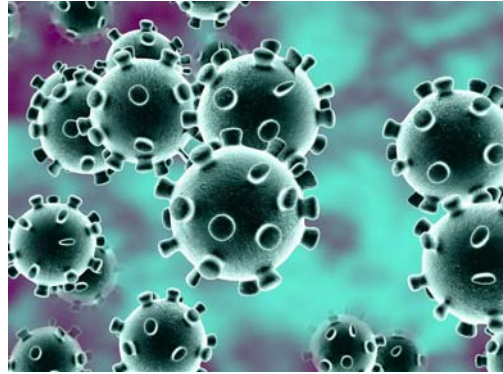


COVID - 19

Katherine
West,RN,BSN,MSEd
Infection Control
Consultant

Novel Coronavirus - COVID-19

- A new coronavirus
- China – 2019
- Animal to human transmission
- Human to human transmission
 - Viral illness
 - Only seriously ill develop pneumonia
 - First U.S. Case – Washington State



2

COVID-19 is a newly identified virus in the coronavirus family. It was first identified in China.

It is believed that this virus was transferred from animal to humans.

It appears that this illness has the greatest effect on older persons with underlying medical problems. Persons with medical issues lower immune response and render these persons more likely to develop pneumonia,

Here in the U.S. The first case was identified in Washington State.



Causative
Organism

- SARS CoV -2 Virus

The causative organism for this illness is the SARS CoV-2 virus



Signs and symptoms that EMS personnel should watch for include; fever, cough, shortness of breath and a tight feeling in the chest.

Signs & symptoms are very much like those of the seasonal flu.

Risk Groups

• CDC, March 9, 2020

- Older adults
- People who have serious chronic medical conditions like:
 - Heart disease
 - Diabetes
 - Lung disease
 - Immunocompromised – any age

With regard to risk groups, as mentioned, older adults with chronic medical conditions such as; heart disease, lung disease and diabetes. Added to the list persons who are immunocompromised in any age group.

Close Contact - Defined

Being within 6 feet or within the room area for a prolonged period of time without PPE

Caring for, living with, visiting, or sharing a healthcare waiting room or room with a nCoV patient

Having direct contact with infectious secretions of a nCoV patient while not wearing PPE

6

Transmission appears to be related to close contact – Close contact is defined as;

Read the listing

Keep in mind that -Most EMS transport times are not long

COVID-19



Clinical Features

- Fever & symptoms of lower respiratory illness
- Fever or symptoms of lower respiratory infection

Epidemiologic Risk

- Travel from Wuhan City, China
- OR
- 14 days before symptoms, close contact with a person under investigation (PUI) while that person was ill
- 14 days close contact with a ill laboratory-confirmed patient

CDC Jan. 17, 2020

Once again we are asked to get a travel history. This questions should be routine for all patient assessments because we are a very global society.

Why the question mark? Well, it appears that we now have transmission within communities. But these questions should still be addressed

Mode of Transmission

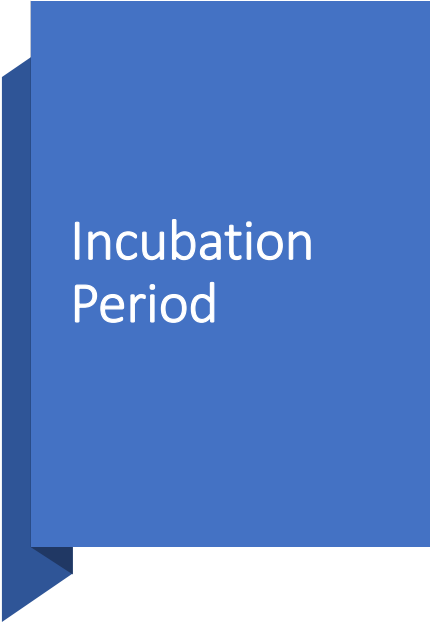
Respiratory –
droplet
precautions (WHO)

Contact
Precautions –
(WHO/CDC)

How is this virus transmitted? Well, here is where some confusion begins –

The World Health Organization (WHO) states that this is a large droplet virus and so Droplet precautions should be used.

