2021 LEAD Capstone Poster Session

Bridging The Gap : Establishing The UTSW Post Pulmonary Embolism Follow Up Program

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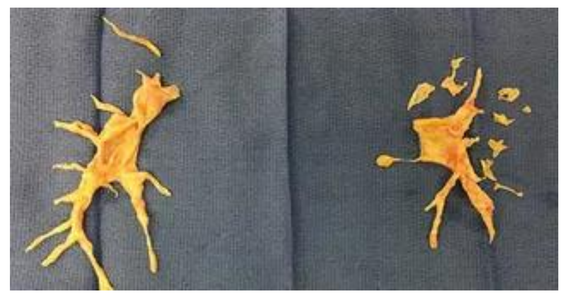

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Abstract

- **Problem :**
  - Pulmonary embolism (PE) is common (~ 900,000/year in US)
  - ~ 3-4 % (~ 31,500/year) patients do not resolve their PE completely and develop chronic thromboembolic pulmonary hypertension (CTEPH)
  - However, a standardized follow up approach to PE is lacking which leads to delay in diagnosis of CTEPH

- **Action :**
  - Develop a post pulmonary embolism follow up program at Clements University Hospital which will :
    - Identify patients at risk
    - Ensure appropriate standardized follow up by establishing follow up clinic
    - Collect data to measure effectiveness and impact of the program

- **Results :**
  - This program will ensure all patients with PE will be followed to resolution of symptoms
  - Will facilitate early diagnosis of CTEPH and improve outcomes
  - This program will be a model for other centers to emulate

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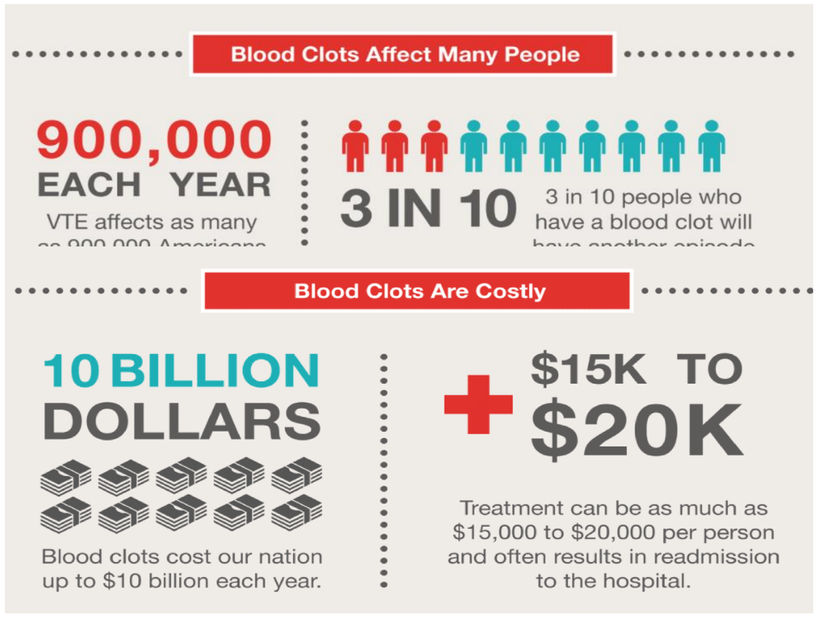
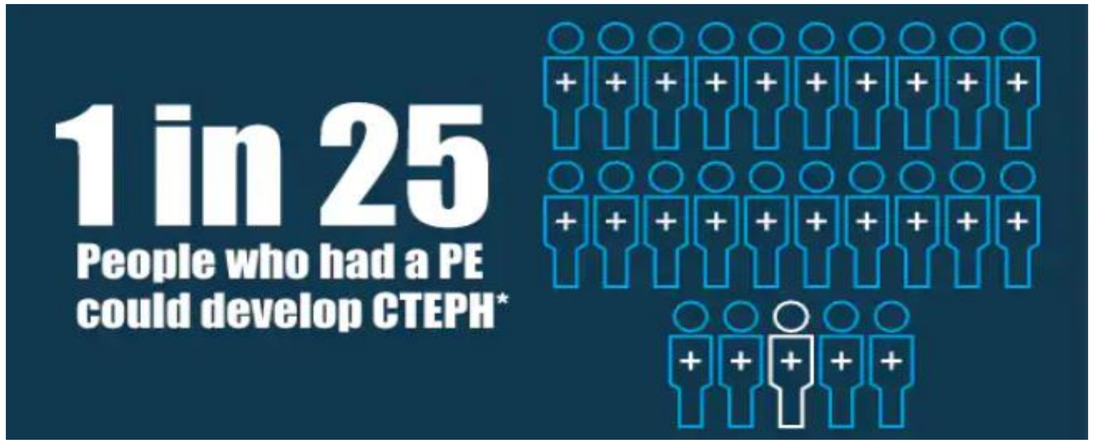
Objectives

- Ensure appropriate follow up for all patients admitted with PE
- Identify CTEPH earlier and hence facilitate earlier treatment
- Decrease morbidity and mortality as well as improve patient satisfaction
- Decrease downstream costs of delayed/missed diagnosis
- High-Impact peer reviewed publication

