

# Ebola Virus Disease

## Directive # 2 – Revised December 9, 2014

THIS DIRECTIVE REPLACES DIRECTIVE #2 ISSUED ON NOVEMBER 7, 2014. DIRECTIVE #2 ISSUED ON NOVEMBER 7, 2014 IS REVOKED AND THE FOLLOWING SUBSTITUTED.

### Issued under Section 77.7 of the Health Protection and Promotion Act, R.S.O. 1990, c. H.7 (“HPPA”)

**WHEREAS** under section 77.7 of the HPPA, if the Chief Medical Officer of Health (“CMOH”) is of the opinion that there exists or there may exist an immediate risk to the health of persons anywhere in Ontario, he or she may issue a directive to any health care provider or health care entity respecting precautions and procedures to be followed to protect the health of persons anywhere in Ontario;

**AND WHEREAS**, under section 77.7(2) of the HPPA, for the purposes of section 77.7(1), the CMOH must consider the precautionary principle where in the opinion of the CMOH there exists or there may exist an outbreak of an infectious or communicable disease and the proposed directive relates to worker health and safety in the use of any protective clothing, equipment or device.

**AND HAVING REGARD TO** Ebola Virus Disease (EVD), which is associated with high fatality rate, and is currently spreading in certain countries in West Africa and is at risk of spreading to Canada and to Ontario – paramedics in pre-hospital settings are particularly at risk.

**I AM THEREFORE OF THE OPINION** that there exists or may exist an immediate risk to the health of persons anywhere in Ontario from EVD;

**AND DIRECT** pursuant to the provisions of section 77.7 of the HPPA that:

# Paramedic Services Land and Air Ambulance and First Responder Practices and Procedures

Date of Issuance: December 9, 2014

Effective Date of Implementation: December 9, 2014

Issued To\*:

- Public Health Units
- X Paramedic Services
- Laboratories

All facilities/personnel providing care in:

- Acute Care Institutions
- Long-Term Care and Complex Continuing Care Settings
- Mental Health Institutions
- Community Settings (offices, clinics, pharmacies, home settings, community-based mental health and addiction programs, Community Health Centres, Community Care Access Centres)

X Specific sector(s): All Paramedic Services Land and Air Ambulance

\* Please ensure that a copy of this directive is provided to the Co-chairs of the Joint Health and Safety Committee and Health and Safety Representative (if any) within your organization

Affected Local Health Integration Networks:

- X All
- Erie St. Clair
- South West
- Waterloo Wellington
- Hamilton Niagara Haldimand Brant
- Central West
- Mississauga Halton
- Toronto Central
- Central
- Central East
- South East
- Champlain
- North Simcoe Muskoka
- North East
- North West

## Summary

Ebola Virus Disease (EVD) is associated with a high fatality rate, and is currently spreading in some countries in West Africa. Although the risk in this country is low, we must be prepared for persons with the disease, or incubating the disease, entering Canada.

In Ontario, those most at risk are health care workers, including paramedics. Therefore, the purpose of this Directive is to provide instructions to all paramedic service providers, and their management and employees, concerning precautions and procedures necessary to protect the health of paramedics or other pre-hospital health care workers and minimize the risk of spreading the disease. Where applicable, this directive also provides instructions to first responders such as fire and police or other first responder agencies.

This directive covers personal protective equipment (PPE) and procedures related to EVD for paramedics and first responders. Directives for other settings, including acute care settings, primary care and laboratories, and concerning training<sup>1</sup>, testing, transportation of specimens, waste management and other matters are, or will be, established.

This directive, in some cases, uses definitions that are specific to the pre-hospital environment to ensure the practices of paramedics (or first responders) are appropriately identified. Some definitions that are used in an acute care or other hospital settings are not provided or used in this directive.

This directive includes guidance on control measures for EVD that may include a higher level of precautions than is being recommended by the Public Health Agency of Canada (PHAC) or the World Health Organization (WHO). The CMOH is recommending these control measures based on the application of the precautionary principle. ***Where there is a discrepancy, paramedic services and paramedics in Ontario are required to follow the control measures in this Directive.***

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<sup>1</sup> [Appendix 1](#): Training contains an overview of training developed for paramedics for release with this directive.

## Definitions

For the purpose of this directive, the following definitions are used:

### Suspect EVD Patients

A suspect patient is a patient who has failed the current EVD screening tool<sup>2</sup>. For patients who have failed the EVD screening tool, paramedics shall employ enhanced PPE practices and revised medical treatment approaches and the patient should be treated and transported with the precautions prescribed below.

For suspect EVD cases in the community, paramedics will remove the patient from the scene into the back of the ambulance, and transport to the closest appropriate emergency department (ED)<sup>3</sup>.

### Confirmed EVD Patients

Confirmed EVD patients are repatriated EVD patients arriving at Pearson International Airport or are diagnosed EVD patients in a hospital with confirmed blood sample results. These patients will be transported by designated ambulances to a designated hospital.

### Paramedic Services

Paramedic Services are land ambulance service<sup>4</sup> or air ambulance service operators certified by the Ministry of Health and Long Term Care (MOHLTC), Emergency Health Services Branch (EHSB) to provide paramedic services, employing certified paramedics for the purpose of responding to ambulance service requests in Ontario.

### Designated Paramedic Services

Designated paramedic service providers shall have and prepare<sup>5</sup> dedicated ambulances that shall be used solely for the purpose of transporting confirmed EVD cases to designated hospitals (designated for referral or treatment of confirmed EVD patients), and EVD patient transfers between hospitals and designated hospitals.

**Inter-facility transfers for confirmed EVD cases and repatriation transfers from Pearson International Airport for confirmed EVD cases will be performed only by designated ambulances.**

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

1. City of Greater Sudbury Paramedic Services
2. Frontenac Paramedic Services

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<sup>2</sup> Please refer to the ministry's EVD Screening Tool for Paramedic Services available at [www.ontario.ca/ebola](http://www.ontario.ca/ebola).

