



## Vascular Surgery Dashboard Report Dictionary

This report contains all VS procedure types in summary form. The data are reported at the collaborative and hospital level and does not contain physician-level data.

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## Carotid Endarterectomy and Stenting

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The numerator and denominator are the same. The total number of discharges containing a CEA or CAS.

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### Carotid Endarterectomy (CEA)

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Numerator: The number of CEA procedures. Denominator: The total number of CEA and CAS procedures.

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#### Symptomatic (CEA)

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Numerator: The number of CEA procedures with “yes” entered for “Target Lesion Symptomatic w/in Past 6 Months”.

Denominator: The total number of CEA procedures.

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#### Asymptomatic (CEA)

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Numerator: The number of CEA procedures with “no” entered for “Target Lesion Symptomatic w/in Past 6 Months”.

Denominator: The total number of CEA procedures.

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### Cardioprotective Medications at Admission (CEA)

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#### Aspirin (CEA)

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Numerator: The number of discharges containing a CEA procedure where the patient is taking Aspirin within 30 days of hospital admission.

Denominator: The total number of discharges containing a CEA procedure.

Exclusion: A contraindication to aspirin.

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#### Clopidogrel (Plavix) (CEA)

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Numerator: The number of discharges containing a CEA procedure where a patient is taking Clopidogrel (Plavix) within 30 days of hospital admission.

Denominator: The total number of discharges containing a CEA procedure.

Exclusion: A contraindication to Clopidogrel (Plavix).

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#### ASA and Clopidogrel (CEA)

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Numerator: The number of discharges containing a CEA procedure where the patient is taking both Aspirin and Clopidogrel (Plavix) within 30 days of hospital admission.

Denominator: The total number of discharges containing a CEA procedure.

Exclusion: A contraindication to Aspirin or Clopidogrel (Plavix).

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#### Statin (CEA)

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Numerator: The number of discharges containing a CEA procedure where the patient was taking a statin within 30 days of hospital admission.

Denominator: The total number of discharges containing a CEA procedure.

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Exclusion: A contraindication to a statin.

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## **Stroke/Death/Myocardial Infarction (Procedure end to 30 days, CEA)**

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Numerator: The number of discharges containing a CEA procedure where a new stroke, death, or myocardial infarction (MI) occurred within 30 days of the procedure end date.

Denominator: The number of discharges containing a CEA procedure.

Note: MI includes Type 2 Myocardial Infarction, Type 1 NSTEMI or STEMI.

Exclusion: CEA performed concurrently with CABG.

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## **Carotid Stent (CAS)**

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Numerator: The number of CAS procedures.

Denominator: The total number of CEA and CAS procedures.

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## **Symptomatic (CAS)**

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Numerator: The number of CAS procedures with "yes" entered for "Target Lesion Symptomatic w/in Past 6 Months".

Denominator: The total number of CAS procedures.

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## **Asymptomatic (CAS)**

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Numerator: The number of CAS procedures with "no" entered for "Target Lesion Symptomatic w/in Past 6 Months".

Denominator: The total number of CAS procedures.

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## **Cardioprotective Medications at Admission (CAS)**

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### **Aspirin (CAS)**

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Numerator: The number of discharges containing a CAS procedure where the patient is taking Aspirin within 30 days of hospital admission.

Denominator: The total number of discharges containing a CAS procedure.

Exclusion: A contraindication to Aspirin.

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### **Clopidogrel (Plavix) (CAS)**

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Numerator: The number of discharges containing a CAS procedure where the patient is taking Clopidogrel (Plavix) within 30 days of hospital admission.

Denominator: The total number of discharges containing a CAS procedure.

Exclusion: A contraindication to Clopidogrel (Plavix).

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### **ASA and Clopidogrel (CAS)**

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Numerator: The number of discharges with a CAS procedure where the patient is taking Aspirin and Clopidogrel (Plavix) within 30 days of hospital admission.

Denominator: The total number of CAS discharges.

Exclusion: A contraindication to Aspirin or Clopidogrel (Plavix).

**Statin (CAS)**

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Numerator: The number of discharges containing a CAS procedure where the patient is taking a statin within 30 days of hospital admission.

Denominator: The total number of discharges containing a CAS procedure.

Exclusion: A contraindication to a statin.

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**Stroke/Death/Myocardial Infarction (Procedure end to 30 days, CAS)**

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Numerator: The number of discharges containing a CAS procedure where a new stroke, death, or myocardial infarction (MI) occurred within 30 days of the procedure end date.

Denominator: The number of discharges containing a CAS procedure.

Note: MI includes Type 2 Myocardial Infarction, Type 1 NSTEMI or STEMI.

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## AAA Repair

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The numerator and denominator are the same. The total number of discharges containing an OAAA or EVAR procedure.

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## Open AAA Repair

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Numerator: The number of discharges containing an Open AAA procedure.

Denominator: The total number of discharges containing an Open AAA or EVAR procedure.

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## Indications (OAAA)

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Note: A procedure may have more than one indication entered.

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## Asymptomatic (OAAA)

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Numerator: The number of open AAA procedures performed for the indication of Asymptomatic or Rapidly Increasing Aneurysm Diameter AND not performed for the indication of Abdominal/Back Pain and Infection.

Denominator: The total number of open AAA procedures.

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## Symptomatic (OAAA)

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Numerator: The number of open AAA procedures that were performed for the indication of Abdominal/Back pain.

Denominator: The total number of Open AAA procedures.

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## Rupture (OAAA)

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Numerator: The number of Open AAA procedures for the repair of a Ruptured AAA.

Denominator: The total number of Open AAA procedures.

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## Cardioprotective Medications at Admission (OAAA)

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### Aspirin (OAAA)

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Numerator: The number of discharges containing an open AAA procedure where the patient is taking Aspirin within 30 days of hospital admission.

Denominator: The total number of discharges containing an open AAA procedure.

Exclusion: A contraindication to aspirin.

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### Statin (OAAA)

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Numerator: The number of discharges containing an open AAA procedure where the patient was taking a statin within 30 days of hospital admission.

Denominator: The number of discharges containing an open AAA procedure.

Exclusion: A contraindication to a statin.

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### Beta Blocker (OAAA)

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Numerator: The number of discharges containing an open AAA procedure where the patient was taking a Beta Blocker within 30 days of hospital admission.

Denominator: The number of discharges containing an open AAA procedure.

