**Script Documentation: KDIGO Stages Calculation**

* **Overview**: This SQL script calculates Acute Kidney Injury (AKI) stages according to the KDIGO criteria based on both creatinine and urine output measurements. It creates a new table named kdigo\_stages to provide a comprehensive assessment of kidney function during a patient's ICU stay.
* **Key References**: None specified.
* **Logic Summary**:
  + The script first establishes AKI stages based on creatinine levels, defining baseline creatinine as the lowest value in the past 7 days.
  + It also evaluates urine output (UO) stages based on specified thresholds and durations.
  + The final output combines both creatinine and urine output criteria to determine the highest AKI stage for each time point.
* **Process Steps**:
  + **CTE cr\_stg**:
    - Calculates AKI stages based on creatinine values from the kdigo\_creatinine table. The criteria include:
      * Stage 3: Creatinine ≥ 3 times baseline or ≥ 4.0 mg/dL with an acute increase.
      * Stage 2: Creatinine ≥ 2 times baseline.
      * Stage 1: Creatinine ≥ 0.3 mg/dL increase from baseline or ≥ 1.5 times baseline.
  + **CTE uo\_stg**:
    - Determines AKI stages based on urine output metrics from the kdigo\_uo table, requiring certain timeframes and measurements to be valid for staging.
  + **CTE tm\_stg**:
    - Collects all unique chart times from both creatinine and urine output stages for each ICU stay.
  + **Final Selection**:
    - Combines the data from the previous CTEs, ensuring all chart times are represented and selecting the maximum AKI stage from either creatinine or urine output for each time point.
* **Output**:  
  The script generates a new table, kdigo\_stages, containing the following fields:
  + icustay\_id: Unique identifier for the ICU stay.
  + charttime: The time of the measurement.
  + creat: The creatinine value at charttime.
  + aki\_stage\_creat: The AKI stage based on creatinine.
  + uo\_rt\_6hr, uo\_rt\_12hr, uo\_rt\_24hr: Urine output rates over different time frames.
  + aki\_stage\_uo: The AKI stage based on urine output.
  + aki\_stage: The overall AKI stage determined by the highest value from creatinine and urine output stages.

**Example Query**:  
To retrieve AKI stages for a specific ICU stay:  
sql  
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SELECT \* FROM kdigo\_stages WHERE icustay\_id = [specific\_icustay\_id];

* **Important Notes**:
  + The script is automatically generated; direct edits should be avoided to maintain integrity.
  + The AKI staging criteria align with KDIGO guidelines and may require updates based on evolving clinical practices.
* **Conclusion**:  
  This script automates the calculation of AKI stages from creatinine and urine output data, facilitating timely clinical assessments and interventions in critically ill patients.