

Novel Coronavirus Disease (COVID-19)

UNFOLDING Reasoning



John Taylor, 68 years old

Primary Concept			
Immunity			
Interrelated Concepts (In order of emphasis)			
<ul style="list-style-type: none"> • Clinical judgment • Communication 			
NCLEX Client Need Categories	Covered in Case Study	NCSBN Clinical Judgment Model	Covered in Case Study
Safe and Effective Care Environment		Step 1: Recognize Cues	✓
<ul style="list-style-type: none"> • Management of Care 	✓	Step 2: Analyze Cues	✓
<ul style="list-style-type: none"> • Safety and Infection Control 	✓	Step 3: Prioritize Hypotheses	✓
Health Promotion and Maintenance	✓	Step 4: Generate Solutions	✓
Psychosocial Integrity	✓	Step 5: Take Action	✓
Physiological Integrity		Step 6: Evaluate Outcomes	
<ul style="list-style-type: none"> • Basic Care and Comfort 			
<ul style="list-style-type: none"> • Pharmacological and Parenteral Therapies 	✓		
<ul style="list-style-type: none"> • Reduction of Risk Potential 	✓		
<ul style="list-style-type: none"> • Physiological Adaptation 	✓		

Part I: Initial Nursing Assessment

Present Problem:

John Taylor is a 68-year-old African-American male with a history of type II diabetes and hypertension. He came to the emergency department (ED) triage window because he felt crummy, complaining of a headache, runny nose, feeling weaker, “achy all over” and hot to the touch and sweaty the past two days. When he woke up this morning, he no longer felt hot but began to develop a persistent “nagging cough” that continued to get worse throughout the day. John is visibly anxious and asks, “Do I have that killer virus that I hear about on the news?”

Personal/Social History:

John lives in a large inner-city that has had over three thousand confirmed cases of COVID-19. He has been married to Maxine, his wife of 45 years, and is a retired police officer and active in his local church.

1. What data from the histories are **RELEVANT** and must be **NOTICED** as clinically significant by the nurse?

(NCSBN: Step 1 Recognize cues/NCLEX: Reduction of Risk Potential)

RELEVANT Data from Present Problem:	Clinical Significance:
68 years old Type 2 diabetes and hypertension Symptoms: headache, runny nose, weakness, body aches, fever, and nagging cough "Do I have that killer virus that I hear about on the news?"	Increased age makes risk of covid 19 infection complications higher Chronic conditions can make recovery less likely Symptoms are those of covid-19 virus need for education of survival and recovery rate of those with COVID-19 virus
RELEVANT Data from Social History:	Clinical Significance:
Lives in large inner-city with over 3,000 confirmed cases of covid 19 Active in his church Married to wife for 45 years	Higher risk of exposure/transmission increases likelihood that he was exposed to COVID-19 and exposed others before symptoms began, immediately implement covid precautions has a social support person, wife should also be tested (air born) for exposure.

2. What additional clarifying questions does the triage nurse need to ask John to determine if his cluster of physical symptoms is consistent with COVID-19?

<p>Have you taken your temperature at home? If so, what has your temperature been? Have you experienced SOB at rest? Is anyone else in your household displaying symptoms? Cough, SOB, fever, etc? Have you taken any medications to treat your symptoms? Have you been exposed to others outside of your household in the last 7 days? Do you smoke? if so, how many packs/day and for how many years? Do you have a history of any respiratory conditions? Have you received your flu vaccine this year?</p>

3. Based on the clinical data collected, identify what measures need to be immediately implemented using the following clinical pathway.

<p>Isolation until COVID-19 is ruled out Wear proper PPE Obtain COVID test Apply MASK to pt until pt is in his own room</p>
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4. What type of isolation precautions does the nurse need to implement if COVID-19 is suspected? What specific measures must be implemented to prevent transmission?

Type of Isolation:	Implementation Components:
Airborn	Isolation in negative pressure room Wear gown, gloves, N95 mask, and face shield when in pts room Limit visitors and ensure each visitor is wearing proper PPE Make sure Isolation precautions are posted outside pts room and proper PPE is available to anyone entering pts room.

