

# Stop the Revolving Door: What You Need to Know About Postdischarge Prophylaxis for Acutely Ill Medical Patients

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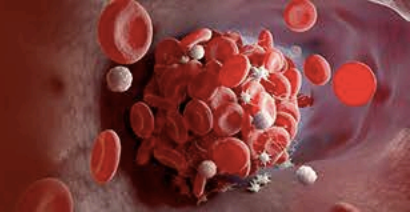
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# Agenda



## Presentation

Understanding the Acutely Ill Medical Patient

Present Guidelines on VTE Prophylaxis for Hospitalized Medical Patients Postdischarge

Implications of the MAGELLAN and MARINER Trials


Strategies to Improve Uptake of Optimal VTE Prophylaxis

Questions and Answers

Adjourn

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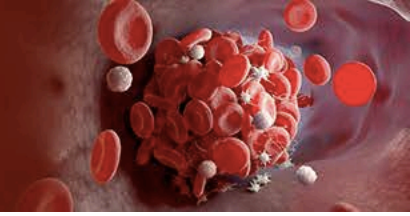
A detailed 3D rendering of a blood vessel's interior. The vessel wall is a textured, reddish-brown surface. The lumen is filled with various blood cells: numerous red blood cells (erythrocytes) of varying sizes and orientations, some appearing as bright red discs; several white blood cells (leukocytes) with distinct, multi-lobed nuclei and thin, radiating cytoplasmic extensions; and a few smaller, spherical platelets. The lighting creates a sense of depth and highlights the cellular details.

# Understanding the Acutely Ill Medical Patient

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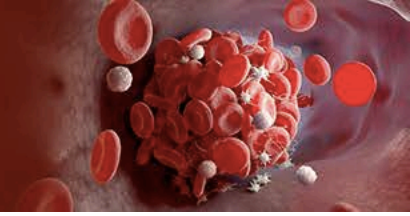
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# Acutely Ill Medical Patients



- Mean age 70 years and immobilized for  $\geq 3$  days
- CHF (NYHA class III or IV)
- Acute respiratory failure/COPD exacerbation
- Acute infection without septic shock
- Stroke
- Acute rheumatic disorders including acute lumbar pain, sciatica, or vertebral compression (caused by osteoporosis or tumor)
- Acute arthritis of the legs or acute episode of rheumatoid arthritis in the legs
- Inflammatory bowel disease exacerbation

# Discussion – Patient Case: James



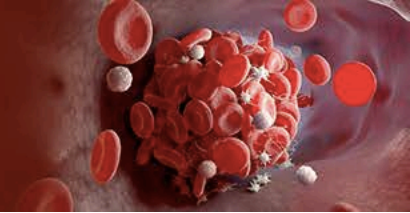
- James is a 75-year-old man with a history of hypertension, hyperlipidemia, and class III heart failure who had been admitted and treated for CHF exacerbation
- After a hospital stay of 5 days, he is now ready to be discharged
  - What risks for VTE does James have?

VTE = venous thromboembolism

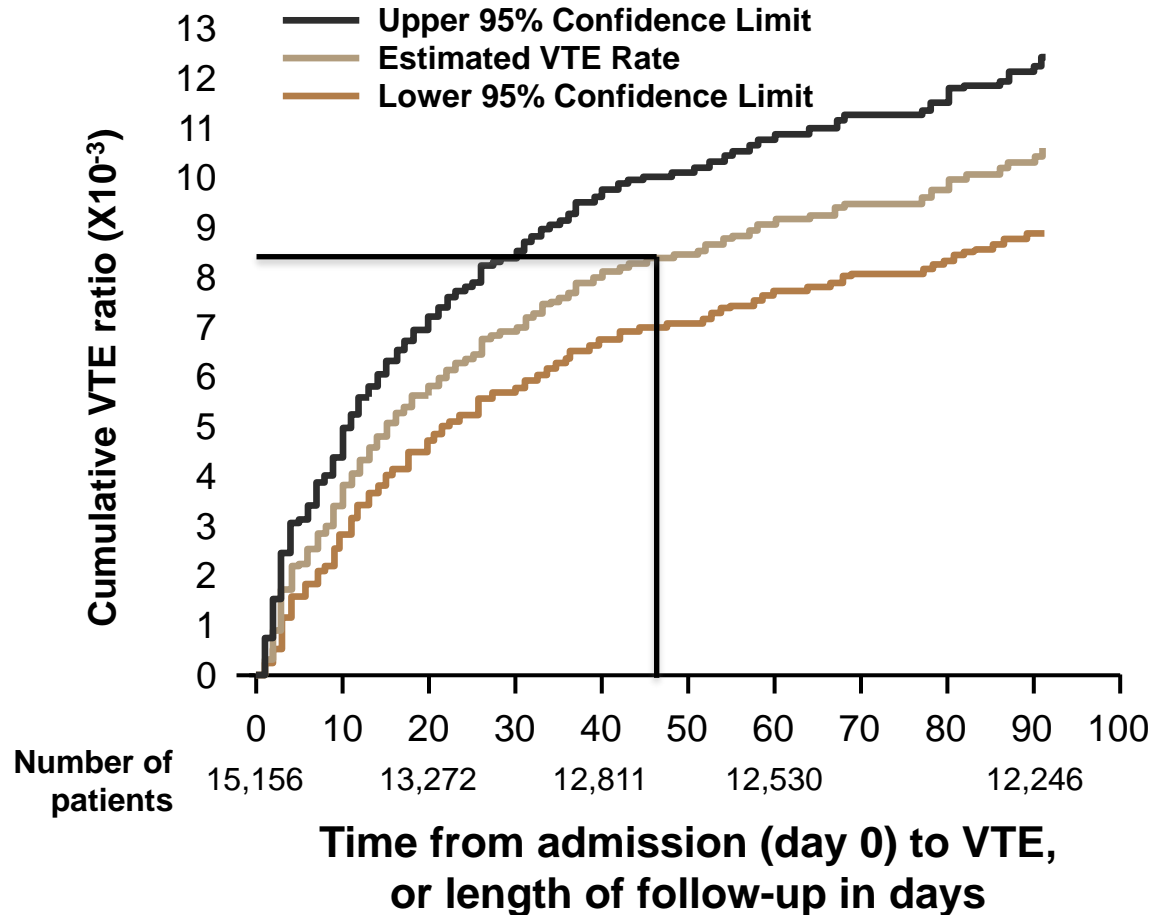
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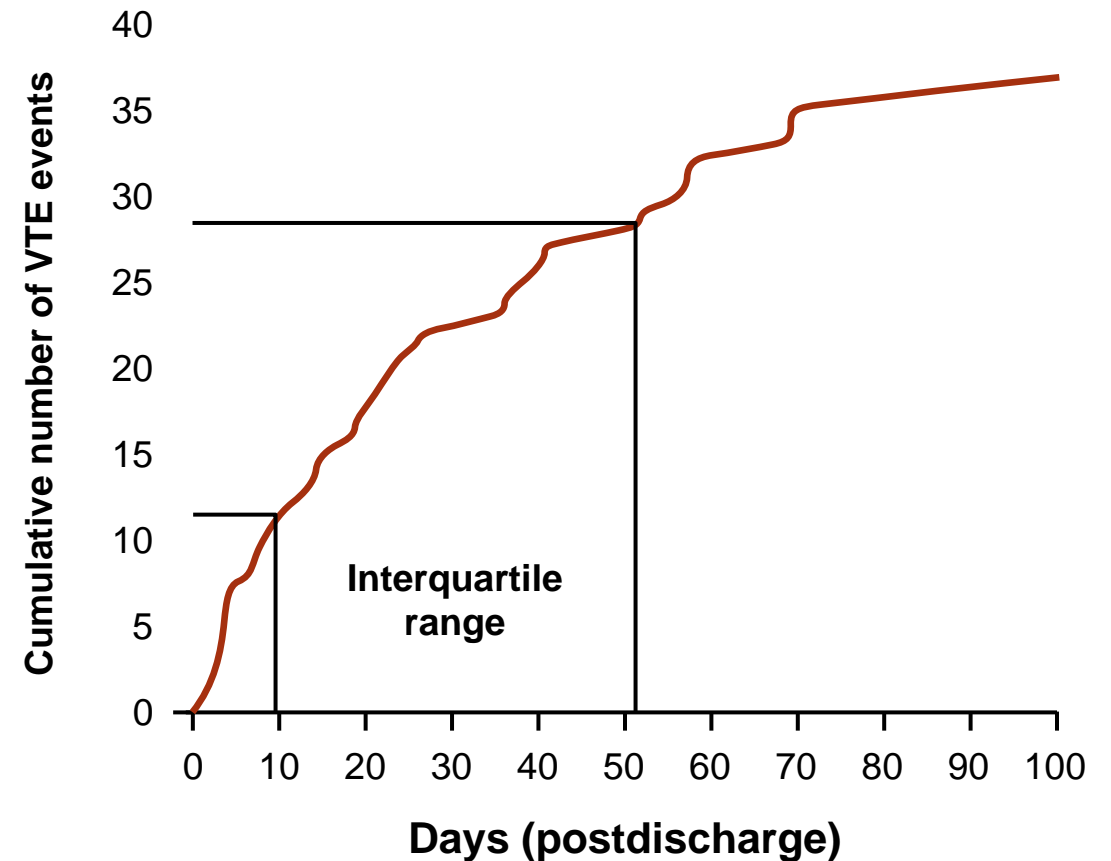
# VTE Risk Extends Beyond Hospitalization in Medical Patients



