Ebola Virus Disease

Directive #2 for Paramedic Services (Land and Air Ambulance) – Revised April 13, 2015

THIS DIRECTIVE REPLACES REVISED DIRECTIVE #2 ISSUED ON DECEMBER 9, 2014. DIRECTIVE #2 ISSUED ON DECEMBER 9, 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), associated with a high fatality rate, and currently spreading in certain countries in West Africa and 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:

Ebola Virus Disease Directive #2 for Paramedic Services (Land and Air Ambulance)

Date of Issuance: April 13, 2015

Effective Date of Implementation: April 13, 2015

Issued To*: paramedic services (pre-hospital care)

*Paramedic services shall provide a copy of this directive to the co-chairs of the Joint Health & Safety Committee (JHSC) or the Health & Safety Representative (HSR) (if any).

Introduction

Ebola virus disease (EVD) is associated with a high case fatality rate, particularly when care is initiated late in the course of illness. There is currently transmission of EVD in several countries in West Africa. Although the risk in Canada is currently very low, Ontario's health care system must be prepared for persons with the disease, or incubating the disease, entering the province.

In Ontario, those most at risk are individuals recently returned from affected countries in West Africa who had direct exposure to persons with EVD and health care workers (including paramedics) who manage suspect patients, persons under investigation (PUIs), and confirmed cases of EVD. The Ministry of Health and Long-Term Care (the ministry) maintains a list of affected countries on its EVD website at www.ontario.ca/ebola.

This Directive provides instructions to paramedic services concerning control measures necessary to protect paramedics and patients and significantly reduce the risk of spreading the disease. Where applicable, this Directive also provides guidance to other first responder agencies such as fire and police services. The control measures in this Directive shall be applied along with the control measures in the Chief Medical Officer of Health (CMOH) EVD Directive #4 Regarding Waste Management for Designated Hospitals and All Paramedic Services.

This Directive includes control measures for EVD that may be of a higher level of precaution than is recommended by the Public Health Agency of Canada or the World Health Organization. The CMOH has issued this Directive based on the application of the precautionary principle. This Directive does not prohibit paramedic services from adopting additional safeguards and precautions where appropriate.

Definitions

The following terms are used in this Directive:

Suspect Patient

A suspect patient is a person in the community who has failed the paramedic services EVD screening tool.[1] Paramedic services shall employ the control measures in this Directive – including the screening processes, personal protective equipment (PPE), revised medical treatment approaches and transportation protocols – 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.

[1] The ministry's EVD Screening Tool for Paramedic Services is available at www.ontario.ca/ebola.

Paramedics shall transport suspect patients to the closest appropriate[2] 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 this Directive.

Person under Investigation

A PUI is a person 1) who has travel history to an EVD-affected area/country, 2) who has at least one clinically compatible symptom of EVD and 3) for whom EVD laboratory testing is recommended (based on a clinical assessment by an ID physician at a hospital in consultation with the public health unit and PHOL) 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.[3]

Confirmed 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.

Paramedic Services

Paramedic services are land or air ambulance service operators[4] certified by the ministry's Emergency Health Services Branch (EHSB) to provide paramedic services. Paramedic services employ certified paramedics for the purpose of responding to ambulance service requests in Ontario.

Designated Paramedic Services

Designated paramedic services have been identified by the ministry to transport confirmed patients.[5] 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.

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[2] 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.

[3] Progress of a patient's status from a suspect patient to a PUI and finally a confirmed patient does not indicate an increase in the level of infectiousness, only an increasing possibility/certainty of EVD. The same control measures should be utilized by paramedic services at all stages. The control measures outlined in this Directive should be used to transport suspect patients, PUIs and confirmed patients.

[4] The Ambulance Act defines ambulance services in Ontario.

[5] As of April 13, 2015, the ministry has identified the following designated paramedic services: City of Greater Sudbury Paramedic Services, Frontenac Paramedic Services, Hamilton Paramedic Services, Middlesex-London Emergency Medical Services, Ottawa Paramedic Services, Peel Regional Paramedic Services, Superior North Emergency Medical Services, Toronto Paramedic Services, Essex-Windsor Emergency Medical Services and Ornge.

Designated paramedic services shall maintain[6] dedicated ambulances to transport confirmed patients.

Treatment Hospital

A treatment hospital manages suspect patients, PUIs (including arranging laboratory testing for EVD) and confirmed patients.[7]

Designated Testing Hospital

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

Screening Hospital

All hospitals that have not been designated as an EVD testing or treatment hospital by the ministry are considered screening hospitals. These hospitals screen ambulatory patients, isolate and assess suspect patients, and arrange for the controlled transfer of PUIs to a testing or treatment hospital via paramedic services so that EVD testing can be performed.

Bypass Agreements

A local bypass agreement[8] is an established mechanism 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.[9] 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)
- provide testing when required as soon and safely as possible for a PUI

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[6] Appendix 1: Designated Paramedic Services provides information regarding designated paramedic services and designated ambulances.

[7] The ministry's document entitled A three-tier approach to Ebola virus disease (EVD) management in Ontario outlines the designated testing and treatment hospitals. The hospitals designated under the ministry's three-tier hospital framework are subject to change.

[8] Examples of bypass agreements include patient transfer destination protocols for trauma and stroke.

[9] See Appendix 2: Suspect Patient Bypass Protocol and PUI Inter-facility Transfer to Designated Testing or Treatment Hospitals for more information.

Paramedic Service Response to Requests for Ambulance Service

Designated Land and Air Ambulances

Designated ambulances shall transport confirmed patients that are picked up at a testing hospital or from Pearson International Airport.[10]

These ambulances shall be outfitted at the time of each service request with the minimum sufficient equipment to perform the requested transfer safely:

- Paramedic services shall ensure that equipment that may be required during such a transfer is available in the ambulance and stored, as much as possible, in a manner that minimizes the risk of contamination.
- Paramedic services shall ensure that equipment that is required under the Provincial Equipment Standards (PES) – but that is not expected to be required for the transfer – is stored in a protected area of the ambulance or carried in an accompanying escort/support vehicle.

Designated paramedic services shall take the potential for contamination, patient safety and acuity, and the safety of the paramedics, support staff and hospital staff into consideration when planning the transfer. As directed by the attending physician and in consultation with ID specialists, the receiving hospital and the paramedic service(s), the designated paramedic services shall transport a confirmed patient in one of the following manners:

- with the patient wrapped in linen as much as possible to avoid environmental contamination and draping of the interior of the back of the ambulance as operationally feasible (using an impermeable material to reduce contamination)
- in a negative pressure isolation vessel that is secured to the ambulance stretcher and that provides filtration of any air exchange and is supported by both AC power and battery backup sources (or sufficient reserve backup power sources if AC power is not available or not applicable)

The ministry will provide designated paramedic services with negative pressure isolation vessels along with supporting documentation and training materials regarding the preparation, use and cleaning of the equipment. Paramedic services shall ensure that paramedics assigned to use these vessels receive training and are assessed for competency in their use prior to being assigned to any call where a vessel will be used during patient movement.

Ornge shall designate a fixed wing air ambulance as a designated air ambulance if the need arises. When an air ambulance is designated, it shall be reserved solely for the transportation of a confirmed patient similar to a designated land ambulance, except that the approach should be modified for the special environment of the aircraft.

For transport of a confirmed patient from Pearson International Airport or from a testing hospital to a treatment hospital, the designated paramedic service shall ensure that at

[10] Pearson International Airport is the port of entry to Ontario for civilians (i.e., non-military personnel) that are confirmed to have EVD and repatriated from an EVD affected country in West Africa.

least two paramedics provide patient care and that a paramedic service driver drives the land ambulance. The driver is not required to be a part of the designated team (as described below) if isolation between the driver and the patient compartment is maintained. For inter-facility transport of a confirmed patient from a testing hospital to a treatment hospital, a hospital clinician may be required for transport, depending on patient acuity, and shall use hospital equipment to provide any clinical care during transport.

If the designated paramedic service prescribes a policy that excludes the driver, safety officer[11] or other support personnel from approaching within two metres of the patient (or any contaminated area or equipment), this individual is therefore not part of the designated team. In this situation, the driver shall not approach the patient and/or patient care equipment and shall not provide patient care. The paramedic service shall ensure that appropriate PPE is available in the driver compartment should it be required during the transfer.

When the driver is expected to provide support or care of the patient during transport, or if isolation cannot be maintained, the paramedic service's designated driver shall be part of the designated team and shall also be protected by PPE and follow all precautions as described in the section on Personal Protective Equipment.

The driver compartment of a land ambulance shall be isolated as much as possible from the patient care area. Designated patient care personnel shall not 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 have been performed.

In the case of an air ambulance, the pilot and the flight deck shall be isolated from the patient compartment and no contact with the patient or equipment shall occur. The pilot is not required to wear PPE.

Designated paramedic service providers and Ornge shall establish PPE requirements for the designated land ambulance driver or designated air ambulance flight crew, taking into consideration the operational requirements for the ambulance and considering the practical and safety aspects of donning and doffing in adverse conditions.

Paramedic services shall train, test and drill drivers and flight crews on donning and doffing PPE during development of service-specific protocols for the operation of land and air ambulances.

EHSB will provide further guidance on the transfer of patients to treatment hospitals through training bulletins.

