

Survey Results: Preventing VTE During Orthopedic Surgery

January 2017



Executive Summary

In November 2016, the Physician-Patient Alliance for Health & Safety (PPAHS) conducted a survey among orthopedic providers to better understand current practices to prevent venous thromboembolism (VTE) in their patients, as well as perceptions on likelihood of prophylaxis prescription given reimbursement under Medicare Part B.

The survey addressed five areas:

1. **Patient Assessment for Risk of VTE** - Ideally, patients should be assessed - on admission, prior to surgery, and prior to discharge. However, the survey found that VTE assessment most commonly occurs prior to surgery (66 percent), followed by upon admission (53 percent) and then prior to discharge (33 percent). This declining pattern indicates a need for a more consistent assessment of risk throughout the patient's care continuum.
2. **Prophylaxis Methods Prescribed Pre-Surgery and Upon Discharge** - Both pharmacological (83 percent) and mechanical prophylaxis (78 percent) prescription rates are very common pre-surgery. However, prescription rates for mechanical prophylaxis drop dramatically upon patient discharge (43 percent) despite published evidence of the VTE risk continuing to be high up to 2 weeks after orthopedic surgery.¹ Increased awareness of post-surgical risks is therefore needed.
3. **Effect of Medicare Reimbursement On Prescription Practices** - Medicare Part B currently does not cover mechanical prophylaxis, such as IPCD. This is having an effect on prescribing habits and usage. Survey respondents indicated that they would be 34 percent more likely to prescribe mechanical prophylaxis, such as IPCD, to patients if it were reimbursable under Medicare Part B. Moreover, a vast majority of respondents (68 percent) believed that the omission of Medicare Part B coverage for mechanical prophylaxis, such as IPCD, was not in the best interest of patient safety. CMS should be encouraged to reimburse mechanical prophylaxis under Medicare Part B of and thereby provide physicians with a broader array of treatment options to prevent the occurrence of VTE after discharge.

¹ ACCP Antithrombotic Guidelines, 9th Ed <http://www.chestnet.org/accp/guidelines/accp-antithromboticguidelines-9th-ed-now-available>



4. **Likelihood of Patient Compliance with VTE Prophylaxis** - The results show that respondents believe that patients are more adherent to pharmacological prophylaxis prescriptions (4.0 on a likelihood scale scale of 1 - least likely - to 5 - most likely) compared to mechanical prophylaxis (2.7 on a likelihood scale scale of 1 - least likely - to 5 - most likely); a 48 percent increase in likelihood. This demonstrates a need for patient education regarding mechanical prophylaxis, because pharmacological prophylaxis carries a higher risk of bleeding and may predispose the orthopedic patient to potential for infection.²

5. **Beliefs on What Would Help Better Assess & Treat Patients For VTE** - The survey results indicate that the need for the development of concise recommendations available for clinicians outlining evidence-driven best practices and guidelines (71 percent) and a risk assessment tool to improve screening for risk of VTE in key patient segments (68.3 percent).

² Venous Thromboembolism Following Major Orthopedic Surgery: What is the Risk After Discharge?
<http://www.venousdisease.com/Publications/ortho-risk-Final-151204.pdf>



Introduction

As a partner of World Thrombosis Day, the Physician-Patient Alliance for Health & Safety (PPAHS) developed a survey to better understand and develop practical solutions to prevent venous thromboembolism (VTE) in patients undergoing hip and knee replacement.

PPAHS has had a long interest in preventing venous thromboembolism, and has brought together panels of health experts to develop the [OB VTE Safety Recommendations](#) and the [Stroke VTE Safety Recommendations](#) (both of which are free resources on the PPAHS website).

Hip and knee replacement surgeries are among the most commonly performed procedures in the US. About 1 million of these procedures are performed each year.³

The 30-day readmission rate following hip and knee replacement is 4.3 percent and 3.9 percent respectively. The readmission rate rises to 7.8 percent 90 days after surgery.

According to the US Department of Health & Human Services (HSS), VTE is the third most prevalent factor accounting for 6.3 percent of readmissions 30 days after surgery.