## Medically Ill Patients

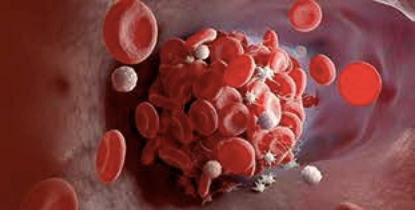


## High-Risk Elderly Medical Patients



**In high-risk elderly medical patients, 80% of VTEs occurred within 6 weeks after discharge.**

# VTE Risk-Assessment Models



## Padua

Baseline Features	Score
Active cancer	3
Previous VTE (with the exclusion of superficial vein thrombosis)	3
Reduced mobility	3
Already known thrombophilic condition	3
Recent ( $\leq 1$ month) trauma and/or surgery	2
Elderly age ( $\geq 70$ years)	1
Heart and/or respiratory failure	1
Acute myocardial infarction (MI) or ischemic stroke	1
Acute infection and/or rheumatic disorder	1
Obesity (BMI $\geq 30$ kg/m <sup>2</sup> )	1
Ongoing hormonal treatment	1

Low risk for VTE = score  $< 4$  points

High risk for VTE =  $\geq 4$  points

## IMPROVE

VTE Risk Factor	Points for the Risk Score
Previous VTE	3
Thrombophilia	2
Lower limb paralysis	2
Current cancer	2
ICU/CCU stay	1
Immobilization $\geq 7$ days	1
Age $> 60$ years	1

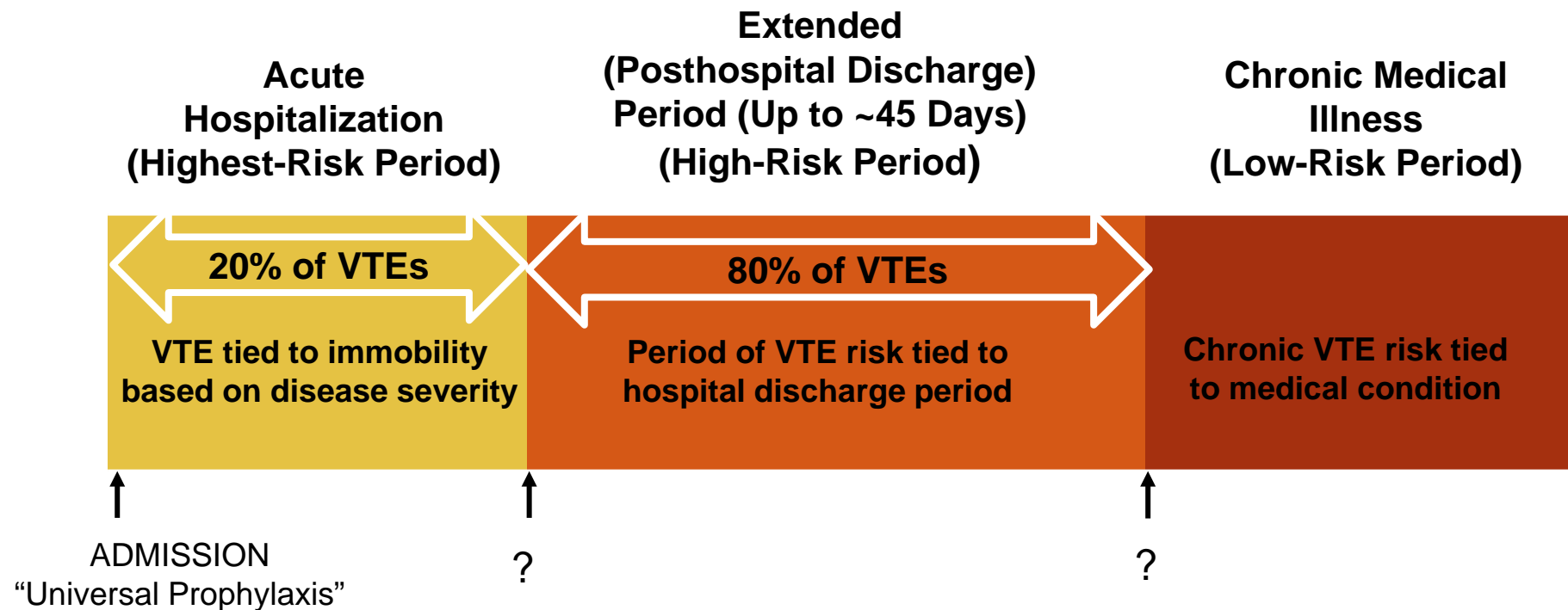
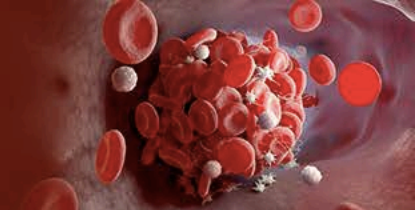
Low risk for VTE = score 0-1 points

Intermediate risk for VTE = 2-3 points

High risk for VTE =  $\geq 4$  points

\*IMPROVEDD score with elevated Dd (2 points)

# Periods of VTE Risk in Medically Ill



- Patient-related (intrinsic) and disease-specific (extrinsic) VTE risk factors
- Patient-related (intrinsic) and disease-specific (extrinsic) VTE risk factors
- Chronic medical illness (+/- intrinsic risk factors)



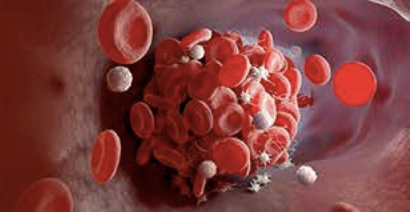
A detailed 3D rendering of a blood vessel's interior. The scene is filled with numerous red blood cells, depicted as biconcave discs, and several white blood cells, shown as larger, more irregularly shaped cells with visible nuclei. Small, star-shaped platelets are scattered throughout the fluid. The background shows the textured, undulating walls of the vessel, creating a sense of depth and movement.

# Present Guidelines on VTE Prophylaxis for Hospitalized Medical Patients Postdischarge

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# Antithrombotic Guideline Recommendations: ETP in Medical Patients




- For acutely ill hospitalized medical patients who receive an initial course of thromboprophylaxis, we suggest against extending the duration of thromboprophylaxis beyond the period of patient immobilization or acute hospital stay (grade 2B)<sup>1</sup>
- Extended duration of thromboprophylaxis may be considered in female patients, patients older than 75 years, or those with severe immobility, but should be determined on an individual basis<sup>2</sup>
- In acutely ill medical patients, [the panel] recommends inpatient over inpatient plus extended-duration outpatient VTE prophylaxis (strong recommendation, moderate certainty in the evidence of effects)<sup>3</sup>

ETP = extended thromboprophylaxis

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1. Kahn SR et al. *Chest*. 2012;141(2 suppl):e195S-226S. 2. Nicolaidis A et al. *Clin Appl Thromb Hemost*. 2013;19(2):163-71.  
3. Schunemann HJ et al. *Blood*. 2018;2(22):3198-225.

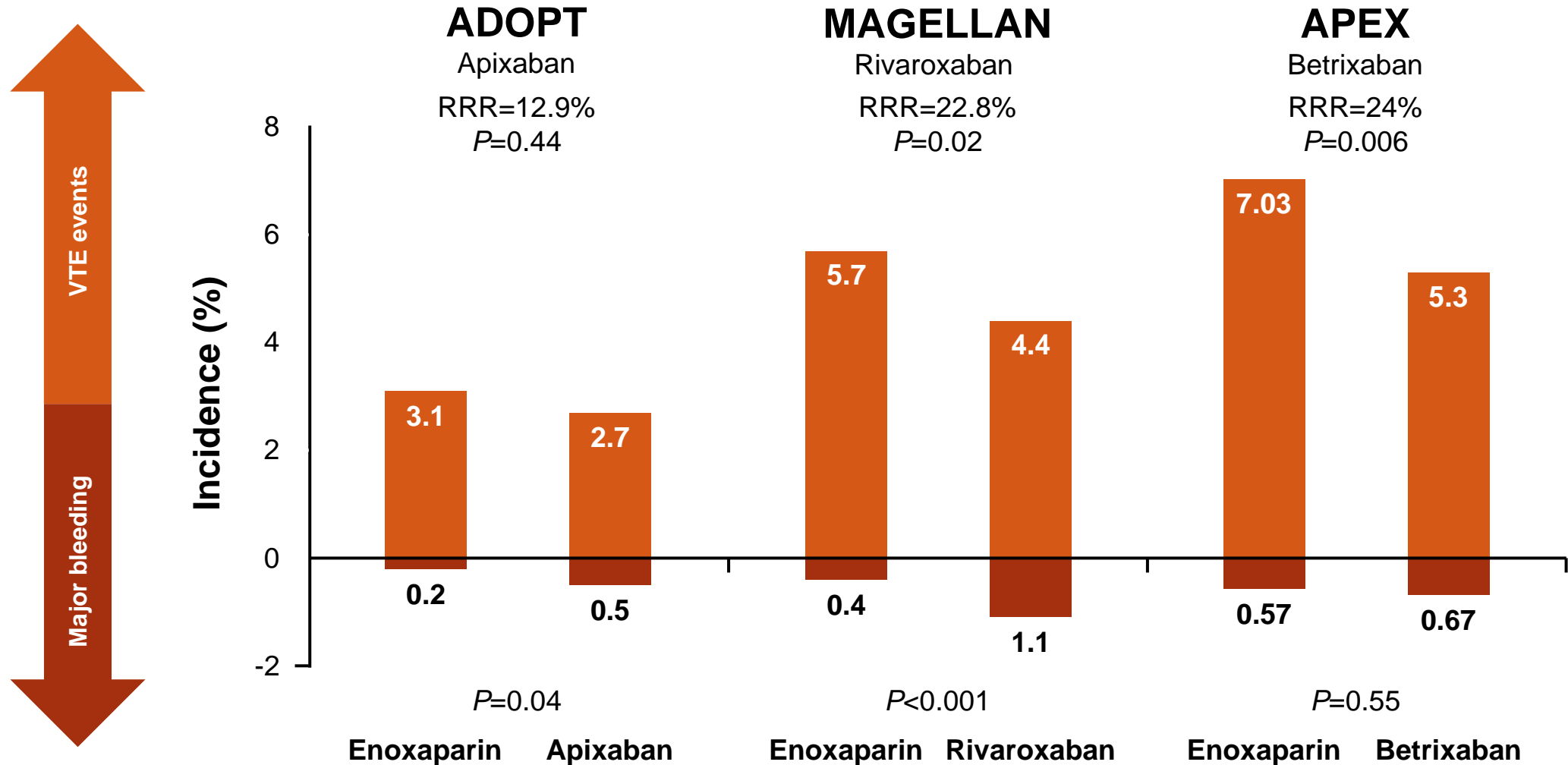
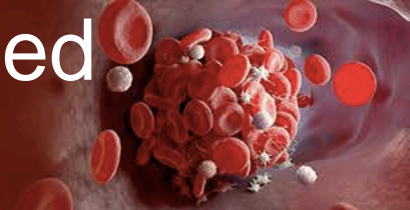
A detailed 3D rendering of a blood smear. The background is a dark, reddish-brown color. In the center, there is a dense cluster of red blood cells, which are depicted as biconcave discs with a textured surface. Interspersed among these are several white blood cells, which are larger and have a more irregular, granular appearance. Some white blood cells have thin, hair-like projections extending from their surfaces. The overall composition is centered and occupies most of the frame.

