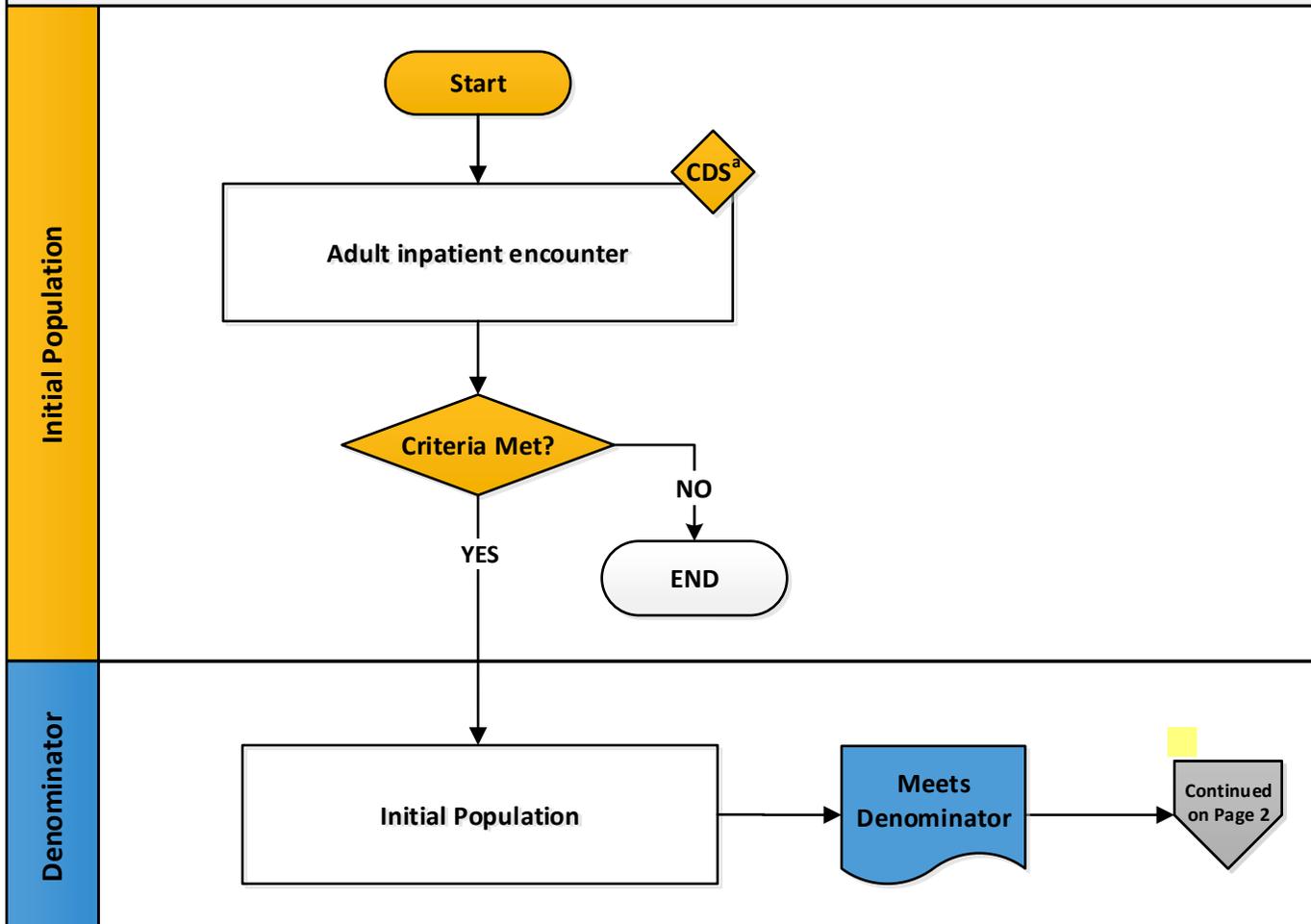


## Hospital Harm – Acute Kidney Injury

**Measure Description:** The proportion of hospitalized patients age 18 years and older, who during their hospitalization suffer the harm of a substantial increase in serum creatinine, defined as greater than or equal to 1.5 times baseline, OR the initiation of renal dialysis (hemodialysis or peritoneal dialysis), during the measurement period.

