COVID-19
Briefing for Emergency Medical Services (EMS) and 911 Public Safety Answering Points (PSAPs)

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COVID-19 OUTBREAK IN CHINA

Findings Published by the World Health Organization

Submitted February 28, 2020
### 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>13.9</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
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%

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

\[ R_0 = 2-2.5 \text{ in absence of interventions} \]
### Key Findings from the WHO-China Report (as of 2/20/20)

#### 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

#### Severe Disease or Death
- Increased with Age
- **Case-fatality Rate >80 Years**: 21.9%
- **Case-fatality Rate in Males**: 4.7%
- **Case-fatality Rate in Females**: 2.8%
- **Severe Disease <19 Years**: 2.5%
- **Critical Disease <19 Years**: 0.2%

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

**Pregnant Women (n=147)**
- 64 Confirmed Cases
- Severe Disease: 8%
- Critical: 1%

**Healthcare Personnel**
- 2,055 Confirmed Cases
- 476 Hospitals across China
- 88% from Hubei Province
Epidemic Curve of COVID-19 Cases Outside of China by Date and WHO Region

As of March 16, 2020
Distribution of COVID-19 cases as of 16 March 2020

*Confirmed* cases reported between 13 and 19 February 2020 include both laboratory-confirmed and clinically diagnosed (only applicable to Hubei province); for all other dates, only laboratory-confirmed cases are shown.

*712 cases are identified on a cruise ship currently in Japanese territorial waters.*

Data Source: World Health Organization
Map Production: WHO Health Emergencies Programme

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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

Cases* by Locality

Number of Cases
- 0
- 1
- 2-5
- 6-10

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)

Entry of most foreign nationals from these destinations has been suspended:
- China
- Iran
- Mainland Europe

- **Reconsider all cruise ship voyages worldwide**

Entry of most foreign nationals from these destinations has been suspended:
- China
- Iran
- Mainland Europe

GUIDANCE FOR EMS PROVIDERS
# COVID-19 Testing Availability

<table>
<thead>
<tr>
<th>Virginia Public Heath Lab (DCLS)</th>
<th>Private Labs</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Testing specimens as of February 29, 2020</td>
<td>• Select private labs are able to perform testing as of March 6, 2020</td>
</tr>
<tr>
<td>• VDH approval required - specimens should not be sent without approval</td>
<td>• VDH approval is not necessary</td>
</tr>
<tr>
<td>• Specimen collection guidance available on <a href="#">DCLS website</a></td>
<td>• Contact your lab provider to determine testing availability</td>
</tr>
</tbody>
</table>
## Interim VDH Testing Criteria (Revised 3/13/20)

<table>
<thead>
<tr>
<th>Clinical Features</th>
<th>Epidemiologic Risk</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fever OR signs/symptoms of lower respiratory illness (e.g., cough or shortness of breath)</td>
<td>Any person, including healthcare personnel, who has had close contact with a laboratory-confirmed COVID-19 patient within 14 days of symptom onset</td>
</tr>
<tr>
<td>Fever AND tested negative for influenza AND a respiratory virus panel negative for all pathogens AND without an alternative diagnosis</td>
<td>Person with clinically or radiographically diagnosed pneumonia requiring hospitalization</td>
</tr>
<tr>
<td>Fever OR signs/symptoms of lower respiratory illness (e.g., cough or shortness of breath) AND tested negative for influenza AND a respiratory virus panel negative for all pathogens AND without an alternative diagnosis</td>
<td>Person residing in a nursing home or long-term care facility</td>
</tr>
</tbody>
</table>

More details can be found on the [VDH Updated Testing Guidance](#)
Requirements to Care for Patients with Suspect or Confirmed COVID-19

• Providers to put on appropriate PPE **before** entering the scene

• Minimize contact with patient until a facemask is on the patient

• Drivers should wear all PPE if providing direct patient care
  • Remove and dispose of all PPE after care and before entering isolated driver’s compartment
  • If no isolation compartment, driver should wear respirator/facemask during transport
Minimum PPE Requirements for Suspected or Confirmed COVID-19

