Nurse Education and Patient Engagement to Prevent Missed Doses of Venous Thromboembolism Prophylaxis in Hospitalized Patients

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@elliotthaut

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EQIC Webinar Fall 2022

Disclosures

- Some of this work has been funded by
  - Patient Centered Outcomes Research Institute (PCORI)
  - Agency for Healthcare Research and Quality (AHRQ)
  - National Heart Lung & Blood Institute (NIH/NHLBI)

Disclosures

- Member of the Board of Directors of the National Blood Clot Alliance (NBCA)
  - Unpaid, Volunteer

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Defect Free Care

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Measuring Defect Free VTE Prevention

- Defect-free VTE prevention process measure requires
  - (1) documentation of a standardized VTE risk assessment
  - (2) prescription of optimal, risk-appropriate VTE prophylaxis
  - (3) administration of all risk-appropriate VTE prophylaxis as prescribed

Lau, Circulation 2018

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Missed Doses of VTE Prophylaxis

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A Big Assumption

- As physicians, we assume that medication orders we place are consistently delivered
- But is that truly the case?
- Does prescription = administration?

Steps to Optimal Pharmacologic VTE Prophylaxis

Do Missed VTE Prophylaxis Doses Matter?

- **Methods**
  - 202 trauma and general surgery patients ordered enoxaparin
- **Results**
  - Overall incidence of DVT = 15.8%
  - 58.9% of patients missed >=1 dose
  - DVT compared missed vs. no missed doses
    - 23.5% vs. 4.8% ($p < 0.01$)

Louis, JAMA Surgery 2014

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Do Missed VTE Prophylaxis Doses Matter?

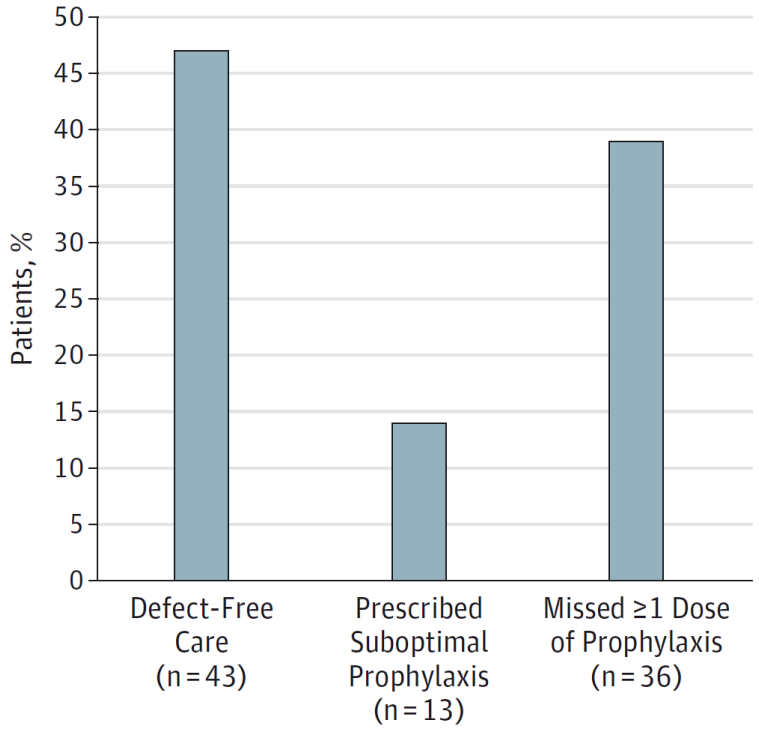
- **Methods**
  - 5327 colectomy patients at 39 hospitals
- **Results**
  - 13.3% of patients missed ≥1 dose
  - In high-risk cohort 2884 patients cancer or IBD missing ≥1 dose was significantly associated with increased VTE events
    - 4.0% vs 1.7%, p = 0.016
    - OR 2.41 (1.27-4.57)

Khorfan, Ann Surg 2021

Do Missed VTE Prophylaxis Doses Matter?

- 92 VTE patients
- 39% missed >=1 dose of prophylaxis

Figure. Categorization of Patients With Hospital-Acquired VTE By Process of Care Appropriateness

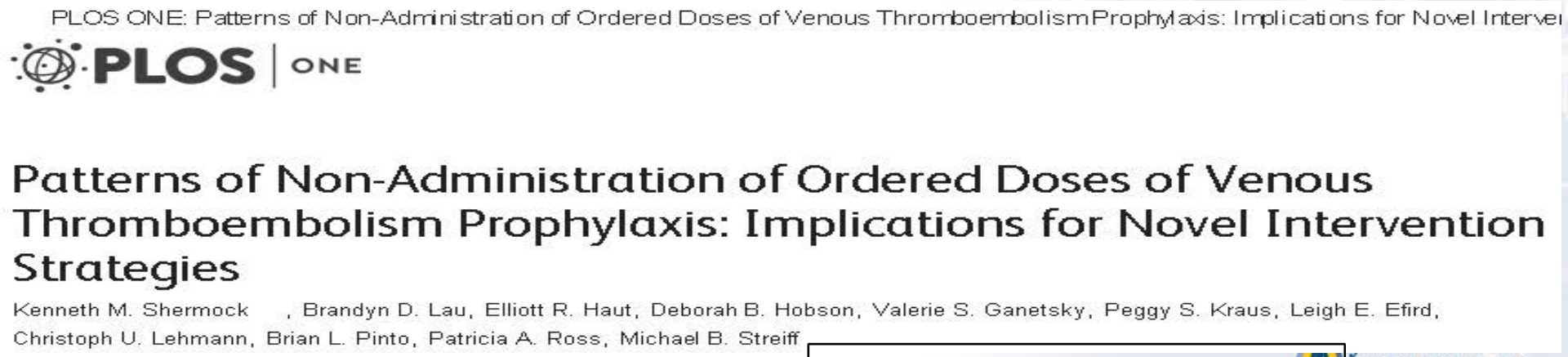


Of the 92 patients with a venous thromboembolism (VTE), 43 (47%) received defect-free care, while 49 (53%) had truly potentially preventable VTE and were in the prophylaxis-failure group (ie, 13 of 92 patients were prescribed suboptimal prophylaxis [14%], and 36 of 92 patients missed ≥1 dose of prescribed prophylaxis [39%]).