**Measure Intent:** This measure focuses on acute kidney injury as an outcome in the hospital inpatient setting. Acute kidney injury affects up to 10% of hospitalized patients (Wilson et al., 2015)(Chertow 2005), comparable to the rates of severe sepsis (Hoste, Schurgers, 2008) and acute lung injury (Wilson et al., 2015)(Goldstein et al., 2016)(McCoy et al., 2010). Less severe acute kidney injury and acute kidney injury requiring dialysis affects approximately 2,000 to 3,000 and 200 to 300 per million population per year, respectively. Up to two thirds of intensive care patients will develop acute kidney injury. Acute kidney injury may result in the need for dialysis, and is associated with an increased risk of mortality (Wilson et al., 2013).

### Implementation Diagram

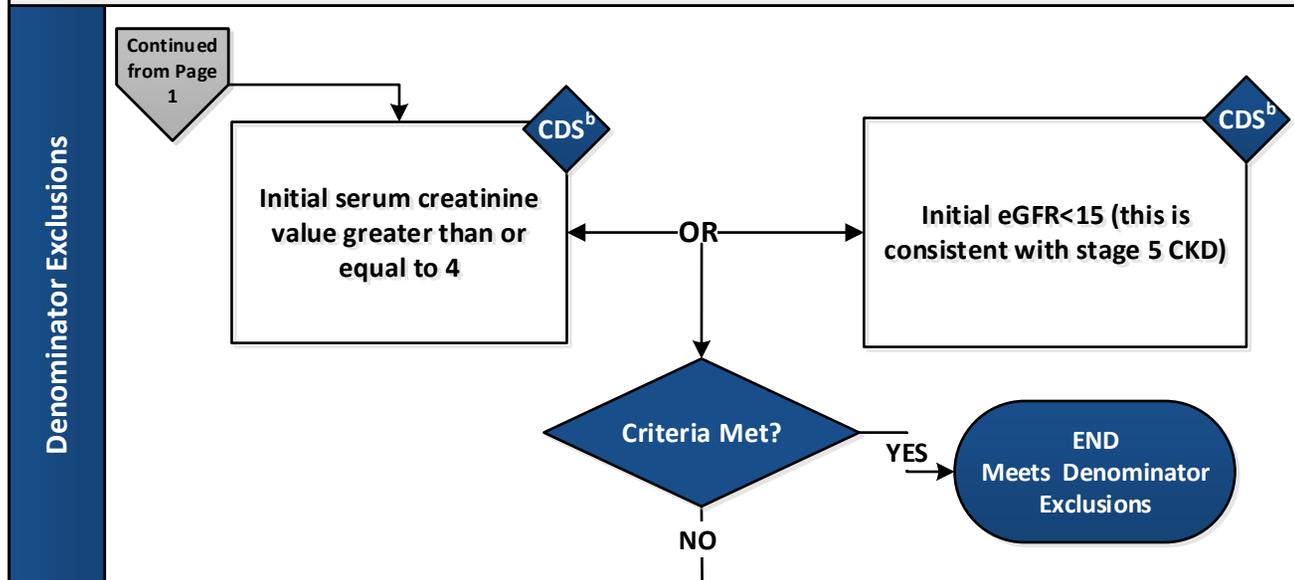


### Initial Population/ Denominator Intent:

Initial Population: Patients age 18 years and older at the start of the measurement period with a discharged inpatient hospital encounter during the measurement period. Measure includes inpatient admissions who were initially seen in the emergency department or in observational status and who become an inpatient.

