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To: All Livingston County Ambulance Agencies & Personnel

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COVID-19 Interim Clinical Guidance for Ambulance Services in Livingston Co.

This document supplements, but does not replace, "Updated COVID-19 Interim Guidance for Livingston County Public Safety Agencies," released April 6th, which remains important for all EMS agencies & personnel to have read and understood. This document provides specific *supplemental* clinical guidance targeted at ambulance agencies & EMS providers within Livingston County who will be rendering definitive pre-hospital care to COVID-19 patients. This clinical guidance does not replace existing state or regional protocols or guidelines.

The Clinical Environment

COVID-19 Prevalence

COVID-19 is now widespread and highly prevalent in our community. EMS should be operating under the assumption that *every patient has COVID-19*. While there are certain characteristic symptoms (fever, cough, other upper respiratory symptoms, shortness of breath, muscle aches) that make COVID-19 more likely, countless atypical presentations have occurred. It is at best challenging, and frankly a dangerous endeavor to try to rule out a patient for COVID-19 in the initial phase of any EMS incident.

All EMS incidents, regardless of dispatch information, must be considered hazardous for threat of COVID-19 exposure, and adequate PPE precautions should be exercised on all incidents.

Ambulance providers are especially at risk due to sustained close contact in close quarters during transport. Failure to utilize PPE risks COVID-19 exposure. But by taking the correct precautions, exposure risk is mitigated. Wearing PPE on all calls has never been more critical.

Atypical presentations

COVID-19 may manifest in surprising and unexpected ways. It may present as a primary cardiac event (cardiac dysrhythmias), STEMI mimic, dehydration, altered mental status, so called "diabetic" calls, or even trauma. Vigilance is critical. Expect the unexpected.

Standards of Care

EMS standards of care remain largely unchanged, with a few caveats highlighted herein. If the pandemic worsens to a point where the EMS system is overwhelmed and is unable to continue existing level of care, crisis standards of care may be implemented at state and/or regional levels. In the

meantime, EMS continues to provide the same diligent, compassionate, expert and professional clinical care that the community has come to know and expect.

Personal Protective Equipment (PPE) Requirements

Standard PPE Requirements – routine care/all EMS calls

- As soon as on scene, don surgical mask, eye protection, and gloves
 - Wrap-around glasses or goggles preferred
 - Standard prescription glasses are inadequate protection
- Personnel may wear the same mask for that entire shift/day so long as it is not grossly contaminated, soiled, wet, damaged, or ill fitting.

Advanced PPE Requirements – critical patients +/- aerosolizing procedures

- Don N-95 mask, eye protection, gown and gloves for critical patients & aerosolizing procedures
- Aerosolizing procedures include:
 - CPR, bag-valve mask (BVM) ventilation, advanced airway management, CPAP or BiPAP, and nebulizer treatments
- Patients requiring aerosolizing procedures are acutely ill and typically critical. EMS personnel who from a distance recognize a patient is in respiratory distress/failure or is otherwise in critical condition should immediately don an N-95 in lieu of a surgical mask as well as a gown.

Patient Assessment Initial Interventions

Principals of initial assessment

- PPE for all incidents as soon as on scene. Do not approach patient without proper PPE.
- Assess all patients from safe distance of 6 feet
- Provide all patients a surgical mask during initial assessment
- Minimize number of personnel making close patient contact (within 6 ft. of patient)
 - In most cases, this number is **one** EMT or paramedic
 - Other personnel should stay at least 6' back (with PPE) unless required for patient care or patient movement
 - Same person conducting assessment obtains vital signs when possible
 - For severely ill or critical patients, more personnel may be required, but should still be limited to the minimum necessary to achieve the tasks(s) at hand, rarely to exceed four

Initial on scene interventions

- When feasible, the same EMS provider who performed the initial assessment should continue to provide care, including interventions, minimizing the number of unique persons in close proximity to the patient
- Others should remain 6 feet back and assist from a safe distance (with PPE)
- Avoid performing excessive tasks or interventions on scene that do not address life threats or suspected emergent conditions
- Avoid initiating aerosolizing procedures unless truly indicated (i.e. see nebulizers below)
- Prioritize disposition decision and actions early on in incident – move incident along at assertive pace

Therapeutics – Basic Life Support

Oxygen

Some patients with COVID-19 will present with hypoxemia. If pulse oximetry is reading less than 90%, initiate supplemental oxygen therapy. Do not use excessive oxygen flow rates. Oxygen therapy should be titrated such that the least amount of supplemental oxygen necessary to maintain SpO₂ at 90% is administered.

Nasal Cannula

- Apply surgical mask over nasal cannula
- Use minimum flow rate to achieve SpO₂ 90%
- Do not exceed 6 liters/minute under any circumstance

Non-rebreather

- Use only if SpO₂ < 90% with nasal cannula at 6 liters/min
- Apply non-rebreather over surgical mask
- Flow at 10-12 liters/min
- Do not exceed 12 liters/min.