CDC has not settled on this and refers to droplet but then as refers to airborne –
Both WHO and CDC agree on the use of contact precautions



Incubation Period

- 14 days after exposure

Testing Issues

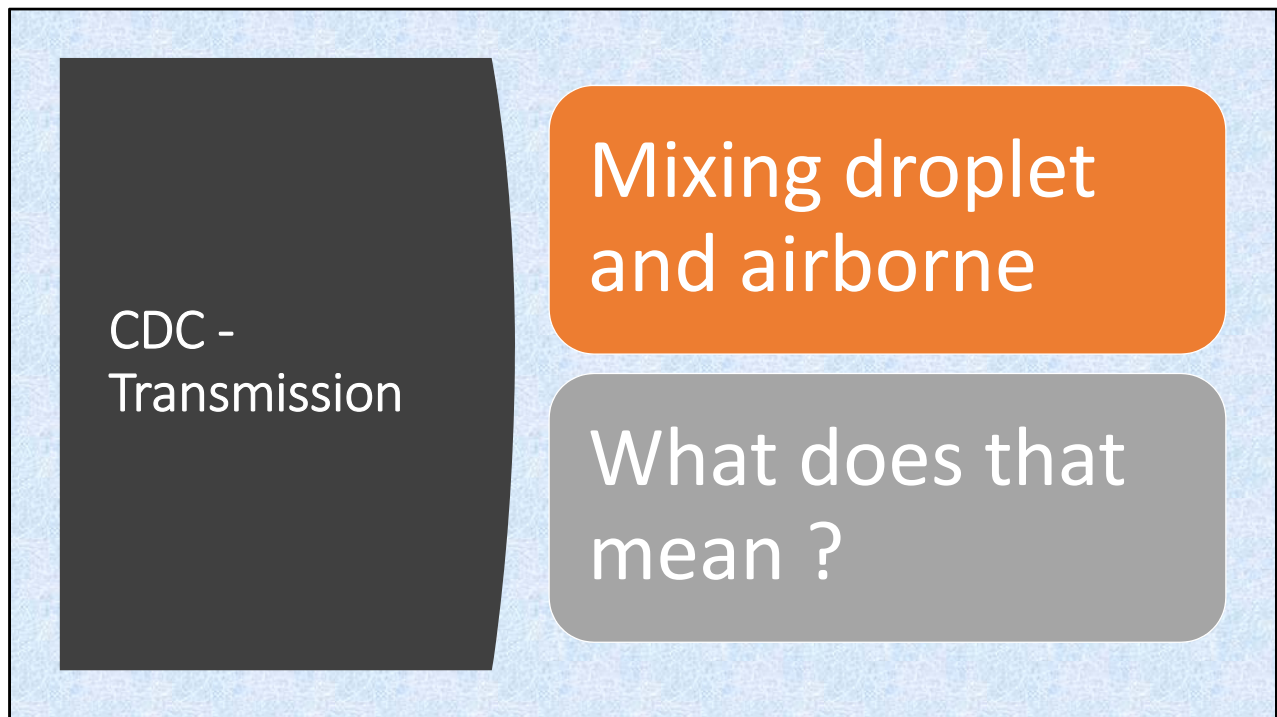
Doctors order will be needed

There have been multiple issues with testing for COVID-19 – The U.S. decided not to use the tests kits developed by the WHO that are in use across the globe. This has greatly delayed the testing process here. The first test developed here was found to have issues = another delay. To date, we are still not sure of the actual case number in this country. Hopefully, this will soon be remedied.



Conflicting statements from CDC

There definitely conflicting statements from the CDC even in the Interim Guidelines for COVID-19 that were published for EMS. Remember, that these are interim guidelines and not final. But, they are a reminder that EMS does not follow the hospital guidelines. Following what a hospital does is often not relevant to EMS care and transport.

