

# Covid-19: The Role of the Pharmacy Technician

***October 2020***

Bradley N. Nix, PharmD



# Knowledge Assessment

Covid-19 is a respiratory disease caused by the same virus that causes seasonal flu.

- A. True
- B. False

B



# Knowledge Assessment

How may Covid-19 be transmitted from human to human?

- A. Contact with and/or inhalation of respiratory droplets
- B. Inhalation of fine aerosols formed during medical procedures
- C. Inhalation of short-range body aerosols
- D. All of these listed answers

D



# Knowledge Assessment

Which of the following diseases has the lowest fatality rate in terms of percentage of total cases?

- A. Covid-19
- B. SARS
- C. Seasonal Flu
- D. MERS

C



# Knowledge Assessment

Which of the following statements concerning Covid-19 is false?

- A. Anyone can have mild to severe symptoms.
- B. Covid-19 incubation period is the same as common cold or seasonal flu.
- C. Covid-19 hospitalization and fatality are not affected by age or race.
- D. Only B and C
- E. All of these listed answers

D



# Knowledge Assessment

Identify TWO methods of reducing spread of Covid-19 for the general public

Avoid Close Contact  
Clean/Disinfect  
Barrier Controls



# Knowledge Assessment

What is meant by “flattening the curve”?

- A. Protective measures to reduce Covid-19 spread over time will completely eliminate new cases.
- B. Human immunity to mutations in SARS-CoV virus reduces hospitalization and mortality rates of Covid-19
- C. Protective measures to reduce Covid-19 spread over time lowers active cases to within healthcare system capacity
- D. None of these listed answers

C



# Knowledge Assessment

Because Covid-19 is a new disease of pandemic proportions, Infection Prevention and Control has nothing to offer in terms of reducing the spread of the disease.

- A. True
- B. False

**B**



# Knowledge Assessment

What is the difference between Standard Precautions (SP) and Transmission-Based Precautions (TBP)?

- A. SP are for the general public while TBP are for hospitalized patients.
- B. SP are designed to protect patients while TBP are designed to protect healthcare workers.
- C. SP are for every patient while TBP are added protective measures for Covid-19 patients
- D. SP are not effective and have been replaced with TBP

C



# Knowledge Assessment

Appropriate personal protective equipment (PPE) for reducing the spread of Covid-19 includes which of the following items?

- A. Gown
- B. Gloves
- C. Eye Protection
- D. Face Mask / Respirator
- E. All of these listed answers

E



# Knowledge Assessment

Which of the following statements concerning Cleaning/Disinfecting is true?

- A. Cleaning removes dirt and germs while disinfecting kills bacteria and viruses.
- B. Alcohol-based cleaners are inappropriate for electronic devices.
- C. Only disinfectants are required to be EPA-safe.
- D. EPA-registered disinfectants may be found on EPA List D
- E. All of these listed answers

A



# Covid-19: The Role of the Pharmacy Technician

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# Disclosure Statement

Bradley N. Nix, PharmD

## ***Covid-19: The Role of the Pharmacy Technician***

I have no financial or non-financial relationships to disclose.



I WONDERED, IS IT  
BETTER TO DO THE  
RIGHT THING AND FAIL  
...OR IS IT BETTER TO  
DO THE WRONG THING  
AND SUCCEED?



# Objectives

- ❖ Provide a general introduction to Covid-19
- ❖ Describe methods of reducing spread of Covid-19
- ❖ Discuss the Pharmacy Technician's Role with Covid-19



# General Introduction to Covid-19

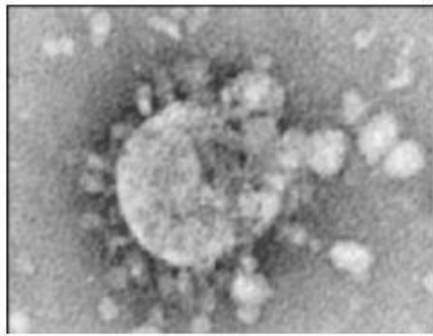
- ❖ Coronavirus (CoV)<sup>1</sup>
  - Large family that can cause illness in animals or humans
  - Several known to cause human respiratory infection
    - Common Cold
    - Severe Acute Respiratory Syndrome (SARS)
    - Middle East Respiratory Syndrome (MERS)
    - Coronavirus disease 2019 (Covid-19)
      - SARS-CoV-2