<sup>3</sup> In the context of ambulance destinations, the term "appropriate" takes into consideration the requirement to recognize specific destinations for particular medical conditions such as stroke and trauma.

<sup>4</sup> The [Ambulance Act](#) defines ambulance services in Ontario.

<sup>5</sup> Appendix 2: Designated Paramedic Service Guidance provides information regarding designated paramedic services and designated ambulances.

3. Hamilton Paramedic Services
4. Middlesex-London EMS
5. Ottawa Paramedic Services
6. Peel Regional Paramedic Services
7. Superior North EMS
8. Toronto Paramedic Services
9. Ornge

### Designated Hospital

A hospital designated by the MOHLTC specifically for the purpose of referral, treatment and management of confirmed EVD patients.

The following is the current list of designated hospitals<sup>6</sup> in Ontario. The ambulance communication centre or Ornge Communication Centre will direct the land or air ambulance destination in accordance with the specific campus information as provided by the hospitals, when identified.

1. Children's Hospital of Eastern Ontario
2. Hamilton Health Sciences Centre
3. Health Sciences North
4. Hospital for Sick Children
5. Kingston General Hospital
6. London Health Sciences Centre
7. St Michael's Hospital
8. Sunnybrook Health Sciences Centre
9. The Ottawa Hospital
10. Thunder Bay Regional Health Sciences Centre
11. University Health Network's Toronto Western Hospital

### Bypass Agreements

A bypass agreement is an established mechanism managed by the EHSB for hospitals and local paramedic service providers seeking to establish mutually agreed upon conditions (with supporting medical advice) that permit an ambulance to bypass the closest emergency department for specific patient conditions and transport directly to an appropriate alternative. Considerations include patient acuity, the problem nature and the distance to the proposed alternate destination. Examples of bypass agreements include patient transfer destination protocols for trauma and stroke.

There is no provincial protocol to bypass the closest ED for suspect EVD cases, however hospitals and paramedic services may locally draft bypass agreements for consideration by the ministry. The established approval process<sup>7</sup> for bypass

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<sup>6</sup> The specific campus of each designated hospital will be identified by the respective organization and communicated to the ambulance communication centres and the designated paramedic service providers. This list is subject to change.

<sup>7</sup> Bypass agreement approvals require submission of the draft agreement to the Central Ambulance Communication Centre (CACC) for review and to initiate consideration for approval by the ministry.

agreements (managed by the EHSB) will be followed by hospitals and local paramedic services seeking to implement a local ED bypass agreement for suspect EVD cases.

## Paramedic Service Response to Requests for Ambulance Service

### Designated Land and Air Ambulances

Designated ambulances shall transport only confirmed EVD patients that are picked up at a hospital or Pearson International Airport.<sup>8</sup> They shall contain the minimum necessary equipment and shall be outfitted at the time of each service request with only sufficient equipment to perform the requested transfer.

1. Equipment that may be required during such a transfer shall be available in the ambulance, but, as much as possible, will be stored in a manner that minimizes the risk of contamination.
2. Equipment that is required under the Patient Equipment Standards (PES) but is not expected to be required for the transfer may be stored in a protected area of the ambulance, or carried in an accompanying escort/support vehicle, to ensure the equipment is available should it be needed during the transfer.

**Ornge** will designate a specific fixed wing air ambulance as a designated air ambulance if the need arises, and when an air ambulance is designated, it shall be reserved solely for transportation of an EVD case similar to a designated land ambulance, and will be prepared and utilized similarly, except that the approach should be modified for the special environment of the aircraft.

**For transport from Pearson International Airport** with a designated ambulance for confirmed EVD patients, two paramedics are required to provide patient care at all times and a third paramedic service designated driver will be assigned.

Only those paramedics and the designated driver fully trained, tested, and drilled (i.e. ability to demonstrate knowledge and understanding of the practical training received) shall provide patient care and should monitor each other's adherence to procedures at all times, including donning and doffing of PPE. Demonstrated knowledge of the practical training should include an understanding of:

- the hazards of EVD,
- engineering and administrative protections,
- the use of PPE and other equipment (and the limitations of the PPE), and
- the proper PPE donning and doffing protocols and techniques

**For inter-facility transport** with a designated ambulance for confirmed EVD patients, at least two paramedics are required for patient care and a third paramedic service designated driver is required to drive the land ambulance. A hospital clinician may be required, depending on patient acuity, and shall provide clinical care (using hospital equipment) during transport.

Designated ambulances will transport an EVD patient in the following manner:

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<sup>8</sup> Pearson International Airport is currently the only designated port of entry to Ontario for repatriated EVD patients.

1. In a manner directed by the attending physician in consultation with ID specialists, the receiving designated facility and the paramedic service provider. The potential for contamination, patient safety and acuity, and the safety of the paramedics, support staff and hospital staff involved will be taken into consideration. Wrap patient in linen as much as possible to avoid environmental contamination. Draping of the interior of the back of the ambulance as operationally feasible and using an impermeable material should be performed to reduce contamination.
2. When it has been determined<sup>9</sup> in consultation between sending and receiving hospitals, attending physician(s), ID specialists and the designated paramedic service, that a negative pressure isolation vessel<sup>10</sup> should be used; in a designated vessel that is secured to the ambulance stretcher and that provides filtration of any air exchange, is supported by both AC power and battery backup power sources (or sufficient reserve backup power sources if AC power is not available or not applicable).

When treating and transporting a confirmed EVD patient, there should be at least two paramedics with the patient at all times in the patient care compartment. The paramedics providing care shall have no other duties and shall monitor each other's adherence to procedures, in particular the donning and doffing of PPE.

The paramedic services designated driver shall be part of the designated transport team and shall also be protected by PPE as described below. PPE not initially selected shall be available in the driver compartment should it be required during the transfer.

PPE requirements for the designated land ambulance driver or designated air ambulance flight crew shall be developed by the paramedic service provider or air ambulance service provider, taking into consideration the operational requirements for the ambulance or aircraft and considering the practical and safety aspects of donning and doffing in adverse conditions.

