

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 been exposed to anyone with COVID or any other respiratory illness?
- How long have you had these symptoms?
- When did your symptoms start?
- Have you taken anything besides acetaminophen and ibuprofen?
- When was the last time you have taken any medications and how much?
- Any allergies to medications?
- Have you received any treatment for these symptoms?
- Have you traveled outside of the United States recently?
- Have you experienced these symptoms before? What was the diagnosis and treatment plan?

Extra Patient Information

A. Further History	
<i>She has traveled from China a week ago because she was visiting family.</i>	
She also has seasonal allergies.	
B. Physical Exam	
<i>List any pertinent positive and negative findings</i>	
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?

- Crepitus & expiratory wheezing
- tachycardia

Explain the significance of these signs and symptoms.

- Crepitus & wheezing could be the signs that the disease is progressing and could lead to further complications.
- Tachycardia could lead to more serious problems such as stroke, heart failure, or sudden cardiac arrest.

What type of isolation precautions should this patient have?

The patient should be placed in airborne isolation due to suspected COVID exposure.

Emergency Room: Part 2 Time: 2 hours later

You notice the following rhythm:



What rhythm is this patient experiencing?

- Tachycardia (130 BPM)

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

- N95/PAPR, gown, gloves, and eye protection

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: 12.6 k/uL
RBC: 5.60 m/uL
HCT: 47.4%
Hgb: 17.2 g/dL
Neutrophils: 75.9%
Lymphocytes: 17.5%
Monocytes: 5.2%
Eosinophils: 0.9%
Basophils: 0.2%

BMP:

Glucose: 78 mg/dL
BUN: 5 mg/dL
Creatinine: 0.67 mg/dL
Sodium: 142 mmol/L
Potassium: 3.6 mmol/L
Chloride: 107 mmol/L
CO₂: 20.0 mmol/L
Calcium: 9.8 mg/dL
Protein: 7.3 g/dL
Albumin: 5.0 g/dL
AST: 12 u/L
ALT: 39 u/L

ABGs

pH: 7.23
CO₂: 52
HCO₂: 24
O₂ Sat: 84%

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

When the patient's O₂ saturation has rose and the patient isn't struggling to breathe.

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):

Grace Yi is being transferred to the ICU for COVID related respiratory complications. She is a 35-year-old female with no known past medical history who present to the ED with fever, coryza, shortness of breath with productive cough, and rhinorrhea. She was diagnosed with bilateral COVID pneumonia and has been stabilized with supplemental O₂ on a non-rebreather. She is being transferred to the ICU for closer monitoring and ongoing treatment.

B (Background):

Grace has no known medical history. She does not take any daily medications besides the occasional acetaminophen and ibuprofen. She has no known drug allergies. She has recently taken a trip to China a week ago and presented with her symptoms once she arrived home.

A (Assessment):

Grace's vitals are as follows: T- 102 F, Pulse- 118, B/P- 100/60, RR- 20, O2- 90% via non-rebreather. She reports that she can breathe better and isn't using accessory muscles as she was on admission. She is alert and oriented to person, place, and time. Recent lab results are in the computer and ABGs suggest respiratory acidosis. Chest x-ray showed bilateral pneumonia and she was placed in airborne isolation based on her symptoms and suspected COVID-19.

R (Recommendations):

Grace requires close monitoring of her vital signs, ABG, and CBC levels. She should continue to receive medications for pain, shortness of breath, and fevers as needed. A pulmonary consult should be requested for further evaluation and treatment planning. Grace's family should be informed of her condition and treatment plan and provided with information about her prognosis and expected outcomes.

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> ● Call a rapid response
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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?

- Grace scored at a 3- high risk in in-hospital mortality.

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

- Hospitalist will arrive, assess patient, and place any added orders that aren't on the sepsis protocol list.
- Respiratory Therapist will arrive and draw ABGs.
- Lab will arrive and draw CBC and BMP.
- Pharmacy will arrive with IV antibiotics and RN will administer.
- House supervisor will arrive and be on stand-by as a runner.

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.

"Hi, I am the RN on duty taking care of your sister today. She is very sick, and we need to get her stabilized. Can I assist you to the waiting room until we get her situated?"

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	4
● Assist with intubation	2
● 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.

- 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?

- To see if the mechanical ventilation and Levophed are working to restore ABGs to normal.

Any recommendations for treatments not currently being given?

- Duo neb treatment via ventilator
- Continuous IV fluids
- Bicarbonate bolus

Follow up considerations:

- 1) Identify potential exposed persons, nature of exposure and discuss necessary actions
 - Any family that she was around, close exposure, and work with the patient's sister that is in the US on contacting the family in China to alert them of Grace's diagnosis.
- 2) What are next steps for individuals who may have been inadvertently exposed?
 - The next steps are to watch for symptoms related to COVID-19 and get tested if symptoms present and take precautions if asymptomatic.
- 3) Discuss potential risk factors involved with the care of this patient
 - Potential risk factors are a sudden decline in the patient's condition, contracting COVID yourself, decreased cardiac output, fluid volume excess, and risk for injury due to alterations in mental status.
- 4) Discuss legal ethical considerations that you might consider in caring for this patient
 - Legal ethical considerations might consist of Grace, or her sister have English as a second language, we may not know her code status, we didn't alert her next of kin before ventilating.

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

- The importance of wearing a mask and maintaining distance from others at least 6 feet.
- Staying hydrated with at least 2-3 L of fluids a day.
- Benefits of the COVID-19 vaccine.

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

- Wearing a mask and distancing helps preventing the spread of COVID-19. The mask keeps the respiratory droplets at bay and social distancing helps from someone else contracting the virus from you.
- Staying hydrated will keep you from getting dehydrated and needing to receive IV fluids. It will also help filter out the disease through the kidneys.
- Benefits of the COVID-19 vaccine are it helps protect you by creating an antibody response without you having to experience potentially severe illness or post-COVID symptoms.

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

- Pamphlets regarding the prevention of COVID-19 and a FACT sheet from the CDC on the vaccine in the patient's preferred language.

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

- Where do I get the masks?
- Where can I receive the vaccine?
- Are there any long-term effects of COVID?
- What are the side effects of the vaccine?
- Can I get contract COVID again even after receiving the vaccine?

5) How will you answer these questions?

- You can buy masks at any local drugstore, grocery store, or even on Amazon.
- The vaccine can be received from your PCP, a local pharmacy, or a COVID vaccine clinic.
- There can be some long-term side effects of COVID such as persistent cough, headache, loss of taste or smell, muscle and joint aches, and memory problems.

- Side effects of the vaccine include pain, swelling, and redness on the arm where the shot was given, tiredness, headache, muscle or joint pain, chills, and swollen lymph nodes.
- Yes, you can still contract COVID even after receiving the vaccine. The risks are lower for the more severe effects of the virus.