This guidance applies to all first responders, including law enforcement, fire services, emergency medical services, and emergency management officials, who anticipate close contact with persons with confirmed or possible COVID-19 in the course of their work.

Thank you for your service.
EMS plays a vital role in responding to requests for assistance, triaging patients, and providing emergency medical treatment and transport for ill persons.
Slide 3

COVID-19 Signs and Symptoms among Confirmed Cases Reported in China

<table>
<thead>
<tr>
<th>Sign or symptom*</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fever</td>
<td>87.9</td>
</tr>
<tr>
<td>Dry Cough</td>
<td>67.7</td>
</tr>
<tr>
<td>Fatigue</td>
<td>38.1</td>
</tr>
<tr>
<td>Sputum</td>
<td>33.4</td>
</tr>
<tr>
<td>Shortness of breath</td>
<td>18.6</td>
</tr>
<tr>
<td>Myalgia or arthralgia</td>
<td>14.8</td>
</tr>
<tr>
<td>Sore Throat</td>
<td>13.5</td>
</tr>
<tr>
<td>Headache</td>
<td>13.6</td>
</tr>
<tr>
<td>Chills</td>
<td>11.4</td>
</tr>
<tr>
<td>Nausea or vomiting</td>
<td>5.0</td>
</tr>
<tr>
<td>Nasal congestion</td>
<td>4.8</td>
</tr>
<tr>
<td>Diarrhea</td>
<td>3.7</td>
</tr>
</tbody>
</table>

*Among 55,924 confirmed cases

Slide 4

Key Findings from the WHO-China Report (as of 2/20/20)

Age
- Median Age: 51 years
- Range: 2 days – 100 years
- 30-69 years: 77.8%
- <19 years: 2.4%

Sex
- Male: 51.1%
- Female: 48.9%

Duration of Illness
- Mild Disease: ~2 Weeks
- Severe or Critical Disease: 3-6 Weeks
- Onset to Severe Disease: 1 Week
- Onset to Death: 2-8 Weeks

Case-fatality Rate by Comorbidity
- No Comorbidity: 1.4%
- Cardiovascular Disease: 13%
- Diabetes: 9.2%
- Hypertension: 8.4%
- Chronic Respiratory Disease: 8.0%
- Cancer: 7.6%

Slide 5

Key Findings from the WHO-China Report (as of 2/20/20)

Spectrum of Disease
- Mild: 80%
- Severe: 13.8%
- Critical: 6.1%

R₀ = 2-2.5 in absence of interventions
Slide 6

Key Findings from the WHO-China Report (as of 2/20/20)

<table>
<thead>
<tr>
<th>Pregnant Women (n=147)</th>
<th>Healthcare Personnel</th>
</tr>
</thead>
<tbody>
<tr>
<td>64 Confirmed Cases</td>
<td>2,055 Confirmed Cases</td>
</tr>
<tr>
<td>Severe Disease: 8%</td>
<td>476 Hospitals across China</td>
</tr>
<tr>
<td>Critical: 1%</td>
<td>88% from Hubei Province</td>
</tr>
</tbody>
</table>

Slide 7

Epidemic Curve of COVID-19 Cases Outside of China by Date and WHO Region

Confirmed cases through March 16

The total number of cases and deaths outside China has overtaken the total number of cases in China. Globally, 167,511 cases have been confirmed, including 6,606 deaths.

