Do you really have to admit that PE patient?

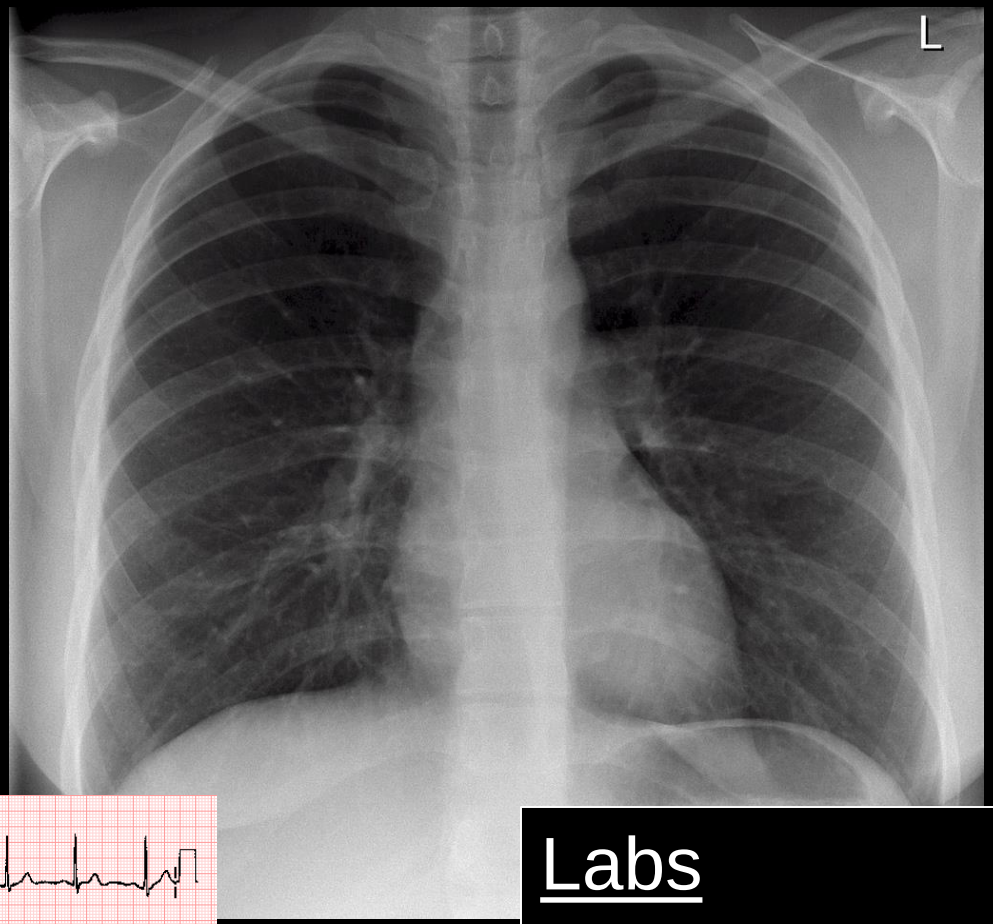
W Frank Peacock, MD, FACEP, FACC
Professor, Emergency Medicine
Associate Chair and Research Director
Baylor College of Medicine
Houston, Texas

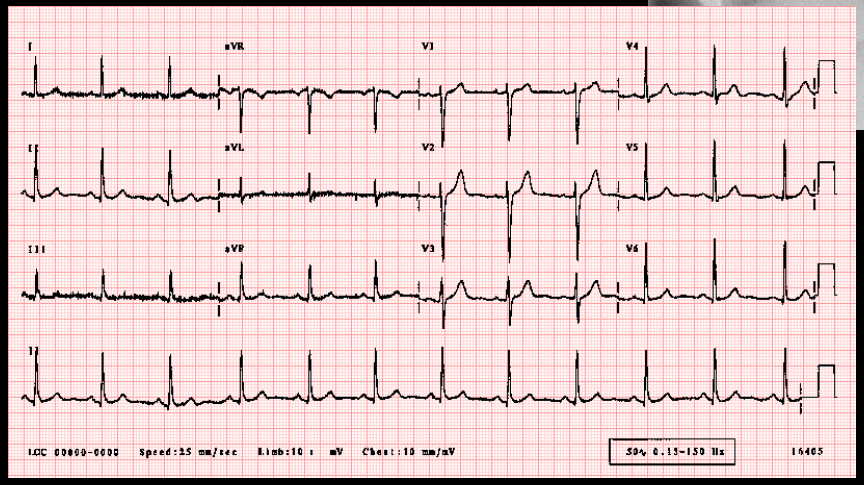
Your 72 year old Mom

- Calls you on the phone…
  - She just got back from London after visiting her childhood friend
  - Says her chest hurts
  - What do you do?

Send her to the ER!!

