Training Bulletin

Ebola Virus Disease

Issue Number 114 - Version 4.0
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Emergency Health Services Branch
Ministry of Health and Long-Term Care

Ontario

To all users of this publication:

The information contained herein has been carefully compiled and is believed to be accurate at date of publication. Freedom from error, however, cannot be guaranteed.

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Document Control

Version Number (status)	Date of Issue	Brief Description of Change
1.0	October 09, 2014	Finalized version
1.1	October 14, 2014	Final version with updated hyperlinks
2.0	October 24, 2014	Finalized version with document renaming, introduction of updated dispatch screening questions and specific PPE for suspected or confirmed cases
2.1	October 24, 2014	Finalized version with a correction to PPE specifics
3.0	April 20, 2015	Finalized version with detailed updates as per Directive #3 released on April 13, 2015
4.0	September 17, 2015	Finalized version in updated format as per the Living Standard Project, updated MAC recommendations and updated information from CMOH.

Summary of Changes

The following changes are the only changes that have been made between version 3.0 and 4.0:

- Modifications to the Recommendations from MAC for the Paramedic Medical Procedures and Medication Administration for suspect EVD and PUI patients and confirmed EVD patients.
- Updated list of treatment and testing hospital lists and a modified definition of Screening Hospital as August 27, 2015 release of *A Three-Tier Approach to Ebola Virus Disease Management in Ontario.*

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Ebola Virus Disease Training Bulletin

Introduction

In response to the widespread transmission of Ebola Virus Disease (EVD) outbreak in several countries in West Africa, the Chief Medical Officer of Health (CMOH) issued the revised Ebola Virus Disease Directive #2 for Paramedic Services (Land and Air Ambulance) on April 13, 2015. The Directive is available at www.ontario.ca/ebola

The Directive provides instructions to paramedic services concerning control measures necessary to protect paramedics and patients and significantly reduce the risk of spreading EVD.

There has been an amendment to the treatment and testing hospital lists and a modification to the definition of Screening Hospital. This is reflected in the updated *A Three-Tier Approach to Ebola Virus Disease Management in Ontario* dated August 27, 2015 found in Appendix A.

This training bulletin provides an update to the recommendations from Ontario Base Hospital Group - Medical Advisory Committee (MAC) for paramedic medical procedures and medication administration. The revisions are due to a better understanding of the disease process of Ebola which has now resulted in a change to how patients are treated while eliminating the high risk factor of disease transmission to paramedics.

Definitions

Suspect EVD Patient

A suspect patient is a person in the community who has failed the *EVD Screening Tool for Paramedic Services*. Paramedic services shall employ the control measures in the Directive to manage suspect patients. A suspect patient becomes a person under investigation (PUI) when an infectious disease (ID) physician at a hospital (in consultation with the public health unit and Public Health Ontario Laboratories) determines that the patient requires EVD testing.

Paramedics shall transport suspect patients to the closest appropriate emergency department (ED) or to the nearest testing or treatment hospital as directed by the ambulance communication centre and following the bypass provisions described in the Directive.

Person under Investigation (PUI)

A PUI is a person:

1) who has travel history to an EVD-affected area/country **and**

2) who has at least one clinically compatible symptom of EVD **and**

3) for whom EVD laboratory testing is recommended (based on clinical assessment by an ID physician at a hospital in consultation with the public health unit and Public Health Ontario Laboratories) or laboratory results are pending. The patient remains a PUI until laboratory testing rules out or confirms EVD.

Paramedic services shall transfer PUIs that are identified in a screening hospital to a testing or treatment hospital.

Confirmed EVD Patient

A confirmed patient is a person with laboratory confirmation of EVD. Confirmed patients may be repatriated from West Africa to Ontario (arriving at Pearson International Airport) or they may be diagnosed at a testing or treatment hospital in Ontario. Confirmed patients shall only be transported by designated paramedic services.

Designated Paramedic Services

Designated paramedic services are paramedic services that have been identified by the MOHLTC to transport confirmed patients. This includes inter-facility transfers of confirmed patients from testing to treatment hospitals and transfers of repatriated confirmed patients from Pearson International Airport to treatment hospitals.

