Review of: ""Hospital's Thermo-neutral Zone for Patient Safety and Climate Change Sustainability"

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Potential competing interests: No potential competing interests to declare.

General Comments:

- The title is suitable and clear
- The abstract is comprehensive, well structured, and well written.
- The paper is well structured.
- References are sufficient and recent
- The paper presents an interesting study evaluating thermal comfort in hospital wards in Iraq using field measurements and simulation models.
- The background provides good context about sustainable buildings and the need for thermal comfort assessments. The study aims are clearly outlined.
- The method details data collection, climate parameters examined, instruments used etc. Results analyze temperature prediction models and thermal comfort levels.

Strengths:

- The study collects extensive empirical data on multiple microclimatic factors over a long duration in the hospital wards.
- Sophisticated instruments are used for measurements - pyranometer, thermocouples, anemometer providing reliable data.
- Several prediction models are developed and validated to estimate air temperatures based on climate variables with good accuracy.
- Thermal comfort is evaluated through multiple parameters - temperature, ventilation, adaptive models providing robust assessment.

Weak points:

- More details could be provided on the hospital building construction, materials, insulation, openings etc. to better account for heat gains/losses.
- The description of the simulation models and validation process is vague. More information is needed on the modeling methodology and equations used.
- There is limited quantitative analysis of overheating criteria, exact thermal comfort survey data and metrics to support the conclusions drawn.

- The readability and flow of the paper could be improved with better organization of the background and results sections.

Suggestions:

- Include more details on hospital building envelope and morphology - sizes, orientations, window to wall ratios etc.
- Provide complete details on the simulation model development, equations governing heat transfer and calibration process.
- Supplement with actual thermal comfort surveys - PMV/PPD indexes, patient/staff feedback on thermal sensation.
- Perform quantitative analysis of overheating risk using established criteria. Evaluate adaptation measures with simulations.
- Restructure the sections and content for better flow. Expand background section and streamline results/discussions.

In summary, this is a highly relevant study on an important topic with notable strengths. Addressing the suggestions highlighted would enhance its quality and potential impact.