Haut, JAMA Surgery 2015

Missed Doses of VTE Prophylaxis at Johns Hopkins Hospital

- December 1, 2007 to June 30, 2008
  - >100,000 doses
  - 12% of doses not administered
    - Patient refusal most frequent (~60%) documented reason


PLOS ONE: Patterns of Non-Administration of Ordered Doses of Venous Thromboembolism Prophylaxis: Implications for Novel Interve

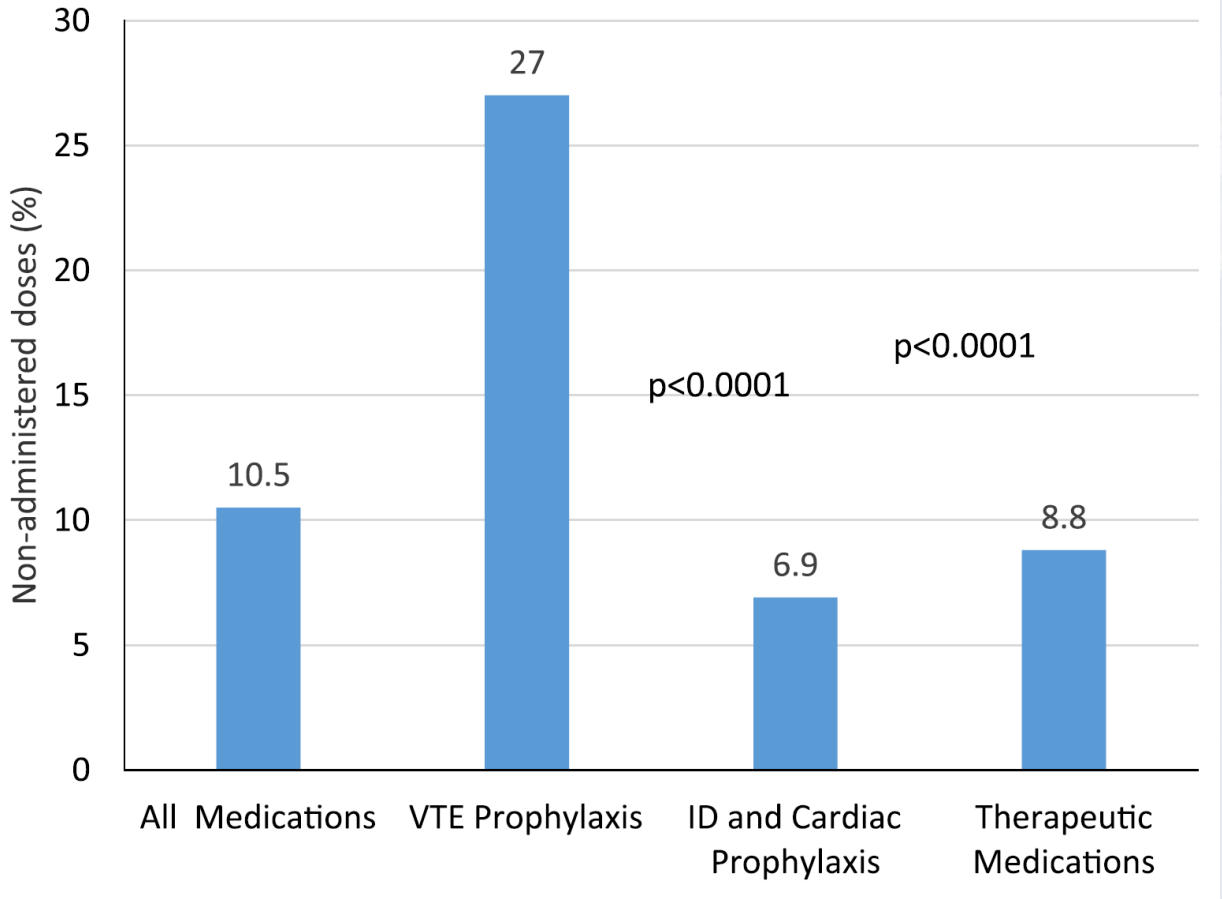
PLOS | ONE

Patterns of Non-Administration of Ordered Doses of Venous Thromboembolism Prophylaxis: Implications for Novel Intervention Strategies

Kenneth M. Shermock , Brandyn D. Lau, Elliott R. Haut, Deborah B. Hobson, Valerie S. Ganetsky, Peggy S. Kraus, Leigh E. Efird, Christoph U. Lehmann, Brian L. Pinto, Patricia A. Ross, Michael B. Streiff

Shermock, PlosOne 2013

Missed Prophylaxis Medications VTE vs. Other Types



Popoola, Thrombosis Research 2017

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Missed Doses Across Johns Hopkins Health System (470,000 doses)

All Patients Prescribed Pharmacologic Venous Thromboembolism (VTE) Prophylaxis

One Academic Hospital (n=24,709)		Three Community Hospitals (n=18,355)
10.9% 33,971/311,294	Proportion of VTE Prophylaxis Doses Not Administered (p<0.001)	**13.6%** 21,550/158,938
43.7%	Proportion of Patients who Miss ≥ 1 Dose (p=0.852)	**43.6%**

Lau, et al. JGIM 2017

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What's the Real Story Behind Missed Doses?

- "Hidden Barriers to Delivery of Pharmacologic Venous Thromboembolism Prophylaxis"
- Mixed methods study (quantitative/qualitative)
  - Quantitative Nursing survey
  - Qualitative observations of nurse/patient interaction
  - Focus groups with nurses

Elder, Journal of Patient Safety epub 2014

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What's the Real Story Behind Missed Doses? - Quantitative

- "I have the clinical knowledge and experience to determine if it is necessary to administer DVT/PE prophylaxis injections to patients."
  - AGREE 87%/79% medicine/surgery

Elder, Journal of Patient Safety epub 2014

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Is VTE Prophylaxis Optional?

- *"I push harder for my patients to accept heparin [prophylaxis] if they have, like, sickle cell disease, as opposed to say pneumonia or something where they are just here for [IV] antibiotics."*
- *"Sometimes, if it is the middle of the night and [LDUH] is the only medication I have to give a patient, I won't wake them up just to give VTE prophylaxis."*

Elder, Journal of Patient Safety epub 2014

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The Ambulation Myth

- *"We make the clinical decision all the time as to whether a patient needs VTE prophylaxis every day, based on how much the patient is ambulating."*
- *"Hey Ms. R, it's time for your heparin dose, but as long as I see you up, high-fiving me in the hallways, we can hold off for now."*

Elder, Journal of Patient Safety epub 2014

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The Ambulation Myth - BUSTED

cmajOPEN

Research

Effectiveness of ambulation to prevent venous thromboembolism in patients admitted to hospital: a systematic review

Brandyn D. Lau MPH, Patrick Murphy MD MPH MS, Anthony J. Nastasi MHS, Stella Seal MLS, Peggy S. Kraus PharmD, Deborah B. Hobson MSN, Dauryne L. Shaffer MSN, Christine G. Holzmueller MS, Jonathan K. Aboagye MBChB MPH, Michael B. Streiff MD, Elliott R. Haut MD PhD

Interpretation: We did not find high-quality evidence supporting ambulation alone as an effective prophylaxis for venous thromboembolism. Ambulation should not be considered an adequate prophylaxis for venous thromboembolism, nor as an adequate reason to discontinue pharmacologic prophylaxis for venous thromboembolism during a patient's hospital admission.

