

Direct Oral Anticoagulant Protocol for Venous Thromboembolism Treatment Initiation in the Emergency Department

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BACKGROUND

- The 2016 CHEST Guidelines recommend using a direct oral anticoagulant (DOAC) over a vitamin K antagonist (VKA) in patients with deep vein thrombosis (DVT) or pulmonary embolism (PE) and no active cancer (grade 2B recommendation).¹
- The 2012 CHEST Guidelines recommend initial treatment at home in patients with an acute DVT and adequate home circumstances over in-hospital treatment (grade 1B recommendation).²
- Studies show cost-savings with DOAC therapy compared to bridging VKA with either unfractionated heparin or low molecular weight heparin (LMWH) both at home and in-hospital.^{3,4,5}
- Previous Boston Medical Center (BMC) research project reviewed data from November 2015-December 2016 to review DOAC prescribing patterns and found:
 - 85% of patients were initiated on either unfractionated heparin or LMWH
 - 5% of patients were initiated on apixaban on rivaroxaban
 - 65% of patients were admitted for diagnosis of acute or recurrent DVT/PE

METHODS

- BMC is a large, urban, academic medical center with approximately 130,000 ED visits per year
- The BMC ED is staffed by attending physicians, physician assistants, and emergency medicine residents with a dedicated clinical pharmacist in the ED 24/7

Table 1: Criteria for outpatient DOAC treatment established

BMI ≤ 40 kg/m ² and weight ≤ 120 kg
Must not currently be on anticoagulation
Not currently pregnant
No history of active malignancy
Adequate renal function (CrCl ≥ 30 mL/min)
No additional indications for hospital admission

METRICS

Outcome

- Total number of patients receiving DOAC for newly diagnosed DVT
- Percent of patients counseled by a pharmacist prior to discharge

Process

- Total number of patient diagnosed with DVT, and eligible for DOAC per protocol

Balancing

- Number of patients readmitted for VTE or bleeding

LIMITATIONS

- Pharmacist involvement in DOAC discharge relies upon pharmacy care note documentation.
- Percentage of pharmacists providing education at discharge may be higher than reflected in data.
- Unable to assess 30 day ED-return visits in patients presenting to other institutions.

DISCUSSION

- DOAC utilization and discharges after DVT diagnosis has increased in the ED.
- Two patients have returned to the ED within 30 days of DOAC initiation (one for unrelated complaint, one for minor bleeding not requiring admission).
- Pharmacist involvement in anticoagulation initiation has increased as well as involvement in ED transitions of care and discharge patient education.
- Patients being discharged during outpatient pharmacy business hours left the ED with medication in hand.

2017-2018 WORK GROUP

- To address the small percentage of patients without cancer were started on a DOAC for VTE, an interdisciplinary team consisting of pharmacists and physicians from the ED, hematology, and internal medicine was established.
- The group collaborated on how to improve adherence with the CHEST guidelines for VTE treatment and develop a pathway to allow patients to be safely discharged from the ED with a new DVT diagnosis (Table 1).

