Designing a Dashboard to Streamline Pediatric Heart Transplant Decision Making
(Technical Report)

Artificial or Human Judgement: Implications of Automating High-Stakes Decision Making in Healthcare
(STS Research Paper)

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Preface

User experience design influences high-stakes decision making in diverse fields, including healthcare. Effective interfaces simplify users' tasks without impairing decisions. Clear information displays and automation of routine functions can serve these purposes. Artificial intelligence (AI) can improve both. However, digital automation bears the risk of algorithmic bias – a risk that AI can compound.

To guide its allocation of donor organs, the United Network for Organ Sharing (UNOS) uses a digital interface. The research team proposed interface redesigns that would optimize allocation decisions. Nearly 50 percent of viable donated hearts are discarded unused, yet waitlist mortality approaches 20 percent for pediatric heart transplant candidates. To assess user needs and pain points, the project team took a user-centered design (UCD) approach. Using insights gathered from research and interviews, we developed a final interface mockup. Given more time on this project, our next steps would be to build a working prototype and simulate the donor offer process to compare the effectiveness of our design with the current interface. Future project teams may develop the mockup into a prototype for testing and evaluation.

Artificial intelligence (AI) bears complex and controversial implications in healthcare. In the United States, patients, medical professionals, healthcare service providers, and advocacies disagree about the ethical and optimal medical applications of AI. While most patients welcome medical innovation, associating with better care, some perceive risks to patient privacy or to interpersonal care in medical AI. Physicians typically value AI as a helpful supplement to expert human care, but are cautious towards hazards in AI systems that could displace them. To healthcare service providers, medical

AI promises to ease administrative burdens, prevent human error and reduce per-patient costs. Some advocacies call for regulation to mitigate hazards they associate with medical AI, including algorithmic biases.