Venous Thromboembolism (VTE) Prevention

January 2008

Case Study – Northern Health

Setting

Established in July 2000, Northern Health provides quality health care services to the expanding communities in Melbourne's northern suburbs. In one of Melbourne's busiest growth corridors, Northern Health offers the community health care services where they are needed – close to where people live.

Northern Health's campuses – Broadmeadows Health Service, The Northern Hospital, Bundoora Extended Care Centre, Craigieburn Health Service and Panch Health Service – provide a unique mix of services including medical, surgical, emergency, intensive and coronary care, paediatrics, women's and maternal health, mental health, aged care, palliative care, and rehabilitation programs. These are provided through inpatient, ambulatory and community-based programs.

The Venous Thromboembolism Prevention project has been conducted at The Northern Hospital, which is the acute campus of Northern Health. Since opening in 1998 it has been continually undergoing building works to expand the services provided to the community. With approximately 300 beds The Northern Hospital treated 70,000 emergency presentations, 35,000 inpatients and 104,000 outpatients during the past year.

The Northern Hospital is a teaching hospital that jointly recruits junior medical staff with Austin Health. Training registrar positions are offered across a range of specialties including medicine, surgery, orthopaedics, plastics, obstetrics, emergency, intensive care and anaesthetics. The majority of senior medical staff are visiting medical officers with some full-time specialists employed.

Background

In 2003 The Northern Hospital's Clinical Risk Management program identified venous thromboembolism (VTE) prevention as a safety and quality issue. A working group was subsequently established and over the next 18 months work was undertaken to try to reduce the risk to our patients. This included introducing a *Thrombosis risk assessment form* and raising the profile of preventative measures such as the use of compression stockings and pneumatic compression.

Feedback was received from nursing staff in mid 2005 requesting that the *Thrombosis risk assessment form* be revised, as they felt frustrated by their attempts to obtain orders for recommended prophylaxis from medical staff. Between September 2004 and September 2005, 158 patients had deep vein thrombosis (DVT) during their admission, 86 had a pulmonary embolism (PE) and two patients died related to a PE. Although we were able to gather data on patients with DVT we realised that this was not an accurate record of our DVT complication rate, as some patients were admitted with DVT as their primary diagnosis and not due to a complication of an admission. Some patients who did have a complication were potentially presenting to another hospital.

When the National Institute of Clinical Studies issued an invitation for hospitals to apply to participate in their Venous Thromboembolism Prevention Program we readily submitted an expression of interest to participate. We believed that participation in the project would help us to reinvigorate our prevention program and would provide support and advice on the best way to make improvements to our prevention strategies.

We were very pleased when we were advised that we had been successful in our submission to participate in the NICS program. In addition, we were notified that the Victorian Quality Council would be providing financial support during our participation.

Implementation

With funding from the VQC, the first step to reinvigorating our program was to recruit a project officer. It was important to us that the person chosen to drive the project was respected throughout the organisation. We asked our injury prevention coordinator to add this to the group of projects that she managed (including falls prevention, pressure ulcer prevention and bariatric patient management). We provided her with a one-day-a-week assistant to assist her in balancing her workload.

Once the project officer was identified we re-established the working party and renamed it 'VTE Prevention Working Party'. This group was multidisciplinary and was chaired by the project's executive sponsor (Director of Nursing). Working party members included:

- Director of Nursing
- Clinical Services Director – Medicine
- Clinical Services Director – Surgery
- Clinical Services Director – Obstetrics, Gynaecology & Paediatrics
- Director of Anaesthetics
- Medical Administration Fellow
- Director of Pharmacy
- Deputy Director of Pharmacy
- Quality Coordinator
- Clinical Risk Manager
- Health Information Services Manager
- Injury Prevention Coordinator
- nursing representative.

We conducted an audit on all inpatients on the general wards in order to gain an understanding of exactly what was occurring throughout the hospital.

This was based on the NICS audit tool and assessed whether the patient had received prophylaxis that was compliant with *Prevention of venous thromboembolism: best practice guidelines for Australia & New Zealand, 3rd edition, 2005*. We employed some medical students as research assistants for the day in order to conduct an audit of this size. The audit reinforced our suspicions – showing us that in February 2006 only 44 per cent of high-risk patients were receiving evidence-based prophylaxis.

This result confirmed that a new approach was required and the reinvigorated VTE Prevention Working Party, with clinical directors from all key divisions decided:

- to develop a new *VTE risk assessment tool*, with clear guidelines for prescribing preventative prophylaxis, based on the best-practice guidelines
- that medical staff would be responsible for identifying level of risk and prescribing prophylaxis
- to add the tool as an extra page to the soon-to-be-introduced *National inpatient medication chart*, in order to integrally link the tool to prescribing
- that nursing staff only would be responsible for administering prophylaxis.