Background Information

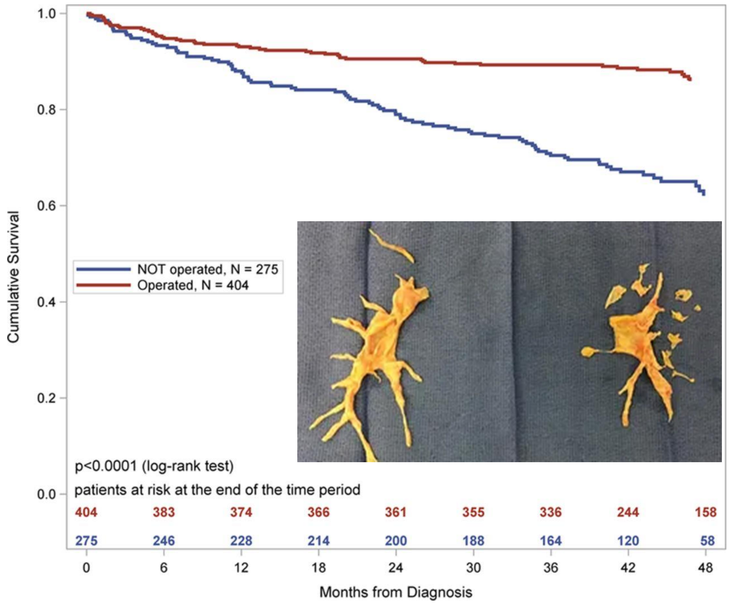




- Diagnostic delay :14-21 months
- Median 13 consultations
- Significant increase in cost due to this delay
- Treatable disease with Pulmonary Thromboendarterectomy (PTE)

Improve :

- Morbidity
- Mortality
- Patient satisfaction
- Save $$$



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Specific Aims

I : To ensure standardized follow up of all patients admitted with pulmonary embolism

II : Diagnose and treat CTEPH early

III: Systematic collection of data to show impact on morbidity, mortality, patient satisfaction and costs

Project Plan

Index hospitalization :
- Patient identified and contacted
- 3 month follow up phone call scheduled

3 months

Persistent symptoms questionnaire :
- Electronically or inquired over phone

- ve → Patient advised to follow up with PCP

+ ve

Schedule in multidisciplinary Post- PE clinic with TTE and VQ scan

- ve work up → Refer for alternative diagnosis

+ve work up

Diagnose and treat CTEPH

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Application of What You Learned at LEAD

- Organize and articulate the vision effectively
- Negotiation with stakeholders
- Leveraging to achieve common goal
- Collaboration
- Inspiring change
- Assemble and manage a diverse team

Proposed Budget

Item	Estimated cost
Medical director	0.1 FTE
Program coordinator	Full time cost (60K/yr)
Clinical data entry specialist	Full time cost (35 k/yr)
Clinic space	Hospital to provide
Redcap registration fees	$ 300

- Multidisciplinary post PE follow up clinic will be hospital-based clinic so buy in will be needed from hospital administration
- Once operational program should be able to generate revenue by patient visits, testing and decreasing ACO costs

Innovation and Significance

- This pulmonary embolism follow up program will be a quality improvement initiative to expedite diagnosis of CTEPH and reduce morbidity/mortality.

- It will improve patient satisfaction and decrease our ACO costs

- If successful, it will be a model for other centers across US to emulate

References

1. https://www.cdc.gov/ncbddd/dvt/infographic-impact.html
2. Tapson VF and Humbert M. Incidence and prevalence of chronic thromboembolic pulmonary hypertension: from acute to chronic pulmonary embolism. *Proc Am Thorac Soc.* 2006;3:564-567.
3. Pengo V, Lensing AWA, Prins MH, et al. Incidence of chronic thromboembolic pulmonary hypertension after pulmonary embolism. *N Engl J Med*. 2004;350(22):2257-2264
4. Delcroix M, Lang I, Pepke-Zaba J, et al. Long-term outcome of patients with chronic thromboembolic pulmonary hypertension. Results from an international prospective registry. *Circulation.* 2016;133:859-871
5. Pepke-Zaba J, Delcroix M, Lang I, et al. Chronic thromboembolic pulmonary hypertension (CTEPH): results from an international prospective registry. *Circulation*. 2011;124(18):1973-1981
6. Rivera-Lebron B, McDaniel M, Ahrar K, et al. Diagnosis, Treatment and Follow Up of Acute Pulmonary Embolism: Consensus Practice from the PERT Consortium. *Clinical and Applied Thrombosis/Hemostasis*. January 2019. doi:10.1177/1076029619853037
7. Rivera-Lebron BN, Rali PM, Tapson VF. The PERT Concept: A Step-by-Step Approach to Managing Pulmonary Embolism. Chest. 2021 Jan;159(1):347-355. doi: 10.1016/j.chest.2020.07.065. Epub 2020 Aug 3. PMID: 32758561.