Slide 8

Confirmed cases through March 16
States Reporting Cases of COVID-19 to CDC
As of 3/16/20, Total U.S. Cases = 3,487; Total U.S. Deaths = 68

COVID-19 Cases in Virginia
As of 3/16/20, Virginia has 51 cases of COVID-19

GUIDANCE FOR 911 PUBLIC SAFETY ANSWERING POINTS
PSAPs or EMD Screening Patients with Respiratory Symptoms

- Have you travelled in the past two weeks, and if so where and when?
- Stay informed with the updated affected geographic regions
- Did you have contact with someone confirmed to have COVID-19?
- Notify possible COVID-19 patients to EMS clinicians before arrival on scene
- Response to ill travelers at US international airports and other ports of entry should be notified to CDC quarantine station of jurisdiction for the port of entry

Travel Notices and Restrictions (as of 3/16/20)

- Reconsider all cruise ship voyages worldwide
- Entry of most foreign nationals from these destinations has been suspended:
  - China
  - Iran
  - Mainland Europe
  - United Kingdom and Ireland

- Recommendation
  - Avoid Nonessential Travel
  - China, Iran, Mainland Europe, United Kingdom and Ireland

- Alert Level 2
  - Recommendation
  - Practice Enhanced Precautions
  - South Korea
  - Japan

- Watch Level 1
  - Recommendation
  - Practice Usual Precautions
  - Global


GUIDANCE FOR EMS PROVIDERS

CDC EMS guidance updated 3/10/20.

COVID-19 Testing Availability

Virginia Public Health Lab (DCLS)
- Testing specimens as of February 29, 2020
- VDH approval required - specimens should not be sent without approval
- Specimen collection guidance available on DCLS website

Private Labs
- Select private labs are able to perform testing as of March 6, 2020
- VDH approval is not necessary
- Contact your lab provider to determine testing availability

Due to a limited number of tests available, testing performed at DCLS, Virginia’s state lab, is reserved for patients who meet VDH’s priority investigation criteria on this slide. Other patient’s who need COVID-19 testing can be tested through a private lab.

Question: Is there an expedited process to test EMS providers and other healthcare personnel for COVID-19?
Answer: Symptomatic healthcare personnel meet the definition of close contact or exposure, and would be tested for COVID-19 by DCLS, the state public health lab.

Slide 17

Requirements to Care for Patients with Suspect or Confirmed COVID-19

- Providers to put on appropriate PPE before entering the scene.
- Maintain contact with patient until a face mask is on the patient.
- Drivers should wear all PPE if providing direct patient care.
- Remove and dispose of all PPE before entering isolated driver's compartment.
- If no isolation compartment, driver should wear respirator/facemask during transport.

EMS clinicians who will directly care for a patient with possible COVID-19 infection or who will be in the compartment with the patient should use appropriate PPE.

An N95 or higher-level respirator should be used.

Facemasks are an acceptable alternative until the supply chain is restored.
Eye protection, gown, and gloves continue to be recommended.

Eye protection should cover the front and sides of the face. Personal eyeglasses and contact lenses are NOT considered adequate eye protection.

Change gloves if they become torn or heavily contaminated.

Respirators should be prioritized for procedures that are likely to generate respiratory aerosols.

If there are shortages of gowns, they should also be prioritized for aerosol-generating procedures, and activities where splashes and sprays are anticipated, and high-contact patient care activities that provide opportunities for transfer of pathogens to the hands and clothing of EMS clinicians (e.g., moving patient onto a stretcher).
Aerosol-Generating Procedures

- Exercise caution if procedures are necessary
- Consult with medical control if possible
- Bag valve masks and other ventilator equipment should be equipped with HEPA filtration
- Rear doors of transport vehicle should be opened and HVAC system should be activated during aerosol-generating procedures
- Perform away from pedestrian traffic

Clinical Management

- Currently no specific antiviral treatment
- Prompt infection prevention and control and supportive management of complications is recommended
- Patients with mild illness might not initially require hospitalization
- Signs and symptoms might worsen in 2nd week of illness
- Decision to monitor patient in an inpatient or outpatient setting is made on case-by-case basis
- Avoid corticosteroids unless indicated for other reasons

Vaccination and Treatment

- Clinical trials for treatment and vaccines in development
  - Treatment
    - Currently no specific antiviral treatment
    - Supportive care
    - Research is ongoing
  - Vaccine
    - Currently no vaccine
    - NIH research and development ongoing
    - Projected timeline = 12-18 months