Practical testing of PPE for drivers and flight crews must be conducted by the service provider during development of the service specific protocols for the operation of land and air ambulances.

In cases where the driver, safety officer or other support personnel will not be within 2 metres of the patient or contaminated environment, enhanced PPE for suspect or confirmed EVD patients is not a requirement and wearing of PPE by the driver of a land ambulance or support unit is not required.

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<sup>9</sup> For most confirmed patients, the use of negative pressure containment vessels presents an increased risk of exposure to paramedics during loading and unloading, and may not be the most appropriate means of transport by ambulance. See [Appendix 2](#) for further information.

<sup>10</sup> Negative pressure containment vessels will be supplied centrally by the ministry to designated paramedic service providers along with supporting documentation and training materials regarding the preparation, use and cleaning of the equipment. Paramedics assigned to work in designated ambulances will receive training on the supplied vessels and will be assessed for competency in their use prior to being assigned to any call where a vessel will be used during patient movement

In the case of an air ambulance, the pilot and the flight deck will be isolated from the patient compartment and no contact with the patient or equipment will occur. The wearing of PPE by the pilot is not a requirement.

The driver compartment of a land ambulance or flight deck area of an aircraft shall be isolated as much as possible from the patient care area. Designated patient care personnel shall not at any time enter a driver compartment or flight deck area at any time after donning PPE, until the conclusion of any patient transport activity and until a complete deep environmental cleaning and decontamination of the designated land or air ambulance and all members of the transportation team has been performed.

Only those paramedics fully trained, tested, and drilled (i.e. ability to demonstrate knowledge and understanding of the practical training received) on the hazards of EVD, PPE and other equipment such as the vessel, and provided with the knowledge of the limitations of the PPE), and proper PPE donning and doffing protocols and techniques, shall form part of the transport team and all members of the team shall at all times monitor each other's adherence to procedures, particularly donning and doffing of PPE.

Further guidance on the transfer of patients to designated hospitals will be provided to Paramedic Services by the Ministry of Health and Long-Term Care, Emergency Health Services Branch, in the form of Training Bulletins.<sup>11</sup>

### Non-Designated Ambulances

Non-designated ambulances are land or air ambulances deployed by paramedic service providers and Ornge to respond to all ambulance requests (excluding those outlined above for designated ambulances) as assigned by an ambulance communication centre. These include those requests where there is a suspect EVD patient as identified by the ambulance communication centre or Ornge Communication Centre through screening protocols based on the current EVD screening tool.

Paramedics responding in a non-designated ambulance, and any other responders that may be responding to the request, will always follow Routine Practices and Additional Precautions (RPAP) as recommended by the Provincial Infectious Diseases Advisory Committee (PIDAC)<sup>12</sup>. RPAP includes the use of hand hygiene, cleaning and disinfection of all shared equipment, regular environmental cleaning using an approved hospital grade disinfectant<sup>13</sup>, meticulous attention to safety around the use of needles and sharps, and a complete and careful risk assessment during the initial patient encounter.

Where EVD is suspected, paramedics will follow further enhanced precautions as identified below. Where other first responders are responding to the call, the same precautions apply.

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<sup>11</sup> Training bulletins are routinely used by EHSB as needed, to provide guidance to paramedics and to ambulance communication officers.

<sup>12</sup> See PIDAC's [Routine Practices and Additional Precautions in All Health Care Settings](#) for more information.

<sup>13</sup> All hospital-grade disinfectants must have a drug information number (DIN)



## Patient Transportation from Pre-Hospital Setting to ED

When a suspect EVD patient is identified by an ambulance communication centre, the anticipated destination or receiving ED will be notified by the ambulance communication centre immediately.

When a suspected case of EVD is initially identified by a paramedic after patient assessment at the scene of any land or air ambulance service request, the receiving ED must be notified immediately by the paramedic or ambulance communication centre to allow appropriate receiving preparations by the hospital.

The initial assessment, triage, and transfer of care to ED staff of patients with suspected EVD will be conducted in the ED ambulance bay. While in the ambulance bay, ED triage area (if applicable), or ED proper (if applicable), paramedics attending to an EVD patient while wearing PPE shall avoid contact with hospital surfaces, walls, and equipment, and maintain a distance of at least one metre from staff and visitors. Any contact must be reported to hospital staff and the paramedic's supervisor.

Where no ambulance bay exists, a safe area located away from public access and other people, and as determined by the hospital in consultation with the paramedic service should be pre-identified for the initial assessment and triage of suspect EVD patients. This process may be conducted inside the ambulance. 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 has been completed. These deep environmental cleaning and decontamination processes will be conducted according to local paramedic service and first responder service policies.

## Restricting Access to Patient(s)

For **designated** ambulance transport of confirmed EVD patients, no persons other than the paramedics and/or other essential health care providers (appropriately trained as noted previously in this Directive) shall be allowed in the back of the ambulance.

For **non-designated** paramedic service transport of suspected EVD patients, no persons other than the paramedic(s) (appropriately trained as noted previously in this Directive), and if required, a care-giver, shall be allowed in the back of the ambulance.

## Point of Care Risk Assessments

Transmission of EVD can occur:

- directly through contact with blood and/or body fluids or droplets,
- indirectly through contact with patient care equipment or surfaces contaminated with blood and/or body fluids (secretions and excretions: blood, vomit, urine, feces, sweat, semen, saliva, other fluids), and
- possibly when performing aerosol-generating procedures.

Paramedic services shall ensure that paramedics are incorporating the latest in occupational health & safety and infection prevention & control recommendations from the Chief Medical Officer of Health for EVD into their point of care risk assessments, including any enhancements or modifications to PPE.

### Ambulance Communication Centre Screening

When ambulance communication centres and the Ornge Communication Centre receive a request for an emergency land or air ambulance response, they shall employ the EVD screening tool.

When the screening indicates a suspect EVD case the ambulance communication centre or the Ornge Communication Centre shall immediately advise the responding paramedics that, “**The patient has failed EVD screening**”. Additional medical information will be provided as soon as available/possible.