EMS Providers in Close Contact
- Hand Hygiene
- Goggles or Face Shield
- Gown
- Gloves
- N95 Respirator
- or
- Facemask

Patients
- Hand Hygiene
- Facemask
PPE Prioritization: Aerosol-Generating Procedures

Prioritize PPE if supply chain disruption:

- **N95 respirators** - aerosol-generating procedures
- **Gowns** - aerosol-generating procedures, activities where splashes and sprays are anticipated, high-contact patient activities

Once supply chain is restored, fit-tested EMS clinicians should return to use of respirators for patients with known or suspected COVID-19
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

List of treatments and vaccines in development
www.clinicaltrialsarena.com/analysis/coronavirus-mers-cov-drugs/
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/
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
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 an equipped supplemental recirculating ventilation unit that passes 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
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
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
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
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
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

<table>
<thead>
<tr>
<th>Revised PUI Case Definition</th>
<th>Healthcare Infection Control Guidance</th>
<th>Healthcare Personnel with Potential Exposure Guidance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pregnant Women and Children FAQs</td>
<td>Inpatient Obstetric Healthcare Guidance</td>
<td>Discontinuation of Transmission-based Precautions</td>
</tr>
<tr>
<td>HCP Preparedness Checklist and Tool</td>
<td>Strategies for Long-Term Care Facilities</td>
<td>COVID-10 Publications</td>
</tr>
</tbody>
</table>

VDH Resources for EMS Providers

Information for Healthcare Providers
• 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
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
CDC Patient Resources

COVID-19 Factsheet

Steps to Prevent the Spread of COVID-19
•  https://www.cdc.gov/coronavirus/2019-ncov/about/steps-when-sick.html

Travelers: Frequently Asked Questions and Answers

People at Higher Risk and Special Populations

Preventing the Spread of COVID-19 in Communities
PUBLIC HEALTH SYSTEM RESPONSE
CDC Protects and Prepares Communities

CDC is aggressively responding to the global outbreak of COVID-19 and preparing for the potential of community spread in the U.S.

**Travel**
- Conducts outreach to travelers
- Issues travel notices

**Laboratory and diagnostics**
- Develops diagnostic tests
- Confirms all positive test results submitted by states

**Schools**
- Provides guidance for schools including school closures and online education options

**Businesses**
- Provides business guidance including recommendations for sick leave policies and continuity of operations

**Community members**
- Shares information on symptoms and prevention
- Provides information on home care
- Encourages social distancing

**Healthcare professionals**
- Develops guidance for healthcare professionals
- Conducts clinical outreach and education

**Healthcare systems**
- Develops preparedness checklists for health systems
- Provides guidance for PPE supply planning, healthcare system screening, and infection control
- Leverages existing telehealth tools to redirect persons to the right level of care

For more information: [www.cdc.gov/COVID19](http://www.cdc.gov/COVID19)
Virginia Readiness

Incident command structure in place since January 22, 2020

Preparedness Plans
- Built on pandemic influenza experience
- Working with CDC, state and local organizations, and other partners

Public Health Information Campaign
- Working with media and providing targeted communications
- Webpage and Call Center (1-877-ASK-VDH3)
COVID-19
Surveillance and Investigation

- Gather necessary information to guide response efforts
- Perform laboratory tests when necessary
- Ensure appropriate prevention measures are implemented
- Identify potentially exposed people

Public Health Response
Identify and Monitor People Exposed to COVID-19

• Airport screening
  • Exit & entry screening - Flights from China & Iran
  • Exit screening in Italy & South Korea

• Monitoring and movement restrictions of travelers and contacts to cases
  • Contact info of travelers from China & Iran provided to state health departments
  • Other travelers instructed at airport to stay home and monitor themselves for 14 days
  • Known close contacts; cruise ship notifications provided to state health departments

• Contact tracing
Nonpharmaceutical Interventions
Knowledge Gaps

• Source of infection
• Pathogenesis and virulence evolution of the virus
• Transmission dynamics
  • Role of aerosol transmission in non-healthcare settings
  • Role of fecal-oral transmission
• Viral shedding
• Risk factors for infection
  • Asymptomatic infection
• Seasonality
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 OEMS questions to Karen.Owens@vdh.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