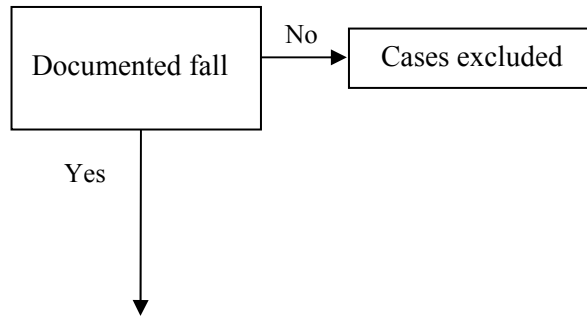


# Medicare Patient Safety Monitoring System (MPSMS) Measure Algorithms

## Inpatient Falls

### # Hospital Discharges



### # Patients who fell at least once during hospital stay

#### Notes:

- # patients who had a new fracture documented the day of the fall or after the fall during the hospital stay.
- # patients who had a subdural hematoma documented the day of the fall or after the fall during the hospital stay.
- # patients who had both a new fracture and subdural hematoma documented the day of the fall or after the fall during the hospital stay.

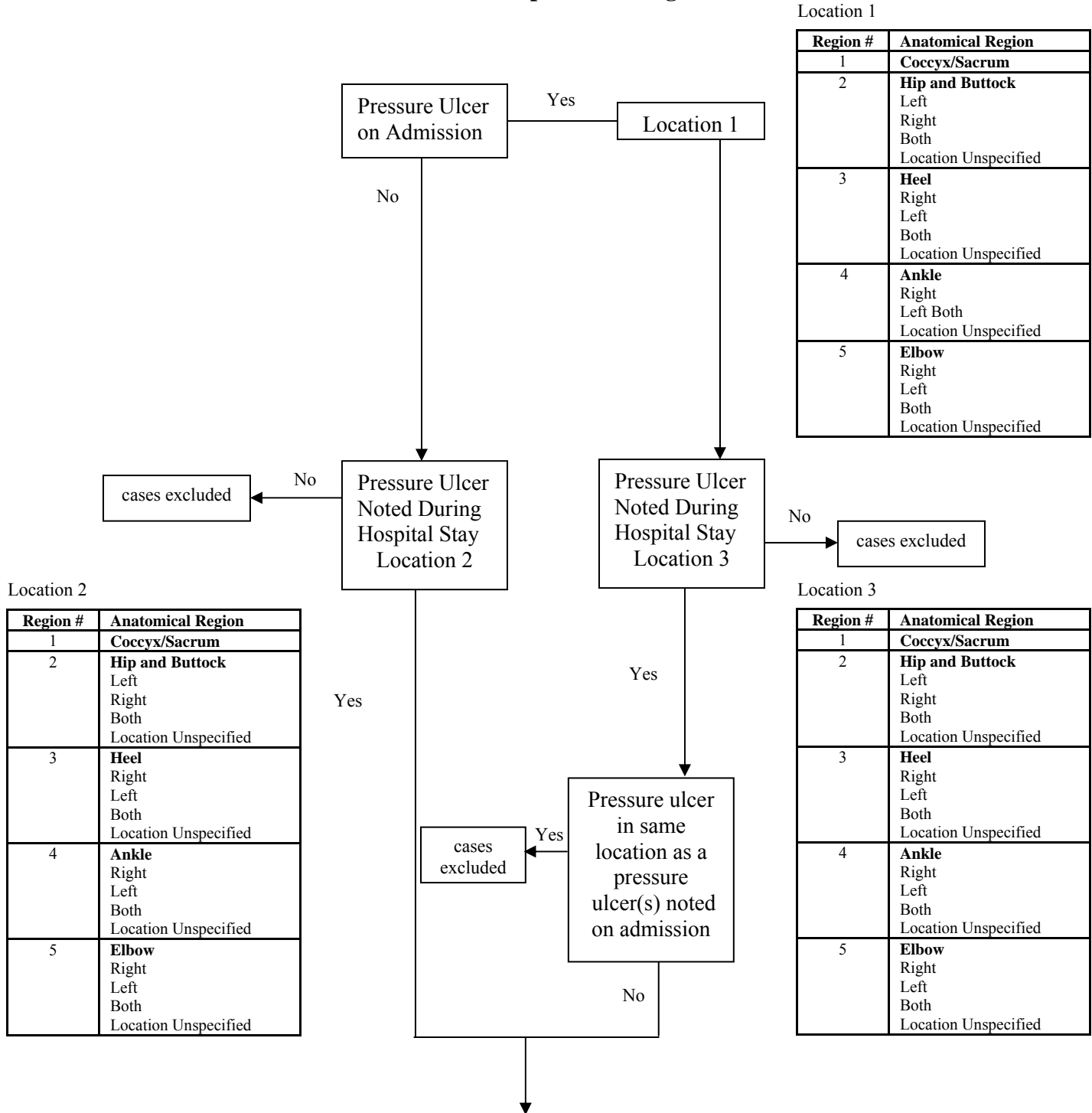
#### **Please note that additional injuries associated with falls were collected for the 2011 sample patients. # other types of injuries associated with a fall were abstracted:**

- # patients had one of the following new injuries: bruising, hematoma, laceration without sutures, pain or a sprain documented on the day of, or the day after the fall.
- # patients had a new laceration requiring sutures/staples documented on the day of, or the day after the fall
- # patient had a new dislocation of bone/joint documented on the day of, or the day after the fall

# Medicare Patient Safety Monitoring System (MPSMS) Measure Algorithms

## Hospital-Acquired Pressure Ulcers (HAPrU)

### # Hospital Discharges



Location 1

Region #	Anatomical Region
1	Coccyx/Sacrum
2	Hip and Buttock Left Right Both Location Unspecified
3	Heel Right Left Both Location Unspecified
4	Ankle Right Left Both Location Unspecified
5	Elbow Right Left Both Location Unspecified

Location 2

Region #	Anatomical Region
1	Coccyx/Sacrum
2	Hip and Buttock Left Right Both Location Unspecified
3	Heel Right Left Both Location Unspecified
4	Ankle Right Left Both Location Unspecified
5	Elbow Right Left Both Location Unspecified

Location 3

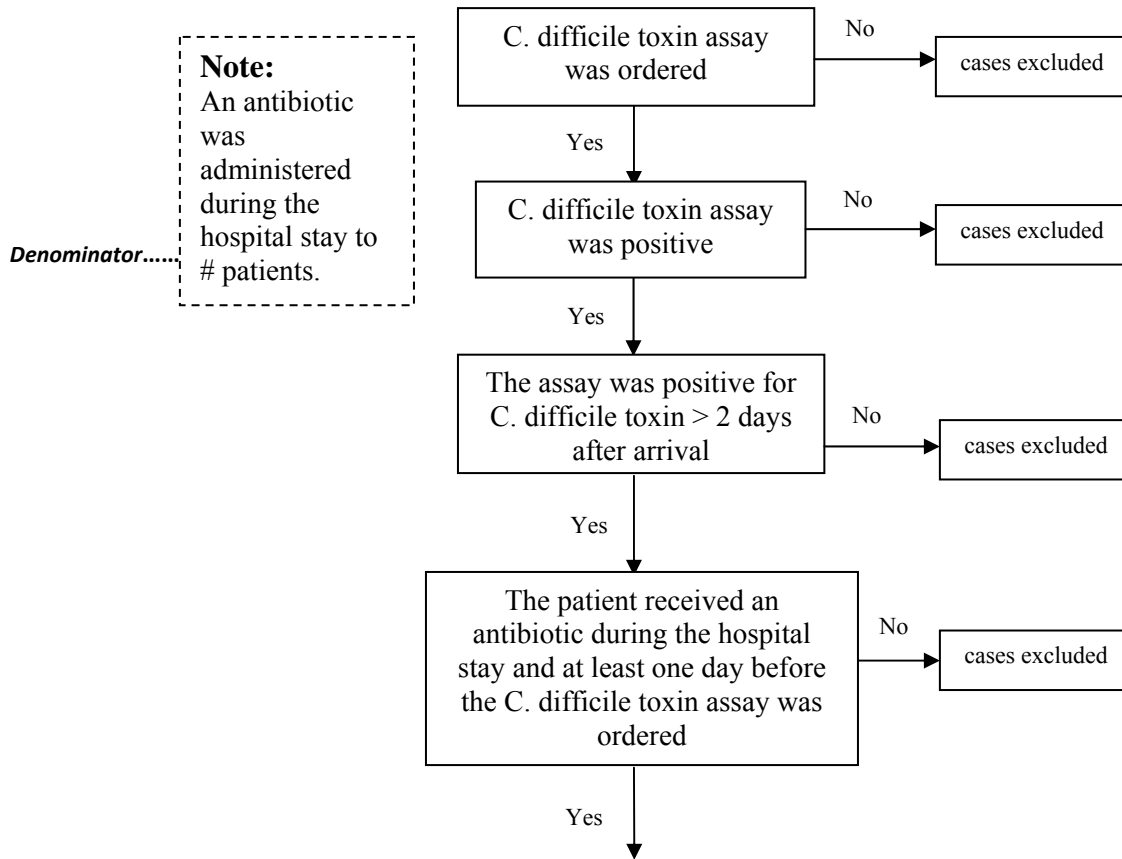
Region #	Anatomical Region
1	Coccyx/Sacrum
2	Hip and Buttock Left Right Both Location Unspecified
3	Heel Right Left Both Location Unspecified
4	Ankle Right Left Both Location Unspecified
5	Elbow Right Left Both Location Unspecified