The survey was created in SurveyMonkey. It was targeted at orthopedic clinicians and patient safety experts across the U.S. and asked key questions regarding current practices to prevent VTE in their patients, as well as perceptions on likelihood of prophylaxis prescription given reimbursement under Medicare Part B. Respondents were encouraged to complete the survey with entry into a lottery draw to win a \$100 Amazon gift certificate. Conducted in November 2016, the survey gathered 41 respondents from across the country.

³ For more on prevalence, see the study by Hilal Maradit-Kremers, MD, MSc et al, “Prevalence of Total Hip (THA) and Total Knee (TKA) Arthroplasty in the United States”.



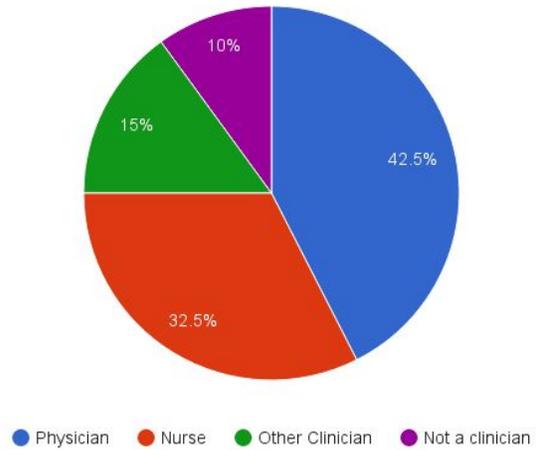
Respondents' Profession and Work Setting

The majority of respondents indicated that they were either physicians (42.5 percent) or nurses (32.5 percent). Those who elected to identify themselves as “Other” largely fell within four self-identified professions:

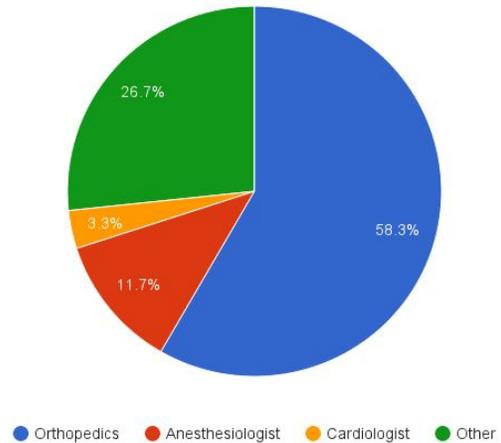
1. Nurse practitioners
2. Physical therapists
3. Program managers
4. Pharmacists

About 3 in 5 respondents indicated that their primary work setting was in Orthopedics from the available options. While 26.7 percent of respondents selected “Other” as a primary work setting, the majority of these responses were to more clearly specify work within an Orthopedic setting. The remainder of the “Other” respondents worked in administrative, outpatient therapy, and anesthesiology roles.

