Using the Quality Improvement Data System (QIDS) to view Hospital Acquired Complication (HAC) Data for Venous Thromboembolism (VTE)

A hospital-acquired complication (HAC) refers to a complication for which clinical risk mitigation strategies may reduce (but not necessarily eliminate) the risk of that complication occurring. Medical records codes for VTE HACs using internationally set ICD-10 codes, which are included in the Health Information Exchange (HIE) dataset (Table 1).

The Quality Improvement Data System (QIDS) has been developed by the CEC to allow LHDs/SHNs and their facilities to view and extract HAC data. VTE HAC data can be extracted on an LHD, facility or ward level with the ability to benchmark against peer group hospitals and NSW averages (Figure 1).

Principal and all other diagnosis codes are included in database extractions.

The VTE database is intended to provide LHDs/SHNs:

- with a starting point for commencing conversations around VTE and initiating investigations as appropriate
- with data that can be used to inform the implementation of processes aimed at reducing the incidence of hospital-associated VTE
- the ability to monitor rates of VTE and evaluate the implementation of VTE prevention processes

Figure 1. VTE Database Extractions

Select the most recent VTE HAC Codes as per https://www.safetyandquality.gov.au/our-work/indicators/hospital-acquired-complications

Select relevant ages. The NSW Health VTE Prevention Policy specifies that all adult inpatients (16 years and over) should be assessed for VTE risk

Remember to turn on the condition onset 'During the episode of admitted patient care'
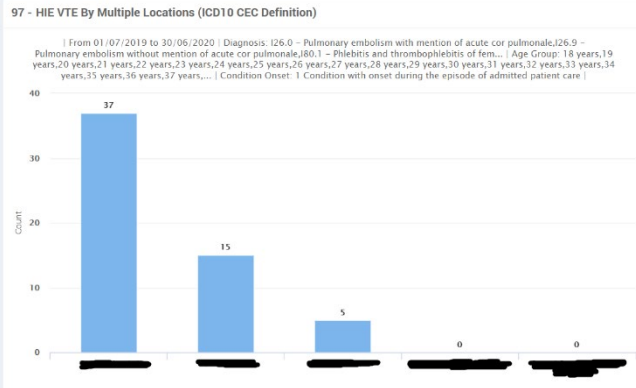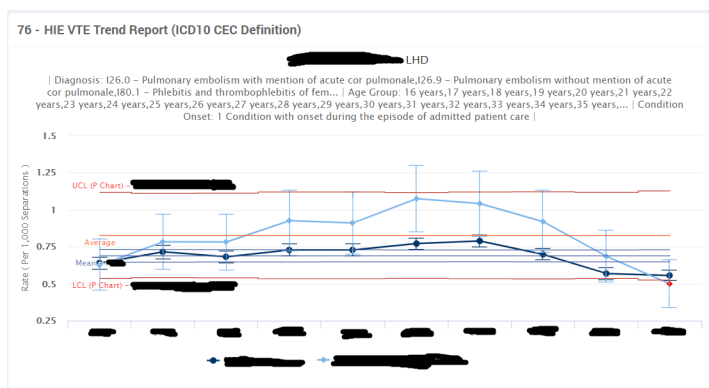
Table 1- VTE related ICD-10 codes (as per HAC Version 3.1 – current at March 2021)

I26.0	Pulmonary embolism with mention of acute cor pulmonale
I26.9	Pulmonary embolism without mention of acute cor pulmonale
I80.1	Phlebitis and thrombophlebitis of femoral vein
I80.20	Phlebitis and thrombophlebitis of deep vessels of lower extremities, not elsewhere classified
I80.21	Phlebitis and thrombophlebitis of iliac vein
I80.22	Phlebitis and thrombophlebitis of popliteal vein
I80.23	Phlebitis and thrombophlebitis of tibial vein
I80.42	Phlebitis and thrombophlebitis of deep vessels of upper extremities
I80.8	Phlebitis and thrombophlebitis of other sites

Limitations within the Dataset

While the database provides a general overview of the incidence of VTE and is a useful resource for facilities wishing to improve their prevention processes, limitations exist within the dataset.

As the database relies on coded data extracted from the HIE dataset, the quality of the data is affected by coding accuracy (e.g. insufficient documentation in the medical record will result in the case not being coded and a lower rather than actual rate recorded). Coding validation audits may be considered to confirm the data's quality. Additionally, LHDs may wish to undertake efforts to standardise coding practices across their facilities to improve the internal comparability of their data.

The origin of the VTE (whether the condition was present at the beginning of the current episode of care or absent but arose during the episode) is not a mandatory reporting item in the HIE dataset. These reporting limitations make it difficult to ascertain the true incidence of VTE occurring during hospitalisation.

While approximately half to two thirds of cases are preventable[1, 2], coded data does not identify whether the case was preventable.

The HIE dataset does not identify cases of hospital-associated VTE requiring readmission. Data linkage may assist with identifying these cases and improve the accuracy of VTE rates associated with hospitalisation.

Cases of hospital-associated VTE following discharge which either lead to death or require treatment in the community setting are often not reported. This suggests that rates of hospital-associated VTE may be higher than those captured in the HIE dataset.

The HAC specification list is revised periodically. When viewing data across years, it is important to note that there may be some variation in the definition of the VTE HAC rates captured. QIDS is periodically updated and it is important to check that the most current HAC specification list is in use.

Caution should be exercised when extracting rates by ward. Since the database captures rates based on admissions, if a VTE developed and the patient had been on 3 wards during that admission, it is counted for each ward. Thus, inferences cannot be accurately drawn from rates extracted on a ward level nor can these rates be used to compare incidences between wards.

The database allows for the extraction of rates via VTE types (pulmonary embolism (PE) and deep vein thrombosis (DVT)). The addition of rates extracted for each type may result in a total that differs from the figure generated by inputting 'ALL' in the 'VTE Type' field. The latter method counts the number of admissions with at least one VTE event whereas extracting rates via VTE types counts all events. Since some patients have multiple events during the same admission (for example PE and DVT), the addition of rates extracted for each type may yield a higher total.

References

1. Arnold DM, Khan SR, I S. Missed opportunities for the prevention of venous thromboembolism: an evaluation of the use of thromboprophylaxis guidelines. Chest Dec 2001;120(6):1964-71.

2. Agency for Healthcare Research and Quality. Preventing Hospital-Acquired Venous Thromboembolism. A Guide for Effective Quality Improvement. August 2008.

About the CEC VTE Prevention Program

This program was been established to reduce the incidence of hospital-associated VTE in NSW public hospitals. For more information on any aspect of the VTE Prevention Program please contact CEC- Stopclots@health.nsw.gov.au or refer to the VTE Prevention Program webpage https://www.cec.health.nsw.gov.au/keep-patients-safe/medication-safety/vte-prevention