Exclusion: A contraindication to Beta Blockers.

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## Elective Open AAA

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Numerator: The number of discharges containing an elective Open AAA procedure.

Denominator: The total number of discharges containing an Open AAA procedure.

Note: The first vascular surgery procedure in a discharge with multiple procedures of the same type will be used to determine procedure status (elective, urgent, emergent).

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## Death (Procedure end to 30 days, elective OAAA)

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Numerator: The number of VS discharges containing an Elective open AAA procedure where a death occurred within 30 days of the procedure.

Denominator: The total number of discharges containing an Elective open AAA procedure.

Note: The first vascular surgery procedure in a discharge with multiple procedures of the same type will be used to determine procedure status (elective, urgent, emergent).

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## Major Morbidity (Procedure end to 30 days, elective OAAA)

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### Renal Failure (elective OAAA)

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Numerator: The number of discharges containing an Elective open AAA procedure where there is a outcome of renal failure or dialysis within 30 days of the procedure end date.

Denominator: The total number of discharges containing an elective open AAA procedure.

Note: The first vascular surgery procedure in a discharge with multiple procedures of the same type will be used to determine procedure status (elective, urgent, emergent).

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### Pneumonia (elective OAAA)

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Numerator: The number of discharges containing an elective open AAA procedure where an outcome of Infection/Sepsis (Pulmonary selected) occurred within 30 days of the procedure end date.

Denominator: The total number of discharges containing an elective open AAA procedure.

Note:

- Pneumonia is not tracked on 30 day follow-up form.
- The first vascular surgery procedure in a discharge with multiple procedures of the same type will be used to determine procedure status (elective, urgent, emergent).

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### Myocardial Infarction (elective OAAA)

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Numerator: The number of discharges containing an Elective OAAA procedure where a myocardial infarction (MI) occurred within 30 days of the procedure end date.

Denominator: The total number of discharges containing an Elective OAAA procedure.

Note:

- MI includes Type 2 Myocardial Infarction, Type 1 NSTEMI or STEMI.
- The first vascular surgery procedure in a discharge with multiple procedures of the same type will be used to determine procedure status (elective, urgent, emergent).

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### Bleeding (>= 4 units PRBCs) (elective OAAA)

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Numerator: The number of discharges containing an Elective open AAA procedure where a transfusion of 4 or more units of PRBCs was given within 30 days of the procedure end date. (For any procedure within that discharge).

Denominator: The total number of discharges containing an Elective open AAA procedure.

Note: The first vascular surgery procedure in a discharge with multiple procedures of the same type will be used to determine procedure status (elective, urgent, emergent).

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### **Readmission (Procedure end to 30 days, elective OAAA)**

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Numerator: The number of discharges containing an elective open AAA procedure where the patient is readmitted to the hospital within 30 days of the procedure end date.

Denominator: The total number of discharges containing an elective open AAA procedure.

Note: The first vascular surgery procedure in a discharge with multiple procedures of the same type will be used to determine procedure status (elective, urgent, emergent).

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### **Urgent/Emergent Open AAA**

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Numerator: The number of discharges containing an urgent or emergent Open AAA procedure.

Denominator: The total number of discharges containing an Open AAA procedure.

Note: The first vascular surgery procedure in a discharge with multiple procedures of the same type will be used to determine procedure status (elective, urgent, emergent).

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### **Death (Procedure end to 30 days, urgent/emergent OAAA)**

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Numerator: The number of discharges containing an urgent or emergent open AAA procedure where the outcome of death occurred within 30 days of the procedure.

Denominator: The total number of discharges containing an urgent or emergent open AAA procedure.

Note: The first vascular surgery procedure in a discharge with multiple procedures of the same type will be used to determine procedure status (elective, urgent, emergent).

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### **Major Morbidity (Procedure end to 30 days, urgent/emergent OAAA)**

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### **Renal Failure (urgent/emergent OAAA)**

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Numerator: The number of discharges containing an urgent or emergent open AAA procedure where an outcome of renal failure or dialysis occurred within 30 days of the procedure end date.

Denominator: The total number of discharges containing an urgent or emergent open AAA procedure.

Note: The first vascular surgery procedure in a discharge with multiple procedures of the same type will be used to determine procedure status (elective, urgent, emergent).

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### **Pneumonia (urgent/emergent OAAA)**

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Numerator: The number of discharges containing an urgent or emergent open AAA procedure where the outcome of Infection/Sepsis (Pulmonary selected) occurred within 30 days of the procedure end date.

Denominator: The total number of discharges containing an urgent or emergent open AAA procedure.

Note:

- Pneumonia is not tracked on 30 day follow-up form.
- The first vascular surgery procedure in a discharge with multiple procedures of the same type will be used to determine procedure status (elective, urgent, emergent).

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### **Myocardial Infarction (urgent/emergent OAAA)**

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Numerator: The number of discharges containing an Urgent or Emergent Open AAA procedure where a myocardial infarction (MI) occurred within 30 days of the procedure end date.

Denominator: The total number of discharges containing an Urgent OR Emergent Open AAA procedure.

Note:

- MI includes Type 2 Myocardial Infarction, Type 1 NSTEMI or STEMI.
- The first vascular surgery procedure in a discharge with multiple procedures of the same type will be used to determine procedure status (elective, urgent, emergent).

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## **Bleeding (>= 4 units PRBCs) (urgent/emergent OAAA)**

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Numerator: The number of discharges containing an Urgent or Emergent open AAA procedure where a transfusion of 4 or more units of PRBCs was given post-procedure for any procedure within that discharge (within 30 days of the procedure end date).

Denominator: The total number of discharges containing an Urgent or Emergent open AAA procedure.

Note: The first vascular surgery procedure in a discharge with multiple procedures of the same type will be used to determine procedure status (elective, urgent, emergent).

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## **Readmission (Procedure end to 30 days, urgent/emergent OAAA)**

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Numerator: The number of discharges containing an urgent or emergent open AAA procedure where the patient is readmitted to the hospital within 30 days of the procedure end date.

Denominator: The total number of discharges containing an urgent or emergent open AAA procedure.

Note: The first vascular surgery procedure in a discharge with multiple procedures of the same type will be used to determine procedure status (elective, urgent, emergent).

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## **EVAR**

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Numerator: The number of discharges containing an EVAR procedure. Denominator: The total number of discharges containing an Open AAA or EVAR procedure.

