**Step 1: Prediction and Data Utilization**

* Performed By: ED staff.
* Activity:
  + Use predictive analytics on electronic health records (EHR) to estimate likely admissions from ED patient.
  + Predict patient’ disposition (ICU, general unit, etc.) and remaining ED length of stay.
* Outcome: Reliable early forecasts of inpatient bed requirements, enabling downstream units to plan proactively.

**Step 2: Early Task Initiation**

* Performed By: bed manager
* Activity:
  + Generate proactive bed request signals for likely admissions based on prediction data.
  + Initiate bed allocation tasks (cleaning and preparing beds) for projected patient admissions.
* Outcome: Minimized bed preparation and availability lead time, reducing delays.

**Step 3: Workflow Coordination**

* Performed By: bed manager
* Activity:
  + Assign bed preparation tasks using a first-in-first-out (FIFO) priority.
  + Prioritize beds based on patient admission urgency, ensuring alignment with predictive signals.
* Outcome: Beds are cleaned and ready for transfer just-in-time, optimizing resource use.

**Step 4: Handling Prediction Errors**

* Performed By: Bed manager
* Activity:
  + Adjust bed allocations dynamically in cases of false positives (patient not requiring beds) or false negatives (unexpected admissions).
  + Follow predefined error-handling rules to reallocate or release reserved beds.
* Outcome: Efficient use of bed resources without compromising non-ED patient admissions.

**Step 5: Monitoring and Real-Time Updates**

* Performed By: Hospital administration.
* Activity:
  + Continuously monitor real-time bed status using integrated EHR and communication tools (e.g., pagers, dashboards).
  + Communicate updates regarding bed readiness and patient transfer status to ED and inpatient units.
* Outcome: Enhanced situational awareness and seamless coordination across units.

**Step 6: Patient Transfer to Inpatient Units**

* Performed By: Inpatient Unit Team
* Activity:
  + Transfer patient promptly once their ED treatment concludes and assigned beds are ready.
* Outcome: Reduced ED crowding and shorter patient boarding times.