No |
| 2. | Advised to seek medical attention for applicable disease i.e. T.B./Meningitis | ☐ | Yes | ☐ | No |
| 3. | Advised to practice respiratory precautions while being tested/treated | ☐ | Yes | ☐ | No |
| 4. | Advised of testing procedures applicable to exposure i.e. Mantoux, etc | ☐ | Yes | ☐ | No |
| 5. | Educated about possible drugs therapy (PEP) if indicated by physician | ☐ | Yes | ☐ | No |
| 6. | Advised of side effects/risk vs. benefit | ☐ | Yes | ☐ | No |
| 7. | Provided with list of contact/treatment options i.e. TFS physician/personal physician/public health | ☐ | Yes | ☐ | No |

***Designated Officer***

| |
|---|
| **Name of Designated Officer:** |
| **Date & Time Notified:** |
| **Signature & Date:** |

## I - Post Incident D.O. Notes:

# POST EXPOSURE RISK ASSESSMENT
# BITE EXPOSURE

**To be filled out by exposed Firefighter and/or Designated Officer AFTER Firefighter and D.O. have determined a legitimate concern of exposure to disease transmitted via an animal, insect or human bite.**

*** Note: Be aware of the possibility of also filling out the blood/bodily fluid Post Exposure Risk Assessment Form, if applicable.**

The purpose of the risk assessment form is to help assess the need for a physician examination and to assist the physician with his/her assessment of the exposure risk. This will help determine the need for PEP (Post Exposure Prophylaxis) if available, updating of necessary immunizations, any follow up treatment that may be required and necessary contacts to be made, such as the Department of Public Health.

In some exposure cases time is of the essence so the **Workers Report of Suspected Exposure** and other WSIB forms may be filled out later, but must be completed at the earliest possible convenience. ***As always, all medical files are kept strictly confidential.***

***TO BE COMPLETED BY DESIGNATED OFFICER***

# DESIGNATED OFFICER REPORT FORM

## Toronto Fire Services – Exposure to Communicable Disease

## Bite Exposure Risk Assessment Form

### A - General Information

| | |
|---|---|
| Name of Firefighter: | Phone #: |
| Command/Apparatus: / | Hall Phone #: |
| Platoon/Employee #: / | Incident #: |
| Designated Officer: | Phone #: |
| Date of Possible Exposure: **mm/dd/yyyy** | Time: |
| Date Incident Reported: **mm/dd/yyyy** | Time: |
| Name of Public Health Unit Contact: | Phone #: |
| Name of Hospital (If Applicable): | Phone #: |
| Name of Infection Control Personnel: | Phone #: |

**POST EXPOSURE RISK ASSESSMENT**

**BITE EXPOSURE**

**SECTION 1**

## *B* - Details of Exposure

1. Did bite break the surface of skin? ☐ Yes ☐ No

2. When did bite occur? (Date & Time)

3. Was area cleansed after bite? How? When?

4. Was bite received from human? ☐ Yes ☐ No

**IF YES COMPLETE SECTION 2**

**SECTION 2 – HUMAN BITE**

**1. Where did bite occur i.e. Hostel, crackhouse, etc.**

---

---

2. Does patient have a confirmed or suspected infectious disease?
What was the source of this information?

☐ Unknown ☐ Yes ☐ No

---

---

3. If patient medical history is unknown is it known if they are from a high-risk group?

☐ Unknown ☐ Yes ☐ No

If yes, please describe source of information.

---

---

4. Did patient have any blood/bodily fluids and/or open sores in mouth?

☐ Unknown ☐ Yes ☐ No

*If yes or unknown, please refer to and fill out Blood/Bodily Fluid Risk Assessment Form as well.

5. Has Firefighter received a full course of Hep B vaccine? ☐Yes ☐ No
If yes complete the following: ☐ Unknown

5a. When was the last dose of Hep B vaccine received?
yr/ mo / Unknown

5b. Was serology testing done to determine if Firefighter responded to vaccine? ☐ Yes ☐ No ☐ Unknown

5c. When was last testing done for antibody levels?
yr/ mo / Unknown

## SECTION 3 - *ANIMAL BITE*

1. Describe type of animal.

2. What was the geographic location of the incident?

3. How did the exposure occur? (i.e. provoked vs. unprovoked).

4. Has the animal been vaccinated against rabies?

☐ Unknown ☐ Yes ☐ No

5. Is the animal available or can it be captured for testing? ☐ Yes ☐ No

6. Did animal show any signs of infection? i.e. appear unhealthy, behaviour, frothing at mouth, poor muscle coordination, etc.

7. Did animal bite anyone else prior to Firefighter? is there a risk of blood/bodily fluid exposure? ☐ Yes ☐ No
   **** If yes please refer to and fill out Blood/Bodily Fluid Risk Assessment Form as well.**

8. Has Firefighter received any prior Prophylaxis treatment for Rabies?
   ☐ Yes ☐ No

   Describe: Date (year/month) or other info.

**SECTION 4 – *INSECT BITES***

1. Is type of insect bite known? ☐ Yes ☐ No
   If yes, is insect known to be poisonous, i.e. exotic spider/scorpion, etc.

2. Is there a local skin reaction? ☐ Yes ☐ No

3. Does Firefighter have history of anaphylaxis? ☐ Yes ☐ No

   **If yes, is Firefighter in possession of a prescribed EPI pen?**
   ☐ Yes ☐ No

4. Is Firefighter feeling unwell? ☐ Yes ☐ No

## C - Firefighter Information

1. What is the Firefighter Immune Status? Immunizations up-to-date for?

   i. ☐ Tetanus and Diptheria ☐ Polio
   ii. ☐ Rubella ☐ Measles
   iii. ☐ Unknown ☐ Hep B, see section 2

2. Has Firefighter received any other Immunizations i.e. Rabies?

3. Is Firefighter pregnant or trying to become pregnant? ☐ Yes ☐ No

## D - Firefighter Consent

1. Will Firefighter consent to baseline blood or other testing to screen for any existing disease.

☐ Yes ☐ No

## E - Source of Exposure

| | |
|---|---|
| **Name of Source:** | **Birthdate:** |
| **Address of Source:** | **Phone No.: ( )** |
| **Physician of Source:** | **Phone No.: ( )** |
| **Receiving Facility (If applicable):** | |

## F - Reportable Disease Information System (RDIS)

Results of search on RDIS to determine if source has a disease that was previously reported to the Public Health Unit:

Date & Time of RDIS Search:
Conducted by:

## G - Source – Hospitalized

If the source patient is hospitalized contact hospital and ask to speak to the Infection Control Practitioner (ICP) or charge nurse.

| |
|---|
| **Name of (ICP) or Charge Nurse:** |
| **Date & Time ICP/Charge Nurse contacted:** |

## H - Assessment Results

| | | | | | |
|---|---|---|---|---|---|
| 1. | Was exposure significant? | ☐ | Yes | ☐ | No |
| 2. | Advised to seek medical attention applicable to exposure i.e. human/animal/insect | ☐ | Yes | ☐ | No |
| 3. | Advised of any PEP availability applicable to exposure i.e. rabies | ☐ | Yes | ☐ | No |
| 4. | Advised of risk vs. benefit and side effects. | ☐ | Yes | ☐ | No |
| 5. | Has Firefighter agreed to follow care/testing and treatment if applicable. | ☐ | Yes | ☐ | No |
| 6. | Advised of treatment options and facilities i.e. TFS Medical Officer personnel, physician/public health | ☐ | Yes | ☐ | No |
| 7. | Informed of possible bloodborne exposure in human bite situation | ☐ | Yes | ☐ | No |

***Designated Officer***

| |
|---|
| **Name of Designated Officer:** |
| **Date & Time Notified:** |
| **Signature & Date:** |

## I – Post Incident D.O. Notes

# POST EXPOSURE RISK ASSESSMENT
# ENTERIC EXPOSURE

**To be filled out by exposed Firefighter and/or Designated Officer AFTER Firefighter and D.O. has determined a legitimate concern of exposure to disease transmitted via enteric routes (feces or sources contaminated with feces).**

The purpose of the risk assessment form is to help assess the need for a physician examination and to assist the physician with his/her assessment of the exposure risk. This will help determine the need for PEP (Post Exposure Prophylaxis) if available, updating of necessary immunizations, any follow up treatment that may be required and necessary contacts to be made, such as the Department of Public Health.

In some exposure cases time is of the essence so the **Workers Report of Suspected Exposure** and other WSIB forms may be filled out later, but must be completed at the earliest possible convenience. ***As always, all medical files are kept strictly confidential.***

***TO BE COMPLETED BY DESIGNATED OFFICER***

# DESIGNATED OFFICER REPORT FORM

## Toronto Fire Services – Exposure to Communicable Disease

## Enteric Fluid Exposure Risk Assessment Form

### A - General Information

| | |
|---|---|
| Name of Firefighter: | Phone #: |
| Command/Apparatus: / | Hall Phone #: |
| Platoon/Employee #: / | Incident #: |
| Designated Officer: | Phone #: |
| Date of Possible Exposure: **mm/dd/yyyy** | Time: |
| Date Incident Reported: **mm/dd/yyyy** | Time: |
| Name of Public Health Unit Contact: | Phone #: |
| Name of Hospital (If Applicable): | Phone #: |
| Name of Infection Control Personnel: | Phone #: |

## POST EXPOSURE RISK ASSESSMENT
## ENTERIC EXPOSURE

### B - Details of Exposure

1. Was there direct exposure to patient's feces? ☐ Yes ☐ No

2. Was source patient in a position to handle Firefighter food or drink?

☐ Yes ☐ No

3. Was there visible blood in patient's feces? ☐ Yes ☐ No

**Note: If answer is yes, it may be necessary to fill out Blood/Bodily Fluid Assessment Form as well.**

4. Is patient's medical history known or suspected? ☐ Yes ☐ No

5. Was there some other route of exposure i.e. exposure to raw sewage, contaminated food, etc.

6. Was there a route to oral contamination i.e. inadvertent rub of nose or face before clean up? ☐ Yes ☐ No

7. Were preventive measures in place i.e. gloves, goggles, etc. ☐ Yes ☐ No

7a. Were they compromised? ☐ Yes ☐ No

8. Was post exposure clean up of Firefighter completed with proper cleaning agent, i.e. Chlorhexidine hand soap for VRE? ☐ Yes ☐ No

