

Pioneers in Quality On-Demand Webinar Series Expert to Expert 2020 eCQM Annual Updates for the 2021 Reporting Period

This on-demand webinar will offer Continuing Education credit.

January 2021

On-Demand Webinar Series

2020 eCQM Annual Updates

- Stroke Measures
- VTE Measures
- PC-05 Exclusive Breast Milk Feeding
- ED-2 Median Admit Decision Time to ED Departure Time for Admitted Patients

New Measure Review

- The CMS Safe Use of Opioids- Concurrent Prescribing

Visit the eCQI Resource Center: <https://ecqi.healthit.gov/general-ecqm-and-ecqi-education>

On-Demand eCQM Video Shorts

eCQM Basics (2 min/video)

- What is a Value Set?
- What is a QDM Data Element?
- What is a Datatype?
- What is an Attribute?

CQL Basics (11 min)

- CQL Basics (excerpt from 2019 PIQ Expert to Expert Series)

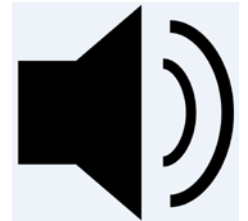
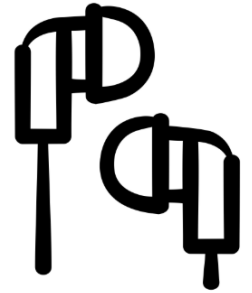
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2020 eCQM Annual Update: VTE Measures

Webinar Audio – Information & Tips

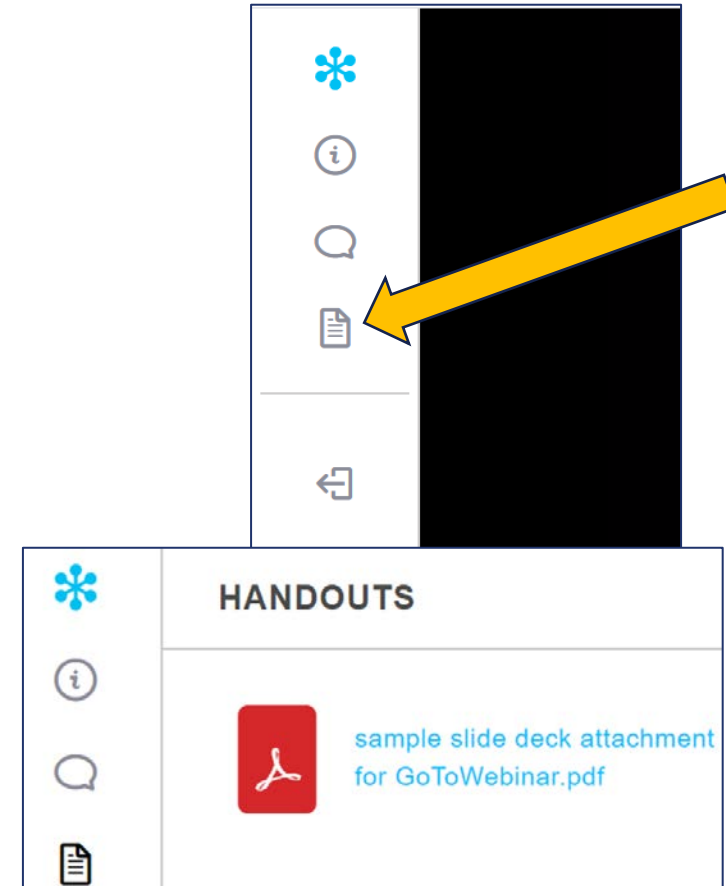
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**At the end of this webinar, participants
should be able to:**

- 1.** Apply concepts learned about the logic and intent for the VTE eCQMs,
- 2.** Identify common issues and questions regarding VTE eCQMs and,
- 3.** Prepare to implement the VTE measures for the 2021 eCQM reporting period

Disclosure Statement

These staff and speakers have disclosed that neither they nor their spouses/partners have any financial arrangements or affiliations with corporate organizations that either provide educational grants to this program or may be referenced in this activity:

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Pioneers in Quality On-Demand Webinar

Expert to Expert Series

eCQM Annual Update: VTE Measures

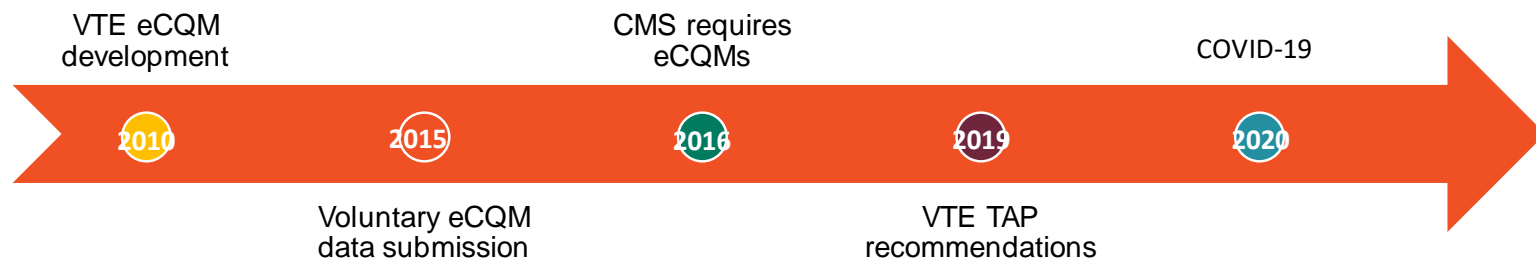
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VTE Measure Timeline



- **eVTE-1 Venous Thromboembolism Prophylaxis**
- **eVTE-2 Intensive Care Unit Venous Thromboembolism Prophylaxis**

Initial Population - VTE-1 and VTE-2

Inpatient hospitalizations for patients age 18 and older discharged from hospital inpatient acute care without a diagnosis of venous thromboembolism (VTE) or obstetrics with a length of stay less than or equal to 120 days that ends during the measurement period

Initial Population: "Encounter With Age Range and Without VTE Diagnosis or Obstetrical Conditions"

Encounter With Age Range and Without VTE Diagnosis or Obstetrical Conditions

```
( Global."Inpatient Encounter" InpatientEncounter
  with ["Patient Characteristic Birthdate": "Birth Date"] BirthDate
  such that Global."CalendarAgeInYearsAt"(BirthDate.birthDatetime, start of InpatientEncounter.relevantPeriod)>= 18)
intersect "Admission Without VTE or Obstetrical Conditions"
```

Global.Inpatient Encounter

```
["Encounter, Performed": "Encounter Inpatient"] EncounterInpatient
  where "LengthInDays"(EncounterInpatient.relevantPeriod)<= 120
  and EncounterInpatient.relevantPeriod ends during "Measurement Period"
```

Admission Without VTE or Obstetrical Conditions

```
Global."Inpatient Encounter" InpatientEncounter where not
  ( exists ( InpatientEncounter.diagnoses EncounterDiagnoses
    where ( EncounterDiagnoses.code in "Obstetrics" or EncounterDiagnoses.code in "Venous Thromboembolism" or
      EncounterDiagnoses.code in "Obstetrics VTE")))
```

Initial Population - VTE-1 and VTE-2

Patients age 18 and older discharged from hospital inpatient acute care without a diagnosis of venous thromboembolism (VTE) or obstetrics with a length of stay less than or equal to 120 days that ends during the measurement period

Initial Population: "Encounter With Age Range and Without VTE Diagnosis or Obstetrical Conditions"

Encounter With Age Range and Without VTE Diagnosis or Obstetrical Conditions

```
( Global."Inpatient Encounter" InpatientEncounter
  with ["Patient Characteristic Birthdate"] BirthDate
  such that Global."CalendarAgeInYearsAt"(BirthDate.birthDatetime, start of InpatientEncounter.relevantPeriod)>= 18
  intersect "Admission Without VTE or Obstetrical Conditions"
```

Global.Inpatient Encounter

```
["Encounter, Performed": "Encounter Inpatient"] EncounterInpatient
  where "LengthInDays"(EncounterInpatient.relevantPeriod)<= 120
  and EncounterInpatient.relevantPeriod ends during "Measurement Period"
```

Admission Without VTE or Obstetrical Conditions

```
Global."Inpatient Encounter" InpatientEncounter where not
  ( exists ( InpatientEncounter.diagnoses EncounterDiagnoses
    where ( EncounterDiagnoses.code in "Obstetrics" or EncounterDiagnoses.code in "Venous Thromboembolism"
    or EncounterDiagnoses.code in "Obstetrics VTE")))
```

Denominator: What is the difference?