- HR 94
- BP 122/76
- O2 sat 94%





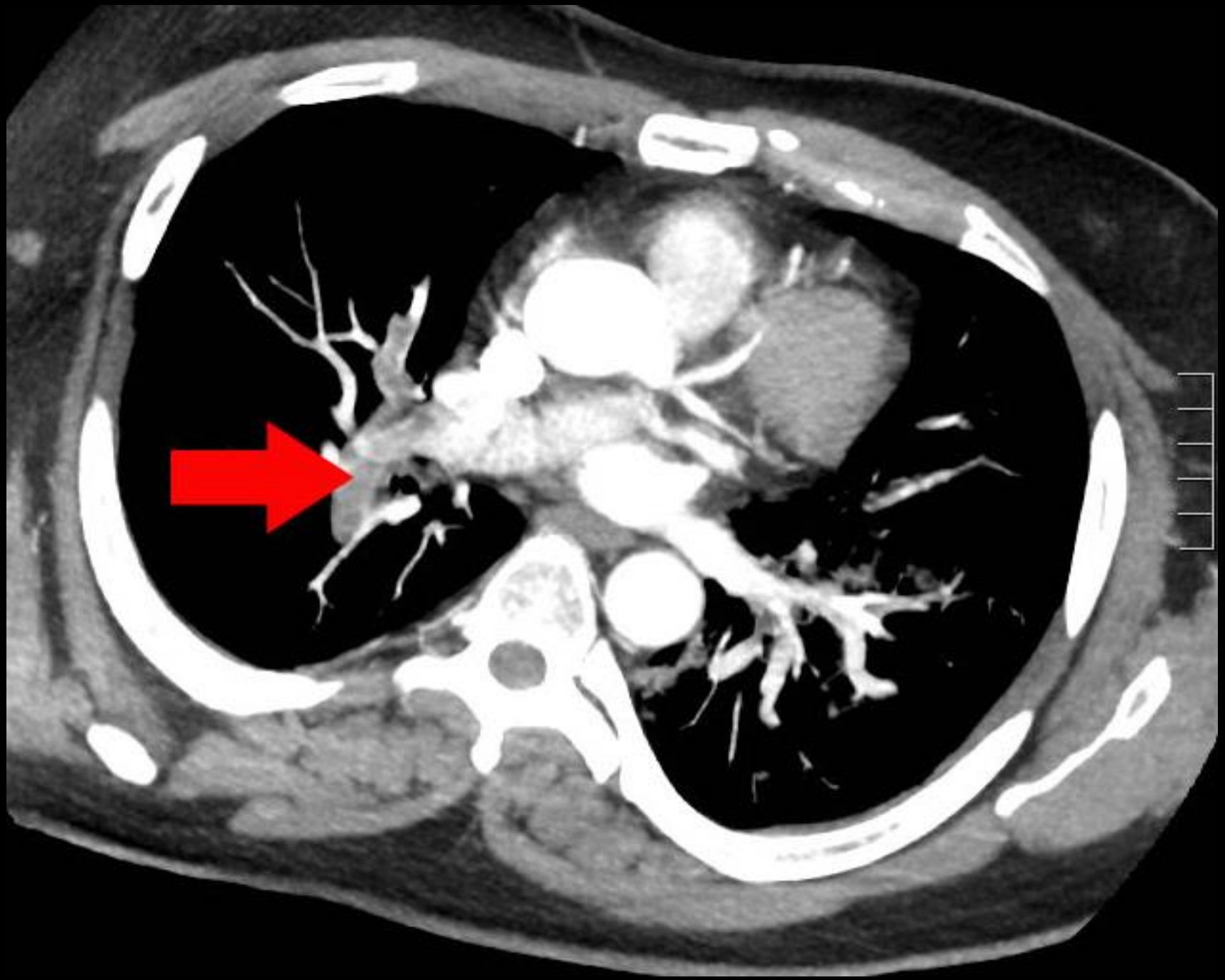
Labs

- Hgb 12.2 g/dL
- BNP 74 pg/mL
- TnI 0.03 ng/mL
- UCG negative

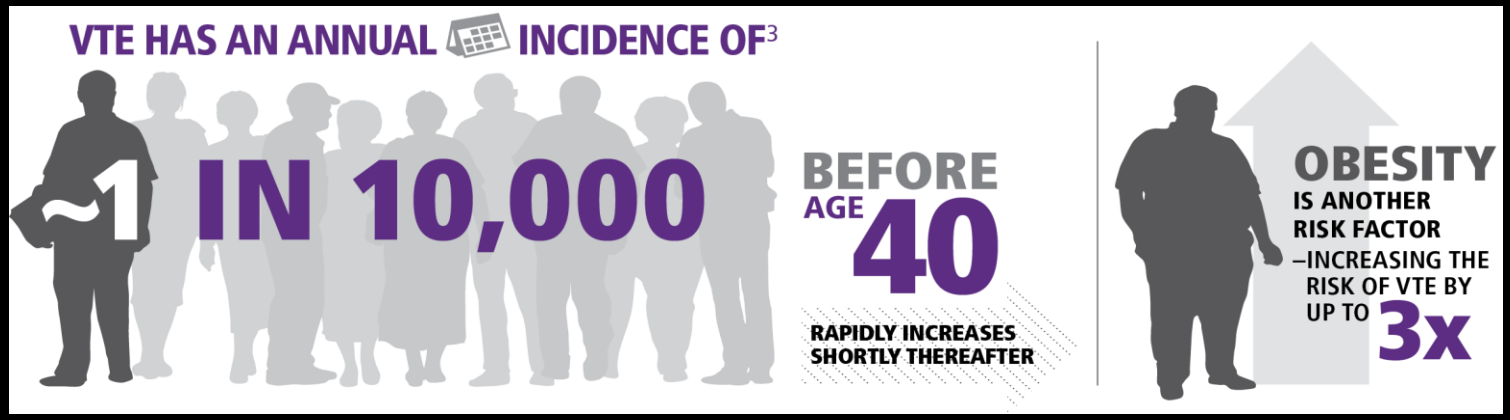
What would you do?

- Nothing?
- Test?
- Treat and test?
  - If treat, what?

- ~ 90% of ER docs will treat with heparin, even though ultimately treating with a DOAC
  - Mercury data



VTE Is the Leading Cause of Preventable Hospital Death



- Almost 50% of VTEs occur during or after a hospital stay
- Approximately 10% of all hospital deaths are related to PE

VTE = venous thromboembolism.

PE

- Clots are common
- Clots increase in frequency with age
- There are more old people and they visit the ED more often
- Cancer predisposes and we keep people with cancer alive longer

PE

- We test for it a lot, and we miss a lot.
- Since the tests are rather good we probably miss most clots because we do not consider the diagnosis and do not test.
- The old maxim “in order to diagnose it you have to think of it”.
- If person has a clot, rational testing will reveal 98% of time.
- So--if you test and don’t find it, OK.
  - if you don’t test and don’t find it, not OK.

DVT & PE

- The numbers:
- DVT
  - About two million ultrasounds done a year
  - More than one million people diagnosed with DVT per year
  - 50-75% of clots embolize

PE

600,000 cases per year

26-37% mortality

PE: *Clinical Factors*

- Risk factors
  - Long list ----summary
    - Old
    - Old and sick (cardio pulmonary disease)
    - Old, sick and smoke
    - If not old: female, BCP and smoke
    - Surgery within 4 weeks

DVT & PE: Clinical Factors

- PE: Signs andSymptoms
  - Dyspnea 73%
  - Tachypnea RR>20 70%
  - Pleuritic Chest Pain 66%
  - Rales 51%
  - Cough 37%
  - Tachycardia (HR>100) 30%
  - Leg Pain 26%
  - Increased S2 23%
  - Pleural Friction Rub 3%
- *Dyspnea, Tachypnea, or Chest Pain 97%*

DVT & PE: the tests

- D-Dimer
  - test for fragments of physiologic thrombolyis by plasmin
  - High negative predictive value WHEN USED IN *LOW RISK* PATIENT

PE: Wells Score

- Who is *LOW RISK*?
  - Clinical signs of DVT 3
  - Alternative dx unlikely 3
  - HR >100 1.5
  - Immobiliation previous 4 days 1.5
  - Previous DVT/PE 1
  - Hemoptysis 1
  - Malignancy (RX 6 mos.) 1

  - **≤2 = low risk**
  - **>2 = not low risk**

PERC Score

If low risk patient can"PERC OUT" no further testing

- Age ≥ 50
- HR ≥ 100
- Room air SaO_2 <95%
- Unilateral leg swelling
- Hemoptysis
- Sx/trauma requiring general anesthesia within 4 weeks
- Prior PE/DVT
- Hormone use

DVT/PE

ACEP DVT/PE Clinical Policy (2011)

- Question #1

- Do objective criteria improve risk stratification over gestalt clinical assessment?

"There is insufficient evidence to support preferential use of one over the other." (level B)

PE/D Dimer

ACEP DVT/PE Clinical Policy (2011)

- Question # 3

- What is role of quantatative D Dimer …in exclusion of PE?

"In patients with low pretest probability… a negative…D-dimer can… exclude PE."

DVT & PE//the numbers

- **Physician judgment** approximates the Wells score

DVT & PE: the PE tests

- If low risk by Wells----do D-Dimer
- If D-Dimer ***negative*****----**STOP
- If not low risk by Wells—do CT
- If D-Dimer ***positive*****----**do CT

DVT & PE//the tests

- How do we know this is the right path?
  - Hull RD JAMA 2006 Jan 11
    - 3306 patients
      - » 2206 Wells “unlikely”
      - » 1100 Wells “likely”
    - Test “unlikely” with D –Dimer
      - » 1028 D-Dimer negative
    - 90 day outcome for low risk+neg D Dimer=.5% VTE

DVT & PE: the tests

- Hull/JAMA (cont'd)

  CT done on all "likely" and all D-Dimer+

  1436 had ***NEG*** PECT

  1.35% of ***NEG*** PECT had VTE at 90 days

  non fatal PE---3

  fatal PE---7 (0.5% of ***NEG*** PECT)

  DVT---8

DVT/PE/CT

ACEP Clinical Policy

- Question #4:

-Can CT angio be used “as the sole …test in the exclusion of PE?”

“For patients with a low or PE unlikely (Wells < 4)…probability a negative multi detector CT anigo alone can…exclude PE. (level B)

DVT/PE: CT

ACEP Clinical Policy

- Question #4 (answer cont'd)

- If high pretest probability and negative CT (and no CT venogram done), perform additional testing (e.g. D-dimer, venous US,V/Q etc) (level C)

DVT/PE: ULTRASOUND

ACEP Clinical Policy (2011)

- Question #5

-"What is role of venous imaging in the evaluation of patients with suspected PE?"

With pos US and symptoms of PE (esp if pregnant or dye allergy) ok not to test more.

(level B)

Your 72 year old Mom

- Calls you on the phone…
  - She just got back from London after visiting her childhood friend
  - Says her chest hurts
  - What do you do?

ACCP Recommendations for Anticoagulation Therapy in Patients With DVT/PE

ACCP recommends (Grade 2B) a NOAC* over VKA therapy as long-term anticoagulant therapy for patients with:

- DVT of the leg and no cancer
- PE and no cancer

- Compared with VKA therapy, NOACs appear to have:
  - Similar reduction of risk for recurrent VTE
  - Less risk of ICH
  - No increased risk of a fatal major bleed
  - Greater convenience for patients and HCPs

NOAC = non-vitamin K antagonist oral anticoagulant.
*NOACs include rivaroxaban, dabigatran, apixaban, and edoxaban.