Designated paramedic services shall maintain dedicated ambulances to transport confirmed patients.

Designated paramedic service providers at the time of the release of this training bulletin are:

1. City of Greater Sudbury Paramedic Services
2. Frontenac Paramedic Services
3. Hamilton Paramedic Services
4. Middlesex-London Emergency Medical Services
5. Ottawa Paramedic Services
6. Peel Regional Paramedic Services
7. Superior North Emergency Medical Services
8. Toronto Paramedic Services
9. Essex Windsor Emergency Medical Services
10. Ornge

Three-Tier Hospital Model

Ontario's EVD management strategy includes a three-tier hospital framework to ensure that the health care system is prepared to manage patients with EVD in Ontario. Hospitals in Ontario will serve one of three roles: treatment hospitals, testing hospitals and screening hospitals.

Treatment Hospitals

A treatment hospital manages confirmed EVD cases for the duration of the patient's illness, including ongoing testing. Treatment hospitals also maintain all the capabilities of screening and testing hospitals.

Designated treatment hospitals are the following:

- The Hospital for Sick Children (Toronto) (designated to care for confirmed pediatrics cases)
- London Health Sciences Centre – Victoria Hospital (designated to care for confirmed adult cases) and the Children's Hospital (designated as the back-up to The Hospital for Sick Children for confirmed pediatric cases)
- The Ottawa Hospital – General Campus (designated to care for confirmed adult cases)
- University Health Network – Toronto Western Hospital (designated to care for a confirmed adult case repatriated from West Africa in addition to confirmed adult cases that are identified in Ontario)

Testing Hospitals

A testing hospital manages suspect patients and PUIs, which includes arranging laboratory testing for EVD.

Once a PUI is determined to be a confirmed case, testing hospitals work with CritiCall Ontario to arrange for the interfacility transfer to a treatment hospital through paramedic services.

Designated testing hospitals are the following:

- The Children's Hospital of Eastern Ontario
- Hamilton Health Sciences Centre – Juravinski Hospital (designated for adult PUIs) and McMaster Children's Hospital (designated for pediatric PUIs)
- Health Sciences North (Sudbury)
- Kingston General Hospital
- Sunnybrook Health Sciences Centre
- Thunder Bay Regional Health Sciences Centre
- Windsor Regional Hospital – Metropolitan Campus

Screening Hosptial

All hospitals in Ontario with emergency departments and/or urgent care centres that have not been designated as an EVD testing or treatment hospital by the MOHLTC are considered screening hospitals.

These hospitals screen patients, isolate and assess suspect patients, and arrange for the controlled transfer of PUIs to a designated treatment or testing hospital via paramedic services.

Screening hospital may also assess a suspect patient that arrives via paramedic services. When paramedic services identify a suspect patient during a scene response (i.e. 911 call), they attempt to bypass screening hospitals for a low acuity patient. If the distance to a designated testing or treatment hospital is more than one hour's drive time, paramedic services may need to transport the patient to a closer screening hospital for an assessment (to confirm whether testing is needed) as well as to arrange the subsequent transfer to a designated hospital.

Bypass Agreements

A local bypass agreement is an established protocol managed by EHSB for paramedic services and hospitals seeking to establish mutually agreed upon conditions (with supporting medical advice) that permit an ambulance to bypass the closest ED for specific patient conditions and transport directly to an appropriate alternative hospital. Considerations to establishing bypass agreements include patient acuity, the nature of the problem and the distance to the proposed alternate destination.

A provincial bypass protocol has been implemented for low acuity suspect patients. The purpose of the bypass protocol is to:

- reduce the number of paramedics and other health care workers involved in the transport of a suspect patient;
- move a suspect patient to a testing or treatment hospital in the most efficient manner possible while ensuring the safety of paramedics, other health care workers, patients and the public;
- reduce the requirements for inter-facility transfers of PUIs (should the suspect patient be determined to be a PUI); and
- provide testing when required as soon and safely as possible for a PUI.