# Implications of the **MAGELLAN** and **MARINER** Trials

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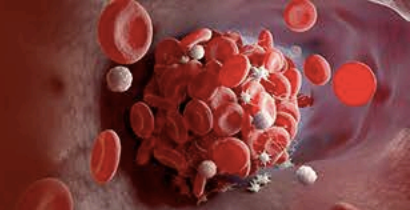
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# Comparison of Direct Oral Anticoagulant Trials of Extended Thromboprophylaxis in Acute Medically Ill Patients



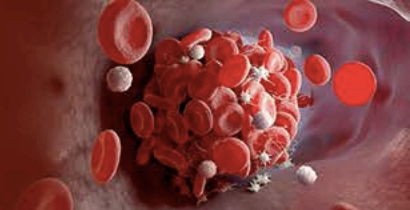
RRR = relative risk reduction

# MARINER Trial – Results



	<b>Rivaroxaban</b> no. of patients/total no. (%)	<b>Placebo</b> no. of patients/total no. (%)	<b>Hazard Ratio</b> (95% CI)
<b>Primary efficacy outcome</b> Symptomatic VTE or VTE-related death	50/6007 (0.83)	66/6012 (1.10)	0.76 (0.52-1.09) <i>P</i> =0.14
<b>Secondary efficacy outcomes</b>			
VTE-related death	43/6007 (0.72)	46/6012 (0.77)	0.93 (0.62-1.42)
Symptomatic VTE	11/6007 (0.18)	25/6012 (0.42)	0.44 (0.22-0.89)
Symptomatic VTE or death from any cause	78/6007 (1.30)	107/6012 (1.78)	0.73 (0.54-0.97)
Symptomatic VTE, MI, nonhemorrhagic stroke, or CV death	94/6007 (1.56)	120/6012 (2.00)	0.78 (0.60-1.02)
Death from any cause	71/6007 (1.18)	89/6012 (1.48)	0.80 (0.58-1.09)
<b>Safety outcome</b> Major bleeding	17/5982 (0.28)	9/5980 (0.15)	1.88 (0.84-4.23)

# Meta Analysis of ETP in Medically Ill Patients



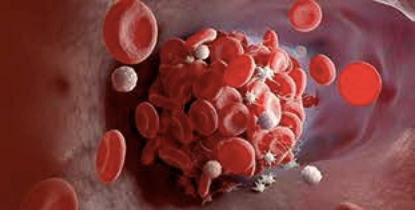
Trial	Year	Drug/Dose/Frequency		RR (95% CI)	EDT	No EDT
					n events/N total	
<b>Symptomatic VTE or VTE-related death</b>						
EXCLAIM	2010	Enoxaparin 40 mg OD		0.20 (0.08, 0.53)	5/2485	25/2510
ADOPT	2011	Apixaban 2.5 mg BID		0.45 (0.19, 1.03)	8/3255	18/3273
MAGELLAN	2013	Rivaroxaban 10 mg OD		0.73 (0.50, 1.09)	42/2967	59/3057
APEX	2016	Betrixaban 80 mg OD		0.65 (0.42, 0.99)	35/3721	54/3720
MARINER	2018	Rivaroxaban 10 mg OD		0.76 (0.53, 1.09)	50/6007	66/6012
Subtotal (I-squared=47.3%, P=0.108)				0.61 (0.44, 0.83)	140/18435	222/18572
<b>Major bleeding inclusive of fatal bleeding</b>						
EXCLAIM	2010	Enoxaparin 40 mg OD		2.51 (1.21, 5.22)	25/2975	10/2988
ADOPT	2011	Apixaban 2.5 mg BID		2.53 (0.98, 6.50)	15/3184	6/3217
MAGELLAN	2013	Rivaroxaban 10 mg OD		2.87 (1.60, 5.16)	43/3997	15/4001
APEX	2016	Betrixaban 80 mg OD		1.19 (0.67, 2.12)	25/3716	21/3716
MARINER	2018	Rivaroxaban 10 mg OD		1.89 (0.84, 4.23)	17/5982	9/5980
Subtotal (I-squared=22.8%, P=0.269)				2.04 (1.42, 2.91)	125/19854	61/19902
NOTE: Weights are from random effects analysis						

← Favors EDT      Favors No EDT →

**Reduction of symptomatic VTE and VTE-related death by 40%**  
**RR 0.61, 95% CI: 0.44-0.83, P=0.002**  
**2-fold increase in major and fatal bleeding**  
**RR 2.04, 95% CI: 1.42-2.91, P<0.001**

BID = twice a day; EDT = extended-duration thromboprophylaxis;  
 OD = once a day; RR = risk ratio

# Key Exclusion Criteria Applied to MAGELLAN



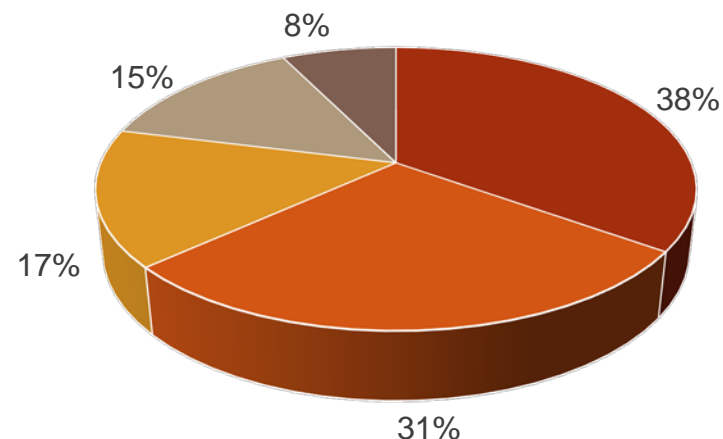
## 5 key risk factors for major bleeding were identified and applied as exclusion criteria to MAGELLAN

1. Active cancer
2. Dual antiplatelet therapy (DAPT) at baseline
3. Any bleeding within 3 months prior to or during hospitalization
4. Active gastroduodenal ulcer within 3 months or currently symptomatic
5. Bronchiectasis or pulmonary cavitation

80% of the MAGELLAN population had none of the above risk factors for bleeding.

### Exclusion Criteria

- Active cancer
- Bleeding within 3 months
- Bronchiectasis/pulm cavitation
- DAPT
- Active GI ulcer within 3 months

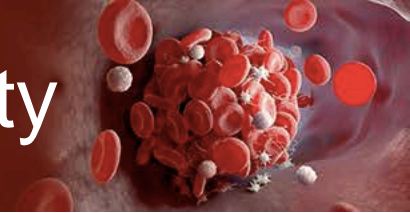


Note: Some subjects had more than one exclusion

**Safety, efficacy, and benefit-risk analysis were evaluated in this subpopulation.**

GI = gastrointestinal

# MARINER-Like Subpopulation From MAGELLAN Safety



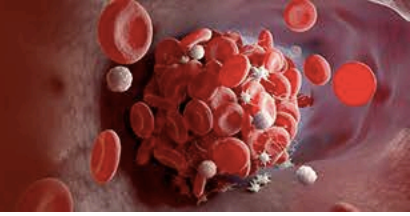
	MAGELLAN			MAGELLAN Subpopulation		
Safety Population*	Rivaroxaban N=3997	Enoxaparin N=4001	RR (95% CI)	Rivaroxaban N=3218	Enoxaparin N=3229	RR (95% CI)
<b>Rivaroxaban-enoxaparin/placebo treatment phase (day 1 to 35)*</b>						
Clinically relevant bleeding	164 (4.1%)	67 (1.7%)	2.455 (1.854-3.251)	114 (3.5%)	49 (1.5%)	2.345 (1.685-3.264)
Major bleeding	43 (1.1%)	15 (0.4%)	2.867 (1.596-5.149)	22 (0.7%)	15 (0.5%)	1.480 (0.771-2.842)
Clinically relevant nonmajor bleeding	124 (3.1%)	52 (1.3%)		93 (2.9%)	34 (1.1%)	
Fatal bleeding	7 (0.2%)	1 (<0.1%)		3 (<0.1%)	1 (<0.1%)	
<b>Rivaroxaban-enoxaparin treatment phase (day 1 to 10)*</b>						
Clinically relevant bleeding	111 (2.8%)	49 (1.2%)	2.272 (1.628-3.171)	80 (2.5%)	35 (1.1%)	2.306 (1.556-3.418)
Major bleeding	24 (0.6%)	11 (0.3%)	2.181 (1.070-4.445)	13 (0.4%)	11 (0.3%)	1.191 (0.535-2.651)
Clinically relevant nonmajor bleeding	88 (2.2%)	38 (0.9%)		67 (2.1%)	24 (0.7%)	
Fatal bleeding	5 (0.1%)	1 (<0.1%)		1 (<0.1%)	1 (<0.1%)	

**The risk of major bleeding associated with rivaroxaban was reduced in both treatment phases in the MAGELLAN subpopulation.**

\*On treatment + 2 days.

