COVID-19 has hit FHCW in terms of total # of visits under current operating conditions…

- Federally mandated space constraints within the clinic
  - Airflow restrictions limit providers to 2 in-person patient sessions
- Staff shortages across the board increase scheduling complexity
- Change in the underlying types of consultations increasing variability in types of appointments
- COVID testing, contact tracing, and vaccine distribution add responsibility to a full workload

… but as the aphorism goes, never waste a good crisis

- Opportunity to re-evaluate its core operating processes
  - Build on current efforts to simplify schedule and pilot shorter appointments, and rework EMR functionality
- Increased utilization of telehealth visitations
  - Patients and providers more willing
  - Medicaid policy adoption eases reimbursements
- Staff re-balancing due to turmoil can lead to more efficient human capital allocation

Designing a Scheduling Optimization Model

Model Setup

For each pre-visit day, visit type (in-person/telehealth), season, and day of week:

- schedule the number of patients, hours, (P) patients scheduled, and (S) patients waitlisted

![Scheduling Optimization Model Diagram]

Objective

Maximize the total visits achieved in one month (28 days)

Constraints

- Maximum visits per provider hour
- In-person/telehealth visit types not available for some scheduled patients
- Maximum in-person visits in each team per session
- Capacity through the main entrance
- Less demand for remote visits if a visit switch is disrupted by provider availability rate
- Boosts in providers’ weekly working hours and monthly target visits
- Total number of patient visits achieved cannot exceed
  - Total number of scheduled visits (including no-shows)
- Total number of scheduled and waitlisted patients who show up to visits

Sensitivity Analysis

How many more patient visits can we achieve if we…

- Add evening shifts besides morning / afternoon shifts? Add weekend shifts?
- Add waitlist to fill no-show visits instead of canceling?
- Improve no-show rates (by increasing call center resources to set up reminders and follow-up?)
- Change capacity (shorter visits, different phases of COVID, or realization of space?)
- Providers have more flexible availability and make less last-minute changes?

Achieving 7,500 Visits per Month

How many interventions (and to what degree) are needed to achieve 7,500 visits per month?

- A pilot of adding evening hours
- Increase provider availability and / or target to consolidate findings and develop high-impact, low-effort interventions first. These include adding evening and Saturday hours and implementing a waitlist to fill in no shows and late cancellations.

A pilot of adding evening hours would not only test for increased total visits, but also for decreased patient no shows and staff shortages due to additional schedule flexibility.

Impact vs. Effort for Improvement Opportunities

- Adding evening hours
- Add waitlist
- Add weekend shifts
- Reduce provider cancellations
- Reduce patient no shows
- Increase weekly yrs. per provider
- Increase max. visits per provider

High

Low

Effort

Impact

Final deliverables include initial data analyses, a current state model simulating the patient scheduling process at FHCW, sensitivity analyses outlining the impact of addressing individual constraints, and a prioritized list of improvement opportunities. Our team demonstrated that 7,500 visits per month is achievable in multiple ways through implementation of one or more improvements.