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[11] A safety officer is an individual specifically assigned to accompany or follow the designated team to ensure safety precautions are followed and to provide guidance where required. A safety officer is not involved in patient care.

Non-Designated Paramedic Services

Non-designated ambulances are land or air ambulances deployed by paramedic services to respond to all ambulance requests as assigned by a communication centre including calls originating from primary care settings[12] and excluding those outlined above for designated service providers. These include those requests where there is a suspect patient as identified by the communication centre through screening protocols.

Paramedics responding in a non-designated ambulance and anticipating potential contact (within two metres) with a suspect patient shall follow the PPE controls in this Directive. Other first responders that anticipate potential contact with the suspect patient shall also follow the recommended PPE controls outlined in this Directive.

Patient Transportation from Pre-Hospital Setting to Emergency Department

When a suspect patient is identified by an ambulance communication centre (see Ambulance Communication Centre Screening), the communication centre shall immediately notify the responding paramedics, the paramedic service and the anticipated destination hospital. The ambulance communication centre shall determine the destination ED as soon as the acuity of the patient (as assessed by the paramedic(s) and in accordance with the Canadian Triage Acuity Scale [CTAS]) is provided to the ambulance communication centre.

The ambulance communication centre shall direct a land ambulance with a suspect patient with an 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 acuity level as soon as it receives the information from the paramedics.

The ambulance communication centre shall direct a land ambulance with a suspect patient with an acuity of CTAS 3, 4 or 5 to the closest designated testing or treatment hospital, or alternate screening hospital (i.e., a screening hospital that is closer to a designated testing or treatment hospital).[13] The ambulance communication centre shall notify the receiving hospital of the patient's suspect EVD status and acuity level as soon as it receives the information from the paramedics.

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, and as determined by the hospital and in consultation with the paramedic service, should be pre-identified for assessment, triage and transfer of care of suspect patients.[14]

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[12] Primary care settings deliver care to patients who present with acute illness and include community care health centres, Aboriginal Health Access Centres, nurse practitioner-led clinics, primary care physician practices, walk-in clinics and other family practice models (e.g., family health groups, family health networks, family health organizations and family health teams).

[13] See Appendix 2: Suspect Patient Bypass Protocol and PUI Inter-facility Transfers to a Designated Testing or Treatment Hospital for a complete description of bypass provisions.

[14] This process may be conducted inside the back of the ambulance.

While in the ambulance bay, ED triage area, and/or ED proper, paramedics attending to a suspect patient while wearing PPE shall avoid contact with hospital surfaces, walls and equipment, and maintain a distance of at least one metre from staff, patients, and visitors. Paramedics shall report any contact to hospital staff and their supervisor.

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.[15] 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.[16] These environmental cleaning and decontamination processes shall be conducted according to local paramedic service policies and in accordance with Appendix 3 of this Directive. 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.

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

The local paramedic service shall conduct any required inter-facility transfer of a PUI.[17] A screening hospital shall arrange for a transfer of a PUI to a testing or treatment hospital following the standard inter-facility transfer arrangement processes through CritiCall, the Patient Transfer Authorization Centre (PTAC) and the ambulance communication centre.

The transfer shall be arranged as a scheduled transfer following the ambulance communication centre's consultations with the paramedic service and EHSB's Provincial Duty Officer. The paramedic service shall establish the scheduled patient pickup time after all aspects of the transfer have been considered and related logistics confirmed. The ambulance communication centre shall communicate the pickup time to the screening hospital. Once the estimated time of arrival is determined, the communication centre shall communicate this to the receiving hospital.

An inter-facility transfer of a PUI 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 paramedic service.

In order 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.

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[15] For the purposes of this Directive, the term enhanced precautions refers to the additional PPE required for use by paramedics when transporting suspect patients, PUIs or confirmed patients.

[16] See Appendix 3: Cleaning and Decontamination for more information.

[17] See Appendix 2: Suspect Patient Bypass Protocol and PUI Inter-facility Transfers to a Designated Testing or Treatment Hospital for more information.

Restricting Access to Patient(s)

For transport of suspect patients, PUIs and confirmed patients, no persons other than the paramedics and/or other essential health care workers (appropriately trained as noted in this Directive) shall be allowed in the back of the ambulance.[18]

Point of Care Risk Assessments

Paramedic services shall ensure that paramedics are incorporating the control measures from this Directive into their point of care risk assessments. This shall include any enhancements or modifications to PPE control measures.

When conducting point of care risk assessments, paramedics shall consider that transmission of EVD can occur:

- directly through contact with blood and/or other body fluids, or potentially through droplets
- indirectly through contact with patient care equipment, materials or surfaces contaminated with blood and/or other body fluids
- possibly when performing aerosol-generating procedures

Ambulance Communication Centre Screening

The ambulance communication centre shall screen all callers for EVD using the ministry's EVD screening tool.

