

## Suspected Corona Virus Patient Case Study

## TRIAGE

<b>Date: Today Time: Now</b>					
Patient Name: Ms. Grace Yi		Age: 35	Gender: F	Weight: 60kg	
Presenting complaint: Shortness of breath, cough, fever					
Temp: 39.2	HR: 140	BP: 100/60	RR: 22	O <sub>2</sub> Sat: 90%	FiO <sub>2</sub> : RA
Cap glucose: 130			GCS: 15		
Triage note:  35-year-old woman became febrile last night with coryza and woke up acutely short of breath with productive cough, rhinorrhea, and a subjective fever.					
Allergies: None					
Past Medical History: None			Current Medications: Ibuprofen 600mg q 6 hours PRN Acetaminophen 500 mg q 4 hours PRN		

**Task Alert:**

Review a COVID-19 screening tool: <https://www.chop.edu/clinical-pathway/2019-novel-coronavirus-emergency-clinical-pathway>

What questions would be important to ask this patient?

- *Have you experienced loss of taste or smell? (According to the CDC, smell and taste are the very first symptoms an infected person will lose).*
- *Have you traveled outside of the United States in the past months?*
- *If yes, where in particular?*
- *Have you been exposed to anyone with COVID or symptoms of COVID?*
- *Have you been sick since you returned from that trip?*
- *If yes, how long did you have the symptoms?*
- *Did you take anything for it?*
- *Did the symptoms get worse or better?*
- *Do you live alone or with anyone?*
- *If you live with somebody, do they have the same symptoms?*

**Extra Patient Information****A. Further History**

*She has traveled from China a week ago because she was visiting family.*

She also has seasonal allergies.

**B. Physical Exam**

*List any pertinent positive and negative findings*

Cardio: Tachycardia

Neuro: WNL

Resp: Crepitus and expiratory wheezes bilaterally,  
productive cough

Head & Neck: Coryza

Abdo: WNL

MSK/skin: Flushed

Other: She feels very weak and tired

**She screens positive for potential coronavirus exposure due to fever, respiratory symptoms and a high-risk travel history.**

**What signs and symptoms are most concerning?**

*For COVID-19 symptoms, the most concerning are shortness of breath, fever, productive cough, fatigue, rhinorrhea, and tachycardia.*

**Explain the significance of these signs and symptoms.**

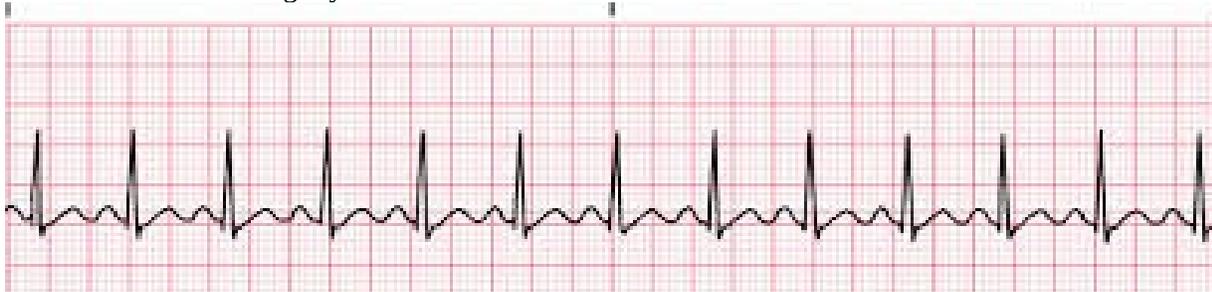
*COVID-19 symptoms of shortness of breath signifies that the infection may have compromised the client's respiratory system. The fever signifies that there is indeed an infection. The productive cough could potentially cause more respiratory problems as the client is already tachypneic. Rhinorrhea also could compromise respiratory function. The weakness and fatigue signify that the immune system of the client is also compromised.*

**What type of isolation precautions should this patient have?**

*The CDC protocol dictates to put the client in a negative pressure airborne isolation for suspected COVID with healthcare workers to put on full PPE (N95, gloves, gown, and face shields) when encountering the client.*

**Emergency Room: Part 2 Time: 2 hours later**

You notice the following rhythm:



What rhythm is this patient experiencing?