Lau, CMAJ Open 2020

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Our 1st PCORI Project

pcori | Patient-Centered Outcomes Research Institute

- Preventing Venous Thromboembolism: Empowering Patients and Enabling Patient-Centered Care via Health Information Technology

Principal Investigator
Elliott Haut, MD, PhD

Organization	Funding Announcement
Johns Hopkins University	Assessment of Prevention, Diagnosis, and Treatment Options
State	**Project Budget**
Maryland	$1,499,194
Year Awarded	**Project Period**
2013	3 years

http://www.pcori.org/research-in-action/improving-patient-nurse-communication-prevent-life-threatening-complication

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Our PCORI Objectives

- 1) Enable patients to make informed decisions about their preventive care by improving the quality of patient-nurse communication about the harms of VTE and benefits of VTE prophylaxis
- 2) Empower patients to take an active role in their VTE preventive care
- 3) Identify and facilitate active engagement of patients who are not administered doses of VTE prophylaxis using a real-time escalating alert

http://www.pcori.org/research-in-action/improving-patient-nurse-communication-prevent-life-threatening-complication

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Our PCORI Collaborators / Key Stakeholders

ClotCare Online Resource

Helping others improve lives through anticoagulation

National Blood Clot Alliance

Stop The Clot®

Patient and Family Advisory Council

http://www.pcori.org/research-in-action/improving-patient-nurse-communication-prevent-life-threatening-complication

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PCORI Website "Research in Action"

Research & Results

OUR PROGRAMS

RESEARCH WE SUPPORT

HOW WE SELECT RESEARCH TOPICS

RESEARCH METHODOLOGY

PCORNET: THE NATIONAL PATIENT-CENTERED CLINICAL RESEARCH NETWORK

RESEARCH IN ACTION

COLLABORATING WITH OTHER RESEARCH FUNDERS

Improving Patient-Nurse Communication to Prevent a Life-Threatening Complication

Hospitalized patients are at increased risk for potentially fatal blood clots in their legs and lungs; a Baltimore team is exploring how to ensure wider use of preventive measures.

Baltimore, MD—Susan Kulik, DNP, MBA, RN was at her job as a surgical nurse at Johns Hopkins University Hospital in Baltimore when she slipped on a patch of wet floor and fractured her hip. The hospital admitted her right away for surgery to insert pins to stabilize her fractured bones.

The morning after the surgery, Kulik woke around 7 a.m., unable to breathe. "I got very dizzy and scared," Kulik says. "I thought I was going to die. It was an awful feeling."

A blood clot had formed in a vein deep in Kulik's leg, then broken off and traveled to her lung, where it blocked blood flow. This condition, venous thromboembolism (VTE), includes the formation of blood clots in deep veins and pulmonary embolism, in which a clot ends up in the lungs.

"I got very dizzy and scared ... I thought I was going to die. It was an awful feeling."
Susan Kulik

AT A GLANCE

Preventing Venous Thromboembolism: Empowering Patients and Enabling Patient-Centered Care via Health Information Technology

Principal investigator:
Elliott R. Haut, MD, PhD
Johns Hopkins University

Goal: To increase patient understanding and improve

THE WALL STREET JOURNAL.

STYLE & FASHION
Your Top 7 Men's Style Questions for Fall, Answered

EATING & DRINKING
Europe (Finally) Wakes Up to Superior Coffee

ADVENTURE & TRAVEL
A Weekend Away in Southern England's Wine Country

RUMBLE SEAT
Subaru Forester: Function Over Form

LIFE | HEALTH | THE INFORMED PATIENT

Blood Clot Prevention Is Higher Priority at Hospitals

Many patients don't receive anticlotting drugs; nurses don't always give them

"Everyone assumed that once we got doctors to order the right medications, the rest would magically fall into place," says Dr. Haut. "It turns out that was very naive thinking. The nurse administration and patient acceptance phases are just as critical."

Dr. Haut is now leading a new project funded by the nonprofit Patient-Centered Outcomes Research Institute that includes training sessions for nurses about improving communication with patients and a special admission package for patients about taking an active role in clot prevention. Hopkins turned to some patients who have suffered blood clots to review the materials, talk to nurses, and tell their own stories in a video to convey the dangers of clots.

http://on.wsj.com/1M18Aqu

Hospitals are intensifying inpatient care to prevent potentially fatal blood clots. WSJ's Laura Landro and Johns Hopkins' Dr. Elliott Haut join Tanya Rivero on Lunch Break. Photo: Getty

By LAURA LANDRO
Aug. 3, 2015 2:20 p.m. ET

13 COMMENTS

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Does Nurse Education Improve VTE Prophylaxis administration? Results from a Cluster Randomized Trial

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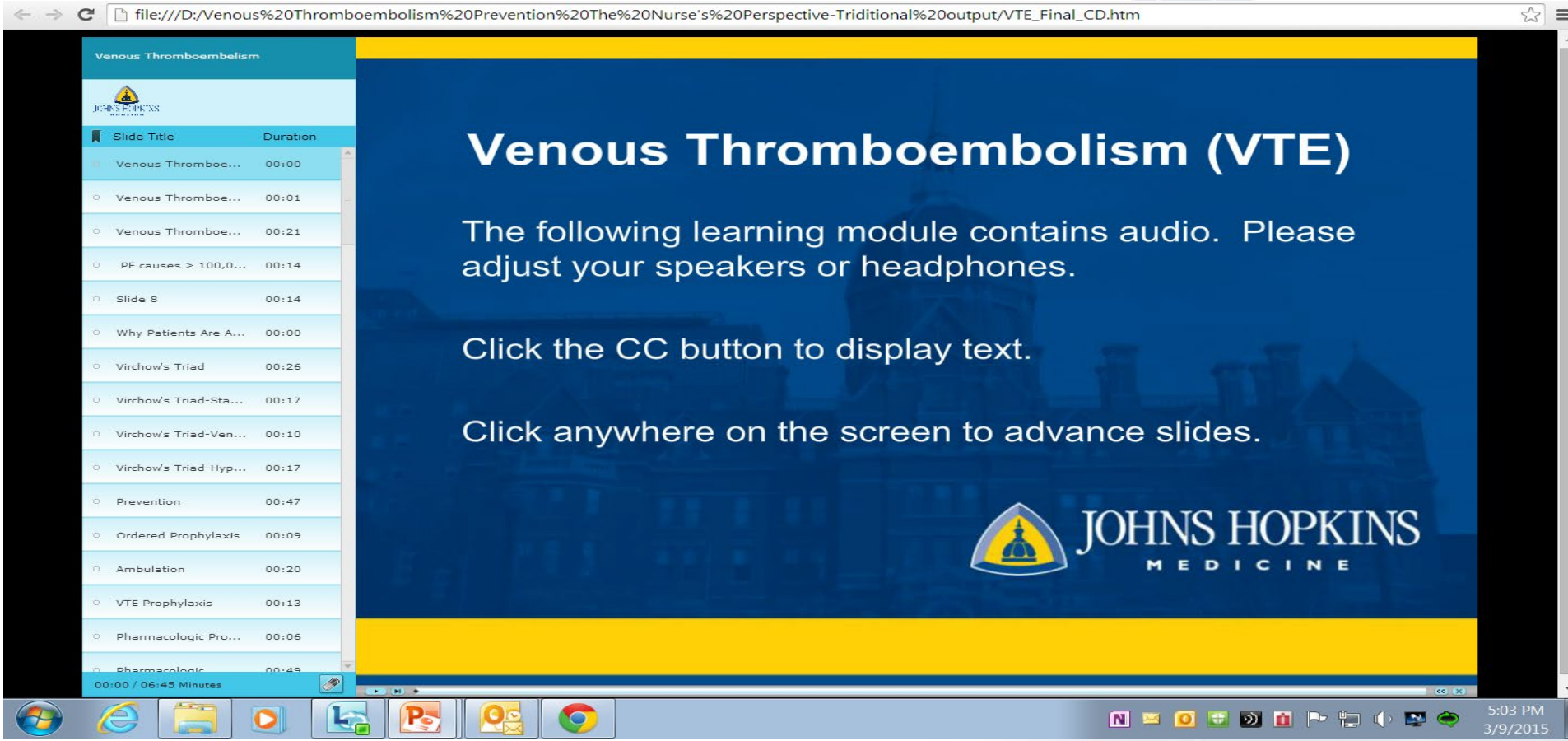
Static PowerPoint Slides With Voice Over