Paramedic Services Screening Tool

The *EVD Screening Tool for Paramedic Services* continues to be reviewed so that it contains the most updated information. It is distributed by the MOHLTC in consultation with the CMOH. This screening tool is intended to be used during an outbreak to assist both ambulance communications officers (ACOs) and paramedics with the initial assessment and management of both symptomatic and asymptomatic patients.

In the case of current widespread outbreak of EVD, this tool is used to screen returning travellers from countries and areas affected by EVD.

The current version of the screening tool replaces any previously issued *EVD Screening Tool for Paramedics Services*. Screening questions shall be asked by the ACO when receiving all emergency and transfer requests for service prior to the 'Pre-Arrival Information' being provided to the caller.

The questions are designed to identify suspect patients based on travel history and medical symptoms. All relevant travel history and the symptoms obtained through these questions will then be provided to the paramedics at the time of dispatching.

A person is considered to have failed the screening when there is a "Yes" response to **both** the travel history question **and** the fever or other symptoms question. Only persons who fail the screening are suspect patients.

In all cases where the person has failed the *EVD Screening Tool for Paramedic Services*, the ACO shall advise the caller to expect paramedics to arrive wearing personal protective equipment.

Please visit: www.ontario.ca/ebola for the current version of the *MOHLTC EVD Screening Tool for Paramedics Services*.

Ambulance communication centres using MPDS™ call taking protocols shall utilize the most current Emerging Infectious Disease Surveillance Tool (SRI/MERS/EBOLA).

Point of Care Assessment

Patients who have failed the *EVD Screening Tool for Paramedic Services* conducted by the ambulance communication centre will be screened by again by the paramedic upon arrival. The assessment should be conducted by one paramedic, appropriately protected as described in the Directive and in this training bulletin, immediately upon arrival and prior to a second paramedic entering the scene.

The paramedic screening the patient shall remain at a minimum distance of two (2) metres before each interaction with a patient and/or the patient's environment to evaluate the likelihood of exposure to an infectious agent/infected source and to choose the appropriate safe work practices.

The second paramedic shall remain more than two (2) metres away from the patient and shall follow Routine Practices and Additional Precautions (RPAP) while awaiting the results of the point of care assessment. The purpose of this precautionary approach is to allow the paramedics to communicate the findings of their assessment to the ambulance communication centre, and/or hospital, and/or ID physician for advice and/or perform any other duties required that may be impeded once enhanced precautions are adopted by both paramedics.

The EVD screening that is conducted at the scene shall result in the paramedic making a determination as to whether or not the patient is a suspect patient.

If the patient is not a suspect patient, the standard operating procedures of the paramedic service and patient care standards the routine standards of patient care practice set out within the *Basic Life Support Patient Care Standards* and *Advanced Life Support Patient Care Standards* shall apply.

If the patient is determined to be a suspect patient, the paramedic will consult with an ID physician and if that option is not available then the provisions of the Directive shall apply.

Personal Protective Equipment

Paramedics should ensure that they incorporate the control measures from the Directive into the point of care risk assessment.

The following enhanced PPE is required:

Suspect Patients, PUIs or Confirmed Patients

- Fit-tested, seal-checked N95 respirator
- Full face shield (may be supplemented by safety eyewear)
- Double gloves - one glove under the cuff and one longer glove over the cuff
- Impermeable full body barrier protection - there should be no exposed, unprotected skin, which can be achieved by the use of the following components:
  - full head protection to cover the head and neck, gown(s) and foot coverings (foot coverings to provide at least mid-thigh protection); or
  - one piece full body protective suit (coverall) with integrated or separate hood and covered seams and foot coverings providing at least mid-calf coverage.

Training provided to paramedics on the chosen protective equipment and its components must follow the manufacturer's advice and any other training regimen developed by the employer.

As a reminder, always follow Routine Practices which includes frequent hand hygiene. This information is included on the Public Health Ontario website "Just Clean Your Hands Hand Care Program" at:

http://www.publichealthontario.ca/en/eRepository/hand-care-program.pdf

The Public Health Ontario 'Protecting Your Hands Fact Sheet for Health Care Providers' can be found at:

http://www.publichealthontario.ca/en/eRepository/hand-care-assessment.pdf

MAC Recommendations

Modified Medical Procedures and Medication Administration for the EVD Patients

The recommended modifications by MAC for paramedic medical procedures and medication administration are designed to balance the risk of paramedic exposure against the low likelihood of encountering an unrecognized positive EVD case in the prehospital field. Given the current circulation of the EVD, it is more likely that screened positive patients will have a diagnosis other than EVD (i.e. dengue fever or malaria).
While appropriate caution is prudent, withholding time sensitive lifesaving treatment based on the risk of EVD alone could have a significant impact on patient outcome.

It must be acknowledged that paramedics work with undifferentiated patients in an equally uncontrolled environment and in confined spaces during transport. Given the non-specific presentation of EVD and the high case mortality rate of EVD, it is clear that paramedics must exercise a degree of caution beyond what might be considered in a traditional health care setting.

The revisions listed below replace the MAC recommendations in version 3.0 which was issued April 20, 2015.

The following is a list of medical procedures that are affected due to risk of disease transmission:

- Intravenous (IV) access
- Intraosseous (IO) access
- Intramuscular (IM) injection
- **S**ubcutaneous (SC) injection
- Sublingual (SL) administration
- Intranasal (IN) administration
- Per oral (PO)
- Central venous access device (CVAD) access
- Orotracheal intubation
- Nasotracheal intubation
- Supraglottic airway
- Continuous positive airway pressure (CPAP)
- Nebulized or metered dose inhaler (MDI) medications
- Glucometry
- Chest needle thoracostomy
- Cricothyrostomy
- CVAD access
- Electronic control device probe removal
- Bag Valve Mask (BVM)
- Oropharyngeal airway (OPA), Nasopharyngeal airway (NPA)
- Cardiopulmonary Resuscitation (CPR) chest compression
- Defibrillation
- Transcutaneous pacing
- Cardioversion
- Oxygen administration
- Cardiac monitoring and 12-lead electrocardiogram (ECG)
- Termination of Resuscitation (TOR) Medical/Trauma (for Trauma TOR - ACPs use PCP rule)

The following is the revised advice from MAC on the modifications to paramedic medical procedures and medication administration that applies to both suspect EVD patients **and** PUI and confirmed patients:

Suspect EVD Patients (failed paramedic screening, with or without ID physician consultation)

And

PUI Patient (laboratory investigations pending, transfer from screening hospital to testing and/or treatment hospital)

- Some limited patient care medical procedures
- Follow Routine Practices and Additional Precautions (RPAP)
- Procedures to be applied to **compliant non-combative patients while administered in stationary vehicle**
- Avoid high risk procedures for stable patients

Acceptable Procedures

- IM injections
- Glucometry
- Non-invasive airway procedures (jaw thrust/chin lift/head tilt) for unstable patients
- Continuous positive airway pressure (CPAP)
- Bag Valve Mask (BVM)
- Cardiopulmonary Resuscitation (CPR) chest compression
- Defibrillation
- Transcutaneous pacing
- Cardioversion
- Oxygen administration
- Cardiac monitoring and 12-lead electrocardiogram (ECG)
- Termination of Resuscitation (TOR) Medical/Trauma (for Trauma TOR - ACPs use PCP rule)

Unacceptable Procedures

- IV access, IO, SC,SL, IN and Oral
- CVAD access
- OPA and NPA management, supraglottic airway (to minimize any potential contamination risk)
- Intubation
- Chest needle thoracostomy
- Cricothyrostomy
- Electronic control device probe removal
- Nebulized medication

The following is the revised advice from MAC on the modifications to paramedic medical procedures and medication administration for confirmed EVD patients:

Confirmed EVD Patients (transfer to designated treatment hospital by designated paramedic service)

- Limited patient care medical procedures
- Follow Routine Practices and Additional Precautions (RPAP)

Acceptable Procedures

- Oxygen administration
- Cardiac monitoring
- Termination of Resuscitation (TOR) Medical/Trauma (for Trauma TOR - ACPs use PCP rule)

Unacceptable Procedures

- All other procedures and medication administration

NOTE: In any case or circumstance in which a paramedic requires further clarification, a patch to their Base Hospital Physician (BHP) is recommended.

