

## **VTE Prophylaxis Data Roadmap**

### **Implementing Best-Practice, Patient-Centered Venous Thromboembolism Prevention in Trauma Centers**

**Patient-Centered Outcomes Research Institute (PCORI) contract DI-2019C3-17859**

**Coalition for National Trauma Research**

**PI: Elliott R. Haut, MD, PhD**

#### **Purpose**

The purpose of this part of the study is to build a registry of every dose of VTE prophylaxis medication that is prescribed for patients at your hospital from January 1, 2019 until December 31, 2022. Using electronic health record [EHR] systems, the VTE prophylaxis registry will retrospectively report dose-level information about medications used for VTE prophylaxis (see appendix). Dose-level data, including patient information, medication information, prescriber information, and nurse information, will be reported from multiple sources within the EHR.

#### **Data Sources Using Epic Clarity**

##### **Epic Hospital Admissions**

All inpatient and observation encounters use PAT\_ENC\_HSP and/or HSP\_ACCOUNT tables for specific admission/discharge date ranges that are the primary focus of your institution.

##### **Epic VTE Prophylaxis Medications**

VTE prophylaxis data extraction is medication-driven. Identifying the medications and doses that your institution uses for VTE prophylaxis is a critical step before data extraction. Appendix B has all of the included medications with dose, route, and frequency listed (see Appendix). CLARITY\_MEDICATION table in Epic Clarity stores all medications that are available at your institution. Eligible medications can queried from the CLARITY\_MEDICATION table using various data elements such as NAME, GENERIC\_NAME, PHARM\_CLASS\_C, STRENGTH, ROUTE, and other identifiers that will allow you to capture all the required medications throughout this discovery phase. MEDICATION\_ID is a unique identifier for every medication, which should be documented for the selected medication list, which will be later used in extracting medication orders.

##### **Epic Medication Orders**

ORDER\_MED table is the leading table in the query to extract medication orders for identified medications. When pulling medication orders it is important to exclude any of the canceled, pending, or denied orders using ORDER\_STATUS\_C field in the selection criteria. Use ORDER\_MED.MEDICATION\_ID field in combination with ORDER\_MED.HV\_DISCR\_FREQ\_ID (frequency). Frequency definitions could be located in IP\_FREQUENCY table by linking it using ORDER\_MED.HV\_DISCR\_FREQ\_ID = IP\_FREQUENCY.FREQ\_ID. Identifying a correct combination of both the medications, frequencies, administration routes, and any other VTE prophylaxis data requirements is a big part of the query's selection criteria. Refer to Appendix A for the VTE prophylaxis data extraction diagram.

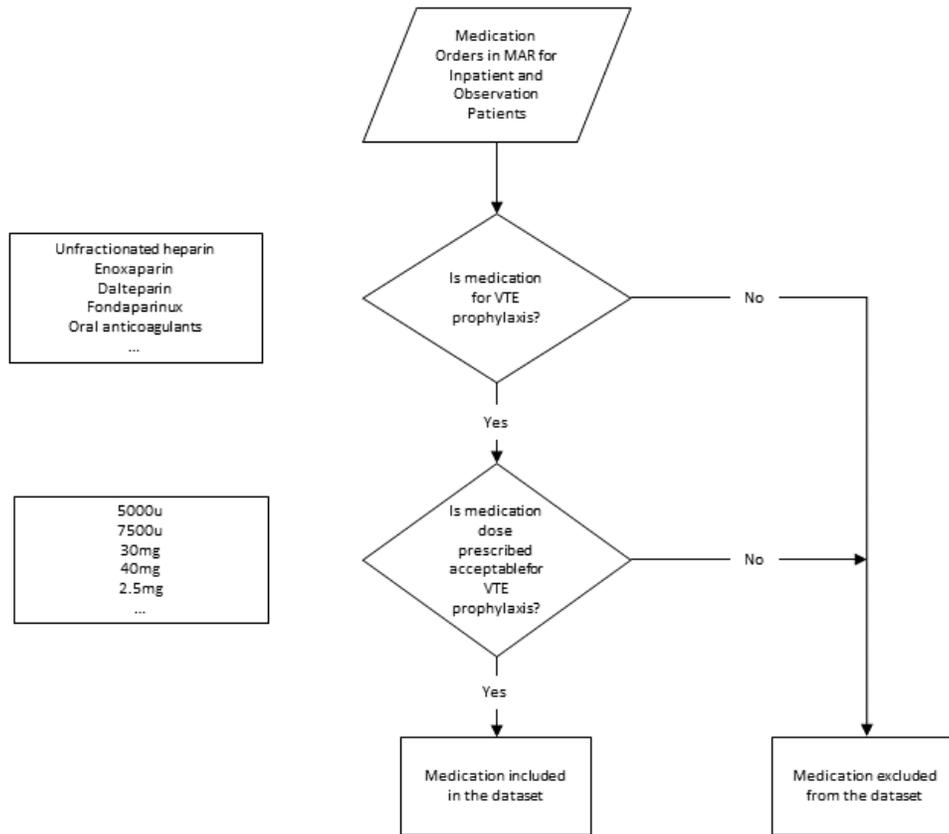
##### **Epic Medication Administration Record (MAR)**