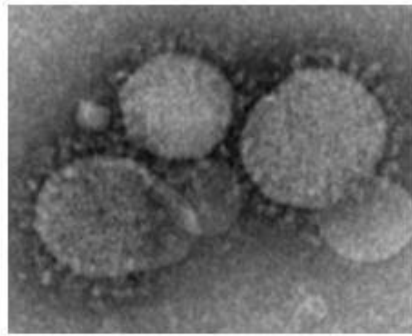
# General Introduction to Covid-19

- ❖ Coronavirus (CoV)<sup>1</sup>
  - Identified in Wuhan, China December 2019
  - Similar SARS-CoV-2 sequences from China and other countries
    - Likely animal reservoir late 2019
    - Travel-related exportation
  - Betacoronavirus - likely originating in bats
    - SARS-CoV-2
    - MERS
    - SARS

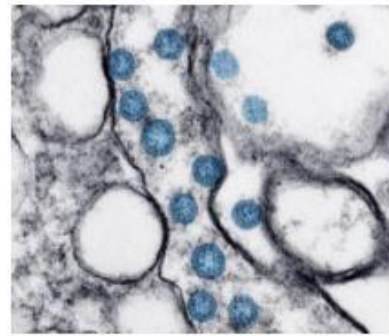




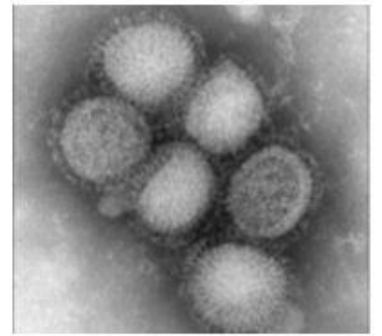
SARS



MERS



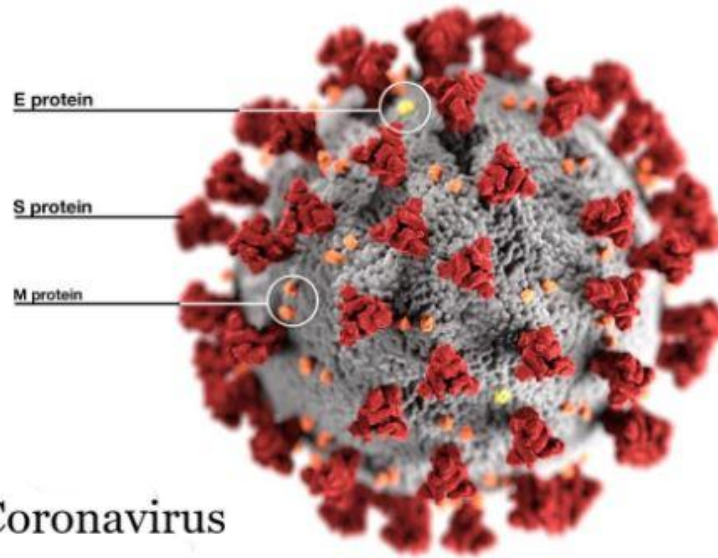
Covid-19



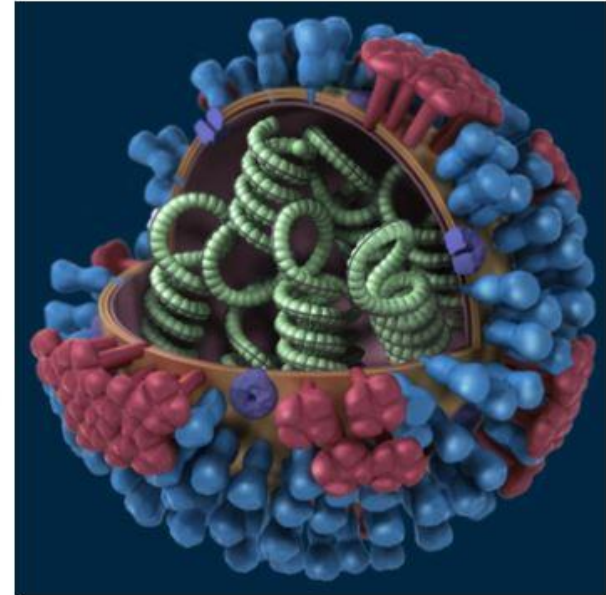
Influenza



## CORONAVIRUS



## INFLUENZA VIRUS



# General Introduction to Covid-19

## ❖ Transmission of Covid-19<sup>1-2</sup>

- Primary Person-to-Person Transmission
  - Respiratory Droplets - Talking, Sneezing, Coughing
  - Short-range inhalation aerosols - crowds, low-ventilation
  - Generated fine aerosols - medical procedures
  - No data to support long range aerosol transmission
- May be spread via touch contamination
- Asymptomatic transmission
- Host incubation up to 14 days