If a patient fails the screening process (i.e., is a suspect patient based on travel to an EVD affected country and has symptoms compatible with EVD), the ambulance communication centre or Ornge Communication Centre shall immediately advise the responding paramedics that **"the patient has failed EVD screening"** and shall provide additional medical information as soon as possible.[19]

Paramedic Screening

Following the ambulance communication screening process and regardless of the results of the screening done by the communications centre, paramedics shall again screen patients using the EVD screening tool upon arrival at the scene. The assessment should be conducted by one paramedic, appropriately protected as

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[18] For paediatric patients (or adult patients with certain conditions e.g., cognitive impairment), a parent/caregiver may accompany the patient in the back of the ambulance. Informed consent and instruction on the use of PPE and other precautions are required. The parent/caregiver shall be excluded from the back of the ambulance if an aerosol-generating procedure is performed and/or if the paramedics decide for any other reason that this accompaniment would impact the safety of the patient, paramedics, or parent/caregiver.

[19] To implement EVD screening, ambulance communication centres using the DPCI II ambulance call triaging protocols and the Ornge Communication Centre should use the EVD screening tool for Paramedic Services published and maintained by the ministry. Ambulance communication centres using MPDS™ call taking protocols should implement the Emerging Infectious Disease Surveillance Tool (SRI/MERS/EBOLA).

described in this Directive, 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 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. If the patient has failed the EVD screening done by the communication centre, the paramedic screening the patient should be appropriately protected using the PPE as outlined in this Directive.

The second paramedic shall remain more than two metres away from the patient and shall follow Routine Practices and Additional Precautions (RPAP)[20] while awaiting the results of the point of care risk assessment. The purpose of this precautionary approach is to allow the paramedic team to communicate the findings of the point of care risk assessment to the ambulance communication centre, and/or hospital, and/or ID specialist 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 shall apply. If the patient is determined to be a suspect patient the provisions of this Directive shall apply.

If the paramedic determines that the patient is a suspect patient, and if a consultation protocol is established by the ministry, the paramedic shall contact a designated ID specialist using the protocols established by EHSB in order to receive advice and assistance in making the on-scene determination. This consultation shall result in a determination that the:

- patient is not a suspect patient and the paramedic shall resume standard operating procedures or
- patient is a suspect patient and the provisions of the Directive shall also apply

If a consultation protocol has not been established by EHSB 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 whether the patient is a suspect patient.

Tiered Agency Responses and Co-Responders

Tiered response agreements are established among paramedic services and allied agencies such as fire departments and/or police services. Municipalities are responsible

[20] Routine Practices and Additional Precautions (RPAP) as recommended by the Provincial Infectious Diseases Advisory Committee (PIDAC) include 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.

for tiered response agreement provisions and the participation of agencies in tiered response agreements.

For suspect patients 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 patient 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 to contain potential exposures. If police or fire services are needed for a suspect patient, paramedic services shall consult with the allied agency to establish the appropriate response procedures.

Personal Protective Equipment

For suspect patients, PUIs or confirmed patients the following minimum[21] PPE coverage is required:

- fit-tested, seal-checked N95 respirator
- full face shield (may be supplemented by safety eyewear)[22]
- 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

Paramedic services shall consider 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 – when procuring PPE.

Paramedic services shall follow the manufacturer's advice when developing training on the chosen PPE and its components.

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[21] The prescribed PPE level is appropriate for the management of suspect patients, PUIs and confirmed patients. A positive air pressure respirator (PAPR) may be used as an alternative to the N95 respirator and face shield combination. Training on the use of PAPRs shall be provided by the paramedic service and shall be consistent with the principles outlined in this Directive. The Medical Advisory Committee will provide guidance for paramedics in the event that PAPRs are used while performing modified medical procedures.

[22] 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).

Procedures

Donning and Doffing Personal Protective Equipment

In some cases, suspect patients may not be recognized immediately. The consistent and appropriate use of RPAP remains the best defense against the transmission of EVD and other infections. Paramedics shall follow RPAP, including the use of appropriate PPE. Paramedic services shall provide sufficient quantities of PPE in a variety of sizes to ensure that the PPE is the correct size for the paramedic required to use it.

Paramedics shall 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 shall be observed by an individual who has been trained in doffing techniques by their paramedic service. Doffing without an observer should only 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, the paramedic shall use a hospital-grade disinfectant[23] on the outer layer of gloves. If a hospital-grade disinfectant is not available, the paramedic shall 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). Paramedics shall also sanitize the inner layer of gloves if/when they are uncovered.[24] Cleaning of gloves is applicable only during self-doffing when assisted doffing is not available and should not be done during normal use; gloves are never cleaned and then left on the hands for continued use.