- VTE-1

All patients in the initial population

- VTE-2

Patients directly admitted or transferred to ICU during the hospitalization

VTE-1 Thromboembolism Prophylaxis (CMS108v9)

Denominator – VTE-1

All patients in the initial population

Denominator:
"Initial Population"

Initial Population

"Encounter With Age Range and Without VTE Diagnosis or Obstetrical Conditions"

Encounter With Age Range and Without VTE Diagnosis or Obstetrical Conditions

(Global."Inpatient Encounter" InpatientEncounter with ["Patient Characteristic Birthdate"] BirthDate such that Global."CalendarAgeInYearsAt"(BirthDate.birthDatetime, start of InpatientEncounter.relevantPeriod)>= 18) intersect "Admission Without VTE or Obstetrical Conditions"

Global.Inpatient Encounter

["Encounter, Performed": "Encounter Inpatient"] EncounterInpatient where "LengthInDays"(EncounterInpatient.relevantPeriod)<= 120 and EncounterInpatient.relevantPeriod ends during "Measurement Period"

Admission Without VTE or Obstetrical Conditions

(Global."Inpatient Encounter" InpatientEncounter where not (exists (InpatientEncounter.diagnoses EncounterDiagnoses where (EncounterDiagnoses in "Obstetrics" or EncounterDiagnoses in "Venous Thromboembolism" or EncounterDiagnoses in "Obstetrics VTE"))))

Denominator Exclusions – VTE-1



Inpatient hospitalizations for Inpatient hospitalizations for patients who have a length of stay less than 2 days

Inpatient hospitalizations for Inpatient hospitalizations for patients who are direct admits to intensive care unit (ICU), or transferred to ICU the day of or the day after hospital admission with ICU length of stay greater than or equal to one day

Inpatient hospitalizations for patients with a principal diagnosis of mental disorders or stroke

Inpatient hospitalizations for patients with a principal procedure of Surgical Care Improvement Project (SCIP) VTE selected surgeries

Inpatient hospitalizations for patients with comfort measures documented anytime between the day of arrival and the day after hospital admission

Inpatient hospitalizations for patients with comfort measures documented by the day after surgery end date for surgeries that start the day of or the day after hospital admission

Denominator Exclusions: "Encounter Less Than 2 Days"
union "Encounter With ICU Location Stay 1 Day or More"
union "Encounter With Principal Diagnosis of Mental Disorder or Stroke"
union "Encounter With Principal Procedure of SCIP VTE Selected Surgery"
union " Encounter With Intervention Comfort Measures From Day of Start of Hospitalization
To Day After Admission "
union " Encounter With Intervention Comfort Measures on Day of or Day After Procedure"

Denominator Exclusions – VTE-1

Inpatient hospitalizations for patients who have a length of stay less than 2 days

Denominator Exclusions:

- "Encounter Less Than 2 Days"
- union "Encounter With ICU Location Stay 1 Day or More"
- union "Encounter With Principal Diagnosis of Mental Disorder or Stroke"
- union "Encounter With Principal Procedure of SCIP VTE Selected Surgery"
- union "Intervention Comfort Measures on Day of or Day After Start of Hospitalization"
- union "Intervention Comfort Measures on Day of or Day After Procedure"

Encounter Less Than 2 Days:

"Encounter With Age Range and Without VTE Diagnosis or Obstetrical Conditions" QualifyingEncounter
where Global."LengthInDays"(QualifyingEncounter.relevantPeriod)< 2

Denominator Exclusions – VTE-1

Inpatient hospitalizations for patients who are direct admits to intensive care unit (ICU), or transferred to ICU the day of or the day after hospital admission with ICU length of stay greater than or equal to one day

Denominator Exclusions:

- "Encounter Less Than 2 Days"
- union "Encounter With ICU Location Stay 1 Day or More"
- union "Encounter With Principal Diagnosis of Mental Disorder or Stroke"
- union "Encounter With Principal Procedure of SCIP VTE Selected Surgery"
- union "Intervention Comfort Measures on Day of or Day After Start of Hospitalization"
- union "Intervention Comfort Measures on Day of or Day After Procedure"

Encounter With ICU Location Stay 1 Day or More

"Encounter With Age Range and Without VTE Diagnosis or Obstetrical Conditions" QualifyingEncounter
where exists (QualifyingEncounter.facilityLocations Location
where Location.code in "Intensive Care Unit"
and Global."LengthInDays"(Location.locationPeriod)>= 1
and Location.locationPeriod starts during Interval[start of QualifyingEncounter.relevantPeriod,
Global."ToDate"(start of QualifyingEncounter.relevantPeriod + 2 days)))

Denominator Exclusions – VTE-1

Inpatient hospitalizations for patients with a principal diagnosis of mental disorders or stroke

Denominator Exclusions:

- "Encounter Less Than 2 Days"
- union "Encounter With ICU Location Stay 1 Day or More"
- union "Encounter With Principal Diagnosis of Mental Disorder or Stroke"
- union "Encounter With Principal Procedure of SCIP VTE Selected Surgery"
- union "Intervention Comfort Measures on Day of or Day After Start of Hospitalization"
- union "Intervention Comfort Measures on Day of or Day After Procedure"

Encounter With Principal Diagnosis of Mental Disorder or Stroke

"Encounter With Age Range and Without VTE Diagnosis or Obstetrical Conditions" QualifyingEncounter
 where exists (QualifyingEncounter.diagnoses EncounterDiagnoses
 where EncounterDiagnoses.rank = 1
 and (EncounterDiagnoses.code in "Mental Health Diagnoses"
 or EncounterDiagnoses.code in "Hemorrhagic Stroke"
 or EncounterDiagnoses.code in "Ischemic Stroke"

Denominator Exclusions – VTE-1

Inpatient hospitalizations for patients with a principal procedure of Surgical Care Improvement Project (SCIP) VTE selected surgeries

Denominator Exclusions:

- "Encounter Less Than 2 Days"
- union "Encounter With ICU Location Stay 1 Day or More"
- union "Encounter With Principal Diagnosis of Mental Disorder or Stroke"
- union "Encounter With Principal Procedure of SCIP VTE Selected Surgery"
- union "Intervention Comfort Measures on Day of or Day After Start of Hospitalization"
- union "Intervention Comfort Measures on Day of or Day After Procedure"

Encounter With Principal Procedure of SCIP VTE Selected Surgery

"Encounter With Age Range and Without VTE Diagnosis or Obstetrical Conditions" QualifyingEncounter
with ("SCIP VTE Selected Surgery" Procedure
where Procedure.rank = 1) SelectedSCIPProcedure
such that SelectedSCIPProcedure.relevantPeriod during QualifyingEncounter.relevantPeriod

SCIP VTE Selected Surgery

["Procedure, Performed": "General Surgery"]
union ["Procedure, Performed": "Gynecological Surgery"]
union ["Procedure, Performed": "Hip Fracture Surgery"]
union ["Procedure, Performed": "Hip Replacement Surgery"]
union ["Procedure, Performed": "Intracranial Neurosurgery"]
union ["Procedure, Performed": "Knee Replacement Surgery"]
union ["Procedure, Performed": "Urological Surgery"]

Denominator Exclusions – VTE-1

Inpatient hospitalizations for patients with comfort measures documented anytime between the day of arrival and the day after hospital admission

Denominator Exclusions:

- "Encounter Less Than 2 Days"
- union "Encounter With ICU Location Stay 1 Day or More"
- union "Encounter With Principal Diagnosis of Mental Disorder or Stroke"
- union "Encounter With Principal Procedure of SCIP VTE Selected Surgery"
- union "Encounter with Intervention Comfort Measures From Day of Start of Hospitalization To Day After Admission "
- union "Intervention Comfort Measures on Day of or Day After Procedure"

Encounter with Intervention Comfort Measures From Day of Start of Hospitalization To Day After Admission
"Encounter With Age Range and Without VTE Diagnosis or Obstetrical Conditions" QualifyingEncounter
with "Intervention Comfort Measures" ComfortMeasures
such that **Coalesce**(start of ComfortMeasures.**relevantPeriod**, ComfortMeasures.**authorDatetime**) during
VTEICU."FromDayOfStartOfHospitalizationToDayAfterAdmission"(QualifyingEncounter)

Intervention Comfort Measures

["Intervention, Order": "Comfort Measures"]
union ["Intervention, Performed": "Comfort Measures"]

Denominator Exclusions – VTE-1

Inpatient hospitalizations for patients with comfort measures documented by the day after surgery end date for surgeries that start the day of or the day after hospital admission

Denominator Exclusions:

- "Encounter Less Than 2 Days"
- union "Encounter With ICU Location Stay 1 Day or More"
- union "Encounter With Principal Diagnosis of Mental Disorder or Stroke"
- union "Encounter With Principal Procedure of SCIP VTE Selected Surgery"
- union "Intervention Comfort Measures on Day of or Day After Start of Hospitalization"
- union "Encounter with Intervention Comfort Measures on Day of or Day After Procedure"

Encounter With Intervention Comfort Measures on Day of or Day After Procedure

from "Encounter With Age Range and Without VTE Diagnosis or Obstetrical Conditions" QualifyingEncounter,
["Procedure, Performed": "General or Neuraxial Anesthesia"] AnesthesiaProcedure,
"Intervention Comfort Measures" ComfortMeasures

where AnesthesiaProcedure.relevantPeriod ends 1 day after day of start of QualifyingEncounter.relevantPeriod
and Coalesce(start of ComfortMeasures.relevantPeriod, ComfortMeasures.authorDatetime) during
TJC."CalendarDayOfOrDayAfter"(end of AnesthesiaProcedure.relevantPeriod)

return QualifyingEncounter

Numerator – VTE-1

Inpatient hospitalizations for patients who received VTE prophylaxis:

- the day of or the day after hospital admission
- the day of or the day after surgery end date for surgeries that end the day of or the day after hospital admission

Inpatient hospitalizations patients who have documentation of a reason why no VTE prophylaxis was given:

- between the day of arrival and the day after hospital admission
- the day of or the day after surgery end date (for surgeries that end the day of or the day after hospital admission)

2021 Numerator:

- #1 “Encounter With VTE Prophylaxis Received **From Day of Start of Hospitalization To Day after Admission or Procedure**”
union ("Encounter With Medication Oral Factor Xa Inhibitor Administered on Day of or Day After Admission or Procedure"
- #2 intersect ("Encounter With Prior or Present Diagnosis of Atrial Fibrillation or VTE"
union "Encounter With Prior or Present Procedure of Hip or Knee Replacement Surgery"))
- #3 union "Encounter With Low Risk for VTE or Anticoagulant Administered"
- #4 union "Encounter With No VTE Prophylaxis Due to Medical Reason"
- #5 union "Encounter With No VTE Prophylaxis Due to Patient Refusal"

2020 Numerator:

- #1 “Encounter With VTE Prophylaxis Received **on Day of or Day After Admission or Procedure**”
union ("Encounter With Medication Oral Factor Xa Inhibitor Administered on Day of or Day After Admission or Procedure"
- #2 intersect ("Encounter With Prior or Present Diagnosis of Atrial Fibrillation or VTE"
union "Encounter With Prior or Present Procedure of Hip or Knee Replacement Surgery"))
- #3 union "Encounter With Low Risk for VTE or Anticoagulant Administered"
- #4 union "Encounter With No VTE Prophylaxis Due to Medical Reason"
- #5 union "Encounter With No VTE Prophylaxis Due to Patient Refusal"

Numerator – VTE-1

Numerator:

- #1 "Encounter with VTE Prophylaxis Received From Day of Start of Hospitalization To Day After Admission or Procedure"
union ("Medication Oral Factor Xa Inhibitor Administered on Day of or Day After Admission or Procedure"
- #2 intersect ("Encounter With Prior or Present Diagnosis of Atrial Fibrillation or VTE"
union "Encounter With Prior or Present Procedure of Hip or Knee Replacement Surgery"))
- #3 union "Low Risk for VTE or Anticoagulant Administered"
- #4 union "No VTE Prophylaxis Due to Medical Reason"
- #5 union "No VTE Prophylaxis Due to Patient Refusal"

Encounter With VTE Prophylaxis Received From Day of Start of Hospitalization To Day After Admission or Procedure

"Encounter With Age Range and Without VTE Diagnosis or Obstetrical Conditions" QualifyingEncounter,
with "VTE Prophylaxis by Medication Administered or Device Applied" VTEProphylaxis
such that VTEProphylaxis.relevantPeriod starts during
VTEICU."FromDayOfStartOfHospitalizationToDayAfterAdmission" (QualifyingEncounter.relevantPeriod)
union (from "Encounter With Age Range and Without VTE Diagnosis or Obstetrical Conditions" QualifyingEncounter,
["Procedure, Performed": "General or Neuraxial Anesthesia"] AnesthesiaProcedure, "VTE Prophylaxis by Medication Administered or
Device Applied" VTEProphylaxis
where AnesthesiaProcedure.relevantPeriod ends 1 day after day of start of QualifyingEncounter.relevantPeriod and
VTEProphylaxis.relevantPeriod starts during **TJC."CalendarDayOfOrDayAfter"**(end of AnesthesiaProcedure.relevantPeriod)
return QualifyingEncounter)

VTE Prophylaxis by Medication Administered or Device Applied

(["Medication, Administered": "Low Dose Unfractionated Heparin for VTE Prophylaxis"] VTEMedication
where VTEMedication.route in "Subcutaneous route")
union ["Medication, Administered": "Low Molecular Weight Heparin for VTE Prophylaxis"]
union ["Medication, Administered": "Injectable Factor Xa Inhibitor for VTE Prophylaxis"]
union ["Medication, Administered": "Warfarin"]
union ["Medication, Administered": "Rivaroxaban and Betrixaban for VTE Prophylaxis"]
union ["Device, Applied": "Intermittent pneumatic compression devices (IPC)"]
union ["Device, Applied": "Venous foot pumps (VFP)"]
union ["Device, Applied": "Graduated compression stockings (GCS)"]

Numerator:

- #1 VTE Prophylaxis Received on Day of or Day After Admission or Procedure"
union ("Encounter With Medication Oral Factor Xa Inhibitor Administered on Day of or Day After Admission or Procedure"
- #2 intersect ("Encounter With Prior or Present Diagnosis of Atrial Fibrillation or VTE"
union "Encounter With Prior or Present Procedure of Hip or Knee Replacement Surgery")
- #3 union "Low Risk for VTE or Anticoagulant Administered"
- #4 union "No VTE Prophylaxis Due to Medical Reason"
- #5 union "No VTE Prophylaxis Due to Patient Refusal"

Medication Oral Factor Xa Inhibitor Administered on Day of or Day After Admission or Procedure

"Encounter With Age Range and Without VTE Diagnosis or Obstetrical Conditions" QualifyingEncounter
with ["Medication, Administered": "Oral Factor Xa Inhibitor for VTE Prophylaxis or VTE Treatment"] FactorXaMedication
such that FactorXaMedication.relevantPeriod starts during TJC."CalendarDayOfOrDayAfter"
(start of QualifyingEncounter.relevantPeriod) return QualifyingEncounter)

union

(from "Encounter With Age Range and Without VTE Diagnosis or Obstetrical Conditions" QualifyingEncounter,
["Procedure, Performed": "General or Neuraxial Anesthesia"] AnesthesiaProcedure,
["Medication, Administered": "Oral Factor Xa Inhibitor for VTE Prophylaxis or VTE Treatment"] FactorXaMedication
where AnesthesiaProcedure.relevantPeriod ends 1 day after day of start of QualifyingEncounter.relevantPeriod
and FactorXaMedication.relevantPeriod starts during TJC."CalendarDayOfOrDayAfter"
(end of AnesthesiaProcedure.relevantPeriod) return QualifyingEncounter)

Numerator:

- #1 VTE Prophylaxis Received on Day of or Day After Admission or Procedure"
union ("Encounter With Medication Oral Factor Xa Inhibitor Administered on Day of or Day After Admission or Procedure"
- #2 intersect ("Encounter With Prior or Present Diagnosis of Atrial Fibrillation or VTE"
union "Encounter With Prior or Present Procedure of Hip or Knee Replacement Surgery")
- #3 union "Low Risk for VTE or Anticoagulant Administered"
- #4 union "No VTE Prophylaxis Due to Medical Reason"
- #5 union "No VTE Prophylaxis Due to Patient Refusal"

Encounter With Prior or Present Diagnosis of Atrial Fibrillation or VTE

("Encounter With Age Range and Without VTE Diagnosis or Obstetrical Conditions" QualifyingEncounter
with ["Diagnosis": "Atrial Fibrillation/Flutter"] AtrialFibrillation
such that AtrialFibrillation.prevalencePeriod starts on or before end of QualifyingEncounter.relevantPeriod)
union ("Encounter With Age Range and Without VTE Diagnosis or Obstetrical Conditions" QualifyingEncounter
where exists (QualifyingEncounter.diagnoses EncounterDiagnosis
where EncounterDiagnosis.code in "Atrial Fibrillation/Flutter"))
union ("Encounter With Age Range and Without VTE Diagnosis or Obstetrical Conditions" QualifyingEncounter
with ["Diagnosis": "Venous Thromboembolism"] VTEDiagnosis
such that VTEDiagnosis.prevalencePeriod starts before start of QualifyingEncounter.relevantPeriod)

Numerator – VTE-1

Numerator:

- #1 VTE Prophylaxis Received on Day of or Day After Admission or Procedure"
union ("Encounter With Medication Oral Factor Xa Inhibitor Administered on Day of or Day After Admission or Procedure"
- #2 intersect ("Encounter With Prior or Present Diagnosis of Atrial Fibrillation or VTE"
union "Encounter With Prior or Present Procedure of Hip or Knee Replacement Surgery"))
- #3 union "Low Risk for VTE or Anticoagulant Administered"
- #4 union "No VTE Prophylaxis Due to Medical Reason"
- #5 union "No VTE Prophylaxis Due to Patient Refusal"

Encounter With Prior or Present Procedure of Hip or Knee Replacement Surgery

"Encounter With Age Range and Without VTE Diagnosis or Obstetrical Conditions" QualifyingEncounter
with (["Procedure, Performed": "Hip Replacement Surgery"]
union ["Procedure, Performed": "Knee Replacement Surgery"]) HipKneeProcedure
such that HipKneeProcedure.relevantPeriod starts on or before end of QualifyingEncounter.relevantPeriod

Numerator – VTE-1

Numerator:

- #1 VTE Prophylaxis Received on Day of or Day After Admission or Procedure“
union ("Medication Oral Factor Xa Inhibitor Administered on Day of or Day After Admission or Procedure"
- #2 intersect ("Encounter With Prior or Present Diagnosis of Atrial Fibrillation or VTE"
union "Encounter With Prior or Present Procedure of Hip or Knee Replacement Surgery"))
- #3 union "Encounter With Low Risk for VTE or Anticoagulant Administered"
- #4 union "No VTE Prophylaxis Due to Medical Reason"
- #5 union "No VTE Prophylaxis Due to Patient Refusal"