Part II: Patient Care Begins in the ED:

John is brought back to a room. As the nurse responsible for his care, you collect the following clinical data:

Current VS:	P-Q-R-S-T Pain Assessment:	
T: 100.3 F/38.8 C (oral)	Provoking/Palliative:	“moving makes it worse”
P: 118 (regular)	Quality:	“achy”
R: 22 (regular)	Region/Radiation:	“all over”
BP: 164/88 MAP: 113	Severity:	5/10
O2 sat: 92% room air	Timing:	continuous

1. What VS data are RELEVANT and must be NOTICED as clinically significant by the nurse?

(NCSBN: Step 1 Recognize cues/NCLEX: Reduction of Risk Potential/Health Promotion and Maintenance)

RELEVANT VS Data:	Clinical Significance:	Nursing Intervention (if needed):
T: 100.3 °F P: 118 bpm R: 22/min BP: 164/88 O ₂ : 92% room air * Moving makes it worse * achy / "all over" * 5/10, continuous	Elevated temperature indicates possibility of infection Elevated pulse can indicate increased severity of illness Elevated respiratory rate can indicate impaired gas exchange/respiratory function Elevated BP could be due to his anxiety, but is also likely due to his hx of hypertension O ₂ sat below 95% can indicate impaired gas exchange/lung function Fatigue/general pain upon movement could indicate infection General achiness can indicate infection, likely COVID-19 when grouped w/ all other symptoms Moderate, continuous achiness can indicate fever/infection	Acetaminophen to lower fever Promote rest/relaxation, educate pt to reduce anxiety Encourage pt to cough and expel mucus, use supplemental oxygen if needed, position pts HOB at 30° or higher, encourage use of incentive spirometer Ask pt if his blood pressure is normally elevated, if he has been diagnosed w/ hypertension Request an order for acetaminophen for moderate/general pain and to lower body temperature

2. What body system(s) will you assess most thoroughly performing a FOCUSED assessment based on the primary/priority problem? Identify correlating specific nursing assessments.

(NCLEX: Reduction of Risk Potential/Physiologic Adaptation)

PRIORITY Body System:	PRIORITY Nursing Assessments:
Respiratory	Monitor O ₂ Sat Apply supplemental oxygen if needed consult RT Encourage pt to expel mucus when coughing Encourage use of incentive spirometer Position pts HOB at 30° or higher Inspect pts position (tripod can indicate SOB) Inspect pts color (face + Lips) Inspect for use of accessory muscles and even rise and fall of chest Auscultate lungs

Current FOCUSED Nursing Assessment:	
GENERAL SURVEY:	Appears anxious, body tense
NEUROLOGICAL:	Alert & oriented to person, place, time, and situation (x4), generalized weakness
HEENT:	Head normocephalic with symmetry of all facial features. Lips, tongue, and oral mucosa pink and moist.
RESPIRATORY:	Breath sounds fine dry crackles bilat. with diminished aeration on inspiration and expiration in all lobes anteriorly, posteriorly, and laterally, non-labored respiratory effort, episodic non-productive cough
CARDIAC:	No edema, heart sounds regular, pulses strong, equal with palpation at radial/pedal/post-tibial landmarks, brisk cap refill. Heart tones audible and regular, S1 and S2 noted over A-P-T-M cardiac landmarks with no abnormal beats or murmurs. No JVD noted at 30-45 degrees.
ABDOMEN:	Deferred
GU:	Deferred
INTEGUMENTARY:	Skin hot, dry, intact, normal color for ethnicity. Skin integrity intact, skin turgor elastic, no tenting present.

3. What assessment data is **RELEVANT** and must be **NOTICED** as clinically significant by the nurse?

(NCSBN: Step 1 Recognize cues/NCLEX: Reduction of Risk Potential/Health Promotion & Maintenance)

RELEVANT Assessment Data:	Clinical Significance:
Pt is anxious and tense Dry crackles in lungs and diminished aeration Generalized weakness	Client may need education to ease his anxiety. Explaining the illness to the patient may bring some understanding and reassurance to him. Ask pt if he has any questions or concerns. Good indication of complications in lung function - likely due to COVID-19. Weakness makes pt a fall risk

4. Interpreting clinical data collected, what problems are possible? Which problem is the **PRIORITY**? Why?

(NCSBN: Step 2: Analyze cues/Step 3: Prioritize hypotheses/NCLEX: Management of Care)

Problems:	Priority Problem:	Rationale:
Upper respiratory infection Influenza COVID-19 or pneumonia	Likely COVID-19	Because pt lives in a densely populated area with such a high transmission rate, the likelihood of the pts symptoms being cause by a COVID-19 infection are very high.