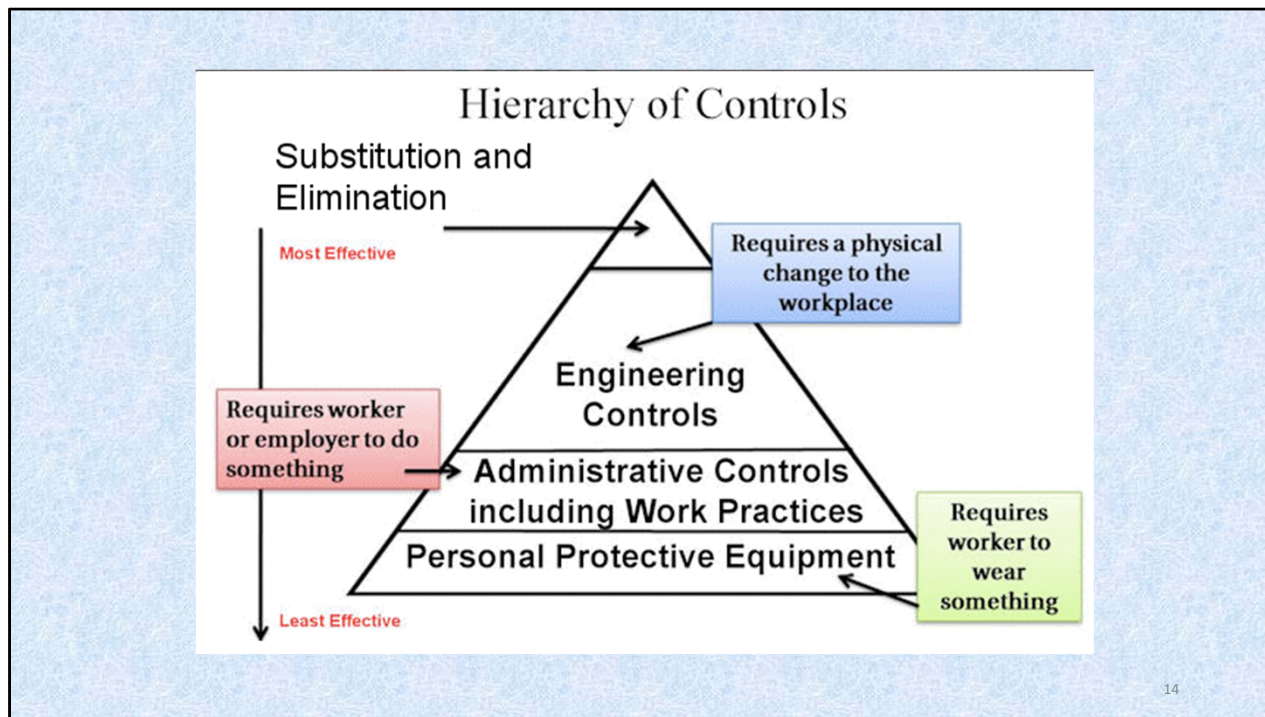


Both WHO and the CDC state that placing a surgical mask on the patient to contain droplets is important – basic infection control is contain at the site. This would apply to airborne transmission as well.

CDC – Feb. 28, 2020

- Patient wearing a facemask which can efficiently block respiratory secretions from contaminating others and the environment
- Basic infection control – contain at the source!

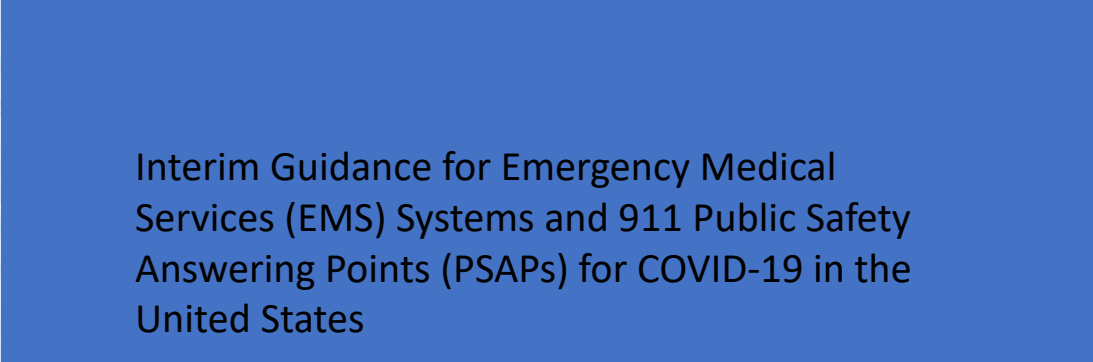
The CDC published this statement on February 28th. This fully supports the previous slide.



It is important to bring in the Hierarchy of Safety Controls. This illustrates that there are other protective elements beside personal protective equipment (PPE). This process begins with Elimination of risk – that would start with placing a surgical mask on the patient. With regard to Engineering Controls – this refers to the use of the exhaust fan in the vehicle. This fan exchanges out the air in the back of your vehicle a minimum of every two minutes! This is a KKK vehicle specification. Another option is to set the heat or A/C on the non-recirculating cycle. Cleaning and disinfection would also come under the heading of Environmental controls.

The next control is Administrative – having handwashing solution available, conducting education and training for department members and practicing donning and doffing of PPE.