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### **Indications (EVAR)**

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#### **Asymptomatic (EVAR)**

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Numerator: The number of EVAR procedures performed for the indication of Asymptomatic or Rapidly Increasing Aneurysm Diameter AND not performed for the indication of Abdominal/Back Pain and Infection.

Denominator: The total number of EVAR procedures.

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#### **Symptomatic (EVAR)**

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Numerator: The number of EVAR procedures that were performed for the indication of Abdominal/Back pain.

Denominator: The total number of EVAR procedures.

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#### **Rupture (EVAR)**

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Numerator: The number of EVAR procedures for the repair of a Ruptured AAA.

Denominator: The total number of EVAR procedures.

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## **Cardioprotective Medications at Admission (EVAR)**

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### **Aspirin (EVAR)**

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Numerator: The number of discharges containing an EVAR procedure where the patient is taking Aspirin within 30 days of hospital admission.

Denominator: The number of discharges containing an EVAR procedure.

Exclusion: A contraindication to aspirin.

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### **Statin (EVAR)**

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Numerator: The number of discharges containing an EVAR procedure where the patient was taking a statin within 30 days of hospital admission.

Denominator: The total number of discharges containing an EVAR procedure.

Exclusion: A contraindication to a statin.

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### **Beta Blocker (EVAR)**

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Numerator: The number of discharges containing an EVAR procedure where the patient is taking a Beta Blocker within 30 days of hospital admission.

Denominator: The total number of discharges containing an EVAR procedure.

Exclusion: A contraindication to Beta Blockers.

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### **Elective EVAR**

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Numerator: The number of discharges containing an elective EVAR procedure.

Denominator: The number of discharges containing an EVAR procedure.

Note: The first vascular surgery procedure in a discharge with multiple procedures of the same type will be used to determine procedure status (elective, urgent, emergent).

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### **Death at 30 days (Procedure end to 30 days, elective EVAR)**

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Numerator: The number of VS discharges containing an Elective EVAR procedure where a death occurred within 30 days of the procedure.

Denominator: The total number of discharges containing an Elective EVAR procedure.

Note: The first vascular surgery procedure in a discharge with multiple procedures of the same type will be used to determine procedure status (elective, urgent, emergent).

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### **Major Morbidity (Procedure end to 30 days, elective EVAR)**

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### **Renal Failure (elective EVAR)**

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Numerator: The number of discharges containing an Elective EVAR procedure where there is a outcome of renal failure or new requirement for dialysis within 30 days of the procedure end date.

Denominator: The total number of discharges containing an elective EVAR procedure.

Note: The first vascular surgery procedure in a discharge with multiple procedures of the same type will be used to determine procedure status (elective, urgent, emergent).

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## **Pneumonia (elective EVAR)**

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Numerator: The number of discharges containing an elective EVAR procedure where an outcome of Infection/Sepsis (Pulmonary selected) occurred within 30 days of the procedure end date.

Denominator: The total number of discharges containing an elective EVAR procedure.

Note:

- Pneumonia is not tracked on 30-day follow-up form.
- The first vascular surgery procedure in a discharge with multiple procedures of the same type will be used to determine procedure status (elective, urgent, emergent).

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## **Myocardial Infarction (elective EVAR)**

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Numerator: The number of discharges containing an elective EVAR procedure where a myocardial infarction (MI) occurred within 30 days of the procedure end date.

Denominator: The total number of discharges containing an elective EVAR procedure.

Note:

- MI includes Type 2 Myocardial Infarction, Type 1 NSTEMI or STEMI.
- The first vascular surgery procedure in a discharge with multiple procedures of the same type will be used to determine procedure status (elective, urgent, emergent).

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## **Bleeding (>=4 units PRBCs)(elective EVAR)**

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Numerator: The number of discharges containing an Elective EVAR procedure where a transfusion of 4 or more units of PRBCs was given post-procedure within 30 days of the procedure end date. (For any procedure within that discharge).

Denominator: The total number of discharges containing an Elective EVAR procedure.

Note: The first vascular surgery procedure in a discharge with multiple procedures of the same type will be used to determine procedure status (elective, urgent, emergent).

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## **Readmission (Procedure end to 30 days, elective EVAR)**

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Numerator: The number of discharges containing an elective EVAR procedure where the patient is readmitted to the hospital within 30 days of the procedure end date.

Denominator: The total number of discharges containing an elective EVAR procedure.

Note: The first vascular surgery procedure in a discharge with multiple procedures of the same type will be used to determine procedure status (elective, urgent, emergent).

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## **Urgent/Emergent EVAR**

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Numerator: The number of discharges containing an urgent or emergent EVAR procedure.

Denominator: The total number of discharges containing an EVAR procedure.

Note: The first vascular surgery procedure in a discharge with multiple procedures of the same type will be used to determine procedure status (elective, urgent, emergent).

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## **Death at 30 days (Procedure end to 30 days, urgent/emergent EVAR)**

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Numerator: The number of discharges containing an urgent or emergent EVAR procedure where the outcome of death occurred within 30 days of the procedure.

Denominator: The total number of discharges containing an urgent or emergent EVAR procedure.

Note: The first vascular surgery procedure in a discharge with multiple procedures of the same type will be used to determine procedure status (elective, urgent, emergent).

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## **Major Morbidity (Procedure end to 30 days, urgent/emergent EVAR)**

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### **Renal Failure (urgent/emergent EVAR)**

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Numerator: The number of discharges containing an urgent or emergent EVAR procedure where an outcome of renal failure or new requirement for dialysis occurred within 30 days of the procedure end date.

Denominator: The total number of discharges containing an urgent or emergent EVAR procedure.

Note: The first vascular surgery procedure in a discharge with multiple procedures of the same type will be used to determine procedure status (elective, urgent, emergent).

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### **Pneumonia (urgent/emergent EVAR)**

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Numerator: The number of discharges containing an urgent or emergent open AAA procedure where the outcome of Infection/Sepsis (Pulmonary selected) occurred within 30 days of the procedure end date.

Denominator: The total number of discharges containing an urgent or emergent open AAA procedure.

Note:

- Pneumonia is not tracked on 30 day follow-up form.
- The first vascular surgery procedure in a discharge with multiple procedures of the same type will be used to determine procedure status (elective, urgent, emergent).