To implement EVD screening, ambulance communication centres using the DPCI II<sup>14</sup> call taking protocols will use the EVD screening tool for Paramedic Services published and maintained by the Ministry of Health and Long-Term Care.

To implement EVD screening, ambulance communication centres using MPDS™ call taking protocols<sup>15</sup> will implement the Emerging Infectious Disease Surveillance Tool (SRI/MERS/EBOLA).

### Paramedic Screening

Patients presenting in pre-hospital environments shall be screened first by the ambulance communication centre (as outlined above) according to the most current version of the EVD screening tool, as well as by the paramedics at the scene.

Patients screened by the ambulance communication centre and identified as a suspect EVD patient shall be screened again using the EVD screening tool by a paramedic upon arrival. The assessment should be conducted by one paramedic (appropriately protected as described for suspect EVD patients in this directive) immediately upon arrival, and prior to a second paramedic entering the scene.

A paramedic should conduct a point of care risk assessment 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, including appropriate PPE.

The second paramedic must remain more than two metres away from the patient and shall follow routine PPE precautions while awaiting the results of the point of care risk assessment conducted by the paramedic performing this role. (The purpose of the precautionary approach is to allow the paramedic team to communicate the findings of the assessment to the ambulance communication centre, and/or hospital, and/or ID

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<sup>14</sup> Dispatch Priority Call Information II (DPCI II) is a Ministry of Health and Long Term Care proprietary ambulance call prioritization algorithm used in Ontario by some ambulance communication centres.

<sup>15</sup> Medical Dispatch Priority System ® is an ambulance call prioritization algorithm used by Toronto and Niagara ambulance dispatch centres.

specialist for advice, and/or perform any other duties required that may be impeded once enhanced precautions are adopted by both paramedics.)

The second screening that is conducted at the scene will result in the paramedic making a determination as to whether the patient is a suspect EVD patient (and the provisions of the directive will apply) or that the patient is not a suspect EVD patient (and standard operating procedures of the paramedic service will apply).

Based on the paramedic point of care risk assessment conducted at the scene, if the determination is made that the patient is a suspect EVD case, and if a consultation protocol is established by the ministry, the paramedic shall contact a designated Infectious Disease (ID) specialist using the protocols established by the EHSB in order to receive advice and assistance in making the on-scene determination.

- This consultation will result in a determination that the patient is a suspect EVD case and the provisions of the directive will apply; or
- The consultation will result in a determination that the patient is not a suspect EVD case and the paramedic will resume normal practices.
- If a consultation protocol has not been established by the ministry or is not possible for operational reasons (such as no radio patch service) then the results of the point-of-care risk assessment conducted by the paramedic shall define the patient as a suspect EVD case, or not, until the patient is transferred to the emergency department (ED).

## Tiered Agency Responses and Co-Responders

Tiered response agreements are established between paramedic services and allied agencies such as fire departments and/or police services. Municipalities are responsible for tiered response agreement provisions and the participation of agencies in tiered response agreements.

For suspect EVD cases as identified by the ambulance communications centre, the allied responders that participate in medical tiered response shall be immediately notified by the communication centre that, “**The patient has failed EVD screening**”. Unless fire and police services are required to attend to a suspect EVD case for a specific purpose (e.g. for extrication or for the restraint of a combative patient), all measures should be taken to avoid a tiered response. If police or fire services are needed for a suspect EVD case, paramedic service providers should consult with the allied agency to establish the appropriate response procedures.

## Personal Protective Equipment

### Suspect or Confirmed EVD Cases

For confirmed or suspect EVD cases (as identified by the communications centre or on scene by the paramedic), the following minimum<sup>16</sup> PPE coverage is required:

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<sup>16</sup> The prescribed PPE level is appropriate for the management of suspect and confirmed EVD patients. A Positive Air Pressure Respirator (PAPR) has been approved by the ministry as an alternative to the N95 and face shield combination for EVD patient management. Training on the use of PAPRs must be

- fit-tested, seal-checked N95 respirator
- full face shield (may be supplemented by safety eyewear)<sup>17</sup>
- 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 protection

Consideration must be given to the environment and working conditions of paramedics, such as being exposed to adverse and changing weather, slippery terrain and other variables that paramedics may experience. Paramedic Services should take into consideration the working conditions and needs of paramedics when procuring PPE solutions.

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

## Procedures

### Donning and Doffing PPE

In some cases, patients with EVD may not be recognized immediately. The consistent and appropriate use of RPAP remains the best defense against the transmission of EVD and other infections. RPAP includes the use of hand hygiene, cleaning and disinfection of all shared equipment, regular environmental cleaning using an approved hospital grade disinfectant, meticulous attention to safety around the use of needles and sharps, and a complete and careful risk assessment during the initial patient encounter.

RPAP, including the use of appropriate PPE, should always be followed by paramedics and first responders. Sufficient quantities of PPE in a variety of sizes shall be provided by the ambulance service or first responder agency to ensure that the PPE is the correct size for the paramedic and first responder required to use it.

Paramedics should observe each other's donning and doffing of PPE to ensure that the inadvertent contamination of eyes, mucous membranes, skin or clothing does not occur. Whenever possible, doffing must be observed by an individual who has been trained in doffing techniques by their paramedic service. Doffing without an observer should only

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provided and must be consistent with the principles outlined in this directive. Guidance for paramedics will be provided by the Medical Advisory Committee (MAC) should PAPRs be used while performing modified medical procedures.

<sup>17</sup> Paramedic Services may prescribe local practices to supplement the requirement for a full face shield. Considerations for supplementing the face shield would include the design and configuration of the face shield and working environment. Augmentation of the full face shield should also consider the design of the selected optional eye protection (such as potential for fogging, or degree of protection provided).

occur when it is unavoidable (such as when a breach occurs and there is no assistance available or during other circumstances that prevent assisted doffing).