Encounter With Low Risk for VTE or Anticoagulant Administered

"Low Risk for VTE or Anticoagulant Administered From Day of Start of Hospitalization To Day After Admission"
union "Low Risk for VTE or Anticoagulant Administered on Day of or Day After Procedure"

Numerator:

- #3 union "Encounter With Low Risk for VTE or Anticoagulant Administered"
- #4 union "No VTE Prophylaxis Due to Medical Reason"
- #5 union "No VTE Prophylaxis Due to Patient Refusal"

Low Risk Indicator For VTE

/*The variable "LowRiskDatetime" is to hold VTE Risk Assessment relevant dateTime, INR Laboratory Test result dateTime, and Anticoagulant Medication administration start dateTime.*/

```
( ["Assessment, Performed": "Risk for venous thromboembolism"] VTERiskAssessment
  where VTERiskAssessment.result in "Low Risk"
  return {
    id: VTERiskAssessment.id,
    LowRiskDatetime: VTERiskAssessment.relevantDatetime
  })
union ( ["Laboratory Test, Performed": "INR"] INRLabTest
  where INRLabTest.result > 3.0
  return {
    id: INRLabTest.id,
    LowRiskDatetime: INRLabTest.resultDatetime
  })
union ( ( ( ["Medication, Administered": "Unfractionated Heparin"] UnfractionatedHeparin
  where UnfractionatedHeparin.route in "Intravenous route"
)
  union ["Medication, Administered": "Direct Thrombin Inhibitor"]
  union ["Medication, Administered": "Glycoprotein IIb/IIIa Inhibitors"] ) AnticoagulantMedication
  return {
    id: AnticoagulantMedication.id,
    LowRiskDatetime: start of AnticoagulantMedication.relevantPeriod
  })
```

Numerator:

- #3 union "Encounter With Low Risk for VTE or Anticoagulant Administered"
- #4 union "No VTE Prophylaxis Due to Medical Reason"
- #5 union "No VTE Prophylaxis Due to Patient Refusal"

Encounter With Low Risk for VTE or Anticoagulant Administered

```
""Low Risk for VTE or Anticoagulant Administered From Day of Start of Hospitalization To Day After Admission"  
union "Low Risk for VTE or Anticoagulant Administered on Day of or Day After Procedure"
```

""

Low Risk for VTE or Anticoagulant Administered From Day of Start of Hospitalization To Day After Admission

```
"Encounter With Age Range and Without VTE Diagnosis or Obstetrical Conditions" QualifyingEncounter,  
with "Low Risk Indicator For VTE" LowRiskForVTE  
such that LowRiskForVTE.LowRiskDatetime during VTEICU."FromDayOfStartOfHospitalizationToDayAfterAdmission" (  
QualifyingEncounter )
```

Low Risk for VTE or Anticoagulant Administered on Day of or Day After Procedure

```
from "Encounter With Age Range and Without VTE Diagnosis or Obstetrical Conditions" QualifyingEncounter,  
["Procedure, Performed": "General or Neuraxial Anesthesia"] AnesthesiaProcedure,  
"Low Risk Indicator For VTE" LowRiskForVTE  
where AnesthesiaProcedure.relevantPeriod ends 1 day after day of start of QualifyingEncounter.relevantPeriod  
and LowRiskForVTE.LowRiskDatetime during TJC."CalendarDayOfOrDayAfter"(end of  
AnesthesiaProcedure.relevantPeriod)  
return QualifyingEncounter
```


Numerator – VTE-1

Numerator:

- #3 union "Low Risk for VTE or Anticoagulant Administered"
- #4 union "Encounter With No VTE Prophylaxis Due to Medical Reason"
- #5 union "No VTE Prophylaxis Due to Patient Refusal"

Encounter With No VTE Prophylaxis Due to Medical Reason

("No VTE Prophylaxis Medication Due to Medical Reason From Day of Start of Hospitalization To Day After Admission"

intersect "No VTE Prophylaxis Device Due to Medical Reason From Day of Start of Hospitalization To Day After Admission")

union ("No VTE Prophylaxis Medication Due to Medical Reason on Day of or Day After Procedure"

intersect "No VTE Prophylaxis Device Due to Medical Reason on Day of or Day After Procedure")

Numerator:

- #3 union "Low Risk for VTE or Anticoagulant Administered"
- #4 union "Encounter With No VTE Prophylaxis Due to Medical Reason"
- #5 union "No VTE Prophylaxis Due to Patient Refusal"

Encounter With No VTE Prophylaxis Due to Medical Reason

("No VTE Prophylaxis Medication Due to Medical Reason From Day of Start of Hospitalization To Day After Admission "
intersect "No VTE Prophylaxis Device Due to Medical Reason From Day of Start of Hospitalization To Day After Admission")
union ("No VTE Prophylaxis Medication Due to Medical Reason on Day of or Day After Procedure"
intersect "No VTE Prophylaxis Device Due to Medical Reason on Day of or Day After Procedure")

No VTE Prophylaxis Medication Due to Medical Reason From Day of Start of Hospitalization To Day After Admission

"Encounter With Age Range and Without VTE Diagnosis or Obstetrical Conditions" Qualifying Encounter,
with "No VTE Prophylaxis Medication Administered or Ordered" NoVTE Medication
such that NoVTE Medication.negotiationRationale in "Medical Reason"
and NoVTE Medication.authorDatetime during
VTEICU."FromDayOfStartOfHospitalizationToDayAfterAdmission"(Qualifying Encounter)

No VTE Prophylaxis Medication Administered or Ordered

["Medication, Not Administered": "Low Dose Unfractionated Heparin for VTE Prophylaxis"]
union ["Medication, Not Administered": "Low Molecular Weight Heparin for VTE Prophylaxis"]
union ["Medication, Not Administered": "Injectable Factor Xa Inhibitor for VTE Prophylaxis"]
union ["Medication, Not Administered": "Warfarin"]
union ["Medication, Not Administered": "Rivaroxaban and Betrixaban for VTE Prophylaxis "]
union ["Medication, Not Ordered": "Low Dose Unfractionated Heparin for VTE Prophylaxis"]
union ["Medication, Not Ordered": "Low Molecular Weight Heparin for VTE Prophylaxis"]
union ["Medication, Not Ordered": "Injectable Factor Xa Inhibitor for VTE Prophylaxis"]
union ["Medication, Not Ordered": "Warfarin"]
union ["Medication, Not Ordered": "Rivaroxaban and Betrixaban for VTE Prophylaxis "]

Numerator – VTE-1

Numerator:

- #3 union "Low Risk for VTE or Anticoagulant Administered"
- #4 union "Encounter With No VTE Prophylaxis Due to Medical Reason"
- #5 union "No VTE Prophylaxis Due to Patient Refusal"

Encounter With No VTE Prophylaxis Due to Medical Reason

```
( "No VTE Prophylaxis Medication Due to Medical Reason From Day of Start of Hospitalization To Day After Admission "  
intersect "No VTE Prophylaxis Device Due to Medical Reason From Day of Start of Hospitalization To Day After Admission")  
union ( "No VTE Prophylaxis Medication Due to Medical Reason on Day of or Day After Procedure"  
intersect "No VTE Prophylaxis Device Due to Medical Reason on Day of or Day After Procedure")
```

No VTE Prophylaxis Device Due to Medical Reason From Day of Start of Hospitalization To Day After Admission

```
"Encounter With Age Range and Without VTE Diagnosis or Obstetrical Conditions" QualifyingEncounter,  
with "No VTE Prophylaxis Device Applied or Ordered" NoVTEDevice  
such that NoVTEDevice.negotiationRationale in "Medical Reason"  
and NoVTEDevice.authorDatetime during  
VTEICU."FromDayOfStartOfHospitalizationToDayAfterAdmission"(QualifyingEncounter)  
return QualifyingEncounter
```

No VTE Prophylaxis Device Applied or Ordered

```
["Device, Not Applied": "Intermittent pneumatic compression devices (IPC)"]  
union ["Device, Not Applied": "Venous foot pumps (VFP)"]  
union ["Device, Not Applied": "Graduated compression stockings (GCS)"]  
union ["Device, Not Ordered": "Intermittent pneumatic compression devices (IPC)"]  
union ["Device, Not Ordered": "Venous foot pumps (VFP)"]  
union ["Device, Not Ordered": "Graduated compression stockings (GCS)"]
```

Numerator:

- #3 union "Low Risk for VTE or Anticoagulant Administered"
- #4 union "No VTE Prophylaxis Due to Medical Reason"
- #5 union "No VTE Prophylaxis Due to Patient Refusal"

No VTE Prophylaxis Due to Medical Reason

("No VTE Prophylaxis Medication Due to Medical Reason From Day of Start of Hospitalization To Day After Admission "
intersect "No VTE Prophylaxis Device Due to Medical Reason From Day of Start of Hospitalization To Day After Admission")
union ("No VTE Prophylaxis Medication Due to Medical Reason on Day of or Day After Procedure"
intersect "No VTE Prophylaxis Device Due to Medical Reason on Day of or Day After Procedure")