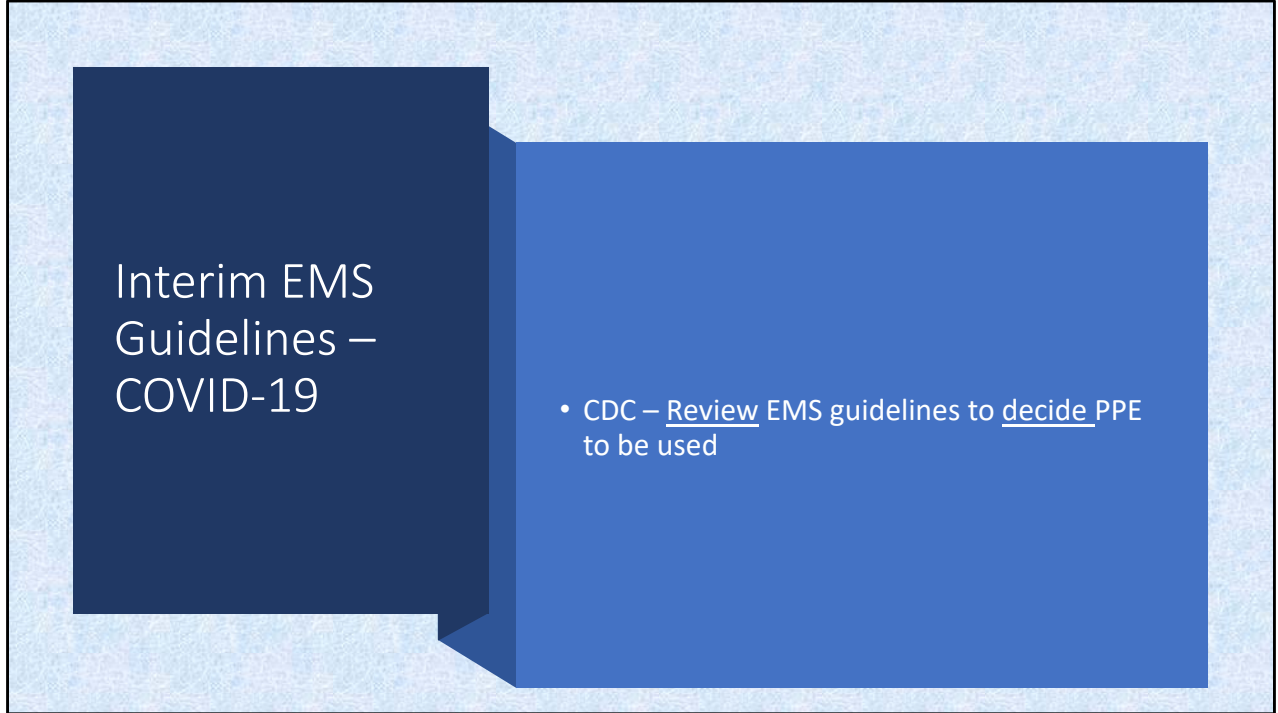
As you can see, PPE is at the bottom of the hierarchy - this shows that PPE is not a “primary” protective measure. Although one might not get that from photos shown on TV!



Interim Guidance for Emergency Medical
Services (EMS) Systems and 911 Public Safety
Answering Points (PSAPs) for COVID-19 in the
United States

The CDC published Interim Guidelines for EMS – these are not final guidelines! These guidelines were taken from previous guidelines for SARS (Severe Acute Respiratory Syndrome) and MERS (Middle Eastern Respiratory Syndrome).

There was some real cutting and pasting here and there are some conflicting statements with the document.



The document states that these are for review and then a decision as to what PPE is to be used would be made!

Environmental Controls

Insuring proper
ventilation
(exhaust fan)

Environmental
cleaning –
standard
disinfectant agents

Going back to environmental controls – the exhaust fan is a great protection.

Also, under environmental controls - cleaning and disinfection!

NIOSH Statement

- Engineering controls with regard to COVID-19 would include the use of HVAC systems in a vehicle. A recent NIOSH study showed that particle clearance could be improved by the use of the rear vent fan (when positioned on the “high” setting) in conjunction with the provision of outside air through the vehicle’s main HVAC systems.

CDC Interim Guidelines for EMS

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This statement from the National Institute for Occupational Safety & Health (NIOSH) makes a strong statement on the importance of the exhaust fan. This statement is from the CDC Interim Guidelines for EMS.

Cleaning / Disinfection

Routine cleaning and disinfection procedures (e.g., using cleaners and water to pre-clean surfaces prior to applying an EPA-registered, hospital-grade disinfectant to frequently touched surfaces or objects for appropriate contact times as indicated on the product's label) are appropriate for SARS-CoV-2 (the virus that causes COVID-19) in healthcare settings, including those patient-care areas in which aerosol-generating procedures are performed.

CDC Interim Guidelines for EMS

The next protection for EMS providers and patients is cleaning followed by disinfection is an important reminder that cleaning must be done first in order for disinfection to occur.

Cleaning

- Clean and disinfect the vehicle in accordance with standard operating procedures. All surfaces that may have come in contact with the patient or materials contaminated during patient care (e.g., stretcher, rails, control panels, floors, walls, work surfaces) should be thoroughly cleaned and disinfected using an EPA-registered hospital grade disinfectant in accordance with the product label.

Where should cleaning be focused? The term currently used is – high contact items. What the patient was in contact with and what equipment was used to care for the patient.

Note that no special cleaning solution is needed or recommended for COVID-19.

Importance of Cleaning !

This question is a key one to ask when evaluating the purchase of any automated disinfection system.