1. What nursing priority(ies) and goal will guide how the nurse **RESPONDS** to formulate a plan of care? (NCSBN: Step 4 Generate solutions/Step 5: Take action/NCLEX: Management of Care)

Nursing PRIORITY:	Impaired gas exchange	
GOAL of Care:	Maintain adequate respiratory function and O ₂ levels >92%	
Nursing Interventions:	Rationale:	Expected Outcome:
Monitor respiratory status often (RR, O ₂ sat, breathing pattern, etc) Protect yourself from transmission of the illness by ensuring use of PPE, keeping distance from pt when possible Keep pt in a therapeutic position. Pt education and support	Keeping track of vital sign trends can help indicate improvement or decline in respiratory status. Protecting yourself is important to keep transmission to a minimum and not risk your own safety. Pt should be comfortable and in a position that makes it easier for him to breathe Pt is anxious and may have questions. Providing support may decrease his level of anxiety.	Identifying concerning vital signs early Decreased transmission and increased nurse safety. Pt will find it easier to breathe, possibly improve gas exchange and oxygen levels, and conserve energy. Pt will be less anxious if he is reassured. He may slow down if anxiety is decreased

[KR1]

Caring and the "Art" of Nursing

6. What is the patient likely experiencing/feeling right now in this situation? What can you do to engage yourself with this patient's experience, and show that they matter to you as a person? (NCLEX: Psychosocial Integrity)

What Patient is Experiencing:	How to Engage:
Pt may be confused, anxious, alone	Ask if he would like to call his wife, teach him how to use the phone if he doesn't know Answer any questions he may have. Explain why PPE is being worn Reassure the pt that your goal is to provide him with the best care you can

[KR2]

The ED physician assesses John and orders the following:

Collaborative Care: Medical Management

7. State the rationale and expected outcomes for the medical plan of care. (NCLEX: Pharm. and Parenteral Therapies)

Care Provider Orders:	Rationale:	Expected Outcome:
<p>Contact-Airborne-Droplet precautions</p> <p>Influenza swab</p> <p>COVID-19 swab (only if influenza neg)</p> <p>Chest x-ray</p> <p>Complete blood count (CBC)</p> <p>Metabolic panel (BMP)</p> <p>Lactate</p> <p>Nasal cannula titrate to keep O₂ sat >90%^[KR3]</p>	<p>Decrease risk of transmission and increase safety of healthcare workers</p> <p>Influenza is a possibility because it does present overlapping symptoms w/ covid.</p> <p>Influenza swab may come back negative in which case you would swab for COVID to ensure you provide the correct treatment and education</p> <p>With the presentation of his current symptoms, complications in the lungs are very possible.</p> <p>Identify any physiological responses to the illness</p> <p>Identify any other existing issues in kidneys or electrolyte imbalances</p> <p>Assess anaerobic metabolism to identify severity of illness</p> <p>Allows for increase in oxygen therapy if needed</p>	<p>Decreased transmission</p> <p>Likely negative but needs to be ruled out</p> <p>Likely to be positive, especially if influenza is negative.</p> <p>Changes in Lung physiology</p> <p>WBC count may be elevated</p> <p>Possibly high because of illness severity</p> <p>Early intervention for hypoxia</p>

8. Which orders do you implement first? Why? (NCLEX: Management of Care)

Care Provider Orders:	Order of Priority:	Rationale:
<ul style="list-style-type: none"> Contact-Airborne-Droplet precautions COVID-19 swab Nasal cannula titrate to keep O₂ sat >95% 	<p>Contact - Airborne - Droplet precautions</p> <p>Nasal cannula titrate to keep O₂ sat >92%.</p> <p>COVID-19 swab</p>	<p>Preventing transmission is most important to protect self and others</p> <p>Maintaining therapeutic oxygen levels is more important than finding out cause of low oxygen saturation.</p>

Part III: Interpreting Diagnostic Data

The following diagnostic results just posted in the electronic health record:

Radiology Reports:

What diagnostic results are RELEVANT and must be NOTICED as clinically significant by the nurse?

