

Suspected Corona Virus Patient Case Study

TRIAGE

Date: Today Time: Now					
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 ₂ Sat: 90%	FiO ₂ : 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, or someone you regularly interact with, traveled out of the country in the last 30 days?
If you have, where did you go?

Have you, or someone you regularly interact with, tested positive for COVID-19?
If you have, when was this?

Are you or someone you regularly interact with experiencing COVID-19 symptoms? These include headaches, nausea, cough/runny nose, and loss of taste.

Please indicate if you are experiencing any of the following COVID-19 symptoms:

- Headaches
- Nausea
- Cough/runny nose
- Flu-like symptoms
- Loss of taste or smell

Have you encountered anyone who contracted COVID-19?

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?

Shortness of breath, fever, productive cough, exhaustion, rhinorrhea, and tachycardia are the most worrisome COVID-19 symptoms.

Explain the significance of these signs and symptoms.

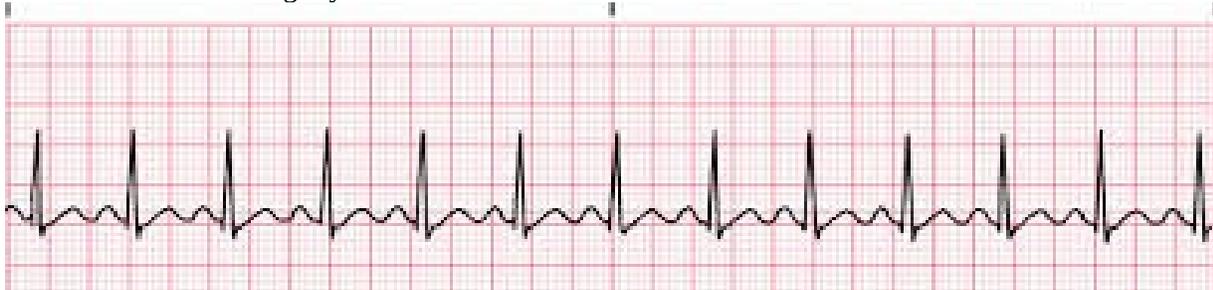
Shortness of breath is one of the COVID-19 symptoms, which suggests that the infection may have weakened the client's respiratory system. Fever is a symptom that an infection is present. Since the client is already tachypneic, the productive cough could lead to other respiratory issues. The ability to breathe could be compromised by rhinorrhea. Weakness and exhaustion indicate a damaged immune system in the client.

What type of isolation precautions should this patient have?

This patient must be at home and away from others. Personal stuff like cups, towels, and utensils shouldn't be shared. The patient should stay isolated for at least five days if possible. If the patient must go anywhere in public, they should wear a mask. When engaging with the patient, staff members should wear PPE, and the patient should be placed on airborne isolation if they are in the hospital.

Emergency Room: Part 2 Time: 2 hours later

You notice the following rhythm:



What rhythm is this patient experiencing?

The patient is experiencing sinus tachycardia.

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

Before entering this patient room, I would put on all the proper PPE equipment, including an N95 mask, face shield, gown, and gloves.

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

Patient is experiencing worsening shortness of breath with RR: 28 and O₂SAT: 84%. You work with the healthcare team to complete the following orders:

Apply O₂ 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:

CBC

WBC:	17,000/mm ³
RBC:	6.9 units
Hct:	58%
Hgb:	17%
Neutrophils:	70%
Lymphocytes:	40%
Monocytes:	1.6%
Eosinophils:	6%

Basophils:	0.5%
CRP:	>3.0 mg/L
Blood Culture & Sensitivity	Positive
BMP (Chem7)	
Potassium:	6.6 mEq/L
Chloride:	115 mEq/L
Calcium:	8.5 mg/dL
CO ₂ :	28 mEq/L
BUN:	13 mg/dL
Creatinine:	0.8 mg/dL
Glucose:	125 mg/dL
ABG	
pH:	7.1
CO ₂ :	49
HCO ₃ :	26
SaO ₂ :	82%

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

The non-rebreather mask functions if the client's SaO₂ increases from 84% to the standard range above 92%. The patient won't exhibit any signs of altered consciousness, such as drowsiness or disorientation.

Emergency Room: Part 3 Time: 15 minutes later

O₂Sat increases to 90% with supplemental O₂
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): Hello, my name is Chiquita, and I work as an ER nurse. I'm calling about a patient by the name of Grace Yi. Ms. Yi, a 35-year-old woman who weighs 60 kg, arrived at the emergency room three hours ago and reported having a fever, coryza, SOB with a productive cough, and rhinorrhea.

B (Background): Ms. Yi recently returned from a trip to China. The patient has undergone a COVID-19 and flu swab, with results awaiting. In anticipation of the swab test results, the patient is in airborne isolation. The patient has bilateral pneumonia and is being brought to the ICU due to worsening SOB symptoms, including hypoxia, tachycardia, and fever. Blood Culture, BMP, CBC, and ABG tests were requested. The client's charts show the results. The patient is currently 90% saturated with a non-rebreather mask. The last recorded vitals for Ms. Yi are a temperature of 39.2

oC, blood pressure of 100/60, heart rate of 130, GCS of 15, respiration rate of 28, blood sugar of 130, and her ABGs show that she has respiratory acidosis. The client said she took 500mg of acetaminophen and 600mg of ibuprofen orally to treat discomfort.

A (Assessment): When assessing the patient, I asked about the onset of symptoms, is she experiencing any dyspnea assessed mental status, vital signs, and pulmonary examinations.

R (Recommendations): I recommend that the patient be monitored regularly for any worsening changes in condition.