***The client is experiencing Sinus Tachycardia with 130 bpm.***

Before you go into assess the patient describe what PPE you will use:

***Since the client is placed in airborne isolation, the PPE to be used are fitted N95 respirator mask, gloves, gown, and face shield.***

Now you are in the patient's room and notice the following changes:

Patient is experiencing worsening shortness of breath with RR: 28 and O<sub>2</sub>SAT: 84%. You work with the healthcare team to complete the following orders:

Apply O<sub>2</sub> by NRB mask  
Portable chest Xray, BMP, CBC, ECG

**Task Alert:**

1) Review the chest x-ray results here: <https://emsimcases.com/2020/02/18/suspected-covid-19/>

Results indicate bilateral pneumonia.

2) Create a set of lab values based on what you might expect to see:

	<u><b>CBC</b></u>		<u><b>BMP (Chem7)</b></u>
<b>WBC:</b>	<b>15,000/mm<sup>3</sup></b>	<b>Potassium:</b>	<b>5.5 mEq/L</b>
<b>RBC:</b>	<b>5.9 units</b>	<b>Chloride:</b>	<b>110 mEq/L</b>
<b>Hct:</b>	<b>48%</b>	<b>Calcium:</b>	<b>9.5 mg/dL</b>
<b>Hgb:</b>	<b>17%</b>	<b>CO<sub>2</sub>:</b>	<b>18 mEq/L</b>
<b>Neutrophils:</b>	<b>80%</b>	<b>BUN:</b>	<b>15 mg/dL</b>
<b>Lymphocytes:</b>	<b>50%</b>	<b>Creatinine:</b>	<b>0.7 mg/dL</b>
<b>Monocytes:</b>	<b>1.3%</b>	<b>Glucose:</b>	<b>125 mg/dL</b>
<b>Eosinophils:</b>	<b>4%</b>		
<b>Basophils:</b>	<b>0.5%</b>	<u><b>ABG</b></u>	
<b>CRP:</b>	<b>&gt;3.0 mg/L</b>	<b>pH:</b>	<b>7.2</b>
<b>Blood Culture</b>		<b>CO<sub>2</sub>:</b>	<b>50</b>
<b>&amp; Sensitivity</b>	<b>Positive</b>	<b>HCO<sub>3</sub><sup>-</sup>:</b>	<b>25</b>
		<b>SaO<sub>2</sub>:</b>	<b>84%</b>

3) How would you know if the non-rebreather mask is working?

*The non-rebreather mask is working if the client's SaO<sub>2</sub> improves from 84% to the normal range of >90%. The client will show no change in level of consciousness, like lethargy or confusion.*

**Emergency Room: Part 3 Time: 15 minutes later**

O<sub>2</sub>Sat increases to 90% with supplemental O<sub>2</sub>  
Swabs for flu and coronavirus are sent

**The patient will transfer to ICU. Write Report in SBAR frame you would give to the ICU RN.**

**S (Situation):**

*Hi, this is ER Nurse Jonny. I am calling about patient Grace Yi. Ms. Yi, a 35-year-old female, 60 kgs came to the emergency department 3 hours ago complaining of fever, coryza, SOB with productive cough, and rhinorrhea.*

**B (Background):**

*Ms. Yi traveled to China and came back a week ago. The client has been swabbed for flu and COVID-19, pending results. The patient is on airborne isolation pending the results of swabs. The client is being admitted to the ICU with bilateral pneumonia with worsening symptoms of SOB with hypoxia, tachycardia, and fever. Labs were ordered for BMP, CBC, ABG, and Blood Culture. Results are in the client's charts. The patient has a non-rebreather mask saturating at 90% currently. Ms. Yi's last vitals are temp. 39.2°C, BP 100/60, HR 130, GCS of 15, the respiration rate of 28, blood sugar of 130, ABG shows respiratory acidosis. The client mentioned taking 600mg PO ibuprofen and 500mg PO acetaminophen for pain.*

**A (Assessment):**

*Ms. Yi needs to be transferred to critical care for close monitoring and to avoid further deterioration.*

**R (Recommendations):**

*I suggest a pulmonary consult, infectious disease consult, daily blood chemistry, hematology labs, and additional blood cultures after 24 hours. Keep the client in airborne isolation until results come back from the swabs. Continue with the provider's orders until critical care providers take over.*

*Do you have any additional questions for me?*

**ICU Room: Part 4 Time: 1 hour later****You complete an assessment**

<b>Vitals:</b> T: 38.6 BP: 88/50 Pulse: 130 RR: 30 O <sub>2</sub> SAT: 86% NRB	<b>Focused Assessment:</b> Patient becoming more hypoxic, agitated. Pale, cool clammy skin	<u>What actions should you take next? Make a check list below</u> <ul style="list-style-type: none"> <li>• <i>Activate rapid response team!</i></li> <li>• <i>Activate the sepsis protocol!</i></li> </ul>
---	--	--