If self-doffing is a requirement because no assistance is available and PPE must be removed, first use a hospital grade disinfectant on the outer layer of gloves. If a hospital grade disinfectant is not available, use alcohol-based hand rub (ABHR) on gloves, ensuring the gloves are removed immediately and not subjected to extended contact with ABHR which may degrade glove material. Cleaning of gloves is applicable only during doffing and should not be done during normal use; gloves are never cleaned and then left on the hands for continued use.

In circumstances requiring self-doffing, every effort should be made to mitigate the risk of touching any part of the body with contaminated hands, including contaminated gloved hands. Sanitizing the second layer of gloves may also be done if/when they have been uncovered. This practice mitigates risks if a breach to gloves has occurred and should always be done before a critical step during doffing (such as removal of eye protection or N95 respirator mask).

Paramedics must avoid contact between contaminated gloves/hands and equipment and the face, skin or clothing. Hands or gloves must be cleaned before any contact with the face. If there is any doubt, clean hands again to ensure mucous membranes (eyes, nose and mouth) will not be contaminated.

## Patient Care

Only essential equipment shall be used while caring for a suspect or confirmed EVD patient. Medical devices and equipment should be disposable whenever possible. All equipment used shall be dedicated to the patient until the diagnosis of EVD is excluded, patient care has been transferred to the ED or the designated hospital, and all precautions are discontinued. All re-usable equipment must be **cleaned and disinfected** using a hospital grade disinfectant<sup>18</sup> by personnel using appropriate PPE and according to the manufacturer's instructions prior to re-use on a subsequent patient. Extreme caution should be exercised when performing procedures which utilize sharps, such as starting intravenous lines or performing injections (which must only occur in a non-moving ambulance). Use of needles and sharps should be kept to a minimum and used for medically essential procedures only. A needleless system and safety-engineered medical devices **must** be used in accordance with the regulation O. Reg. 474/07 Needle Safety made under the *Occupational Health and Safety Act*. A puncture resistant sharps container must be available at point-of-use.

Paramedics will follow the advice of the Medical Advisory Committee (MAC) regarding the treatment of patients, changes in clinical practice, or modified medical procedures for suspect or confirmed EVD patients. Any updated advice from the MAC will be provided to paramedic services and paramedics by the EHSB and will be published in the form of training bulletins.

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<sup>18</sup> All hospital-grade disinfectants must have a DIN number

Paramedics are not responsible for cleaning and/or decontamination of the location from which a patient is removed. Hospitals who receive a suspect EVD patient are required to notify the local public health unit. The hospital will also notify Public Health Ontario (PHO) if laboratory testing is being considered. A future directive will be developed by the CMOH to address decontamination and waste management requirements related to a suspect or confirmed EVD patient.

## Cleaning and Decontamination

- **Blood and all body fluids from EVD patients are highly infectious.**
- **Safe handling of potentially infectious materials and the cleaning and disinfection of the land or air ambulance and equipment is paramount.<sup>19</sup> Waste management<sup>20</sup> is also critical.**

Use hospital-grade disinfectants to clean the ambulance and follow the manufacturer's recommendations.

Any impermeable draping material used in an ambulance and any containment material used to isolate equipment should be collected by ensuring external surfaces are folded inwards, minimizing contamination risk.

Materials contaminated from a confirmed EVD patient are considered highly contagious and must be managed and treated in accordance with the future CMOH waste management directive<sup>21</sup>. Pending release of that directive, waste should be handled in accordance with this directive and/or in conjunction with paramedic services' local hospital policies.

All potentially EVD contaminated waste should be disposed of using two leak proof, red bio-hazard waste bags, or a leak proof, red bio-hazard bag and a leak proof outer container. The outer bio-hazard bag or container should be cleaned with a hospital-grade disinfectant before being transported for incineration,

Upon transfer of care of the patient to the ED, paramedics will doff PPE and don fresh PPE prior to commencing deep environmental cleaning and decontamination of the land or air ambulance. Deep environmental cleaning includes, but is not limited to:

- the removal of all dirty/used items (e.g. suction container, disposable items).
- the removal of any draping material before starting to clean the ambulance.
- the disposal of anything in the ambulance that was not protected by draping material or cannot be cleaned as noted above and in accordance with the CMOH waste management directive.

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<sup>19</sup> Refer to PIDAC's [Best Practices for Environmental Cleaning for Prevention and Control of Infections in all Healthcare Settings](#) for more information.

<sup>20</sup> Waste management and other environmental concerns with respect to management of EVD-related materials will be addressed in a future CMOH waste management directive and specific information and direction in that directive may augment or supersede information on waste management in this directive.

<sup>21</sup> Refer to the future CMOH Waste Management Directive when it has been released.

- the use of hospital-grade single-use wipes (preferred) or microfibre fresh cloths, microfibre mop, supplies and solutions to clean the ambulance

During the cleaning process:

- use as many wipes/cloths as necessary to clean the ambulance
- do not dip a cloth back into disinfectant solution after use
- do not re-use cloths
- clean and disinfect all surfaces
- allow for the appropriate surface contact time with the disinfectant
- discard all contaminated linens and cloths used during the cleaning process
- all other equipment used to clean the ambulance must be cleaned and disinfected before being put back into general use (or disposed of if it cannot be cleaned and disinfected)
- fluid contaminants must be controlled during the cleaning process to ensure contamination of the cleaning area does not occur (i.e., body fluids such as vomit are not 'hosed out')<sup>22</sup>
- all local processes to control the decontamination process must be followed along with all current environmental policies as well as any guidance that is issued for waste management and disposal

Cleaning and decontamination of any vessels used for transport of EVD patients will be performed only by staff who have received training on the equipment and on the cleaning and decontamination procedures recommended by PIDAC (see footnote 11) and the manufacturer.

In instances where vessels are used, the ambulance must still be cleaned and decontaminated as per the above procedures.

Cleaning and decontamination may be performed by the paramedic service using appropriately trained staff employed by the service (as noted above), or may be performed by an external agency, contracted by the paramedic service to conduct cleaning and decontamination.

After cleaning and decontamination is complete, doffing of PPE should be performed in the same manner as previously specified including the use of the observer.