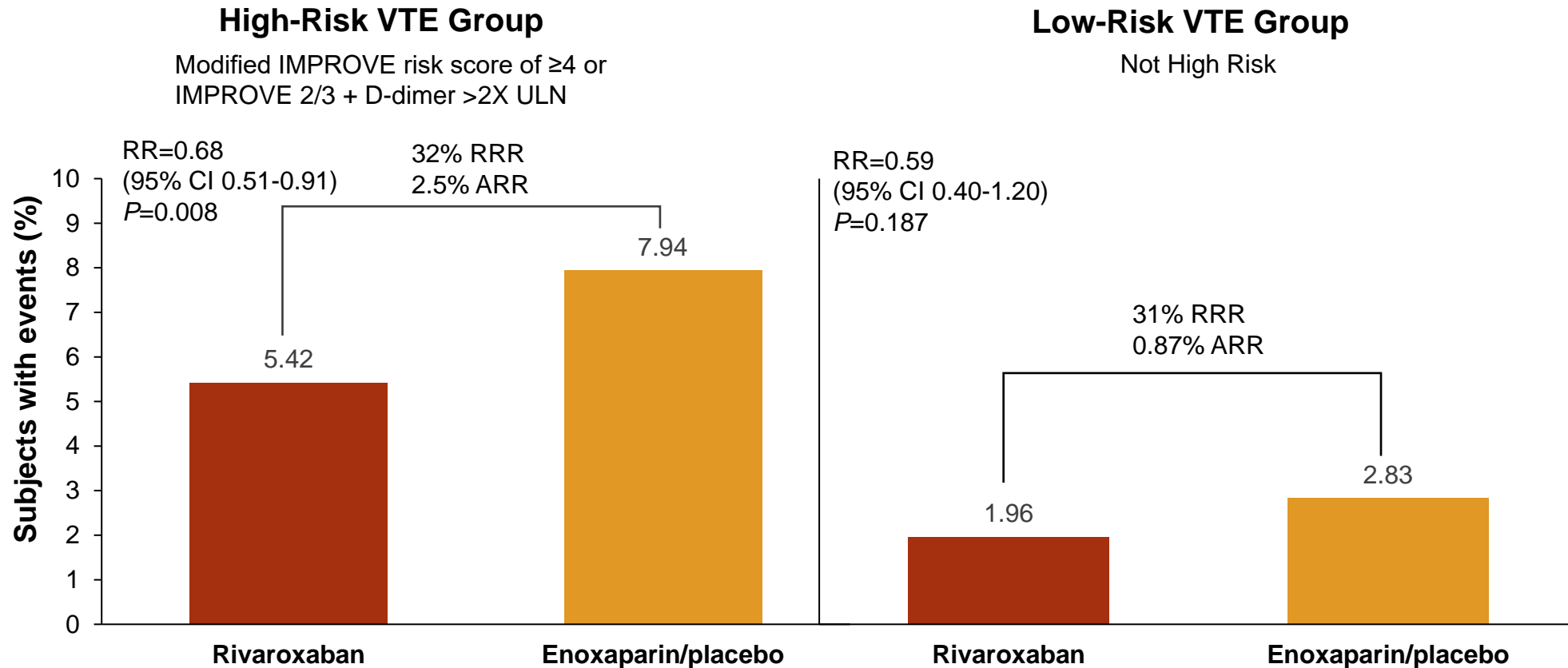


# IMPROVE + DD Subgroup in MAGELLAN Subpopulation



Predicts a nearly 3-fold higher VTE risk group for ET

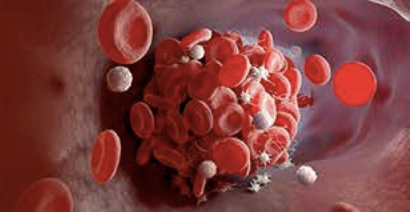
## Primary Efficacy\* (MAGELLAN Subpopulation - IMPROVE Subgroup, mITT D35)



\*Primary efficacy = composite of symptomatic nonfatal PE, symptomatic DVT, VTE death, asymptomatic proximal lower DVT.

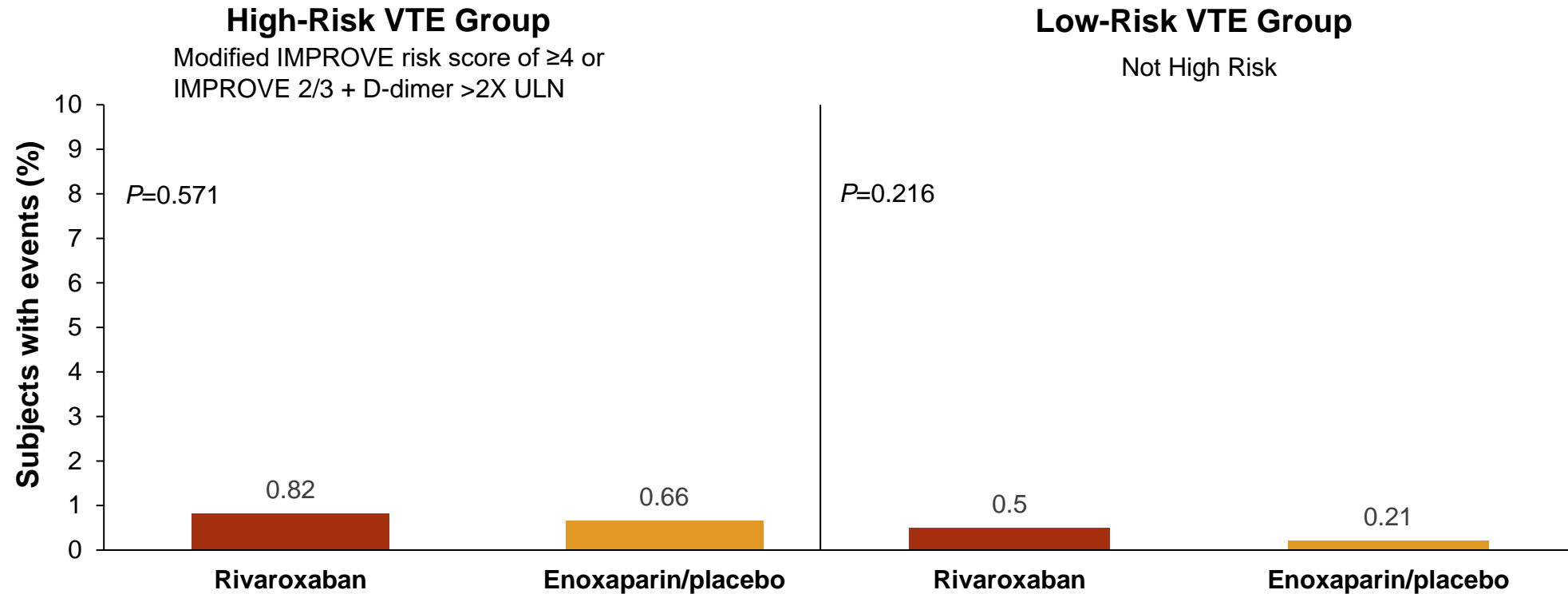
ARR = absolute risk reduction; DD = D-dimer; DVT = deep vein thrombosis; ET = extended thromboprophylaxis; mITT = modified intention to treat; PE = pulmonary embolism; ULN = upper limit of normal

