Appendix 1: Final survey

Q1 Patients referred for thoracentesis often times have comorbid conditions or take medications that potentially put them at higher risk of bleeding. The goal of the survey is to identify practice patterns of attending physicians in performing thoracentesis in patients with risk factors for bleeding including underlying coagulopathy or medication use. Our hypothesis is that practice patterns vary widely due to lack of evidence based guidelines. The results of this survey will be the basis for the development of studies evaluating the safety of performing thoracentesis in patients with uncorrected bleeding risk.

 If you decide to participate, please complete the enclosed survey.  Your return of this survey is implied consent.  Your participation will be anonymous and you will not be contacted again in the future.

Q2 What is your level of training?

* Attending physician (1)
* Fellow/Resident (2)
* Physician Assistant or Nurse Practitioner (3)
* Nurse (4)
* Respiratory therapist (5)

*Skip To: Q4 If What is your level of training? = Attending physician*

*Skip To: Q3 (end of survey) If What is your level of training? = Fellow/Resident, Physician Assistant or Nurse Practitioner, Nurse or Respiratory therapist*

Q3 Thank you for participating in our survey. The goal of the survey is to capture practice patterns of attending physicians only. We appreciate your time. (End of survey)

Q4 What is your gender?

* Male (1)
* Female (2)

Q5 What is your age?

* 25-35 (1)
* 36-45 (2)
* 46-55 (3)
* 56-65 (4)
* Over 66 (5)

Q6 What is your primary field of practice in which you are board certified/board eligible?

* General pulmonary (1)
* General pulmonary and critical care (2)
* Critical care (3)
* Interventional pulmonary (4)
* Thoracic surgery (5)
* Other (6) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Q7  How many years have you actively been performing thoracentesis as an attending physician (more than 1 per year)

* 0-5 years (1)
* 6-10 years (2)
* 11-15 years (3)
* 15+ years (4)

Q8 On average, how many thoracentesis do you personally perform or directly supervise on an annual basis?

* 0-5 (1)
* 6-25 (Up to one every other week) (2)
* 26-50 (Up to one per week) (3)
* 50+ (More than one per week) (4)

Q9 Do you routinely use ultrasound for thoracentesis?

* Yes (1)
* No (2)
* I don't know (3)

Q10 Where is your primary practice location?

* North America (1)
* South America (2)
* Europe (3)
* Asia (4)
* Africa (5)
* Australia (6)

Q11 What is the primary type of institution that you perform the majority of thoracentesis at?

* Teaching/academic hospital (Non-VA) (1)
* Community Hospital (2)
* Veterans Hospital (3)
* Private practice and/or office (4)

Q12 Who performs the majority of thoracentesis at your institution?

* Interventional pulmonology (1)
* General (non-interventional) pulmonology (2)
* Interventional radiology (3)
* General medicine (4)
* Thoracic surgery (5)
* Other (6) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Q13 Does your institution have guidelines for performing a thoracentesis in a patient with thrombocytopenia?

* Yes (1)
* No (2)
* I don't know (3)

Q14 In your practice, what is the lowest platelet count you would perform a thoracentesis without transfusion?

* 10,000 (1)
* 20,000 (2)
* 50,000 (3)
* 100,000 (4)
* Other (specify) (5) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Q15 Does your institution have guidelines for performing a thoracentesis in a patient with an elevated INR?

* Yes (1)
* No (2)
* I don't know (3)

Q16 What is your upper INR threshold for NOT performing a thoracentesis without correction or reversal?

* 1.5 (1)
* 2 (2)
* 3 (3)
* 4 (4)
* 5 (5)

Q17 If a patient has an INR above your stated upper threshold and requires thoracentesis, what would you do next?

* Transfuse FFP, then perform thoracentesis (1)
* Administer vitamin K, then perform thoracentesis (2)
* Hold medication, then perform thoracentesis when INR reaches the threshold you selected above (3)
* Other (4) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Q18 Would you perform a thoracentesis if a patient was actively receiving **therapeutic heparin drip**?

