Managing Venous Thromboembolism:
Exploring the Relationship Between Anticoagulant Treatment Decisions and Patient Outcomes

A Med-IQ and ProDoctor Online Patient Simulation Experience

Educational Platform

- SIMULATION-BASED LEARNING provided a safe space for clinician learners to practice critical decision-making skills
- Learners stratified based on their individual interests and practice areas into either a simulated encounter of a patient with proximal DVT or acute PE
- Simulation environment reflected the unique perspectives and challenges of each target learner, making the education directly applicable to their scope of clinical practice as learners determine optimal immediate and long-term anticoagulation strategies for the patient
- Launched December 23, 2016

Learner Engagement

- 6,454 LEARNER ENGAGEMENTS/ DECISIONS
- 19 DECISION POINTS in simulation
- 340 AVERAGE # DECISIONS per metric
- 23.8 = AVERAGE MINUTES per learner/ 30 min. case

The Heatmap and Dynamic Mentoring

James is currently receiving cortisone injections and taking ibuprofen for his osteoarthritis. Do any modifications to his current medications need to be made before starting anticoagulation therapy?

- (●) No modifications need to be made
- ( ) Modify his treatment by discontinuing ibuprofen only
- ( ) Modify his treatment by discontinuing corticosteroid injections only
- ( ) Modify his treatment by discontinuing both the ibuprofen and corticosteroid injections

Courtesy of ProPatient

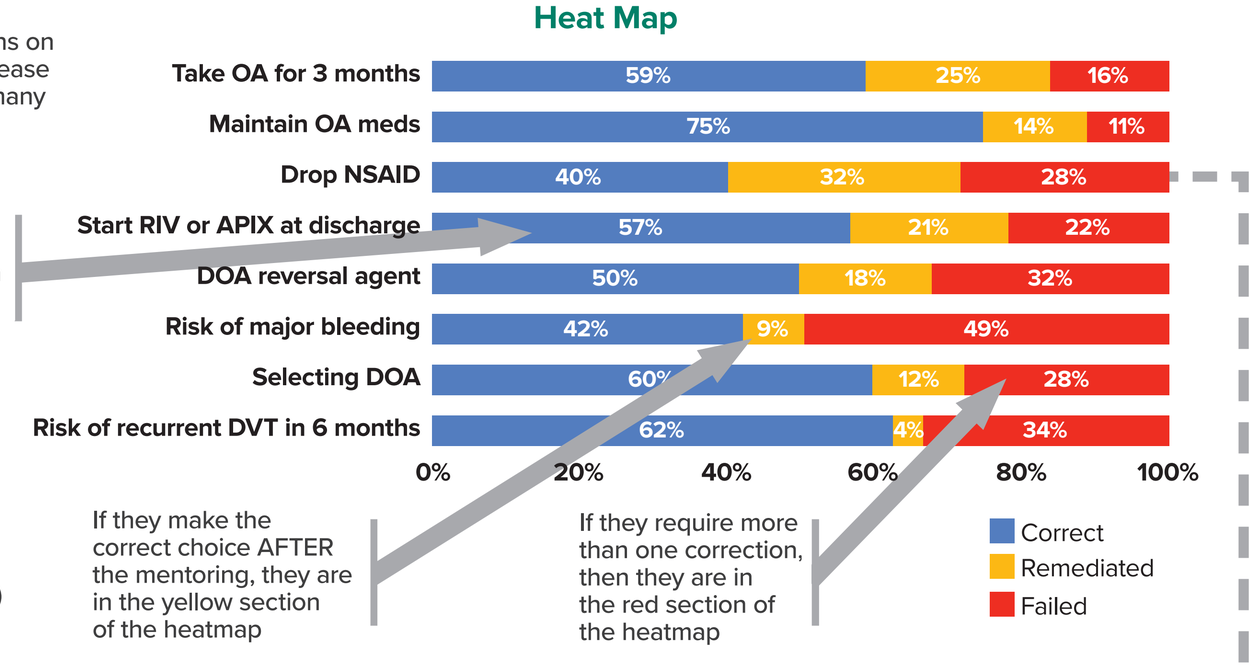
Users make decisions on therapy choices, disease management, and many other competencies

THAT IS CORRECT

If they make the correct choice the first time, they are in the blue section of the heat map

THAT IS INCORRECT

If they make an incorrect choice they receive custom mentoring by the moderator (Dr. Grey)



No, this is my first time. It really took me by surprise. The doctor at the hospital said it was probably because of my knee surgery. Is this something that could happen again?

Patient 1 (DVT)

Your patient is James. He is a 63-year-old man with osteoarthritis diagnosed in both knees 10 years ago. He underwent a total knee replacement on his right knee 2 months ago and continues to receive intra-articular corticosteroid injections in his left knee; he also takes ibuprofen for breakthrough pain. He smokes 1 pack of cigarettes a day and reports moderate alcohol consumption.

Today, James presented to the emergency department with difficulty walking due to pain in his right calf. The ED physician ran a D-dimer and oxygen saturation tests based on a suspicion of a VTE; both tests indicated a likely VTE. A subsequent ultrasound confirmed the presence of a proximal DVT in his right leg. James was started on a continuous infusion of low-molecular-weight heparin, and has been admitted to the hospital from the ED. He is currently stable.

You are seeing him now to determine his go-forward therapy and aftercare.

