

Real-Time CCT Dashboard

In 2019, five student consultants from the Whiting School's Master of Science in Engineering Management (MSEM) program helped the Johns Hopkins Department of Anesthesiology & Critical Care Medicine (ACCM) improve the management and day-to-day operations of Clinical Care Technicians (CCTs).

The CCTs' main responsibilities are to clean and to prepare the anesthesiologist station between operations in addition to providing anesthesiologists with support during operations. They are typically assigned throughout many locations but are not staffed to operating rooms (ORs) in a 1:1 ratio. The main issue was that when CCTs called out on leave or when emergencies occurred, staff needed be rearranged to match the location needs. In that there was no system in place to interpret the real-time circumstances of each location, it was difficult to do so efficiently. Furthermore, the lack of concrete data on staff performance also created difficulties for management in making strategic staffing decisions.

In order to address these two major concerns, the MSEM student consultants recommended the implementation of a smartphone app along with a real-time dashboard, similar to the solutions used at that time by the JHH Facilities Engineering Department with their Environmental Care Technicians. The recommended app would gather data on CCTs' performance with the dashboard providing clarity on the actual situations at each location. In addition, due to the grievances they expressed by CCTs while being shadowed, the student consultants recommended that department hold an expectations summit. Such a summit would allow previously unspoken issues to come to the fore and would provide a springboard for them to be addressed. In turn, this could improve the teamwork dynamic of the CCT department as a whole, thereby increasing workplace satisfaction and overall performance.



Figure 1. Part of CCT Interface

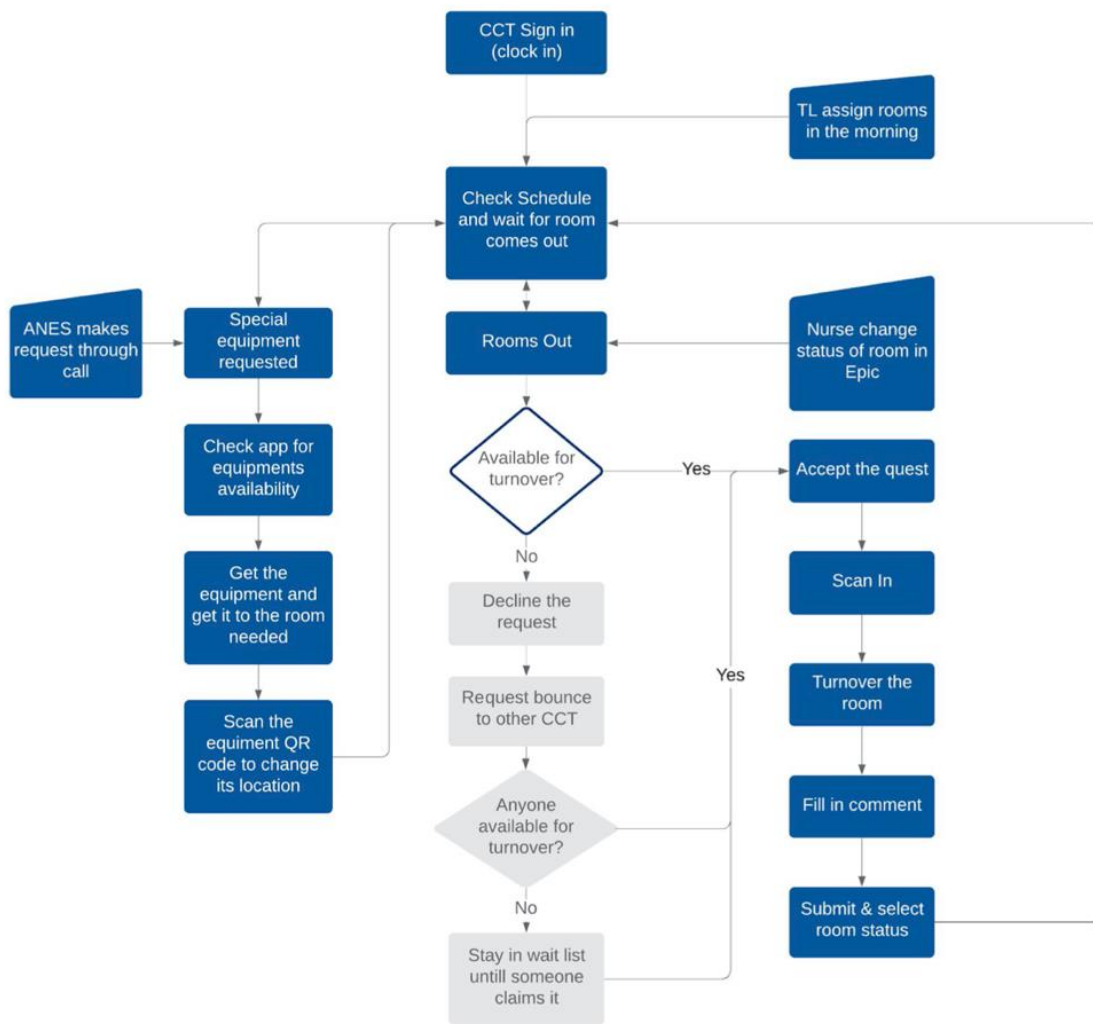


Figure 2. Smartphone App Workflow

As shown above, the CCT interface of this real-time system as well as the smartphone workflow, which were part of the deliverables from student consultants, clearly describe an enhanced work model for care-providers. With the implementation of these recommendations, the ACCM Department was able to gain a better understanding of its process and to take productive steps towards both analyzing and improving its workflows. Consequently, the CCTs were able to provide better care in the ORs and, ultimately, to the patients.