* Yes (1)
* No (2)

*Skip To: Q19 If Would you perform a thoracentesis if a patient was actively receiving therapeutic heparin drip? = No*

*Skip To: Q20 If Would you perform a thoracentesis if a patient was actively receiving therapeutic heparin drip? = Yes*

Q19 If you would not perform a thoracentesis with a patient on a **therapeutic heparin infusion**, what would you do instead?

* Hold drip for 1 hour then perform thoracentesis (1)
* Hold drip for 4 hours then perform thoracentesis (2)
* Hold drip for 6 hours then perform thoracentesis (3)
* Hold drip, transfuse protamine, then perform thoracentesis (4)
* Other (specify) (5) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Q20 Would you perform a thoracentesis if a patient was actively receiving **prophylactic heparin** (5,000 units subcutaneously TID)?

* Yes (1)
* No (2)

*Skip To: Q22 If Would you perform a thoracentesis if a patient was actively receiving prophylactic heparin (5,000... = Yes*

*Skip To: Q21 If Would you perform a thoracentesis if a patient was actively receiving prophylactic heparin (5,000... = No*

Q21 If you would not perform a thoracentesis with a patient on **prophylactic heparin**, what would you do instead?

* Perform thoracentesis 90 minutes following last dose (one half life) (1)
* Perform thoracentesis 6 hours following last dose (4 half lives) (2)
* Other (3) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Q22 Would you perform a thoracentesis if a patient was actively receiving **therapeutic low molecular weight heparin** (Example: enoxaparin 1mg/kg SC q12hrs) ?

* Yes (1)
* No (2)

*Skip To: Q24 If Would you perform a thoracentesis if a patient was actively receiving therapeutic low molecular w... = Yes*

*Skip To: Q23 If Would you perform a thoracentesis if a patient was actively receiving therapeutic low molecular w...* = No

Q23 If you would not perform a thoracentesis with a patient on **therapeutic low molecular weight heparin** (Example: enoxaparin 1mg/kg SC q 12hrs), what would you do instead?

* Perform thoracentesis 7 hours following last dose (1 half life) (1)
* Perform thoracentesis 32 hours following last dose (4 half lives) (2)
* Transfuse protamine and then perform procedure (3)
* Other (4) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Q24 Would you perform thoracentesis if a patient was actively receiving **prophylactic low molecular weight heparin** (Example: enoxaparin 40mg SC daily) ?

* Yes (1)
* No (2)

*Skip To: Q26 If Would you perform thoracentesis if a patient was actively receiving prophylactic low molecular we... = Yes*

*Skip To: Q25 If Would you perform thoracentesis if a patient was actively receiving prophylactic low molecular we... = No*

Q25 If you would not perform a thoracentesis with a patient on **prophylactic low molecular weight heparin** (Example: enoxaparin 40mg SC daily), what would you do instead?

* Perform thoracentesis 7 hours following last dose (1 half life) (1)
* Perform thoracentesis 32 hours following last dose (4 half lives) (2)
* Other (3) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Q26 Would you perform thoracentesis if a patient was on **acetylsalicylic acid** (aspirin)?

* Yes (1)
* No (2)

*Skip To: Q28 If Would you perform thoracentesis if a patient was on acetylsalicylic acid (aspirin)? = Yes*

*Skip To: Q27 If Would you perform thoracentesis if a patient was on acetylsalicylic acid (aspirin)? = No*

Q27 If you would not perform a thoracentesis with a patient on **acetylsalicylic acid** (aspirin), what would you do instead?

* Hold medication 3-4 days, then perform thoracentesis (1)
* Hold medication 5-7 days, then perform thoracentesis (2)
* Hold medication 8+ days, then perform thoracentesis (3)
* Transfuse platelets, then perform thoracentesis immediately (4)
* Other (5) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Q28 Would you perform a thoracentesis if a patient was on **clopidogrel (Plavix) or ticagrelor (Brilinta)**?

* Yes (1)
* No (2)

*Skip To: Q30 If Would you perform a thoracentesis if a patient was on clopidogrel (Plavix) or ticagrelor (Brilinta)? = Yes*

*Skip To: Q29 If Would you perform a thoracentesis if a patient was on clopidogrel (Plavix) or ticagrelor (Brilinta)? = No*

Q29 If you would not perform a thoracentesis with a patient on **clopidogrel (Plavix) or ticagrelor (Brilinta)**, what would you do instead?