Phase 3 Trials for the Initial Treatment of DVT and PE

	EINSTEIN DVT and PE* (N=8281) Rivaroxaban Xarelto®	AMPLIFY (N=5395) Apixiban Eliquis®	RE-COVER I and II* (N=5107) Dabigatran Pradaxa®	HOKUSAI (N=8240) Edoxaban Savaysa®
DVT only, n (%)	3389 (40.9)	3532 (65.5)	3499 (68.5)	4921 (59.7)
PE only, n (%)	3597 (43.4)	1359 (25.2)	1136 (22.2)	2505 (30.4)
Unprovoked index event, n (%)	5255 (63.5)	4845 (89.8)	1817 (35.6)	5410 (65.7)
Recent trauma or surgery, n (%)	1486 (17.9)	Excluded†	Did not specify	Did not specify
Cancer at baseline‡, n (%)	462 (5.6)	169 (3.1)	221 (4.3)	208 (2.5)
Elderly§, n (%)	1283 (15.5)	749 (13.9)	529 (10.4)	1104 (13.4)
Previous VTE, n (%)	1610 (19.4)	872 (16.2)	1099 (21.5)	1520 (18.4)

- **These trials were conducted with different designs and evaluated different populations, so direct comparisons of their results cannot be made**

*Pooled analysis. †Patients defined as having head trauma, other major trauma, or major surgery 1 month prior to randomization were excluded from the trial.[6] ‡Hokusai enrolled 771 (9.3%) patients with any history of cancer.[77] §Elderly patients were aged >75 years for the EINSTEIN and RE-COVER trial programs, and aged ≥75 years for AMPLIFY and Hokusai.[5,76,137,145]

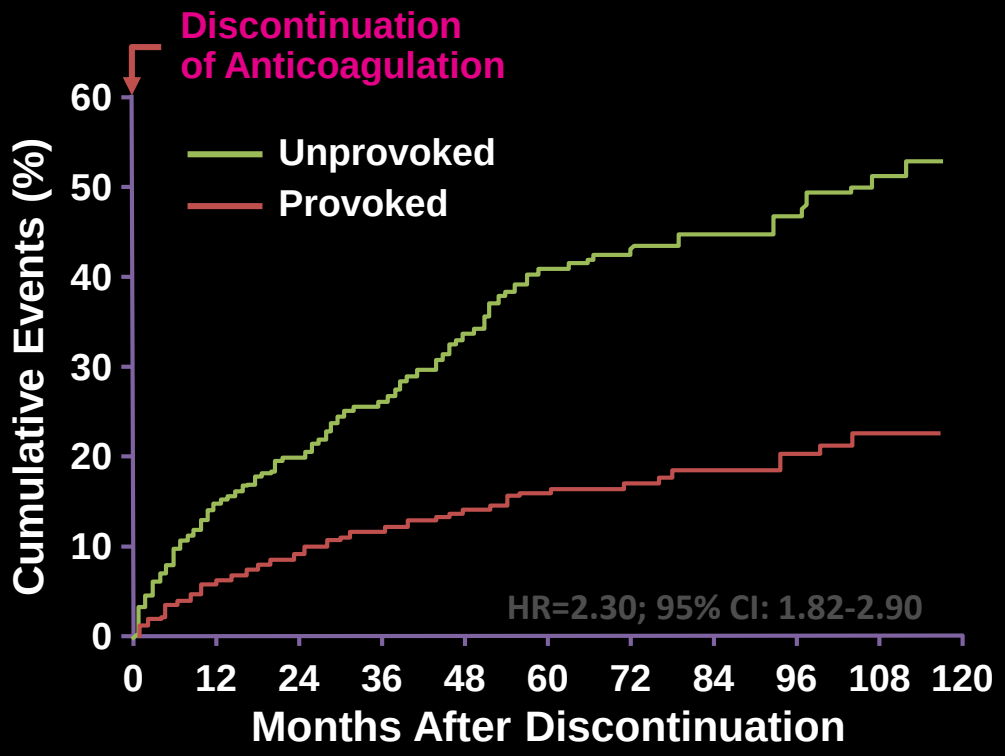
 Proportion of patients calculated by pooling total patients with noted characteristic in each trial arm.

Risk of recurrent VTE after discontinuation of anticoagulation

Patients with a first episode of clinically symptomatic proximal DVT and/or PE* (N=1626)

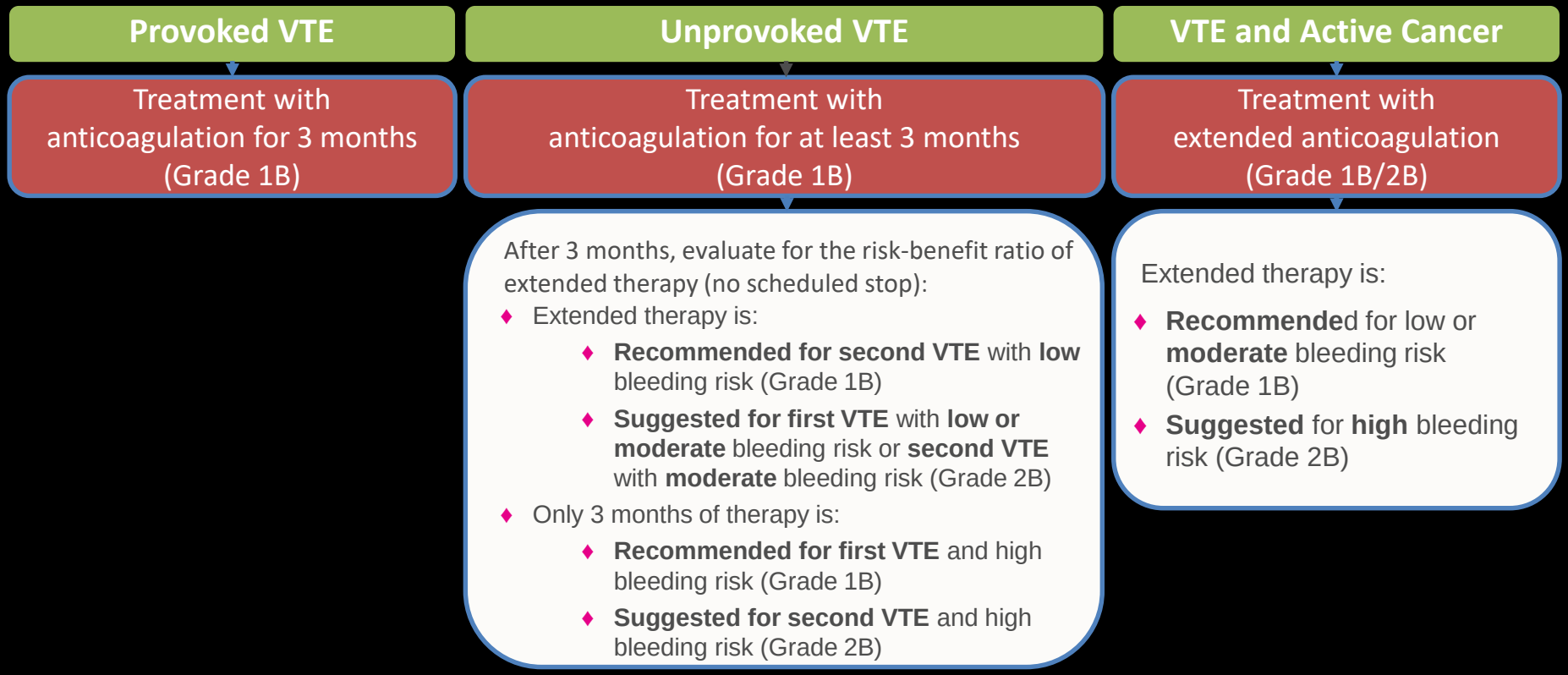
Average of 6 months of anticoagulation treatment

Patients discontinued anticoagulation and were followed for recurrent DVT/PE



*Excluded patients with active cancer, prior VTE, an indication for indefinite anticoagulation, geographic inaccessibility to follow-up, or poor life expectancy.