**Task Alert:**

Complete the QSOFA Score found here <https://www.mdcalc.com/qsofa-quick-sofa-score-sepsis>

**What are your findings?**

*The qSOFA score for the client is 3, which puts her at a High Risk for evidence of organ dysfunction with blood testing, including serum lactate and calculation of the full SOFA Score.*

**You call a code sepsis. What actions do you expect next?**

*The rapid response team comprises the house officer, critical care providers, STAT nurse (a Carle Registered Nurse whose sole job is to respond to rapid responses in the hospital), respiratory therapist, radiology technicians with portable x-ray machines, phlebotomists, a floor nurse with the code cart, another floor nurse on the computer, and several hospitalists and interns. All should be in the proper PPE for airborne isolation protocol. Phlebotomists will draw a sepsis protocol set of labs and a VBG (venous blood gas) for RT to run serum lactic acid as part of the sepsis protocol. Anticipate providers to order IV medications and IV fluid bolus. All other diagnostic tests that they need from other interprofessional team members.*

While the team is providing care for the patient, the patient's sister comes into the room upset and wanting to know what happened. Describe how you would handle the situation.

*Upon seeing the client's sister, as the nurse in charge of the client, I will introduce myself and get the sister's name. This is to establish a trusting relationship with the client's sister. Therapeutically, I will politely direct the sister in a private room to discuss the situation. Once we are inside the room, I will explain the situation. In a calm voice, I will start with the situation chronologically. "Your sister came into the emergency department a few hours ago for being sick. We put her in airborne isolation to protect herself and the caregivers. We are giving her medications and tests to know how we can help her feel better. She is in the critical care unit and will be monitored closely. What you witnessed as you came in was the rapid response team ensuring she received the best care she needed. She got sicker ever since she came to our facility. We will update you once we figure out what to do. I will have the provider talk to you when they are done in there. Is there anything I can get you while you're waiting?"*

**ICU Room: Part 5 Time: 15 minutes later**

You must complete the following actions. What order will you complete these interventions. Place them in order of priority highest to lowest.

Interventions:	Prioritized Interventions
<ul style="list-style-type: none"> <li>Start Levophed drip</li> <li>Administer a Normal saline fluid bolus</li> <li>Assist with intubation</li> <li>Call the laboratory to draw blood cultures</li> </ul>	<b>3. Give vasopressors if BP does not improve after IV fluid bolus.</b>
	<b>2. The client needs an IV fluid bolus to restore fluid volume and help cardiac output.</b>
	<b>4. Maintain airway when the client's condition does not improve.</b>
	<b>1. The client is in septic shock and needs blood cultures before administering IV antibiotics.</b>

**Task Alert:**

Calculate the rate (ml/hr) for the Levophed drip. The order is to give 4mcg/min. The pharmacist prepares a bag of Levophed with 4 mg/250 ml.

*Solve, ml/hr = 250ml/4mg x 4mcg/1 min x 1mg/1000mcg x 60 min/ 1hr = 15 ml/hr.  
Set the pump to infuse at 15 ml/hr.*

**ICU Room: Part 6 Time: 2 hours later****You complete an assessment**

<b>Vitals:</b> T: 37.4 BP: 110/70 Pulse: 90 RR: 14 O <sub>2</sub> SAT: 92% (Vented 100% FiO <sub>2</sub> )	<b>Focused Assessment:</b> Patient is sedated, course lung sound present throughout, secretions thick with yellowish hue	<u>ABG's noted below.</u> <ul style="list-style-type: none"> <li>pH- 7.34</li> <li>CO<sub>2</sub>- 35</li> <li>HCO<sub>3</sub>-18</li> <li>pO<sub>2</sub>- 200</li> </ul>
---	---	---

What's the significance of the assessment?

*The previous interventions of IV fluid bolus and Levophed administration restored the client's BP and helped lower the PR and RR. The ABG result signifies an Uncompensated Metabolic Acidosis.*

Any recommendations for treatments not currently being given?

*In the client's case, IV fluid bolus should be continued, and she should be treated with IV sodium bicarbonate to help balance the acid in her blood to restore acid-base balance in her blood. Also, continue with the IV antibiotic treatment for the bilateral pneumonia.*

**Follow up considerations:**

- 1) Identify potential exposed persons, nature of exposure and discuss necessary actions

*The CDC protocol in place is to do contact tracing of the people the client exposed herself to. Family members living with the client will be required to have a COVID-19 swab and will be advised to quarantine in place pending the results of the swabs.*

- 2) What are next steps for individuals who may have been inadvertently exposed?