No VTE Prophylaxis Medication Due to Medical Reason on Day of or Day After Procedure

from "Encounter With Age Range and Without VTE Diagnosis or Obstetrical Conditions" QualifyingEncounter,
["Procedure, Performed": "General or Neuraxial Anesthesia"] AnesthesiaProcedure,
"No VTE Prophylaxis Medication Administered or Ordered" NoVTEMedication
where NoVTEMedication.negationRationale in "Medical Reason"
and AnesthesiaProcedure.relevantPeriod ends 1 day after day of start of QualifyingEncounter.relevantPeriod
and NoVTEMedication.authorDatetime during TJC."CalendarDayOfOrDayAfter"(end of
AnesthesiaProcedure.relevantPeriod)
return QualifyingEncounter

No VTE Prophylaxis Device Due to Medical Reason on Day of or Day After Procedure

from "Encounter With Age Range and Without VTE Diagnosis or Obstetrical Conditions" QualifyingEncounter,
["Procedure, Performed": "General or Neuraxial Anesthesia"] AnesthesiaProcedure,
"No VTE Prophylaxis Device Applied or Ordered" NoVTEDevice
where NoVTEDevice.negationRationale in "Medical Reason"
and AnesthesiaProcedure.relevantPeriod ends 1 day after day of start of QualifyingEncounter.relevantPeriod
and NoVTEDevice.authorDatetime during TJC."CalendarDayOfOrDayAfter"(end of
AnesthesiaProcedure.relevantPeriod)
return QualifyingEncounter

Numerator:

- #3 union "Low Risk for VTE or Anticoagulant Administered"
- #4 union "No VTE Prophylaxis Due to Medical Reason"
- #5 union "Encounter With No VTE Prophylaxis Due to Patient Refusal"

Encounter With No VTE Prophylaxis Due to Patient Refusal

"No VTE Prophylaxis Due to Patient Refusal From Day of Start of Hospitalization To Day After Admission"
union "No VTE Prophylaxis Due to Patient Refusal on Day of or Day After Procedure"

No VTE Prophylaxis Due to Patient Refusal From Day of Start of Hospitalization To Day After Admission

"Encounter With Age Range and Without VTE Diagnosis or Obstetrical Conditions" QualifyingEncounter,
with "No VTE Prophylaxis Medication or Device Due to Patient Refusal" PatientRefusal
such that PatientRefusal.authorDatetime during
VTEICU."FromDayOfStartOfHospitalizationToDayAfterAdmission"(QualifyingEncounter)

No VTE Prophylaxis Due to Patient Refusal on Day of or Day After Procedure

from "Encounter With Age Range and Without VTE Diagnosis or Obstetrical Conditions" QualifyingEncounter,
["Procedure, Performed": "General or Neuraxial Anesthesia"] AnesthesiaProcedure,
"No VTE Prophylaxis Medication or Device Due to Patient Refusal" PatientRefusal
where AnesthesiaProcedure.relevantPeriod ends 1 day after day of start of QualifyingEncounter.relevantPeriod
and PatientRefusal.authorDatetime during TJC."CalendarDayOfOrDayAfter"(end of
AnesthesiaProcedure.relevantPeriod)
return QualifyingEncounter

Numerator:

- #3 union "Low Risk for VTE or Anticoagulant Administered"
- #4 union "No VTE Prophylaxis Due to Medical Reason"
- #5 union "Encounter With No VTE Prophylaxis Due to Patient Refusal"

No VTE Prophylaxis Due to Patient Refusal

"No VTE Prophylaxis Due to Patient Refusal From Day of Start of Hospitalization To Day After Admission "
union "No VTE Prophylaxis Due to Patient Refusal on Day of or Day After Procedure"

No VTE Prophylaxis Medication or Device Due to Patient Refusal

("No VTE Prophylaxis Medication Administered or Ordered"
union "No VTE Prophylaxis Device Applied or Ordered") NoVTEProphylaxis
where NoVTEProphylaxis.negotiationRationale in "Patient Refusal"

VTE-2 Intensive Care Unit Venous Thromboembolism Prophylaxis (CMS190v9)

Denominator – VTE-2

Inpatient hospitalizations for patients directly admitted or transferred to ICU during the hospitalization

Denominator:

"Encounter With ICU Location"

Encounter With ICU Location

Encounter With Age Range and Without VTE Diagnosis or Obstetrical Conditions" QualifyingEncounter where exists (QualifyingEncounter.facilityLocations Location where Location.code in "Intensive Care Unit" and Location.locationPeriod during QualifyingEncounter.relevantPeriod)

Encounter With Age Range and Without VTE Diagnosis or Obstetrical Conditions

(Global."Inpatient Encounter" InpatientEncounter with ["Patient Characteristic Birthdate": "Birth date"] BirthDate such that Global."CalendarAgeInYearsAt"(BirthDate.birthDatetime, start of InpatientEncounter.relevantPeriod)>= 18) intersect "Admission Without VTE or Obstetrical Conditions"

Global.Inpatient Encounter

["Encounter, Performed": "Encounter Inpatient"] EncounterInpatient where "LengthInDays"(EncounterInpatient.relevantPeriod)<= 120 and EncounterInpatient.relevantPeriod ends during "Measurement Period"

Admission Without VTE or Obstetrical Conditions

(Global."Inpatient Encounter" InpatientEncounter where not (exists (InpatientEncounter.diagnoses EncounterDiagnoses where (EncounterDiagnoses in "Obstetrics" or EncounterDiagnoses in "Venous Thromboembolism" or EncounterDiagnoses in "Obstetrics VTE"))))

Denominator Exclusions – VTE-2

Inpatient hospitalizations for patients who have a length of stay less than 2 days

Inpatient hospitalizations for patients with a principal procedure of Surgical Care Improvement Project (SCIP) VTE selected surgeries that end the day of or the day after ICU admission or transfer

Inpatient hospitalizations for patients with comfort measures documented anytime between arrival and the day after ICU admission or transfer

Inpatient hospitalizations for patients with comfort measures documented by the day after surgery end date for surgeries that end the day of or the day after hospital admission

Denominator Exclusions:

"Encounter With ICU Location And Encounter Less Than 2 Days"

union "Encounter With First ICU Stay With Principal Procedure of SCIP VTE Selected Surgery"

union "Encounter With Intervention Comfort Measures From Day of Start of Hospitalization To Day After First ICU Stay"

union "Encounter With Intervention Comfort Measures on Day of or Day After Procedure"

Denominator Exclusions – VTE-2

Inpatient hospitalizations for patients who have a length of stay less than 2 days

Denominator Exclusions:

"Encounter With ICU Location Less Than 2 Days"

union "First ICU Stay With Principal Procedure of SCIP VTE Selected Surgery"

union "Intervention Comfort Measures From Start of Hospitalization To Day After First ICU Stay"

union "Intervention Comfort Measures on Day of or Day After Procedure"

Encounter With ICU Location And Encounter Less Than 2 Days:

"Encounter With ICU Location" QualifyingEncounterICU

where Global."LengthInDays"(QualifyingEncounterICU.relevantPeriod)< 2

Encounter With ICU Location:

"Encounter With Age Range and Without VTE Diagnosis or Obstetrical Conditions"

QualifyingEncounter

where exists (QualifyingEncounter.facilityLocations Location

where Location.code in "Intensive Care Unit"

and Location.locationPeriod during QualifyingEncounter.relevantPeriod)

– VTE 2

Denominator Exclusions – VTE-2

Inpatient hospitalizations for patients with a principal procedure of Surgical Care Improvement Project (SCIP) VTE selected surgeries that end the day of or the day after ICU admission or transfer

Denominator Exclusions:

```
"Encounter With ICU Location Less Than 2 Days"  
union "Encounter With First ICU Stay With Principal Procedure of SCIP VTE Selected Surgery"  
union "Intervention Comfort Measures From Start of Hospitalization To Day After First ICU Stay"  
union "Intervention Comfort Measures on Day of or Day After Procedure"
```

Encounter With First ICU Stay With Principal Procedure of SCIP VTE Selected Surgery:

```
"Encounter With ICU Location" QualifyingEncounterICU  
with ( "SCIP VTE Selected Surgery" Procedure  
where Procedure.rank = 1 ) SelectedSCIPProcedure  
such that SelectedSProcedure.ordinality CIPProcedure.relevantPeriod ends  
during TJC."CalendarDayOfOrDayAfter"(VTEICU."StartOfFirstICU"(QualifyingEncounterICU))
```

SCIP VTE Selected Surgery:

```
["Procedure, Performed": "General Surgery"]  
union ["Procedure, Performed": "Gynecological Surgery"]  
union ["Procedure, Performed": "Hip Fracture Surgery"]  
union ["Procedure, Performed": "Hip Replacement Surgery"]  
union ["Procedure, Performed": "Intracranial Neurosurgery"]  
union ["Procedure, Performed": "Knee Replacement Surgery"]  
union ["Procedure, Performed": "Urological Surgery"]
```

Denominator Exclusions – VTE-2

Inpatient hospitalizations for patients with a principal procedure of Surgical Care Improvement Project (SCIP) VTE selected surgeries that end the day of or the day after ICU admission or transfer

Denominator Exclusions:

"Encounter With ICU Location Less Than 2 Days"
union "Encounter With First ICU Stay With Principal Procedure of SCIP VTE Selected Surgery"
union "Intervention Comfort Measures From Start of Hospitalization To Day After First ICU Stay"
union "Intervention Comfort Measures on Day of or Day After Procedure"

Encounter With First ICU Stay With Principal Procedure of SCIP VTE Selected Surgery:

"Encounter With ICU Location" QualifyingEncounterICU
with ("SCIP VTE Selected Surgery" Procedure
where Procedure.ordinality in "Principal") SelectedSCIPProcedure
such that SelectedSCIPProcedure.relevantPeriod ends during
TJC."CalendarDayOfOrDayAfter"(VTEICU."StartOfFirstICU"(QualifyingEncounterICU))

VTEICU.StartofFirstICU(Encounter "Encounter, Performed"):

start of "FirstICULocationPeriod"(Encounter)

VTEICU.FirstICULocationPeriod(Encounter "Encounter, Performed"):

Global."FirstInpatientIntensiveCareUnit"(Encounter).locationPeriod

Global."FirstInpatientIntensiveCareUnit"(Encounter "Encounter, Performed")

First(Encounter.facilityLocations L

where L.code in "Intensive Care Unit"

and L.locationPeriod during Encounter.relevantPeriod

sort by start of locationPeriod)

Denominator Exclusions – VTE-2

Inpatient hospitalizations for patients with comfort measures documented anytime between day of arrival and the day after ICU admission or transfer

Denominator Exclusions:

```
"Encounter With ICU Location Less Than 2 Days"  
union "First ICU Stay With Principal Procedure of SCIP VTE Selected Surgery"  
union "Encounter With Intervention Comfort Measures From Day Of Start of Hospitalization To Day After First ICU Stay"  
union "Intervention Comfort Measures on Day of or Day After Procedure"
```

Encounter With Intervention Comfort Measures From Day Of Start of Hospitalization To Day After First ICU Stay:

```
"Encounter With ICU Location" QualifyingEncounterICU with "Intervention Comfort Measures" ComfortMeasures  
such that Coalesce(start of ComfortMeasures.relevantPeriod, ComfortMeasures.authorDatetime)  
during VTEICU."FromDayOfStartOfHospitalizationToDayAfterFirstICU"(QualifyingEncounterICU)
```

VTEICU.FromDayOfStartOfHospitalizationToDayAfterFirstICU(Encounter "Encounter, Performed"):

```
Interval[Global."ToDate"(start of Global."HospitalizationWithObservation"(Encounter)),  
Global."ToDate"(StartOfFirstICU(Encounter)+ 2 days)]
```

Intervention Comfort Measures:

```
["Intervention, Order": "Comfort Measures"]  
union ["Intervention, Performed": "Comfort Measures"]
```

Denominator Exclusions – VTE-2

Patients with comfort measures documented by the day after surgery end date for surgeries that end the day of or the day after hospital admission

Denominator Exclusions:

```
"Encounter With ICU Location Less Than 2 Days"  
union "First ICU Stay With Principal Procedure of SCIP VTE Selected Surgery"  
union "Intervention Comfort Measures From Start of Hospitalization To Day After First ICU Stay"  
union "Encounter With Intervention Comfort Measures on Day of or Day After Procedure"
```

Encounter With Intervention Comfort Measures on Day of or Day After Procedure:

```
from "Encounter With ICU Location" QualifyingEncounterICU,  
  ["Procedure, Performed": "General or Neuraxial Anesthesia"] AnesthesiaProcedure,  
  "Intervention Comfort Measures" ComfortMeasures  
where AnesthesiaProcedure.relevantPeriod ends 1 day after day of start of  
Global."First Inpatient Intensive Care Unit"(QualifyingEncounterICU).locationPeriod  
and Coalesce(start of ComfortMeasures.relevantPeriod, ComfortMeasures.authorDatetime) during  
  TJC."CalendarDayOfOrDayAfter"(end of AnesthesiaProcedure.)  
relevantPeriodreturn QualifyingEncounterICU
```

Numerator - VTE-2

Inpatient hospitalizations for patients who received VTE prophylaxis:

- the day of or the day after ICU admission (or transfer)
- the day of or the day after surgery end date for surgeries that end the day of or the day after ICU admission (or transfer)

Inpatient hospitalizations for patients who have documentation of a reason why no VTE prophylaxis was given:

- between the day of arrival and the day after ICU admission (for patients directly admitted as inpatients to the ICU)
- the day of or the day after surgery end date (for surgeries that end the day of or the day after ICU admission (or transfer))

Numerator:

- #1 "Encounter With VTE Prophylaxis Received on Day of or Day After First ICU Stay or Procedure"
- #2 union ("Encounter With Medication Oral Factor Xa Inhibitor Administered on Day of or Day After First ICU Stay or Procedure"
intersect ("Encounter With Prior or Present Diagnosis of Atrial Fibrillation or VTE"
union "Encounter With Prior or Present Procedure of Hip or Knee Replacement Surgery"))
- #3 union "Encounter With Low Risk for VTE or Anticoagulant Administered"
- #4 union "Encounter With No VTE Prophylaxis Due to Medical Reason"
- #5 union "Encounter With No VTE Prophylaxis Due to Patient Refusal"

Numerator - VTE-2

Numerator:

- #1 "Encounter With VTE Prophylaxis Received on Day of or Day After First ICU Stay or Procedure"
- #2 union ("Encounter With Medication Oral Factor Xa Inhibitor Administered on Day of or Day After First ICU Stay or Procedure"
intersect ("Encounter With Prior or Present Diagnosis of Atrial Fibrillation or VTE" *
union "Encounter With Prior or Present Procedure of Hip or Knee Replacement Surgery"))
- #3 union "Encounter With Low Risk for VTE or Anticoagulant Administered"
- #4 union "Encounter With No VTE Prophylaxis Due to Medical Reason"
- #5 union "Encounter With No VTE Prophylaxis Due to Patient Refusal"

Numerator - VTE-1

Numerator:

- #1 "Encounter With VTE Prophylaxis Received on Day of or Day After Admission or Procedure"
- #2 union ("Encounter With Medication Oral Factor Xa Inhibitor Administered on Day of or Day After First ICU Stay or Procedure"
intersect ("Encounter With Prior or Present Diagnosis of Atrial Fibrillation or VTE" *
union "Encounter With Prior or Present Procedure of Hip or Knee Replacement Surgery"))
- #3 union "Encounter With Low Risk for VTE or Anticoagulant Administered"
- #4 union "Encounter With No VTE Prophylaxis Due to Medical Reason"
- #5 union "Encounter With No VTE Prophylaxis Due to Patient Refusal"

Numerator - VTE-2

Numerator:

```
#1 "Encounter With VTE Prophylaxis Received on Day of or Day After First ICU Stay or Procedure"  
  union ( "Medication Oral Factor Xa Inhibitor Administered on Day of or Day After First ICU Stay or Procedure"  
        intersect ( "Encounter With Prior or Present Diagnosis of Atrial Fibrillation or VTE"  
                  union "Encounter With Prior or Present Procedure of Hip or Knee Replacement Surgery"))  
  union "Low Risk for VTE or Anticoagulant Administered"  
  union "No VTE Prophylaxis Due to Medical Reason"  
  union "No VTE Prophylaxis Due to Patient Refusal"
```

Encounter With VTE Prophylaxis Received on Day of or Day After First ICU Stay or Procedure:

```
( "Encounter With ICU Location" QualifyingEncounterICU  
  with "VTE Prophylaxis by Medication Administered or Device Applied" VTEProphylaxis  
  such that VTEProphylaxis.relevantPeriod starts during  
    TJC."CalendarDayOfOrDayAfter"(VTEICU."StartOfFirstICU"(QualifyingEncounterICU)))  
  union ( from "Encounter With ICU Location" QualifyingEncounterICU,  
    ["Procedure, Performed": "General or Neuraxial Anesthesia"] AnesthesiaProcedure,  
    "VTE Prophylaxis by Medication Administered or Device Applied" VTEProphylaxis  
    where AnesthesiaProcedure.relevantPeriod ends 1 day after day of VTEICU."StartOfFirstICU"(QualifyingEncounterICU)  
    and VTEProphylaxis.relevantPeriod starts during TJC."CalendarDayOfOrDayAfter"(end of AnesthesiaProcedure.relevantPeriod)  
    return QualifyingEncounterICU)
```

Numerator:

#1 "Encounter With VTE Prophylaxis Received on Day of or Day After First ICU Stay or Procedure"
union ("Medication Oral Factor Xa Inhibitor Administered on Day of or Day After First ICU Stay or Procedure"
intersect ("Encounter With Prior or Present Diagnosis of Atrial Fibrillation or VTE"

VTE Prophylaxis by Medication Administered or Device Applied

(["Medication, Administered": "Low Dose Unfractionated Heparin for VTE Prophylaxis"] VTEMedication
where VTEMedication.route in "Subcutaneous route")
union ["Medication, Administered": "Low Molecular Weight Heparin for VTE Prophylaxis"]
union ["Medication, Administered": "Injectable Factor Xa Inhibitor for VTE Prophylaxis"]
union ["Medication, Administered": "Warfarin"]
union ["Medication, Administered": "Rivaroxaban and Betrixaban for VTE Prophylaxis"]
union ["Device, Applied": "Intermittent pneumatic compression devices (IPC)"]
union ["Device, Applied": "Venous foot pumps (VFP)"]
union ["Device, Applied": "Graduated compression stockings (GCS)"]