List of treatments and vaccines in development
www.clinicaltrialsarena.com/analysis/coronavirus-mers-cov-drugs/
Slide 23

Transporting Suspected COVID-19 Patients

If a patient with suspected or confirmed COVID-19 needs transported:

- Provide patient with a facemask
- Call ahead to receiving facility regarding symptoms and risk factors
- Keep the patient separated from other people as much as possible
- Family members and other contacts of patients should not ride in the transport vehicle, if possible
- If riding in transport vehicle, a facemask should be worn
- Contact your local health department to report suspected COVID-19 case
- Keep a log of all clinicians and providers and their level of patient contact

Slide 24

Transporting Suspected COVID-19 Patients

- When possible, use vehicles that have isolated driver and patient compartments with separate ventilation to each area
- Close the door/window between these compartments before bringing the patient on board
- Vehicle ventilation in both compartments should be set on non-recirculated mode
- Only as-equipped supplemental recirculating ventilation units that pass air through HEPA filters may be used for recirculation
- Use rear exhaust fan if equipped on vehicle
- If no isolated driver and patient compartments nor ventilation are present, open the outside air vents in the driver area and turn on the rear exhaust fans to the highest setting

Slide 25

Documentation of Patient Care

- Should be done after EMS clinicians have completed transport, removed and discarded PPE, and performed hand hygiene
- Written documentation should match verbal information given to ED providers at the time patient was transferred
- Include list of EMS clinicians and public safety providers involved in response and level of contact with the patient (e.g., no contact with patient, provided direct patient care)
- This documentation may need to be shared with local public health authorities
Slide 26

Cleaning EMS Transport Vehicles after Transporting Suspected COVID-19 Patients

- After transport, leave the rear doors of the vehicle open to allow for air changes. Doors should remain open during cleaning.
- When cleaning, wear PPE:
  - Disposable gown
  - Gloves
  - Face shield OR facemask + goggles, if splashes or sprays are anticipated
- Clean and disinfect the vehicle in accordance with SOPs
- Clean and disinfect reusable patient-care equipment
- Follow SOPs for disposal of used PPE and laundering used linen; avoid shaking the linen

Slide 27

Environmental Cleaning

- Products with EPA-approved emerging viral pathogens claims are recommended for use against COVID-19
- Follow the manufacturer’s instructions for all cleaning and disinfection products (e.g., concentration, application method and contact time, PPE)
- Refer to List N on the EPA website for EPA-registered disinfectants that have qualified under EPA’s emerging viral pathogens program for use against SARS-CoV-2

https://www.epa.gov/pesticide-registration/list-n-disinfectants-use-against-sars-cov-2

Slide 28

Guidance on Assessment and Monitoring of Healthcare Contacts

- If COVID-19 is identified, healthcare personnel are assessed and classified as high-, medium-, or low-risk depending on multiple factors
- Exposure duration, patient symptoms, if patient was wearing facemask, aerosol-generating procedures, and type of PPE used by healthcare personnel
- Recommendations for monitoring for COVID-19 and work restrictions depend on exposure risk classification
- LHD will work with each facility to outline roles and responsibilities


VDH Healthcare Personnel Risk Assessment Tool
EMS Employer Responsibilities

- EMS agencies should develop sick-leave policies for EMS personnel that are non-punitive, flexible, and consistent with public health guidance.
- Equipment: Consult ventilator equipment manufacturer to confirm appropriate filtration capability and effect of filtration on positive-pressure ventilation.

Infection Prevention and Control Actions Needed Now

- Meet with staff to educate and train them on COVID-19 and what to do to prepare.
- Ensure staff are trained in correct use of PPE and respiratory protection device use.
- Plan to optimize your facility's supply of PPE and EPA-registered hospital grade disinfectants due to ongoing shortages.
- Report any EMS facility supply chain issues to the Regional Healthcare Coalition.