## Duration of Precautions

For patients with suspected EVD, precautions taken by paramedics shall remain in effect until the possibility of EVD has been eliminated.

For patients where EVD is still being considered or for confirmed EVD cases, the precautions taken by paramedics shall remain in effect until the land or air ambulance or designated ambulance and personnel have been decontaminated in accordance with the directive and all local policies.

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<sup>22</sup> Refer to the future CMOH Waste Management Directive when it has been released.

## Management of Potentially-Exposed or Exposed Paramedics

Paramedic service providers and first responder service providers shall develop policies for monitoring and managing paramedics or first responders who have had contact with suspect or confirmed EVD patients. Follow-up of paramedics or first responders who have been potentially exposed is the role of the employer and local public health units. The employer shall ensure that the local public health unit is notified of any paramedic involved in the management of a patient with suspected or confirmed EVD.

The notice of occupational illness requirements of Section 52 (2) of the *Occupational Health and Safety Act* are to be adhered to by employers if the employer is advised by or on behalf of a worker that the worker has an occupational illness or that a claim in respect of an occupational illness has been filed with the Workplace Safety and Insurance Board by or on behalf of the worker.

All exposures shall also be reported to the Joint Health and Safety Committee (JHSC) and the Health and Safety Representative (if any).

Paramedics with percutaneous or mucocutaneous exposures to blood, body fluids, secretions, or excretions from a patient with suspected EVD shall:

- Stop working.
- Immediately wash the affected skin surfaces with soap and water (if not possible, use ABHR). For mucous membrane splashes (e.g., conjunctiva) irrigate with copious amounts of water or eyewash solution.
- Immediately notify the ambulance communication centre or Ornge Communication Centre for a second response.
- Contact the employer.
- Comply with employer-provided arrangements for transportation to decontamination area.
- Address the exposure (for example, if the exposure was a result of a breach of the PPE, the breach should be addressed).
- Follow up with the employer and an appropriate health care provider for post-exposure assessment and management for blood-borne pathogens as per usual organizational policy.

Note that the sequence of steps may require adjustment depending on the circumstances at the time of exposure.

Paramedics who have been caring for or exposed to an EVD patient, and subsequently develop fever (greater than 38 degrees Celsius) or other symptoms consistent with EVD and within 21 days of last known exposure, shall:

- Not report to work or immediately stop working and isolate self from others.
- Notify their employer and local public health unit for further direction.
- Seek prompt medical evaluation and testing as clinically indicated.
- Comply with work exclusion recommended by their local public health unit (PHU) until they are deemed no longer infectious to others.



For asymptomatic paramedics who had an unprotected exposure (e.g., not wearing recommended PPE at the time of patient contact or through direct contact to blood or body fluids) to a patient with EVD:

- Receive medical assessment and follow-up care including fever monitoring and monitoring for other symptoms compatible with EVD twice daily for 21 days after the last known exposure.
- The PHU will conduct daily monitoring for 21 days from the last exposure.
- Do not have any patient contact for 21 days following the unprotected exposure. Other proposed activities (which cannot consist of patient care) will be reviewed by public health.

For asymptomatic paramedics with no unprotected exposure but who have cared for a patient with confirmed EVD (e.g., wearing recommended PPE and with no breach):

- They should be referred to the PHU for individualized assessment and support.

## Communications

EVD can generate extreme media interest. A strategy for internal communications within the organization to reach all staff is important. Easy access to updated policies, procedures, fact sheets and Q and A's geared to various educational and language levels are examples. Maintaining patient confidentiality in the face of media interest is a challenge. Paramedics should be reminded of their legal responsibilities under the *Personal Health Information Protection Act, 2004t*.

Note that the Ministry of Health and Long-Term Care may activate the Ministry Emergency Operations Centre to coordinate and direct the health system's response in the event of a confirmed case of EVD in Ontario. As part of this coordination, the MEOC will support health system partners, including paramedic service providers, to implement a coordinated communications strategy.

**Note: You are also required to comply with applicable provisions of the Occupational Health and Safety Act and its Regulations.**



David L. Mowat, MBChB, MPH, FRCPC  
Interim Chief Medical Officer of Health

## Appendix 1: Training.

Employers must ensure that paramedics receive adequate training on the appropriate use and limitations of personal protective equipment (PPE) and other protective measures necessary to protect both paramedics and patients from the risk of Ebola virus disease (EVD). This includes ensuring paramedics who may be exposed to patients with infectious diseases or, their body fluids or materials that may be contaminated, are trained and competent in the use of PPE (including donning and doffing in a systematic way consistent with best practices to prevent self-contamination). Employers are responsible for arranging and delivering training within their organizations and may access resources identified below.

The *Occupational Health and Safety Act* (OHSA) has an overall requirement for employers to provide information, instruction, and supervision to a worker to protect the health or safety of the worker. This provision, and the requirement for the employer to take every precaution reasonable in the circumstances for the protection of a worker, applies to all workplaces. Requirements with respect to PPE for paramedics and paramedic services are outlined in the *Basic Life Support Patient Care Standards* (BLSPCS), and other applicable standards, as incorporated by reference in Reg. 257/00 under the *Ambulance Act*.

Training must address the unique needs of paramedics and focus on specific areas of risk associated with various employee groups and job functions. All paramedic staff should be trained, tested and drilled on the use of PPE, including enhanced precautions as described in the directive.

Paramedic services using specialized equipment must be trained, tested and drilled on that equipment.

The employer shall work in collaboration with the Joint Health and Safety Committee (JHSC) and Health and Safety Representative (HSR) (if any), to determine the appropriate measures required to control the risk of infection with EVD, including initial and ongoing training, education and practice.

### Types of Training

Training must include the following core areas:

General Awareness training:

- Knowledge of EVD (symptoms, mode of transmission, etc.)
- Knowledge of the pre-hospital care setting's emergency preparedness and response plans for EVD (including any hazard-specific plans for EVD)
- Knowledge of health and safety measures and procedures identified in Directive #2 Paramedic Services Land and Air Ambulance and First Responder Practices and Procedures, as related to an individual's work group and job function.
- Knowledge of workplace measures and procedures for management of suspected or confirmed EVD cases.