Medication administration data is captured in Clarity using MAR\_ADMIN\_INFO table, which could be linked to ORDER\_MED using ORDER\_MED\_ID key. Fields such as TAKEN\_TIME, SCHEDULED\_TIME, and MAR\_ACTION\_C are imperative to capture medication action and the time stamps associated with the MAR record. Capturing the exact location where a VTE Prophylaxis medication was administered is a very important data element in the analysis. Depending on the data capture at your institution's Epic build, MAR location could be obtained through multiple sources. Another way to obtaining MAR Location is using CLARITY\_ADT tables, or a view V\_PAT\_ADT\_LOCATION\_HX (if available).

**Appendix A**  
**Medication List**

Will list the following for each medication: Medication Name, Dose, Frequency, Route

## Appendix B VTE Prophylaxis Data Extraction Diagram



**Appendix C**  
**Epic VTE Prophylaxis Registry Data Elements**

<b>Data Element</b>	<b>Epic Table/Column</b>	<b>Definition</b>
MRN	HSP_ACCOUNT.PATIENT_MRN	Patient's MRN
PATIENT_NAME	PATIENT.PAT_NAME	Patient's Name
CSN	PAT_ENC_HSP. PAT_ENC_CSN_ID	Contact Serial Number (CSN) for an encounter
HOSP_ADMSN_TIME	PAT_ENC_HSP. HOSP_ADMSN_TIME	Hospital Admission Date/Time
HOSP_DISCH_TIME	PAT_ENC_HSP.HOSP_DISCH_TIME	Hospital Discharge Date/Time
AGE	Calculation	Calculate age at admission by using patient's birth date and date of admission.
GENDER	ZC_SEX.ABBR	Patient's gender
RACE	ZC.PATIENT_RACE.NAME	Patient's race
ADMIT_SERVICE	ZC_PAT_SERVICE.NAME	Link CLARITY_ADT.PAT_SERVICE_C to ZC_PAT_SERVICE for the CLARITY_ADT Event ID in which the patient's base class changed from non-inpatient to inpatient.
ADMIT_DEPARTMENT	CLARITY_DEP.DEPARTMENT_NAME	Link CLARITY_ADT.DEPARTMENT_ID to CLARITY_DEP for the CLARITY_ADT Event ID in which the patient's base class changed from non-inpatient to inpatient.
MEDICATION_NAME	CLARITY_MEDICATION.NAME or ORDER_MED.DESCRPTION	VTE Prophylaxis Medication name
DOSE	MAR_ADMIN_INFO.SIG	Medication dose
UOM	ZC_MED_UNIT.NAME	Medication dose unit of measure
ROUTE	ZC_ADMIN_ROUTE.NAME	Medication's administration route
FREQUENCY	IP_FREQUENCY.DISPLAY_NAME	Medication administration frequency
MAR_ACTION	ZC_MAR_RSLT.NAME	MAR action (Given, Missed, etc.)
TAKEN_TIME	MAR_ADMIN_INFO.TAKEN_TIME	Time the action took place
SCHEDULED_TIME	MAR_ADMIN_INFO.SCHEDULED_TIME	The scheduled time on the MAR
DOCUMENTING_NURSE	CLARITY_EMP.NAME	Link MAR_ADMIN_INFO.MAR_DOC_USER_ID to CLARITY_EMP.USER_ID
FLOOR (also referred as UNIT)	CLARITY_DEP.DEPARTMENT_NAME Or V_PAT_ADT_LOCATION_HX. ADT_DEPARTMENT_NAME	Department where MAR Action took place. Could be derived by looking at TAKEN_TIME between IN_DTTM & OUT_DTTM in V_PAT_ADT_LOCATION_HX
ATTENDING_PROVIDER	CLARITY_SER.PROV_NAME	Patient's primary attending provider. Could be extracted by linking PAT_ENC_HSP.BILL_ATTEND_PROVIDER_ID to CLARITY_SER.PROV_ID
ORDER_MED_ID	ORDER_MED.ORDER_MED_ID	Medication order identifier. Used primarily for validation purposes.
MEDICATION_ID	ORDER_MED.MEDICATION_ID	Medication identifier. Used primarily for selection criteria and validation purposes.