Nebulizer Treatments

Nebulizer use (albuterol and/or ipratropium) should be restricted to patients who meet ALL of the following criteria:

1. History of anaphylaxis, asthma and/or COPD
2. Objective respiratory distress as evidenced by:
 - a. Tripoding and/or
 - b. Accessory muscle use and/or
 - c. Abnormal respiratory parameters (tachypnea, hypoxia)
3. Demonstrated bronchospasm as defined by either expiratory wheezing or markedly diminished lung sounds suggesting little to no air movement (i.e. silent chest).

Nebulizers should *not* be utilized for undifferentiated respiratory presentations. They have no role in the management of CHF, pneumonia, or COVID-19.

Ideally, nebulizers are administered in a ventilated environment. When possible, delay initiation of nebulizer treatment until out of patient's room or other enclosed space and you are moving toward the ambulance. If nebulizer therapy is to continue in the ambulance, turn on your Power Vent. If ambient temperature allows, open any available rear patient compartment windows to maximize ventilation.

All nebulizers therapies should be discontinued upon arrival at the receiving hospital, prior to entering the emergency department. In the uncommon circumstance in which a patient cannot sustain five minutes without nebulizer therapy, there should be prehospital notification made with ample warning so that the receiving ED can prepare for the patient's arrival.

Use of Patient's Metered-Dose Inhalers (MDI's)

When possible, consider assisting the patient with use of his or her own prescribed rescue inhaler in lieu of nebulizer therapy. When available, use a spacer. Attach inhaler to end of spacer, have patient breathe out & close mouth around mouthpiece of spacer, push inhaler and have patient take a deep breath in, hold breath for 5-10 seconds, then slowly breath out. Repeat.

If the inhaler and/or spacer is brought to the hospital, be sure it is clearly marked for the patient and hand it back to the patient so that it does not get misplaced or discarded.

Positive Pressure Ventilations (BVM)

In the event of respiratory failure, positive pressure ventilations should be commenced with special attention to the following:

- Don advanced PPE prior to initiating positive pressure ventilations
- Ensure patient & environmental conditions have been optimized for successful positive pressure ventilation to extent possible, including:
 - Correct patient position & ramping
 - Use of nasopharyngeal and/or oropharyngeal airway adjuncts
 - Suctioning secretions
 - Lubrication of mask if patient is bearded
- Optimize mask seal
 - Two-person technique when possible. *Experienced provider holding mask seal.*
 - If only 1 person available, should be experienced EMT or higher who is able to apply proper “C-E” technique and conduct ongoing assessment for mask seal while ventilating
- Do not over ventilate
- If in ambulance, turn on Power Vent and open windows if ambient temperature allows
- If respiratory failure is not immediately reversible (i.e. opioid overdose) and if available, insert a HEPA filter between mask and bag

As soon as positive pressure ventilations are commenced, the medic in charge should establish a definitive airway management plan, which may include any of the following:

- Rapid reversal of underlying etiology when possible (i.e. naloxone administration for opioid overdose)
- ALS and/or RSI for invasive airway management
- Transport to closest hospital
 - Notify receiving hospital as soon as possible

Therapeutics – Advanced Life Support

Intravenous fluids

Exercise judicious use of intravenous fluids in patients with suspected COVID-19. In COVID-19, tachycardia is often secondary to fever and/or respiratory distress. Care must be taken to ascertain the patient’s volume status. If patient appears volume depleted (i.e. history of diarrhea or diminished oral intake, dry mucous membranes, skin tenting), administer IV fluids and titrate to euvoemia. *Do not administer excessive IV fluids, as this can precipitate worsening respiratory failure.*

Use of Epinephrine for Bronchospasm

Any patient with anaphylaxis or asthma and objective respiratory distress severe enough to warrant ongoing nebulizer therapy *during the COVID-19 pandemic* is a potential candidate for IM epinephrine therapy. Refer to existing protocols regarding epinephrine administration. Exercise caution administering IM epinephrine to patients with COPD due to presumed co-existing coronary disease.

CPAP and BiPAP

Continue positive airway pressure (CPAP) and bilevel positive airway pressure (BiPAP), collectively referred to as NIPPV (non-invasive positive pressure ventilation) have limited to no role in the

management of COVID-19 patients. CPAP and BiPAP have historically been excellent treatment modalities for patients in acute CHF, and acute asthma/COPD respectively, but have never been ideal therapy for respiratory infections such as pneumonia. This is particularly true with COVID-19. Additionally, NIPPV is an aerosolizing procedure.