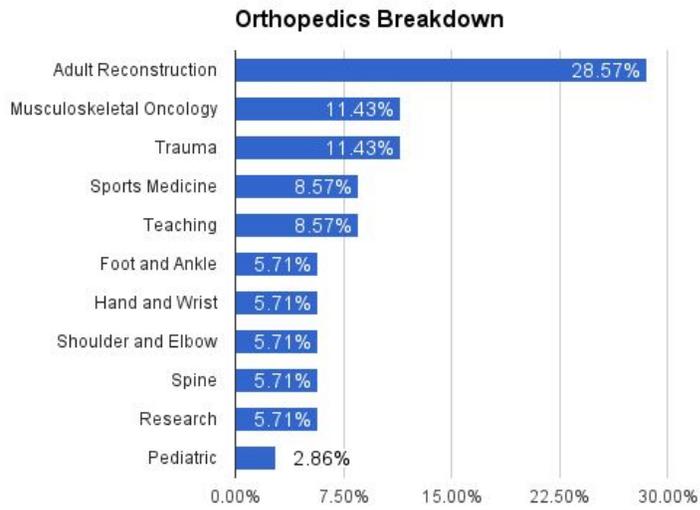
Profession



Primary Work Setting

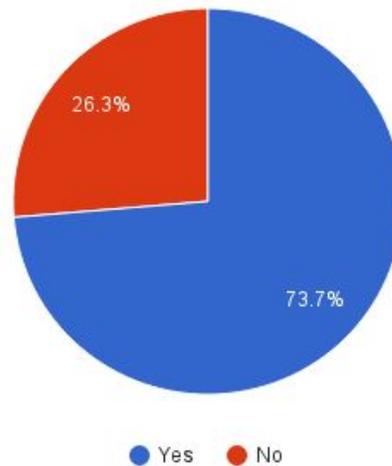


Below is a breakdown of responses that indicated Orthopedics as a primary work setting:

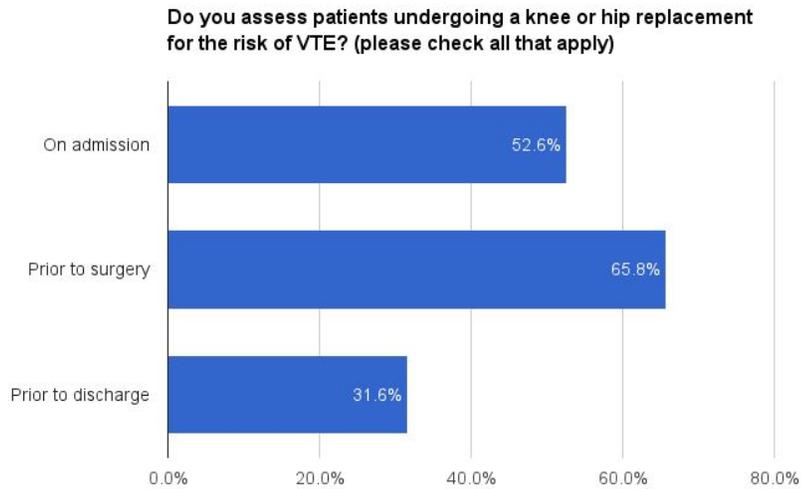


The vast majority of respondents indicated that they worked at a teaching hospital (73.4 percent). The average bed size was 542 beds.

Teaching Hospital

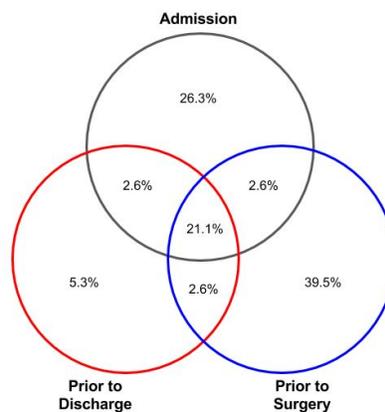


Patient Assessment for Risk of VTE



Respondents were asked when they assess patients for risk of VTE - on admission, prior to surgery, and prior to discharge. Assessment for VTE most commonly occurs prior to surgery (66 percent), followed by upon admission (53 percent) and then prior to discharge (33 percent).

Below is an analysis of overlap in screening practices:



Nearly 1 in 3 respondents indicated that patients were screened more than once throughout the clinical process. 21 percent of respondents indicated that patients underwent three screening processes throughout the patient journey through hospital. The results show that the patients undergo an average of 2 assessments for VTE before discharge.



Editor's Comment

The inconsistent assessment of patients over multiple touch points indicates the need for increased awareness and education in assessing the orthopedic patient for VTE risk and initiating proper prophylaxis. The education should additionally focus on compliance with The Joint Commission's [Surgical Care Improvement Project \(SCIP\)](#) - VTE-1 provides patients should be risk assessed and the recommended prophylaxis ordered and VTE-2 states that appropriate venous thromboembolism prophylaxis is received within 24 hours prior to surgery and 24 hours after surgery.