# IMPROVE + DD Subgroup in MAGELLAN Subpopulation (cont)



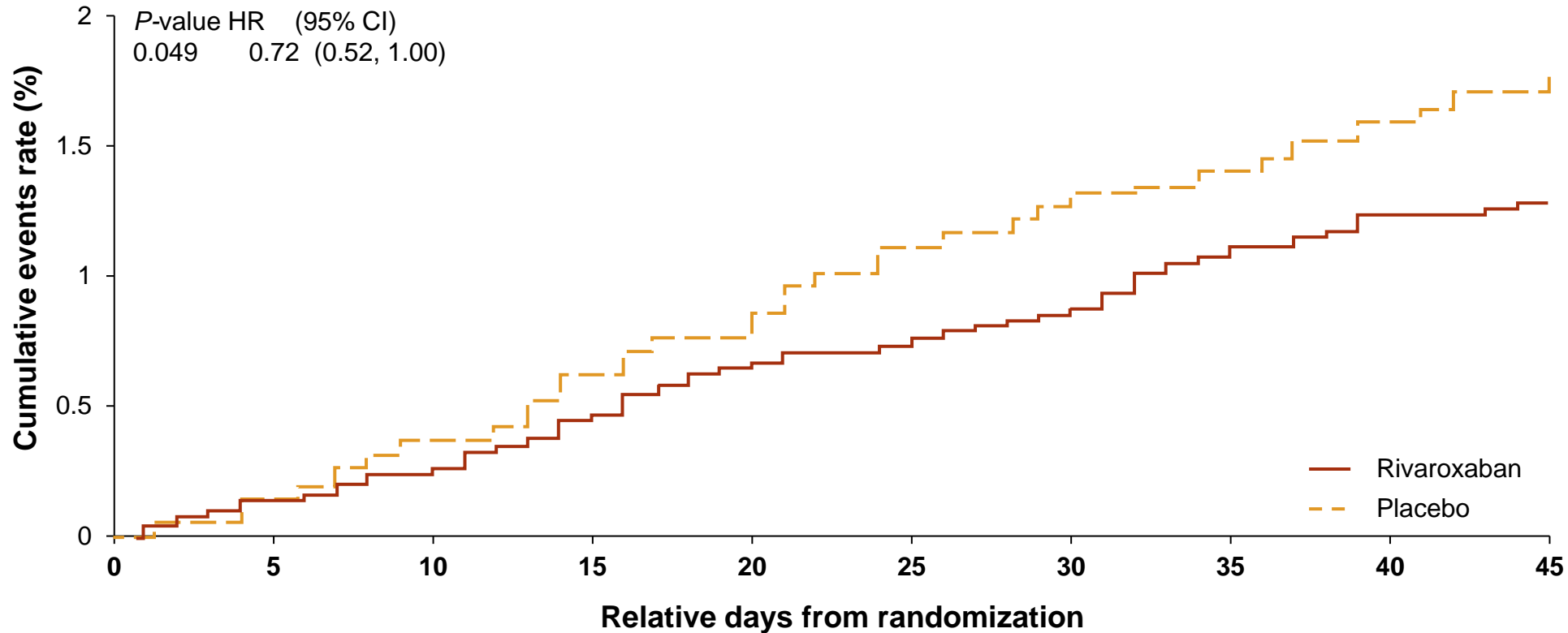
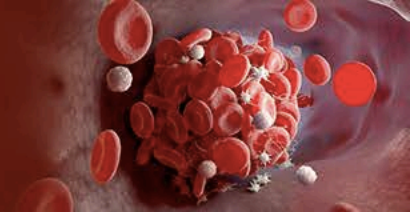
Predicts a nearly 3-fold higher VTE risk group for ET

## ISTH Major Bleeding (MAGELLAN Subpopulation – IMPROVE Subgroup, Safety)



ISTH = International Society on Thrombosis and Haemostasis

# Rivaroxaban 10 mg Reduces Major and Fatal Vascular Events\*



## Subjects at risk

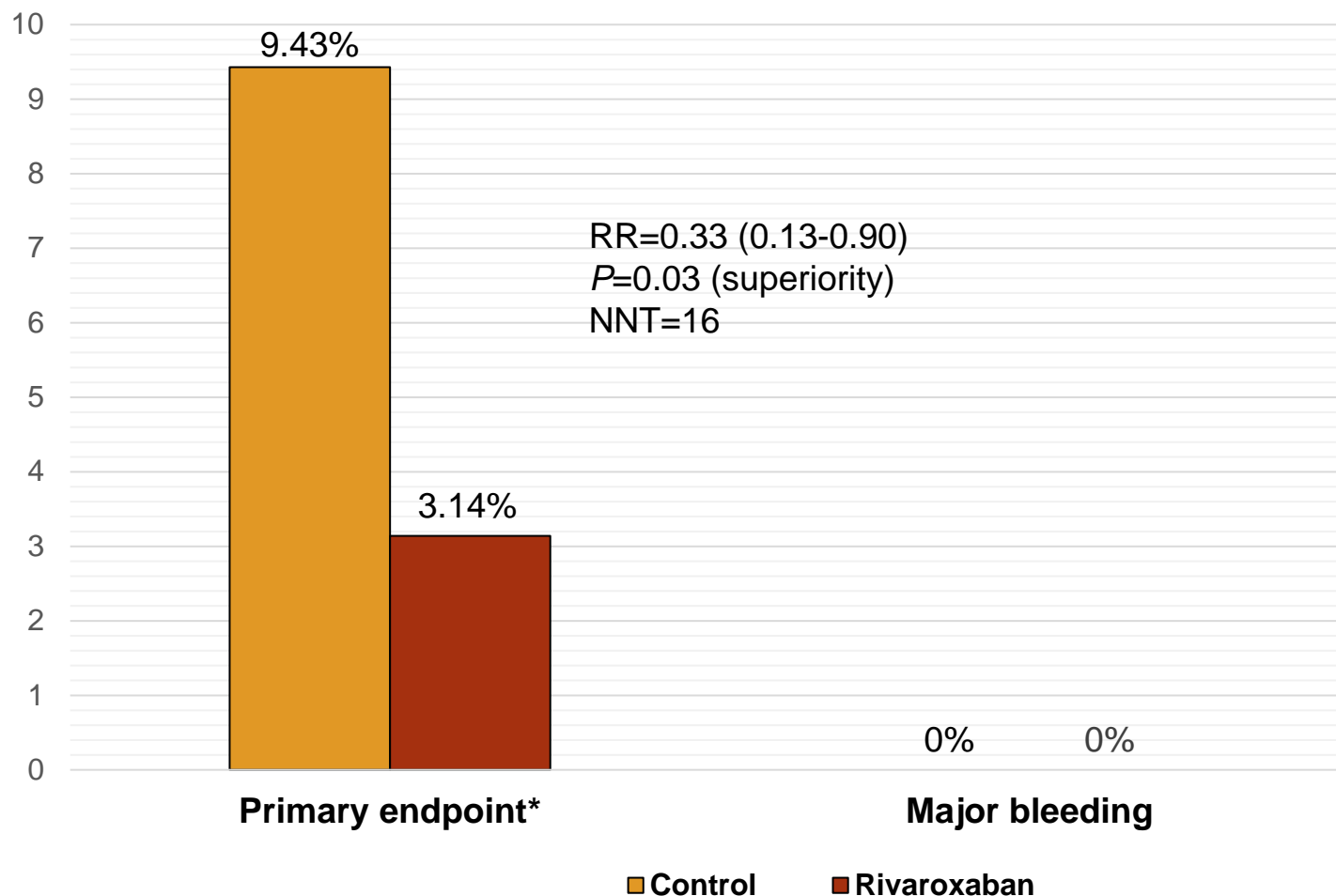
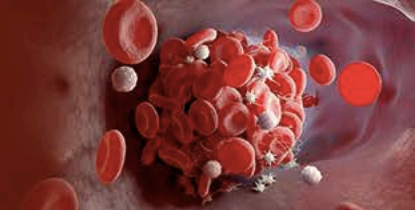
Rivaroxaban	4909	4895	4883	4873	4861	4852	4846	4833	4827	0
Placebo	4913	4896	4881	4866	4852	4835	4821	4815	4802	0

\*Symptomatic VTE, MI, stroke, CV death

**Prevented 40 major or fatal vascular events (symptomatic VTE, MI, stroke, CV death) at the cost of almost no critical site/fatal bleeds per 10,000 patients = 24,000 patients (NNT 260/NNH 200000)**

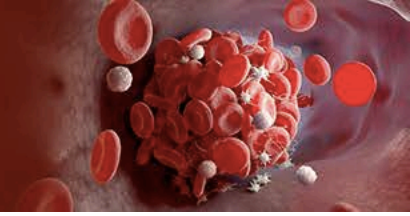
HR = hazard ratio; NNT = number needed to treat; NNH = number needed to harm

# MICHELLE Trial With Extended Rivaroxaban in Hospitalized COVID-19 Patients



\*Composite of symptomatic VTE, VTE-related death, asymptomatic VTE (Doppler and Angio CT scan) and symptomatic ATE, MI, nonhemorrhagic stroke, (MALE), and CV death at day 35.

# Discussion Topics



How have the MAGELLAN, MARINER, and MICHELLE trials influenced your clinical practice?

Should we incorporate D-dimer testing into our care of patients with risk of VTE? Why or why not?

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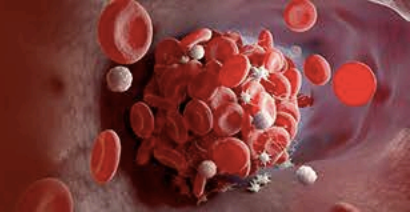
A detailed 3D rendering of a blood clot. The central part is a dense, tangled mass of red blood cells (erythrocytes) and white blood cells (leukocytes). The red blood cells are depicted as biconcave discs, while the white blood cells are smaller and more irregular in shape. The entire structure is set against a dark, reddish-brown background that suggests the interior of a blood vessel. The lighting is dramatic, highlighting the texture and color of the cells.

# Strategies to Improve Uptake of Optimal VTE Prophylaxis

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# VTE Pharmacy Intervention Management Program: Pharmacist Alert Using a VTE RAM

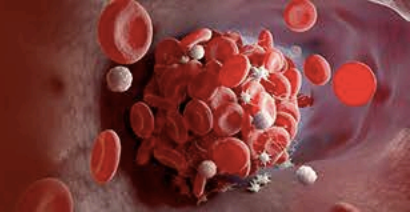


2006 vs 2007	Appropriate Prophylaxis		Preventable VTE	
	Improvement (95% LCL, UCL)	P-value	Reduction (95% LCL, UCL)	P-value
<b>Critical care</b>	2.483 (1.668, 3.697)	0.0001	84% (98%, 116%)	0.0699
<b>Surgical</b>	1.582 (1.308, 1.914)	0.0001	89% (18%, 99%)	0.0313
<b>Medical</b>	2.057 (1.504, 2.814)	0.0001	57% (85%, 123%)	0.1134
<b>Total discharges</b>	1.839 (1.589, 2.129)	0.0001	74% (44%, 88%)	0.0006

- Multifaceted intervention reduced incidence of preventable VTE by **74%** ( $P < 0.0006$ )
- Nonsignificant reduction from 10 to 4 “preventable” PEs

LCL = lower control limit; RAM = risk-assessment model; UCL = upper control limit

# Health Informatics Technology/Electronic Alerts and VTE RAMs in Hospitalized Patients



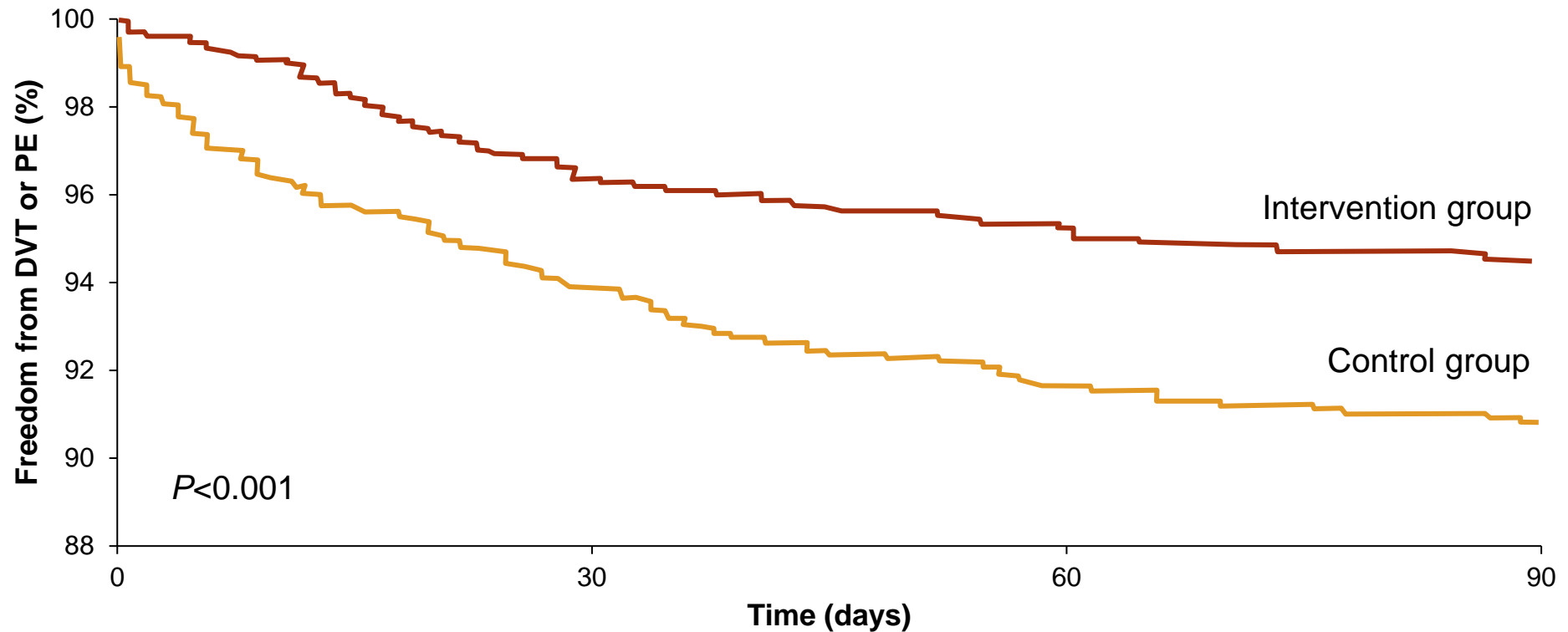
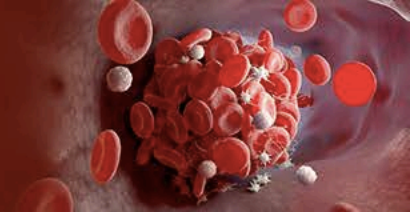
VTE Prophylaxis at Discharge		
Prophylactic Measures	Alert	Control
Any prophylaxis, n (%)	278 (22)	122 (9.7)
Mechanical prophylaxis, n (%)	46 (3.7)	31 (2.5)
Pneumatic compression device	6 (13)	2 (6.5)
Graduated compression stockings*	29 (63)	7 (23)
Inferior vena cava filter*	13 (28)	22 (71)
Pharmacologic prophylaxis, n (%)*	234 (19)	97 (7.7)
Unfractionated heparin	15 (6.4)	12 (12)
Enoxaparin	130 (56)	52 (54)
Warfarin*	123 (53)	29 (30)
Fondaparinux	8 (3.4)	3 (3.1)
<p>Means are tested with 2-sample <i>t</i> test; medians are tested with the Mann-Whitney U test; proportions are tested with the chi-squared test or Fisher's exact test. Patients could receive more than one type of prophylaxis.  <math>P \geq 0.05</math> unless otherwise noted.            *<math>P &lt; 0.001</math>.</p>		

## Physician Alert at Discharge Using VTE RAM

12% increase in rate of pharmacologic prophylaxis (22% vs 9.7%,  $P < 0.001$ )



# Health Informatics and Electronic Alerts to Prevent VTE



## Numbers at risk

Intervention group	1255	977	900	853
Control group	1251	876	893	839

The computer alert system reduced the risk of VTE by 41% during the first 90 days following hospitalization.

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# Example of a Discharge Alert

Best Practice Advisory Discharge, Donald

Important (1 Advisory)

**Your hospitalized patient is at risk for DVT and PE after discharge**

Your patient has an increased risk for DVT and PE after hospital discharge and is not ordered for preventive anticoagulation upon discharge.

What to do?

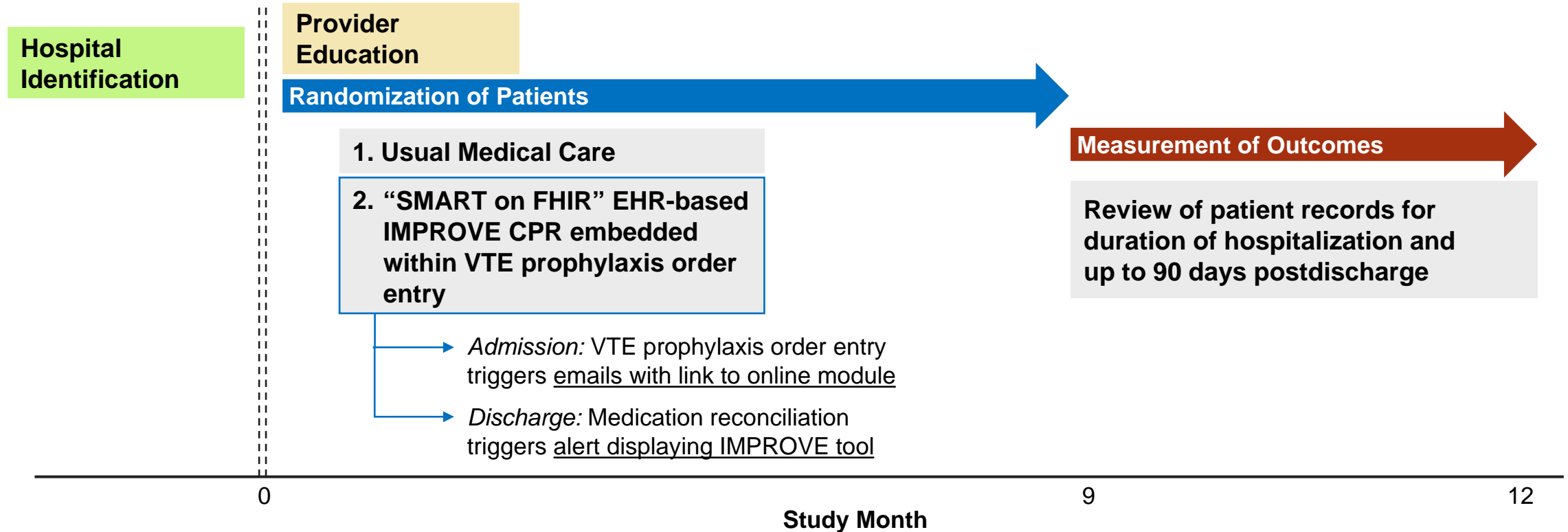
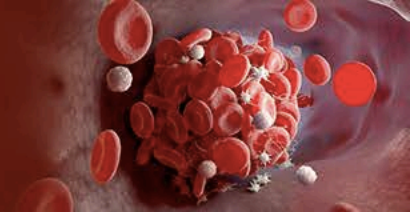
- 1) Prescribe extended-duration prophylactic anticoagulation
- 2) Learn more about [extended-duration prophylactic anticoagulation in medically ill patients](#) from the evidence-based medical literature
- 3) Defer prescribing extended-duration prophylactic anticoagulation at this time

Open Order Set: Extended-Duration VTE Prevention.

Accept Cancel

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# IMPROVE-DD Study Flow Chart – Cluster Randomization (NT=4 Hospitals) NCT04768036

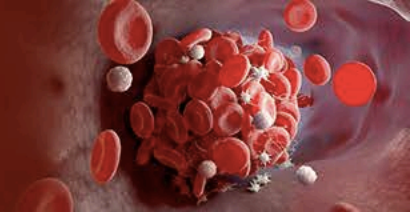


## Statistical Assumptions

Based on previous published data from Northwell Health hospitals, assuming the VTE event rate to be 1.5% in the control group and 0.9% in the intervention group (a 40% RRR), a sample size of 10930 (5465 per cluster) is needed to achieve 80% power to detect the difference between the 2 groups at a significance level of 0.05 using a 2-sided Chi-squared test.

CPR = computerized patient record; EHR = electronic health record; FHIR = Fast Healthcare Interoperability Resource; RRR = relative risk reduction; SMART = Substitutable Medical Applications and Reusable Technologies; VTE = venous thromboembolism

# IMPROVE-DD Study Discharge VTE Risk Assessment



The screenshot displays a medical software interface for a discharge note. The left sidebar shows a navigation menu with 'Med Reconciliation' selected. The main content area is divided into sections: 'MEDICATION RECONCILIATION' and 'DISCHARGE MEDICATIONS'. Under 'MEDICATION RECONCILIATION', there is a 'Medication Reconciliation Status' box with a 'VTE Risk Assessment' button highlighted by a blue circle. Below this, the 'DISCHARGE MEDICATIONS' section lists various medications and their dosages.

Sections

- Discharge Note Provider
  - Discharge Note Provider
    - Hospital Course
    - Med Reconciliation**
    - Care Plan/Procedures
    - Follow Up
    - Quality Measures
    - Home Health
    - Document Complete

Copy Forward Refer to Note Modify Template |< << >> >|

Hospital Course **Med Reconciliation** Care Plan/Procedures Follow Up Quality Measures Home Health Document Complete

**MEDICATION RECONCILIATION**

**Medication Reconciliation**

**Medication Reconciliation Status**  Click to Modify M

Admission Reconciliation is Completed  
Discharge Reconciliation is Not Complete

**VTE Risk Assessment**

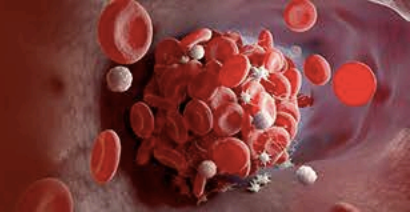
**DISCHARGE MEDICATIONS**

amLODIPine 10 mg oral tablet: 1 tab(s) orally once a day (in the morning)  
ferrous sulfate 325 mg (65 mg elemental iron) oral tablet: 1 tab(s) orally once a day  
Green Soap topical liquid: Apply topically to affected area 2 times a day  
Lasix 20 mg oral tablet: 3 tab(s) orally once a day  
melatonin 5 mg oral tablet: 1 tab(s) orally once a day (at bedtime)  
omeprazole 20 mg oral delayed release capsule: 1 cap(s) orally once a day  
sucralfate 1 g oral tablet: 1 tab(s) orally 4 times a day (before meals and at bedtime)  
tolterodine 4 mg oral capsule, extended release: 1 cap(s) orally once a day (at bedtime)  
traZODone 50 mg oral tablet: 1 tab(s) orally once a day (at bedtime)

Retrieve Last Charted...  
Insert Default Values  
Clear Unsaved Data

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# IMPROVE-DD Study Discharge VTE Risk Assessment (cont)



VTE Risk Assessment

**Northwell Health**  
IMPROVEDD Risk Assessment for Venous Thromboembolism (VTE)

The validated IMPROVEDD risk assessment for VTE uses 7 variables present either at hospital admission, or during the course of hospitalization, to predict a person's risk of VTE.

Previous DVT <i>Value as of 2 weeks ago</i>	No 0	Yes +3
Known Thrombophilia	No 0	Yes +2
Cancer (active or history within 5 yrs) <i>Value as of 12 hours ago</i>	No 0	Yes +2
Current Lower Limb Paralysis	No 0	Yes +2
Immobility ≥1 Day	No 0	Yes +1
ICU/CCU Stay	No 0	Yes +1
Age > 60 Years Old <i>Value as of one hour ago</i>	No 0	Yes +1
D-Dimer ≥ 2x Upper Normal Limit <i>Value as of 5 minutes ago</i>	No 0	Yes +2

Clear Entries      Calculate Probability

Record Results & Proceed      Cancel

Calculations must be re-checked and should not be used alone to guide patient care, nor should they substitute for clinical judgement. [See our full disclaimer.](#)

Version 2020.06.4.0



**Northwell Health**  
IMPROVEDD Risk Assessment for Venous Thromboembolism (VTE)

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ICU/CCU Stay	No 0	Yes +1
Age > 60 Years Old <i>Value as of one hour ago</i>	No 0	Yes +1
D-Dimer ≥ 2x Upper Normal Limit <i>Value as of 5 minutes ago</i>	No 0	Yes +2

Clear Entries      Calculate Probability

**Risk of VTE: 2.2% (IMPROVE-DD score of 5)**

2.2%

.4% .7% 1.6% 2.2%

Record Results & Proceed      Cancel

Calculations must be re-checked and should not be used alone to guide patient care, nor should they substitute for clinical judgement. [See our full disclaimer.](#)

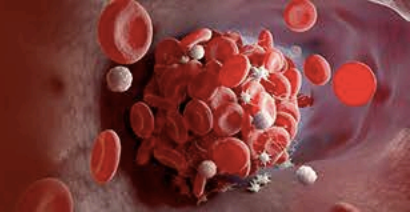
Version 2020.06.4.0

The 42-day VTE risk percentage will display.

Providers select **Record Results and Proceed.**



# IMPROVE-DD Study PredischARGE VTE Risk Assessment

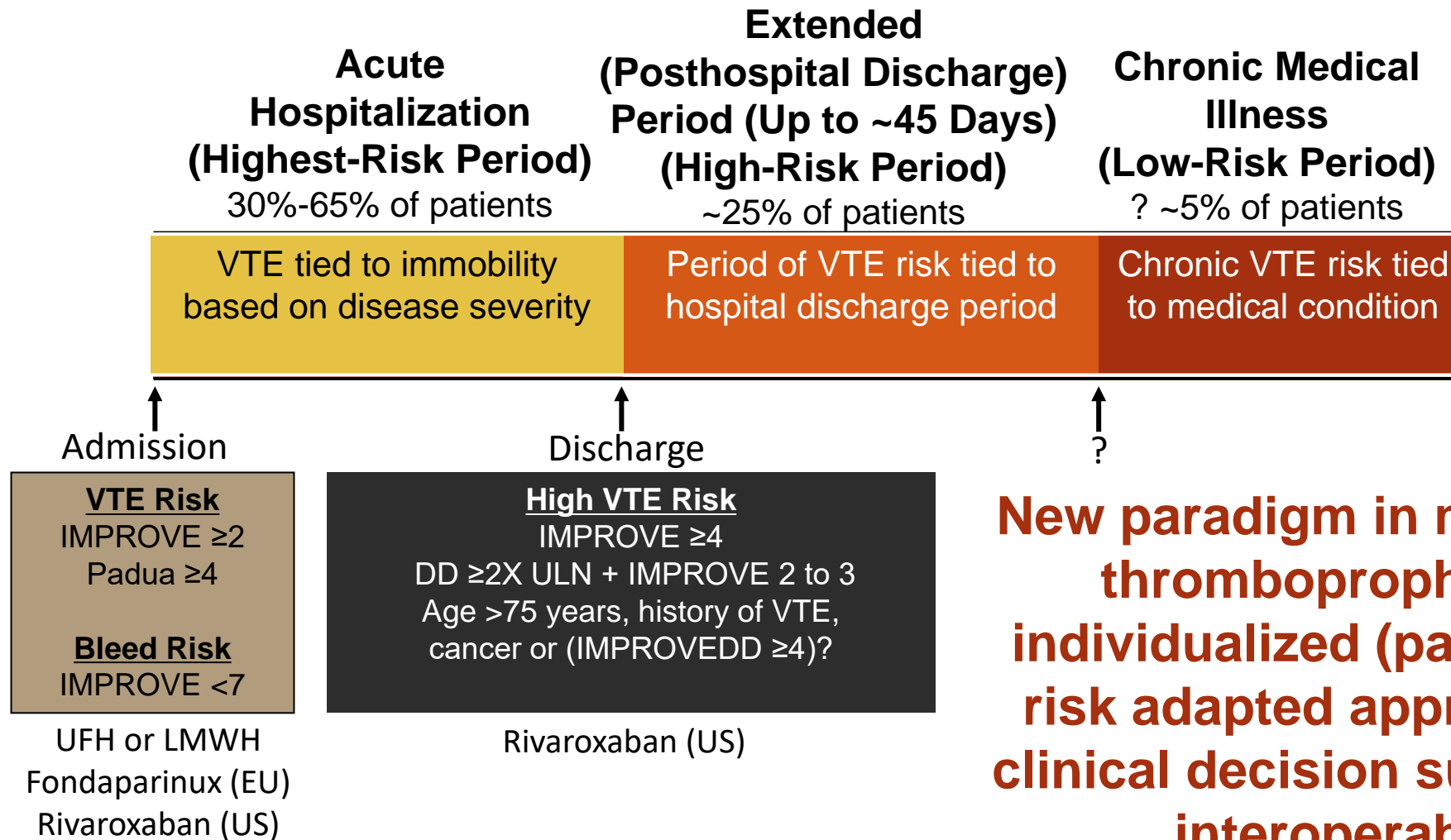
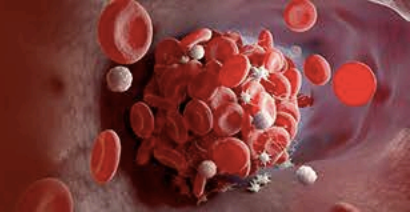


Based on the IMPROVE-DD score, providers see a postdischarge VTE prophylaxis recommendation.



