Pulmonary Embolism (PE):
Guideline Change Talking Points

There has been major updates to national guidelines for the classification and management of pulmonary embolism.

Major highlights of the guideline changes include:

- **Classification is changing from low risk, submassive, or massive to A through E categories with a new R, or Respiratory, modifier for categories C-E**
    - Table with categories and clinical criteria is on the huddle card
    - The respiratory modifier is an R that can be added to the C-E categories. This identifies patients who have a respiratory compromise requiring more attention or escalation, even when the patient does not meet criteria for the next category.
        - Example: A 38 y/o female patient presents to the emergency department with new onset of shortness of breath and chest pain.
            - Vital signs:
                - Blood pressure: 115/65
                - Heart rate: 110
                - Pulse ox: 88% on 2L NC
                - Respiratory rate: 32 breaths/min
                - Temp: 98.9 F
            - Labs are normal. CT is positive for PE. Echo shows no evidence of RV strain
            - This patient meets criteria as C1 but because of their respiratory presentation this would be a C1R indicating their respiratory status dictates additional assessment and evaluation.

- **Treatment and management guidelines have been updated.**
    - Low risk, symptomatic patients that fall into the B classification can be managed outpatient with oral DOAC.
    - LMWH is now recommended over unfractionated heparin drips for classification C and above, unless the patient is on ECMO.
    - Recommend thrombolysis or other interventions to remove the clot for classification D and above.

- **Creation of Pulmonary Embolism Response Team (PERT)**
    - Activation process is determined by the facility (review your facility's PERT activation process)
    - Nurses should be involved in the PERT process. Their role includes:
        - Assessing, monitoring, and escalating concerns or changes with the patient assessment
        - Assisting with transfer or transport of the patient, as needed

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ED Application Answers (cards outlined in teal):

1. You are getting a patient who is presenting to a freestanding ED with shortness of breath, and a near syncopal event. Based on the ED provider's assessment, imaging and labs, the patient's PE has been classified as a D1.

Based on this information, what orders do you expect to help manage the PE?

ANSWER: LMWH, prepare for procedure (CDL or MT) or systemic thrombolysis, and PERT activation. *Educators: please discuss/review your facility-specific PERT activation process*

2. A 56 y/o female presents to triage with a complaint of shortness of breath after traveling for the holidays. After assessment, labs, and imaging, the provider has diagnosed your patient with a category B PE.

Based on this information, should a PERT activation be made and what orders do you expect to help manage the PE?

ANSWER: No, the patient should be discharged with oral DOAC and follow up care.

3. When giving report to the oncoming nurse, you explain that one of your patients was diagnosed with a PE classified as an E1. The oncoming nurse asks what the new guidelines for this category of PE are.

How should you respond?

ANSWER: A PERT activation per facility process, LMWH, a CDL or MT, or systemic thrombolysis, and vasopressor and/or inotropic support.

4. You are precepting a new graduate nurse who is caring for a patient who is tachypneic and hypotensive. After the provider's assessment, imaging, and labs, the provider diagnoses the patient with a category E1 pulmonary embolism.

Based on this information, should you educate the new graduate nurse on how to activate a PERT and what orders you and your new graduate nurse will anticipate helping manage the PE?

ANSWER: Yes, the nurse resident and preceptor should activate a PERT per facility process and should plan for LMWH, prepare for procedure (CDL or MT) or systemic thrombolysis, and administer vasopressor and/or inotropic support.

5. A 67 y/o male presents to your ER by EMS with a chief complaint of chest pain and shortness of breath for two days. Following the provider's assessment, imaging, and labs, the patient is diagnosed with a category C3 pulmonary embolism.

Based on this information, what orders do you expect to help manage the PE?

ANSWER: A PERT will be activated per facility process, and the patient will be started on LMWH.

6. A 26 y/o female presents to your emergency department with shortness of breath. She denies any other symptoms. The physician diagnoses your patient with a category B pulmonary embolism. The patient asks the physician if she will be admitted and what medications she will need to be on.

How do you expect the physician to respond? Should a PERT be activated?

ANSWER: The patient will not be admitted and will be discharged with oral DOAC and follow up care. A PERT is not required.

7. After receiving report for one of your patients, you are unable to find the classification of your patient's PE. You know that the patient needed a PERT activation and received LMWH. The patient will also be admitted and require a mechanical thrombectomy. They did not require vasopressor or inotropic support.

Based on this information and the new PE guidelines, how would you expect this PE to be classified?

ANSWER: D1

8. After receiving report for one of your patients, you are unable to find the classification of your patient's PE. You know that the patient needed a PERT activation and was started on LMWH. The CT confirmed the PE and showed no RV dysfunction. The patient is being admitted for observation only.