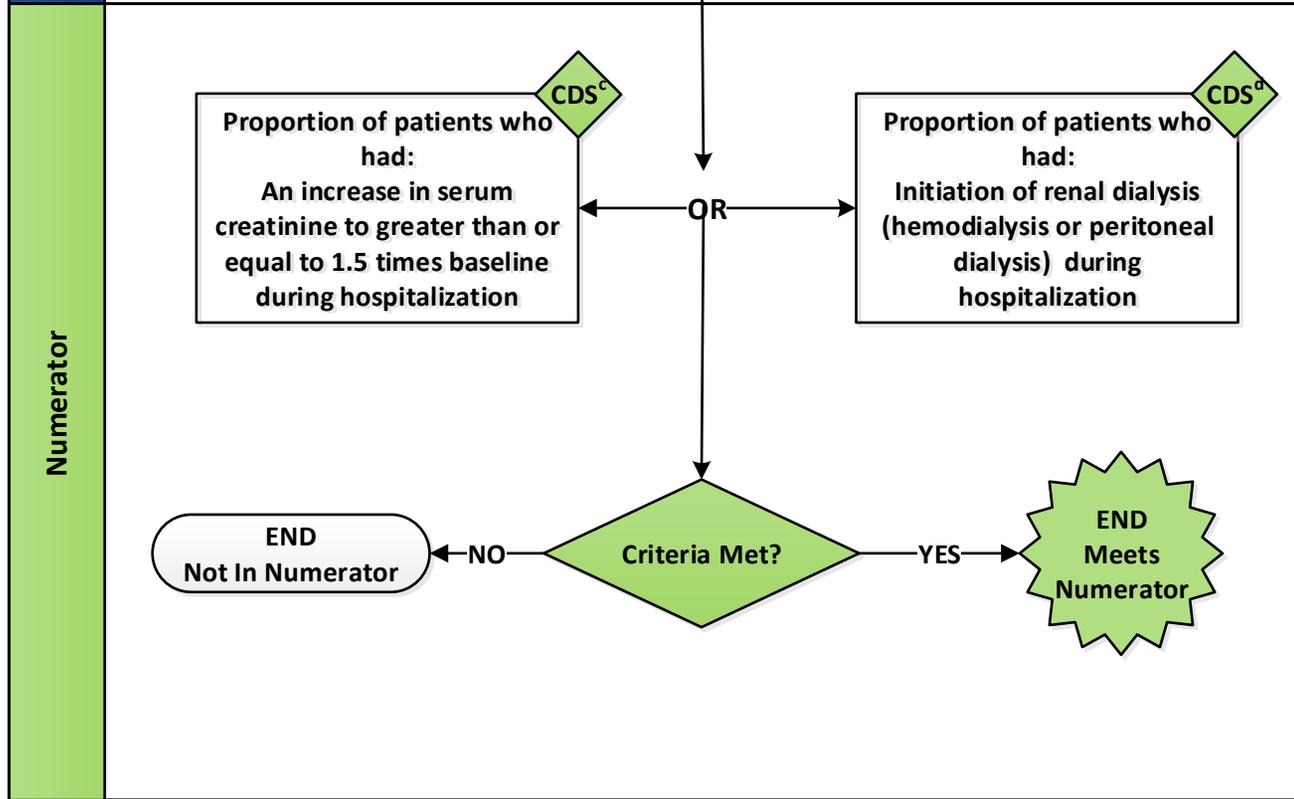
Denominator: Same as Initial Population

# Hospital Harm – Acute Kidney Injury



**Denominator Exclusions Intent**

The goal of the denominator exclusions are to exclude patients with evidence of severe renal dysfunction that is present on arrival



**Numerator Intent**

The goal of the measure is to encourage providers to identify patients who have developed acute kidney injury while hospitalized.

While not all instances of acute kidney injury are avoidable and may be due to natural progression of underlying illness or a complication of a necessary treatment such as chemotherapy, a proportion of acute kidney injury cases are preventable and treatable. The Kidney Disease: Improving Global Outcomes (KDIGO) guidelines suggest careful management of hemodynamic status, fluids, and vasoactive medications for the prevention of acute kidney injury (Wilson et al, 2015). Several studies identified through systematic literature searches developed or evaluated the effectiveness of acute kidney injury electronic alert systems (Selby et al., 2012; Ahmed et al., 2015; Porter et al., 2014; Wilson et al., 2014; McCoy et al., 2014; Kirkendall et al., 2014; Cho et al., 2012). These studies used data elements for defining acute kidney injury that were already present and populated in the EHR. For acute kidney injury diagnosis, all except two were limited to using serum creatinine levels, suggesting that this is the most reliable and consistently available electronic data element for defining acute kidney injury.

# Hospital Harm – Acute Kidney Injury

*Clinical Decision Support (CDS): Examples for suggested use*

CDS<sup>a</sup>

TBD

TBD

CDS<sup>b</sup>

TBD

TBD

CDS<sup>c,d</sup>

TBD

TBD