Paramedics should avoid utilizing NIPPV in patients with suspected COVID-19. This is not to preclude use of CPAP or BiPAP when the diagnosis is clearly acute CHF or severe asthma exacerbation, respectively. Paramedics must continue to utilize their knowledge, experience, and clinical gestalt to best manage the patient in front of them while limiting unnecessary aerosolization.

HEPA Filters

In the event of anticipated advanced airway management (e.g. cardiac arrest, respiratory failure without immediately reversible cause), upon initiating BVM ventilations, *if available*, a viral HEPA filter should be inserted between the mask and bag prior to advanced airway insertion. The same filter can then be used once the advanced airway has been placed.

Immediately upon insertion of any advanced airway (extraglottic or endotracheal tube), if available, a viral HEPA filter should be attached directly to the airway, between the airway and the capnometry sampling device prior to initiating any ventilations. The HEPA filter must remain attached to the advanced airway at all times, including anytime the BVM is disconnected from the airway.

Management of Respiratory Failure

Paramedics caring for patients in respiratory failure must efficiently establish a treatment and disposition plan that (1) optimizes timely definitive care for the patient and (2) minimizes exposure risk to EMS. Paramedics caring for patients in respiratory failure must ensure all providers have donned advanced PPE. Patients failing nasal cannula should be moved to a non-rebreather mask. Patients who are tiring, experiencing ineffective respirations, and/or who are developing hypoxia with a non-rebreather mask are candidates for RSI. Do not initiate NIPPV for respiratory failure secondary to suspected COVID-19. In the event of respiratory failure, ALS must take care to ensure that proper BLS techniques are underway, including optimal mask seal when BVM ventilations are underway. If available, a HEPA filter should be inserted between the mask and BVM. Early prehospital notification is essential.

Paramedics may consider use of a CPAP mask with a BVM in lieu of a standard BVM mask. When used properly, this may allow for a better mask seal and one-person BVM operation, freeing a second provider for other patient care activities. However, a CPAP masked strapped onto an obtunded or unresponsive patient can potentially push the mandible and/or tongue posterior and obstruct the upper airway. The paramedic directing use of a CPAP mask is responsible for ensuring the patient's airway remains patent.

RSI Guidance

During the COVID-19 pandemic, there is anticipated to be increased need for RSI services. Both non-RSI and RSI credentialed paramedics must be cognizant of EMS system volume, available resources, and proximity to closest RSI service, which includes not only available EMS RSI units, but Emergency Departments, including Noyes Hospital. Care must be taken to minimize overall exposure time for EMS while providing safe care. Do not delay transport while waiting for RSI.

Early RSI should be considered for any patient in or imminently approaching respiratory failure, including those with suboptimal oxygenation on a non-rebreather mask.

RSI providers must be cognizant of time spent on scene and either immediately initiate transport or resume transport if intercepted.

RSI providers must first and foremost ensure all personnel in back of ambulance have donned advanced PPE. Any unnecessary personnel should step out of rear patient compartment if possible – suggested number of personnel for RSI is three, no more than four.

RSI providers should develop and execute an airway management plan that (1) optimizes first pass success and (2) limits exposure to EMS personnel. This includes:

- Standard preparatory procedures, including airway assessment, patient positioning/ramping
- Maximizing pre-oxygenation
- Optimizing ergonomic conditions
- Use of VL if equipped, trained, and experienced
- Early use of rescue extraglottic device (i.e. King)

Repeat attempts should be limited barring technological failure. All advanced airways should have HEPA filters attached if available. Early notification to receiving hospital remains important.

Airway Management in Cardiac Arrest

During the COVID-19 pandemic, early attention must be paid to placement of advanced airway. While CPR and early defibrillation remain paramount, *insertion of advanced airway should precede vascular access and medication administration*. This serves two purposes:

1. Immediately limit aerosolization secondary to inherent mask-seal issues
2. Allows for rapid correction of underlying respiratory failure

Ideally, the most skilled airway technician should manage the airway utilizing a plan to optimize first pass success as quickly as possible. This may include use of video laryngoscopy if available and experienced, direct laryngoscopy if predicted easy airway and facile, or immediate insertion of extraglottic device (King). Any unsuccessful intubation attempt should immediately be followed by insertion of extraglottic rescue device.

Cardiac Arrest – Best Practices

Cardiac arrest, including CPR and airway management, is a high-risk event. In the event of an unexpected cardiac arrest, EMS must don advanced PPE prior to initiating resuscitation. EMS should make have advanced PPE nearby at all times – consider use of advanced “PPE Go Bag” containing N-95s and gowns sealed in protected bags on the back of all stretchers.

In the event return of spontaneous circulation (ROSC) is achieved, EMS should not rush to transport immediately, but rather render stabilizing therapies and ensure that ROSC is sustained for at least 5 minutes prior to moving the patient. Stabilizing interventions include securing advanced airway, EKG acquisition, secondary vascular access if needed, and initiation of vasopressor therapy as warranted. Moving the patient too soon risks re-arrest. Failure to sustain ROSC is a relative contraindication to transport.

