

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?

Was the patient experiencing any other symptoms prior to last night? Has the patient taken a COVID test recently? Have you traveled in the last 14 days? Have you been exposed to anyone or been in an area that has high transmission rate of 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?

Tachycardia, crepitus and expiratory wheezes bilaterally with a productive cough, and coryza.

Explain the significance of these signs and symptoms.

The patient is experiencing tachycardia because the heart's demand has increased. The patient is experiencing crepitus and expiratory wheezes bilaterally with a productive cough because she has an upper respiratory infection. The significance of the patient having coryza is the sign of mucous membrane inflammation caused by a fever or cold. All the signs and symptoms lead to the possibility of the patient having COVID.

What type of isolation precautions should this patient have?

The patient should have contact/droplet precautions regardless of her COVID result.

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:

Don gloves, mask, eye protection, and gown.

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: WBCs, RBCs, H/H, etc.

BMP: Na, K⁺, Ca⁺, etc.

Other Labs?

Chest X-ray: If your doctor thinks you might have pneumonia based on your symptoms and examination, he or she will probably order a chest X-ray to look at your lungs.

Sputum testing: Sputum testing requires a sample of sputum (mucus that you cough up). A sputum culture is used to identify the microorganism that caused the pneumonia and can help determine which antibiotic is best.

Urine testing — Urine tests can help diagnose pneumonia caused by two bacteria, *Streptococcus pneumoniae* and *Legionella pneumophila*.

Blood testing: Hospitalized people require blood testing, including a complete blood cell count (CBC) and often a blood culture. A CBC measures the number of many types of blood cells, including white blood cells (WBC); these cells increase in number when there is a bacterial infection. An increased number of WBCs indicates a bacterial infection, including pneumonia, may be present.

A blood culture determines whether the infection has spread from the lungs into the bloodstream. It involves taking a blood sample from a vein and testing it for bacteria. Typically, there should be no bacteria in the bloodstream. Blood cultures are used to identify the bacteria that caused the pneumonia and guide the antibiotic choice.

Blood oxygen measurement: Pneumonia can decrease the amount of oxygen circulating in the blood. As a result, a blood oxygen level is often measured with a small clip that attaches to your finger or ear. In sicker people, the oxygen level may be measured by taking a blood sample from an artery for testing.

Bronchoscopy: People who present initially with severe pneumonia or fail to improve (or get worse) during their hospitalization despite antibiotic treatment may require further testing with bronchoscopy.

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

The patient's oxygen saturation would rise, and the patient would have an ease with breathing.

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): Ms. Yi presented to the ER with febrile symptoms, tachycardia, crepitus and expiratory wheezes bilaterally with a productive cough, and coryza. Ms. Yi is a 35-year-old female who feels tired and weak.

B (Background): She has a history of seasonal allergies. She recently came back a week ago from traveling to China to visit family. Vital signs are BP 100/60, pulse 140, RR 22, O₂ sat 90%, and a temp of 39.2 C.

A (Assessment): The patient had a portable chest x-ray taken and the results indicate that she has bilateral pneumonia.

R (Recommendations): I would monitor her oxygen saturations and get more labs to make sure bacteria does not get into her bloodstream.

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">• <u>Put the patient in semi-fowlers or high fowlers to help her have better breathing.</u>• <u>Get blood labs drawn.</u>• <u>Get another CT or chest x-ray to see the status of the patient's lungs.</u>
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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 patient is at high risk with a suspected infection.

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

Continue oxygen, get blood cultures, given antibiotics, and monitor closely.

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.

I would ask the sister to step out of the room so I could speak with her while the team is working with her sister. I would explain what sepsis is and how we plan on treating her sister to get her back to health. I will ask if she had any questions and if she understood what I explained to her. I will also provide educational articles on sepsis and the steps taken to help fight it. I would do all this while being calm and collected.

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	4 (highest)
• Administer a Normal saline fluid bolus	2
• Assist with intubation	1 (lowest)
• Call the laboratory to draw blood cultures	3

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.

$$4 \text{ mcg} \times 60 \text{ min} / 1000 \text{ mcg} = 0.24 \text{ mg} \times 1000 \text{ mL} / 4 \text{ mg} = 60 \text{ mL/hr}$$

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 significance of the assessment is that the patient's vital signs are improving. Although she is sedated, the sounds and secretions are evidence to the infection. Her ABGs also show metabolic acidosis.

Any recommendations for treatments not currently being given?

Is the patient on macrolide antibiotics like erythromycin or azithromycin?

Follow up considerations:

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

Potential exposed persons would be those who have traveled to high transmission rate areas, those who have been in proximity of transmittable persons, and those who are immunocompromised. Nature of exposure is the direct physical or indirect contact in an exposed environment. If a person is exposed, they need to contact their local state department if they test positive to trace back their exposure and those who were possibly exposed as well. After testing positive, they should get on a treatment plan to get back to health.

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

The next steps for the individuals who may have been inadvertently exposed is to get tested and set up treatment to prevent sepsis.

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

Potential risk factors involved with the care of this patient would be if they were immunocompromised, they are at a higher risk of getting pneumonia. Or if they have asthma, it could cause them to be at risk.

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

The legal ethical considerations to consider while caring for this patient are autonomy, beneficence, nonmaleficence, and justice.

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
Stay home and rest until you feel better.

Continue your medication as scheduled and keep oxygen on as scheduled.

Contact your doctor if your symptoms worsen when home.

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

It is important for them to focus on getting better while at home and taking rest periods.

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

Have signs posted for their medication schedule and oxygen in use at home. Also teach her to check for skin breakdown due to the nasal cannula and to not use Vaseline.

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

She could ask why she should not use Vaseline.

5) How will you answer these questions?

I would state that it is flammable, so it is important to keep it away. Also, oxygen can cause the Vaseline to create burns on the patient.