Creation of a Pulmonary Embolism Response Team (PERT) to Increase Catheter-Directed Therapy (CDT) Utilization

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Background

- This project was completed at a 550 bed, for profit community hospital in Florida.
  - Comprehensive Stroke Center
  - Critical care
  - High risk cardiovascular surgery
  - Oncology
  - Orthopedics
  - Obstetrics and level II NICU
- Prior to this project, there was not a process to consult Interventional Radiology or notify the Rapid Response Team (RRT) of a potentially unstable patient with a PE. However, the facility had the clinicians and devices to perform advanced treatment such as catheter-directed therapy (CDT) and extracorporeal membrane oxygenation (ECMO).
- There was an opportunity to improve outcomes for patients with PE through adding a process to stabilize patients, complete diagnostic tests and consult interventional radiologists.
- 241 patients had ICD-10 code for PE during pre-intervention data collection (9/21-11/2).
  - 19 received thrombectomy
  - 163 treated with medication
  - 59 had no treatment

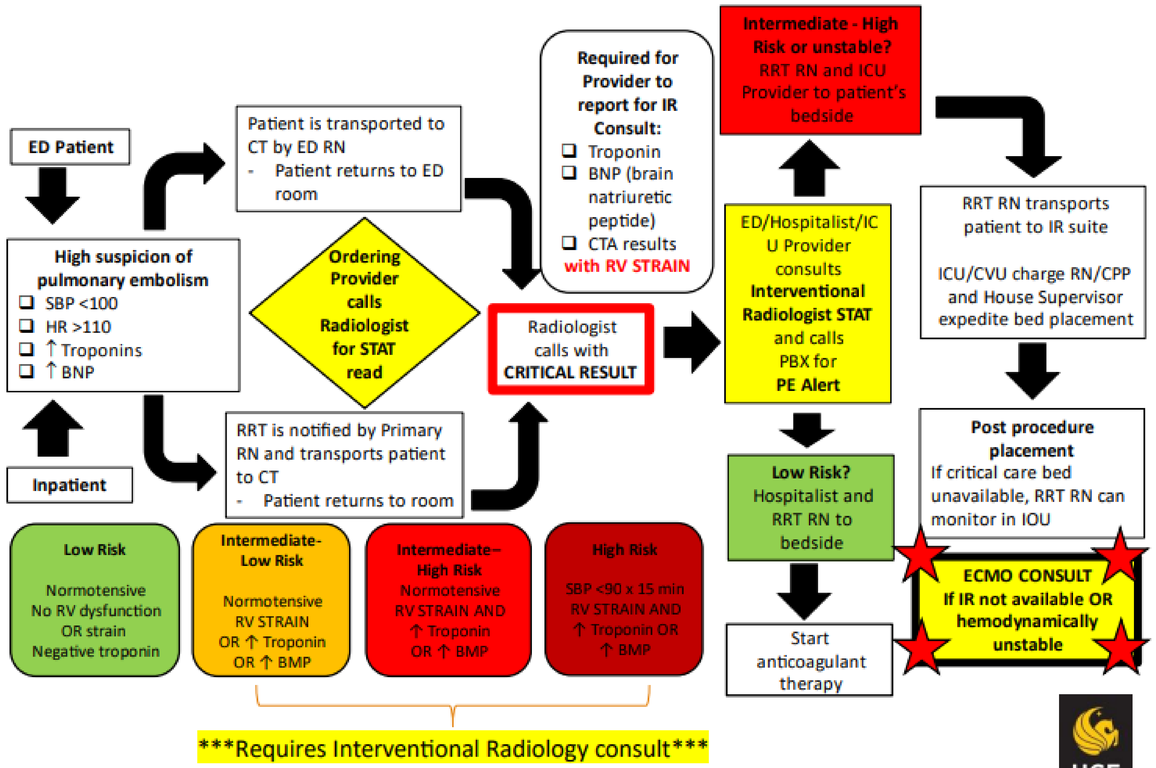
Project Goals

Create a process to evaluate patients with high-risk PE.

Assemble a team of specialists who will respond promptly to a PE Alert.

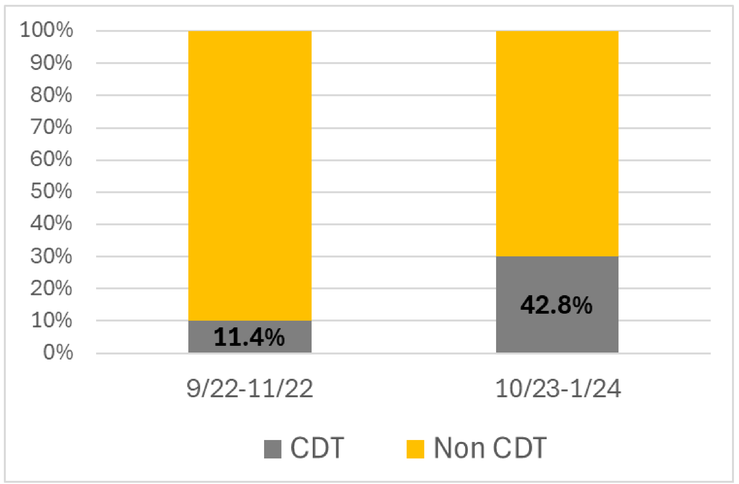
Increase the frequency of catheter-directed therapy (CDT) by 10%.

PERT Algorithm



Results

- Using ICD-10 codes, we collected baseline, pre-intervention data during 9/22-11/22. Who (n=9) had a PE received CDT.
- During the intervention period, 10/23-1/24, 42.8% of patients had CDT (n=3) out of the total 7 patients with PE Alert.
- The PE alert proved effective in bringing expert multidisciplinary clinicians to the bedside promptly.
- There was an increase in the percentage of PE cases that received CDT .
- The sample size was small compared to 2022 historical PE cases data and there is currently a review of medical records underway to determine if any PE cases were missed during the project period.



- Assembled a PERT composed of Rapid Response Nurses, Critical Care providers and Interventional Radiologists that responded when a PE Alert was called. They completed a prompt risk stratification, and transported the patient to a higher level of care and procedure if indicated

Research Method

The Plan-Do-Study-Act (PDSA) model was used for the project's design, testing and implementation. This design focuses on three questions, "What are we trying to accomplish?", "How we will know that a change is an improvement?" and "What change can we make that will result in an improvement?"

Using ICD-10 codes to identify PE cases, baseline data was collected between 9/22-11/22. The PERT with PE Alert was launched 10/23-1/24. Data on PE Alerts was collected from 10/23-1/24.

Limitations

- Staffing challenges in critical care departments.
- Dissemination of program information to free-standing Emergency Departments.
- PE consult in 2022 included low risk PE. Further data collection and analysis is required.
  - There were 61 patients with PE who did not have PE Alert during intervention period.
- Inconsistent training on CDT, devices and risk stratification tool used by the Interventional Radiologists.
  - Recommend to refine PE Alert criteria.

Conclusion

The impact for the PE Alert project was improved clinician coordination in future PE cases and an increase in CDT utilization. This project demonstrated a PE Alert with PERT is an effective intervention for delivery of time-sensitive care to patients with blood clots in their lungs.

Moving forward, the team will refine their PE Alert criteria and communication methods to ensure all cases are captured, and additional education of providers may be needed. Barriers to PERT implementation were identified. Data collection examining response time and patient outcomes such as 30-day mortality and morbidity may support continuation of the PE Alert and PERT.

For a complete list of references please scan QR code: