The simulation model explains:

* the simulation algorithm (how patients flow, which resources are modeled),
* the replication/scenario structure,
* validation & calibration checklist

How to interpret key KPIs

-Average wait vs median vs p90: The mean gives overall load; p90 captures tail behavior (how many patients have excessively long waits). For this study, we focus on p90 to control worst-case experience.

- Average LOS vs p90 LOS: LOS captures end-to-end time in ED, including boarding for admitted patients. Large p90 LOS indicates capacity issues and boarding problems.

- Num\_admitted and avg\_boarding\_min: If many admitted patients show long boarding times, beds are blocked — freeing beds (via increased ward transfers or more beds) often reduces Main ED waits more than adding doctors alone.

- Queue\_samples / beds\_in\_use: Use these to identify peak windows for targeted staffing. If beds\_in\_use frequently hits capacity, consider adding beds or improving downstream transfers.