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

Patient Care

Paramedics shall only use essential equipment while caring for a suspect patient, PUI or confirmed patient. Medical devices and equipment shall 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 receiving hospital, and all precautions are discontinued.

Prior to re-use on a subsequent patient, all re-usable equipment shall be cleaned and disinfected using an approved hospital-grade disinfectant by personnel using appropriate PPE and according to the manufacturer's recommendations.

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[23] EVD is an enveloped virus. Given that non-enveloped viruses are more difficult to destroy than enveloped viruses stronger disinfectants used to destroy non-enveloped viruses are effective against EVD. All approved hospital-grade disinfectants shall have a drug identification number.

[24] ABHR containers should be cleaned and decontaminated, or disposed of, after use.

Paramedics shall exercise extreme caution when performing procedures which utilize sharps, such as starting intravenous lines or performing injections (which shall only occur in a non-moving ambulance). Use of needles and sharps shall be kept to a minimum and used for medically essential procedures only. Paramedic services shall use a needleless system and safety-engineered medical devices in accordance with the regulation O. Reg. 474/07 Needle Safety made under the Occupational Health and Safety Act (OHSA). Paramedic services shall ensure a puncture-resistant sharps container is available at point-of-use.

Paramedics shall follow the advice of the Medical Advisory Committee (MAC) regarding the treatment of patients, changes in clinical practice, or modified medical procedures for suspect patients, PUIs or confirmed patients. EHSB will provide any updated advice from the MAC to paramedic services in the form of training bulletins.

Paramedics are not responsible for cleaning and/or decontamination of the location from which a patient is removed.

Duration of Precautions

For suspect patients, precautions taken by paramedics shall remain in effect until the possibility of EVD has been ruled out or until the ambulance and personnel have been decontaminated in accordance with this Directive and all local policies.

For PUIs or confirmed patients, 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.

Management of Potentially-Exposed or Exposed Paramedics

Paramedic services shall develop policies for monitoring and managing paramedics who have had contact with suspect patients, PUIs or confirmed patients. The employer and public health unit are responsible for the follow-up and monitoring of paramedics who have been exposed. The employer shall ensure that the public health unit is notified of any paramedic involved in the management of a suspect patient, PUI or confirmed patient.

The notice of occupational illness requirements of Section 52 (2) of the OHSA 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.

Paramedics with percutaneous or mucocutaneous exposures to blood, other body fluids, secretions, or excretions from a suspect patient, PUI, or confirmed patient shall:[25]

- stop working

[25] The sequence of steps may require adjustment depending on the circumstances at the time of exposure.

- 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)
- notify the ambulance communication centre or Ornge Communication Centre for a second ambulance 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.

Paramedics who have been exposed to a confirmed patient[26] and develop symptoms consistent with EVD (and within 21 days of last known exposure) shall:

- not report to work or stop working and isolate from other people
- notify their employer; the employer shall notify the public health unit
- seek prompt medical evaluation and testing
- comply with work exclusions as advised by their employer and public health unit until they are no longer deemed infectious

Asymptomatic paramedics who had an unprotected exposure (e.g., not wearing recommended PPE at the time of patient contact or through contact with a patient's blood or other body fluids) to a confirmed patient[27] shall:

- receive a 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[28]
- not have patient contact for 21 days following the unprotected exposure
- follow advice from the public health unit regarding modification to activities.

Paramedic services shall refer asymptomatic paramedics with no unprotected exposure (e.g., wearing recommended PPE and with no breach) but who have cared for a patient with confirmed EVD to the public health unit for individualized assessment and support and determination of appropriate follow-up including discussion of return to work policies with the paramedic service.

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[26] These measures also apply to symptomatic paramedics who have exposure to a suspect patient or PUI that becomes a confirmed patient.

[27] These measures also apply to asymptomatic paramedics who had unprotected exposure to a suspect patient or PUI that becomes a confirmed patient.

[28] The public health unit will monitor paramedics that had unprotected exposure for 21 days from the last exposure.

Training for Paramedic Services

Paramedic services shall ensure that paramedics receive adequate training on the appropriate use and limitations of PPE and other protective measures necessary to protect both paramedics and patients from the risk of EVD. This includes ensuring paramedics who may be exposed to suspect patients, PUIs or confirmed patients or, their body fluids or materials that may be contaminated, are trained, tested and drilled and proficient in the use of PPE (including donning and doffing in a systematic way consistent with best practices to prevent self-contamination). Paramedic services shall arrange and deliver training within their organization.[29]

The OHSA has an overall requirement for employers to provide information, instruction and supervision and to take every precaution reasonable in the circumstances to protect the health or safety of the worker. These provisions apply 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.

