**Script Documentation: Urine Output on First ICU Day**

* **Overview**: This SQL script calculates the total urine output for each ICU patient during the first 24 hours of their ICU stay. It sums the volumes recorded from various urine output-related events and handles special cases like GU irrigants.
* **MIMIC Version**: [Insert MIMIC version]
* **Key References**:
  + The query uses icustays and outputevents tables from MIMIC.
* **Logic Summary**: The script calculates the total urine output for each ICU stay by summing the relevant volume entries in outputevents. It adjusts the volume for certain cases, such as GU irrigant, which is subtracted from the total.
* **Process Steps**:
  + **Urine Output Calculation**:
    - The outputevents table is joined to the icustays table to pull all urine-related output events for each ICU stay.
    - The script checks for the most common item IDs related to urine output from both the CareVue and MetaVision systems.
    - The volume associated with GU irrigant (itemid = 227488) is treated as a negative value.
  + **Time Constraint**:
    - Only events that occurred during the first ICU day (within 24 hours of icustay\_id admission time) are considered.
  + **Grouping and Summing**:
    - The total urine output is summed for each ICU stay, and the results are grouped by subject\_id, hadm\_id, and icustay\_id.
* **Output**:
  + The final table urine\_output\_first\_day includes the following fields:
    - subject\_id: The ID of the patient.
    - hadm\_id: The hospital admission ID.
    - icustay\_id: The ICU stay ID.
    - urineoutput: The total urine output (including adjustments for GU irrigant) during the first 24 hours of ICU stay.

**Example Query**:  
sql  
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SELECT \* FROM urine\_output\_first\_day WHERE urineoutput > 500;

* **Important Notes**:
  + The script uses a specific set of item IDs related to urine output for both CareVue and MetaVision systems. Verify these IDs for your specific MIMIC version.
  + Events are filtered to include only those from the first ICU day (defined as within 24 hours of the ICU admission time).
* **Conclusion**: This script provides a summary of total urine output for ICU patients during the first 24 hours, helping in the study of fluid balance and renal function during critical care.