ACCP Guidelines for Duration of Anticoagulation in VTE Patients



- **Continuing anticoagulation should be reassessed at periodic intervals**

Admit vs Discharge?

- What are the risks?
  1) Outpatient risks
  2) Inpatient risks
  3) Chagrin factor

Inpatient risks vs outpatient risks

Outpatient risks:

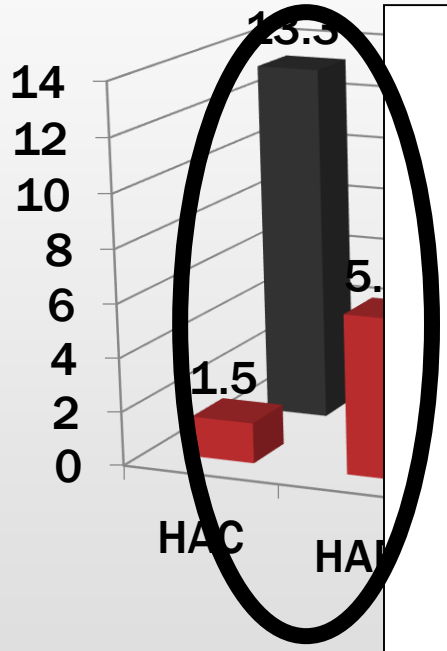
- Mortality rates in PE patients who present with shock exceed 30%
- 30-day mortality rate of low-risk PE patients is consistently <1%
  - What is the advantage to hospitalization if 30 day mortality is <1%?

Kasper W. Management strategies and determinants of outcome in acute major pulmonary embolism: results of a multicenter registry. *J Am Coll Cardiol*. 1997;30:1165-1171

Hospitalization: NO CHANGE IN LOW RISK PE OUTCOMES, MARKEDLY increases Hospital Acquired Condtions

Premier Database

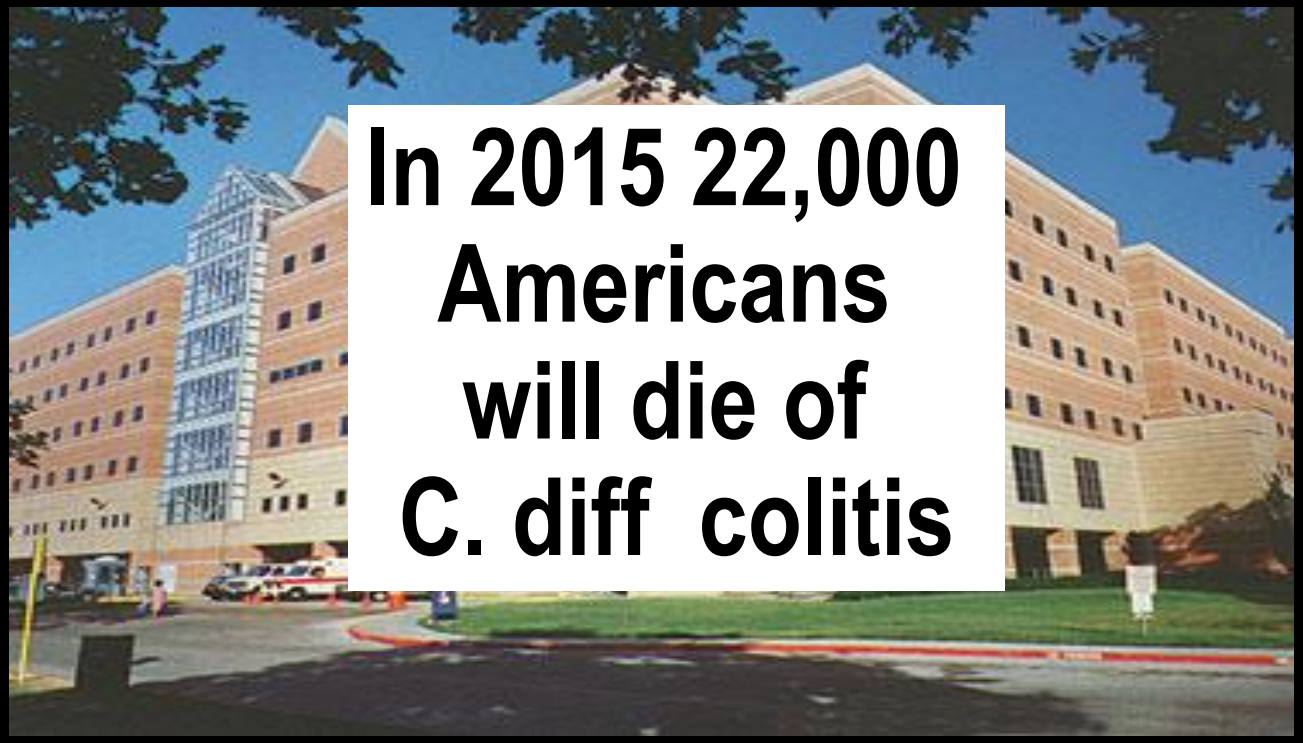
- Definitions
  - Short LOS < 2 days
  - Adverse PE events (aPE)
    Recurrent DVT,
    major bleed, or death
  - Net clinical benefit (NCB)
    1 - APE + hospital a
    acquired conditions (HAC)



887% increase in HAC

- 6,746 PE
  - 1,918 Low risk by sPESI
    - 688 (35.9%) LRPE had a short LOS
  - After PSM: 784 LRPE patients

Ever seen the box where we keep our worst bugs…



Health Buzz: Hospital Admission More Dangerous Than Flying

When a hospital is bad for you; the era of electronic medical records.

By Angela Haupt | July 22, 2011 | 1:29 p.m. EDT + More

World Health Organization: Medical Errors, Infections Make Hospitals Dangerous

A hospital stay is more dangerous than an airplane flight, the World Health Organization announced Thursday, warning that medical errors and hospital-acquired infections kill millions of patients annually. "If you were admitted to the hospital tomorrow in any country, your chances of being subjected to an error would be something like 1 in 10," and your chances of being killed by one would be 1 in 300, said Liam

U.S. News Rankings & Research

U.S. News's "Best" delivers recognized, authoritative information and clear, objective rankings that help readers plan for their life and ultimately, make the most of it.

BEST U.S.News RANKINGS

Best Hospitals
Best Health Plans
Best Nursing Homes
Best Diets

FEB 18, 2015 @ 08:14 AM 1,283 VIEWS

Deadly Germs May Lurk In Your Doctor's Clothing

Robert J. Szczerba, CONTRIBUTOR

Exploring the impact of science and tech on our lives

FOLLOW ON FORBES (137)

Opinions expressed by Forbes Contributors are their own.

FULL BIO

"I never go to hospitals, that's where all the sick people are." It's an old joke that's based on some ugly truths. Hospitals and other healthcare facilities are dangerous places that can lead to a large number of hospital acquired infections (HAIs). According to the Centers for Disease Control and Prevention (CDC), about 1 in every 25 inpatients has an infection related to hospital care.

We all know that one way germs are spread is through unwashed hands. In a healthcare setting filled with sick patients, these dangers are obviously increased. The incredibly compelling video below, by Seema Marwaha, illustrates just how easily a healthcare worker can spread germs through the hospital.