The screenshot displays a medical software interface for a discharge note. The left sidebar shows a tree view with 'Discharge Note Provider' expanded, and 'Med Reconciliation' selected. The main content area has tabs for 'Hospital Course', 'Med Reconciliation', 'Care Plan/Procedures', 'Follow Up', 'Quality Measures', 'Home Health', and 'Document Complete'. The 'Medication Reconciliation' section is active, showing a 'Medication Reconciliation Status' box with a red 'VTE Risk Assessment' label. Below this, the 'DISCHARGE MEDICATIONS' list includes: amLODIPine 10 mg oral tablet: 1 tab(s) orally once a day (in the morning); ferrous sulfate 325 mg (65 mg elemental iron) oral tablet: 1 tab(s) orally once a day; Green Soap topical liquid: Apply topically to affected area 2 times a day; Lasix 20 mg oral tablet: 3 tab(s) orally once a day; melatonin 5 mg oral tablet: 1 tab(s) orally once a day (at bedtime); omeprazole 20 mg oral delayed release capsule: 1 cap(s) orally once a day; sucralfate 1 g oral tablet: 1 tab(s) orally 4 times a day (before meals and at bedtime); and tolterodine 4 mg oral capsule, extended release: 1 cap(s) orally once a day (at bedtime). The 'RECOMMENDED POST-DISCHARGE VTE PROPHYLAXIS' section is circled in blue and contains the text: 'Rivaroxaban 10mg oral tablet: 1 tablet once daily for 30 days'. At the bottom, there are buttons for 'Retrieve Last Charted...', 'Insert Default Values', and 'Clear Unsaved Data', along with checkboxes for 'Need Help?', 'Mark Note As: Results pending', 'Priority', 'Incomplete', 'E&M Calculation', and 'Charge Capture SuperBill', and 'Save' and 'Cancel' buttons.

# New Paradigm in Medically Ill Thromboprophylaxis



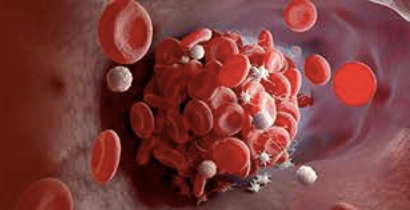
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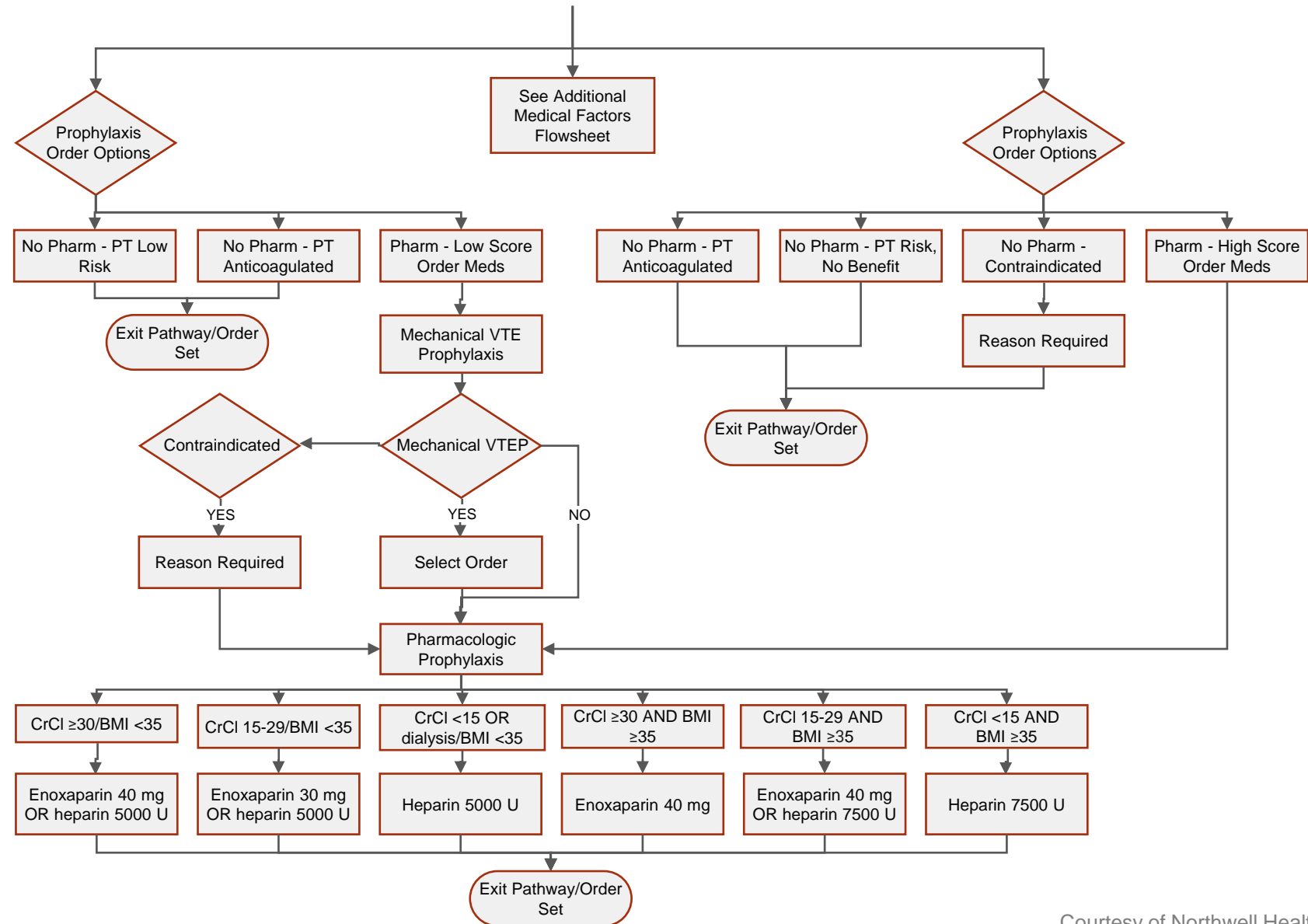
DD = D-dimer; EHR = electronic health record; LMWH = low-molecular-weight heparin; NHS = National Health Service; UFH = unfractionated heparin

Spyropoulos AC et al. *Thromb Haemost* 2017;117(9):1662-70.

# Health Informatics Technology/Electronic Alerts and VTE RAMs in Hospitalized Patients



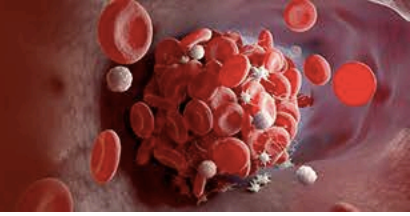
## VTE RAM and HL7 and SMART on FHIR Standards (AEHR “agnostic”)



AEHR = Academic Electronic Health Record; BMI = body mass index; CrCl = creatinine clearance; FHIR = Fast Healthcare Interoperability Resource; PT = patient; SMART = Substitutable Medical Applications, Reusable Technologies; VTEP = venous thromboembolism prophylaxis



# Discussion Topic



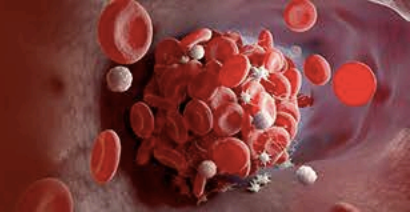
What tactics (if any) has your practice implemented to better ensure optimal VTE prophylaxis in these patients?

What tactics might and might not work in your clinical setting and why?

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# Role of the Multidisciplinary Team With Ensuring Optimal Postdischarge Prophylaxis



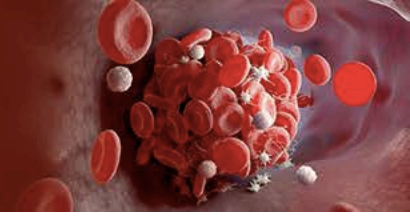
- Patient education
- Multidisciplinary clinical management programs
- Transitions of care
- Long-term care interventions

What are the implications for the hospitalist? Cardiologist? Other clinicians?

How do you work with your multidisciplinary team to ensure continuity of care?

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# Discussion – Patient Case: James



- James is a 75-year-old man with a history of hypertension, hyperlipidemia, and class III heart failure who had been admitted and treated for CHF exacerbation
- After a hospital stay of 5 days, he is now ready to be discharged
  - What strategies are you thinking about for James’s postdischarge care and why?
  - How would you work with your multidisciplinary team to ensure optimal postdischarge care for James?

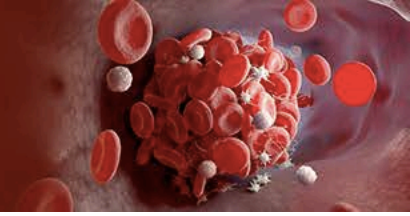
A detailed 3D rendering of a blood smear. The background is a dark, reddish-brown color. In the center, there is a dense cluster of red blood cells, which are depicted as biconcave discs with a textured surface. Interspersed among these are several white blood cells, which are larger and have a more irregular, star-like shape with visible granules. A few platelets are also visible as small, dark specks. The overall composition is centered and occupies most of the frame.

# Action Plan Discussion

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# Action Plan Discussion Topic



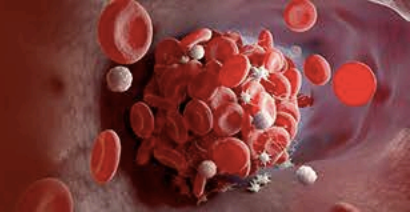
What have been the biggest hurdles for you to ensuring optimal VTE prophylaxis in acutely ill medical patients?

Discuss barriers related to:

- Patients
- Interdisciplinary team
- Health system (eg, formulary/insurance)
- Guidelines

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# Action Plan Discussion Topics



- What changes do you plan to make to better ensure optimal post-discharge VTE prophylaxis?
  - E.g. incorporation of nurse/pharmacist-led alerts or EHR alerts
- Which team members need to be involved?
- What resources do you need?
- What timelines/benchmarks do you have to be sure to implement these changes?

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A detailed 3D rendering of a blood vessel's interior. The central focus is a dense cluster of red blood cells, depicted as biconcave discs with a reddish-orange hue. Interspersed among them are several white blood cells, which are larger and have a more irregular, textured appearance. The background shows the smooth, undulating walls of the vessel, with a soft, warm light illuminating the scene from the right, creating a sense of depth and highlighting the individual cells.

**Thank you**

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