**# Patients who developed one or more pressure ulcers during the hospital stay**

# Medicare Patient Safety Monitoring System (MPSMS) Measure Algorithms

## Hospital-Acquired Antibiotic-Associated Clostridium difficile (C. diff)

### # Hospital Discharges

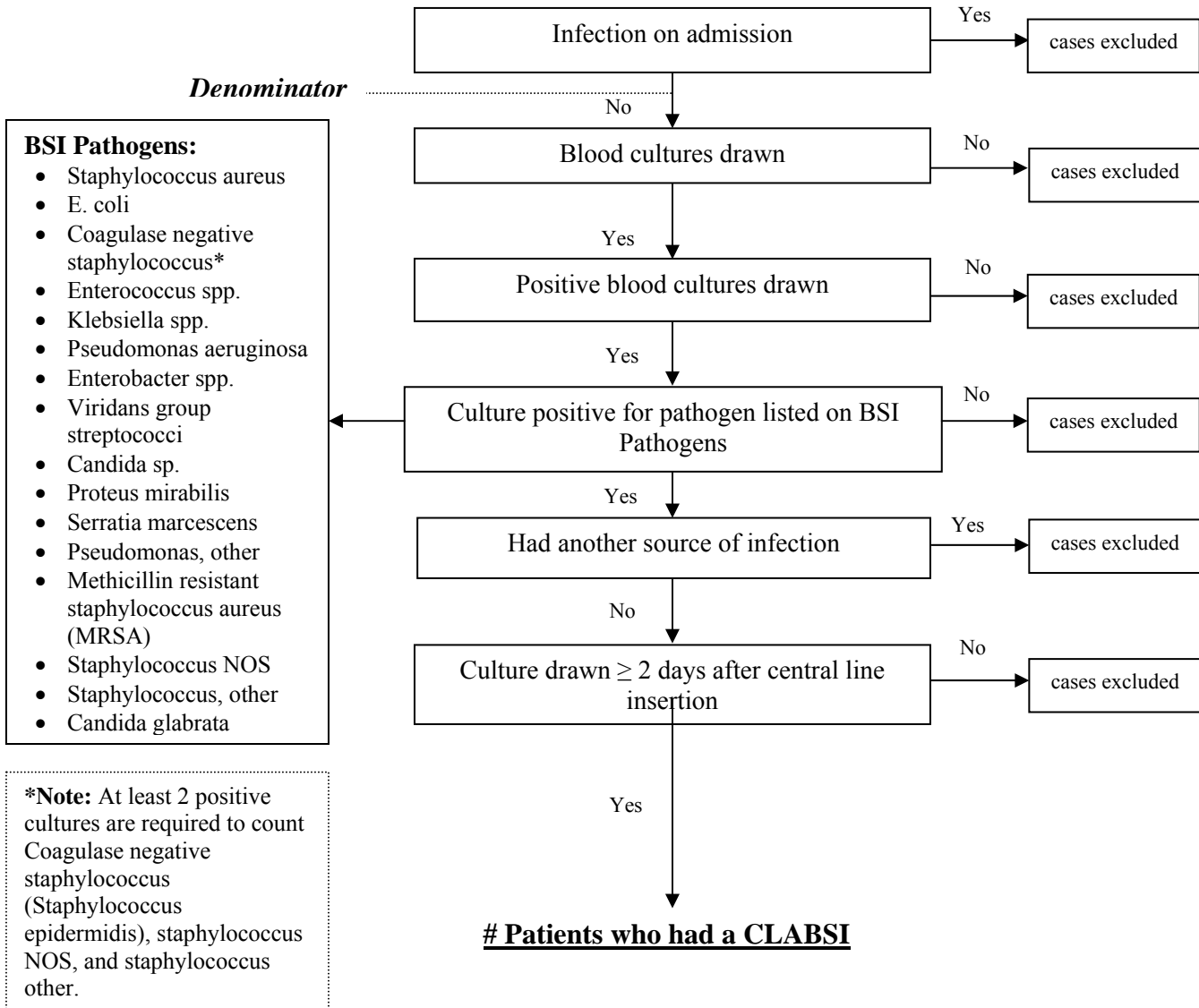


### # Patients who had Hospital-Acquired Antibiotic-Associated C. difficile

# Medicare Patient Safety Monitoring System (MPSMS) Measure Algorithms

## Central Line-Associated Bloodstream Infections (CLABSI)

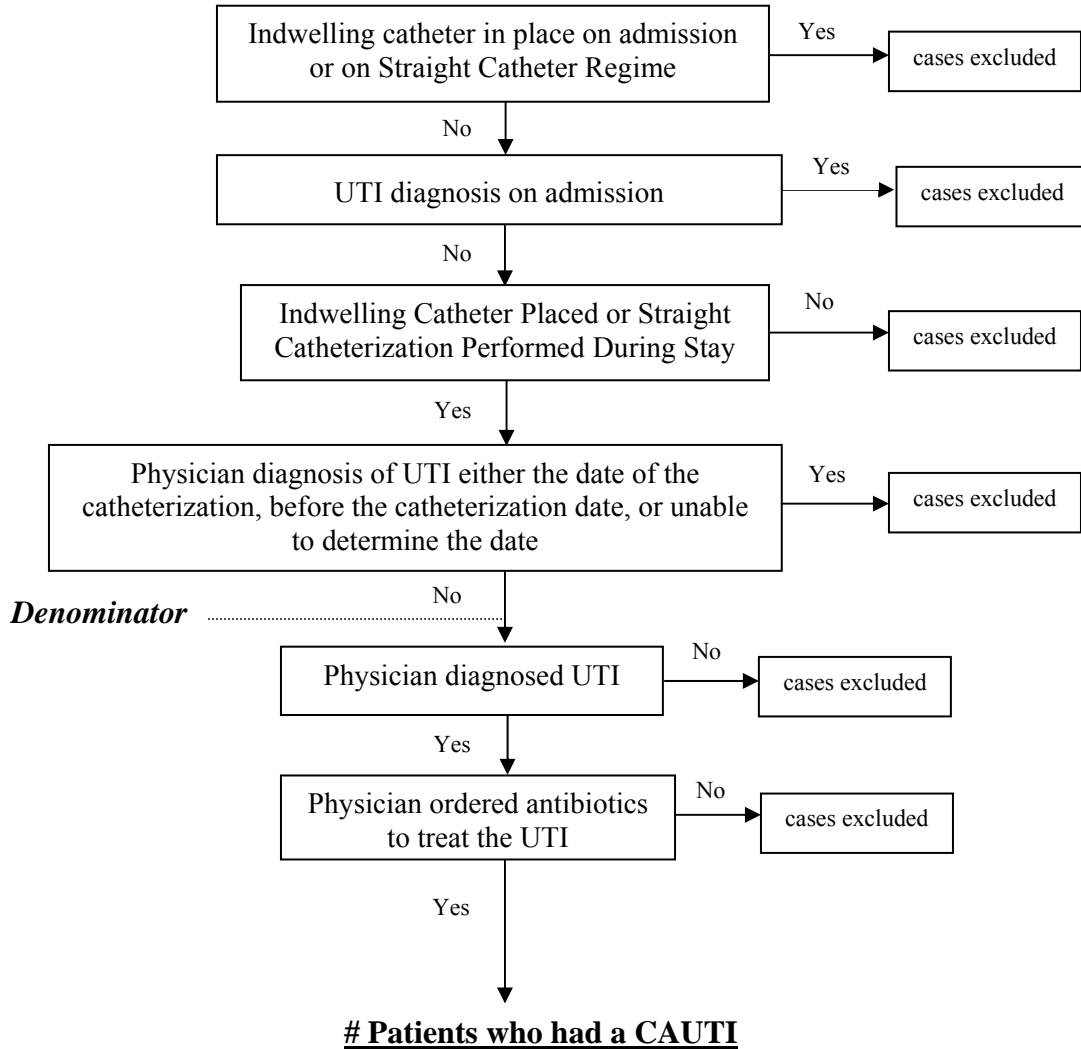
### Central Line Cases (Total central lines inserted)