Based on this information and the new PE guidelines, how would you expect this PE to be classified?

ANSWER: C1

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Inpatient Unit Answers (cards outlined in Black):

1. A 45 y/o female patient is admitted after presenting to her PCP with increasing shortness of breath and cough over the last 2 days. On admission, her O2 sats are 88% and she requires 4L NC to maintain a SpO2 > 90%. After additional testing it is found that the patient has a PE with normal RV function and normal biomarkers. The provider states the patient has a category C1R PE.

Does the patient meet the need for PERT activation?

ANSWER: Yes, a PERT should be activated since the patient has a classification C PE. Class C-E PE should have a PERT activation. *Educators, please discuss/reinforce your facility-specific PERT activation process.*

2. A 64 y/o male, post-op patient is reporting shortness of breath, chest pain, and his vitals show tachycardia and tachypnea. The provider is notified and states they are concerned with PE.

What initial evaluation orders should you expect to help with classification?

ANSWER: CT and/or echo, labs including at least BNP, troponin, and lactate

3. A 60 y/o male patient is being admitted from the ED for a D1 classification PE. The provider has obtained informed consent for a mechanical thrombectomy. The patient is being admitted for monitoring while awaiting the procedure.

At minimum, what medication order do you expect to treat the PE?

ANSWER: Low Molecular Weight Heparin (LMWH)

4. A 28 y/o female s/p vaginal delivery was at her OBGYN office and is now being admitted on suspicion of a PE. After testing and evaluation, the patient is diagnosed with a PE category C3R. You are precepting a new graduate nurse and they ask you what that means. How do you respond?

ANSWER: This means the patient has a PE that is causing RV dysfunction with at least one abnormal biomarker (BNP, troponin, or lactate) and evidence of respiratory compromise (SpO2 ≤ 90%, respiratory rate ≥ 30, or needs supplemental oxygen).

5. A 49 y/o female patient recently had a hysterectomy and is now being admitted with a PE. From the ED report she has been diagnosed with a PE categorized as a C2. What orders do you expect?

ANSWER: Low Molecular Weight Heparin (LMWH), supplemental oxygen

6. A 36 y/o male patient was in the middle of a cross-country road trip when he developed sudden onset shortness of breath and presented to your facility's ED. He was admitted for a PE after CT confirmation. CT also showed RV strain. Lab results are still pending. Admission Vital signs are BP: 86/54, HR: 118, RR: 26, O2: 90% on 3L NC. The hospitalist rounds and diagnoses the patient with a PE categorized as D1. Do you need to call a PERT?

ANSWER: Yes, a PERT team should be activated. Classification C-E PE should have a PERT activation. *Educators, please discuss/review your facility-specific PERT activation process. Acute care units: Staff may want to also call an RRT due to hypotension and RV strain. If this is appropriate, based on the staff's level of care, also discuss/review.*

7. You are the charge nurse. There is a 55 y/o female patient who has been on the unit since the previous shift, diagnosed with a C2 PE. The primary nurse comes to you and tells you that over the last hour the patient is requiring additional oxygen support, her respiratory rate is trending up, and her blood pressure is on the low side of normal. The primary nurse is asking for what else they should do. What advice do you give them?

ANSWER: Escalate concerns to the provider immediately. *Acute care units: Staff may want to also call an RRT due to the patient presentation highlighted. If this is appropriate, based on the staff's level of care, also discuss/review.*

8. A 51 y/o male patient who is being admitted from his PCP's office. Upon admission, he tells you he went to the office because he has been having a hard time breathing when he walks around. He also complains of an annoying pain in chest when he coughs and increased swelling in his right leg over the last 3 days since they got home from traveling abroad. What initial orders do you expect?

ANSWER: At minimum, CT and/or echo, labs including at least BNP, troponin, and lactate