No VTE Prophylaxis Medication Administered or Ordered

["Medication, Not Administered": "Low Dose Unfractionated Heparin for VTE Prophylaxis"]
union ["Medication, Not Administered": "Low Molecular Weight Heparin for VTE Prophylaxis"]
union ["Medication, Not Administered": "Injectable Factor Xa Inhibitor for VTE Prophylaxis"]
union ["Medication, Not Administered": "Warfarin"]
union ["Medication, Not Administered": "Rivaroxaban and Betrixaban for VTE Prophylaxis"]
union ["Medication, Not Ordered": "Low Dose Unfractionated Heparin for VTE Prophylaxis"]
union ["Medication, Not Ordered": "Low Molecular Weight Heparin for VTE Prophylaxis"]
union ["Medication, Not Ordered": "Injectable Factor Xa Inhibitor for VTE Prophylaxis"]
union ["Medication, Not Ordered": "Warfarin"]
union ["Medication, Not Ordered": "Rivaroxaban and Betrixaban for VTE Prophylaxis"]

Numerator - VTE-2

Numerator:

"VTE Prophylaxis Received on Day of or Day After First ICU Stay or Procedure"

#2 union ("Encounter With Medication Oral Factor Xa Inhibitor Administered on Day of or Day After First ICU Stay or Procedure"
intersect ("Encounter With Prior or Present Diagnosis of Atrial Fibrillation or VTE"
union "Encounter With Prior or Present Procedure of Hip or Knee Replacement Surgery"))
union "Low Risk for VTE or Anticoagulant Administered"
union "No VTE Prophylaxis Due to Medical Reason"
union "No VTE Prophylaxis Due to Patient Refusal"

Encounter With Medication Oral Factor Xa Inhibitor Administered on Day of or Day After First ICU Stay or Procedure:

("Encounter With ICU Location" QualifyingEncounterICU with ["Medication, Administered": "Oral Factor Xa Inhibitor for VTE Prophylaxis or VTE Treatment"] FactorXaMedication such that FactorXaMedication.relevantPeriod starts TJC."CalendarDayOfOrDayAfter"(VTEICU."StartOfFirstICU"(QualifyingEncounterICU)))
union (from "Encounter With ICU Location" QualifyingEncounterICU,
["Procedure, Performed": "General or Neuraxial Anesthesia"] AnesthesiaProcedure,
["Medication, Administered": "Oral Factor Xa Inhibitor for VTE Prophylaxis or VTE Treatment"] FactorXaMedication
where AnesthesiaProcedure.relevantPeriod ends 1 day after day of VTEICU."StartOfFirstICU"(QualifyingEncounterICU)
and FactorXaMedication.relevantPeriod starts during TJC."CalendarDayOfOrDayAfter"(end of
AnesthesiaProcedure.relevantPeriod)
return QualifyingEncounterICU)

Numerator - VTE-2

Numerator:

"VTE Prophylaxis Received on Day of or Day After First ICU Stay or Procedure"

#2 union ("Encounter With Medication Oral Factor Xa Inhibitor Administered on Day of or Day After First ICU Stay or Procedure"
intersect ("Encounter With Prior or Present Diagnosis of Atrial Fibrillation or VTE"
union "Encounter With Prior or Present Procedure of Hip or Knee Replacement Surgery"))
union "Low Risk for VTE or Anticoagulant Administered"
union "No VTE Prophylaxis Due to Medical Reason"
union "No VTE Prophylaxis Due to Patient Refusal"

Encounter With Prior or Present Diagnosis of Atrial Fibrillation or VTE:

("Encounter With ICU Location" QualifyingEncounterICU with ["Diagnosis": "Atrial Fibrillation/Flutter"] AtrialFibrillation
such that AtrialFibrillation.prevalencePeriod starts on or before end of QualifyingEncounterICU.relevantPeriod)
union ("Encounter With ICU Location" QualifyingEncounterICU
where exists (QualifyingEncounterICU.diagnoses EncounterDiagnosis
where EncounterDiagnosis in "Atrial Fibrillation/Flutter"))
union ("Encounter With ICU Location" QualifyingEncounterICU
with ["Diagnosis": "Venous Thromboembolism"] VTEDiagnosis
such that VTEDiagnosis.prevalencePeriod starts before start of QualifyingEncounterICU.relevantPeriod)

Numerator - VTE-2

Numerator:

"VTE Prophylaxis Received on Day of or Day After First ICU Stay or Procedure"

#2 union ("Encounter With Medication Oral Factor Xa Inhibitor Administered on Day of or Day After First ICU Stay or Procedure"
intersect ("Encounter With Prior or Present Diagnosis of Atrial Fibrillation or VTE"
union "Encounter With Prior or Present Procedure of Hip or Knee Replacement Surgery"))
union "Low Risk for VTE or Anticoagulant Administered"
union "No VTE Prophylaxis Due to Medical Reason"
union "No VTE Prophylaxis Due to Patient Refusal"

Encounter With Prior or Present Procedure of Hip or Knee Replacement Surgery:

Encounter With ICU Location" QualifyingEncounterICU

with (["Procedure, Performed": "Hip Replacement Surgery"]

union ["Procedure, Performed": "Knee Replacement Surgery"]) HipKneeProcedure

such that HipKneeProcedure.relevantPeriod starts on or before end of QualifyingEncounterICU.relevantPeriod

Numerator - VTE-2

Numerator:

"VTE Prophylaxis Received on Day of or Day After First ICU Stay or Procedure"
union ("Medication Oral Factor Xa Inhibitor Administered on Day of or Day After First ICU Stay or Procedure"
intersect ("Encounter With Prior or Present Diagnosis of Atrial Fibrillation or VTE"
union "Encounter With Prior or Present Procedure of Hip or Knee Replacement Surgery"))
#3 union "Encounter With Low Risk for VTE or Anticoagulant Administered"
union "No VTE Prophylaxis Due to Medical Reason"
union "No VTE Prophylaxis Due to Patient Refusal"

Encounter With Low Risk for VTE or Anticoagulant Administered:

- Low Risk for VTE or Anticoagulant Administered From Day of Start of Hospitalization To Day After First ICU Stay"
union "Low Risk for VTE or Anticoagulant Administered on Day of or Day After Procedure"

Numerator:

```
#3 union "Encounter With Low Risk for VTE or Anticoagulant Administered"
```

Encounter With Low Risk for VTE or Anticoagulant Administered:

```
Low Risk for VTE or Anticoagulant Administered From Day of Start of Hospitalization To Day After First ICU Stay"  
union "Low Risk for VTE or Anticoagulant Administered on Day of or Day After Procedure"
```

Low Risk for VTE or Anticoagulant Administered From Day of Start of Hospitalization To Day After First ICU Stay:

```
Encounter With ICU Location" QualifyingEncounterICU  
with "Low Risk Indicator For VTE" LowRiskForVTE  
such that LowRiskForVTE.LowRiskDatetime during  
VTEICU."FromDayOfStartOfHospitalizationToDayAfterFirstICU" ( QualifyingEncounterICU )
```

Low Risk Indicator For VTE

```
( ["Assessment, Performed": "Risk for venous thromboembolism"] VTERiskAssessment  
  where VTERiskAssessment.result in "Low Risk"  
  return {  
    id: VTERiskAssessment.id,  
    LowRiskDatetime: VTERiskAssessment.relevantDatetime  
  })  
union ( ["Laboratory Test, Performed": "INR"] INRLabTest  
  where INRLabTest.result > 3.0  
  return {  
    id: INRLabTest.id,  
    LowRiskDatetime: INRLabTest.resultDatetime  
  })  
union ( ( ( ["Medication, Administered": "Unfractionated Heparin"] UnfractionatedHeparin  
  where UnfractionatedHeparin.route in "Intravenous route"  
  )  
  union ["Medication, Administered": "Direct Thrombin Inhibitor"]  
  union ["Medication, Administered": "Glycoprotein IIb/IIIa Inhibitors"] ) AnticoagulantMedication  
  return {  
    id: AnticoagulantMedication.id,  
    LowRiskDatetime: start of AnticoagulantMedication.relevantPeriod  
  })
```

Numerator:

```
"VTE Prophylaxis Received on Day of or Day After First ICU Stay or Procedure"  
  union ( "Medication Oral Factor Xa Inhibitor Administered on Day of or Day After First ICU Stay or Procedure"  
    intersect ( "Encounter With Prior or Present Diagnosis of Atrial Fibrillation or VTE"  
      union "Encounter With Prior or Present Procedure of Hip or Knee Replacement Surgery"))  
#3 union "Encounter With Low Risk for VTE or Anticoagulant Administered"  
  union "No VTE Prophylaxis Due to Medical Reason"  
  union "No VTE Prophylaxis Due to Patient Refusal"
```

Encounter With Low Risk for VTE or Anticoagulant Administered:

```
Low Risk for VTE or Anticoagulant Administered From Start of Hospitalization To Day After First ICU Stay"  
  union "Low Risk for VTE or Anticoagulant Administered on Day of or Day After Procedure"
```

Low Risk for VTE or Anticoagulant Administered on Day of or Day After Procedure:

```
from "Encounter With ICU Location" QualifyingEncounterICU,  
  ["Procedure, Performed": "General or Neuraxial Anesthesia"] AnesthesiaProcedure,  
  "Low Risk Indicator For VTE" LowRiskForVTE  
where AnesthesiaProcedure.relevantPeriod ends 1 day after day of VTEICU."StartOfFirstICU" (  
  QualifyingEncounterICU )  
and LowRiskForVTE.LowRiskDatetime during TJC."CalendarDayOfOrDayAfter" (  
  end of AnesthesiaProcedure.relevantPeriod )  
return QualifyingEncounterICU
```