Paramedic services shall ensure that training addresses the unique needs of paramedics and focusses on specific areas of risk associated with various worker groups and job functions. Paramedic services shall train, test and drill paramedic staff on the use of PPE, including enhanced precautions as described in this Directive.

Paramedic services shall train, test and drill staff that use specialized equipment on that equipment.

Types of Training

Paramedic services shall ensure that training addresses the following core areas.

General Awareness Training

- knowledge of EVD (symptoms, mode of transmission, etc.)
- knowledge of the pre-hospital care setting's preparedness and response plans for EVD (including any hazard-specific plans for EVD)
- knowledge of control measures identified in this Directive and as related to an individual's work group and job function
- knowledge of workplace measures and procedures for management of a suspect patient, PUI or confirmed patient

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

- application of RPAP, including the selection of PPE based on point of care risk assessments

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[29] In addition to the resources available on the ministry's EVD website at www.ontario.ca/ebola, paramedic services may access resources from the following organizations to support the delivery of training activities: Ministry of Labour, Public Services Health & Safety Association, Ontario Hospital Association, Infection Prevention and Control Canada and the Regional Infection Control Networks.

- confidence and proficiency in donning and doffing of PPE (appropriately sized to the individual using it) and 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 Drilling

Paramedic services shall ensure that hands-on practical training, testing and drilling on donning and doffing PPE are provided for identified work groups or job functions. This training shall include best practices for the use of unfamiliar PPE (e.g., observation, refresher training). Paramedic services shall ensure that training on PPE is consistent with the control measures in this Directive and the PPE selected for use by each organization.

All paramedics identified for hands-on practical training shall demonstrate competency in performing EVD-related infection prevention and 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 in the section on Donning and Doffing PPE). This competency shall be verified by a trained observer/coach and documented as per the procedures outlined in the section on Documentation and Verification of Competency.

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

Documentation and Verification of Competency

General Awareness Training

Paramedic services shall document all training completed by paramedics clearly identifying:

- type of training
- worker group or job function
- name of trainee

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

Paramedic services shall maintain additional documentation for paramedics that participate in hands-on PPE training, drills and testing to verify proficiency and competency in donning and doffing PPE.

Paramedic services shall document the first hands-on EVD PPE training sessions completed by identified paramedics using a step-by-step checklist[30], in which core

[30] The Public Services Health & Safety Association has developed sample checklists that paramedic services may use to train paramedics on donning and doffing procedures. Paramedic services may adapt these checklists to meet their needs (while maintaining consistency with the PPE controls in this Directive) or they may use other existing checklists.

competencies are assessed, verified and documented for each trainee by a trained observer/coach.

Paramedic services shall document follow-up refresher sessions and just-in-time training using step-by-step checklists, at the discretion of individual organizations.

Checklists used for training and documentation shall be consistent with the PPE recommended in this Directive and the organization's selected PPE.

Paramedic services are also required to comply with the applicable provisions of the OHSA and its Regulations.

David L. Mowat, MBChB, MPH, FRCPC

Interim Chief Medical Officer of Health

Appendix 1: Designated Paramedic Services

Issue: Use of negative pressure containment vessel (vessel)

Recommendations:

A. For patient and paramedic safety, an isolation vessel, identified by the ministry[31] for use in a transport environment (land or air ambulance[32]) 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 ID 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, the paramedic service shall determine that no alternative method of isolation exists, and that the risk of contamination from bodily fluids exists despite the provision of PPE 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 (1) significant contamination is expected, (2) the duration of transport will not exceed the patient's and the paramedics' abilities to travel in this mode, (3) safer modes of transport are not available, and (4) any other requirements to be determined in consultation with the paramedic service provider at the time of planning the transfer are followed.
D. If the paramedic service recommends vessel use at the conclusion of the consultation and at the time of booking the transfer, the isolation vessel shall meet the designated paramedic service's requirements for safe use in an ambulance (for both patients and paramedics).
E. Most confirmed patients should be transported on a regular stretcher, fully covered, with no exposed skin or clothing. Paramedic services should consider completely wrapping the patient in impermeable sheets (or linens) and providing a face shield, or be in full coverage impermeable PPE, including a face shield, surgical mask, gloves and foot coverings. Wrapping of a patient shall 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 shall be taken into account. The approach to protecting the patient and paramedics in this manner shall be included in the pre-transfer considerations by the sending and receiving hospitals, attending physician(s), ID specialist and the paramedic service.

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[31] 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. The minsitry will make available a vessel that is determined to meet those requirements to designated paramedic services for use when the acuity, transport distance and other factors indicate that the use of an isolation vessel is the safest mode of transport for both the patient and paramedics.

