

Best Practices for Building a Multidisciplinary Fontan Clinic & Combined Heart-Liver Transplant Program

Disclosures:

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Background

Multidisciplinary care enables a comprehensive clinical approach providing better coordination of care, improved outcomes, and less expense to patients. The Heart Institute (HI) at Cincinnati Children's Hospital Medical Center (CCHMC) developed a multidisciplinary Fontan Clinic for Adult Congenital Heart Disease (ACHD) patients in mid-2018. This review assesses the success of the Fontan Clinic as well as the process of building a subsequent Combined Heart-Liver Transplant (CHLT) program to provide better outcomes for Fontan patients. Figure 1 shows the various specialties involved in the Fontan Clinic.

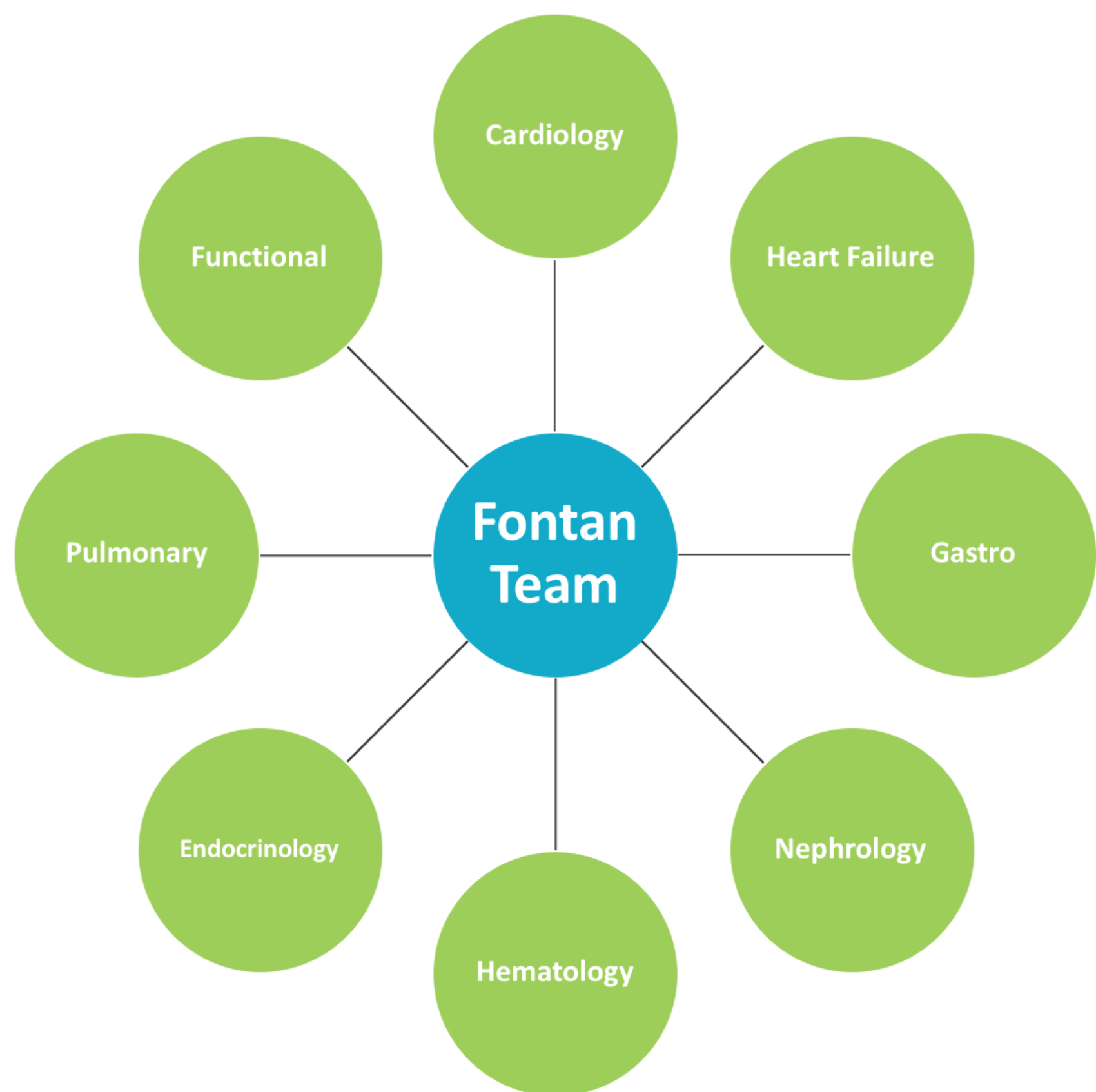


Figure 1: Medical Specialties Participating in the Multidisciplinary Fontan Clinic

Adolescent and adult survivors of the Fontan operation must coordinate much of their care across a complex health care system while bridging pediatric and adult specialists. We seek to change this paradigm through the formalization of an integrated Fontan Clinic. The model, summarized in Figure 2, was created in order to not only stand up the clinic but to ensure sustainability. A long-term approach was taken in order to ensure medical interventions could be considered, coupled with long term clinical care and procedures.