Specific training and demonstrated competency in appropriate and safe use of PPE:

- Use of Routine Practices in infection prevention and control (i.e., RPAP as noted previously).
- The selection of appropriate additional precautions, including PPE based on a point of care risk assessment.
- Confidence and proficiency in donning and doffing of PPE (appropriately sized to the individual using it) consistent with the organization's protocols.
- Understanding of the strengths and limitations of different pieces of PPE.
- Proper fit and inspection of PPE for damage or deterioration.
- Appropriate disposal of PPE after use.

### Hands-On PPE Training, Testing and Frequent Practice

All organizations must ensure that hands-on practical training, testing, and frequent practice on donning and doffing PPE is provided for identified work group or job functions. This training should include best practices for the use of unfamiliar PPE (e.g., observation, refresher training, etc.). Training on PPE must be consistent with both Directive #2 for Paramedic Services Land and Air Ambulance and First Responder Practices and Procedures and the PPE selected for use by each organization.

All paramedics identified for hands-on practical training must demonstrate competency in performing Ebola-related infection control practices and procedures (as required by their function) and specifically in using the appropriate sequence for donning and doffing of PPE and the additional precautions to exercise if self-doffing (where unavoidable, as noted on page 13). This competency must be verified by a trained observer/coach and documented as per the procedures below.

Training should be repeated and practiced frequently, with just-in-time refresher training provided in instances of increased risk of exposure to a patient with suspect or confirmed EVD, or that patient's environment, waste, or specimens.

### Documentation and Verification of Competency

#### ***General Awareness Training for Paramedics***

Organizations must document all training completed by paramedics clearly identifying:

- Type of training
- Employee group or job function
- Name of trainee

#### ***Hands-On PPE Training for Identified Work Groups or Job Functions***

Additional documentation is required for paramedics that participate in hands-on PPE training, drills and testing to verify proficiency and competency in donning and doffing PPE.

The first hands-on Ebola PPE training sessions completed by identified paramedics should be documented using a step-by-step checklist, in which core competencies are assessed, verified, and documented for each trainee, by a trained observer/coach.

Follow-up refresher sessions and just-in-time training may also be documented using step-by-step checklists, at the discretion of individual organizations.

Checklists used for training and documentation must be consistent with the PPE recommended in Directive #2 for Paramedic Services Land and Air Ambulance and First Responder Practices and Procedures and the organization's PPE selected by the individual organizations. A sample checklist will be developed by the Public Service Health and Safety Association (PSHSA) as soon as possible and will be posted on the Ministry's Ebola website ([www.ontario.ca/ebola](http://www.ontario.ca/ebola)). This checklist may be used and adapted by organizations (while maintaining consistency with Directive #2) to meet their individual needs. Organizations may also develop and use their own tools and checklists.

### Reporting

Organizations are responsible for documenting and reporting on the status of all training completed at each Paramedic Service, including:

- Total number staff requiring training (identify specific employee group and type of training)
- Total number of staff received training (identify specific employee group and type of training)
- Total number of outstanding training (identify specific employee group and type of training)

Organizations are responsible for reporting the status of this training on request to the Ministry of Labour and/or the Ministry of Health and Long-Term Care.

### Supporting Resources

Organizations may access resources from the following organizations to support their development and delivery of training for paramedics:

- [Ministry of Health and Long-Term Care](#)
- [Public Service Health & Safety Association](#)
- [Infection Prevention and Control Canada](#)

These organizations continue to develop additional resources – please check their websites regularly.

## Appendix 2: Designated Paramedic Services Bulletin

### 1. Issue: Use of negative pressure containment vessel (vessel)

#### Recommendations:

- A. For patient and paramedic safety, an isolation vessel identified by the ministry<sup>23</sup> for use in a transport environment (land or air ambulance<sup>24</sup>) should only be used in limited conditions where the medical acuity of the patient and all circumstances of the intended transfer are considered by an infectious disease specialist, the attending physician, the sending and receiving hospitals and the designated paramedic service provider.
- B. To approve the use of an isolation vessel for a particular patient, it must be determined that no alternative methods of isolation exist, and that the risk of contamination from bodily fluids exists despite the provision of enhanced personal protective equipment for the patient and the attending paramedics and/or other health care providers involved in the management, treatment and transfer of the patient.
- C. Isolation vessels may be used for cases where significant contamination is expected, the duration of transport will not exceed the patient's and the paramedics' abilities to travel in this mode, no other safer mode can be used and any other requirements to be determined in consultation with the paramedic service provider at the time of planning the transfer.
- D. If vessel use is recommended at the conclusion of the consultation and at the time of booking the transfer, the isolation vessel must meet the designated paramedic service's requirements for safe use in an ambulance (for both patients and paramedics).
- E. Most confirmed EVD patients should be transported on a regular stretcher, fully covered, with no exposed skin or clothing. Consider completely wrapping the patient in impermeable sheets (or linens) and providing a face shield; or in full coverage impermeable PPE, including a face shield, surgical mask, gloves and foot coverings. Wrapping of a patient must be done with consideration for the potential of raising the patient's temperature (patient may be febrile). Also on a case by case basis, the ability to provide treatments during transport must be taken into account. The approach to protecting the patient and paramedics in this manner must be included in the

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<sup>23</sup> The ministry is working with paramedic services and the vendor(s) of isolation vessels to determine the requirements for any changes to the existing products in order to meet the designated paramedic services requirements. A vessel that is determined to meet those requirements will be made available to designated paramedic services for use when the acuity, transport distance and other factors indicate the use of an isolation vessel is the safest mode of transport for both patient and paramedics.

<sup>24</sup> Ornge has identified an isolation vessel which meets their requirements for use in a designated ambulance.

pre-transfer considerations by the sending and receiving hospitals, attending physician(s), ID specialist and the paramedic service.

