# Statewide Collaborative to Improve Venous Thromboembolism Prophylaxis after Abdominopelvic Cancer Surgery

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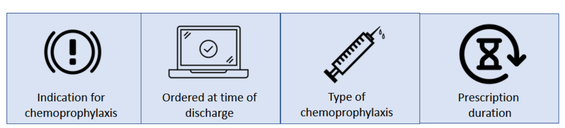
## Background

Venous thromboembolism (VTE) is a leading cause of preventable morbidity and mortality after abdominopelvic cancer surgery[1,2]. Adherence to guideline-recommended post-discharge VTE chemoprophylaxis remains low[3].

## Research Objectives

Illinois Surgical Quality Improvement Collaborative (ISQIC) implemented a post-discharge VTE process measure in 2016.




1. Evaluate post-discharge VTE chemoprophylaxis prescription adherence rates

2. Identify variation at the patient and hospital levels for the process measure

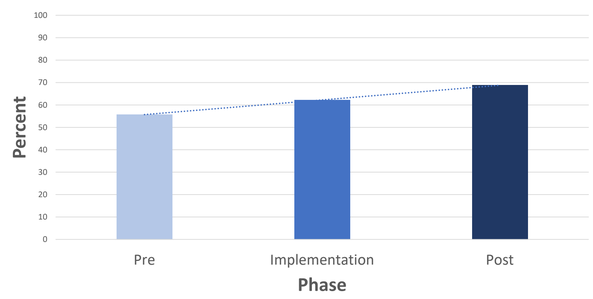
## Methods

**Multi-institutional Prospective Observational Cohort Study**
- NSQIP database and ISQIC process-measure database

**Inclusion criteria:**
- Patients who underwent abdominopelvic resection for malignancy
- Surgery performed in the state of Illinois at an ISQIC enrolled hospital
- Surgeries performed by general surgeons, urologists, or gynecologists

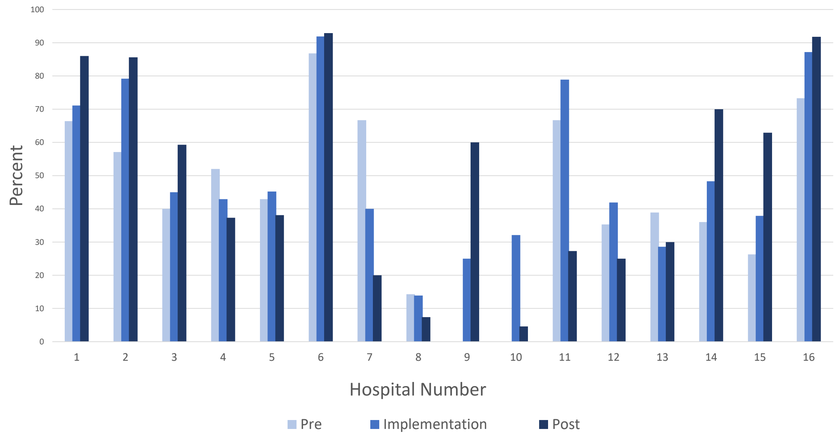
**Exclusion criteria:**
- Outpatient surgery
- Patients with contraindications to prophylactic anticoagulation
- Patients who suffered inpatient death


## Post-Discharge VTE Adherence Rates




Overall, increase in adherence rates over the three phases

## Post-Discharge VTE Adherence by Hospital Site




## Results

| Post Discharge VTE Prophylaxis Adherence | | | |
|---|---|---|---|
| | No (n=1367) | Yes (n=2145) | OR, CI |
| **Age** | | | |
| **<44** | 77 | 112 | Ref |
| **45-64** | 594 (41.6) | 830 (58.4) | 1.00, (0.73-1.39) |
| **65-74** | 368 (36.7) | 635 (63.3) | 1.22, (0.88-1.70) |
| **74-84** | 244 (36.4) | 427 (63.6) | 1.38, (0.98, 1.95) |
| **>85** | 84 (37.3) | 141 (62.7) | 1.46, (0.97-2.22) |
| **Sex** | | | |
| **Male** | 750 (42.4) | 1020 (57.6) | Ref |
| **Female** | 617 (35.4) | 1125 (64.6) | 1.03, (0.89-1.21) |
| **BMI** | | | |
| **<18.5** | 36 (39.1) | 56 (60.9) | 1.00, (0.63-1.59) |
| **18.5-24.9** | 349 (37.8) | 574 (62.2) | Ref |
| **25-29.9** | 484 (41.7) | 677 (58.3) | 0.87, (0.72-1.08) |
| **>30** | 498 (37.3) | 838 (62.7) | 0.88, (0.71-1.08) |
| **Race/Ethnicity** | | | |
| **White** | 1100 (39.5) | 1688 (60.5) | Ref |
| **Black** | 152 (37.1) | 258 (62.9) | 1.16, (0.92-1.45) |
| **Asian** | 55 (42.3) | 75 (57.7) | 0.85, (0.59-1.24) |
| **Other/Unknown** | 60 (32.6) | 124 (67.4) | 1.29, (0.92-1.80) |
| **Current Smoker** | | | |
| **Yes** | 182 (39.0) | 285 (61.0) | 1.08, (0.88-1.34) |
| **No** | 1185 (38.9) | 1860 (61.1) | Ref |
| **Procedure type** | | | |
| Colorectal | 959 (44.1) | 1215 (55.9) | Ref |
| Hepato-pancreatico-biliary | 101 (29.4) | 243 (70.6) | 1.97, (1.53-2.54) |
| Urologic | 208 (41.9) | 289 (58.1) | 1.13, (0.92-1.38) |
| Gynecologic | 64 (16.7) | 319 (83.3) | 3.92, (2.92-5.27) |

- No associations between patient demographic characteristics and passing the measure when adjusting for confounders
- More likely prescribed post-discharge chemoprophylaxis if under went hepato-pancreatico-biliary or gynecologic surgery compared to colorectal surgery
- Significant hospital level variability

## Limitations

- NSQIP contains hospitals participating in ISQIC or other quality improvement programs
- Implementation changed to optional mid-way through study
- Characteristics were not evaluated between time points, only across all 3 phases

## Conclusions

- Implementation of a post-discharge VTE QIP was associated with an increase in rate of process measure adherence
- Future work to focus on specific hospital-level differences and interventions

**References**
1. Rasmussen MS, Jorgensen LN, Wille-Jorgensen P. Prolonged thromboprophylaxis with low molecular weight heparin for abdominal or pelvic surgery. Cochrane Database Syst Rev. 2009(1):CD004318.
2. Lyman GH. Venous thromboembolism in the patient with cancer: focus on burden of disease and benefits of thromboprophylaxis. Cancer 2011;117:1334-49.
3. Geahchan N, Basile M, Tohmeh M, registry D. Venous thromboembolism prophylaxis in patients undergoing abdominal and pelvic cancer surgery: adherence and compliance to ACCP guidelines in DIONYS registry. Springerplus. 2016;5(1):1541.

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ISQIC Illinois Surgical Quality Improvement Collaborative