PATIENT CHART

- Acute proximal DVT in right leg 1 week ago; receiving anticoagulation therapy
- Total knee replacement surgery (right knee) 2 months ago for osteoarthritis
- Osteoarthritis diagnosed 10 years ago in both knees; receiving methylprednisolone acetate 40 mg every 4 weeks by intra-articular injection
- Smokes 1 pack of cigarettes per day for 40 years

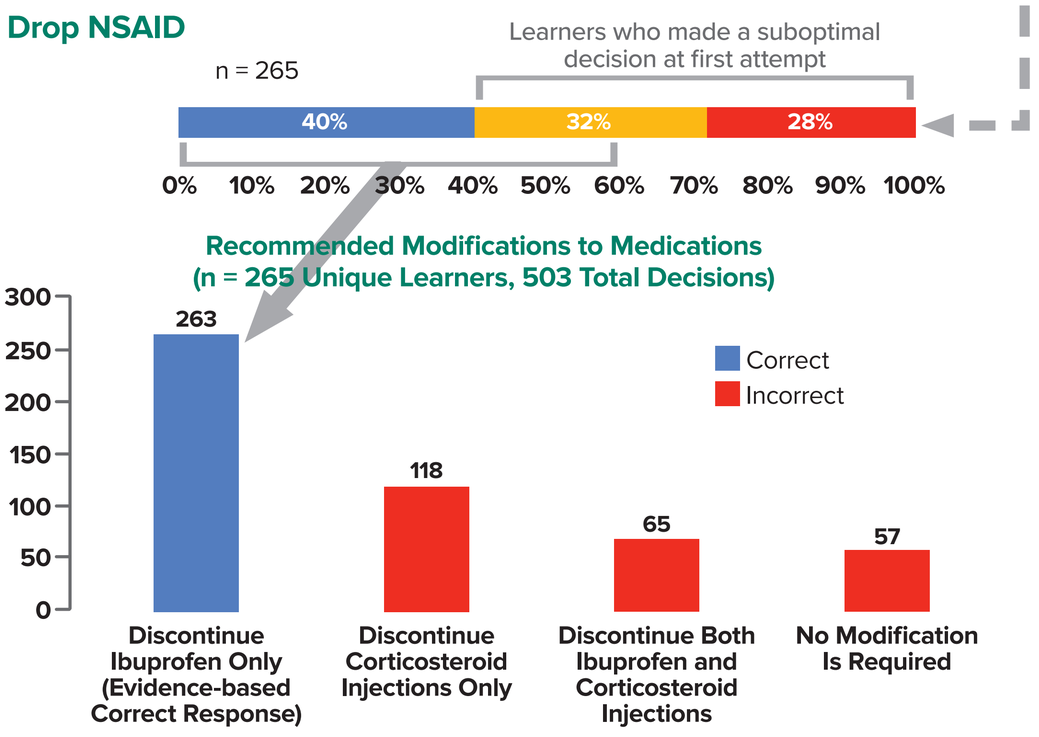
Current Medications
- Apixaban 5 mg BID or rivaroxaban 20 mg QD for surgically provoked DVT
- Intra-articular methylprednisolone acetate 40 mg every week 4 weeks (left knee)

Current Allergies
- Penicillin

Vitals
Height: 73 in (185 cm)
Weight: 230 lbs (104.3 kg)
BMI: 30 kg/m^2
BP: 127/84 mm Hg
Heart rate: 74 beats/minute
Resp. rate: 14 breaths/minute
Temperature: 98.8 F (37.1 C)

Physical Exam Findings
Lungs: Clear to auscultation bilaterally; no wheezing, rales, rhonchi
Heart: Regular rate and rhythm; no murmurs, rubs, or gallops
Extremities: Swelling in right calf resolved since last visit; no erythema; mild tenderness to deep palpatation; 2+ pedal pulses bilaterally
Neurological exam: Intact with no gross abnormalities

IN THE FOLLOWING CHALLENGE learners were asked to demonstrate knowledge of the optimal treatment course for the patient upon discharge. Sixty percent of learners initially chose a suboptimal response. However, after receiving one instance of video mentoring, 32% of learners were able to identify and apply the optimal decision and may be considered remediated (and assumed more likely to make the optimal decision when presented with a similar challenge in actual clinical practice). However, the fact that 28% of learners demonstrated an on-going need for further education provides meaningful insight into one area for future education.



Identifying Current Practice Behaviors and Beliefs, As Well As Persistent Gaps

- Just more than half of learners currently discharge patients on a DOAC. While the behaviors of 21% were corrected, 22% still persistently discharged patients on LMWH.
- Knowledge of DVT recurrence remains a persistent area of need. Most overestimate the risk, while 10% underestimate the risk. A very small group was corrected.
- Rivaroxaban was selected 2:1 over apixaban as the medication prescribed upon discharge, demonstrating a potential marker of preference in current practice.
- Persistent area of need: nearly 50% of learners underestimate the risk of a major bleeding event in patients treated with a DOAC.
- Persistent area of need: initial practice behavior based on responses indicate that only 59% of patients are on a DOAC for the appropriate length of time.

Provided by Med-IQ. Powered by ProDoctor

Med-IQ® ProDoctor

Supported by an educational grant from Bristol-Myers Squibb and Pfizer Alliance.