1.2 Percentage of patients at high risk of venous thromboembolism that receive appropriate prophylaxis

Purpose

This indicator addresses the effectiveness of processes for preventing venous thromboembolism (VTE) in admitted patients.

Background and evidence

The National Institute of Clinical Studies (NICS) has identified the widespread underuse of venous thromboembolism (VTE) prophylaxis in Australian hospitals as an evidence-practice gap.[1] Deep vein thrombosis and pulmonary embolism (collectively known as VTE) are major, potentially fatal complications of hospital admission. The incidence of VTE varies with age, medical condition, type of surgery and prolonged immobilisation.

Appropriate prophylaxis may take the form of mechanical methods (eg graduated compression stockings), chemoprophylaxis or combinations of these. The correct choice of prophylaxis depends on the clinical situation and should be determined by local hospital policy. In terms of quality use of medicines, it is appropriate to ensure all patients who need chemoprophylaxis receive the correct dose. Similarly it is important to ensure chemoprophylaxis is not given when it is not indicated.

Identification of high risk patients requires a standardised process for risk assessment for every adult patient admitted to hospital. Use of locally agreed processes for assessing and documenting risk in all adult patients, and locally agreed recommendations for appropriate prophylaxis may assist implementation of best practice.

Key definitions

Patients at high risk of venous thromboembolism are defined as follows:[2]

- High risk surgical patients include patients with:
  - Orthopaedic surgery of pelvis, hip or lower limb
  - Multiple trauma
  - Major surgery (intra-abdominal surgery, other operations lasting more than 45 minutes) and age over 60 years
  - Major surgery and age 40-60 years with medical risk factors noted below
- High risk medical patients include patients admitted with:
  - A new ischaemic stroke
  - A history of deep vein thrombosis and pulmonary embolism
  - An episode of decompensated heart failure
  - Active cancer
  - Acute on chronic lung disease
  - Acute on chronic inflammatory disease
  - Age more than 60 years unless otherwise well and ambulant and no other risk factors.

Appropriate prophylaxis means prophylaxis that is concordant with the recommendations in locally agreed guidelines which have been endorsed by the Drug and Therapeutics Committee or other appropriate committee.

Continued next page

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Data collection for local use

Recommended sample selection: Random sample of adult patients admitted over a one month period. Identification of high risk patients within the sample will be facilitated by a systematic process for routine VTE risk assessment for all adult patients. Data for high risk medical and high risk surgical patients should be handled separately in order to facilitate targeted action. Random means each patient has an equal chance of inclusion in the audit.

Recommended sample size: The following sample sizes are recommended based on the number of adult beds in the hospital:

Number of adult beds in hospital	Sample size
150 or more	20% of patients
30 - 149	30 patients
Less than 30	All patients

Collecting a larger sample where possible will increase the sensitivity of the data.

Recommended methodology: Review of medical records.

Data collection for inter-hospital comparison

This indicator may be suitable for inter-hospital comparison. In this case, definitions, sampling methods and guidelines for audit and reporting need to be agreed in advance in consultation with the coordinating agency.

Indicator calculation

$$\frac{\text{Numerator}}{\text{Denominator}} \times 100\%$$

Calculate the indicator separately for surgical and medical patients

Numerator = Number of adult patients at high risk of VTE who receive appropriate prophylaxis

Denominator = Number of adult patients at high risk of VTE in sample

Limitations and interpretation

This indicator does not measure appropriate prophylaxis in patients at moderate risk of VTE. Nevertheless, use of appropriate prophylaxis is important in these patients and should not be neglected.

Determination of risk may be dependent on clinical judgement and may be influenced by the extent of documentation in the clinical record.

Choice of prophylactic therapy should be guided by an objective assessment of VTE risk. See indicator *1.1 Percentage of admitted adult patients that are assessed for risk of venous thromboembolism* for further information regarding VTE risk assessment. It is recommended that these indicators be collected concurrently where possible.

Further information

For more information and resources from the NICS "Stop the Clot" program for VTE prevention see the resource page on the NICS website **www.nhmrc.gov.au/nics**. Resources include a sample hospital VTE policy, a sample VTE risk assessment form, and a sample audit form.

The *Medication Safety Self Assessment for Antithrombotic Therapy in Australian hospitals*[3] *(MSSA-AT)* can help identify potential strategies for improvement with this and other indicators. The MSSA-AT encourages development of robust systems for safe prescribing, dispensing, administration and monitoring of antithrombotic therapy. The MSSA-AT is available at **www.cec.health.nsw.gov.au**

References

1. Evidence-Practice Gaps Report Volume 1: National Institute of Clinical Studies, 2003.
2. Prevention of Venous Thromboembolism. Best Practice Guidelines for Australia and New Zealand. 3rd Edition: The Australia and New Zealand Working Party on the Management and Prevention of Venous Thromboembolism, 2005.
3. Medication Safety Self Assessment for Antithrombotic Therapy in Australian Hospitals: Institute for Safe Medication Practices (Adapted for Australian use by the NSW Therapeutic Advisory Group and the Clinical Excellence Commission), 2007.