[32] Ornge has identified an isolation vessel which meets their requirements for use in a designated ambulance.

F. Paramedics and any other escorts involved in patient care or who will be working within two metres of the patient (or contaminated equipment and/or area) should use enhanced PPE as per this Directive. This does not apply where the working distance is within the two metre threshold but engineering protection has been provided.
G. The attending physician(s), sending and receiving hospitals, ID specialist and the paramedic service provider shall consult to determine any other protective measures required.

Issue: Configuration and use of designated vehicles

Recommendations:

A. Other than Ornge Critical Care land ambulances and air ambulances, designated vehicles shall be stripped of all exposed non-essential equipment and draped with impermeable cloths/sheets on the cabinet side of the ambulance and bulkhead to provide isolation from the driver compartment and to reduce decontamination requirements post transport. Seatbelts for paramedics shall 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. Paramedic services 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 equipment in the ambulance should be covered or put away if possible.
D. Ornge critical care and air ambulances shall carry all equipment and supplies per standard operating practices, and shall 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, and are not of high cost, may be considered disposable if used in the treatment of a confirmed patient.
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 shall be provided; where no land ambulance radio package is available, a portable FleetNet capable radio shall be supplied and/or cell phones and/or 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 in this Directive. Waste management is to be conducted in accordance with the practices and procedures developed by

the paramedic service and in the CMOH Directive #4 Regarding Waste Management for Designated Hospitals and All Paramedic Services.

H. Ambulance communication centres and the Ornge Communication Centre shall ensure that Inter-facility EVD calls are prioritized as scheduled transfers.
I. Patient acuity and treatments required during transport will be the determinants in whether a hospital escort is required.
J. Paramedic services shall determine locally the number of paramedics travelling in the land or air ambulance based on the patient's 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.

Issue: Inter-facility transfers of a person under investigation

Recommendations:

A. Baseline position: Designated paramedic service ambulances that have been designated and prepared for transporting confirmed patients are not required for the transfer of a suspect patient or for a PUI. All normal transfer protocols apply (CritiCall, PTAC, Ornge consult, etc.) for the inter-facility transfer of a PUI and the transfer should 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, and/or capacity of the local non-designated paramedic service to perform the transfer.
    iii. If consultations among an ID 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 that the use of a designated paramedic service is the most appropriate means of transport, then this exception shall apply.

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 shall 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 shall be used (there will be fixed wing service only for confirmed patients).
C. For lower acuity confirmed patients (critical clinical care is 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 shall be that service (for confirmed patients).

E. Designated service deployment shall 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. The Greater Toronto Area and the Golden Horseshoe will not receive Ornge designated air ambulance service based on the shorter distances involved, but might receive an Ornge critical care designated land ambulance; this shall be decided through normal transfer booking processes (patient acuity, location of the critical care land ambulance relative to sending facility, etc.).
    ii. Ornge may send a designated land ambulance team to the sending facility, or 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, Ornge, the closest designated paramedic service and EHSB Provincial Duty Officer should confer.

Appendix 2: Suspect Patient Bypass Protocol and Person under Investigation Inter-facility Transfers to Designated Testing or Treatment Hospitals

Bypass Protocol

The ambulance communication centre shall direct suspect patients in the community as a result of an emergency request for paramedic services and meeting CTAS 3-5 criteria to the closest testing or treatment hospital.

When the closest testing or treatment hospital is located too far for a bypass to be considered, an alternate screening hospital (alternate ED) shall be considered as part of the bypass protocol.

- The EVD bypass protocol shall be considered when the time to travel to the testing or treatment hospital is anticipated to be one hour or less as estimated by the ambulance communication centre. Distance and road/weather conditions will be considered by the ambulance communication centre when estimating travel times.
- If the ambulance communication centre determines that the patient should be considered for bypass, the centre shall advise the manager of the paramedic service (using the local paramedic service contact information maintained at the ambulance communication centre) and the paramedic service shall review any PPE limitations for the contemplated bypass, including but not limited to distance, time of day, time on shift by the paramedics, road and weather conditions and other factors that affect the time paramedics would be protected by PPE.
- If the bypass is approved by the paramedic service, the ambulance communication centre shall direct the ambulance to the testing or treatment hospital or alternate ED in order to minimize any potential subsequent inter-facility transfers.
- If PPE restrictions (time in PPE) preclude consideration of the bypass protocol, the patient shall be transported to an alternate ED for assessment and to permit the arrangement of a subsequent transfer to a testing hospital.
- At the paramedic service duty manager's discretion and direction, and to mitigate the time spent in PPE, the responding ambulance may be held at the scene to permit the ambulance communication centre to direct a second ambulance to the scene and receive care of the patient from the paramedic crew on-scene. This shall be considered by the paramedic service on a case by case basis.

