Covid-19
BEFORE, DURING, AND
AFTER CARE

KATY NGUYEN, M.S.N., R.N.
WENDY BOREN, B.S.N., R.N.
UNIVERSITY OF MISSOURI-C
SINCLAIR SCHOOL OF NURSING
QIPMO PROGRAM
Care Before A Covid-19 Infection
**Covid-19 what to know BEFORE infection**

**KNOW THE RISKS**

- Cancer
- Chronic kidney disease
- COPD (chronic obstructive pulmonary disease)
- Immunocompromised from solid organ or transplant
- Obesity
- Hx of serious circulatory conditions (DVT, PE, CVA)
- Diabetic

**MANAGE THE RISKS:**

Frequent monitoring, thorough nursing assessment, education
Covid 19: Know the Symptoms

• Pre-symptoms:
  – 2-14 days with minimal or no symptoms;
  – Begin feeling symptoms between days 4-5 after exposure

• Day 1 of symptoms: Symptoms typically begin mild.
  – Fever – any temperature 100.4 F or greater
  – Dry cough, or shortness of breath.
  – Loss of smell or taste are the most common symptoms
**Covid 19: Know the Symptoms**

• **Days 2-10 of symptoms:** Symptoms continue to increase in severity.
  – Fever, chills, cough
  – Shortness of breath or difficulty breathing
  – Fatigue, muscle or body aches
  – Headache, new loss of taste or smell
  – Sore throat, congestion or runny nose
  – Nausea or vomiting, diarrhea

• **Days 10-12 of symptoms:**
  – Acute respiratory distress syndrome (ARDS): ICU and require ventilator

• **Days 10-14 of symptoms:**
  – Mild case of COVID-19: Symptoms will start to subside. Any cough will last an average of 19 days. *NOTE: some folks are staying on the vent 3-4 weeks! And there can be a reoccurrence.*
Nursing Assessment

Clinical observations may include:

- Vital signs including pain score.
- Hemoglobin-oxygen saturation (SpO2, pulse oximetry)
- Respiratory rate and respiratory distress
- Heart/pulse rate
- Blood pressure (systolic, diastolic and mean)
- Temperature
- Level of consciousness OR level of sedation
**Nursing Assessment - Neurological Observations**

- Level of Consciousness: Glasgow Coma Scale
- Pupil size, shape and reaction to light.
- Signs and symptoms of stroke
- Sensory: taste, smell
- Seizures, muscle pain
- Difficulty concentrating

Retrieved from The Lancet Neurol 2020
Neurological symptoms potentially associated with COVID-19, according to the localization in the nervous system.

<table>
<thead>
<tr>
<th>Localization in the nervous system</th>
<th>Neurological symptoms</th>
</tr>
</thead>
<tbody>
<tr>
<td>Central nervous system</td>
<td>Headache</td>
</tr>
<tr>
<td></td>
<td>Dizziness</td>
</tr>
<tr>
<td></td>
<td>Stroke symptoms</td>
</tr>
<tr>
<td></td>
<td>Seizures</td>
</tr>
<tr>
<td></td>
<td>Confusion</td>
</tr>
<tr>
<td></td>
<td>Agitation</td>
</tr>
<tr>
<td></td>
<td>Delirium</td>
</tr>
<tr>
<td></td>
<td>Stupor</td>
</tr>
<tr>
<td></td>
<td>Coma</td>
</tr>
<tr>
<td>Peripheral nervous system</td>
<td>Hypogeusia</td>
</tr>
<tr>
<td></td>
<td>Hyposmia</td>
</tr>
<tr>
<td></td>
<td>Generalized Weakness</td>
</tr>
<tr>
<td>Muscles</td>
<td>Myalgias</td>
</tr>
<tr>
<td></td>
<td>Weakness</td>
</tr>
</tbody>
</table>

Neurological manifestations and implications of COVID-19 pandemic

*Ther Adv Neurol Disord.* 2020
Respiratory System Observation

- **Color** (centrally and peripherally): pink, flushed, pale, mottled, cyanosed, clubbing

- **Respiratory** rate, rhythm and depth (shallow, normal or deep)

- **Respiratory effort**: mild, moderate, severe, inspiratory: expiratory ratio, shortness of breath

- **Use of accessory muscle**:
  - intercostal/subcostal/supraclavicular/substernal retractions, head bob, nasal flaring, tracheal tug

- **Symmetry** and shape of chest; tracheal position
RESPIRATORY SYSTEM OBSERVATION

- **Audible sounds**: vocalization, wheeze, stridor, grunt, cough - productive/paroxysmal
- Monitor for **oxygen saturation**
- Listen for absence/equality of **breath sounds**; Bilateral symmetry of chest expansion
- **Auscultate** lung: wheeze, crackles, stridor
- **Skin** condition – temperature, turgor and moisture
- **Capillary** refill (central/peripheral)
- Fremitus (tactile)
- Subcutaneous emphysema
**Acute Respiratory Distress Syndrome (ARDS)**