Lau, PLoS ONE 2017

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Venous Thromboembolism Prevention: The Nurse's Perspective

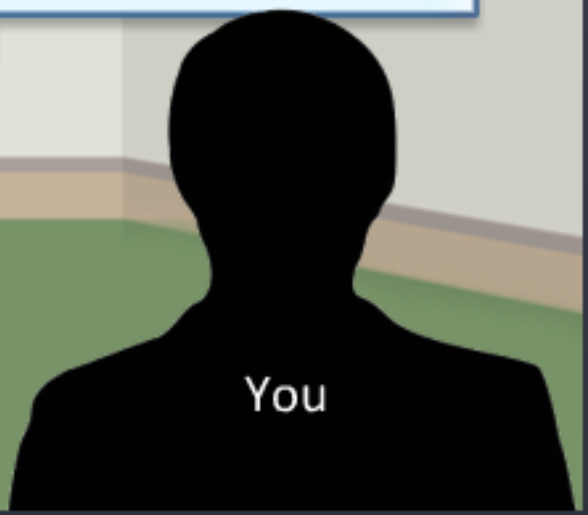
You...

Select the correct response

Hold the heparin injection and document "condition not appropriate" on the electronic medication administration record (eMAR) since she is ambulating well.

Mark it as refused on the eMAR but tell Mrs. Smith that if she ambulates less than 4 times a day you will need to restart it.

Educate Mrs. Smith on the risk of VTE which includes hospitalization, age, dehydration, and history of malignancy which increases her chance of clots significantly.



Methods

- Cluster Randomized Trial
  - 10 surgery floors
  - 11 medicine floors
  - All nurses on a specific floor were assigned either Static or Dynamic Education
- Administered satisfaction survey to compare perceptions of education delivery after completions

- **Primary Outcome - Dose Administration**

Lau, PLoS ONE 2017

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Nurse Education Improves Missed Doses of VTE Prophyalxis

Adult Medical and Surgical Nurses at The Johns Hopkins Hospital (n=933)

Nurses Cluster Randomized by Floor to Receive One of Two Education Modules about Venous Thromboembolism (VTE) Prevention

Primary Outcome	**Any Education**	**VTE Prophylaxis Non-Administration (p=0.002)**	12.4% → 11.1% OR: 0.87, 95% CI: 0.80-0.95

RANDOMIZATION

	Dynamic Scenario-based Education		**Linear Static Education**
Secondary Outcomes	10.8% → 9.2% OR: 0.83, 95% CI: 0.72-0.95	**VTE Prophylaxis Non-Administration (p=0.26)**	14.5% → 13.5% OR: 0.92, 95% CI: 0.81-1.03
		Satisfaction (p<0.05)	

Lau, et al. PLOS ONE 2017

SCAN ME

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Lau, PLoS ONE 2017

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ARMSTRONG INSTITUTE
FOR PATIENT SAFETY AND QUALITY

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Essential Patient Safety and Quality Improvement Learning

https://www.hopkinsmedicine.org/armstrong_institute/training_services/eLearning/

bit.ly/NurseEducationVTE

Venous Thromboembolism Prevention: The Nurse's Perspective

This module focuses on the nurse's role in VTE prevention. It provides an overview of the latest information regarding VTE: prophylaxis, appropriate delivery of pharmacologic and mechanical methods, how to educate patients on VTE, and how to address missed and refused doses. It includes interactive cases, video, and real time knowledge assessment, and provides nurses with the skills to enable patients to make educated decisions.

Delivery Type
Online

What VTE Education Do Patients Really Want?

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Online Survey

- Iterative modified Delphi process involving surveys, feedback and revisions
- Engaged patients and family members
- Recruited via email and/or social media (websites, Facebook, Twitter) through respective organizations
- > 400 respondents

Popoola, PLoS ONE 2016

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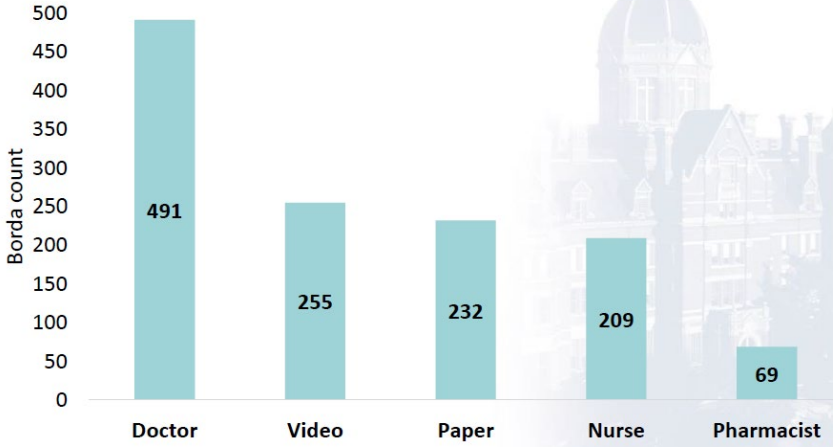
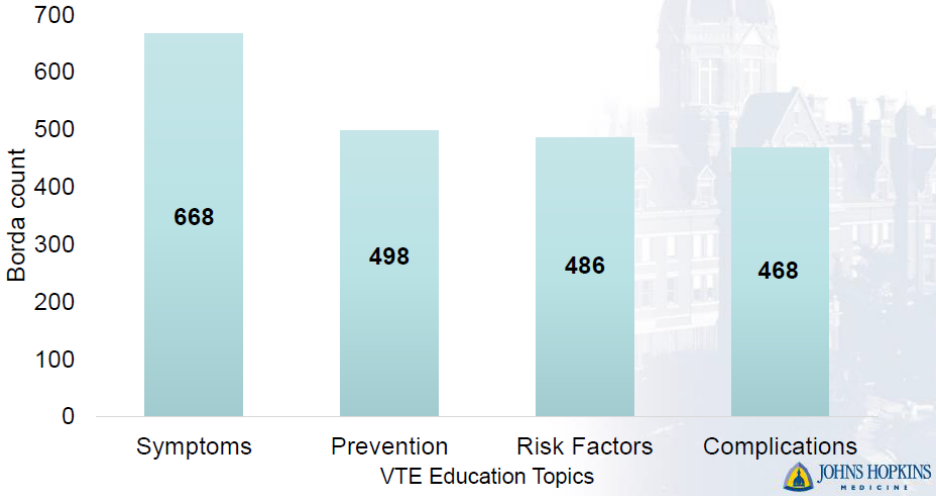
What Do Patients Want?

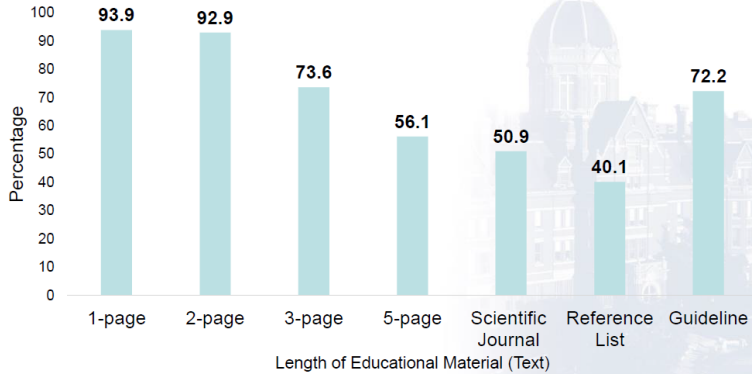
How Do Patients Want To Learn About VTE?



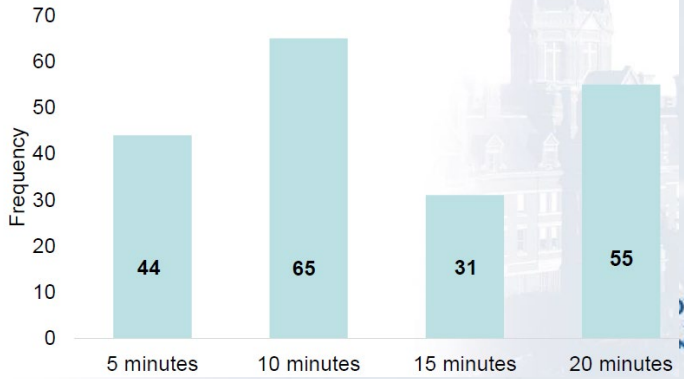
What Do Patients Want to Learn about VTE



How Much Are Participants Willing to Read?



Preferred Length Of Video?



Popoola, PLoS ONE 2016

RESEARCH ARTICLE

Patient Preferences for Receiving Education on Venous Thromboembolism Prevention – A Survey of Stakeholder Organizations

Victor O. Popoola[1☯‡], Brandyn D. Lau[1,4,8,9☯‡], Hasan M. Shihab[1], Norma F. Farrow[1], Dauryne L. Shaffer[1,6], Deborah B. Hobson[1,6], Susan V. Kulik[6], Paul D. Zaruba[1], Kenneth M. Shermock[7,8], Peggy S. Kraus[7], Peter J. Pronovost[2,3,8], Michael B. Streiff[3,8], Elliott R. Haut[1,2,5,8,9]*

Materials and Methods

From March 2014 to September 2014, we engaged a national sample of patients and family members on the content and approaches to delivery of information related to VTE prevention in hospitalized patients. To build consensus, we employed a modified Delphi approach, an iterative process of obtaining input from experts and working towards consensus [19]. Members of the North American Thrombosis Forum (NATF), the National Blood Clot Alliance (NBCA), Clot Care, and The Johns Hopkins Hospital Patient and Family Advisory Council were invited to participate. Participants were recruited via email and/or social media (websites, Facebook, Twitter) through their respective organizations and their responses were collected using an interactive, three-phase, web-based survey tool (SurveyMonkey, Palo Alto, CA).

Popoola, PLoS ONE 2016

What Do Patients Want?

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Patient VTE Education Bundle

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What Do Patients Want? Paper Form (2 pages)

	The Johns Hopkins Hospital Patient Information **How Do I Prevent Blood Clots?** **Venous Thromboembolism (VTE)** **Deep Vein Thrombosis (DVT)** **Pulmonary Embolus (PE)**	Original: Date 05/31/2014 Department: VTE Collaborative/Surgery
What is a blood clot or Venous Thrombo-embolism (VTE)?	Blood clots are called Venous Thromboembolism (VTE). There are 2 main types: • Deep Vein Thrombosis (DVT) is a clot in a deep vein, usually an arm or leg • Pulmonary Embolism (PE) is a clot that has broken off and traveled to the lungs. This can cause death.	

- www.hopkinsmedicine.org/armstrong/bloodclots

They spoke, we listened

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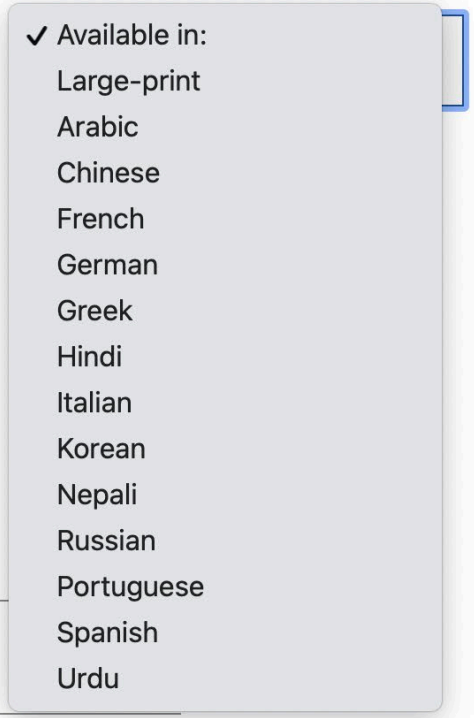
Multiple Languages (n=14)

http://bit.ly/bloodclots

Patient VTE Information Handout

The Johns Hopkins Venous Thromboembolism (VTE) Collaborative has developed an educational handout to better engage patients and their loved ones as partners in preventing blood clots.



VTE FAQs

Content from the handout is adapted below.

What is a blood clot or venous thromboembolism (VTE)?

Are blood clots serious?

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What Do Patients Want? Video

- Patients wanted
  - 10-minute video
  - Physicians, nurses and patients talking

- Screened for JHH PFAC
  - Changes based on group feedback

They spoke, we listened

http://bit.ly/bloodclots

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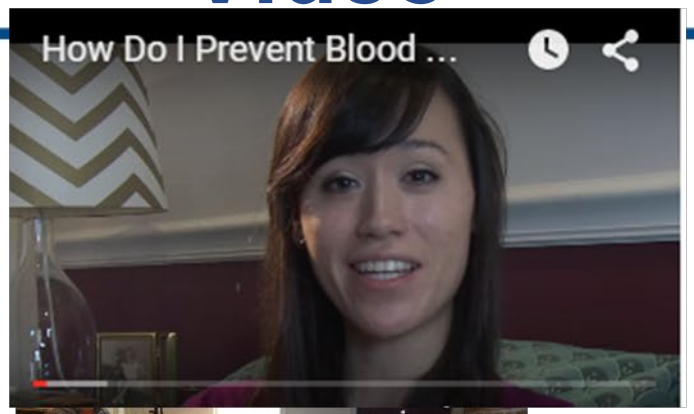
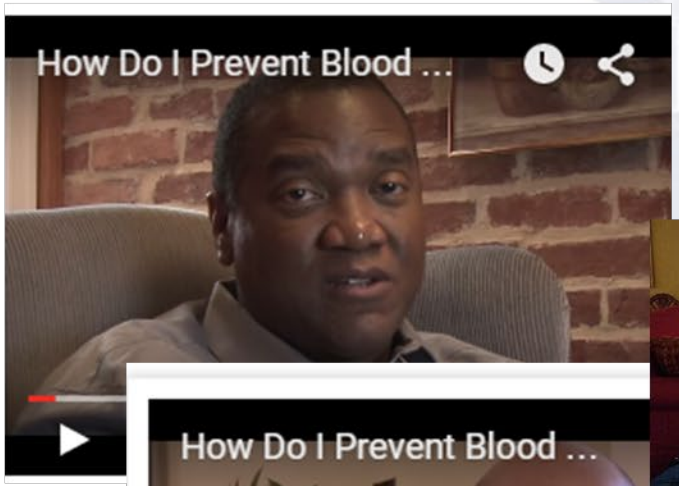
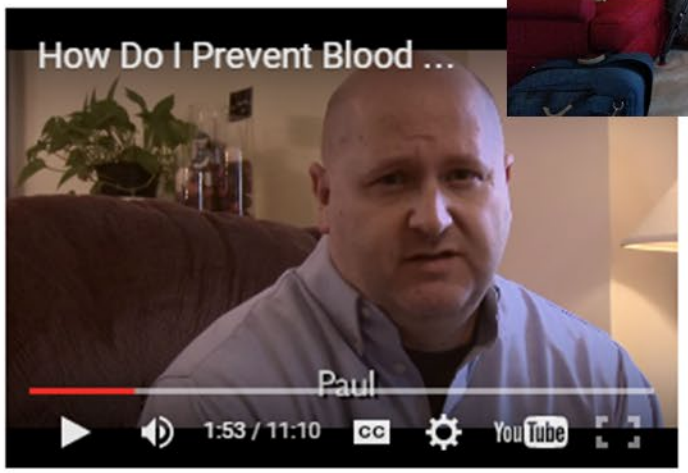
http://bit.ly/bloodclots Video



>285,000 views on YouTube





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Evaluation of the Patient VTE Education Bundle

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Patient Education Bundle Study

JAMA Network | Open™

Original Investigation | Hematology

Effect of Real-time Patient-Centered Education Bundle on Administration of Venous Thromboembolism Prevention in Hospitalized Patients

Elliott R. Haut, MD, PhD; Jonathan K. Aboagye, MB ChB, MPH; Dauryne L. Shaffer, MSN, RN; Jiangxia Wang, MS, MA; Deborah B. Hobson, MSN, BSN, RN; Gayane Yenokyan, MD, PhD, MPH, MHS; Elizabeth A. Sugar, PhD; Peggy S. Kraus, PharmD; Norma E. Farrow, MD; Joseph K. Canner, MHS; Oluwafemi P. Owodunni, MD, MPH; Katherine L. Florecki, MD; Kristen L. W. Webster, PhD; Christine G. Holzmueller, BLA; Peter J. Pronovost, MD, PhD; Michael B. Streiff, MD; Brandyn D. Lau, MPH

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Patient Education Bundle Study Methods

- Real-time missed dose alert built into Electronic Health Record system
- Patient Engagement Bundle included
  - A) one-on-one, face-to-face engagement with a nurse educator
  - B) 2-page patient education sheet
  - C) 10-minute patient education video

Haut, JAMA Network Open 2018

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Patient Education Bundle Study Methods

- Controlled, before-after intervention
- The Johns Hopkins Hospital
- PRE period 10/14-3/15
- INTERVENTION period 4/15-12/15
- 16 adult nursing units
- 4 intervention floors- 2 surgical, 2 medical
- 12 control floors

Haut, JAMA Network Open 2018

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Patient Education Bundle Study Results

Any Missed Dose			
	Intervention	Control	
Pre-Intervention	9.1%	13.6%	
Post-Intervention	5.6%	13.3%	
Odds Ratio Post/Pre (95% CI)	0.57 (0.48, 0.67)	0.98 (0.91, 1.07)	p<0.001

Haut, JAMA Network Open 2018

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Patient Education Bundle Study Results

Refused Dose			
	Intervention	Control	
Pre-Intervention	5.9%	8.7%	
Post-Intervention	3.4%	8.5%	
Odds Ratio Post/Pre (95% CI)	0.53 (0.43, 0.65)	0.98 (0.89, 1.08)	p<0.001

Haut, JAMA Network Open 2018

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Patient Education Bundle Study Results

Adult Medical and Surgical Patients at The Johns Hopkins Hospital Prescribed Pharmacologic VTE Prophylaxis

12 Control Floors N=14,319		4 Intervention Floors N=5,333
No Alert		**Real-time Alert When Patients Miss Dose**
Usual Care		**Patient-Centered Education Bundle**
13.6% → 13.3% Conditional OR: 0.98 (95%CI: 0.91-1.07)	**VTE Prophylaxis Non-Administration (p<0.001)**	9.1% → 5.6% Conditional OR: 0.57 (95%CI 0.48-0.67)
8.7% → 8.5% Conditional OR: 0.98 (95%CI: 0.89-1.08)	**Patient Refusal (p<0.001)**	5.9% → 3.4% Conditional OR: 0.53 (95%CI 0.43-0.65)

JAMA Network Open

Haut ER, et al. *JAMA Network Open*. 2018
doi:10.1001/jamanetworkopen.2018.4741

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Patient Education Bundle Study
No Differential Effect by Race or Sex

Patient-Centered Intervention to Improve Venous Thromboembolism Prevention: No Difference by Race

16 Adult Medicine and Surgery Units

Patients		4 Intervention Units Real-time Patient Education Bundle vs 12 Control Units Usual Care	Significant Reduction in Missed Doses OR (95% CI) for Missed Doses Comparing Intervention vs Control Units
White	123 (45.2%)		0.57 (0.44, 0.75)
Black	126 (46.3%)		0.61 (0.46, 0.81)
Other	23 (8.5%)		0.50 (0.29, 0.88)