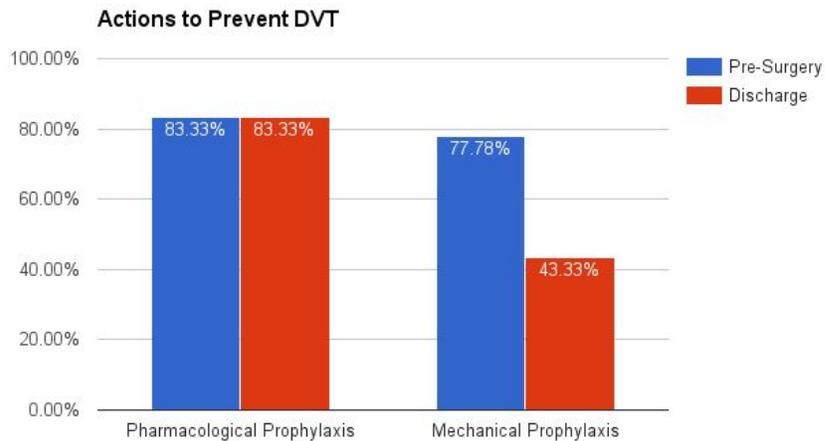
Ideally, the projected clinical outcome goal to ensure prevention of potential harm should be at 100 percent for all touch points - on admission, prior to surgery, and prior to discharge. The particularly low percentage of respondents assessing prior to discharge (33 percent) raises concerns. Research has shown that orthopedic patients continue a high risk for VTE between 10 -14 days post-operatively.



Prophylaxis Methods Prescribed Pre-Surgery and Upon Discharge

We asked respondents two questions in order to gauge differences in prescription rates between pharmacological, such as low-weight molecular heparin, and mechanical prophylaxis, such as intermittent pneumatic compression devices (IPCD):

1. Post-surgery, to prevent DVT, do you (please check all that apply)
2. On discharge, to prevent DVT, do you (please check all that apply)



Both pharmacological (83 percent) and mechanical prophylaxis (78 percent) prescription rates are very common pre-surgery. However, prescription rates for mechanical prophylaxis drop dramatically upon patient discharge (43 percent) despite published evidence of the VTE risk continuing high up to 2 weeks after orthopedic surgery.⁴

The remainder of the survey was developed to understand any key drivers in VTE prophylaxis ordering rates.

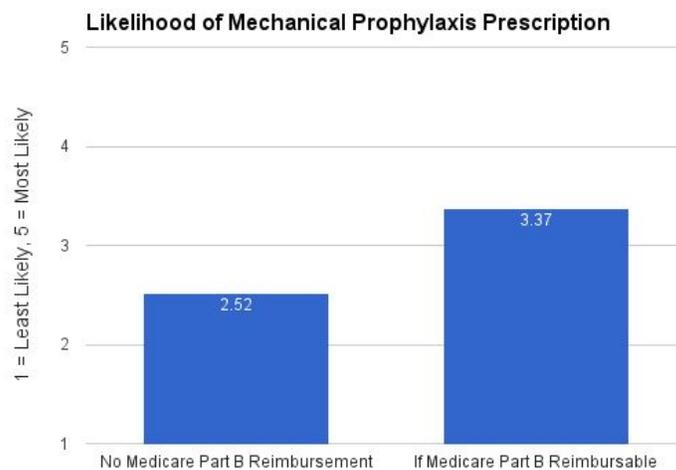
⁴ American Academy of Orthopedic Surgeons, “Deep Vein Thrombosis”
<http://orthoinfo.aaos.org/topic.cfm?topic=A00219>



Effect of Medicare Reimbursement On Prescription Practices

One possible hypothesis tested by the survey was that Medicare reimbursement, or lack thereof, was an influencing factor in prescription rates. In order to test this hypothesis, the PPAHS asked two questions:

1. Currently with no Medicare Part B reimbursement, how likely are you to prescribe the use of IPCD for your Medicare patients for post discharge prevention therapy?
2. If Medicare Part B reimbursed for IPCD, how likely would you prescribe the use of IPCD for your Medicare patients for post discharge prevention therapy?



