Patient Safety Solutions: VTE Prophylaxis in the Bariatric Surgical Patient
Saint Agnes Hospital

Program/Project Description.
Saint Agnes Hospital of Baltimore, Maryland is a Bariatric Center of Excellence. At this location, bariatric physicians perform Roux-en-Y Gastric Bypass, Gastric Banding, and Sleeve Gastrectomies. According to studies, bariatric surgical patients have an increased risk of venous thromboembolism (VTE) (Nguyen, Owings, Gosselin, Pevec, Lee, Goldman, Wolfe, 2001; Rocha, Vasconcellos, Neto, Araújo, Alves, Lopes, 2006). To begin, direct surgical trauma causing inflammation increases VTE risk as related to Virchow's Triad (Maiocco, 2008). Also, specific conditions specialized to the bariatric surgical population like hypercoagulability from chronic inflammatory states and increased venous stasis from medical comorbidities contribute to this group's VTE risk factors (Maiocco, 2008). In order to prevent VTE in this patient population, Saint Agnes physicians order a combination regimen of unfractionated heparin (UFH), sequential compression devices (SCDs), and early ambulation. When some nurses voiced concern over whether this regimen was effective, or if there was a better process in place elsewhere, a small team of nurses chose to investigate the best practice in VTE prophylaxis in this patient population. The goals of the project were to determine current best practice and to take steps necessary to ensure that patients are getting the best possible care with the best possible outcomes.

Process.
1. A team of three staff nurses, under the direction of the nurse manager, investigated the issue by conducting a literature review, expert interview and data analysis. Literature included journal articles obtained from databases such as CINAHL and Ovid. The group conducted an expert interview with Dr. Singh, a bariatric surgeon at Saint Agnes, and performed an analysis of data obtained from the Bariatric Outcomes Longitudinal Database (BOLD). Literature suggested that no clear consensus exists among surgeons regarding best practice for VTE prophylaxis, a finding Dr. Singh agreed with during the interview. (Rocha et al., 2000; Wu, Barba, 2000). The group reviewed each intervention (early ambulation, UFH and SCDs) separately, and combined. The literature supported the safety and efficacy of each individual intervention, showing that the benefits outweighed the risks. (Pearse, Caldwell, Lockwood, & Hollard, 2007; Morris, Woodcock, 2004). Several articles supported the use of all three, and showed improved efficacy with a combination of interventions (Cotter, Fisher, Shopnik, 2005; Escalante-Tattersfield, Tucker, Fajnwaks, Szomstein, Rosenthal, 2008). In one study, only 0.2% of patients developed DVT and no patients developed PE, probably due to effective prophylaxis (Escalante-Tattersfield, Tucker, Szomstein, Rosenthal, 2008). Dr. Singh has found the combination effective, and data obtained from the BOLD database showed the incidence of VTE at Saint Agnes remains very low.

Solution.
After the issue was investigated, it was determined that Saint Agnes Hospital is currently operating within best practice. The findings were shared with the staff at the hospital's annual nursing conference. Educational materials were distributed to the nursing staff. It was also determined that, due to the lack of consistency in reviewed literature, more research should be performed on VTE prophylaxis in the bariatric surgical patient so that universal guidelines can be established. The nursing staff is also exploring the use of pedometers to encourage patient compliance with early ambulation, and creating a handout for all bariatric surgical patients explaining the importance of the interventions and how they can assist with their own recovery.

Measurable Outcomes.
Nurses have demonstrated an increased awareness of VTE prophylaxis since the findings were presented. According to the Bariatric Outcomes Longitudinal Database (BOLD), Saint Agnes Hospital only had one incidence of VTE out of 2,236 bariatric surgical procedures performed since 2007. Registered nurses are being frequently educated, and show increased interest in the prevention of VTE among this high risk patient population. Physicians and staff nurses actively converse regarding patient participation with VTE interventions. The collaborative efforts of a multidisciplinary team such as physicians, staff nurses, clinical unit coordinators, and patient care technicians, provide each patient with the necessary tools and education to prevent VTE.
Sustainability.
The physicians at the Saint Agnes Bariatric Center of Excellence fully incorporated the Solution for VTE prophylaxis, making it a standard of practice on the unit. Patients attend a pre-op class which includes information of VTEs and prophylaxis. Nurses on the unit receive specialized bariatric surgery training, including VTE prophylaxis, during orientation. Some nurses attended the poster presentation, and all received handouts of the poster. With increased awareness about the dangers of VTE, nurses have continued to practice the protocol and encourage patients to take ownership in their own care. Staff has been observed taking extra time at the bedside to carefully explain VTE interventions to their patients and families. Next steps to ensure sustainability include interviewing patients to determine their level of knowledge on VTEs and creating a handout for patients/families. Also, staff is looking into a research study involving pedometers to encourage ambulation. Interdisciplinary collaboration and patient/family education remain crucial to successful implementation of the protocol.

Role of Collaboration and Leadership.
Team work and collaboration between nurses, physicians and management played an important role in the Solution. Staff nurses worked together to obtain information, each researching and becoming an “expert” in one of the interventions, then teaching the group. Tasks were divided up and each person contributed based on their strengths. The physicians showed their support by participating in the expert interview. They also created the VTE protocol that currently exists at St. Agnes, and demonstrate leadership on the unit by encouraging patients, families and staff to follow the interventions. The nurse manager and research coordinator’s active engagement in the search for the Solution demonstrated leadership support. The nurse manager allowed staff time to explore and share the Solution. She also facilitated communication between disciplines, including setting up an expert interview, and obtaining statistics. The nurse manager and administration supported the poster presentation at the 2nd Annual Nursing Evidence Based Practice Conference, and encouraged the submission of the abstract. They also encouraged the group to engage in the next level of research. The nurse manager is in the process of obtaining pedometers for this purpose.

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References