- Occurs when fluid builds up in the tiny, elastic air sacs (alveoli) in your lungs.
- **COVID-19 pneumonia**: Lungs become filled with fluid and inflamed. Air sacs in the lungs fill with fluid, limiting their ability to take in oxygen and causing shortness of breath, cough and other symptoms.
- **Symptoms:**
  - Severe shortness of breath
  - Labored and unusually rapid breathing
  - Low blood pressure
  - Confusion and extreme tiredness
**Acute Respiratory Distress Syndrome (ARDS)**

- **Complications:**
  - Blood clots
  - Collapsed lung (pneumothorax)
  - Infections
  - Scarring (pulmonary fibrosis)
  - Lung failure: shortness of breath sets in, and can lead to acute respiratory distress syndrome (ARDS) that require ventilator support to help circulate oxygen in the body
  - Sepsis: occurs when an infection reaches, and spreads through, the bloodstream, causing tissue damage everywhere it goes

- **Treatment**
  - Supplemental oxygen
  - Mechanical ventilation
Cardiovascular: Observation

- Inspect **circulatory status** of upper and lower extremities
- **Color** (central and peripheral): pink, flushed, pale, mottled, cyanosed
- **Capillary Refill Time (CRT)**: brisk (< 2 sec) or sluggish
- **Edema**: swelling or puffiness of the skin (build-up of fluid causes affecte
- **Hydration status**: Skin turgor, oral mucosa
- Central and peripheral **pulses** for rate, rhythm and volume
- **Skin** condition – temperature (peripheral and central), turgor and diaphoresis
- **Deep vein thrombosis (DVT)**: When a blood clot forms in a vein located deep inside your body
- **PE** (pulmonary embolism): A blockage of an artery in the lungs by a substance that has moved from elsewhere in the body through the bloodstream
• **CVA**: Cerebrovascular accident: a loss of blood flow to part of the brain
  - There are two types of stroke:
    - **Ischemic stroke** is caused by a blood clot that blocks or plugs a blood vessel in the brain. This is the most common type; about 80 percent of strokes are ischemic.
    - **Hemorrhagic stroke** is caused by a blood vessel that breaks and bleeds into the brain
  - **Transient ischemic attack** (a warning or “mini-stroke”).
  - The symptoms of stroke often happen quickly. They include
    - Numbness or weakness of the face, arm, or leg (especially on one side of
    - Confusion, trouble speaking, or understanding speech
    - Trouble seeing in one or both eyes
    - Difficulty walking, dizziness, loss of balance or coordination
    - Severe headache with no known cause
SPOT A STROKE
LEARN THE WARNING SIGNS AND ACT FAST

B  E  F  A  S  T

BALANCE  EYES  FACE  ARMS  SPEECH  TIME
LOSS OF BALANCE, HEADACHE OR DIZZINESS  BLURRED VISION  ONE SIDE OF THE FACE IS DROOPING  ARM OR LEG WEAKNESS  SPEECH DIFFICULTY  TIME TO CALL FOR AMBULANCE IMMEDIATELY

CALL 911 IMMEDIATELY
CARdiovascular Assessment

Skin/Extremities
Assess skin color, skin temperature, turgor, moisture, capillary refill, clubbing, edema.

Chest
Inspect chest for size, shape, symmetry of movement, and any obvious pulsations. Palpate for thrills (abnormal vibration) and heaves (forceful pulsations that bound against the hand).

Blood Pressure
Check blood pressure.
(see Adult Vital Signs for Normal Parameters)

Arterial Pulses
Check carotid, radial, brachial, femoral, popliteal, dorsalis pedis, and posterior tibial pulses.
NEVER PALPATE BOTH CAROTID ARTERIES SIMULTANEOUSLY!

Jugular Venous Pressure
Look for venous pulsations in the neck or a rapid, double (sometimes triple) wave with each heart beat.

Cardiac Auscultation
Auscultate for bruits (blowing sound), murmurs (a series of prolonged sounds heard during either systole or diastole), rubs (grating, machine like sounds heard throughout systole & diastole), and clicks (crisp, high-frequency sounds).
Congestive Heart Failure

CHF occurs when your heart muscle doesn't pump blood as well as it should.

**Symptoms:**
- Shortness of breath (dyspnea),
- Fainting or severe weakness,
- Swelling (edema) in your legs, ankles and feet,
- Rapid or irregular heartbeat,
- Persistent cough or wheezing with white or pink blood-tinged phlegm
- Weight gain from fluid retention
- Treatment: O2 therapy, call for a stat chest X-ray, arterial blood gas, and EKG, diuretic therapy

**Prevention:** Control DM and HTN, manage diuretic therapy
## Congestive Heart Failure

<table>
<thead>
<tr>
<th>Type of heart failure</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Left-sided heart failure</strong></td>
<td>Fluid may back up in your lungs, causing shortness of breath.</td>
</tr>
<tr>
<td><strong>Right-sided heart failure</strong></td>
<td>Fluid may back up into your abdomen, legs and feet, causing swelling.</td>
</tr>
<tr>
<td><strong>Systolic heart failure</strong></td>
<td>The left ventricle can't contract vigorously, indicating a pumping problem.</td>
</tr>
<tr>
<td><strong>Diastolic heart failure</strong> (also called heart failure with preserved ejection fraction)</td>
<td>The left ventricle can't relax or fill fully, indicating a filling problem.</td>
</tr>
</tbody>
</table>
Coronary artery disease is the narrowing or blockage of the coronary arteries, usually caused by atherosclerosis.