# Medicare Patient Safety Monitoring System (MPSMS) Measure Algorithms

## Catheter-Associated Urinary Tract Infection (CAUTI)

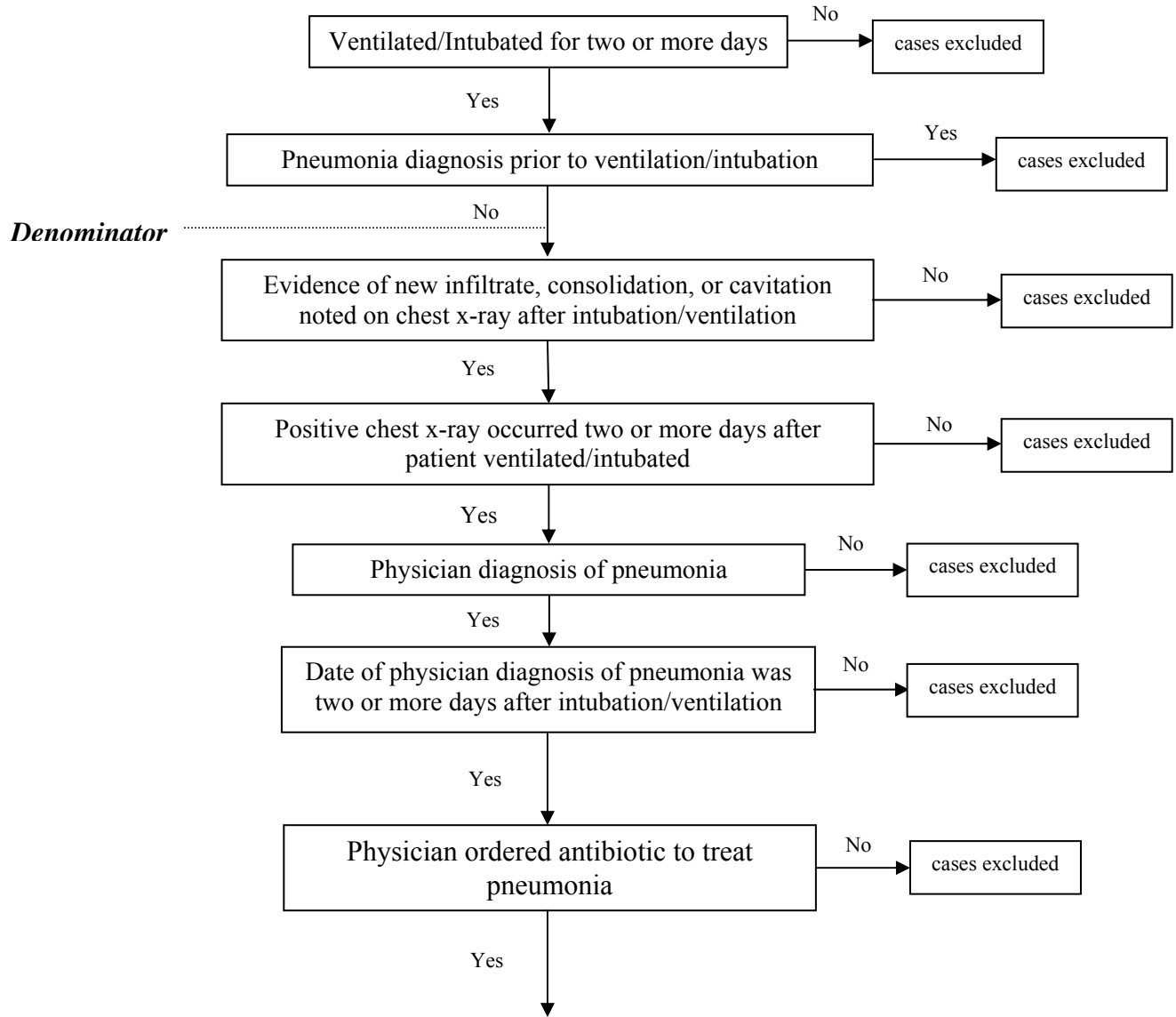
### # Hospital Discharges



# Medicare Patient Safety Monitoring System (MPSMS) Measure Algorithms

## Ventilator-Associated Pneumonia (VAP)

### # Mechanically Ventilated Cases

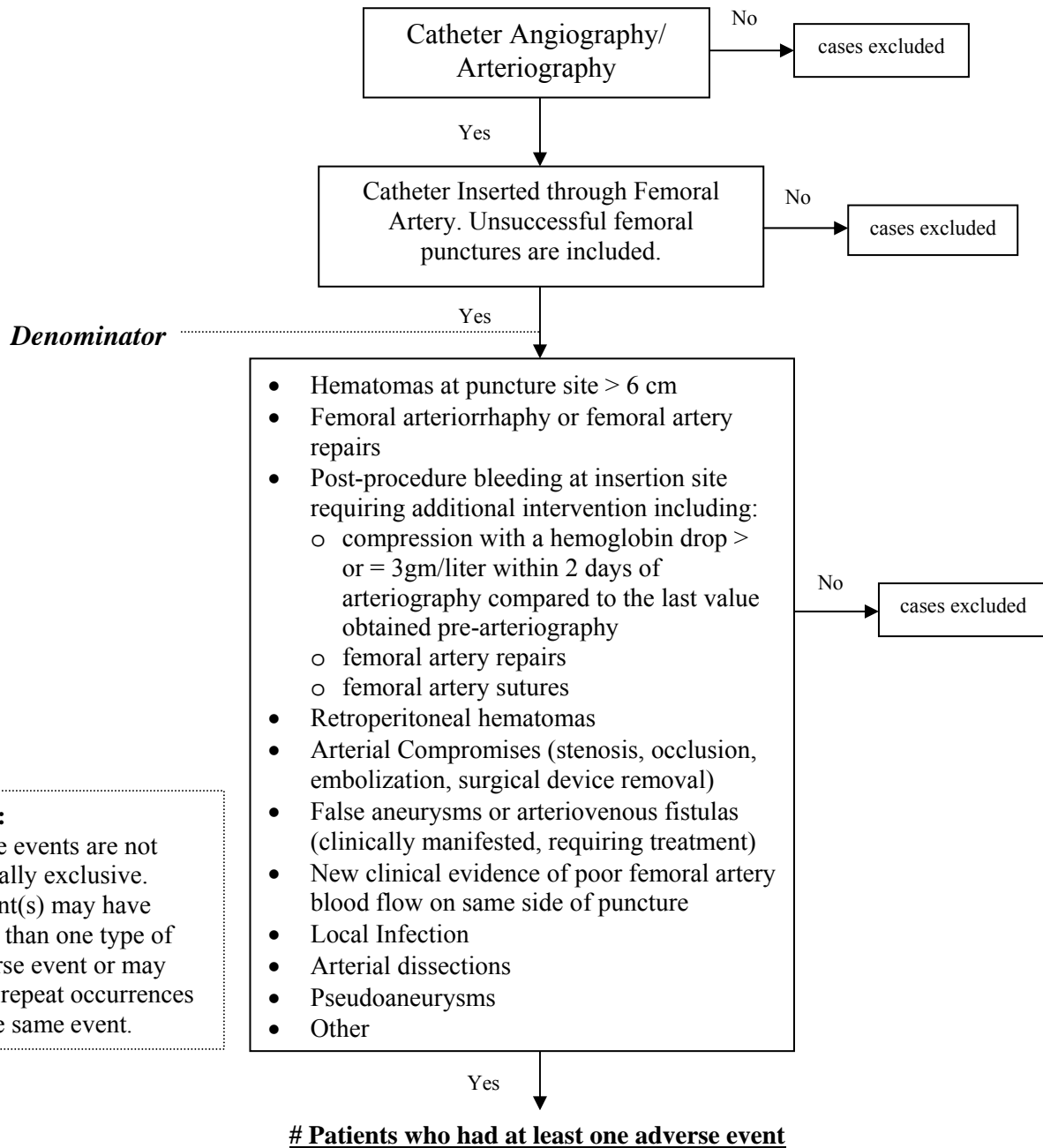


### # Patients who had Ventilator-Associated Pneumonia

# Medicare Patient Safety Monitoring System (MPSMS) Measure Algorithms

## Adverse Events Associated with Femoral Artery Puncture for Catheter Angiographic Procedures (FAPCAP)

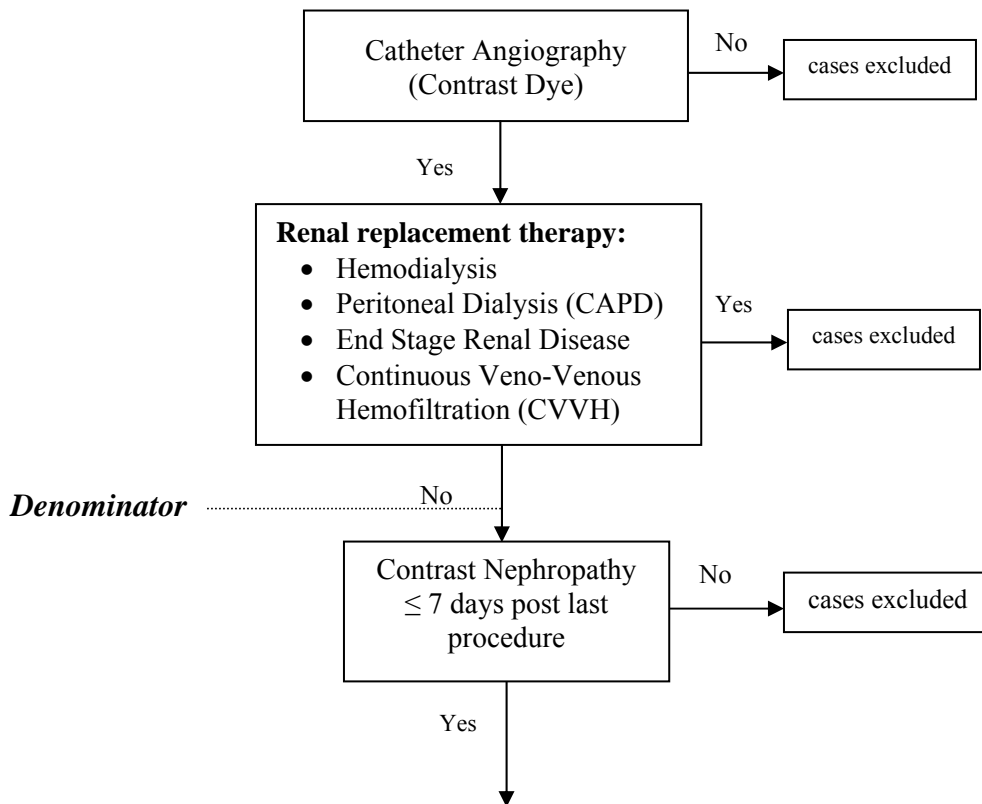
**# Hospital Discharges**



# Medicare Patient Safety Monitoring System (MPSMS) Measure Algorithms

## Contrast Nephropathy<sup>1</sup> Associated with Catheter Angiography (CNACA)

### # Hospital Discharges



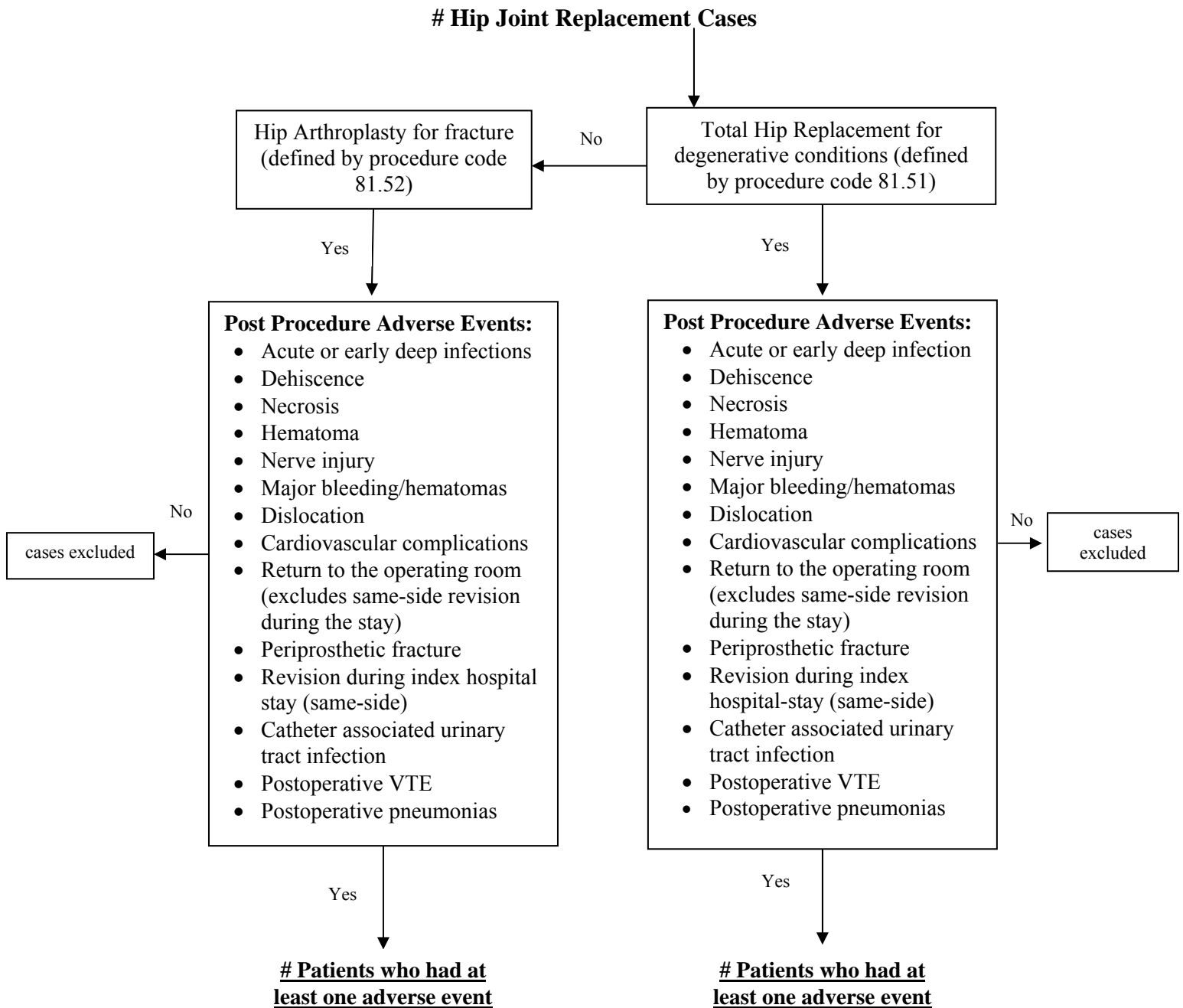
### # Patients who had Contrast Nephropathy after a Catheter Angiography

<sup>1</sup> Contrast Nephropathy is defined as an absolute increase in serum creatinine of more than 0.5 mg/dL or a relative increase in serum creatinine of more than 25% of its level before administration of contrast medium within seven days post-procedure.



# Medicare Patient Safety Monitoring System (MPSMS) Measure Algorithms

## Adverse Events Associated with Hip Joint Replacement



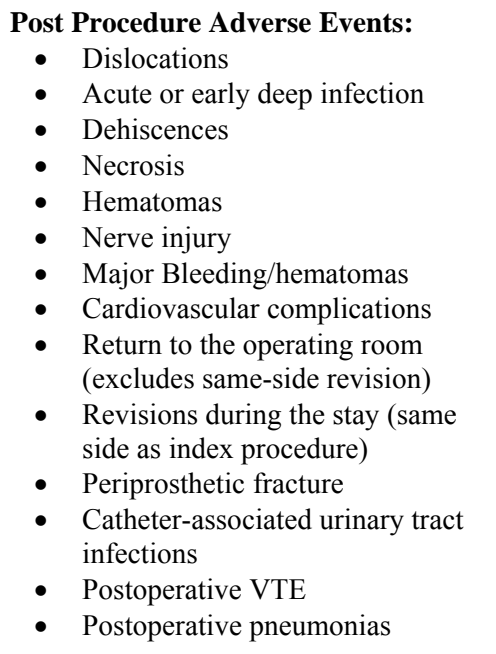
**Note:**

Patient(s) may have experienced more than one incidence of an adverse event (AE) during the hospital stay. Thus, the incidences of AEs may be greater than the number of patients who had at least one AE.