Local bypass agreements for suspect patients that were implemented prior to the implementation of the bypass protocol in this directive shall be reviewed for alignment with the Directive and resubmitted to EHSB for consideration.

Persons Under Investigation Inter-facility Transfers to Designated Testing or Treatment Hospitals

For a PUI, local paramedic services shall accept scheduled inter-facility transfers between screening hospitals and testing or treatment hospitals. Upon learning of a PUI requiring transfer to a testing or treatment hospital, the ambulance communication centre shall notify the paramedic service and engage the provincial duty officer notification process. This will ensure system notification and consultation processes are initiated, and will also facilitate planning for the expected transfer.

Ambulance communication centres and the Ornge Communication Centre shall prioritize inter-facility EVD calls as scheduled transfers.

- Patient acuity and treatments required during transport shall be the determinants in whether a hospital escort is required.
- The transporting paramedic service shall determine the number of paramedics travelling in the land or air ambulance based on the acuity, treatments required during transport and whether hospital escorts accompany the patient.
- The transporting paramedic service shall determine the maximum time that the paramedics can spend in PPE. The maximum time in PPE shall be used by the ambulance communication centre when planning the transfer to determine any relay requirements.

Factors impacting the length of time that paramedics can spend in PPE shall be considered and the paramedic service shall advise the ambulance communication centre of the time/distance limitations (if any) and if the limitations require the ambulance to stop during the transfer. If PPE limitations do not preclude acceptance of the transfer, the paramedic service shall provide the ambulance communication centre with a scheduled pickup time. The ambulance communication centre shall notify the receiving hospital of the expected arrival time of the ambulance and paramedic team.

If the time in PPE required for the transfer exceeds the capacity of a single paramedic team, relay options and patient transfer between paramedic services during the transfer execution shall be considered.

Considerations to facilitate PUI transfers include, but are not limited to the following:

- the relay(s) of a PUI between screening hospital(s) and testing hospital
- the use of multiple teams, or multiple services to participate in the transfer
- the use of Ornge as an alternate service or a participating service in a relay transfer
- assistance with decontamination of local paramedic services by destination hospitals
- consultation with designated services regarding any potential assistance
- any other patient-focused assistance that can be coordinated or facilitated by the hospital, ambulance communication centre, paramedic service(s), or EHSB

For any PUI requiring an inter-facility transfer by a local paramedic service, the EHSB Provincial Duty Officer process shall be activated, including notification of the ministry's Emergency Management Branch and Ornge.

Appendix 3: Cleaning and Decontamination

Blood and other 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.[33] Waste management[34] is also critical.

Paramedic services shall use a hospital-grade disinfectant that is effective against non-enveloped viruses to clean the ambulance and shall follow the manufacturer's recommendations.

Upon transfer of care of the patient to the ED, paramedics shall 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 impermeable draping material and containment material used to isolate equipment before starting to clean the ambulance (the material shall be carefully collected by ensuring external surfaces are folded inwards to minimize contamination)
- 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 Directive #4 Regarding Waste Management for Designated Hospitals and All Paramedic Services
- the use of hospital-grade single-use disinfectant wipes (preferred) or microfibre fresh cloths, microfibre mop, supplies and solutions to clean the ambulance

During the cleaning process, paramedic services shall:

- use as many wipes/cloths as necessary to clean the ambulance
- not dip a cloth back into disinfectant solution after use
- 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 in accordance with the CMOH Directive #4 Regarding Waste Management for Designated Hospitals and All Paramedic Services
- clean and disinfect all other equipment used to clean the ambulance before putting them back into general use (or dispose of them if they cannot be cleaned and disinfected)
- control fluid contaminants during the cleaning process to ensure contamination of the cleaning area does not occur (e.g., body fluids such as vomit are not 'hosed out')[35]

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[33] Refer to PIDAC's Best Practices for Environmental Cleaning for Prevention and Control of Infections in all Healthcare Settings for more information.

[34] Refer to the CMOH Directive #4 Regarding Waste Management for Designated Hospitals and All Paramedic Services for more information.

- follow all local processes to control the decontamination process along with all current environmental policies as well as any guidance that is issued for waste management and disposal

Only staff who have received training on the equipment and on the cleaning and decontamination procedures recommended by PIDAC (see footnote 22) and the manufacturer shall clean and decontaminate vessels used for the transport of confirmed patients.

In instances where vessels are used, the ambulance shall 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 or may be performed by an external agency, contracted by the paramedic service to conduct cleaning and decontamination.

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

[35] Refer to the CMOH Directive #4 Regarding Waste Management for Designated Hospitals and All Paramedic Services for more information.