Respondents ranked their likelihood on a scale of 1 (least likely) to 5 (most likely). Results were calculated using an average weighting, where w = weight of answer choice and x = response count for answer choice. For more information, please visit the [SurveyMonkey Q&A](#).

$$\frac{X_1W_1 + X_2W_2 + X_3W_3 \dots X_nW_n}{\text{Total}}$$

The results of this question set show that respondents would be 34 percent more likely to prescribe mechanical prophylaxis, such as IPCD, to patients if it were reimbursable under Medicare Part B.



Perceptions of Medicare Part B Coverage in Patient Safety

To determine if current Medicare Part B coverage has an effect on patient safety, one of the survey questions was developed to determine clinician perceptions.

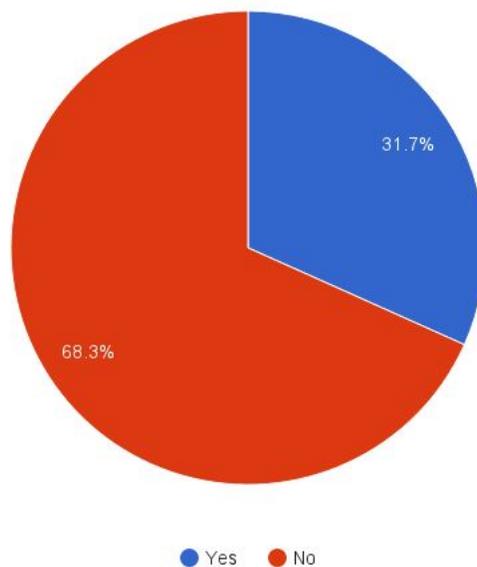
Respondents were given the following prompt for context:

CMS under the Joint Replacement bundle reimburses physicians for pharmacological prophylaxis, such as low-molecular-weight heparin (LMWH), and for mechanical prophylaxis, such as intermittent pneumatic compression device (IPCD).

The survey then asked this question:

However, upon hospital discharge, Medicare Part B does not cover the prescription of IPCD. Do you believe that this is in the best interest of the health of the patient?

Upon hospital discharge, Medicare Part B does not cover the prescription of IPCD. Do you believe that this is in the best interest of the health of the patient?



The vast majority of respondents (68 percent) believed that the omission of Medicare Part B coverage for mechanical prophylaxis, such as IPCD, was not in the best interest of patient safety.



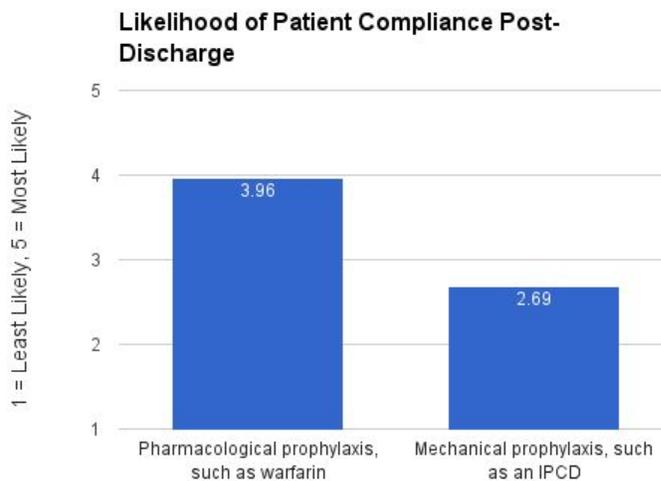
Editor's Comment

This is a significant result from the survey. The CMS determines readmission penalties for never events, which includes VTE; the survey results indicate advocating for CMS reform to include Medicare coverage for mechanical prophylaxis post-discharge.

Likelihood of Patient Compliance with VTE Prophylaxis

Another question was developed to understand if perceived patient compliance also plays a role in current prescription practices. Respondents were asked the following question:

Upon discharge from hospital following an orthopedic procedure, to prevent incidence VTE, on a scale of 1 (least likely) to 5 (most likely), do you believe that patients are adherent to your recommendation for use of:



Respondents' perceptions of likelihood were calculated in the same manner as the previous five-point scale. The results show that respondents believe that patients are more adherent to pharmacological prescriptions (4.0) compared to mechanical prophylaxis (2.7); a 48 percent increase in likelihood.