**Fatalities as a percentage  
of all cases**



COVID-19  
**4.0%**  
of 197,133



Seasonal flu  
**0.1%**  
of millions



SARS  
**9.6%**  
of 8,096



MERS  
**34%**  
of 2,494

Emily Barone/Lon Tweeten/Elijah Wolfson for TIME



# General Introduction to Covid-19

- ❖ Symptoms of Covid-19<sup>1,3-5</sup>
  - Asymptomatic / Unknown
    - No known or reported symptoms
    - May still transmit
  - Common Symptoms
    - Fever
    - Cough
    - Fatigue



# General Introduction to Covid-19

- ❖ Symptoms of Covid-19<sup>1,3-5</sup>
  - Less Common Symptoms
    - Conjunctivitis
    - Sore throat
    - Loss of taste or smell
    - Headache
    - Body aches and pains
    - Rash
    - Discoloration of fingers/toes
    - Diarrhea



# General Introduction to Covid-19

- ❖ Symptoms of Covid-19<sup>1,3-5</sup>
  - Serious Symptoms
    - High fever
    - Dyspnea
    - Chest pain
    - Altered mental status
    - Loss speech or movement













# General Introduction to Covid-19

- ❖ Symptoms of Covid-19<sup>1,3-5</sup>
  - Critical Symptoms
    - Weak pulse
    - Cold hands or feet
    - Respiratory failure
    - Organ failure
    - Sepsis
  - Onset of Symptoms
    - May remain asymptomatic
    - Usual onset at 6 to 8 days



## COVID-19 vs. Flu vs. Cold

	COVID-19	Flu	Cold
 <b>Incubation period</b>	2–14 days	1–4 days	1–3 days
 <b>Symptom onset</b>	Gradual	Abrupt	Gradual
 <b>Cough</b>	Common	Common	Mild to moderate
 <b>Shortness of breath</b>	Common	Sometimes	Mild
 <b>Fever</b>	Common	Common	Rare
 <b>Fatigue</b>	Common	Common	Sometimes
 <b>Runny nose</b>	Sometimes	Sometimes	Common
 <b>Nasal congestion</b>	Sometimes	Sometimes	Common
 <b>Diarrhea</b>	Sometimes	Sometimes	Rare
 <b>Body aches</b>	Sometimes	Common	Slight
 <b>Sore throat</b>	Sometimes	Sometimes	Common
 <b>Headache</b>	Sometimes	Common	Rare
 <b>Loss of appetite</b>	Sometimes	Common	Sometimes
 <b>Respiratory issues</b>	Common	Sometimes	Sometimes
 <b>Chills</b>	Sometimes*	Fairly common	Uncommon
 <b>New loss of taste or smell</b>	Sometimes	Sometimes	Sometimes

\*including repeated shaking with chills



# General Introduction to Covid-19

- ❖ Covid-19 Demographics<sup>3,6-8</sup>
  - Anyone can have mild to severe symptoms
  - Increased risk for severe infection
    - Age
    - Race
    - Underlying clinical condition
      - Heart and/or Lung Disease
      - Diabetes
      - Impaired immune system
  - Differentiation in hospitalization and mortality data



# COVID-19 HOSPITALIZATION AND DEATH BY AGE

## FACTORS THAT INCREASE COMMUNITY SPREAD AND INDIVIDUAL RISK



CROWDED SITUATIONS



CLOSE / PHYSICAL CONTACT



ENCLOSED SPACE



DURATION OF EXPOSURE

Rate ratios compared to 18-29 year olds

0-4 years

5-17 years

18-29 years

30-39 years

40-49 years

50-64 years

65-74 years

75-84 years

85+ years

## HOSPITALIZATION<sup>1</sup>

4x lower

9x lower

Comparison Group

2x higher

3x higher

4x higher

5x higher

8x higher

13x higher

## DEATH<sup>2</sup>

9x lower

16x lower

Comparison Group

4x higher

10x higher

30x higher

90x higher

220x higher

630x higher

## ACTIONS TO REDUCE RISK OF COVID-19



WEARING A MASK



SOCIAL DISTANCING (6 FT GOAL)



HAND HYGIENE



CLEANING AND DISINFECTION



<sup>1</sup> Data source: COVID-NET (<https://www.cdc.gov/coronavirus/2019-ncov/covid-data/covidview/index.html>), accessed 08/06/20). Numbers are unadjusted rate ratios.