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### **Myocardial Infarction (urgent/emergent EVAR)**

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Numerator: The number of discharges containing an Urgent or Emergent EVAR procedure where a myocardial infarction (MI) occurred within 30 days of the procedure end date.

Denominator: The total number of discharges containing an Urgent or Emergent EVAR procedure.

Note:

- MI includes Type 2 Myocardial Infarction, Type 1 NSTEMI or STEMI.
- The first vascular surgery procedure in a discharge with multiple procedures of the same type will be used to determine procedure status (elective, urgent, emergent).

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### **Bleeding (>=4 units PRBCs)(urgent/emergent EVAR)**

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Numerator: The number of discharges containing an Urgent or Emergent EVAR procedure where a transfusion of 4 or more units of PRBCs was given post-procedure for any procedure within that discharge (within 30 days of the procedure end date).

Denominator: The total number of discharges containing an Urgent or Emergent EVAR procedure.

Note: The first vascular surgery procedure in a discharge with multiple procedures of the same type will be used to determine

procedure status (elective, urgent, emergent).

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**Readmission (Procedure end to 30 days, urgent/emergent EVAR)**

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Numerator: The number of discharges containing an urgent or emergent EVAR procedure where the patient is readmitted to the hospital within 30 days of the procedure end date.

Denominator: The total number of discharges containing an urgent or emergent EVAR procedure.

Note: The first vascular surgery procedure in a discharge with multiple procedures of the same type will be used to determine procedure status (elective, urgent, emergent).

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## **PAD Open Bypass Discharges**

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### **Average Age (PAD Open Bypass) (mean, stdev)**

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The average (mean) age of discharges containing a PAD open bypass procedure. This is calculated using the age as of the admission date.

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### **Obesity (PAD Open Bypass)**

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Numerator: The number of discharges containing a PAD open bypass procedure with a BMI > 30.

Denominator: The number of discharges containing a PAD open bypass procedure.

Note: BMI is defined as the patient's weight in kilograms divided by the square of the patient's height in meters. Note: height is captured in centimeters.

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### **Diabetes (PAD Open Bypass)**

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Numerator: The number of discharges containing a PAD Open Bypass procedure where the patient has a history of any type of diabetes.

Denominator: The total number of discharges containing a PAD Open Bypass procedure.

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### **Cardioprotective Medications at Admission (PAD Open Bypass)**

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#### **Aspirin (PAD Open Bypass)**

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Numerator: The number of discharges with a PAD open bypass procedure where the patient is taking aspirin within 30 days of hospital admission.

Denominator: The total number of discharges containing a PAD open bypass procedure.

Exclusions: A contraindication to aspirin.

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#### **Statin (PAD Open Bypass)**

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Numerator: The number of discharges with a PAD open bypass procedure where the patient is taking a statin within 30 days of hospital admission.

Denominator: The total number of discharges containing a PAD open bypass procedure.

Exclusions: A contraindication to a statin.

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#### **ACE-I/ARB (PAD Open Bypass)**

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Numerator: The number of discharges with a PAD open bypass procedure where the patient is taking an ACE Inhibitor (ACE-I) or an Angiotensin II Receptor Antagonist (ARB) within 30 days of hospital admission.

Denominator: The total number of discharges containing a PAD open bypass procedure.

Exclusions: A contraindication to either an ACE-I or ARB.

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### **Elective Bypass**

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Numerator: The number of discharges containing an elective PAD Open Bypass procedure.

Denominator: The total number of discharges containing a PAD Open Bypass procedure.

Note: The first vascular surgery procedure in a discharge with multiple procedures of the same type will be used to determine procedure status (elective, urgent, emergent).

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### **Death at 30 Days (Procedure end to 30 days, PAD Open Bypass)**

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Numerator: The number of discharges containing an Elective PAD open bypass procedure where a death occurred within 30 days of the procedure.

Denominator: The total number of discharges containing an Elective PAD open bypass procedure.

Note: The first vascular surgery procedure in a discharge with multiple procedures of the same type will be used to determine procedure status (elective, urgent, emergent).

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### **Major Morbidities (Procedure end to 30 days, Elective PAD Open Bypass)**

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The first vascular surgery procedure in a discharge with multiple procedures of the same type will be used to determine procedure status (elective, urgent, emergent).

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### **Myocardial Infarction (Elective PAD Open Bypass)**

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Numerator: The number of discharges containing an elective PAD open bypass procedure where a myocardial infarction (MI) occurred within 30 days of the procedure end date.

Denominator: The total number of discharges containing a PAD open bypass procedure.

Note:

- MI includes Type 2 Myocardial Infarction, Type 1 NSTEMI or STEMI.
- The first vascular surgery procedure in a discharge with multiple procedures of the same type will be used to determine procedure status (elective, urgent, emergent).

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### **Graft Failure (Elective PAD Open Bypass)**

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Numerator: The number of discharges containing an elective PAD open bypass procedure where a clot developed in the stent or graft within 30 days of the procedure end date. (This includes discharges where No is entered for Open Bypass Patent on the 30 day follow-up form).

Denominator: The total number of discharges containing an elective PAD open bypass procedure.

Note: The first vascular surgery procedure in a discharge with multiple procedures of the same type will be used to determine procedure status (elective, urgent, emergent).

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### **Bleeding ( $\geq$ 4 units PRBCs) (Elective PAD Open Bypass)**

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Numerator: The number of discharges containing an Elective PAD open bypass procedure where a transfusion of 4 or more units of PRBCs was given post-procedure for any procedure within that discharge (within 30 days of the procedure end date).

Denominator: The total number of discharges containing an Elective PAD open bypass procedure.

Note: The first vascular surgery procedure in a discharge with multiple procedures of the same type will be used to determine procedure status (elective, urgent, emergent).

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### **Major Amputation (Planned) (Elective PAD Open Bypass)**

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Numerator: The number of discharges containing an Elective PAD Open Bypass procedure where an amputation was performed post-procedure on the same side as the open bypass.

Denominator: The total number of discharges containing an Elective PAD Open Bypass procedure.

Note:

- Amputation is defined as amputation points of foot amputation, AKA, BKA, or hip disarticulation.
- The first vascular surgery procedure in a discharge with multiple procedures of the same type will be used to determine procedure status (elective, urgent, emergent).

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## Readmission (Procedure end to 30 days, elective PAD Open Bypass)

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Numerator: The number of discharges containing an elective PAD open bypass procedure where the patient is readmitted to the hospital within 30 days of the procedure end date.

