Children with medical complexity (CMC) represent the pediatric population with the highest needs, but care coordination is poor leading to fragmented care, caregiver stress, high hospitalization rates and healthcare costs. Our team used a novel virtualized human-centered design (HCD) process (figure 1) to elucidate the paint points of care coordination with input from various healthcare stakeholders at all levels of care at Duke Roxboro Children’s Clinic. We created three prototype interventions to enhance the care experience by addressing pain points voiced by stakeholders, with near-term plans to gather feedback and implement in a clinical setting and assess for effectiveness.

**Project Summary**
- **Children with medical complexity (CMC)** represent the pediatric population with the highest needs, but care coordination is poor leading to fragmented care, caregiver stress, high hospitalization rates and healthcare costs.
- Our team used a novel virtualized human-centered design (HCD) process (figure 1) to elucidate the paint points of care coordination with input from various healthcare stakeholders at all levels of care at Duke Roxboro Children’s Clinic.
- We created three prototype interventions to enhance the care experience by addressing pain points voiced by stakeholders, with near-term plans to gather feedback and implement in a clinical setting and assess for effectiveness.

**Virtualized Human Center Design Method**

1. **Empathize**
2. **Define**
3. **Ideate**
4. **Prototype**
5. **Test**
6. **Implement**

**Stakeholder-Voiced Findings**

Pain-points emerged from stakeholder discussions (ranked by importance to stakeholders):

1. Improving coordination of patient care
2. Improving family-provider communication
3. Providing more family support resources
4. Fostering inclusion
5. Health system communication
6. Improving information systems, platforms, and technology
7. Supporting providers and staff

Based on the above pain-points, we designed 3 primary prototypes to present to our stakeholders for feedback.

**Prototypes: Health Passports**

As a tool to enhance care coordination, patients will be given a children-friendly health passport that can be used as a tool to engage children in their care, and carry pertinent narrative health data for caregivers to communicate with providers.

**Future Directions**

- Final prototypes stakeholder testing -> product feedback
- Revision and preparation for permanent clinical use
- Expand implementation to other clinical sites in Duke Health that care for CMC
- Evaluate the impact of the product on health outcomes for CMC population
- Revisit previous unused ideas to develop additional evidence-based medical care integration models

Research reported in this publication was supported by a Duke University Bass Connections grant and a Duke Pediatric Resident Research Grant. Special thanks to our design team members insights and time are critical to advancing the health of CMC and to the success of this project.