Transportation of Patients from Pre-Hospital Setting to Emergency Department

When a request for service for a suspect patient is received by an ambulance communication centre, the ambulance communication centre shall notify the responding paramedics, the paramedic service and the anticipated destination hospital.

Paramedics responding in a non-designated ambulance and anticipating potential contact (within two [2] metres) with a suspect patient shall follow Routine Practices and Additional Precautions (RPAP) outlined in this training bulletin and in the Directive #2.

CTAS 1 & 2 Patients

The ambulance communication centre shall direct a land ambulance with a suspect patient with acuity of CTAS 1 or CTAS 2 to the closest appropriate ED. The ambulance communication centre shall notify the ED of the patient's suspect EVD status and the acuity level as soon as it receives the information from the paramedics.

Note: When selecting the destination, the term "appropriate" takes into consideration the requirement to recognize specific destinations for particular medical conditions such as stroke and STEMI.

CTAS 3-5 Patients

If it is determined that the patient is a suspect patient, the paramedic shall contact a designated ID physician in order to receive advice and assistance in making an on-scene determination. The consultation process is outlined in Appendix A. The consultation shall result in a determination that the:

- patient is not a suspect patient and the paramedic shall resume standard patient care practices **or**
- patient is a suspect patient and the provisions of the Directive shall apply

Once it is established that the patient is a suspect EVD patient, the paramedic is to consult with the ambulance communication centre and determine a destination per the Directive. For patients with an acuity of CTAS 3, 4 or 5, the provincial bypass protocol applies.

When the closest testing or treatment hospital is located too far for a bypass to be considered than an alternate screening hospital shall be considered as part of the bypass protocol. The intent is to minimize any potential subsequent inter-facility patient transfer.

When a suspect EVD patient has been identified and a destination has been decided upon, the ambulance communication centre will notify the EHSB Provincial Duty Officer. EHSB will engage the Emergency Management Branch. The communication centre will operate as the central communication point for all subsequent consultations throughout the management of the call to ensure effective communications and recording of decision points occur.

Paramedics will also notify the receiving facility of the information obtained from the ID physician and the ID physician's call back number. This allows the receiving facility to contact the ID physician directly and obtain a clear understanding of this patient's condition. Additionally the receiving facility can prepare to develop a pathway for treatment for this suspect EVD patient while minimizing the risk of exposure to other people.

Ornge may be considered for the transport of low acuity suspect patients from the community to a testing or treatment hospital.

For suspect patients, the initial assessment, triage and transfer of care to ED staff may be conducted in the ED ambulance bay. Where no ambulance bay exists, a safe area located away from public access, as determined by the hospital in consultation with the paramedic service, should be pre-identified for assessment, triage and transfer of care of suspect patients.

Pre-planning by paramedic services, to execute the bypass provisions should occur as part of EVD deployment planning exercises. Consideration should be given to likely destinations in the event of an EVD transport, and consultations with potential target destination hospitals in the event of selecting an alternate ED, if a testing or treatment hospital cannot be reached based on time spent in PPE by paramedics. These consultations should consider doffing requirements and decontamination in the potential alternate sites, particularly where the alternate site may not normally be a destination for a particular paramedic service.

Following the initial assessment and triage by the ED staff, and if the patient is cleared of EVD suspicion, the paramedics may discontinue enhanced precautions. If the initial assessment and triage by ED staff indicates that EVD is suspected, the paramedics shall continue enhanced precautions until deep environmental cleaning and decontamination of the ambulance have been completed. These environmental cleaning and decontamination processes shall be conducted according to local paramedic service policies and in accordance with Appendix 3 of the Directive (Cleaning and Decontamination). Waste management shall be conducted according to local paramedic service policies and in accordance with the CMOH Directive #4 Regarding Waste Management for Designated Hospitals and All Paramedic Services, which is available at www.ontario.ca/ebola

Patient Transportation from a Screening Hospital to a Testing or Treatment Hospital

The local paramedic service shall conduct any required inter-facility transfer of the **PUI**. A screening hospital shall arrange for the transfer of a PUI to a testing or treatment hospital following the standard inter-facility transfer arrangements processes through CritiCall, the Patient Transfer Authorization Centre (PTAC) and the ambulance communication centre.