# Medicare Patient Safety Monitoring System (MPSMS) Measure Algorithms

## Adverse Events Associated with Knee Joint Replacement (defined by procedure code 81.54)

# Knee Joint Replacement Cases



No

cases excluded

Yes



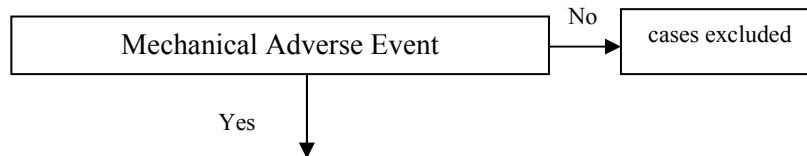
**# Patients who had at least one adverse event**

**Note:**  
Patient(s) may have experienced more than one incidence of an adverse event during the hospital stay. Thus, the incidences of adverse events may be greater than the number of patients who had at least one adverse event.

# Medicare Patient Safety Monitoring System (MPSMS) Measure Algorithms

## Mechanical Complications Associated with Central Lines

# Central Line Cases  
(Total central lines inserted)



**# Patients who had at least one Mechanical Adverse Event**

### Type of Adverse Event:

- Allergic reaction (only when CPR within 15 minutes of catheter insertion)
- Arrhythmias
- Perforations
- Pneumothoraxes
- Hematomas/bleeding
- Shearing off of catheter
- Air embolism
- Misplaced catheters
- Thromboses/embolisms
- Knotting of pulmonary artery catheter
- Bleeding
- Catheter occlusion
- Leaking
- Other

### Note:

Patient(s) may have experienced more than one incidence of an adverse event during the hospital stay. Thus, the incidences of adverse events may be greater than the number of patients who had at least one adverse event.

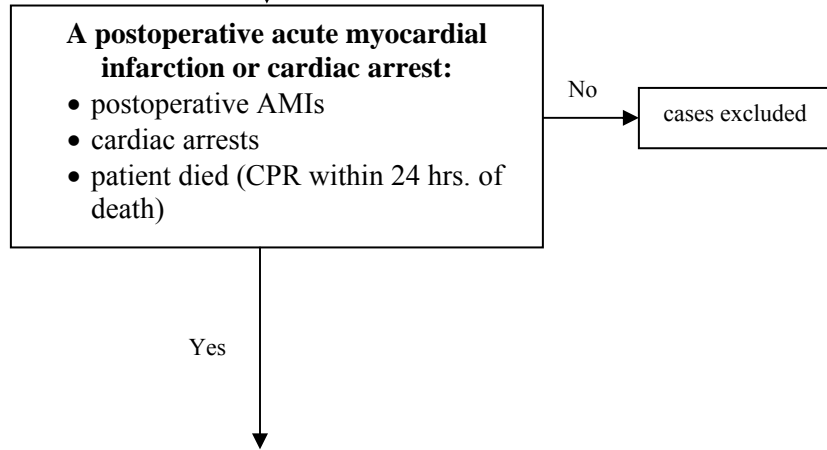
**Medicare Patient Safety Monitoring System (MPSMS)  
Measure Algorithms**

**Postoperative Cardiac Events  
Non-Cardiac Surgical Cases**

# Non-Cardiac  
Surgical Cases

**Note:**

Patient(s) may have experienced more than one incidence of an adverse event during the hospital stay. Thus, the incidences of adverse events may be greater than the number of patients who had at least one adverse event.