(NCSBN: Step 1 Recognize cues/NCLEX: Reduction of Risk Potential/Reduction of Risk Potential/Physiologic Adaptation)

Radiology: Chest X-Ray	
Results:	Clinical Significance:
Diffuse bilateral pulmonary infiltrates	Indicates pneumonia which is common in pts with COVID-19 infection

Lab Results:

Hematology (CBC)								
	WBC	HGB	PLTS	% Neuts	% Lymphs	% Monos	% Eosin	Bands
Norms:	(4.5-11.0 mm ³)	(12-16 g/dL)	(150-450x 10 ³ /μl)	(55-70)	(20-40)	(2-8)	(1-4)	(3-5%)
Current:	3.5	12.8	224	92	8	0	0	0

Metabolic Panel (BMP)										
	Na	K	Cl	CO ₂	AG	Gluc	Ca	BUN	Creat	GFR
	135-145 mEq/L	3.5-5.0 mEq/L	101-111 mmol/L	20-29 mmol/L	(7-16 mEq/L)	64-110 mg/dL	8.5-10.2 mg/dL	10-20 mg/dL	0.8-1.2 mg/dL	>60 mL/min
Current:	141	3.9	105	16		178		18	1.10	>60

Misc.			
	Influenza	COVID-19	Lactate (Ven)
	Neg	Neg	(0.5-2.2 mmol/L)
Current:	Neg	Pos	1.9

[KR4]

What lab results are RELEVANT and must be NOTICED as clinically significant by the nurse?

(NCSBN: Step 1 Recognize cues/NCLEX: Reduction of Risk Potential/Reduction of Risk Potential/Physiologic Adaptation)

RELEVANT Lab(s):	Clinical Significance:	TREND: Improve/Worsening/Stable:
WBC: 3.5 Neuts: 92% Lymphs: 8% Monos: 0% Eosin: 0% Bands: 0% CO ₂ : 16 Creat: 1.1 Influenza: neg COVID-19: Pos Glucose	WBC are always important if infection is suspected First responders to infection Can indicate response to infection Fights infection Regulate inflammation Immature neutrophils used if infection overwhelms the body Indicates metabolic function Indicates kidney function Indicates presence of influenza infection Indicates presence of COVID-19 infection Indicates possible diabetes	Worsening Stable (normal to fight infection) Worsening Stable Stable Stable Stable Worsening Stable Stable Worsening Stable (elevated)

There has been no change in John's status in the ED and is currently stable. He is being admitted to the general med/surg floor for observation.

To ensure a hand-off that will promote safe patient care to the next nurse, communicate a concise SBAR that captures the essence of John's status and summarizes the excellent care you have provided!

Situation:

Name/age:

John Taylor, 68 y/o

BRIEF summary of primary problem:

Pt presented to emergency department with complaint of feeling "crummy," headache, runny nose, generalized weakness/fatigue, feeling "achy all over," feverish, sweaty for 2 days. This am, pt reported no longer feeling feverish, but developed a "nagging cough." Pt reports that the cough is worsening. SOB with activity.

Day of admission/post-op #:

Background:

Primary problem/diagnosis: COVID-19

RELEVANT past medical history:

hypertension and type 2 diabetes

Assessment:

Most recent vital signs:

T: 100.3 oral BP: 164/88

P: 118 R: 22 O₂ sat: 92% RA

RELEVANT body system nursing assessment data:

Breath sounds fine dry crackles bilaterally, diminished aeration all lobes, non labored respirations, non-productive persistent cough.

RELEVANT lab values:

WBC: 3.5, Neut 92%, Lymphs 8%, monos 0%, Eosin 0%, Bands 0%, CO₂ 16, creat 1.1, influenza neg, COVID-19 pos, Glucose 178

How have you advanced the plan of care?

Maintain droplet-airborne-contact precautions, maintain O₂ sat >92%, monitor vital signs and respiratory status

Patient response:

Pts has been educated and understand his diagnosis, O₂ therapy provided no SOB at rest

INTERPRETATION of current clinical status (stable/unstable/worsening):

Stable

Recommendation:

Suggestions to advance the plan of care:

Continued monitoring of respiratory system and vitals