**Risk factors:** Smoking, High blood pressure, High cholesterol, Diabetes or insulin resistance

**Complications:** Chest pain (angina), Heart attack, Heart failure, Abnormal heart rhythm (arrhythmia)

**Observe and recognize:**
- Chest pain or discomfort (angina)
- Weakness, light-headedness, nausea (feeling sick to your stomach), or a cold sweat
- Pain or discomfort in the arms or shoulder
- Shortness of breath
**PULMONARY EMBOLISM (PE)**

- Pulmonary embolism occurs when a clump of material, most often a blood clot, gets wedged into an artery in your lungs. These blood clots most commonly come from the deep veins of your legs, a condition known as deep vein thrombosis (DVT)
- **Risk factors:** Cardiovascular disease, Certain cancers, Surgery, Disorders that affect clotting, Coronavirus disease 2019 (COVID-19), Prolonged immobility
- **Complications:** can be life-threatening, Lead to pulmonary hypertension
- **Prevention:** anticoagulants therapy, Compression stockings, Leg elevation, Physical activity, Pneumatic compression
Care for During the Course of Covid 19
AT NURSING HOME-QUARANTINE

• Implement Covid-19 infection control policies per CDC recommendations (isolate in one room, face mask, limit visitation from clinicians, adequate PPEs)

• Notice any emergency signs, including:
  – Trouble breathing
  – Persistent chest pain or pressure
  – New confusion
  – Bluish lips or face

• Increase monitoring of ill residents, including assessment of symptoms, vital signs, oxygen saturation via pulse oximetry, and respiratory exam, to at least 3 times daily to identify and quickly manage serious infections
AT NURSING HOME-POSITIVE OR SUSPICIOUS
POSITIVE

• Obtain vitals (temperature, heart rate, respirations) AND pulse oximetry every four hours (twice a shift). Blood pressure can be taken every eight hours.

• Place in a private room or group with other symptomatic/positive patients.

• Maintain standard, contact, and droplet precautions, including eye protection.

• Positive or symptomatic patients should be given a surgical mask and encouraged to wear it at all times, especially when close contact with others is anticipated

• **Document all provided services**
Care after Recovery
**After “recovery”**

- Get plenty of rest. Stay hydrated by drinking lots of fluids
- Monitor for recurrent symptoms:
  - Difficulty breathing or shortness of breath
  - Persistent pain or pressure in the chest
  - New confusion or inability to be awake or stay awake
  - Sustained high fever (101 degrees or over)
- Wearing a mask, washing hands


**After “recovery”**

- Mild symptoms will recover within a week to 10 days
- Keep in mind that the resident may still be contagious (re-infected)
- Monitor for symptoms of fatigue, shortness of breath, muscle pain, confusion, headaches and even hallucinations
- Keep in mind that inflammation in the heart can lead to long-lasting cardiac disease and failure
- If breathing problem, consider pulmonary evaluation for treatment and rehabilitation to help rebuild strength
- COVID-19 can affect the brain and central nervous system. Monitor for headaches, dizziness, trouble concentrating or recalling things, stroke, TIA and even hallucinations
- Pulmonary rehabilitation: breathing exercises and muscle strengthening, mobility, monitoring oxygen
**After “Recovery”**

- Continue nursing assessments for major system: heart and lung
- Continue implementing social distancing and wearing mask
- Mental health: counseling, encouraging, monitoring depression, self-esteem. Monitor for
  - distressing memories or avoiding thinking of the event or strong physiological reactions to reminders of the event
  - Flashbacks, hallucinations
  - Distrust in self, others, the world
  - Persistent negative emotions and emotional numbing
  - Trouble with concentration
• Get fresh air and sunshine! It’s mental rehab as much as physical.
• Keep cleaning! Most infections are coming in from staff—don’t let down your guard.
• Start fresh
  – Start rehab, slow and easy…walking, talking, breathing, building up lung capacity, building up strength.
  – Start living!
  – Start rethinking how things are done.
POST-COVID CONVERSATION

Physical long-term side effects
- Extreme fatigue
- Random temperature spikes (mainly in the evening)
- Random coughing fits
- “the shakes” (tremors)
- Difficulty taking deep breaths
- Muscle deconditioning
- Memory loss

Psychological long-term side effects
- Fear, frustration, PTSD
- Delusions
- Nightmares
REFERENCES