- F. Paramedics and any other escorts involved in patient care or who will be working within 2 metres of the patient (or contaminated equipment and/or area) should use enhanced PPE per CMOH Directive # 2 for Paramedic Services Land and Air Ambulance and First Responder Practices and Procedures. (This does not apply where the working distance is within the 2 metre threshold but engineering protection has been provided.)
- G. The attending physician(s), sending and receiving hospitals, ID specialist and the paramedic service provider will consult to determine any other protective measures required.

## **2. Issue: Configuration and use of designated Vehicles**

### **RECOMMENDATIONS:**

- A. Other than Orange Critical Care land ambulance and air ambulance, designated vehicles will be stripped of all exposed non-essential equipment (essential for the specific transfer that is planned in each case), and draped with impermeable cloths/sheets on cabinet side of the ambulance and bulkhead to reduce decontamination requirements post transport and provide isolation from the driver compartment. Seat belts for paramedics must remain available.
- B. Draping does not remove the obligation to clean and decontaminate the ambulance; the purpose is to facilitate post-transport cleaning and decontamination.
- C. Local Paramedic Service practices will determine the content of the paramedic response bags on board the ambulance at the time of the call, OR access to bags and other equipment may be provided from an escort vehicle. Any additional exposed equipment should be covered or put away if possible.
- D. Orange critical care and air ambulances will carry all equipment and supplies per standard operating practices, but will similarly protect the contents from potential contamination where possible, making sure to use disposable supplies as much as possible and plan for post-transport cleaning and decontamination in a manner that accounts for the additional cleaning requirements imposed by carrying critical care equipment and supplies. Items that are not normally disposed of, but are not of high cost may be considered disposable in the case of a confirmed EVD transport to facilitate cleaning and decontamination post-call.
- E. Designated responses may involve more than one unit and depending on the paramedic service protocols and/or the circumstances of the case, may be followed by a support vehicle assigned by the paramedic service.

- F. Communications must be provided; where no land ambulance radio package is available, a portable FleetNet capable radio will be supplied and/or cell phones and support provided by an escort unit.
- G. Post-use cleaning and decontamination of the ambulance unit may be performed by professional cleaning services, or by paramedics (or other paramedic service staff) who have been specifically trained in the cleaning and decontamination requirements of the unit, and following the standards approved by a qualified infection control practitioner and in accordance with the practices and procedures developed by the paramedic service and as directed in the CMOH Directive #2 for Paramedic Services and any other CMOH related directives that apply to the cleaning and decontamination activities.
- H. Ambulance communication centres and Ornge Communication Centre will ensure that Inter-facility EVD calls are prioritized as scheduled transfers (Code 2).
- I. Patient acuity and treatments required during transport will be the determinants in whether a hospital escort is required.
- J. Paramedic services will determine locally, the number of paramedics traveling in the land or air ambulance; based on the acuity, treatments required during transport and whether hospital escorts are attending.
- K. Training should be paramedic service specific, due to individual approaches to equipment procurement and the variety of stages in training program delivery individual services have achieved to date.

**3. Issue: Inter-facility Transfers of Suspect EVD Cases (PUI – Patients Under Investigation) by dedicated paramedic services or non-dedicated paramedic services**

**RECOMMENDATIONS:**

- A. Baseline Position: Designated Paramedic Service ambulances that have been designated and prepared for transporting EVD patients are not required for the transfer a suspect EVD patient. All normal transfer protocols apply (Critical, PTAC, Ornge consult, etc.) for the inter-facility transfer of a suspect EVD patient and the transfer will be performed by a non-designated ambulance.
  - i. Exception: Extenuating circumstances may be considered at the time of booking as exceptions to the rule, on a case by case basis.
  - ii. These extenuating circumstances may include a combination of excessive travel distances, patient acuity and capacity of the remote hospital.
  - iii. If consultations between an infectious disease specialist, the sending and receiving hospitals and the paramedic service provider determine that the impact to a local paramedic service by using a non-designated

ambulance or the specific patient conditions and transfer requirements indicate the use of a designated paramedic service is the most appropriate means of transport, then this exception will apply.

- B. Communication centres and Ornge Communication Centre will ensure that inter-facility EVD calls are prioritized as scheduled transfers (Code 2).
- C. Patient acuity and treatments required during transport will be the determinants in whether a hospital escort is required.
- D. The transporting paramedic service will determine the number of paramedics traveling in the land or air ambulance; based on the acuity, treatments required during transport and whether hospital escorts accompany the patient.

**4. Issue: Designated Paramedic Service Unit Deployments/Ornge Integration  
RECOMMENDATIONS:**

- A. Out of province transfers would not be considered for the purpose of EVD referral, but other medical conditions complicated by EVD would require case by case consultation. Consideration must be given to cleaning and decontamination requirements at the receiving end of the transfer.
- B. Normal booking determinants still apply for Ornge – patient acuity and distance. If normal operating procedures call for rotor wing response, then an alternative must be used (there will be no rotor wing service for confirmed EVD patients).
- C. For lower acuity confirmed EVD cases (critical care not required), designated paramedic services other than Ornge will usually provide transport.
- D. When there is a designated paramedic service in the sending hospital's area; the transporting service will be that service.
- E. Designated Service deployment will be based on the closest designated service availability.
- F. When Ornge is being considered for the transfer;
  - i. There will be a general division between Northern and Southern Ontario. GTA and Golden Horseshoe, Southwest will not receive Ornge designated air ambulance service based on the shorter distances involved, but might receive Ornge CCLA designated land ambulance; to be decided through normal transfer booking processes (patient acuity, location of CCLA unit relative to sending facility, etc.).
  - ii. Ornge may send a land ambulance team to the sending facility over land, with a designated land ambulance; or
  - iii. Ornge may send a team with equipment by air, and assist by converting a local resource into a designated ambulance, for transporting the patient to meet a fixed wing designate air ambulance at a local airport.
- G. In difficult cases or where there is not a clear protocol to determine the most appropriate designated paramedic service for a transfer, the Emergency



Management Branch (EMB), Ornge, the closest designated paramedic services and EHSB Provincial Duty Officer will confer.