**# Non-cardiac surgery patients who had a postoperative cardiac event during the index hospital stay**

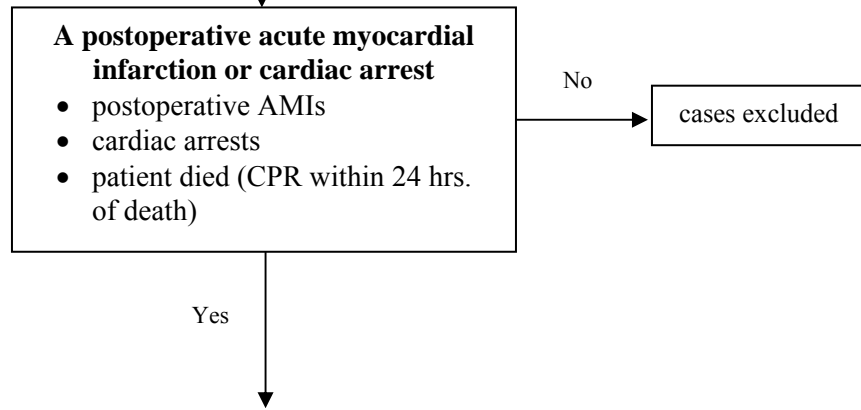
# Medicare Patient Safety Monitoring System (MPSMS) Measure Algorithms

## Postoperative Cardiac Events Cardiac Surgical Cases

# Cardiac Surgical  
Cases

**Note:**

Patient(s) may have experienced more than one incidence of an adverse event during the hospital stay. Thus, the incidences of adverse events may be greater than the number of patients who had at least one adverse event.

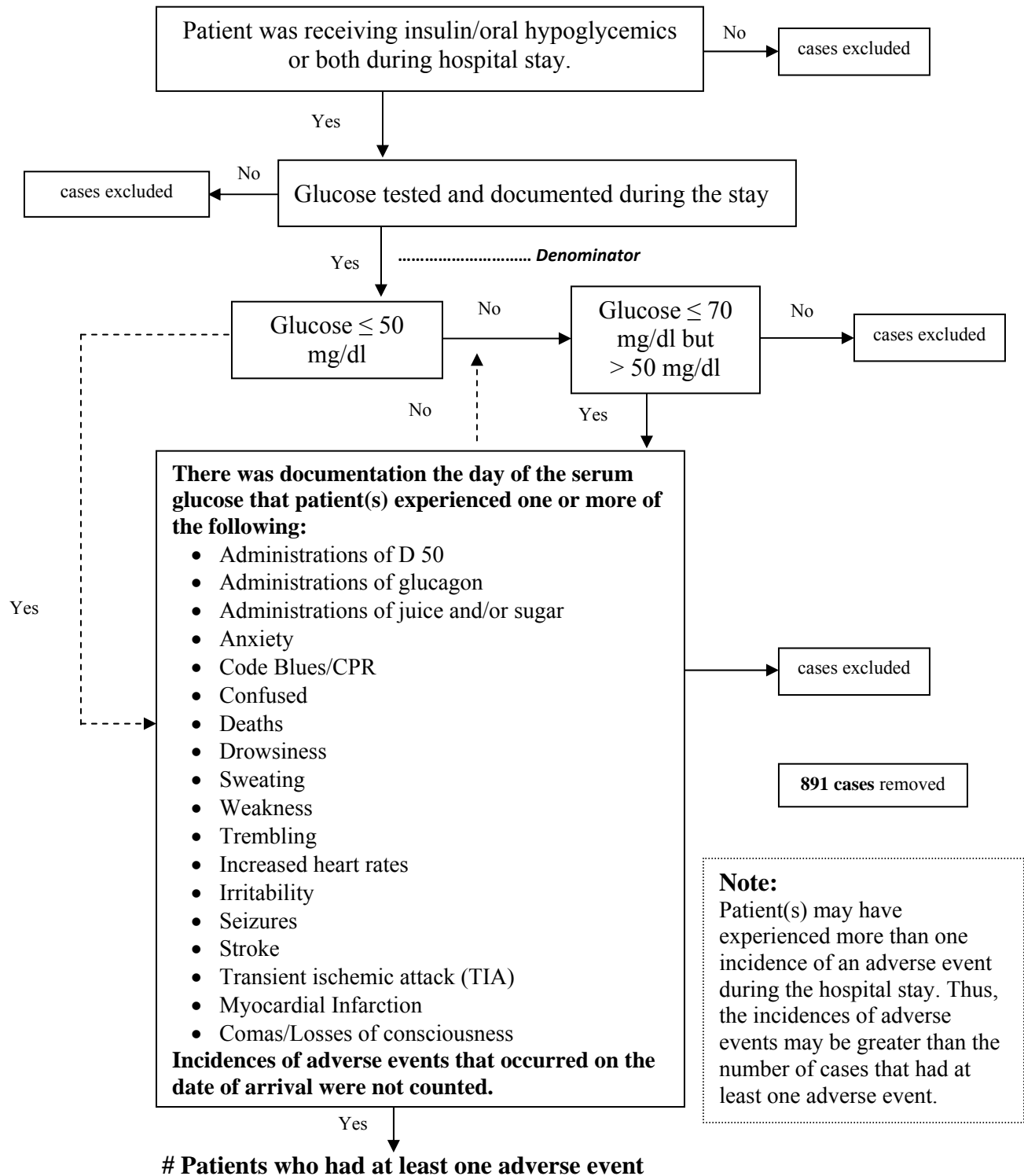


**# Cardiac surgery patients who had a postoperative cardiac event during the index hospital stay**

# Medicare Patient Safety Monitoring System (MPSMS) Measure Algorithms

## Adverse Events Associated with Hypoglycemic Agents: Insulin/Oral Hypoglycemics/Combination of Both

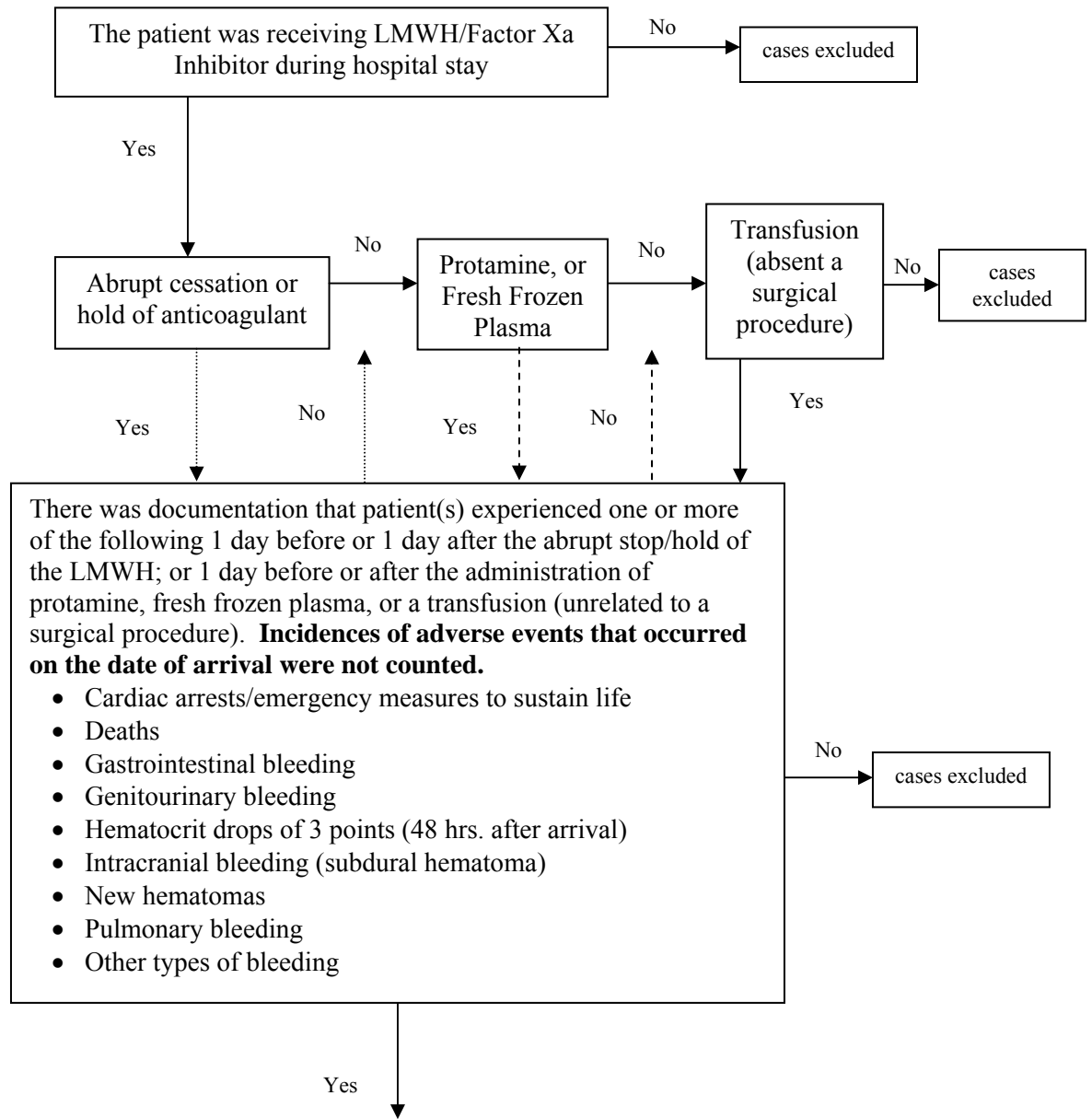
### # Hospital Discharges



# Medicare Patient Safety Monitoring System (MPSMS) Measure Algorithms

## Adverse Events Associated with Low Molecular Weight Heparin (LMWH) and Factor Xa Inhibitor

### # Hospital Discharges



**Note:**

Patient(s) may have experienced more than one incidence of an adverse event during the hospital stay. Thus, the incidences of adverse events may be greater than the number of patients who had at least one adverse event.

