

## **PREVENTION OF PE AND DVT AMONG HOSPITALIZED PATIENTS**

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There is a wide gap between consensus guidelines and actual implementation of venous thromboembolism (VTE) prophylaxis. At the moment, ordering VTE prophylaxis is usually left to the discretion of the patient's Attending Physician. The attitude toward VTE prevention is evolving, however, from the traditional voluntary approach to more of a mandatory edict. Within the next 5 years, VTE prophylaxis of hospitalized patients will be required. Inappropriate omission of prophylaxis orders will result in censure, lower hospital quality ratings, and, for repeat violators, potential loss of hospital accreditation.

Audits show that the major gap is failure to prophylax hospitalized medical patients at risk for VTE. General medical services and medical subspecialty services, especially oncology, consistently rate as the biggest "trouble spots."

At Brigham and Women's Hospital, we undertook a randomized controlled trial to determine if we could change physician behavior. We worked with colleagues in Information Systems for 2 years to devise programming that could identify patients at high risk of DVT. The program would then search to determine whether these high risk patients had computerized orders entered to prevent DVT.

I developed a score point system that facilitated rapid assessment of VTE risk. High risk patients were defined as having 4 or more score points, which could be accumulated with any of the following 8 VTE risk factors: cancer (3 points), prior VTE (3 points), hypercoagulability (3 points), major surgery (2 points), bed rest (1 point), advanced age (1 point), obesity (1 point), or hormone replacement therapy/oral contraceptives (1 point).

As a quality improvement initiative, we undertook a trial in which high risk VTE patients without prophylaxis orders were randomized to an intervention or control group. The intervention was a single alert to the responsible physician that his or her patient is at high risk of DVT but does not have prophylaxis orders.

The control group patients had a high rate of symptomatic DVT or pulmonary embolism (PE): more than 8% during the 3 months of follow up. Each DVT or PE was confirmed by an imaging test, usually venous ultrasound or chest CT, respectively.

The intervention group had an overall 41% reduction in VTE. The rate of PE reduction was 60%. There was no increase in major or minor bleeding the intervention group.

Electronic alerts facilitated detection of patients at high risk for VTE. The alerts more than doubled the rate of prophylaxis. Most importantly, electronic alerts reduced the incidence of symptomatic VTE by 41%.

## **REFERENCES**

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