<sup>2</sup> Data source: NCHS Provisional Death Counts (<https://www.cdc.gov/nchs/nvss/vsrr/COVID19/index.htm>), accessed 08/06/20). Numbers are unadjusted rate ratios.

[cdc.gov/coronavirus](https://cdc.gov/coronavirus)

CS319360-A 08/10/2020



# COVID-19 CASES, HOSPITALIZATION, AND DEATH BY RACE/ETHNICITY

## FACTORS THAT INCREASE COMMUNITY SPREAD AND INDIVIDUAL RISK



CROWDED SITUATIONS



CLOSE / PHYSICAL CONTACT



ENCLOSED SPACE



DURATION OF EXPOSURE

Rate ratios compared to White, Non-Hispanic Persons	American Indian or Alaska Native, Non-Hispanic persons	Asian, Non-Hispanic persons	Black or African American, Non-Hispanic persons	Hispanic or Latino persons
CASES <sup>1</sup>	2.8x higher	1.1x higher	2.6x higher	2.8x higher
HOSPITALIZATION <sup>2</sup>	5.3x higher	1.3x higher	4.7x higher	4.6x higher
DEATH <sup>3</sup>	1.4x higher	No Increase	2.1x higher	1.1x higher

Race and ethnicity are risk markers for other underlying conditions that impact health — including socioeconomic status, access to health care, and increased exposure to the virus due to occupation (e.g., frontline, essential, and critical infrastructure workers).

## ACTIONS TO REDUCE RISK OF COVID-19



WEARING A MASK



SOCIAL DISTANCING (6 FT GOAL)



HAND HYGIENE



CLEANING AND DISINFECTION



<sup>1</sup> Data source: COVID-19 case-level data reported by state and territorial jurisdictions. Case-level data include about 80% of total reported cases. Numbers are unadjusted rate ratios.

<sup>2</sup> Data source: COVID-NET (<https://www.cdc.gov/coronavirus/2019-ncov/covid-data/covidview/index.html>, accessed 08/06/20). Numbers are ratios of age-adjusted rates.

<sup>3</sup> Data source: NCHS Provisional Death Counts (<https://www.cdc.gov/nchs/nvss/vsrr/COVID19/index.htm>, accessed 08/06/20). Numbers are unadjusted rate ratios.

[cdc.gov/coronavirus](https://cdc.gov/coronavirus)

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# Methods of Reducing Spread of Covid-19

## ❖ General Public Guidelines and Recommendations<sup>1-4</sup>

### ➤ Avoid Close Contact

- Stay at home when sick
- Social distance

### ➤ Personal / Environmental Hygiene

- Wash with soap and water / alcohol-based hand sanitizer
- Clean/disinfect frequently touched objects and surfaces

### ➤ Barrier Containment

- Wear a mask
- Cover coughs and sneezes



# STOP THE SPREAD OF GERMS

Help prevent the spread of respiratory diseases like COVID-19.

Avoid close contact with people who are sick.



Cover your cough or sneeze with a tissue,  
then throw the tissue  
in the trash.



Avoid touching your eyes, nose, and mouth.



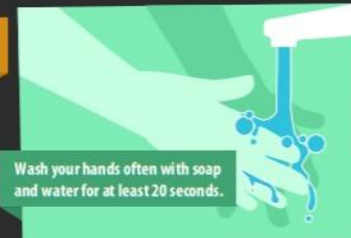
Clean and disinfect frequently  
touched objects and surfaces.



Stay home when you are sick,  
except to get medical care.



Wash your hands often with soap  
and water for at least 20 seconds.