Denominator: The total number of discharges containing an elective PAD open bypass procedure.

Note: The first vascular surgery procedure in a discharge with multiple procedures of the same type will be used to determine procedure status (elective, urgent, emergent).

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## Urgent/Emergent Bypass

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Numerator: The number of discharges containing an urgent or emergent PAD open bypass procedure.

Denominator: The total number of discharges containing an PAD open bypass procedure.

Note: The first vascular surgery procedure in a discharge with multiple procedures of the same type will be used to determine procedure status (elective, urgent, emergent).

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## Death at 30 days (Procedure end to 30 days, Urgent/Emergent PAD Open Bypass)

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Numerator: The number of discharges containing an urgent or emergent PAD open bypass procedure where the outcome of death occurred within 30 days of the procedure.

Denominator: The total number of discharges containing an urgent or emergent PAD open bypass procedure.

Note: The first vascular surgery procedure in a discharge with multiple procedures of the same type will be used to determine procedure status (elective, urgent, emergent).

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## Major Morbidities (Procedure end to 30 days, Urgent/Emergent PAD Open Bypass)

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### Myocardial Infarction (Urgent/Emergent PAD Open Bypass)

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Numerator: The number of discharges containing an Urgent or Emergent PAD open bypass procedures where a myocardial infarction (MI) occurred within 30 days of the procedure end date.

Denominator: The total number of discharges containing an Urgent or Emergent PAD open bypass procedure.

Note:

- MI includes Type 2 Myocardial Infarction, Type 1 NSTEMI or STEMI.
- The first vascular surgery procedure in a discharge with multiple procedures of the same type will be used to determine procedure status (elective, urgent, emergent).

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### Graft Failure (Urgent/Emergent PAD Open Bypass)

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Numerator: The number of discharges containing an urgent or emergent PAD open bypass procedure where a clot developed in the stent or graft within 30 days of the procedure end date. (This includes discharges where No is entered for Open Bypass Patent on the

30 day follow-up form).

Denominator: The total number of discharges containing an urgent or emergent PAD open bypass procedure.

Note: The first vascular surgery procedure in a discharge with multiple procedures of the same type will be used to determine procedure status (elective, urgent, emergent).

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### **Bleeding ( $\geq$ 4 units PRBCs) (Urgent/Emergent PAD Open Bypass)**

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Numerator: The number of discharges containing an Urgent or Emergent PAD open bypass procedure where a transfusion of 4 or more units of PRBCs was given post-procedure for any procedure within that discharge (within 30 days of the procedure end date).

Denominator: The total number of discharges containing an Urgent or Emergent PAD open bypass procedure.

Note: The first vascular surgery procedure in a discharge with multiple procedures of the same type will be used to determine procedure status (elective, urgent, emergent).

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### **Major Amputation (Planned) (Urgent/Emergent PAD Open Bypass)**

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Numerator: The number of discharges containing an urgent or emergent PAD Open Bypass procedure where an amputation was performed post-procedure on the same side as the open bypass.

Denominator: The total number of discharges containing an urgent or emergent PAD Open Bypass procedure.

Note:

- Amputation is defined as amputation points of foot amputation, AKA, BKA, or hip disarticulation.
- The first vascular surgery procedure in a discharge with multiple procedures of the same type will be used to determine procedure status (elective, urgent, emergent).

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### **Readmission (Procedure end to 30 days, urgent/emergent PAD Open Bypass)**

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Numerator: The number of discharges containing an urgent or emergent PAD open bypass procedure where the patient is readmitted to the hospital within 30 days of the procedure end date.

Denominator: The total number of discharges containing an urgent or emergent PAD open bypass procedure.

Note: The first vascular surgery procedure in a discharge with multiple procedures of the same type will be used to determine procedure status (elective, urgent, emergent).



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## Wound Complication Rate (Overall)

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Numerator: The number of discharges containing a PAD Open Bypass procedure where a Graft Infection or Wound Site Infection occurred within 30 days of the procedure end date.

Denominator: The number of discharges containing a PAD open bypass procedure.

Note: This measure includes Readmission to hospital for either Wound infection/dehiscence, Lymph Leak or Graft infection selected, or Wound Complication entered on the VS 30-day follow-up form.

---

## Wound Complication Rate (Elective)

---

Numerator: The number of discharges containing an elective PAD Open Bypass procedure where a Graft Infection or Wound Site Infection occurred within 30 days of the procedure end date.

Denominator: The number of discharges containing an elective PAD open bypass procedure.

Note:

- This measure includes Readmission to hospital for either Wound infection/dehiscence, Lymph Leak or Graft infection selected, or Wound Complication entered on the VS 30-day follow-up form.
- The first vascular surgery procedure in a discharge with multiple procedures of the same type will be used to determine procedure status (elective, urgent, emergent).

---

## Wound Complication Rate (Urgent/Emergent)

---

Numerator: The number of discharges containing an urgent or emergent PAD Open Bypass procedure where a Graft Infection or Wound Site Infection occurred within 30 days of the procedure end date.

Denominator: The number of discharges containing an urgent or emergent PAD open bypass procedure.

Note:

- This measure includes Readmission to hospital for either Wound infection/dehiscence, Lymph Leak or Graft infection selected, or Wound Complication entered on the VS 30-day follow-up form.
- The first vascular surgery procedure in a discharge with multiple procedures of the same type will be used to determine procedure status (elective, urgent, emergent).

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## **PAD/Open Bypass Procedures**

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The numerator and denominator are the number of PAD open bypass procedures.

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### **Procedure Variables**

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#### **Indications (PAD Open Bypass)**

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##### **Claudication only**

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Numerator: The number of PAD open bypass procedures that were performed for the indication of claudication only.

Denominator: The total number of PAD open bypass procedures.

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##### **Rest Pain**

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Numerator: The number of PAD open bypass procedures that were performed for the indication of rest pain.

Denominator: The total number of PAD open bypass procedures.

Note: A procedure can have more than one indication.

---

##### **Tissue Loss**

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Numerator: The number of PAD open bypass procedures where the procedure was performed for the indication of Ulcer / Gangrene OR a Wound (WIFI) grade was documented.

Denominator: The total number of PAD open bypass procedures.

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##### **Redo Procedure**

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Numerator: The number of PAD open bypass Redo Procedures.

Denominator: The total number of PAD open bypass procedures.