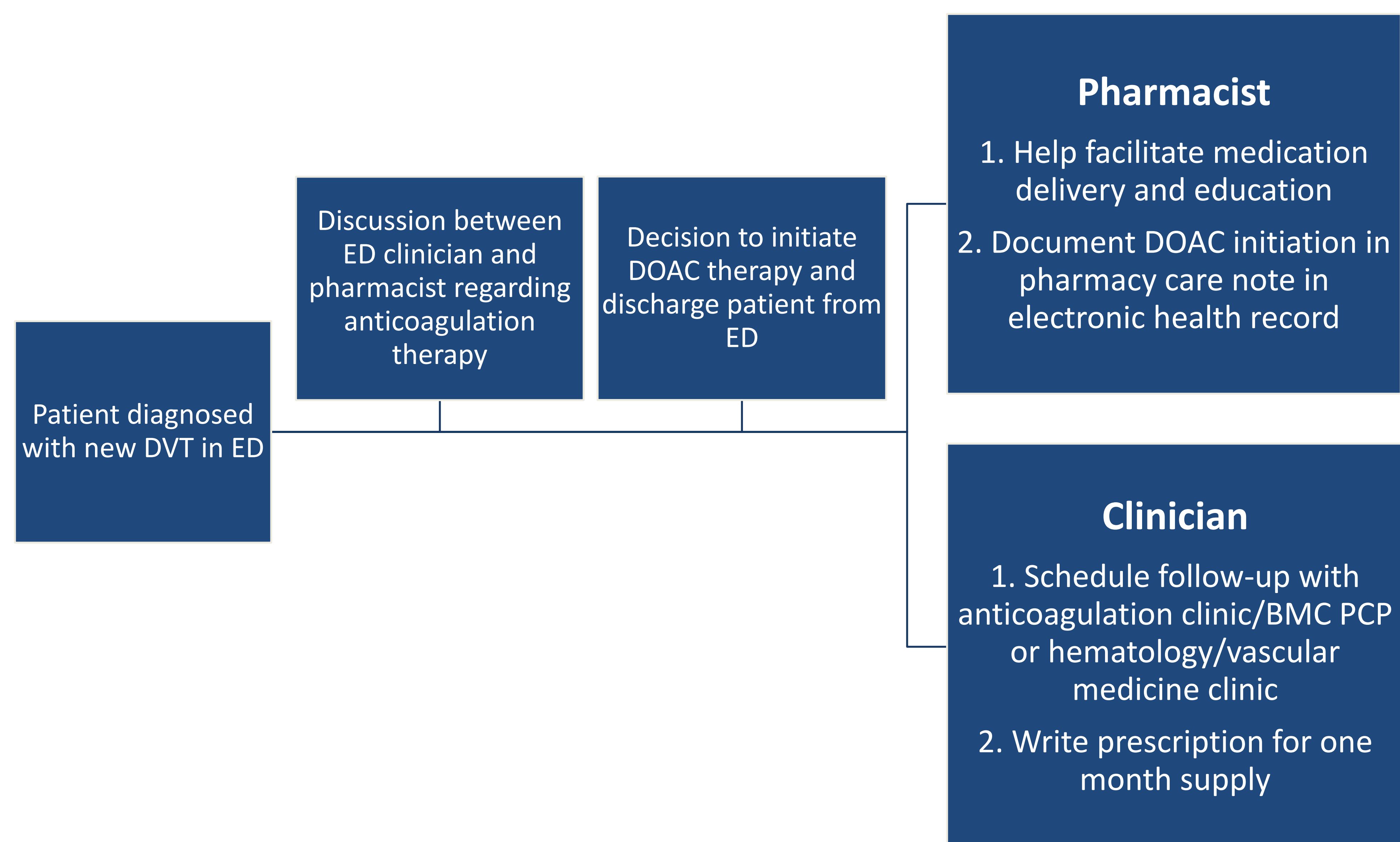
AIM

- The aim of the project was to increase DOAC utilization in the ED for DVT treatment, and provide medication discharge counseling to 90% of patients by an ED clinical pharmacist.

