Design Challenge Report: OR & Medical Devices Scheduling System Improvement in Hospitals

1. Take a stab at framing this challenge as a question:

How might we redesign our OR and medical device scheduling system so it's faster, easier to use, and fair for everyone making it simple for staff to plan, swap, and communicate without all the confusion?

2. Now state the key outcome you're trying to achieve:

We aim to create a scheduling process that saves time, avoids conflicts, and ensures better communication between surgical teams and equipment coordinators. The goal is to cut down manual work, reduce last-minute stress, and make scheduling transparent, efficient, and reliable for all stakeholders involved.

3. Write down important aspects of the context or constraints that you need to consider:

The current OR and device scheduling method is mostly manual, which makes it slow and error-prone. This issue is similar to what Lin et al. (2024) found in hospitals, where it took about five minutes to schedule one surgery, highlighting how inefficient manual systems can be.

The main constraints hospitals face include limited technology resources, a tight budget, and some staff resistance to new systems. Additionally, our scheduling needs to handle sudden changes, like last-minute case delays or equipment unavailability, without causing confusion or overwork. We also lack integration between historical case data, device usage, and current scheduling, which could help predict peak workloads and plan better.

4. What are some possible solutions to your design question?

- Create a shared OR scheduling dashboard that updates automatically with equipment status.
- Introduce automation or templates to save time and prevent human errors.
- Allow staff to request changes, time off, or device swaps digitally rather than by email.
- Include smart alerts to flag overlapping cases or missing equipment.
- Provide short training sessions to help everyone get comfortable with the new system.

5. Does your original design question need a tweak? Try it again.

How might we design a simple and data-smart OR and medical device scheduling system that reduces effort and confusion while helping everyone stay organized, productive, and satisfied with their schedules?