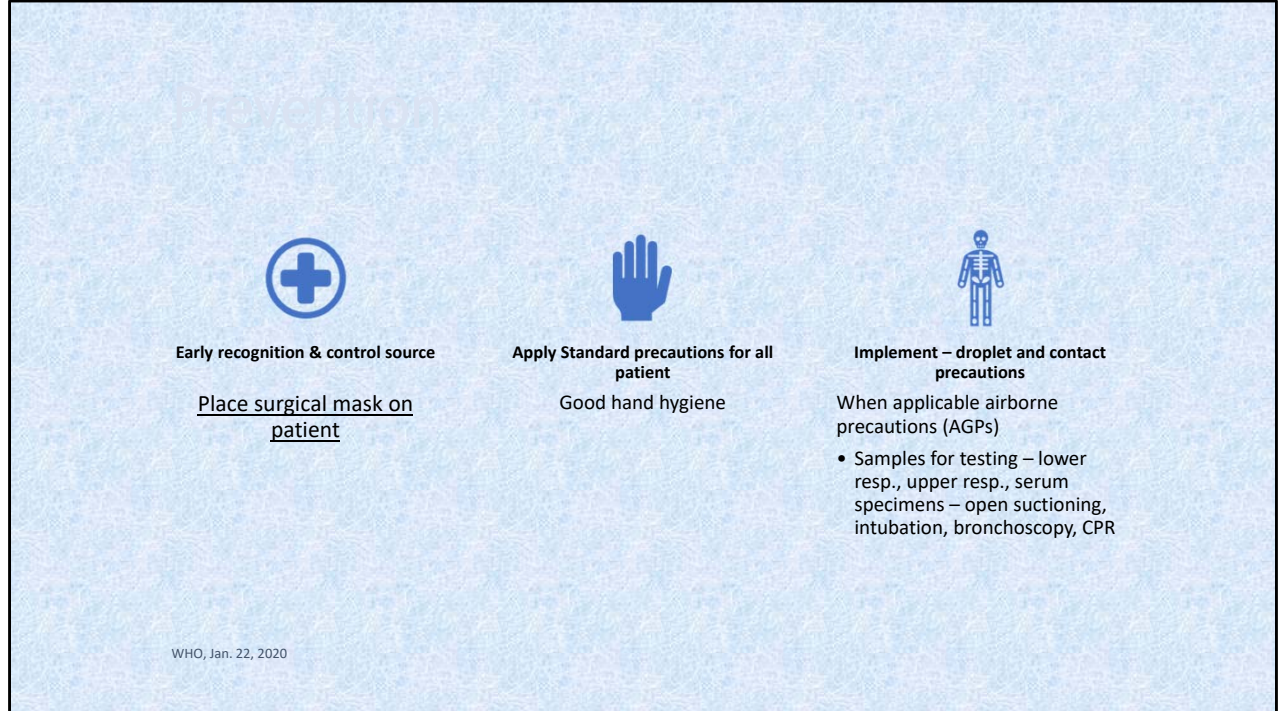
This question was recently answered by Dr. William Rutala a nationally recognized expert in disinfection and sterilization. In an interview for Healthcare Hygiene Magazine, January, 2020, Dr. Rutala stated:

“ the rationale for rigorous manual cleaning/disinfection before use of UV technology, for example, is that organic material can interfere with disinfection technologies. **Thus, surfaces must be cleaned/disinfected prior to use of automated disinfection technology.**”

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Many departments have purchased automated disinfection systems. Many department believe that these systems eliminate the need to clean! That is not correct –

Dr. William Rutala is the leading national expert on Cleaning and Disinfection and in a recent interview he specifically addressed this statement – Cleaning must still be performed first because the presence of organic material can interfere with achieving disinfection.



The WHO put out this guide which appears to be straight forward. Everything begins with a surgical mask being placed on the patient – source control. Then for care providers to use Standard Precautions – gloves and good handwashing.

Proper handwashing is a procedure that many healthcare personnel do not manage to perform properly. Next, to also implement droplet and **contact** precautions. Airborne precautions are only to be used when performing aerosol generating procedures as listed here. A couple of things to note here – EMS does not perform open-suctioning – EMS maintains a closed filtered system. Open suctioning is performed in the hospital setting to take samples and instill medications. The same would be said for sample testing in general. EMS might perform suctioning and/or intubation but most transports are short and these procedures would be performed on arrival at a medical facility. Keep in mind that few patients have the need for these procedures. For example, with Ebola patients EMS was directed not to perform such procedures but just to transport.

What is a patient needs O2 during transport ? CDC states to put the surgical mask over the nasal cannula.

Respiratory Protection

- Surgical mask Vs. N95's
 - Depends on risk
- CDC EMS Interim Guidelines

Surgical masks are key to protection from COVID-19 by containing droplets at the source. There is NO recommendation or requirement for the wearing of a respirator for all patients. There have been reported instances of overuse of PPE.