ICU Room: Part 4 Time: 1 hour later

You complete an assessment

Vitals: T: 38.6 BP: 88/50 Pulse: 130 RR: 30 O ₂ SAT: 86% NRB	Focused Assessment: 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">• Activate rapid response team.
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Task Alert:

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

What are your findings?

The client's qSOFA score is 3, placing her at a High Risk for showing signs of organ dysfunction.

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

The rapid response team members include the house officer, critical care specialists, respiratory therapists, radiology technicians, phlebotomists, a floor nurse with the code cart, another floor nurse using the computer, and several hospitalists and interns. For the airborne isolation protocol, everyone should be wearing the correct PPE. As part of the sepsis procedure, phlebotomists will draw the necessary lab tests and a VBG (venous blood gas) for RT to measure the patient's serum lactic acid levels. Expect doctors to order IV hydration bolus and medicines.

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.

As the nurse in charge of the patient, I will introduce myself and ask for the sister's name when I see her. This is done to build trust with the client's sister. I will kindly ask the sister to talk about the issue in a private space. I'll explain what's going on once we're in the room. "Your sister visited the emergency room a few hours earlier due to illness. To protect her and the caregivers, we placed her in isolation. To figure out how we can make her feel better, we are giving her medications and doing tests. She is being intensively watched in the critical care unit.

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
• Start Levophed drip	3
• Administer a Normal saline fluid bolus	2
• Assist with intubation	4
• Call the laboratory to draw blood cultures	1

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, $\text{ml/hr} = 250\text{ml}/4\text{mg} \times 4\text{mcg}/1 \text{ min} \times 1\text{mg}/1000\text{mcg} \times 60 \text{ min}/ 1\text{hr} = 15 \text{ ml/hr}$.
Set the pump to infuse at 15 ml/hr.

ICU Room: Part 6 Time: 2 hours later

You complete an assessment

Vitals: T: 37.4 BP: 110/70 Pulse: 90 RR: 14 O ₂ SAT: 92% (Vented 100% FiO ₂)	Focused Assessment: 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"> • pH- 7.34 • CO₂- 35 • HCO₃-18 • pO₂- 200
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What's the significance of the assessment?

The client's BP improved thanks to the previous treatment of an IV fluid bolus and the administration of Levophed, which also helped reduce the PR and RR. The ABG result indicates Uncompensated Metabolic Acidosis.

Any recommendations for treatments not currently being given?

In the client's condition, the IV fluid bolus should be maintained, and sodium bicarbonate IV therapy should be administered to help the client's blood's acid-base balance be restored. Maintain the IV antibiotic therapy for bilateral pneumonia as well.

Follow up considerations:

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

According to CDC protocol, the people the client exposed herself to will be tracked down through contact information. The client's family members will be required to undergo a COVID-19 swab, and they will be recommended to quarantine themselves until the swab's results are known.

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

The exposed individuals will be watched and tested for COVID-19 symptoms. Some patients, however, won't even have the minor symptoms, and they should remain in isolation to prevent spreading the illness to others. Swabs taken from positive patients should be treated for their symptoms until the virus has run its course. The COVID-19 vaccine will be recommended as a series of doses for those who test negative to protect themselves. The COVID-19 vaccine provides some protection against contracting the disease, not immunity.

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

Risk factors for the client include death or an exacerbation of bilateral pneumonia. Even when thorough measures are followed, healthcare workers still have a high risk of developing COVID-19 infection.

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

Nurses have a moral and legal obligation to look after sick patients. Despite the high risk of catching COVID-19 and becoming infected, our nurses must respect ethical standards. Nursing professionals had to decide whether to put their lives in danger on the front lines of healthcare or give up their careers when the pandemic broke out, and there were no remedies. To uphold their oath of duty and professionalism, millions of nurses across the globe accepted the challenge, stayed with their clients, and sacrificed themselves and their families despite the difficulties.

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

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.

1. Have a plan to help stop the spread of infection.

If you have a weakened immune system or live with someone who does, create a COVID-19 action plan

Prevention Measures:

- Get an updated COVID-19 vaccine
- Improve ventilation and spend time outdoors when possible
- Learn about testing locations and treatment options **before** getting exposed or sick
- Get tested if you've been exposed or have symptoms*
- Wash your hands often
- Wear a well-fitting respirator or mask and maintain distance in crowded spaces



*Talk to your doctor about treatment options if you test positive

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MMWR

2. Take isolation precautions.

Isolate and take precautions if you have or suspect you have COVID-19

ISOLATION

Stay home and away from others
Wear a high-quality mask if you must be around others

Start counting days
Day 0 is the day your symptoms started
If you never had symptoms, day 0 is the day you took a COVID-19 test

911 Watch for emergency warning signs, like trouble breathing
Seek help if they develop

AFTER ISOLATION

Until at least day 11, avoid being around people who are more likely to get very sick
Wear a high-quality mask when around others indoors

Removing your mask
After ending isolation, wear your mask through day 10
OR
Take 2 antigen tests, 48 hours apart
If both tests are negative, you may remove your mask sooner than day 10

ENDING ISOLATION

Isolate to day 5 or later, if you:

- never had symptoms or symptoms are improving, and
- are fever-free for 24 hours without the use of fever-reducing medication.

Continue to isolate if your fever persists or other symptoms have not improved

Isolate through day 10, if you experienced moderate illness, like shortness of breath or difficulty breathing

Isolate through day 10 and talk with a healthcare provider before you end isolation, if you:

- were hospitalized, or
- have a weakened immune system

COVID-19 Antigen Self-Test

cdc.gov/coronavirus

3. Things you can do to manage covid.



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

The patient may ask, "Have I developed any long-term health effects due to contracting COVID-19?"

5) How will you answer these questions?

I would explain to the patient that "unfortunately, there can be long-lasting effects due to having COVID. These include loss of taste, a cough, fatigue, headaches, and chest discomfort.