Chagrin Factor

1. My mother
2. Barack Obama
3. Carrie Underwood
.
.
45. My mother –in-law
.
.
.
.
1294. Some homeless dude
1295. Your mother –in-law

ACCP Guidelines for Outpatient Treatment of Patients With DVT/PE

Acute DVT

Current guidelines recommend initial treatment at home over treatment in-hospital (Grade 1B)

Low-Risk PE

Current guidelines recommend treatment at home or early discharge over standard discharge (Grade 2B)

These recommendations are contingent on adequate home circumstances, such as:

- Well-maintained living conditions
- Strong support network
- Phone access
- Patient feeling well enough for home treatment
- Ability to be promptly rehospitalized

Considerations for Patient Selection for Outpatient Therapy

- 60%-95% of patients with acute, proximal DVT may be eligible for outpatient therapy

- Exclusion criteria from institutional protocols include:
  - Comorbidity needing hosp
  - Active or high risk for bleeding
  - Severe hypertension
  - Catheter-associated DVT
  - Recent surgery
  - Morbid Obesity
  - Hypercoaguable
  - Pregnancy

PESI and sPESI: Validated Tools to Identify Low-Risk

Old
Ca, HF,COPD
Abnl vitals

Variable	Score	
	PESI	sPESI
Age >80 years	Age in years	1
Male sex	10	0
History of cancer	30	1
History of heart failure	10	1*
History of chronic lung disease	10	
Pulse ≥110 bpm	20	1
Systolic BP <100 mm Hg	30	1
Respiratory rate ≥30 breaths/min	20	0
Temperature <36°C	20	0
Altered mental status	60	0
SaO_2 <90% (w or w/o O2)	20	1

Classification by Total Score		
	PESI	sPESI
Class I	≤65	Low risk=0
Class II	66-85	
Class III	86-105	High risk≥1
Class IV	106-125	
Class V	>125	

Jimenez D. *Arch Intern Med.* 2010;170(15):1383-1389.

Hestia

- 1. Hemodynamically unstable?
  - SBP<100, HR>100, BP>180/110, O2sat >90%
- 2. Active bleeding or high risk of bleeding?
    - GIB<2w, CVA<4w, OR<2w, plt<75k
- 3. Failed anticoagulants?
- 4. IV pain medication?
- 5. Med/Soc reason to hospitalize?
- 6. Renal (eGFR <30) or liver failure?
- 7. Pregnant?

Any point = admission

Zondag W. J Thrombosis and Haemostasis, 11: 686–692, 2013

External validation of the Hestia criteria for identifying acute pulmonary embolism patients at low-risk of early mortality

Erin R. Weeda, PharmD; Christine G. Kohn, PharmD; W. Frank Peacock, MD, FACEP; Gregory J. Fermann, MD; Concetta Crivera, PharmD, MPH; Jeff R. Schein, DrPH, MPH; **Craig I. Coleman, PharmD**

University of Connecticut School of Pharmacy, Storrs, CT, USA; University of Connecticut/Hartford Hospital Evidence-Based Practice Center, Hartford, CT, USA; University of Saint Joseph School of Pharmacy, Hartford, CT, USA; Department of Emergency Medicine, Baylor College of Medicine, Houston, TX, USA; Department of Emergency Medicine, University of Cincinnati, Cincinnati , OH, USA; Janssen Scientific Affairs LLC, Raritan, NJ, USA

Methods

- Retrospective analysis
- Consecutive adults
- Objectively-confirmed PE
- Hartford Hospital ED from 2010-2014
- Risk stratification by Hestia criteria
- Low risk =0
  - determined the accuracy of the Hestia criteria for predicting in-hospital and 30-day all-cause mortality
- Mortality status was determined by SSDI

Results

In-Hospital & 30-Day Mortality by Hestia Risk Strata

Hestia Risk Categories	Patients (n=577) % (95%CI)	In-Hospital Mortality (n=19) % (95%CI)	30-Day Mortality (n=35) % (95%CI)
0	25.8 (22.4-29.6)	0 (0-2.5)	0 (0-2.5)
1	36.2 (32.4-40.2)	0.5 (0.08-2.6)	3.2 (1.6-6.5)
2	19.9 (16.9-23.4)	6.3 (3.2-11.9)	9.5 (5.5-15.8)
3	6.8 (5.0-9.1)	10.6 (4.6-22.6)	17.0 (8.9-30.1)
4-6	5.2 (3.7-7.3)	13.2 (5.8-27.3)	21.1 (11.1-36.4)
Low	25.8 (22.4-29.6)	0 (0-2.5)	0 (0-2.5)
High	74.2 (70.5-77.6)	4.4 (2.9-6.8)	8.2 (5.9-11.2)

Risk Score Validation In Hospital Mortality (N=861)

	PESI	sPESI	Hestia
Low-Risk Mortality n/N (%)	2/309 (0.6%)	0/250 (0%)	0/211 (0%)
Sensitivity (95%CI)	90.5% (68.2-98.3%)	100% (80.8-100%)	100% (80.8-100%)
NPV (95%CI)	99.4% (97.4-99.9%)	100% (98.1-100%)	100% (97.8-100%)

Risk Score Validation
30 day Mortality (N=573)

	PESI	sPESI	Hestia
Low-Risk Mortality n/N (%)	3/218 (1.4%)	1/177 (0.6%)	0/160 (0%)
Sensitivity (95%CI)	90.9% (74.5-97.6%)	97.0% (82.5-99.8%)	100% (87.0-100%)
NPV (95%CI)	98.6% (95.7-99.6%)	99.4% (96.4-100%)	100% (97.1-100%)

PREMIER: PE Costs and LOS

- Premier data analysis 12/12 to 3/15
- Inclusion
  - hospital encounter for PE (ICD-10=415.1) in the primary position
  - Dx test for PE first 2 days in hospital
  - Tx with rivaroxaban or parenteral anticoagulation/warfarin.
  - 1:1 propensity score matched riva to parenterally bridged warfarin patients.
- Results: N=3466

Coleman C. Clin App Throm Hemo. 2016: 1-8

PREMIER: PE Costs and LOS

- Riva vs Warfarin
  - 1.36-day <LOS
    - (p<0.001)
  - $2304 <costs
    - (p<0.001)
- Re-admissions similar
  - VTE: 1.7% vs 1.6%
    - (p=0.64)
  - MB: 0.2% vs 0.2%
    - (p>0.99).

- **LRPE analyses (n =1551)**
- Riva associated with
  - 1.01-day <LOS (p<0.001)
  - $1855 <costs (p<0.001)
  - Readmission rates similar (p>0.56 for all)

Coleman C. Clin App Throm Hemo. 2016: 1-8

Discharge or admit? Emergency department management of incidental pulmonary embolism in patients with cancer: a retrospective study

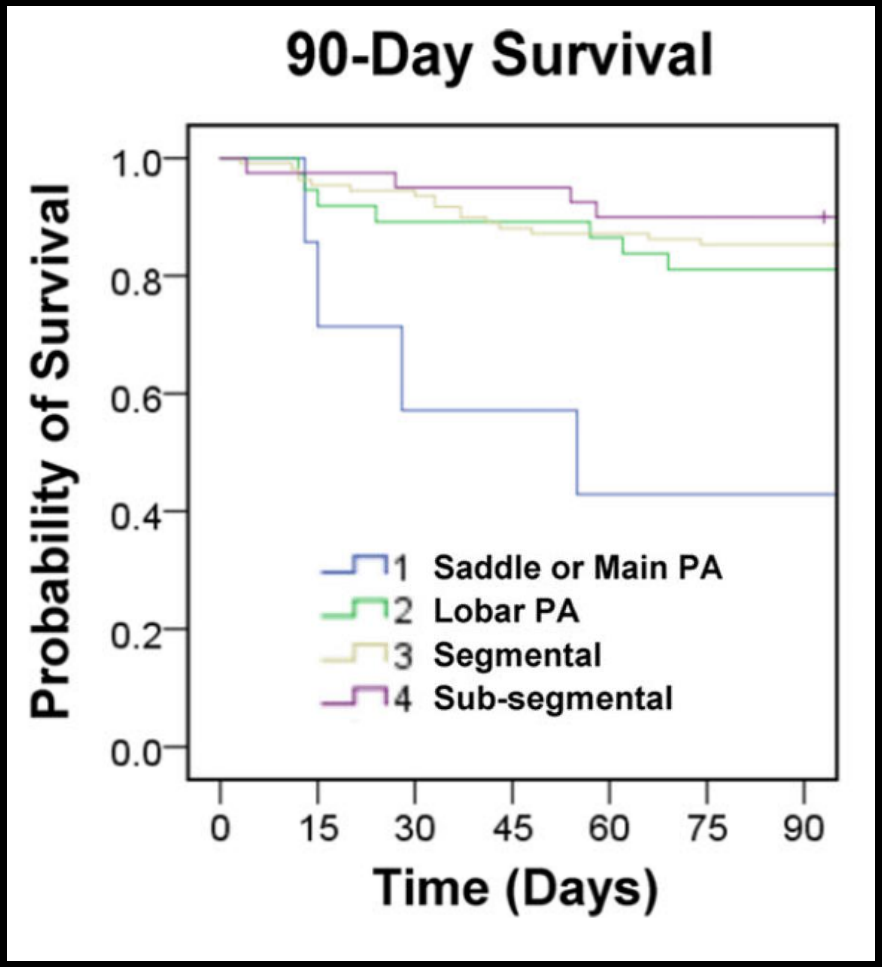
Srinivas R. Banala[1,2], Sai-Ching Jim Yeung[1], Terry W. Rice[1], Cielito C. Reyes-Gibby[1], Carol C. Wu[3], Knox H. Todd[1,4], W. Frank Peacock[5] and Kumar Alagappan[1*]

