In-Hospital Mortality Trends From Acute Pulmonary Embolism At VMC: Pre- And Post-Pulmonary Emergency Response Team (PERT) Comparison Quality Improvement Study

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Objectives

• Disclosures
• PERT: Who and What?
• Scope of PERT team
• QI project
  • Methods
  • Pre data
  • Post Data
• Conclusion
• Limitations and Future Directions
• No COI
• No Funding was sought
• QI project with an approved IRB (#19-002380)
• PERT call participants volunteer their personal time to take extra call without any financial incentives.
Severe PE Identified

Activate PERT

Immediate Conference with PE Specialists:
cardiology, cardiac surgery, diagnostic radiology, emergency medicine,
hematology, interventional radiology, pulmonary/critical care,
vascular medicine, vascular surgery

Diagnostic, Treatment and Disposition Plan

Mobilization of Resources

Pulmonary Embolism Response Teams; Witkin et al.
Launched: January 2018

PERT

- ED/Referring MD
- Pulmonary and critical Care
- CardioThoracic Surgery
- Vascular Surgery
- Cardiology
- Emergency response team
PERT Workflow for Submassive & Massive PE’s

CCM Fellow/Attending Assess patient

Assessment | Review Options | Patient and Family preferences

Call Cardiac Connections to facilitate conference call

Cardio Vascular Surgery | Vascular Surgery | CC medicine | Primary provider

Outcome

Assessment | Plan A | Plan B | Placement- MICU/CICU/CVICU
Primary Objectives

Analyze and compare outcomes for PE patients pre- and post-PERT initiation:

1. All-cause mortality
2. Length of stay
Methodology

Design: Quality Improvement Project

• Retrospective Review

• Premiere and Electronic Health Record
  – EHR workbench was run to identify PE’s POA
  – Inclusion criteria: newly diagnosed PE’s
  – Exclusion criteria: Age <18 and LOA >100
  – Premiere data harvested w/ HAR numbers: age, race, point of origin, procedure, mortality, LOS, admitting diagnosis & secondary diagnosis.
## Methodology

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<tr>
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<th>Pre PERT initiation</th>
<th>Post PERT initiation</th>
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<tbody>
<tr>
<td><strong>Data Source</strong></td>
<td>Vizient</td>
<td>Premier</td>
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<td><strong>Time Frame</strong></td>
<td>10/2016-9/2017 (1 year)</td>
<td>1/2018-12/2019 (2 years)</td>
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<td><strong>Sample Size (N)</strong></td>
<td>267 (PE as a primary Dx)</td>
<td>762 (PE Present on admission)</td>
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<td><strong>Palliative care patients in mortality</strong></td>
<td>Excluded</td>
<td>Included</td>
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Pre and Post PERT Outcomes

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<tr>
<th></th>
<th>Mortality</th>
<th>LOS</th>
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<tr>
<td>Pre PERT</td>
<td>9.04</td>
<td>9.37</td>
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<tr>
<td>Post PERT</td>
<td>6.69</td>
<td>7.31</td>
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Findings and Discussion

• In our preliminary data review,
  – All-cause mortality has decreased by 2.35%
  – LOS decreased by approximately 2 days

• Need to further determine whether this change in mortality is due to education and presence of team or due to the actual number of interventions
Limitations

• Pilot review of crude data
• Data acquisition: Vizient vs Premiere
• PE as primary diagnosis vs POA
• Improvement due to interventions vs just PERT discussion and education
• Provider change/turnover

Future Directions

• Data acquisition on Vizient moving forward
• Emergency Department LOS
• Interventions
• Mortality in relation to BMI
## Acknowledgements

### Department

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<th>Pulmonary and Critical Care Medicine</th>
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<tr>
<td>Interventional Cardiology</td>
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<td>ECU IRB and Vidant CRG</td>
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<td>Cardiac Connections</td>
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### Mentors

Veeranna Maddipati, MD & Amy Campbell PhD, RN
References