With the possibility of limited supplies – understanding what is and is not needed is important.

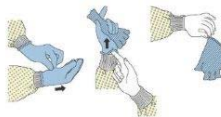



PPE

- Gloves – double gloves are not needed
- Cover gown or coveralls
- Protective eyewear
- Surgical masks/ respirators


Further clarification on use of PPE is found in the EMS Guidelines – no double gloving is needed or recommended. The CDC's Dr. Ryan stated that eyewear is recommended to prevent care providers from touching their eyes during the provision of care. Cover gowns or coveralls are both fine – we may go with what is available if cases continue to increase.

HOW TO SAFELY REMOVE PERSONAL PROTECTIVE EQUIPMENT (PPE)
EXAMPLE 1

There are a variety of ways to safely remove PPE without contaminating your clothing, skin, or mucous membranes with potentially infectious materials. Here is one example. **Remove all PPE before exiting the patient room except a respirator; if worn. Remove the respirator after leaving the patient room and closing the door. Remove PPE in the following sequence:**

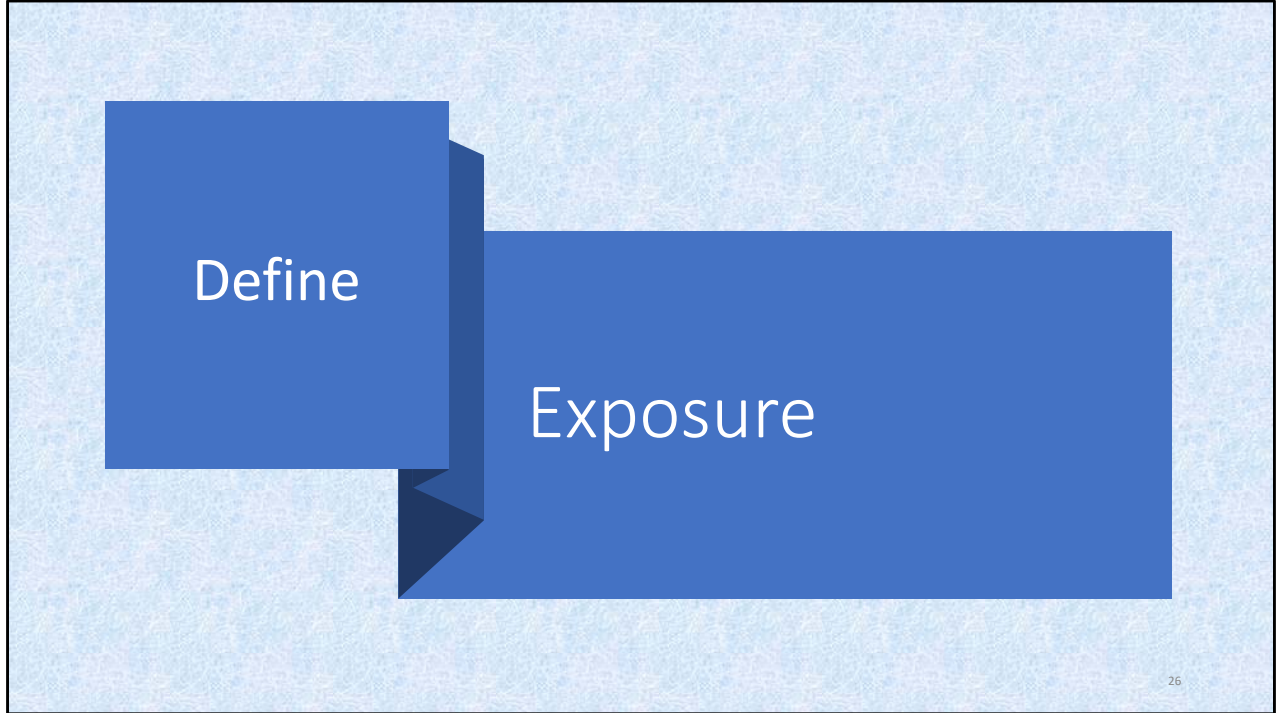
- 1. GLOVES**
 - Outside of gloves are contaminated!
 - If your hands get contaminated during glove removal, immediately wash your hands or use an alcohol-based hand sanitizer
 - Using a gloved hand, grasp the palm area of the other gloved hand and peel off first glove
 - Hold removed glove in gloved hand
 - Slide fingers of ungloved hand under remaining glove at wrist and peel off second glove over first glove
 - Discard gloves in a waste container
- 2. GOGGLES OR FACE SHIELD**
 - Outside of goggles or face shield are contaminated!
 - If your hands get contaminated during goggles or face shield removal, immediately wash your hands or use an alcohol-based hand sanitizer
 - Remove goggles or face shield from the back by lifting head band or ear pieces
 - If the item is reusable, place in designated receptacle for reprocessing. Otherwise, discard in a waste container
- 3. GOWN**
 - Gown front and sleeves are contaminated!
 - If your hands get contaminated during gown removal, immediately wash your hands or use an alcohol-based hand sanitizer
 - Untie/gun gown ties, taking care that sleeves don't contact your body when reaching for ties
 - Pull gown away from neck and shoulders, touching inside of gown only
 - Turn gown inside out
 - Fold or roll into a bundle and discard in a waste container
- 4. MASK OR RESPIRATOR**
 - Front of mask/respirator is contaminated — DO NOT TOUCH!
 - If your hands get contaminated during mask/respirator removal, immediately wash your hands or use an alcohol-based hand sanitizer
 - Grasp bottom ties or elastics of the mask/respirator, then the ones at the top, and remove without touching the front.
 - Discard in a waste container
- 5. WASH HANDS OR USE AN ALCOHOL-BASED HAND SANITIZER IMMEDIATELY AFTER REMOVING ALL PPE**

PERFORM HAND HYGIENE BETWEEN STEPS IF HANDS BECOME CONTAMINATED AND IMMEDIATELY AFTER REMOVING ALL PPE



Ebola was a reminder of the importance of proper removal of PPE. May departments sought out HazMat personnel for this instruction. Only there is a problem with that – the sequence is different for pathogens

Than for chemical hazards. This chart is from the CDC on the procedure for proper removal of PPE. Not that handwashing is to be performed after PPE removal!



Another key questions – what constitutes and exposure to COVID-19? This has been defined -

Exposure

- Risk Assessment - Patient s/s and duration of exposure
 - High Risk – HCP performed or were present when AGPs were performed on patients with COVID-19 without use of PPE
 - Medium Risk – prolonged close contact with COVID-19 patients and HCP hands or mucous membranes were exposed

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This is the definition of an exposure -

Work Restriction

- EMS agencies should develop sick-leave policies for EMS personnel that are nonpunitive, flexible, and consistent with public health guidance. Ensure all EMS personnel, including staff who are not directly employed by the healthcare facility but provide essential daily services, are aware of the sick-leave policies.
- CDC EMS Interim Guidelines

If an exposure were to occur, then work restriction or voluntary quarantine would be needed. This would be for 14 days and the EMS department would then need to replace that person for the 14 days.

This would be covered by work Comp.