- **Retrospective Review of Incidental PE**
- **N= 193 patients;**
  - **135 (70%) discharged, 58 (30%) admitted**
- **189 (98%) ED anticoagulation**
  - **170 (90%) LMWH**

Banala SR. International J of EM (2017) 10:19

Incidental PE

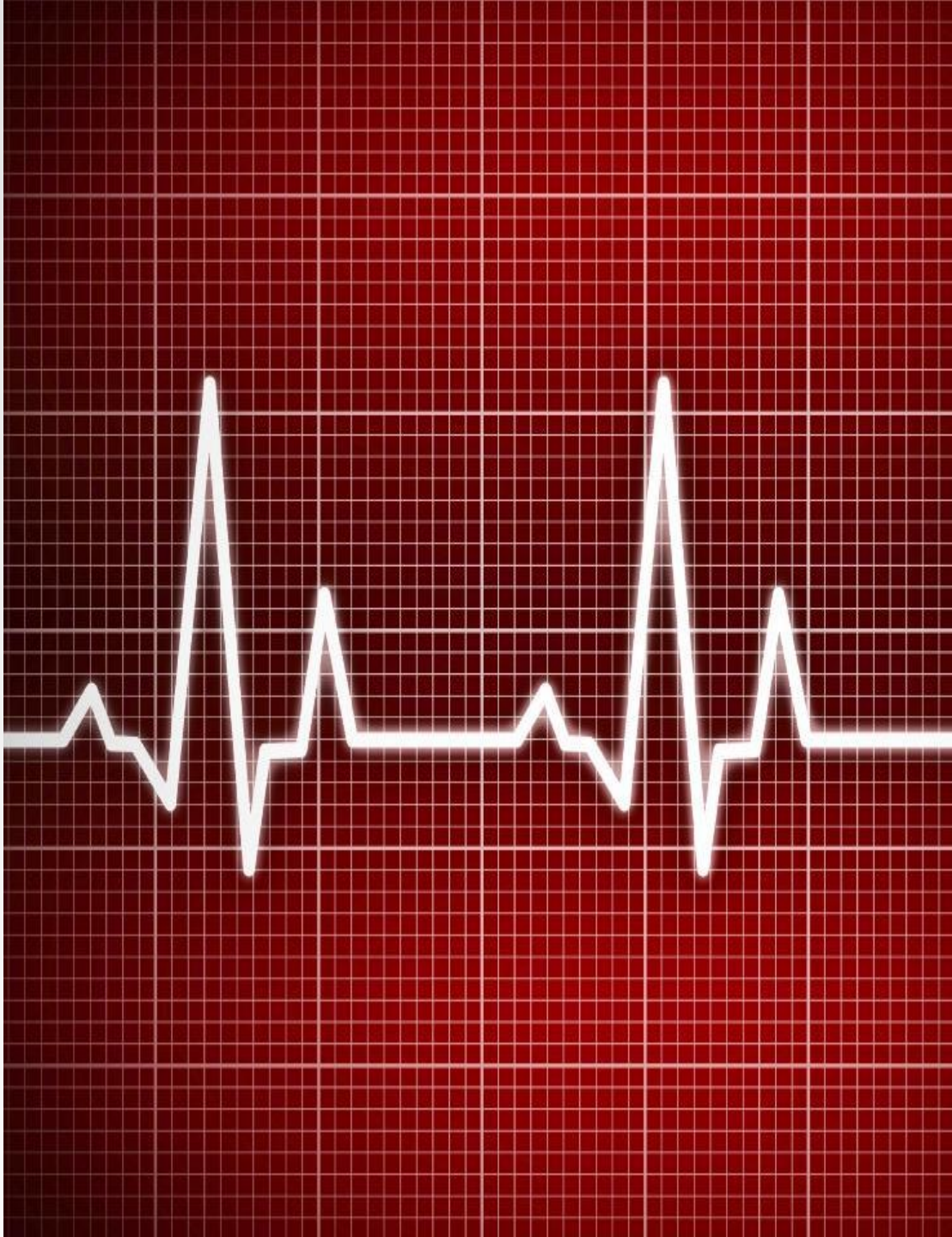
- The 30-day survival = 92%
  - 99% of D/C'd
  - 76% of admitted
- Dead within 30 days
  - 43% saddle emboli
  - 11% main or lobar
  - 6% segmental
  - 5% subsegmental



Banala SR.
International J of EM (2017) 10:19

Multicenter Trial of Rivaroxaban for Early Discharge of Pulmonary Embolism From the Emergency Department (MERCURY-PE)

Peacock W, Diercks D, Francis S, Kabrhel C, Keay C, Kline J, Manteuffel J, Wildgoose P, Xiang J, Singer AJ