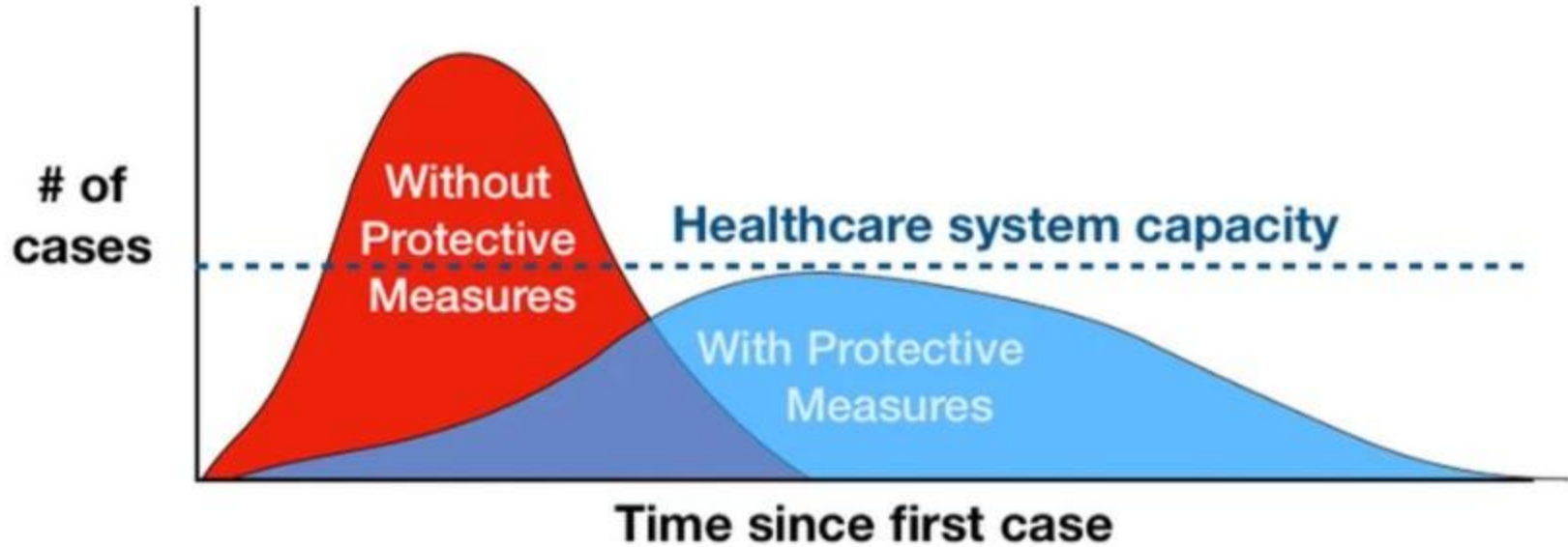


For more information: [www.cdc.gov/COVID19](https://www.cdc.gov/COVID19)

COVID-19 A



# Flattening the Curve<sup>3,10</sup>



# Methods of Reducing Spread of Covid-19

- ❖ Healthcare Guidelines and Recommendations<sup>1-4</sup>
  - Follow Hospital Infection Prevention and Control
    - Support essential healthcare services
      - Rapid identification of suspect cases
      - Immediate isolation
      - Safe clinical management
    - Keep patients and healthcare workers healthy and safe
  - Use Standard and Transmission-Based Precautions
    - Standard precautions for EVERY patient
    - Transmission-based precautions in addition



# Methods of Reducing Spread of Covid-19

## ❖ Standard Precautions<sup>1-4</sup>

- Hand hygiene
- Wearing appropriate PPE
  - Gloves
  - Mask
  - Gown
- Respiratory and cough etiquette
- Safe injection practices
- Cleaning/disinfection of devices and work surfaces
- Appropriate medication storage and handling



# Methods of Reducing Spread of Covid-19

- ❖ Transmission-Based Precautions<sup>1-4</sup>
  - Additional PPE
    - Contact/Droplet precautions
    - Airborne precautions
  - Disposable or dedicated patient care equipment
    - Stethoscopes
    - Blood pressure cuffs
    - Bulk medications
    - Additional disinfection



# Methods of Reducing Spread of Covid-19

- ❖ Transmission-Based Precautions<sup>1-4</sup>
  - Additional Isolation Precautions
    - Dedicated rooms/bathrooms
    - Ventilation requirements
    - Avoid unnecessary transport
    - Dedicated healthcare personnel
    - Restricted visitation



## SEQUENCE FOR PUTTING ON PERSONAL PROTECTIVE EQUIPMENT (PPE)

The type of PPE used will vary based on the level of precautions required, such as standard and contact, droplet or airborne infection isolation precautions. The procedure for putting on and removing PPE should be tailored to the specific type of PPE.