Owodunni & Haut, et al. PLOS ONE 2020
doi: 10.1371/journal.pone.0227339
PCORI Study (CE-12-11-4489, DI-1603-34596); ClinicalTrials.gov NCT02402881

@FemiOwodunni
@elliotthaut
@LauzeeTweet

Effectiveness of a Patient Education Bundle on Venous Thromboembolism (VTE) Prophylaxis: No Difference by Sex

16,865 Patients on 16 Adult Surgery and Medicine Units

Patients			4 Intervention Units Real-time Patient Education Bundle vs. 12 Control Units Usual Care	Post/Pre OR (95% CI) for Missed Doses Intervention vs. Control Female: 0.59 (0.47-0.73), p<0.001 Male: 0.55 (0.44-0.70), p<0.001 Significant Decrease in Missed Doses of VTE Prophylaxis Same for Male & Female
Female	Male			
Intervention: 2,460	Intervention: 2,350			
Control: 5,682	Control: 6,373			

Owodunni et al. J Surg Research 2022
doi: doi.org/10.1016/j.jss.2022.07.015
PCORI Study (CE-12-11-4489, DI-1603-34596); ClinicalTrials.gov NCT02402881

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Patient Education Bundle Study Conclusion

- The intervention worked
- Huge effect on missed doses and refused doses of VTE prophylaxis in hospitalized patients

Generalizability (D&I) Award #1 PCORI

- Scaled up
  - Howard County General Hospital
  - The Johns Hopkins Hospital
- Project funded by PCORI Dissemination and Implementation (D&I) Award
- https://www.pcori.org/research-results/2016/preventing-venous-thromboembolism-vte-engaging-patients-reduce-preventable

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Generalizability
(D&I) Award #1 PCORI

Adult Medical and Surgical Floors at The Johns Hopkins Hospital (n=16)

Floors Cluster Randomized to Receive One of Two Interventions to Reduce Missed Doses of Venous Thromboembolism (VTE) Prophylaxis

Primary Outcome	**Any Intervention**	**VTE Prophylaxis Non-Administration (p<0.001)**	13.4% → 9.2% OR: 0.64, 95% CI: 0.57-0.71

RANDOMIZATION

Patient Education Bundle

Nurse Feedback

Secondary Outcomes	12.2% → 7.4% OR: 0.56, 95% CI: 0.48-0.66	**VTE Prophylaxis Non-Administration (p=0.03)**	14.7% → 11.2% OR: 0.72, 95% CI: 0.62-0.84
	7.3% → 3.7% OR: 0.46, 95% CI: 0.37-0.58	**Non-Administration due to Patient Refusal (p=0.003)**	9.5% → 7.1% OR: 0.71, 95% CI: 0.59-0.86

Haut, et al. JAHA

Results from ENACT
NCT03367364

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Generalizability (D&I) Award #1 PCORI

Original Research

Disseminating a patient-centered education bundle to reduce missed doses of pharmacologic venous thromboembolism (VTE) prophylaxis to a community hospital

Journal of Patient Safety and Risk Management
2021, Vol. 26(1) 22–28

DOI: 10.1177/2516043520969324
journals.sagepub.com/home/cri
SAGE

Table 2. Missed doses of pharmacologic VTE prophylaxis pre-post intervention periods.

	Pre-intervention doses (n = 7100)	Post-intervention doses (n = 3773)	p^a Value	Post/pre ^{b}OR CI 95%
Any Missed Dose, n (%)	978 (13.8)	309 (8.2)	<0.001	0.56 (0.48, 0.64)
Refused Doses, n (%)	626 (8.8)	190 (5.0)	<0.001	0.54 (0.46, 0.64)
Other Reasons for Missed Doses, n (%)	352 (5.0)	119 (3.2)	<0.001	0.62 (0.51, 0.77)

Owodunni, JPSRM 2021

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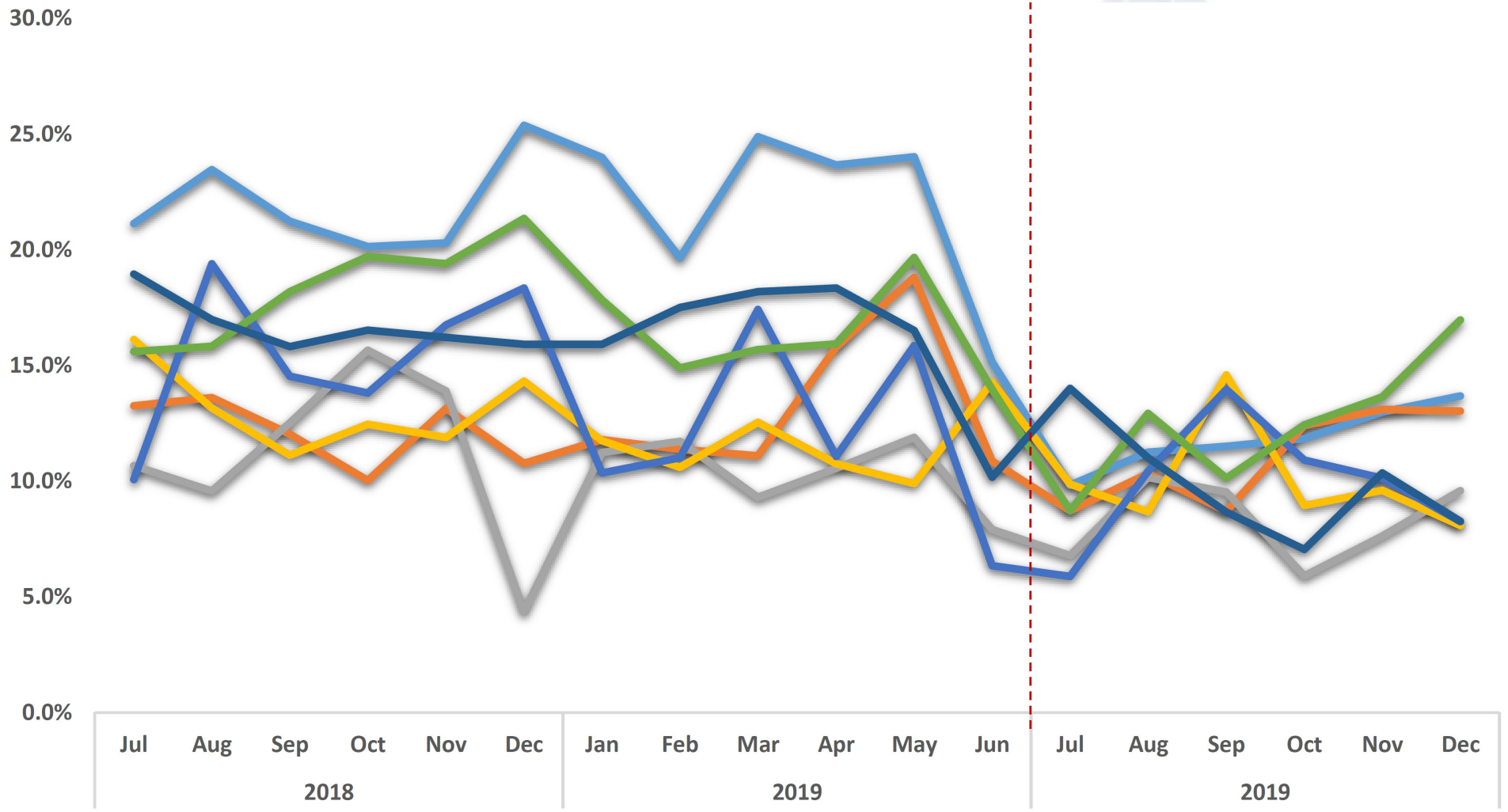
Generalizability
HCGH – All floors (n=7)