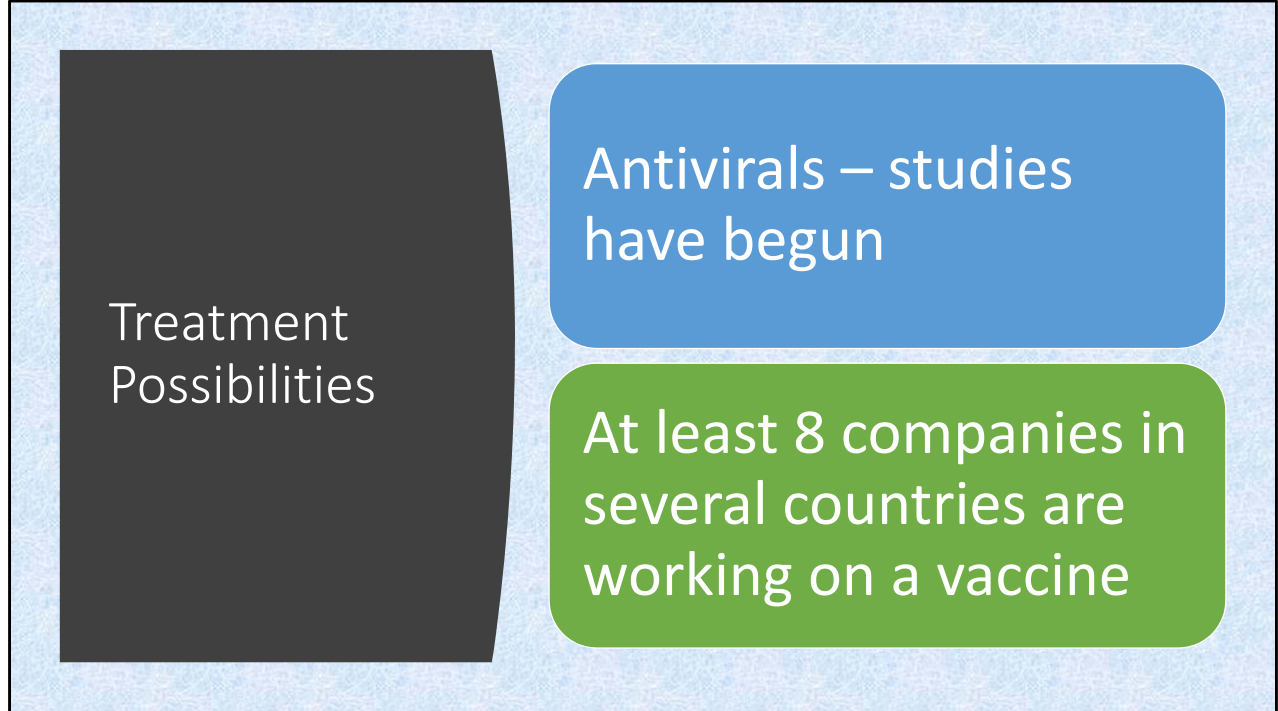
Quarantine |

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Quarantine has been used and has been effective for centuries. However, there must be co-operative on the part of the person or persons to be quarantined. Person on quarantine should not be housed with persons

who are not on quarantine. There have been reports of persons breaking quarantine- this not only poses a possible risk of transmission to others but may also have legal consequences.

A person who breaks quarantine can be charged with - Criminal Misdemeanor. This may vary from state to state but usually - the punishment for a **misdemeanor** is up to a year or less in the county jail,



There are studies underway regarding possible treatments for COVID-19. One HIV treatment drug is showing promise in one study. But, currently, care is supportive.

With regard to a vaccine, at least 8 companies are working on a vaccine. One company is set to begin human study trials. These trials have 4 phases and take time. If a trial is promising and safe through at least 2 phases, Sometimes it may be grant use under an “emergency authorization”. This was used for the Ebola vaccine in the beginning but that vaccine is now FDA approved.

Questions from the Infection Control Community

Substitutions, alternatives, reuse and reprocessing of gowns, goggles, and masks/respirators to conserve supplies

Accessing PPE for patients receiving care at home

- Education of staff and patients to prevent **misuse** and **overuse** of PPE

The Infection Control Community has raised several key questions regarding response to COVID-19- READ LIST Both overuse and misuse are present in EMS response!

Perhaps the key one is education of staff to prevent misuse and overuse of PPE. We are all ready seeing responders over using PPE !

Unresolved Issues - Quarantine

Income loss – 14 days

Getting groceries

Getting medications

Unresolved issues from going back to the time of SARS –

Some attention is now being given to supplementing lost income associated with this illness. That will improve compliance for quarantine.

There are some grocery stores that offer food delivery but persons under quarantine need to be able to access money to pay for it,

There is an advisory for having at least 2 weeks of medication on hand – but what is a person can not afford that ? These are all key having a successful quarantine situation.

CDC – Statement of Shortage of N95s

- Interim Infection Prevention and Control Recommendations for Patients with Suspected Coronavirus Disease 2019 –
 - Update PPE –
“Based on local and regional situational analysis of PPE supplies, facemasks are an acceptable alternative when the supply chain of respirators cannot meet the demand”

CDC, March 10, 2020

This update was just published by the CDC – it answers one of the concerns that has recently been voiced!

Center for
Medicare &
Medicaid
Services

- “today’s CMS memo implements CDC guidance by stating that facemasks are an acceptable temporary alternative to respirator”...
- CMS, March 11, 2020

Again working to prepare for shortages in the health care work environment.

FDA Statement of Masks - Shortages

- **If Surgical Masks and/or Gowns Are Running Low:**
 - Extend the use of single use gowns for healthcare providers without changing the gown between patients with the same infectious disease diagnosis or exposure who are maintained in a confined area. If the gown becomes contaminated, replace it.
 - Use surgical masks and/or gowns that meet CDC recommendations and/or ANSI standards for fluid resistance and bacterial filtration efficiency.
 - Prioritize the use of unexpired FDA-cleared surgical masks for healthcare providers in procedures where it is important to protect the healthcare provider and/or the patient from risk of exposure to blood and body fluids.
 - Use surgical masks beyond the manufacturer-designated shelf life in a setting where there is a lower risk of transmission (e.g., non-surgical). The user should visibly inspect the product prior to use and, if there are concerns (such as degraded materials or visible tears), discard the product.
 - Re-use surgical masks during care for multiple patients where they are used to protect the healthcare provider from an activity with low transmission risk (such as dispensing medications) and thus do not create a risk to the healthcare provider or patient. If the mask becomes contaminated, replace it.
 - Be aware that counterfeit masks and gowns may be on the market, especially during this time of reduced supply.

FDA, March 11, 2020

Getting Medications

- There is discussion regarding extending refill times and Extending mail in service
- Nothing has been mentioned about funds to pay for medication

Here is where things stand as of March 11, 20120



The bottom line is here this – borrowed from the British during World War II - It is a good message – provide care to those in need and be able to be supportive not fearful.



Questions ?

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