### 1. GOWN

- Fully cover torso from neck to knees, arms to end of wrists, and wrap around the back
- Fasten in back of neck and waist



### 2. MASK OR RESPIRATOR

- Secure ties or elastic bands at middle of head and neck
- Fit flexible band to nose bridge
- Fit snug to face and below chin
- Fit-check respirator



### 3. GOGGLES OR FACE SHIELD

- Place over face and eyes and adjust to fit



### 4. GLOVES

- Extend to cover wrist of isolation gown



## USE SAFE WORK PRACTICES TO PROTECT YOURSELF AND LIMIT THE SPREAD OF CONTAMINATION

- Keep hands away from face
- Limit surfaces touched
- Change gloves when torn or heavily contaminated
- Perform hand hygiene



# Methods of Reducing Spread of Covid-19

## ❖ Cleaning and Disinfecting<sup>1-4</sup>

- SARS-CoV-2 may remain viable for hours to days on a variety of surfaces
- No documented transmission of novel coronavirus from contaminated surfaces
- Cleaning visibly dirty surfaces followed by disinfection is a best practice measure for prevention of Covid-19 and other viral respiratory illnesses



# Methods of Reducing Spread of Covid-19

## ❖ Cleaning<sup>1-4</sup>

- Removing dirt, impurities and germs from surfaces
- Does not KILL germs, but lowers their numbers and reduces risk of spreading infection
- Routine schedule with soap and water or common household cleaners
  - EPA safe
  - Follow recommended use
  - Alcohol-based for electronics
- Appropriate PPE



# Methods of Reducing Spread of Covid-19

## ❖ Disinfecting<sup>1-4</sup>

- Use of chemicals to kill germs on surfaces
- After cleaning to further lower risk of spreading infection
- EPA-registered disinfectants
  - List N
- Follow recommended dwell time and dry time
- Appropriate PPE



# Methods of Reducing Spread of Covid-19

- ❖ Community Pharmacy Recommendations<sup>1-4</sup>
  - Implement universal use of face coverings
  - Advise sick employees to stay home
  - Process prescriptions to minimize risk of exposure to staff and patients
    - Hand sanitizer (at least 60% alcohol) for patients
    - Encourage phone and/or electronic prescribing
    - Avoid direct patient contact
      - Reduce handling insurance cards
      - Place products on counter
    - Wash hands & avoid touching face



# Methods of Reducing Spread of Covid-19

- ❖ Community Pharmacy Recommendations<sup>1-4</sup>
  - Engineering controls
    - Signs and floor markers
    - Barrier protection at checkout and counseling counters
    - Distanced self-checkout
  - Administrative controls
    - Workplace spacing - work stations and computers
    - Divert patients - drive through, pickup, delivery
    - Text/Phone notifications



# Methods of Reducing Spread of Covid-19

## ❖ Community Pharmacy Recommendations<sup>1-4</sup>

- Regularly clean
  - Floors
  - Doors
  - Work surfaces
  - Hands
- Regularly disinfect
  - Work surfaces
  - Drug packaging/containers
  - Counting/compounding equipment



# Methods of Reducing Spread of Covid-19

- ❖ Hospital Pharmacy Recommendations<sup>1-4</sup>
  - Implement universal use of face coverings
  - Advise sick employees to stay home
  - Process orders to minimize risk of exposure to staff
    - Alcohol-based sanitizer for frequent hand hygiene
    - Work gloves
  - Additional PPE protocols
  - Engineering controls
    - Designated processing areas
    - Additional containment for drug transport



# Methods of Reducing Spread of Covid-19

- ❖ Hospital Pharmacy Recommendations<sup>1-4</sup>
  - Administrative controls
    - Workplace spacing - work stations and computers
    - Reduced drug delivery rounds
    - Restrictive process for medication returns
  - Regularly clean
    - Floors
    - Doors
    - Work surfaces
    - Hands



# Methods of Reducing Spread of Covid-19

- ❖ Hospital Pharmacy Recommendations<sup>1-4</sup>
  - Regularly disinfect
    - Work surfaces
    - Drug packaging/containers
    - Counting/compounding equipment
    - Drug storage locations
      - ADM
      - Trays
      - Crash Carts
    - Drug delivery systems



[https://covid.cdc.gov/covid-data-tracker/#cases\\_casesinlast7days](https://covid.cdc.gov/covid-data-tracker/#cases_casesinlast7days)



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# Questions