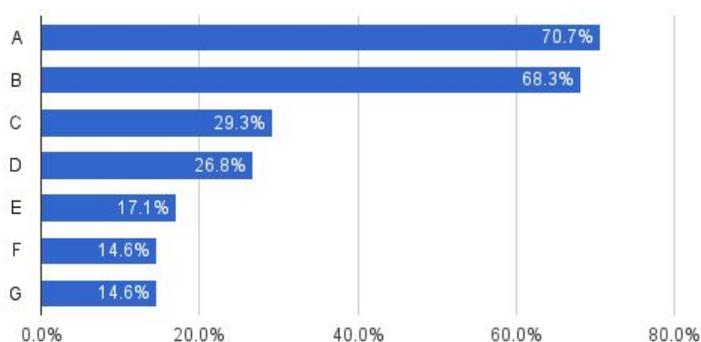
Editor's Comment

This finding demonstrates a need for patient education in terms of mechanical prophylaxis as pharmacological prophylaxis carries a higher risk of bleeding which may predispose the orthopedic patient to potential for infection.⁵

Beliefs on What Would Help Better Assess & Treat Patients For VTE

The PPAHS concluded the survey by asking respondents the following question:

What do you believe would help better assess and treat patients for VTE (please check all that apply)



Legend:

- A.** Concise recommendations summarizing current best practices, literature, guidelines and recommendations.
- B.** Risk assessment tool
- C.** Articles by experts highlighting examples of best practices
- D.** Podcasts by experts highlighting examples of best practices
- E.** Articles by experts on the prevention of VTE
- F.** Podcasts by experts on the prevention of VTE
- G.** Other

Responses showed a clear need for concise recommendations available for clinicians outlining evidence-driven best practices and guidelines (70.7 percent). Respondents also indicated that risk assessment tool needs to be developed to improve screening for risk of VTE (68.3 percent).

Comments by survey respondents indicate additional recommendations for the treatment of VTE. One anesthesiologist suggested “anti-Xa levels for the morbidly obese”. Another, a physician working in Adult Reconstruction, added that recommendations should be “Good information from people NOT BOUGHT by big pharma” (*sic*, emphasis the respondent’s).

⁵ Venous Thromboembolism Following Major Orthopedic Surgery: What is the Risk After Discharge? <http://www.venousdisease.com/Publications/ortho-risk-Final-151204.pdf>



Conclusion

The survey indicates that awareness of the risks of VTE following orthopedic surgery are high. Patients go through at least one assessment screening for risk of VTE, with an average of two times. The clinical outcome goal should be targeted at 100 percent compliance with VTE risk assessment on admission (to establish a baseline) and at multiple points along the patient's continuum of care until discharge.

Of note is the level to which prescription for mechanical prophylaxis, such as IPCDs, drops following discharge; from 77.8 percent prior to surgery to 43.3 percent prior to discharge. An analysis of the data shows that eligibility for such methods under Medicare Part B could be a key driver in this, with respondents indicating that they would be 34 percent more likely to prescribe mechanical prophylaxis for their patients if it were covered by Medicare Part B. It is also possible that patient compliance with prescriptions plays a factor in this. Respondents believed that patients were 48 percent more likely to adhere to pharmacological prescriptions, such as wayfarin, as they were for mechanical prophylaxis. Patient education should be a key component in improving compliance for both modalities.

It is clear, however, that the lack of coverage by the CMS has restricted physician options in preventing VTE upon discharge. The vast majority of respondents, 68.3 percent, indicated that they believed that the lack of coverage for mechanical prophylaxis after discharge under Medicare Part B was not in the best interest of the patient. Physicians taking care of Medicare patients have just one reimbursable choice for their patients on discharge - pharmacological prophylaxis. Physicians should have a broader array of reimbursable options for their patients to ensure the care provided is in the best health interests for each patient.

Doing so requires support and endorsement from CMS to act in the best interest of their patients patients in covering VTE prophylaxis - both pharmacological and mechanical. Additionally, it also requires evidence-based VTE assessment and recommendations summarizing current best practices and guidelines.