There was documentation that patient(s) experienced one or more of the following 1 day before or 1 day after the abrupt stop/hold of the LMWH; or 1 day before or after the administration of protamine, fresh frozen plasma, or a transfusion (unrelated to a surgical procedure). **Incidences of adverse events that occurred on the date of arrival were not counted.**

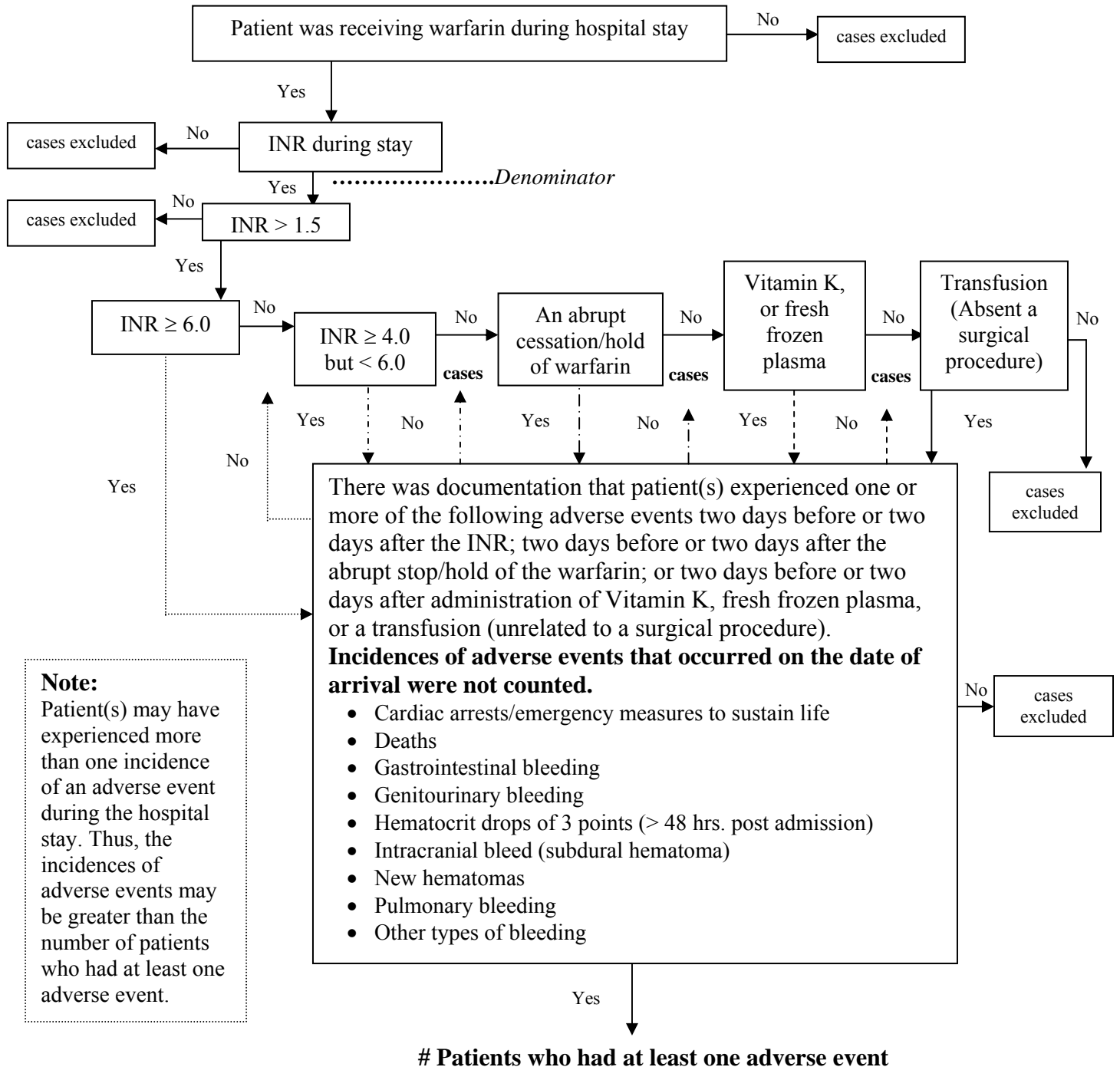
- Cardiac arrests/emergency measures to sustain life
- Deaths
- Gastrointestinal bleeding
- Genitourinary bleeding
- Hematocrit drops of 3 points (48 hrs. after arrival)
- Intracranial bleeding (subdural hematoma)
- New hematomas
- Pulmonary bleeding
- Other types of bleeding