## C - Firefighter Immune / Medical Status

1. What is the Firefighter Immune Status? Immunizations up-to-date for?

☐ Tetanus and Diptheria ☐ Polio
☐ Rubella ☐ Measles
☐ Unknown ☐ Hep B, see section 2

2. Has Firefighter received any other Immunizations i.e. Hep A etc.

3. Is Firefighter pregnant or trying to become pregnant? ☐ Yes ☐ No

## D - Will Firefighter consent to baseline blood or other testing as applicable to exposure for screen for any existing disease?

☐ Yes ☐ No

## E - Source of Exposure

| | |
|---|---|
| **Name of Source:** | **Birthdate:** |
| **Address of Source:** | **Phone No.: ( )** |
| **Physician of Source:** | **Phone No.: ( )** |
| **Receiving Facility (If applicable):** | |

## F - Reportable Disease Information System (RDIS)

Results of search on RDIS to determine if source has a disease that was previously reported to the Public Health Unit:

Date & Time of RDIS Search:

Conducted by:

## G - Source – Hospitalized

If the source patient is hospitalized contact hospital and ask to speak to the Infection Control Practitioner (ICP) or charge nurse.

| | |
|---|---|
| **Name of (ICP) or Charge Nurse:** | |
| **Date & Time ICP/Charge Nurse contacted:** | |
| **Was a blood sample examined for bloodborne, illness** | **Yes ☐ No ☐** |
| **or other sample applicable to exposure** | **Yes ☐ No ☐** |
| **If Yes, results:** | |

## H - Assessment Results

| | | | | | |
|---|---|---|---|---|---|
| 1. | Was exposure significant? | ☐ | Yes | ☐ | No |
| 2. | Advised to seek medical attention applicable to exposure. | ☐ | Yes | ☐ | No |
| 3. | Potential for bloodborne exposure investigated. | ☐ | Yes | ☐ | No |
| 4. | Has Firefighter agreed to follow care/testing and treatment if necessary. | ☐ | Yes | ☐ | No |
| 5. | Firefighter educated about exposure risks, UP & PPE | ☐ | Yes | ☐ | No |

Others:

_____

_____

_____

***Designated Officer***

| |
|---|
| **Name of Designated Officer:** |
| **Date & Time Notified:** |
| **Signature & Date:** |

## I - Post Incident D.O. Notes

# Glossary of Terms

# Glossary of Terms

## A

Acute
Having a short and relatively severe course vs. chronic. An acute infection will resolve itself vs. becoming a chronic infection.

Amniotic Fluids
The fluid that surrounds the developing fetus within the amniotic sac.

Anaphylaxis
An allergic reaction resulting in the release of histamine causing a localized or global immune response. May result in an acute allergic reaction with shortness of breath, rash, wheezing, hypotension.

Anti $HB_C$
Antibody found in blood to the Hepatitis B core antigen.

## B

BCG Vaccine
A vaccine used for Tuberculosis.

## C

Cerebrospinal Fluid
A clear, colourless fluid that fills the ventricles of the brain and central canal of the spinal cord.

Chronic
Persisting over a long period of time a chronic disease does not resolve and the patient may remain infectious for life.

## E

Encephalitis
Inflammation of the brain.

Endotracheal Intubation
The placement of a flexible plastic tube into the trachea for the purpose of ventilating the lungs.

## F

Febrile
Characterized by having a fever.

# H

$HB_SAg$

A serologic marker on the surface of the Hepatitis B virus. The body will normally produce antibodies to Hepatitis B surface antigen as part of the normal immune response to infection. It is the presence of antibodies to the Hepatitis B surface antigen that are detected in a positive Hepatitis B blood test.

# I

IU/L

A measurement known as an Internation Unit or International Unit per Litre (IU/L)

# L

Lancets

A sharp pointed instrument used in venesection or to cause an opening in the skin to induce bleeding as is required in blood sugar testing for diabetics.

# M

Mucosal

Pertaining to mucosal membranes as found in the eyes, nose, mouth, vagina or rectum.

# N

Nosocomial

Pertaining to or originating in the hospital. An infection that a patient, or healthcare worker acquires in a hospital (or treatment setting).

# P

Pleural Fluid

Allows visceral pleura to slide over parietal pleura, maintaining adhesion and lubricates the internal membranes known as pleural layers or peritoneal, retro peritoneal, pericardial membranes/fluids etc.

# S

Seroconversion/Seroconverted

The change of a serological test from negative to positive indicating the development of antibodies in response to infection of immunization.

Synovial Fluid

Joint fluid, a viscous fluid that lubricates the joint.

# V

VDRL
: A blood test used to diagnose syphilis known as Venereal Disease Research Laboratory test.

# W

West Nile Virus
: On of the Japanese encephalitis group, which produces encephalitis when inoculated with infected blood.  Transmission by mosquitoes by inoculating a new host with virus.