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##### **Graft Type (origin from femoral)**

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###### **Vein graft**

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Numerator: The number of open bypass procedures where a vein graft was implanted.

Denominator: The number of open bypass procedures.

Note: Only procedures with a graft origin in the common femoral or superficial femoral artery are included.

---

###### **Prosthetic**

---

Numerator: The number of open bypass procedures where a prosthetic graft was implanted.

Denominator: The number of open bypass procedures.

Note: Only procedures with a graft origin in the common femoral or superficial femoral artery are included.

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###### **Skin Prep Type**

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Note: A procedure may have more than one prep type entered.

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### **Iodine based**

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Numerator: The number of PAD open bypass procedures where the skin was prepped with Iodine or Iodine and alcohol.

Denominator: The total number of PAD open bypass procedures.

Note: A procedure can have more than one skin prep.

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### **Chlorhexidine based**

---

Numerator: The number of PAD open bypass procedures where the skin was prepped with Chlorhexidine or Chlorhexidine and alcohol.

Denominator: The total number of PAD open bypass procedures.

Note: A procedure can have more than one skin prep.

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### **Chlorhexidine and Iodine**

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Numerator: The number of PAD open bypass procedures where the skin was prepped with Chlorhexidine and iodine.

Denominator: The total number of PAD open bypass procedures.

Note: A procedure can have more than one skin prep.

---

### **Temperature (< 36 deg)**

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Numerator: The number of PAD open bypass procedures with an intraoperative Nadir body temperature < 36 degrees.

Denominator: The total number of PAD open bypass procedures.

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### **Glucose (> 180)**

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Numerator: The number of PAD open bypass procedures with an intraoperative Glucose (peak) value >180.

Denominator: The total number of PAD open bypass procedures.

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### **Wound Closure**

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Note: A procedure may have more than one wound closure.

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### **Staples**

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Numerator: The number of PAD open bypass procedures where staples were used to close the muscle, fascia, or skin.

Denominator: The total number of PAD open bypass procedures.

---

### **Suture (absorbable)**

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Numerator: The number of PAD open bypass procedures where absorbable sutures were used to close the muscle, fascia, or skin.

Denominator: The total number of PAD open bypass procedures.

---

### **Suture (permanent)**

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Numerator: The number of PAD open bypass procedures where permanent sutures were used to close the muscle, fascia, or skin.

Denominator: The total number of PAD open bypass procedures.

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## Open Thrombectomy

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The number of VS discharges that contain an open thrombectomy procedure. The numerator and denominator are the same.

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### Indications (OT)

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#### ALI (only)

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Numerator: The number of Open Thrombectomy procedures where the Indication of ALI is the only indication marked for that procedure.

Denominator: The total number of Open Thrombectomy procedures.

Note: BMC2 only collects urgent and emergent open thrombectomy procedures.

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### Cardioprotective Medications at Admission (OT)

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#### Aspirin (OT)

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Numerator: The number of discharges containing an open thrombectomy procedure where the patient is taking Aspirin within 30 days of hospital admission.

Denominator: The number of discharges containing an open thrombectomy procedure.

Exclusion: A contraindication to aspirin.

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#### Statin (OT)

---

Numerator: The number of discharges containing an open thrombectomy procedure where the patient is taking a Statin within 30 days of hospital admission.

Denominator: The number of discharges containing an open thrombectomy procedure.

Exclusion: A contraindication to a statin.

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#### Clopidogrel (Plavix) (OT)

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Numerator: The number of discharges containing an open thrombectomy procedure where the patient is taking clopidogrel (Plavix) within 30 days of hospital admission.

Denominator: The number of discharges containing an open thrombectomy procedure.

Exclusion: A contraindication to clopidogrel (Plavix).

---

#### Anticoagulant (OT)

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Numerator: The number of discharges containing an open thrombectomy procedure where the patient took an anticoagulant within 30 days of admission.

Denominator: The total number of discharges containing an open thrombectomy procedure.

Medications is this measure:

- Dabigatran (Pradaxa)
- Edoxaban (Savaysa)
- Rivaroxaban (Xarelto)
- Apixaban (Eliquis)
- Warfarin/Coumadin

Exclusion: A contraindication to any of the anticoagulants in the list and the patient was not taking another anticoagulant in the list.

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## Major Morbidities (Procedure end to 30 days, OT)

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### Myocardial Infarction (OT)

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Numerator: The number of discharges containing an open thrombectomy procedure where a myocardial infarction (MI) occurred within 30 days of the procedure end date.

Denominator: The total number of discharges containing an open thrombectomy procedure.

Note:

- BMC2 collects urgent and emergent open thrombectomy procedures only.
- MI includes Type 2 Myocardial Infarction, Type 1 NSTEMI or STEMI.

---

### Bleeding ( $\geq 4$ units PRBCs) (OT)

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Numerator: The number of discharges containing an open thrombectomy procedure where a transfusion of 4 or more units of PRBCs was given post-procedure for any procedure within that discharge (within 30 days of the procedure end date).

Denominator: The total number of discharges containing an open thrombectomy procedure.

Note: BMC2 collects urgent and emergent open thrombectomy procedures only.

---

### Major Amputation (OT)

---

Numerator: The number of discharges containing an open thrombectomy procedure where an amputation was performed post-procedure on the same limb as the open thrombectomy within 30 days of the procedure end date.

Denominator: The total number of discharges containing an open thrombectomy procedure.

Note:

- Amputation is defined as amputation points of foot amputation, AKA, BKA, or hip disarticulation.
- BMC2 collects urgent and emergent open thrombectomy procedures only.

---

### Death (OT)

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Numerator: The number of discharges containing an open thrombectomy procedure where the outcome of death occurred within 30 days of the procedure end date.

Denominator: The total number of discharges containing an open thrombectomy procedure.

Note: BMC2 collects urgent and emergent open thrombectomy procedures only.

---

### Readmission (Procedure end to 30 days, OT)

---

Numerator: The number of discharges containing an open thrombectomy procedure where the patient is readmitted to the hospital within 30 days of the procedure end date.

Denominator: The total number of discharges containing an open thrombectomy procedure.

Note: BMC2 only collects urgent and emergent open thrombectomy procedures.

---

## Post-Op Myocardial Infarction (Procedure end to 30 Days, all VS discharges)

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This section of the reports includes VS discharges that contain EVAR, Open AAA, Open bypass, CAS, or CEA procedures.