Key Reminders

- All personnel should avoid touching their face while working.
- Perform hand hygiene after removing PPE.
- EMS personnel should be alert for fever or respiratory symptoms (e.g., cough, shortness of breath, sore throat).
- If symptoms develop, self-isolate and notify occupational health services and/or LHD to arrange for appropriate evaluation.

Here are simple but key reminders for all staff.
Help Counter Stigma

- Support people who are coming back to school or work after completing their quarantine or isolation period for COVID-19
- Maintain confidentiality of those seeking health care and those who are part of any contact investigation
- Raise awareness without increasing fear
- Share accurate information about how virus spreads
- Provide social support

ADDITIONAL RESOURCES

New or Updated CDC Guidance

- Revised PUI Case Definition
- Healthcare Infection Control Guidance
- Healthcare Personnel with Potential Exposure Guidance
- Pregnant Women and Children FAQs
- Inpatient Obstetric Healthcare Guidance
- Discontinuation of Transmission-Based Precautions
- HCP Preparations Checklist and Tools
- Standard for Long-Term Care Facilities
- COVID-19 Publications

**Slide 35**

**VDH Resources for EMS Providers**

Information for Healthcare Providers
- [http://www.vdh.virginia.gov/content/uploads/sites/13/2020/03/Provider_FAQ_03082020.pdf](http://www.vdh.virginia.gov/content/uploads/sites/13/2020/03/Provider_FAQ_03082020.pdf)

Interim Guidance for COVID-19 Testing

Healthcare Personnel Risk Assessment Tool

**Slide 36**

**EMS COVID-19 Resources**

CDC COVID-19 Interim Guidance for EMS

EMS Infectious Disease Playbook

Criteria to Guide Evaluation of PUI for COVID-19

Interim Infection Control Guidance

Strategies for Ensuring Healthcare Systems Preparedness and Optimizing N95 Supplies

**Slide 37**

**CDC Patient Resources**

COVID-19 Factsheet

Steps to Prevent the Spread of COVID-19

Travelers: Frequently Asked Questions and Answers

People at Higher Risk and Special Populations

Preventing the Spread of COVID-19 in Communities
Virginia Readiness
Incident command structure in place since January 22, 2020

Preparedness Plans
- Build on emergency management
- Testing with VDH foreign disease and infection control

Public Health Information Campaign
- Working with media
- Developing dynamic, targeted communication

Additional efforts
- Website: https://www.vdh.virginia.gov/covid-19/
- Call center: 1-877-ASKVDH3
At an industry event sponsored by the U.S. Chamber of Commerce this week, David E. Short, deputy assistant secretary for aviation and international affairs, said the Trump administration has agreements in place with South Korea and Italy to screen passengers before they leave those countries. 
Slide 43

Nonpharmaceutical Interventions

Slide 44

Knowledge Gaps

- Source of infection
- Pathogenesis and virulence evolution of the virus
- Transmission dynamics
  - Rate of aerosol transmission in non-healthcare settings
  - Rate of fecal-oral transmission
- Viral shedding
- Risk factors for infection
- Asymptomatic infection
- Seasonality

Slide 45

Take Home Messages

- Prepare your transport vehicles to safely triage and manage patients with respiratory illness, including COVID-19
- Immediately report suspect or confirmed COVID-19 cases to your local health department
- Everyone has a role to play in preparing for COVID-19 in the community
- Direct ODM questions to oems.chess@cph.virginia.gov
General COVID-19 Resources

Virginia Department of Health (VDH)
- 35 Local Health Districts
- www.vdh.virginia.gov/coronavirus

Centers for Disease Control and Prevention (CDC)
- COVID-19 Website: www.cdc.gov/coronavirus/2019-ncov

World Health Organization (WHO)
- www.who.int/emergencies/diseases/novel-coronavirus-2019

Thank you!
Please send questions to: respiratory@vdh.virginia.gov