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To: EMS Medical Directors
EMS System Coordinators
EMS Service Providers
EMS Personnel

From: Bobby Van Bebber, MSN, RN *BV*
Division Chief, EMS and Highway Safety

Subject: Measles Guidance for EMS

Clinical Features/Assessment Findings

Measles is an acute viral respiratory illness. The Centers for Disease Control and Prevention (CDC) lists characterizing features as:

- Fever
- Cough
- Inflammation of the mucus membranes of the nose
- Runny nose
- Red, watery eyes
- White or grey specks on the buccal mucosa, referred to as Koplik spots.
- Rash which typically appears around 14 days after exposure and spread from the head to the trunk, to the lower extremities.

Patients are considered contagious 4 days before and 4 days after the rash appears. Those who are immunocompromised may never develop a rash.

Transmission/Infection Control

Measles is transmitted by direct contact with infectious droplets or by airborne droplets when an infected person breathes, coughs, or sneezes. The CDC reports the measles virus may remain infectious in the air for up to two hours after an infected person leaves the area.

Pre-hospital providers should be cautious when caring for patients with a fever and rash. Special consideration should be taken when caring for patients who are unvaccinated for measles, have been exposed to a person with a rash and fever, or traveled internationally.

Any patient presenting with a rash and fever should immediately be given a surgical mask to wear.

Pre-hospital providers should wear an N95 mask or PAPR and take all respiratory precautions when caring for any patient who may be suspicious for a measles infection.

Personal Protective Equipment and measles prevention.

Review any local EMS System protocols for airborne and droplet precautions. Review agency decontamination and cleaning policies. The following PPE is recommended by the CDC:

- Disposable gloves
- Goggles or face shield
- N95 mask or PAPR
- Disposable and fluid resistant gown
- Handwashing with soap and water is preferred to alcohol-based sanitizer.

EMS providers are encouraged to have immunity to measles. The vaccine is 97% protective against measles infection.

If EMS providers who are non-immune to measles are exposed, then they should receive post exposure prophylaxis in the form of a measles vaccine within 72 hours of the **first** day of exposure and if they cannot get the measles vaccine then receive the immunoglobulin within 6 days of exposure.

If EMS providers are non-immune and exposed to measles, then they would need to be in quarantine from the first day of exposure after the exposure until day 21 from the last day of exposure.

Patient Care and Transport Consideration

Measles infections can lead to serious complications. Those at the highest risk for complication are patients who are under 5 years of age, patients over 20 years of age, patients who are immunocompromised, and pregnant woman. Complications may include:

- Ear infections
- Diarrhea
- Pneumonia
- Encephalitis (swelling of the brain)
- Deafness
- Cognitive disability

During assessment, treatment, and transport all patients with a fever and rash, or patients who suspect may have a measles infection should be provided with a surgical mask that covers the mouth and nose. Additional considerations include:

- Patients should be encouraged to maintain cough etiquette and provided tissues for secretion control.
- All procedures known to aerosolize droplets should be avoided unless medically indicated.
- Patients who are intubated should be ventilated with a bag-valve device or ventilator equipped with a HEPA filter on exhalation port.

During transport isolate the driver compartment when possible. If isolation of the driver's compartment is not possible, then the person operating the vehicle should wear an N95 mask. If the ambulance has a patient compartment exhaust system that does not recirculate, this should be set to high.

Ensure all unnecessary medical supplies or medical instruments are not accessed or open to air during transport. All equipment making patient contact should be disposable or cleaned and disinfected before use on another patient.

Decontamination should occur per agency protocols with considerations to ensure the following:

- Standard cleaning and disinfection procedures (e.g., using cleaners and water to pre-clean surfaces prior to applying disinfectants to frequently touched surfaces or objects for indicated contact times) are adequate for measles virus environmental control in all settings.
- Surfaces that may be contaminated with body fluids should be cleaned with disinfectant. Generally, EPA-registered disinfectants suitable for Hepatitis B viruses and HIV (i.e., those on [List D](#)) will be effective against the measles virus.

Hospital Notification

Ensure the receiving facility is aware of assessment findings and measles suspicion. Include the following information in addition to normal inbound patient report:

- Any family accompanying the patient
- The need for an airborne infection isolation room for patient placement
- Vaccination status if known
- Any awareness of persons traveling to the hospital to be with the patient

Exposure Reporting

All pre-hospital care providers should report suspected exposure to measles according to agency and EMS System Policy.

If you have any questions, please contact your Regional EMS Coordinator or me at Robert.VanBebber2@Illinois.gov.

References and further guidance

The guidance above has been developed from information from the CDC and the ASPR TRACIE EMS Infectious Disease Playbook. I highly recommend all stakeholders review these resources.

<https://www.cdc.gov/measles/hcp/index.html>

<https://www.cdc.gov/infectioncontrol/guidelines/isolation/precautions.html>

<https://www.cdc.gov/measles/symptoms/complications.html>

<https://asprtracie.hhs.gov/technical-resources/resource/4442/ems-infectious-disease-playbook>

CC: Andrea Dos Santos
Leslee Stein-Spencer
Regional EMS Coordinators