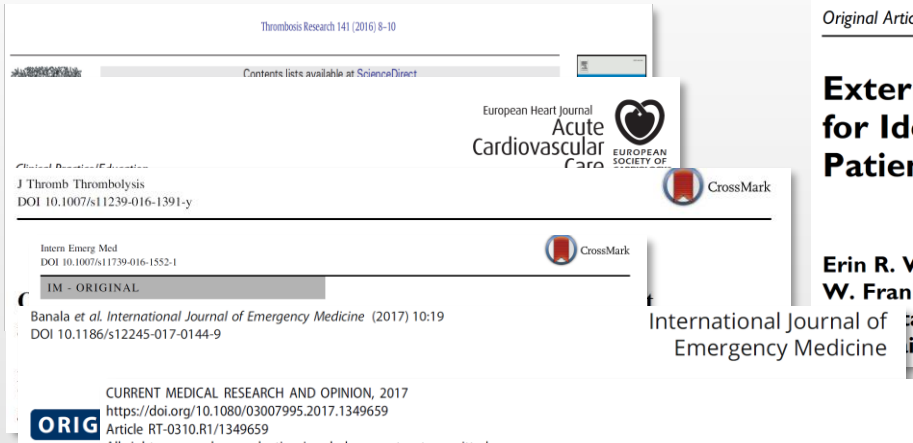


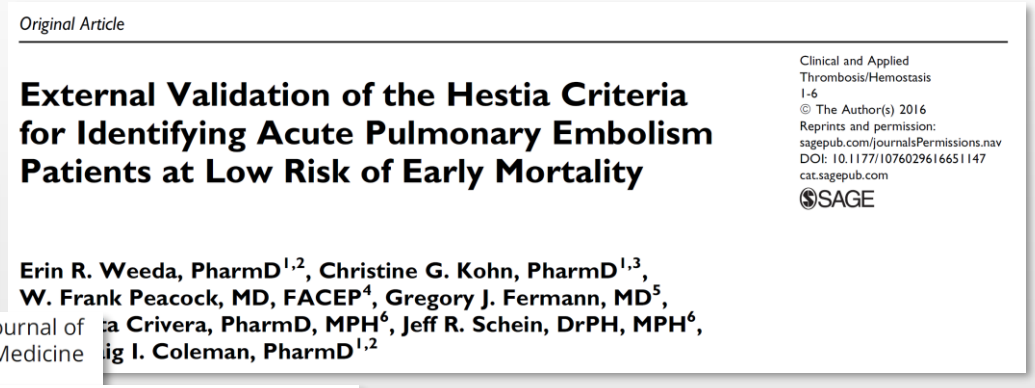
Background

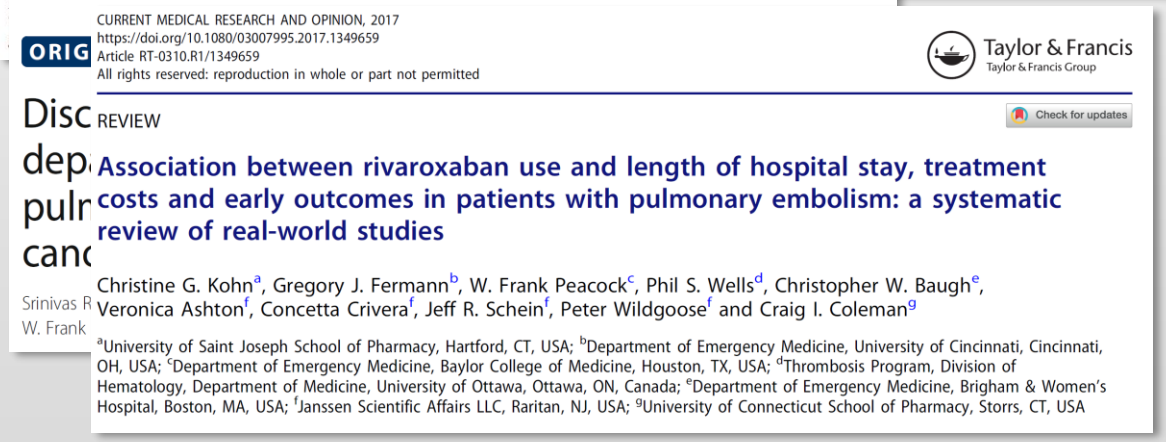
- In 2012:
- US hospital admissions for PE = 202,015
- Median LOS = 4 days (IQR, 3-6 days)
- Mean hospital charge of $39,330

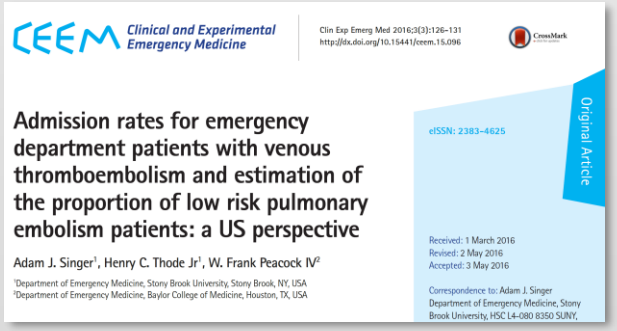
Smith SB, *et al. Chest,* 2016;150(1):35-45.

Protocol development: back the right horse…
(first you will have to find it, then you will have to teach it)







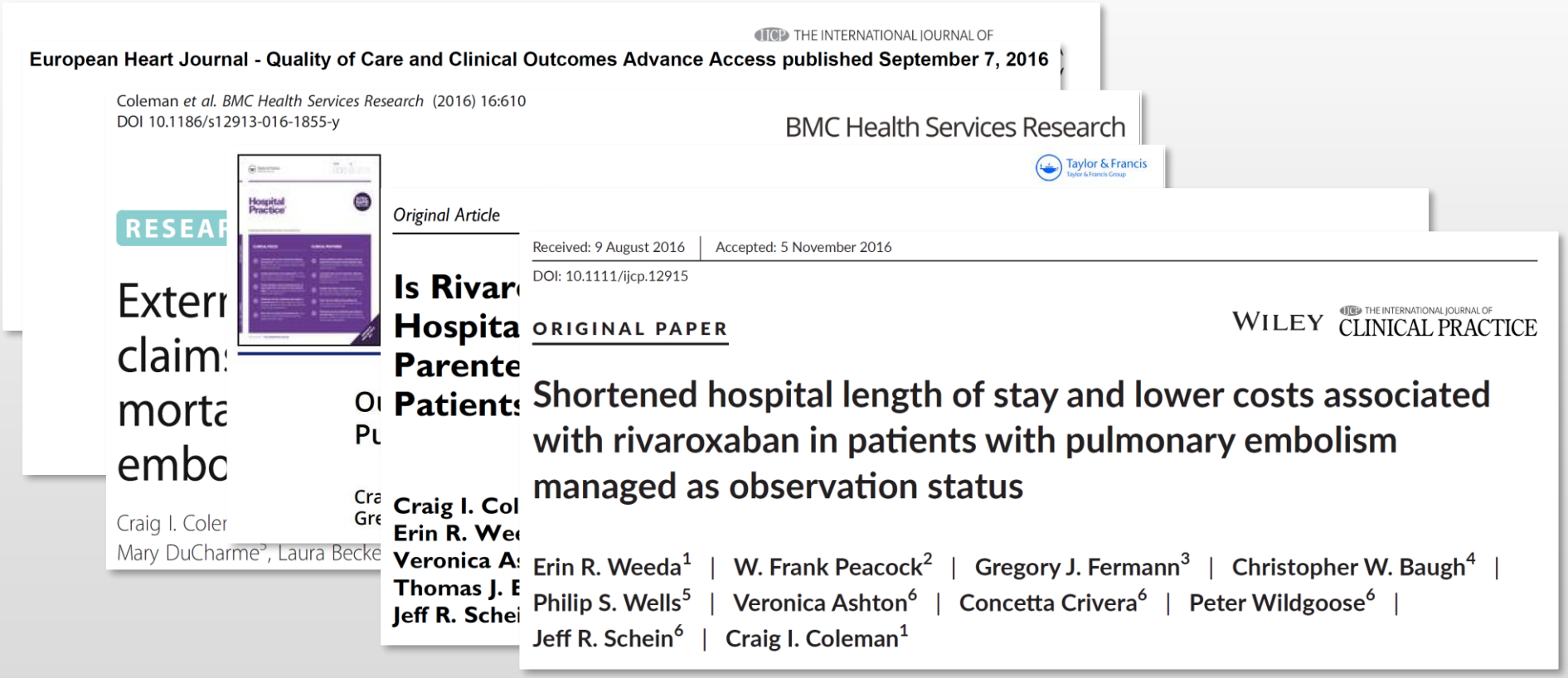


Hestia Criteria

Variable	Hestia Criteria Score
Hemodynamically unstable	1
Thrombolysis or embolectomy needed	1
High risk for bleeding	1
Oxygen needed to maintain a PaO2>90% for >24 hours	1
Pulmonary embolism diagnosed during anticoagulant treatment	1
Intravenous pain medication for >24 hours	1
Medical or social reason for treatment in the hospital >24 hours	1
Creatinine clearance <30mL/minute	1
Severe liver impairment	1
Pregnant	1
History of heparin-induced thrombocytopenia	1

Zondag W *et al. Journal of Thrombosis and Haemostasis*, 11:686 – 692; Weeder ER, *et al. Clinical and Applied Thrombosis/Hemostasis,* 2016; DOI: 10.1177/1076029616651147.

Call attention to the cost related to PE management



A little arrogance

Academic Emergency Medicine
Official Journal of the Society for Academic Emergency Medicine

ORIGINAL CONTRIBUTION

Multicenter Trial of Rivaroxaban for Early Discharge of Pulmonary Embolism From the Emergency Department (MERCURY PE): Rationale and Design

Adam J. Singer, MD, Jim Xiang, PhD, Christopher Kabrhel, MD, Gino J. Merli, MD, Charles Pollack, MD, Victor F. Tapson, MD, Peter Wildgoose, PhD, and W. Frank Peacock, MD

HESTIA on MedCalc

November 1st, 2017

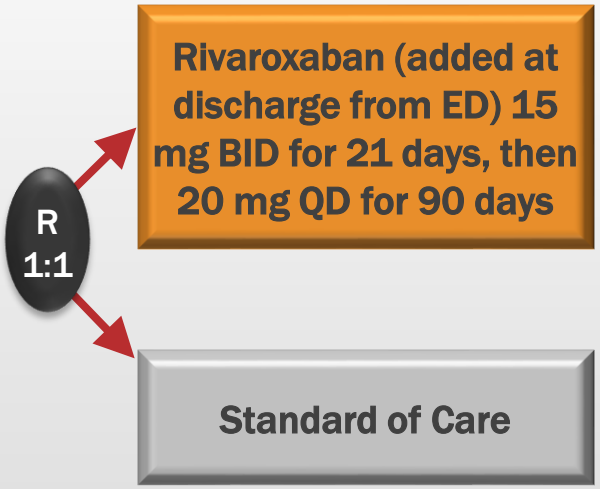
Purpose

- To determine if low-risk PE patients (as defined by Hestia criteria) discharged home from the ED on rivaroxaban have fewer total number of hospital days through Day 30 vs standard of care (SOC)

Peacock W, *et al. Annals of Emergency Medicine,* 2017; 70 (Suppl):A70.

Methods

- Multicenter, prospective, open-label, randomized, clinical trial
- ≥18 years of age with an ED diagnosis of low-risk PE (per HESTIA criteria)



Primary Endpoint

- Total number of inpatient hospital days (including the index admission) for VTE or bleeding-related events during the first 30 days after randomization

Secondary Endpoint

- A 90-day composite safety endpoint defined as International Society on Thrombosis and Haemostasis (ISTH) major bleeding, clinically relevant non-major bleeding, and mortality

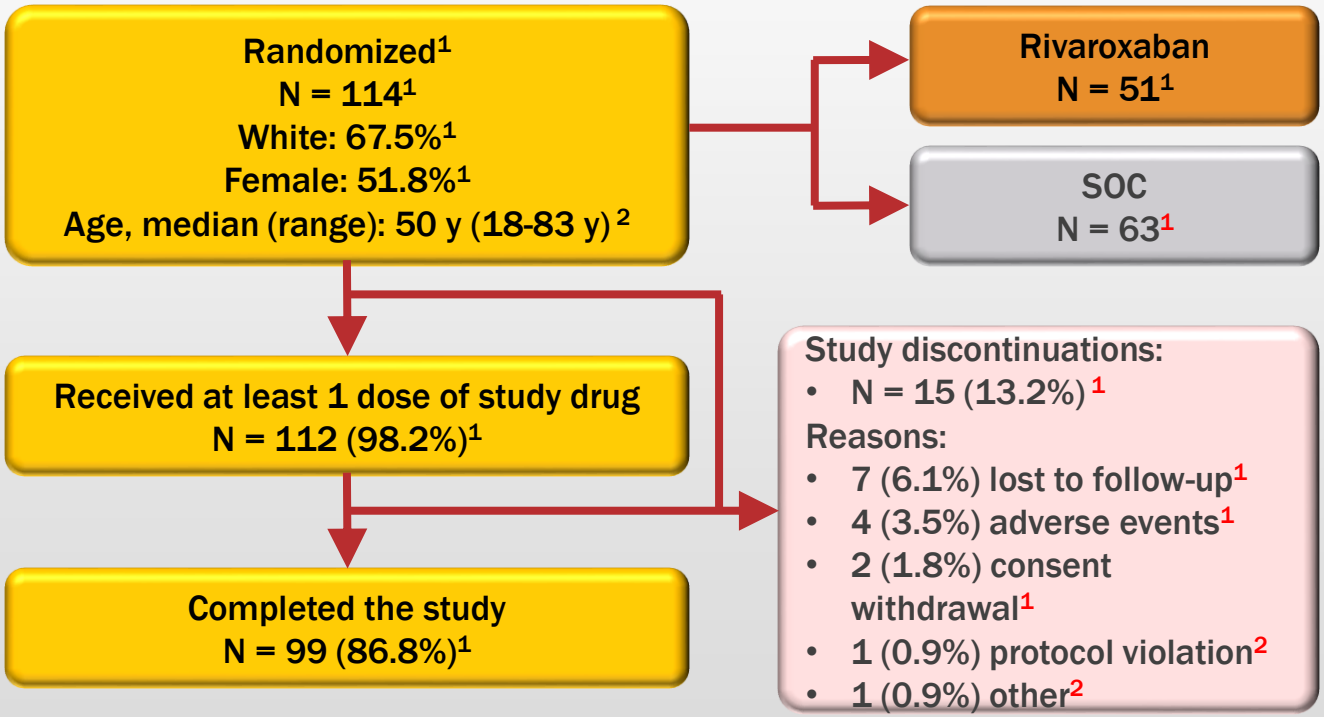
- Cohorts were compared using descriptive statistics and 95% confidence intervals (CI) for mean differences

BID, twice daily; QD, once daily.

Peacock W, *et al. Annals of Emergency Medicine,* 2017; 70 (Suppl):A70.

.

Results (1)



1. Peacock W, *et al. Annals of Emergency Medicine*. 2017; 70 (Suppl):A70; 2. Unpublished data.

Results (2)

Outcomes	SOC (Mean days)	Rivaroxaban (Mean days)	Mean Difference/Difference in Proportions (95% CI)
Median (range) treatment days	89[1] (2-105)[2]	91[1] (3-109)[2]	
In hospital related to bleeding/VTE @ 30 days (1° Endpoint)	1.4[2]	0.2[2]	–1.2 days[1] (–1.73 to –0.63)[1]
In hospital related to bleeding/VTE @ 90 days	1.5[2]	0.2[2]	–1.3 days[2] (–1.99 to –0.68)[2]
In hospital for any reason, @ 90 days	1.8[1]	0.8[1]	–0.8 days[1] (–1.96 to –0.61)[1]
Unplanned VTE/bleeding hospitalizations, n (%)	4 (6.3)[1]	2 (3.9)[1]	–0.02[1] (–0.21 to 0.16)[1]
Composite safety endpoint, n (%)	1 (1.6)[2]	1 (2)[2]	0.005[1] (–0.181 to 0.191)[1]

1. Peacock W, *et al. Annals of Emergency Medicine*. 2017; 70 (Suppl):A70; 2. Unpublished data.

Results (3)

- No ISTH major bleeding events, no deaths
- Composite safety endpoint was similar
  - difference in proportions, 0.005 (95% CI, –0.181 to 0.191)
- AEs were higher in the rivaroxaban group;
  - Overall SAEs and SAEs leading to hospitalization were similar in both groups

Peacock W, *et al. Annals of Emergency Medicine*. 2017; 70 (Suppl):A70.

Results (4)

Outcome	SOC (N = 63),[1] n (%)	Rivaroxaban (N = 49),[2] n (%)	*P* Value
Adverse events (AE)	25 (39.7)[1]	29 (59.2)[1]	0.04[2]
Serious AE	7 (11.1)[2]	5 (10.2)[2]	0.88[2]
AE leading to discontinuation of anticoagulation	4 (6.3)[2]	2 (4.1)[2]	0.60[2]
SAE leading to hospitalization	7 (11.1)[2]	5 (10.2)[2]	0.88[2]

1. Peacock W, *et al. Annals of Emergency Medicine*, 2017; 70 (Suppl):A70; 2. Unpublished data.

Results

Outcome	Standard of Care (N = 63), n (%)	Rivaroxaban (N = 49), n (%)
Treatment-emergent adverse event (TEAE)	24 (38.1)	28 (57.1)
Most frequently reported TEAEs by preferred term		
Chest pain	3 (4.8)	6 (12.2)
Dyspnea	7 (11.1)	1 (2.0)
Headache	3 (4.8)	2 (4.1)

Unpublished data.

Conclusion

- In this prospective, randomized, standard-therapy–controlled trial, low-risk ED PE patients discharged on rivaroxaban had similar rates of VTE and bleeding-related hospitalization as SOC, but had fewer total hospital days during the subsequent month.

Peacock W, *et al. Annals of Emergency Medicine,* 2017; 70 (Suppl):A70.

Summary

- Low risk PE SHOULD BE DISCHARGED
  - Especially if it is your mother

- Low risk is defined as
  - HESTIA
  - sPESI