Between February and September 2006 the VTE policy was updated and the new Risk assessment tool, with guidelines, were developed, trialed and printed on the hospital's National inpatient medication chart. Implementation of the new tool and the new National inpatient medication chart occurred in September. Staff education focused on nursing staff with only one-on-one discussion with medical staff. This proved to be an ineffective approach; the focus should have been on providing education to all levels of medical staff. Audits conducted in September 2006 showed that 74 per cent of high-risk patients on the general wards now received evidence-based prophylaxis.

Between November 2006 and February 2007 optimal prescribing reduced again to 52 per cent after an intern rotation in November.

Some minor changes were made to the Risk assessment tool, in line with feedback received from medical staff, and a more structured educational program was developed for junior medical staff through 10-minute educational sessions at the beginning of each intern rotation.

Compliance increased again to 72 per cent in March 2007, an improvement but not yet close enough to our aim of at least 90 per cent optimal prescribing of VTE prophylaxis.

Review

Further changes were developed and implemented in June and July 2007. They included:

- refocusing education to medical staff at all levels, including 10-minute educational sessions for all interns and second- and third-year HMOs with each rotation
- introducing regular feedback of audit results by medical treating units and departments to consultants and other staff at grand rounds
- incorporating VTE as a standard agenda item at clinical risk meetings and placing audit results on the hospital's intranet site
- adjusting the Risk assessment tool, including clarifying risks related to age and mobility, and including orthopaedic and obstetric requirements
- introducing a dedicated VTE prophylaxis-prescribing box in the regular medication section of the National inpatient medication chart

- improving patient education through providing patient education brochures – the NICS VTE prevention brochures are now available in all wards, and are handed to all high-risk patients in the pre-admission clinic (brochures in 11 other languages are printed from the hospital's intranet site).

Those changes did have a significant impact and audit results in August 2007 showed that 98 per cent of eligible high-risk acute general ward patients and 97 per cent of all eligible acute general ward patients now received appropriate prophylaxis.

In December 2007 the audit was expanded to include a number of recently opened general wards, delivery suite and the obstetric department; results showed that the improvements had been maintained with 96 per cent of all, and 97 per cent of high-risk acute ward patients receiving appropriate prophylaxis.

Enablers

Key points that contributed to the positive results of the project include:

- The VTE Project Committee consisted of the most senior staff from all relevant departments. This ensured that all decisions were supported and disseminated by management and could be introduced in a timely manner.
- The project coordinator, who is also the injury prevention coordinator, was funded for one extra day a week in 2006 and 2007. The project has now been integrated with other injury prevention projects to ensure that the project maintains its high profile and education. Audits and other improvements continue to be explored and implemented.
- Medical staff completed the Risk assessment tool (previous tool was completed by nursing staff).
- The tool and extra guidelines were printed on the new National inpatient medication chart.
- The patient's risk level and the preventative prophylaxis order was documented in the dedicated VTE prophylaxis prescribing box in the regular medication section of the National inpatient medication chart.
- Audits were conducted regularly and results, by treating medical unit, were distributed to consultants and other medical staff.
- Junior medical staff receive ongoing VTE education (at hospital orientation, during each rotation, and through guidelines in the medical handbooks).

Barriers

A number of barriers were encountered. They included:

- The initial staff education focused on nursing staff with only one-on-one discussion with medical staff. This proved to be an ineffective approach; the focus should have been on providing education to all levels of medical staff.
- Initially engagement from consultants and other senior medical staff was less than ideal; they did not question, nor guide junior staff regarding optimal prescribing of preventative prophylaxis. This improved after an educational session presented by Dr Alison Street at the hospital. Further engagement was achieved by presenting regular VTE audit results (by treating unit) at grand rounds.
- Although ordering of prophylaxis is optimal, the documentation of the patients risk remains poor. This problem has not yet been overcome.

Turning the project into a ongoing program

By appointing the injury prevention coordinator as the VTE project coordinator (with extra funding for one day a week), it was very easy to ensure that the project would be sustainable in the long term by integrating it with other injury prevention programs, which for example include falls and pressure ulcers prevention.

The VTE committee will also remain active but will only meet on an irregular basis as the need arises. Regular e-mail contact is maintained to report audit results and other relevant information.

VTE has also become a standard agenda item on the clinical risk committees for all divisions. to ensure that results are maintained and issues addressed.

Medical education has now also been integrated into the yearly educational program for interns and second- and third-year HMOs