Refusal of Medical Attention/Non-Transport

Both New York State and the MLREMS region have issued guidance on non-transport of patients during the COVID-19 pandemic. Please read these documents in their entirety. *Note - these guidance documents do not serve as authorization for EMS to refuse transport of a patient.* This has never been the case, and still is not the case. EMS cannot decline transport of a 911 patient.

However, the non-transport protocols allow for an informed shared-decision making discussion with the patient. Worried well patients with no alarming vital sign derangements, who are relatively young and otherwise healthy (please see referenced protocols for specifics) are unlikely to benefit from evaluation or treatment in an emergency department, and are candidates for non-transport, *so long as they agree*. EMS is encouraged to keep a laminated copy of the MLREMS non-transport protocol algorithm in each ambulance and refer to it while speaking with any patient who is a candidate for non-transport. By walking through the guidelines with the patient, EMS can instill confidence and provide reassurance to otherwise worried well patients.

Any non-transport must be accompanied by a proper signed refusal form, thorough counseling to the patient, including informed risk, reasons to call back and a follow-up plan (i.e. contact PCP). The patient must be able to understand and communicate back to the provider. Lastly, documentation on the associated patient care report must be completed must be thorough and reference the COVID-19 non-transport protocol.

When questions arise regarding safety or eligibility for a non-transport, consider consulting the on-duty county medical director or online medical control for guidance. When still in doubt, the default option is to transport.

Importantly, this protocol does *not* apply to all patients, only those presenting with an influenza-like illness consistent with suspected COVID-19. It does not apply to trauma patients, high risk complaints such as chest pain or dyspnea, or other patients without an influenza-like illness.

Transport Considerations

Family members & riders

- All area hospitals have enacted zero visitor policies
 - Two exceptions: one parent/support person for pediatrics & active labor only
- No family members or other riders should be allowed to ride along in ambulance with exception of one parent for pediatrics
 - Any rider should wear a mask
 - In the event of a single parent, provided the patient is stable, every effort should be made to find a suitable guardian (family member, friend, neighbor, etc.) to watch children. Involve law enforcement if able and do not compromise patient care. Do not refuse transport if unable to find alternate guardian. Notify the receiving hospital in advance of accompanying children.

Driver Compartment

- Isolate driver compartment from rear patient compartment
- Improvise with any available materials ASAP to close off your driver compartment
 - Makeshift taped plastic barrier, etc.

- If unable to isolate from passenger compartment:
 - Driver must keep mask on
 - Remove/change gloves prior to entering driver compartment
 - Driver compartment will need to be disinfected after each call

Destination Decisions

- Any hospital is capable of receiving suspected COVID-19 patients
- The patient should go to whatever hospital they would normally go to

Pre-notification

- No extra pre-notification to large hospitals (i.e. UPMC) for suspected COVID-19 unless:
 - You are unable to obtain source control on patient (cannot mask/uncooperative)
 - Aerosolizing procedures underway
 - You would otherwise call before COVID-19 (e.g. STEMI, stroke, etc.)
- Continue prenotification to smaller hospitals on all inbound patients as per usual practice

Tents

Strong Memorial Hospital has a COVID tent outside ambulatory entrance to ED.

- Operational roughly 8 am to 11 pm
- If in service, green flag will be out
- EMS can walk any ambulatory patient with suspected COVID-19 directly to tent

Disinfection

Process

- Wear gloves during disinfection process
- Air out any ambulance rear compartment after a patient for 5-10 minutes
- Wipe down all patient care areas, surfaces, and equipment with EPA approved disinfectant
- No need to wait to return to service after disinfecting ambulance
- Wipe down vehicle interiors at end of call or minimum daily
 - Special attention to radio, light/siren controls etc.
- Please refer to EPA handout:
 - <https://www.epa.gov/pesticide-registration/list-n-disinfectants-use-against-sars-cov-2>

COVID-19 References

Monroe-Livingston EMS

<https://mlrems.org/provider/covid-response/>

New York State Bureau of EMS

<https://www.health.ny.gov/professionals/ems/policy/policy.htm>

New York State Dept. of Health:

<https://coronavirus.health.ny.gov/information-healthcare-providers>

Livingston County Department of Health

<https://www.livingstoncounty.us/1207/COVID-19>

CDC Coronavirus Disease Website

<https://www.cdc.gov/coronavirus/2019-ncov/index.html>

CDC Interim Guidance for EMS & Risk Assessment

<https://www.cdc.gov/coronavirus/2019-ncov/hcp/guidance-for-ems.html>

<https://www.cdc.gov/coronavirus/2019-ncov/hcp/guidance-risk-assesment-hcp.html>