



**Supplementary Figure 1. Data Preprocessing workflow for AKI prediction model.** This flowchart illustrates the preprocessing steps for static (tabular) and dynamic (time series) data used in our AKI prediction model. For dynamic data, missing values are first filled with the most recent previous value when available. Remaining missing values in both static and dynamic data are then handled by categorizing patients into AKI and non-AKI groups (based on the first 48 hours for static data, and the preceding 48-hour window for dynamic data) and filling with respective group averages. Finally, flag data is added to mark initially missing values. AKI, acute kidney injury.