BACKGROUND
Measles typically presents in adults and children as an acute, viral illness characterized by fever and a generalized maculopapular rash (small, red, flat or raised bumps). The early signs may include cough, conjunctivitis, and runny nose. Koplik spots – blue-white spots on the mucosal tissue of the mouth and gums – are occasionally seen. The rash usually starts on the face, proceeds down the body, and may include the palms and soles. The rash, which lasts for several days, initially appears discrete, but may become confluent before fading in order of appearance. The time between exposure and rash onset averages 14 days but may range from 7 to 21 days. Of note, immunocompromised patients may not develop the rash. Complications include diarrhea, otitis media, pneumonia, hepatitis, and encephalitis.

Measles is transmitted by airborne particles, droplets, and direct contact with the respiratory secretions of an infected person. Patients are considered to be contagious for a total of nine days - from 4 days before through 4 days after the rash appears with date of rash onset counting as day 0.

PURPOSE
There have been an increased number of measles cases and multiple outbreaks in the U.S. These guidelines address precautions that should be taken by EMS personnel when evaluating and transporting persons with suspected measles infection.

PROCEDURE
In addition to routine infection prevention practices including standard precautions, VT EMS recommends the following:

1. Vaccination
   - All EMS personnel should have documented evidence of immunity to measles. Entities responsible for EMS providers may want to review their current policies regarding documentation of immunity for staff, including volunteers. This information should be documented and readily available at the work location.
   - Presumptive evidence of immunity to measles for EMS providers includes 2 doses of MMR vaccine or laboratory evidence of immunity (measles IgG positive).
   - First responders born before 1957 who lack laboratory evidence (e.g., blood test) of immunity or laboratory confirmation of previous disease should be vaccinated with 2 doses of MMR vaccine at the appropriate interval.

2. Protective Equipment and Procedures
   - All EMS personnel should use standard, droplet, and airborne precautions during all encounters with patients suspected to have measles. Measles is a highly contagious viral infection. In order to minimize risk, the following is recommended:
     - Only those who are known to be immune should approach patients who may have measles.
     - EMS personnel should wear an N-95 particulate respirator or a respirator with similar effectiveness in preventing airborne transmission. Please note that particulate respirators should only be used as part of a comprehensive respiratory protection program that includes appropriate screening, training, and fit-testing. Patients should wear a surgical mask, if they are able to tolerate it safely.

Procedure Continues
3. Notification to Receiving Facility
   - Receiving facilities must be notified PRIOR to arrival of known or suspected measles patients to facilitate implementation of appropriate infection prevention procedures.
   - In health care settings, patients with suspected measles should be placed immediately in an airborne infection (negative-pressure) isolation room if one is available and, if possible, should not be sent to other parts of the hospital for examination or testing purposes.

4. Transportation
   - Because measles virus can contaminate surfaces or hang in the air for up to two hours, ambulances and transport vehicles should be taken out of service for two hours after transport of a patient with known or suspected measles.
   - Routine cleaning of the transport vehicle should be done.

5. Report and Evaluation of Exposure
   - Make note of all EMS personnel who were potentially exposed to measles during the time the suspect measles patient was being treated by EMS and for up to 2 hours after.
   - If measles is confirmed in the suspect patient, exposed people will need to be assessed for measles immunity.
     - EMS personnel who are potentially exposed to measles should consult with health care and public health professionals.
     - Health care personnel should evaluate risk and recommend and/or provide appropriate post-exposure prophylaxis when indicated (i.e., one dose of MMR within 72 hours of exposure for first responders with no proof of immunity).
     - In consultation with the Health Department, first responders who are exposed and do not have proof of immunity may be furloughed from day 5 through day 21 following exposure.
     - Personnel who develop symptoms consistent with measles, including fever, rash, runny nose, cough and red, watery eyes, should seek medical attention (calling ahead before going to the medical facility so proper precautions can be taken to reduce potential exposure).
     - All suspected cases of measles must be reported immediately to the Health Department at 802-863-7240 (available 24/7).