Generalizability (D&I) Award #2 PCORI

- Consortium of Leaders in the study Of Traumatic Thromboembolism (CLOTT)

- Project funded by PCORI Dissemination and Implementation (D&I) Award

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CLOTT 3

CNTR

COALITION FOR NATIONAL TRAUMA RESEARCH

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Stakeholder Organizations

- National Blood Clot Alliance
- North American Thrombosis Forum
- Patient Safety Movement Foundation
- Society of Trauma Nurses
- American Trauma Society
- American College of Surgeons Committee on Trauma
- Coalition for National Trauma Research Board of Directors
- Coalition for National Trauma Research Scientific Advisory Council
- Eastern Association for the Surgery of Trauma
- Trauma Surgery & Acute Care Open
- American Association for the Surgery of Trauma

Multi-Center Study

1. University of Maryland
2. Oregon Health & Science University
3. Medical College of Wisconsin (Froedtert Hospital)
4. Stanford University (Stanford Health Care)
5. University of California – San Diego
6. University of California – San Francisco (Zuckerberg San Francisco
7. University of Utah
8. Medical University of South Carolina
9. Penn Medicine – Lancaster General Hospital
10. Christiana Hospital

Nurse Education Module

Site	Completers	Each Site's Target #	Percent Completed
A	214	235	91%
B	121	131	92%
C	127	157	81%
D	37	73	51%
E	113	115	98%
F	53	60	88%
G	57	58	98%
H	106	126	84%
I	75	91	82%
Project Total	**903**	**1046**	**86%**

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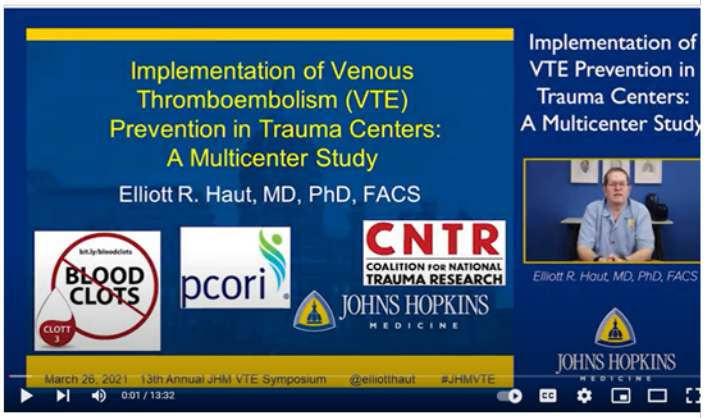
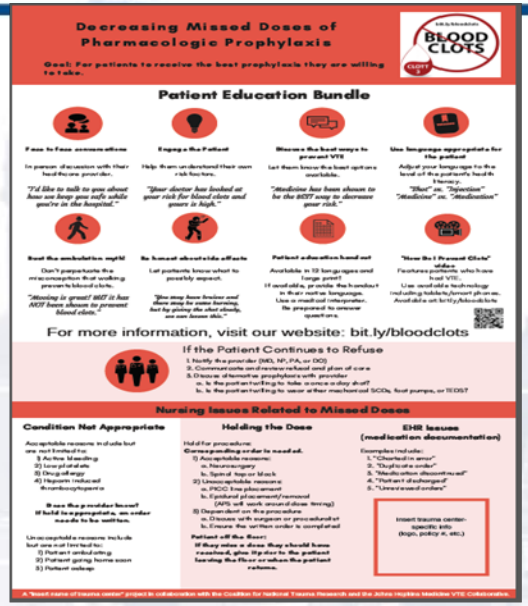
Implementation Materials





How To Talk to Patients About VTE Prevention

- Let's talk about how to keep you safe in the hospital.
- Your doctor looked at your individual risk factors for blood clots.
- Medicine is the **best practice** for blood clot prevention.
- Walking has **NOT** been shown to prevent blood clots.
- Bruising and burning can happen, but we can lessen that by giving the shot slowly.
- Do you have questions about the handout or video?
- What is the best practice for you (shots, SCDs)?

BLOOD CLOTS

bit.ly/bloodclots

Strategies for Refused Doses

Provide Education Bundle ->

- Talk to Patient
  AND
- Provide Education Handout
  AND
- Show "How Do I Prevent Blood Clots?" Video

Still Refusing ->
Document and Notify Provider

Strategies for Missed Doses

Patient Off Floor ->
Give dose when patient returns

Patient Being Discharged ->
Give dose before discharge

Upcoming Procedure ->
Give dose unless hold ordered by prescriber

Condition Not Appropriate ->
Confirm with prescriber to hold dose

Duplicate Orders ->
Ask provider to correct

What to Know

- Your blood clot risk
- What your provider has ordered
- How to prevent blood clots

Learn More

- Video
- Handout
- Visit this site for more info: bit.ly/bloodclots

Implementation Materials

What to Know

- Your blood clot risk
- What your provider has ordered
- How to prevent blood clots

andout

- Visit this site for more info: bit.ly/bloodclots

Learn More

- Video
- Ha

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2022 VTE in Trauma Conference

- Consensus Conference to Implement Optimal VTE Prophylaxis in Trauma
- Sponsored by Coalition for National Trauma Research (CNTR)
- Funded by NIH/NHLBI
- FREE Access to all content at https://www.nattrauma.org/research/research-policies-templates-guidelines/vte-conference/

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2022 VTE in Trauma Conference

Presentation Title	Speaker
The Patient Perspective	Leslie Lake National Blood Clot Alliance @lesllake

Changing Practice is a Team Effort

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DEEP VEIN THROMBOSIS
DVT Blood Clots: Understand the Risk


DEEP VEIN THROMBOSIS

For More Info
@elliotthaut (Twitter) or ehaut1@jhmi.edu

- Armstrong Institute massive open online course (MOOC)
  - https://www.coursera.org/learn/patient-safety-implementation
- Hopkins VTE Website
  - http://www.Hopkinsmedicine.org/Armstrong/bloodclots
- Patient Education Video and Paper Handouts
  - http://bit.ly/bloodclots
- Nurse Education
  - https://www.hopkinsmedicine.org/armstrong_institute/training_services/eLearning/ or bit.ly/NurseEducationVTE

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