*The exposed people will be observed and monitored for signs and symptoms of COVID-19. However, some will not have any mild symptoms, and asymptomatic clients should still isolate themselves to avoid infecting other people. For those whose swabs are positive, the symptoms should be treated until the virus takes its full course. For those who test negative, they are going to be advised to get the COVID-19 Vaccine shots in series to protect themselves. COVID-19 Vaccines do not mean one will be immune, but rather have some protection against getting sick.*

- 3) Discuss potential risk factors involved with the care of this patient

*Risk factors for the client include worsening of bilateral pneumonia or possibly death. For healthcare professionals, the risk factors of contracting COVID-19 infection are also high, even when strict protocols are followed.*

- 4) Discuss legal ethical considerations that you might consider in caring for this patient.

*Caring for sick clients is a nurse's legal and ethical responsibility. Although the risk of contracting and getting infected with COVID-19 is tremendous, we are bound as nurses to uphold professional ethics. When the pandemic started, and no treatments were available, nurses faced difficult decisions on whether to risk their lives on the front lines of healthcare or quit their careers. Despite the challenges, millions of nurses worldwide accepted the challenge, stayed with their clients, and sacrificed themselves and their families to uphold their oath of service and professionalism.*

**ICU Room: Part 7 Time: 5 days later**

**The patient is doing much better, so you the nurse are preparing for the patient for discharge.**

**Review the COVID-19 Fact Sheet for Nurses pdf document and prepare to educate the patient using the prompts below.**

Patient education

- 1) Choose 3 points under the patient teaching sections general and/or discharge planning

*Before discharging the client, I would do patient teaching on the following topics:*

1. *Have a COVID-19 Plan to help stop the spread of the virus.*
2. *How to isolate and take precautions if you are suspected of contracting COVID-19.*
3. *How to manage COVID-19 symptoms if infected.*

2) What will you share with the patient regarding these 3 points?

1. **Have a COVID-19 Plan to help stop the spread of the virus.**
  - How to start planning for COVID-19
  - How to take precautions
  - How to recognize COVID-19 symptoms
  - How to check for emergency warning signs for COVID-19
  - What, where, when, who, and how to look for resources
2. **How to isolate and take precautions if you are suspected of contracting COVID-19.**
  - Isolation
  - Ending Isolation
  - After Isolation
3. **How to manage COVID-19 symptoms if infected.**
  - 10 Things to do to manage COVID-19 symptoms

3) Consider any visuals or other resources you might use to demonstrate and teach regarding these 3 points.

The following websites are the official COVID-19 resources approved and certified by the US government. These are also being used as dependable resources globally.

- [COVID.gov - Find COVID-19 guidance for your community](https://www.cdc.gov/coronavirus/2019-ncov/index.html)
- [About COVID-19 | CDC](https://www.cdc.gov/coronavirus/2019-ncov/about/index.html)
- [Vaccines for COVID-19 | CDC](https://www.cdc.gov/coronavirus/2019-ncov/vaccines/index.html)

Here are some of the visuals available for free to print and share with everyone from the CDC website.

1. **Have a COVID-19 Plan to help stop the spread of the virus.**

The image shows a screenshot of the CDC's COVID-19 website. It is divided into several columns with different sections:

- COVID-19 Plan:** Includes sections for 'Tools, information, and action steps to share with your family, friends, and healthcare provider', 'Start your personal COVID-19 plan', 'Recognize COVID-19 symptoms', 'Emergency warning signs for COVID-19', and 'If I have symptoms'.
- COVID-19 testing near me:** A form to find testing locations, including fields for address, phone number, and a 'Test to Treat' location.
- My medical information:** A form for recording medical details like allergies, medications, and conditions.
- My healthcare providers:** A form to list healthcare providers with fields for name, phone number, and address.
- How to contact my provider after hours:** A form to find after-hours care options.
- My pharmacy:** A form to list nearby pharmacies.
- My COVID-19 vaccinations:** A form to track vaccination status, including dates and types of vaccines.
- Contact information for family/friends:** A form to provide contact details for others.
- Things to consider if I get sick:** A checklist of items to have on hand, such as prescriptions, masks, and hand sanitizer.

The CDC logo is visible in the bottom right corner, along with the URL [cdc.gov/coronavirus](https://www.cdc.gov/coronavirus).