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### Myocardial Infarction Rate (Overall)

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Numerator: The number of discharges containing an EVAR, Open AAA, PAD Open bypass, Open thrombectomy, CAS, or CEA procedure where a myocardial infarction (MI) occurred within 30 days of the procedure end date.

Denominator: The total number of discharges containing an EVAR, Open AAA, PAD Open bypass, Open thrombectomy, CAS, or CEA procedure.

Note: MI includes Type 2 Myocardial Infarction, Type 1 NSTEMI or STEMI.

---

### Myocardial Infarction Rate (Elective)

---

Numerator: The number of discharges containing an Elective EVAR, Open AAA, PAD Open bypass, CAS, or CEA procedure where a myocardial infarction (MI) occurred within 30 days of the procedure end date.

Denominator: The total number of discharges containing an Elective EVAR, Open AAA, PAD Open bypass, CAS, or CEA procedure.

Note:

- MI includes Type 2 Myocardial Infarction, Type 1 NSTEMI or STEMI.
- The first procedure in a discharge determines procedure status (elective, urgent, emergent).

---

### Myocardial Infarction Rate (Urgent/Emergent)

---

Numerator: The number of discharges containing an Urgent or Emergent EVAR, Open AAA, PAD Open bypass, Open thrombectomy, CAS, or CEA procedure where a myocardial infarction (MI) occurred within 30 days of the procedure end date.

Denominator: The total number of discharges containing an Urgent or Emergent EVAR, Open AAA, PAD Open bypass, Open thrombectomy, CAS, or CEA procedure.

Note:

- MI includes Type 2 Myocardial Infarction, Type 1 NSTEMI or STEMI.
- The first procedure in a discharge determines procedure status (elective, urgent, emergent)

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### Myocardial Infarction Rate by Discharge Type

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#### PAD/Open Bypass

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Numerator: The number of discharges containing a PAD Open bypass procedure where a myocardial infarction (MI) occurred within 30 days of the procedure end date.

Denominator: The total number of discharges containing a PAD Open bypass procedure.

Note: MI includes Type 2 Myocardial Infarction, Type 1 NSTEMI or STEMI.

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#### AAA

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Numerator: The number of discharges containing an EVAR or Open AAA procedure where a myocardial infarction (MI) occurred within 30 days of the procedure end date.

Denominator: The total number of discharges containing an EVAR or Open AAA procedure.

Note: MI includes Type 2 Myocardial Infarction, Type 1 NSTEMI or STEMI.

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## CVOD

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Numerator: The number of discharges containing a CAS or CEA procedure where a myocardial infarction (MI) occurred within 30 days of the procedure end date.

Denominator: The total number of discharges containing a CAS or CEA procedure.

Note: MI includes Type 2 Myocardial Infarction, Type 1 NSTEMI or STEMI.

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## Average Age (MI) (mean, stdev)

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The average (mean) age of discharges containing an EVAR, Open AAA, PAD Open bypass, Open thrombectomy, CAS, or CEA procedure.

Note: Age as of the admission date.

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## Diabetes (MI)

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Numerator: The number of discharges containing an EVAR, Open AAA, PAD Open bypass, Open thrombectomy, CAS, or CEA procedure where the patient has a history of Diabetes.

Denominator: The number of discharges containing an EVAR, Open AAA, Open bypass, Open thrombectomy, CAS, or CEA procedure.

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## Stress Test (MI)

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The number of discharges containing an EVAR, Open AAA, or PAD Open bypass, Open thrombectomy, CAS, or CEA procedures where a stress-test was performed within 6 months of the procedure.

Denominator: The number of discharges containing an EVAR, Open AAA, or PAD Open bypass, Open thrombectomy, CAS, or CEA bypass procedure.

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## Cardioprotective Medications at Admission

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### Aspirin

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Numerator: The number of discharges containing an EVAR, Open AAA, PAD Open bypass, Open thrombectomy, CAS, or CEA procedure where the patient is taking Aspirin within 30 days of hospital admission.

Denominator: The number of discharges containing an EVAR, Open AAA, PAD Open bypass, Open thrombectomy, CAS, or CEA procedure.

Exclusion: A contraindication to aspirin.

---

### Clopidogrel (Plavix)

---

Numerator: The number of discharges containing an EVAR, Open AAA, PAD Open bypass, Open thrombectomy, CAS, or CEA procedure where the patient is taking Clopidogrel (Plavix) within 30 days of hospital admission.



Denominator: The number of discharges containing an EVAR, Open AAA, PAD Open bypass, Open thrombectomy, CAS, or CEA procedure.

Exclusion: A contraindication to Clopidogrel (Plavix).

---

## ASA and Clopidogrel

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Numerator: The number of discharges containing an EVAR, Open AAA, PAD Open bypass, Open thrombectomy, CAS, or CEA procedure where the patient is taking both Aspirin and Clopidogrel (Plavix) within 30 days of hospital admission.

Denominator: The number of discharges containing an EVAR, Open AAA, PAD Open bypass, Open thrombectomy, CAS, or CEA procedure.

Exclusion: A contraindication to Aspirin or Clopidogrel (Plavix).

---

## Statin

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Numerator: The number of discharges containing an EVAR, Open AAA, PAD Open bypass, Open thrombectomy, CAS, or CEA procedure where the patient was taking a statin within 30 days of hospital admission.

Denominator: The number of discharges containing an EVAR, Open AAA, PAD Open bypass, Open thrombectomy, CAS, or CEA procedure.

Exclusion: A contraindication to a statin.

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## Beta Blocker

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Numerator: The number of discharges containing an EVAR, Open AAA, PAD Open bypass, Open thrombectomy, CAS, or CEA procedure where the patient is taking a Beta Blocker within 30 days of hospital admission.

Denominator: The total number of discharges containing an EVAR, Open AAA, PAD Open bypass, Open thrombectomy, CAS, or CEA procedure.

Exclusions: A contraindication to a Beta Blocker.

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## ACE-I/ARB

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Numerator: The number of discharges containing an EVAR, Open AAA, PAD Open bypass, Open thrombectomy, CAS, or CEA procedure where the patient is taking an ACE Inhibitor (ACE-I) or an Angiotensin II Receptor Antagonist (ARB) within 30 days of hospital admission.