* Hold medication for 3-4 days, then perform thoracentesis (1)
* Hold medication for 5-7 days, then perform thoracentesis (2)
* Hold medication for 8+ days, then perform thoracentesis (3)
* Transfuse platelets, then perform thoracentesis immediately (4)
* Other (5) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Q30 Would you perform a thoracentesis if a patient was on **prasugrel (Effient)**?

* Yes (1)
* No (2)

*Skip To: Q32 If Would you perform a thoracentesis if a patient was on prasugrel (Effient)?   = Yes*

*Skip To: Q31 If Would you perform a thoracentesis if a patient was on prasugrel (Effient)?   = No*

Q31 If you would not perform a thoracentesis with a patient on **prasugrel (Effient)**, what would you do instead?

* Hold medication for 3-4 days, then perform thoracentesis (1)
* Hold medication for 5-7 days, then perform thoracentesis (2)
* Hold medication for 8+ days, then perform thoracentesis (3)
* Transfuse platelets, then perform thoracentesis immediately (4)
* Other (5) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Q32 Would you perform a thoracentesis if a patient was on **ticlopidine (Ticlid)**?

* Yes (1)
* No (2)

*Skip To: Q34 If Would you perform a thoracentesis if a patient was on ticlopidine (Ticlid)? = Yes*

*Skip To: Q33 If Would you perform a thoracentesis if a patient was on ticlopidine (Ticlid)? = No*

Q33 If you would not perform a thoracentesis with a patient on **ticlodipine (Ticlid)** what would you do instead?

* Hold medication for 3-4 days, then perform thoracentesis (1)
* Hold medication for 5-7 days, then perform thoracentesis (2)
* Hold medication for 8+ days, then perform thoracentesis (3)
* Transfuse platelets, then perform thoracentesis immediately (4)
* Other (5) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Q34 Would you perform a thoracentesis if a patient was actively receiving **infused thrombin inhibitors** (argatroban, bivalirudin, lepirudin)?

* Yes (1)
* No (2)

*Skip To: Q36 If Would you perform a thoracentesis if a patient was actively receiving infused thrombin inhibitors... = Yes*

*Skip To: Q35 If Would you perform a thoracentesis if a patient was actively receiving infused thrombin inhibitors... = No*

Q35 If you would not perform a thoracentesis with a patient on **infused thrombin inhibitors** (argatroban, bivalirudin, lepirudin) what would you do instead?

* Hold medication for 4-6 hours, then perform thoracentesis (1)
* Hold medication for 7-8 hours, then perform thoracentesis (2)
* Other (3) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Q36 Would you perform a thoracentesis if a patient was on **oral direct thrombin inhibitors** (dabigatran)?

* Yes (1)
* No (2)

*Skip To: Q38 If Would you perform a thoracentesis if a patient was on oral direct thrombin inhibitors (dabigatran)? = Yes*

*Skip To: Q37 If Would you perform a thoracentesis if a patient was on oral direct thrombin inhibitors (dabigatran)? = No*

Q37 If you would not perform a thoracentesis with a patient on **oral direct thrombin inhibitors** (dabigatran) what would you do instead?

* Hold medication for 1-2 days, then perform thoracentesis (1)
* Hold medication for 3-5 days, then perform thoracentesis (2)
* Hold medication for 6-7 days, then perform thoracentesis (3)
* Other (4) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Q38 Would you perform a thoracentesis if a patient was on **oral direct factor X-a inhibitors** (rivaroxaban, apixaban)?

* Yes (1)
* No (2)

*Skip To: End of Block If Would you perform a thoracentesis if a patient was on oral direct factor X-a inhibitors (rivaroxa... = Yes*

*Skip To: Q39 If Would you perform a thoracentesis if a patient was on oral direct factor X-a inhibitors (rivaroxa... = No*

Q39 If you would not perform a thoracentesis with a patient on **oral direct factor X-a inhibitors** (rivaroxaban, apixiban) what would you do?

* Hold for 1-2 days, then perform a thoracentesis (1)
* Hold for 3-5 days, then perform a thoracentesis (2)
* Hold for 6-7 days, then perform a thoracentesis (3)
* Other (4) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Q40 Thank you for participating in our survey!