2. How to isolate and take precautions if you are suspected of contracting COVID-19.

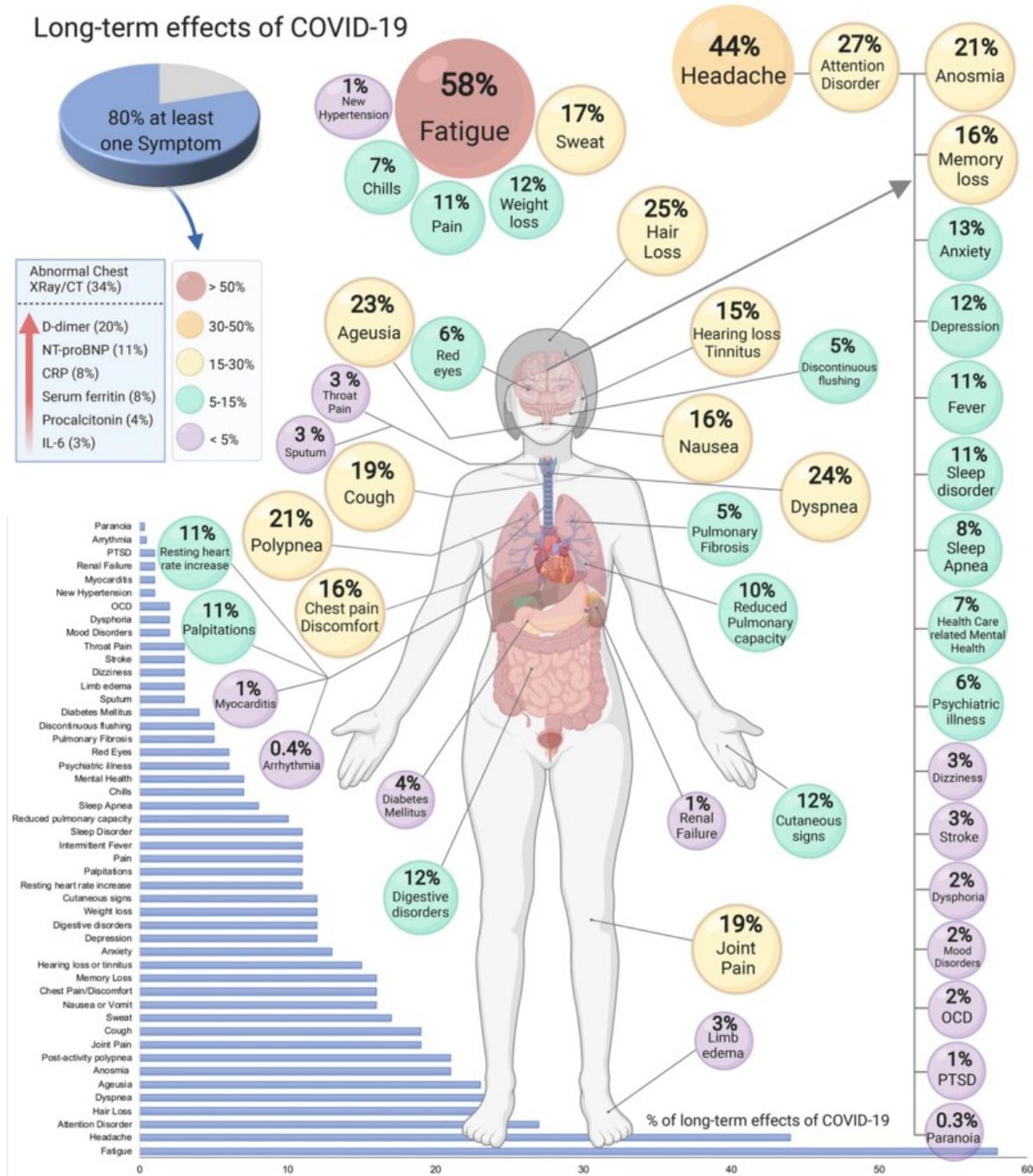
3. How to manage COVID-19 symptoms if infected. (One in Chinese)

4) What questions do you anticipate the patient might have once you provide teaching?

The client might ask the question, “Are there any long-term effects on my health since I got infected with COVID-19?”

5) How will you answer these questions?

*“Unfortunately, long COVID or Long-haul COVID is a real diagnosis. Although not many studies have been done, data shows that infected clients would have recurring symptoms after treatment.”*



**References:**

Wikimedia Foundation, Inc. (2023, September 3). Long COVID. Wikipedia. Retrieved September 5, 2023, from [https://en.wikipedia.org/wiki/Long\\_COVID](https://en.wikipedia.org/wiki/Long_COVID).