Denominator: The total number of discharges containing an EVAR, Open AAA, PAD Open bypass, Open thrombectomy, CAS, or CEA procedure.

Exclusions: A contraindication to either an ACE-I or ARB.

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## Pre Procedure BNP >100 pg/mL

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Numerator: The number of discharges containing an EVAR, Open AAA, PAD Open bypass, Open thrombectomy, CAS, or CEA procedure that have a Pre Procedure BNP level >100 pg/mL.

Denominator: The number of discharges containing an EVAR, Open AAA, PAD Open bypass, Open thrombectomy, CAS, or CEA

procedure.

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## Post-operative HgB $\leq$ 8.0

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### All Discharges with HgB $\leq$ 8.0

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Numerator: The number of discharges containing an EVAR, Open AAA, PAD Open bypass, Open thrombectomy, CAS, or CEA procedure that have a post-procedure hemoglobin  $\leq$ 8.0, as measured by the lowest nadir hemoglobin.

Denominator: The number of discharges containing an EVAR, Open AAA, Open bypass, Open thrombectomy, CAS, or CEA procedure.

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### Discharges with Myocardial Infarction with Hgb $\leq$ 8.0

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Numerator: The number of discharges containing an EVAR, Open AAA, Open bypass, Open thrombectomy, CAS, or CEA procedure that have a post-procedure hemoglobin  $\leq$ 8.0, as measured by the lowest nadir hemoglobin and an outcome of myocardial infarction (MI) occurred within 30 days of the procedure end date.

Denominator: The total number of discharges containing an EVAR, Open AAA, Open bypass, Open thrombectomy, CAS, or CEA procedure.

Note: MI includes Type 2 Myocardial Infarction, Type 1 NSTEMI or STEMI.

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## Transfusion (Procedure end to 30 days)

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### Transfusion Rate (Overall)

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Numerator: The number of discharges containing an Open AAA, EVAR, or PAD Open Bypass procedure in which a post-procedure transfusion of PRBCs was given within 30 days of the procedure end date.

Denominator: The number of discharges containing an Open AAA, EVAR, or PAD Open Bypass procedure.

Note: Multiple Transfusions given during a discharge are counted once.

Exclusions:

- Ruptured AAA repair
- Indication of Trauma

---

### Transfusion Rate (Elective)

---

Numerator: The number of discharges containing an Elective Open AAA, EVAR, or Open Bypass procedure in which a post-procedure transfusion of PRBCs was given within 30 days of the procedure end date.

Denominator: The number of discharges containing an Elective Open AAA, EVAR, or Open Bypass procedure.

Note: Multiple Transfusions given during a discharge are counted once.

Exclusions:

- Ruptured AAA repair
- Indication of Trauma

---

### Transfusion Rate (Urgent/Emergent)

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Numerator: The number of discharges containing an Urgent or Emergent Open AAA, EVAR, or Open Bypass procedure in which a post-procedure transfusion of PRBCs was given within 30 days of the procedure end date.

Denominator: The number of discharges containing an Urgent or Emergent Open AAA, EVAR, or Open Bypass procedure.

Note: Multiple Transfusions given during a discharge are counted once.

Exclusions:

- Ruptured AAA repair
- Indication of Trauma

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### Transfusion Rate by Discharge Type

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#### PAD Open Bypass (transfusion)

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Numerator: The number of discharges containing a PAD Open Bypass procedure in which a post-procedure transfusion of PRBCs was given within 30 days of the procedure end date.

Denominator: The number of discharges containing a PAD Open Bypass procedure.

Note: Multiple Transfusions given during a discharge are counted once.

Exclusion: Indication of Trauma

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## **EVAR (transfusion)**

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Numerator: The number of discharges containing a EVAR procedure in which PRBCs were transfused post-operatively within 30 days of the procedure end date.

Denominator: The total number of discharges containing an EVAR procedure.

Note: Multiple transfusion given during a discharge are counted only once.

Exclusions:

- Ruptured AAA repair
  - Indication of Trauma
- 

## **Open AAA (transfusion)**

---

Numerator: The number of discharges containing an Open AAA procedure in which PRBCs are transfused post-operatively within 30 days of the procedure end date.

Denominator: The total number of discharges containing an open AAA procedure.

Note: Multiple transfusion given during a discharge are only counted once.

Exclusions:

- Ruptured AAA repair
  - Indication of Trauma
- 

## **Pre-procedure Anemia**

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Anemia is measured by the World Health Organization definition. For men the threshold is 13, for women, it is 12.

Source <https://ada.com/hemoglobin-levels/#normal-hemoglobin-ranges-by-age>

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## **All discharges with anemia**

---

Numerator: The number of discharges that have a pre-procedure hemoglobin value of <13 for males, <12 for females for the first procedure in a discharge.

Denominator: The number of discharges containing an EVAR, Open AAA, or PAD Open bypass.

Exclusions:

- Ruptured AAA repair
  - Indication of Trauma
- 

## **Transfused discharges with anemia**

---

Numerator: The number of discharges containing an containing EVAR, Open AAA, or PAD Open bypass that have a pre-procedure hemoglobin value of <13 for males, <12 for females for the first procedure in a discharge and a transfusion of PRBCs was given within 30 days of the procedure end date.

Denominator: The number of discharges containing an containing EVAR, Open AAA, or PAD Open bypass where a transfusion of PRBCs was given within 30 days of the procedure end date.

Exclusions:

- Ruptured AAA repair
- Indication of Trauma

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## Use of Lytic/Anticoagulant

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### All discharges with lytics

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Numerator: The number of discharges containing an EVAR, Open AAA, or PAD Open bypass procedure where heparin was given post procedure or lytics (Tissue Plasminogen Activator, Tenecteplase, Retavase) were given during the procedure or post procedure.

Denominator: The number of discharges containing an EVAR, Open AAA, or PAD Open bypass procedure.

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### Discharges with lytics and transfusion

---

Numerator: The number of discharges containing an EVAR, Open AAA, or PAD Open bypass procedure where heparin was given post procedure or lytics (Tissue Plasminogen Activator, Tenecteplase, Retavase) were given during the procedure or post procedure and a transfusion of PRBCs was given within 30 days of the procedure end date.

Denominator: The number of discharges containing an EVAR, Open AAA, or PAD Open bypass procedure where a transfusion of PRBCs was given within 30 days of the procedure end date.

Exclusions:

- Ruptured AAA
  - Indication of Trauma
-