**# Patients who had at least one adverse event**

# Medicare Patient Safety Monitoring System (MPSMS) Measure Algorithms

## Adverse Events Associated with Warfarin

### # Hospital Discharges

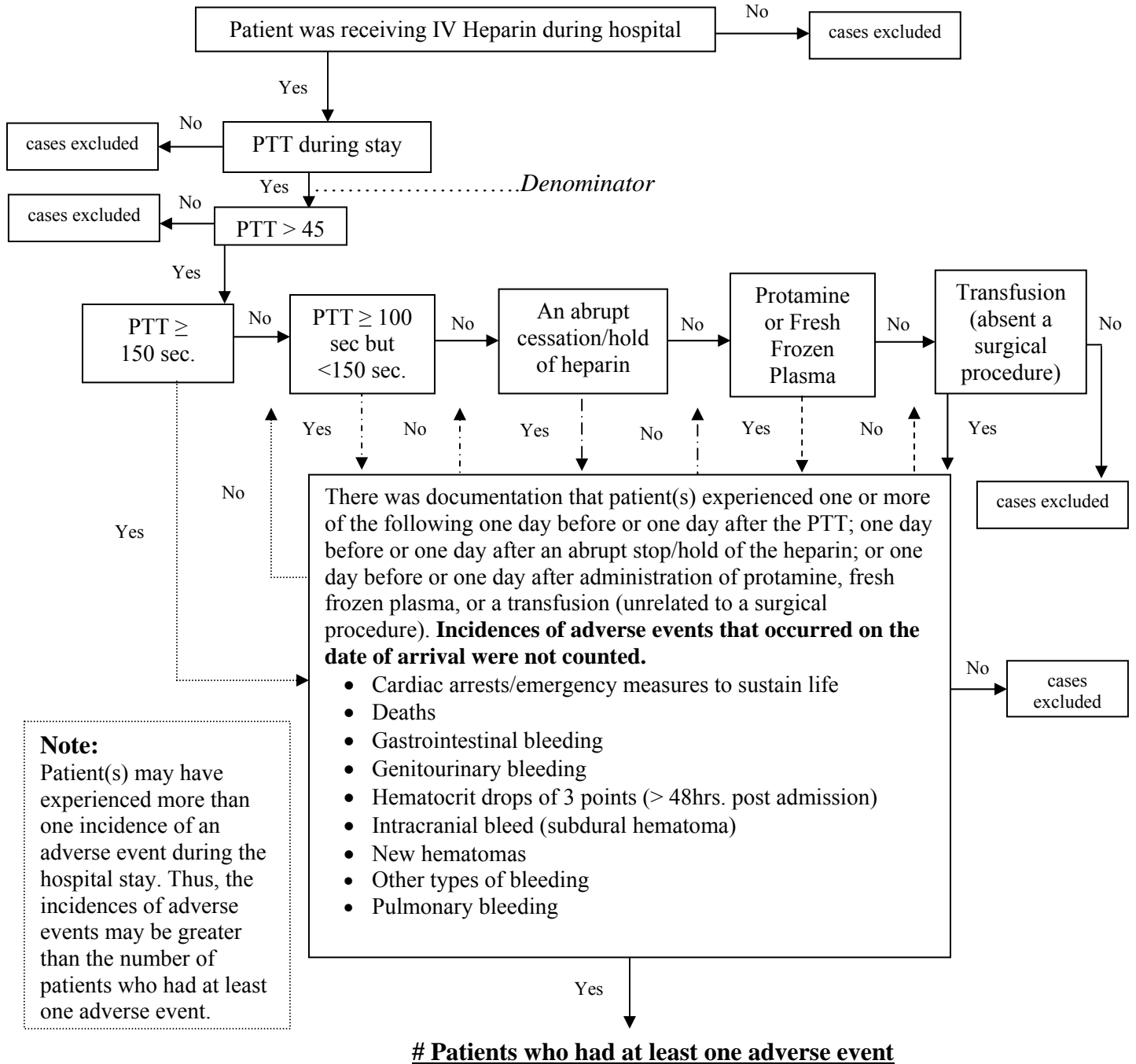




# Medicare Patient Safety Monitoring System (MPSMS) Measure Algorithms

## Adverse Events Associated with IV Heparin

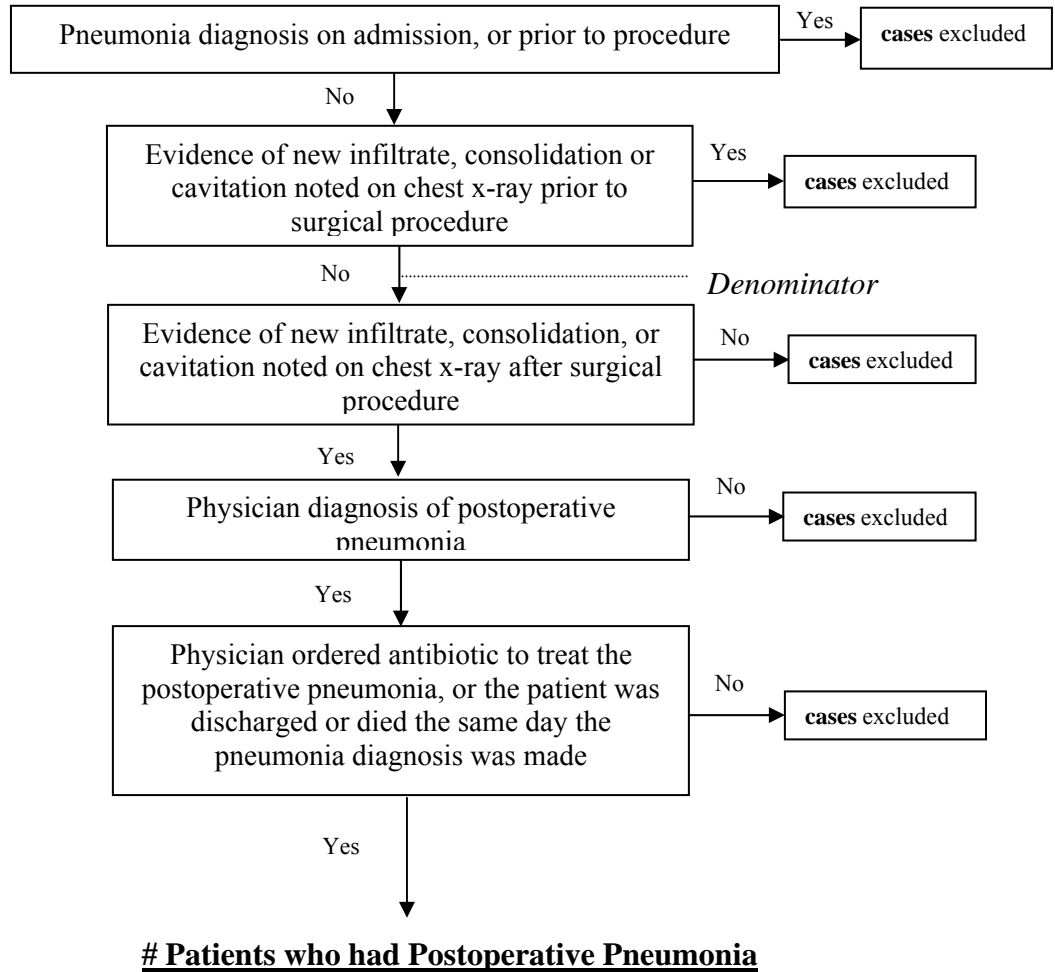
### # Hospital Discharges



# Medicare Patient Safety Monitoring System (MPSMS) Measure Algorithms

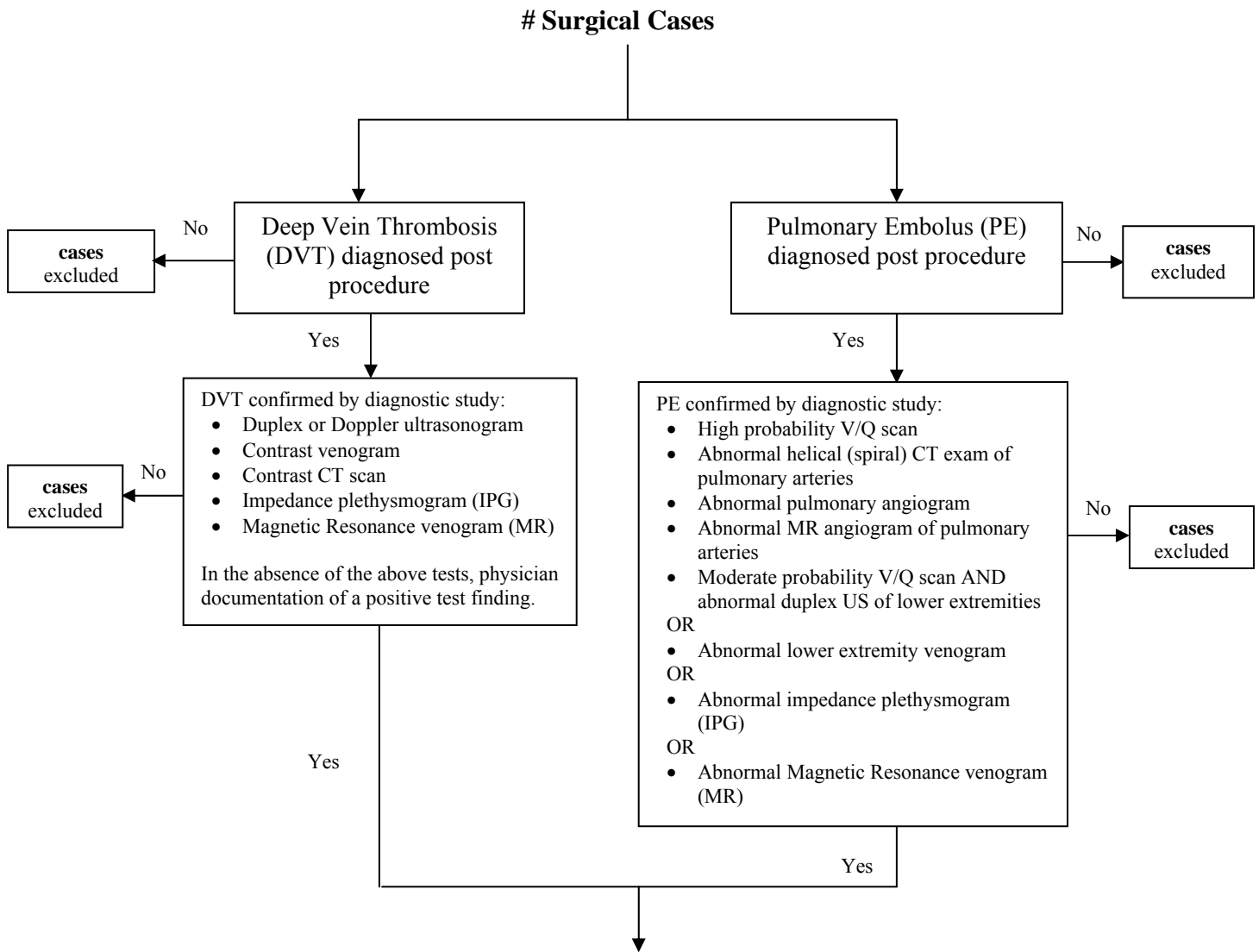
## Postoperative Pneumonia

### # Surgical Cases



# Medicare Patient Safety Monitoring System (MPSMS) Measure Algorithms

## Postoperative Venous Thromboembolic Events

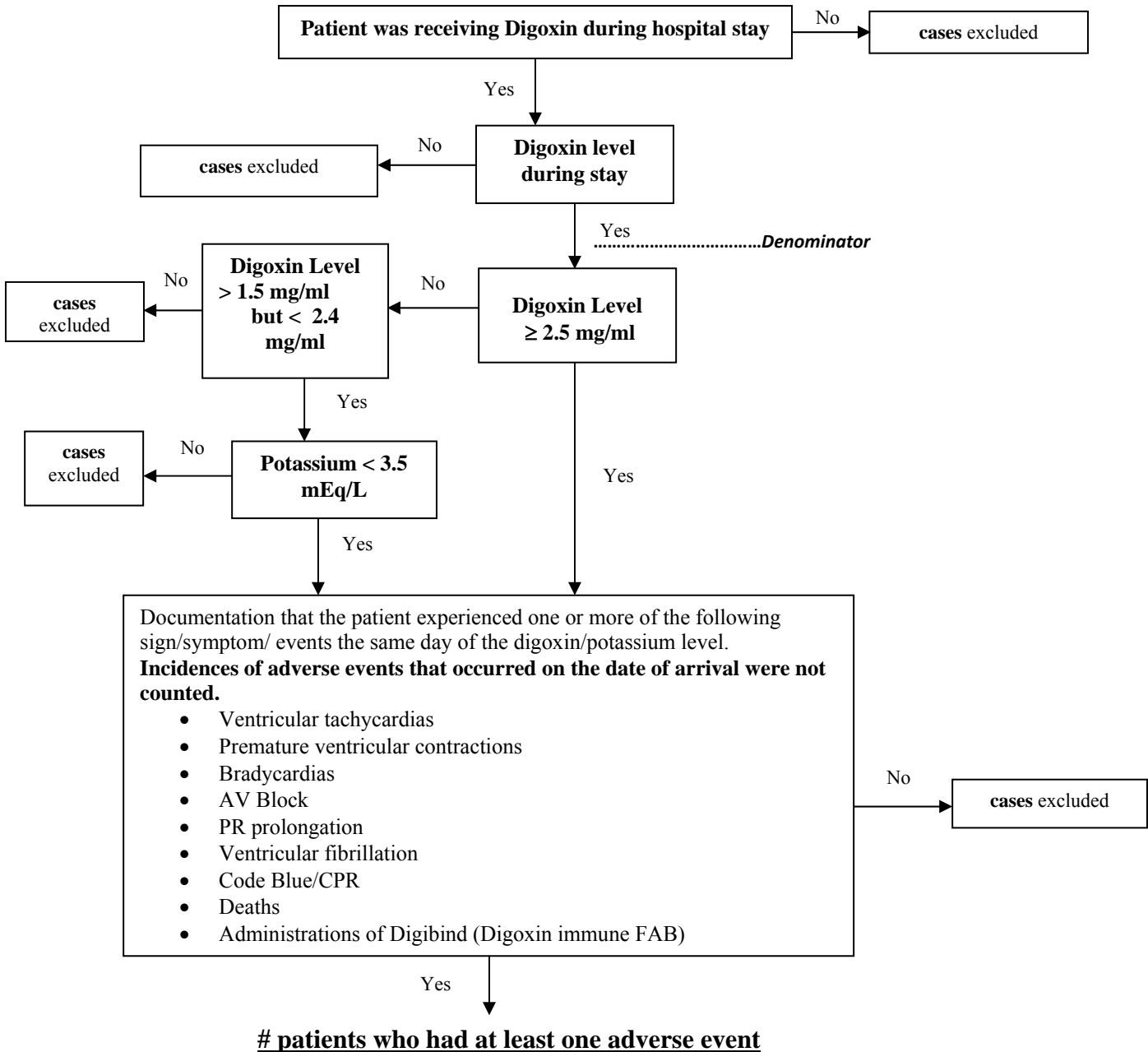


**# Patients who had at least one postoperative PE/DVT during the hospital stay**

# Medicare Patient Safety Monitoring System (MPSMS) Measure Algorithms

## Adverse Events Associated with Digoxin

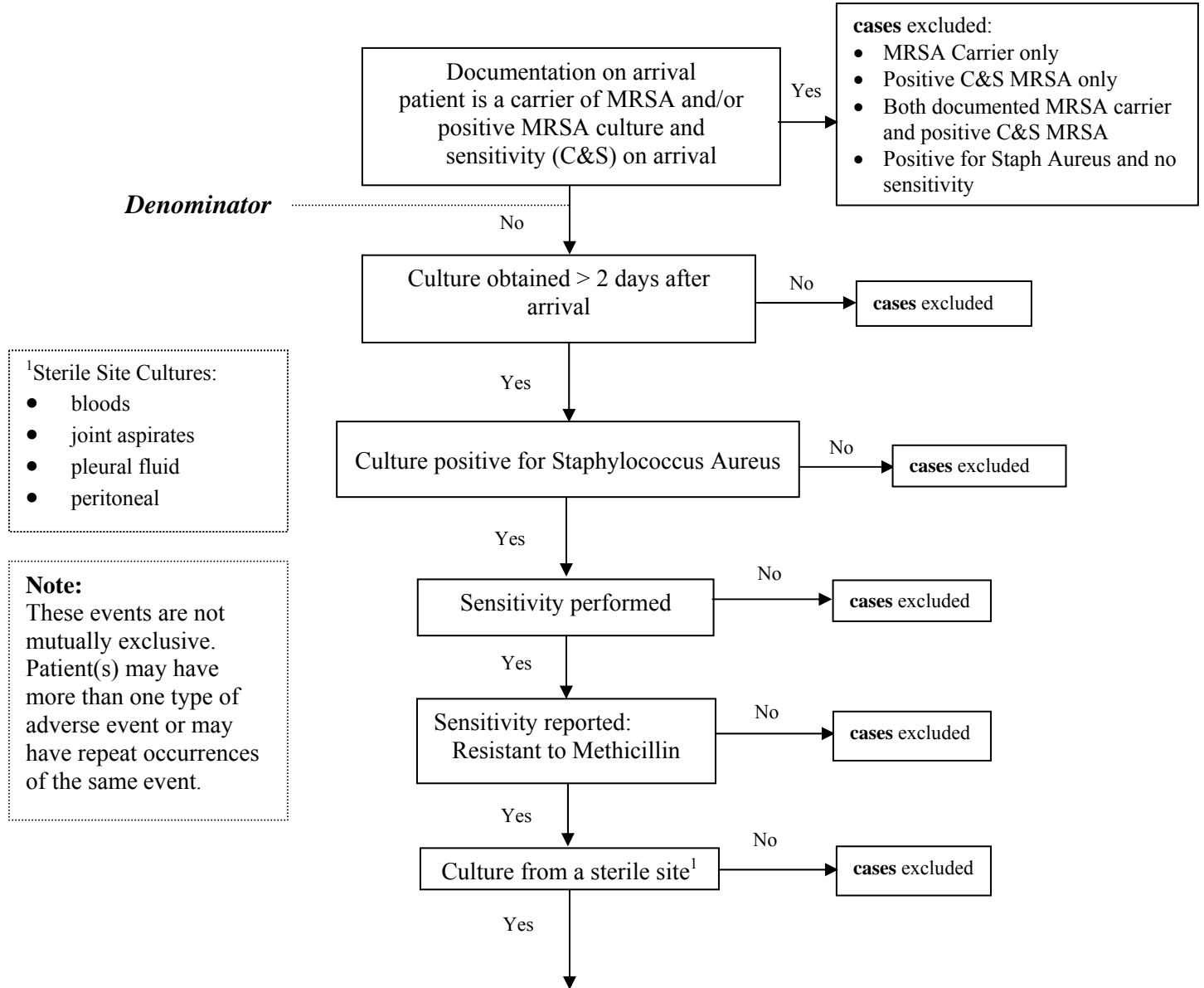