Numerator - VTE-2

Numerator:

"VTE Prophylaxis Received on Day of or Day After First ICU Stay or Procedure"
union ("Medication Oral Factor Xa Inhibitor Administered on Day of or Day After First ICU Stay or Procedure"
intersect ("Encounter With Prior or Present Diagnosis of Atrial Fibrillation or VTE"
union "Encounter With Prior or Present Procedure of Hip or Knee Replacement Surgery"))
union "Low Risk for VTE or Anticoagulant Administered"
#4 union "Encounter With No VTE Prophylaxis Due to Medical Reason"
union "No VTE Prophylaxis Due to Patient Refusal"

Encounter With No VTE Prophylaxis Due to Medical Reason:

("No VTE Prophylaxis Medication Due to Medical Reason From Day of Start of Hospitalization To Day After First ICU Stay"
intersect "No VTE Prophylaxis Device Due to Medical Reason From Day of Start of Hospitalization To Day After First ICU Stay")
union ("No VTE Prophylaxis Medication Due to Medical Reason on Day of or Day After Procedure"
intersect "No VTE Prophylaxis Device Due to Medical Reason on Day of or Day After Procedure")

Numerator - VTE-2

Numerator:

"VTE Prophylaxis Received on Day of or Day After First ICU Stay or Procedure"
union ("Medication Oral Factor Xa Inhibitor Administered on Day of or Day After First ICU Stay or Procedure"
intersect ("Encounter With Prior or Present Diagnosis of Atrial Fibrillation or VTE"
union "Encounter With Prior or Present Procedure of Hip or Knee Replacement Surgery"))
union "Low Risk for VTE or Anticoagulant Administered"
union "No VTE Prophylaxis Due to Medical Reason"
#5 union "Encounter With No VTE Prophylaxis Due to Patient Refusal"

Encounter With No VTE Prophylaxis Due to Patient Refusal:

No VTE Prophylaxis Due to Patient Refusal From Day of Start of Hospitalization To Day After First ICU Stay"
union "No VTE Prophylaxis Due to Patient Refusal on Day of or Day After Procedure"

Denominator Exceptions - VTE-2

Inpatient hospitalizations for patients with ICU LOS less than one day

Denominator Exceptions:

"Encounter With First ICU Location Stay less than 1 day

Encounter With First ICU Location Stay less than 1 day:

Encounter With ICU Location" QualifyingEncounterICU

where Global."LengthInDays"(VTEICU."FirstICULocationPeriod"(QualifyingEncounterICU))< 1

First ICU Location Period(Encounter "Encounter, Performed")

Global."FirstInpatientIntensiveCareUnit"(Encounter).locationPeriod



Question and Answer Segment

Joint Commission Pioneers in Quality eCQM Expert to Expert Webinar eCQM Annual Update



Questions for this segment were obtained from common questions submitted to JIRA and other sources

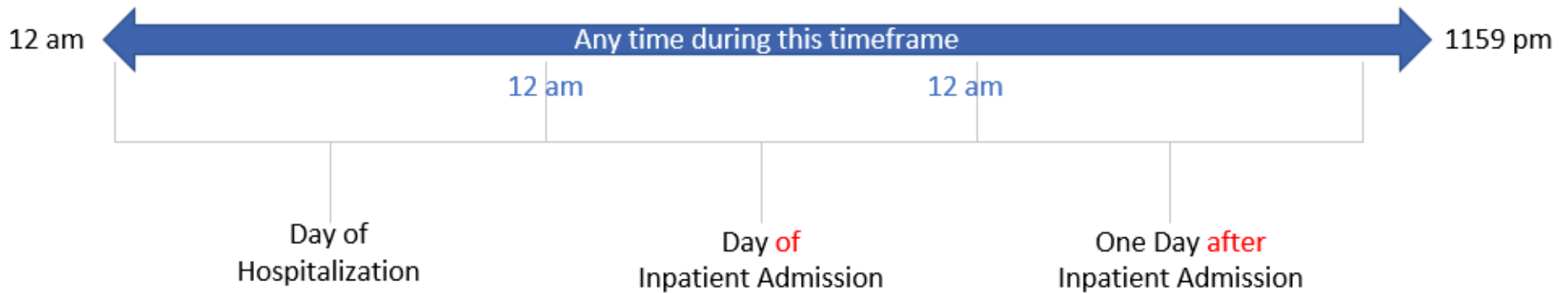
Question: What is the impact with the timing change of ...“From Day Of Start Of Hospitalization To Day After Admission function”?

Answer: VTE prophylaxis that occurs in the ED or in Observation will count to meet the Numerator

From Day Of Start Of Hospitalization To Day After Admission

VTEICU.FromDayOfStartOfHospitalizationToDayAfterAdmission(Encounter "Encounter, Performed")

Interval[Global."ToDate"(start of Global."HospitalizationWithObservation"(Encounter)), Global."ToDate"(start of Encounter.relevantPeriod + 2 days))



FromDayOfStartOfHospitalizationToDayAfterAdmission

Question: What is the purpose of using the LowRisk Datetime Variable?

Answer: It allows for 3 different timestamps to fill in the LowRisk Datetime variable to indicate whether the patient is a low risk for VTE

Question: Does patient refusal need to be for both pharmacological and mechanical prophylaxis?

Answer: Patient refusal of either pharmacological or mechanical is acceptable as a reason for no VTE prophylaxis.

Question: If the patient was taking a direct oral anticoagulant (DOAC) medication like apixaban or rivaroxaban prior to hospital arrival, will that count as a reason for no VTE prophylaxis?

Answer: A prior history of taking a DOAC does not count as a reason for no VTE prophylaxis.

Question: We are seeing higher doses of pharmacological prophylaxis being used for COVID patients. Is this acceptable?

Answer: Higher doses of pharmacological agents may be indicated. The current measure specifications can accommodate these patients if prophylaxis is administered on arrival or by the end of the day after hospital admission or surgery end date for patients who undergo surgery that starts the day of or the day after hospital admission.

Resources

eCQI Resource Center – EH Measures:

<https://ecqi.healthit.gov/eligible-hospital/critical-access-hospital-ecqms>

Pioneers In Quality

<https://www.jointcommission.org/measurement/pioneers-in-quality/>

ONC Issue Tracking System

<https://oncprojecttracking.healthit.gov/>

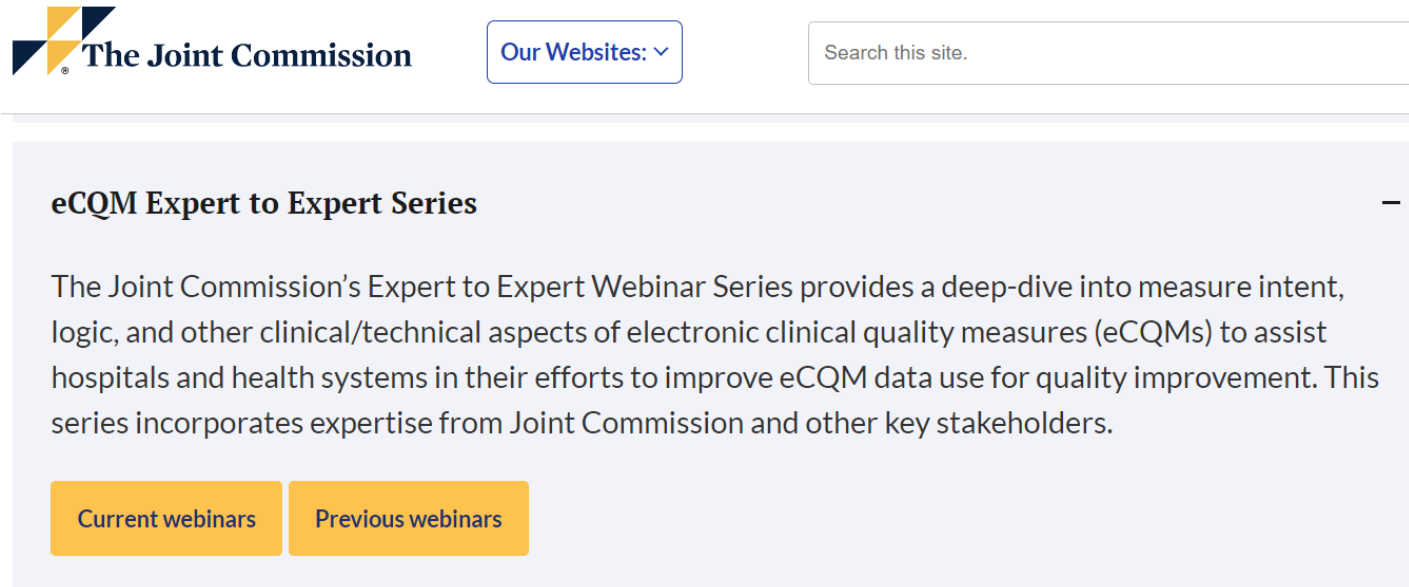
Blueprint for the CMS Measures Management Systems version 16.0

<https://www.cms.gov/Medicare/Quality-Initiatives-Patient-Assessment-Instruments/MMS/Downloads/Blueprint.pdf>

Webinar recording

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