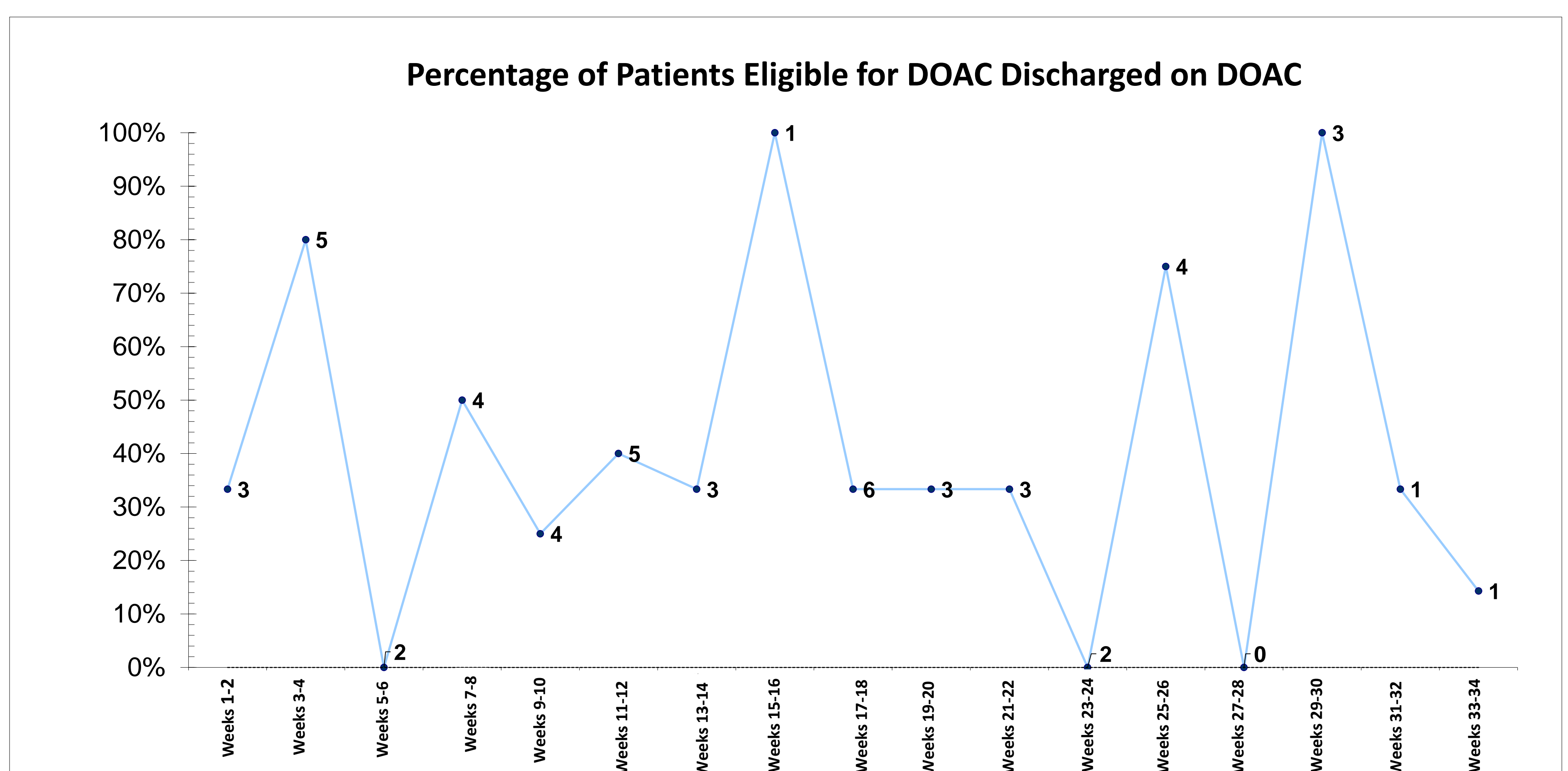
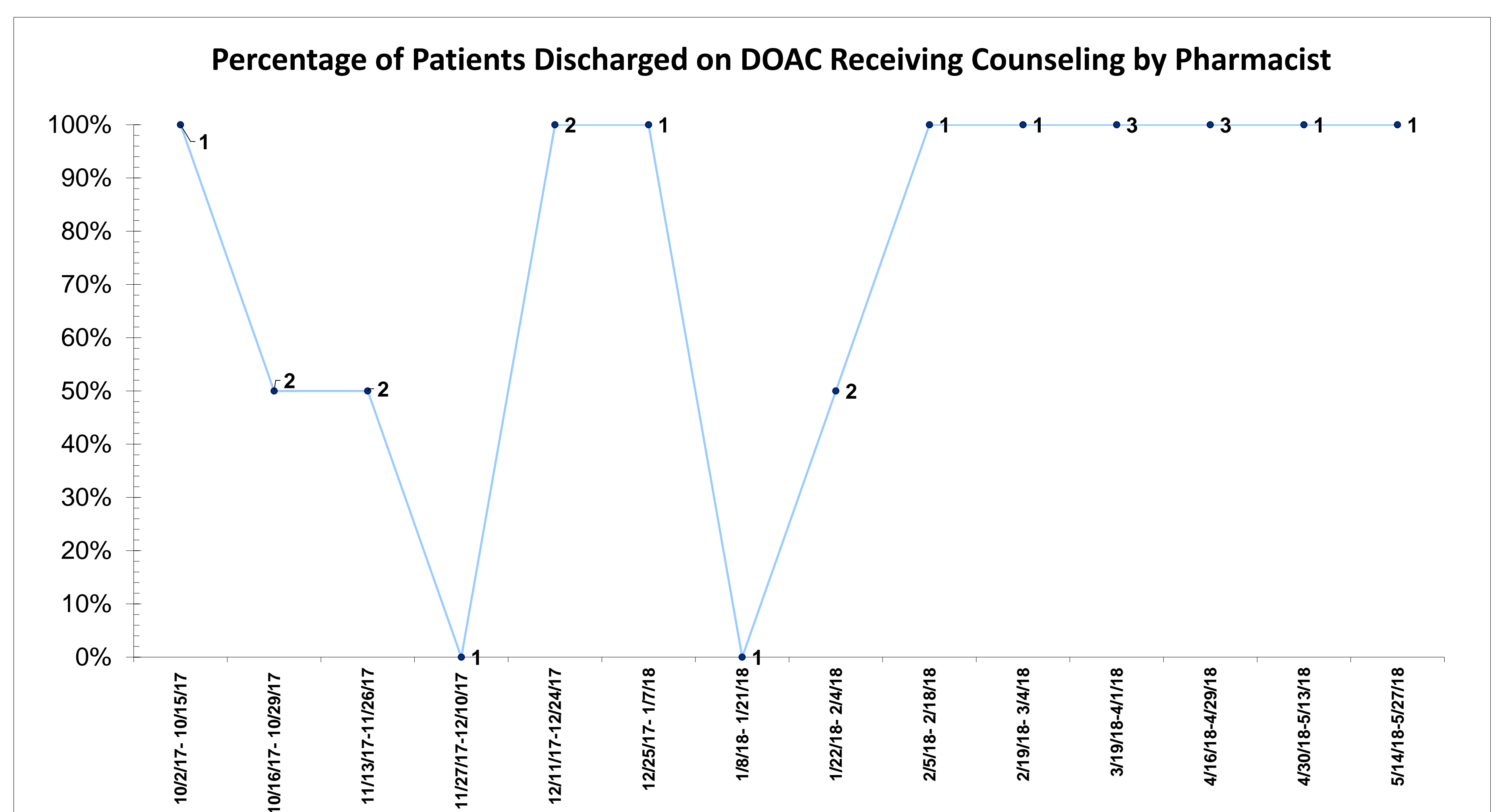
ETHICAL CONSIDERATIONS

- This project met institutional criteria for a quality improvement project; thus, institutional review board approval was waived.

PROJECT DESIGN



RESULTS



REFERENCES

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