The inter-facility transfer of a PUI could consist of a relay or relays as part of the transfer. The duration of each relay leg will be defined by the limitation of time in PPE for the paramedics and will be established by the paramedic services. Please refer to Appendix 2 of the Directive for more information.

To begin preparations to carry out or participate in an inter-facility transfer, the ambulance communication centre shall notify the local paramedic service of the expected transfer (or the starting point for the relay leg of a transfer) as soon as possible. The ACO will also engage EHSB's Provincial Duty Officer to facilitate the planning for the expected transfer. EHSB will engage the Emergency Management Branch.

Local paramedic service management, in consultation with EHSB's Provincial Duty Officer, will determine the scheduled pick up time, relay requirements and assignment of paramedic crews:

- When the distance for a required transfer indicates a relay is required, the first leg of a transfer is a single ambulance call that begins at the originating hospital and terminates at a screening hospital that is within the safe traveling range of the transporting paramedic crew.
- When that destination is identified in the planning process, the hospital will be contacted and advised of the expected arrival of a PUI. The paramedic service in that jurisdiction will be advised that a PUI case will be at the screening hospital and will be provided with an estimate of the anticipated arrival time.
- The next leg of the transfer will be booked and assigned as a new ambulance call, and the paramedic service for that area will be assigned the call, following similar notification consultation as described for the first leg of the transfer.
- The logistics of planning a multi-leg transfer must be coordinated and put in place as a complete transportation plan that considers: each relay point; each receiving hospital; each new assignment. It establishes the plan's milestones and events prior to assigning the first leg of the relay. The relay transportation plan must be approved by EHSB Provincial Duty Officer prior to initial assignment and patient pickup.

Patient Transportation to a Treatment Hospital

An inter-facility transfer of a **confirmed patient** may consist of a relay or relays as part of the transfer. The duration of each relay leg will be defined by the limitation of time in PPE for the paramedics and will be established by the **designated paramedic service**.

To begin preparations to carry out or participate in an inter-facility transfer, the ambulance communication centre shall notify the designated paramedic service of the expected transfer (or the starting point for the relay leg of a transfer) as soon as possible. The ACO will also engage EHSB's Provincial Duty Officer to facilitate the planning for the expected transfer. EHSB will engage the Emergency Management Branch.

Designated paramedic service management, in consultation with EHSB's Provincial Duty Officer, will determine the scheduled pick up time, relay requirements, and assignment of paramedic crews.

This process also applies when a confirmed patient is repatriated from West Africa to Ontario, arriving at Pearson International Airport:

- When the distance for a required transfer indicates a relay is not required, the entire transfer is a single ambulance call that begins at the originating hospital and terminates at the treatment hospital.

- Where the distance is too great for a single land ambulance transport, Ornge and other designated paramedic services will be consulted to arrange a relay or relays to ensure transport is seamless and with relay points occurring at a hospital or other safe location that provides decontamination support for the paramedic crew that is handing off patient care.
- The logistics of planning a multi-leg transfer must be coordinated and put in place as a complete transportation plan that considers each relay point and establishes the plan's milestones and events prior to assigning the first leg of the relay. The relay transportation plan must be approved by EHSB Provincial Duty Officer prior to initial assignment and patient pickup.

Conclusion

There have been no confirmed cases of Ebola in Canada and the risk to Ontarians remains very low. MOHLTC continues to gather information and will update precautions and protocols as required to mitigate the risk to paramedics while considering best practices for patient care.

Appendix A – A Three-Tier Approach to Ebola Virus Disease Management in Ontario


Ontario