### # Hospital Discharges



# Medicare Patient Safety Monitoring System (MPSMS) Measure Algorithms

## Hospital-Acquired Methicillin-resistant Staphylococcus Aureus (MRSA)

### # Hospital Discharges



**# Patients who acquired MRSA (sterile site cultures only) during the index hospital stay**

<sup>1</sup>Sterile Site Cultures:

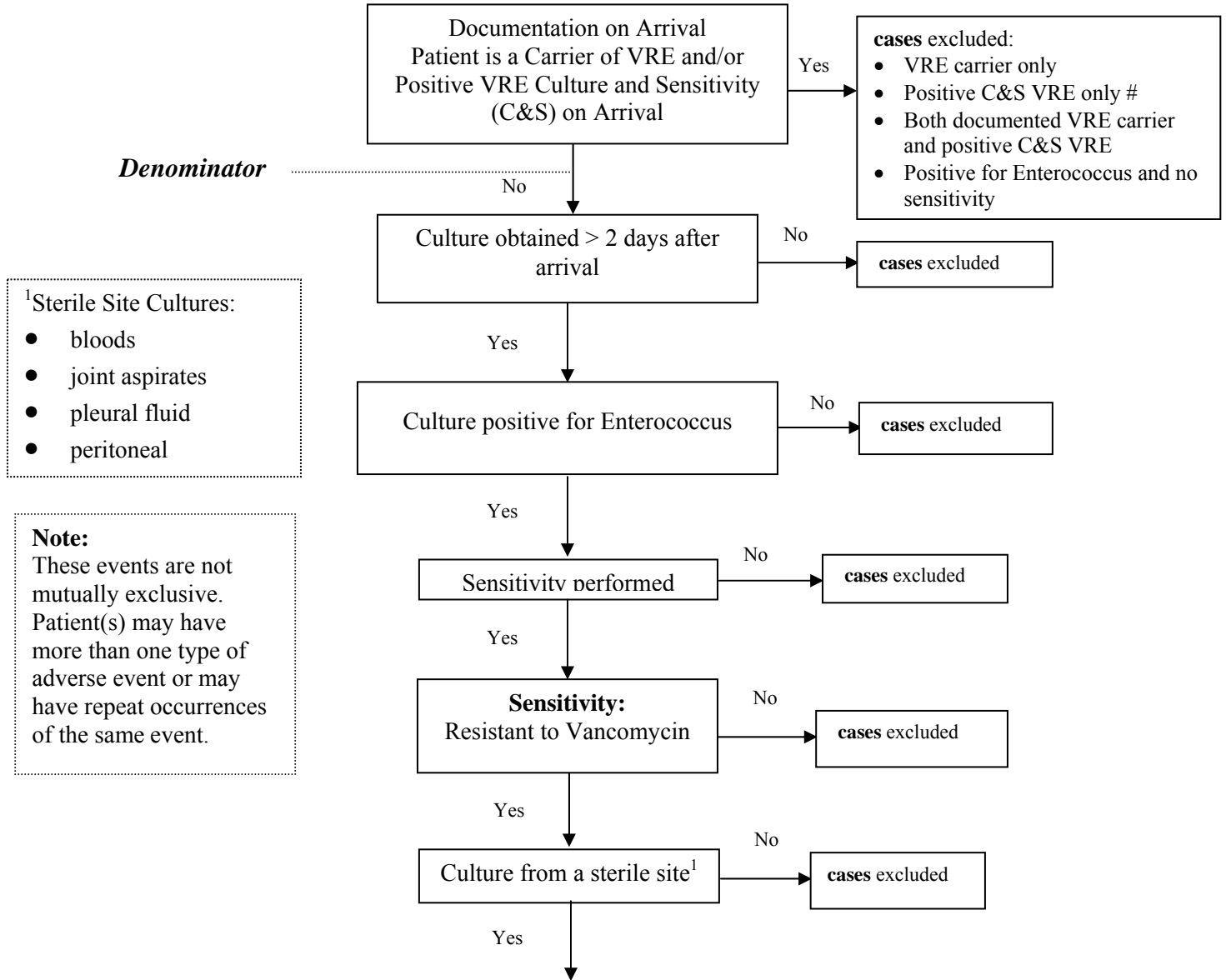
- bloods
- joint aspirates
- pleural fluid
- peritoneal

**Note:**  
These events are not mutually exclusive. Patient(s) may have more than one type of adverse event or may have repeat occurrences of the same event.

# Medicare Patient Safety Monitoring System (MPSMS) Measure Algorithms

## Hospital-Acquired Vancomycin-Resistant Enterococcus (VRE)

### # Hospital Discharges



**# Patients who acquired VRE (sterile site cultures only) during the index hospital stay**