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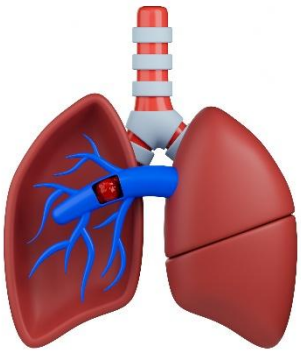
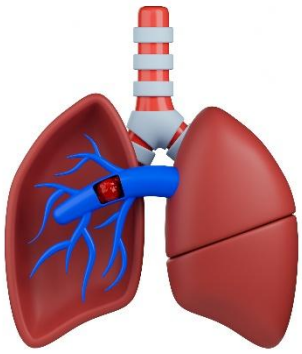
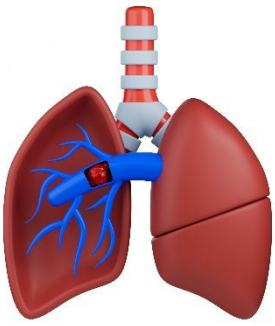
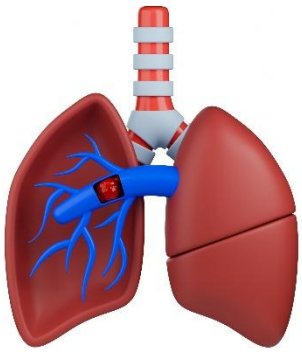
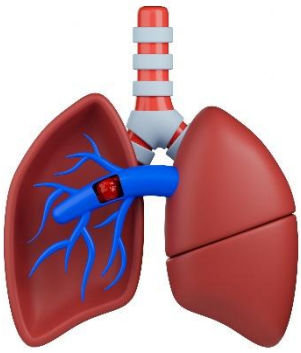
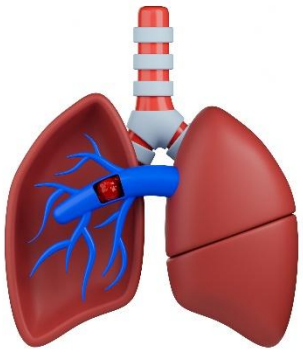
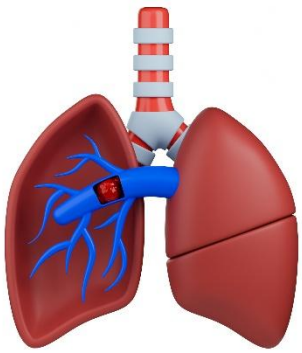
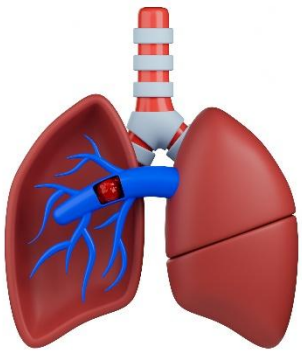
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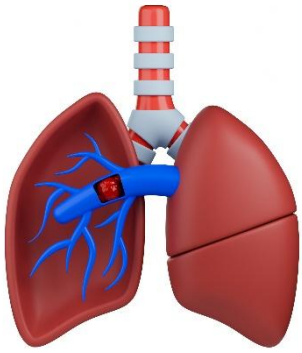
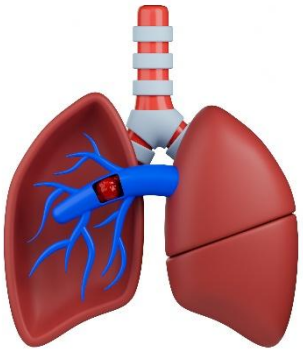
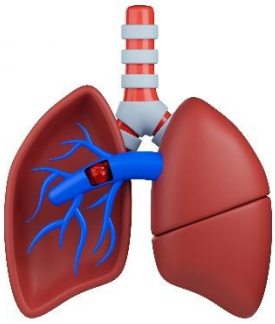
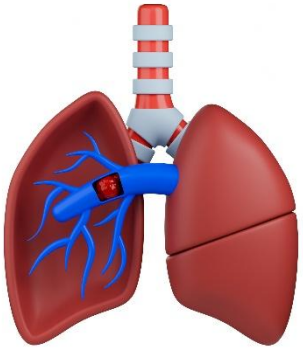
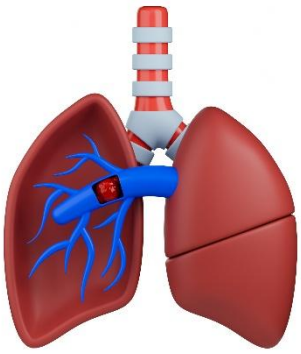
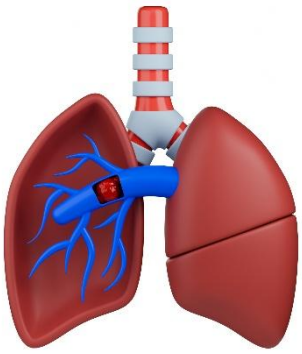
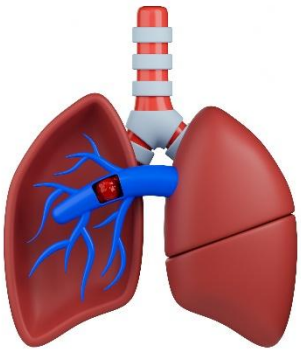
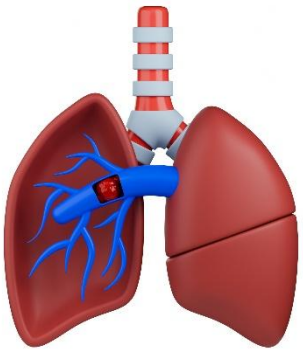
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