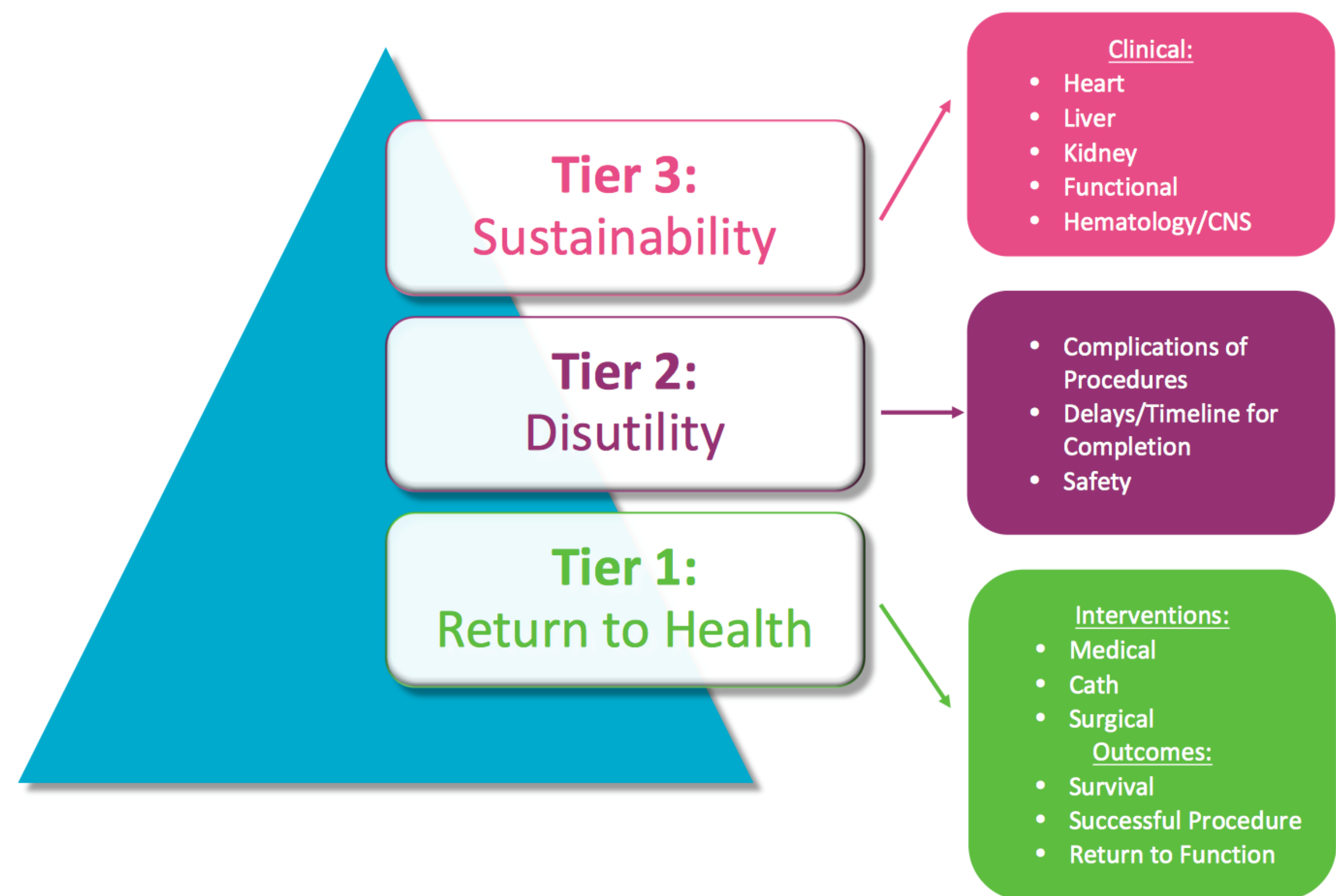


Figure 2: Clinic Build Model

Methods

Fontan patients are at a high risk of developing multi-organ dysfunction over time following the Norwood, Glenn, and Fontan procedures. The clinic uses standardized cardiac and non-cardiac surveillance testing to monitor organ function and create individualized care plans. This model established weekly physician collaboration huddles and a monthly steering committee meeting. A care coordinator was hired to help collect patient data for the pre-visit planning meeting. At these meetings the care team discusses each patient, reviews imaging, and determines an immediate care plan based on the individual needs of the patient with input from multiple specialties. A care model, illustrated in Figure 3, was designed to align clinical providers, business staff, and the patient and family. In order to connect these three stakeholders in the clinic, a care coordinator facilitates the conversations and communication through scheduled additional patient-family-provider team interactions.

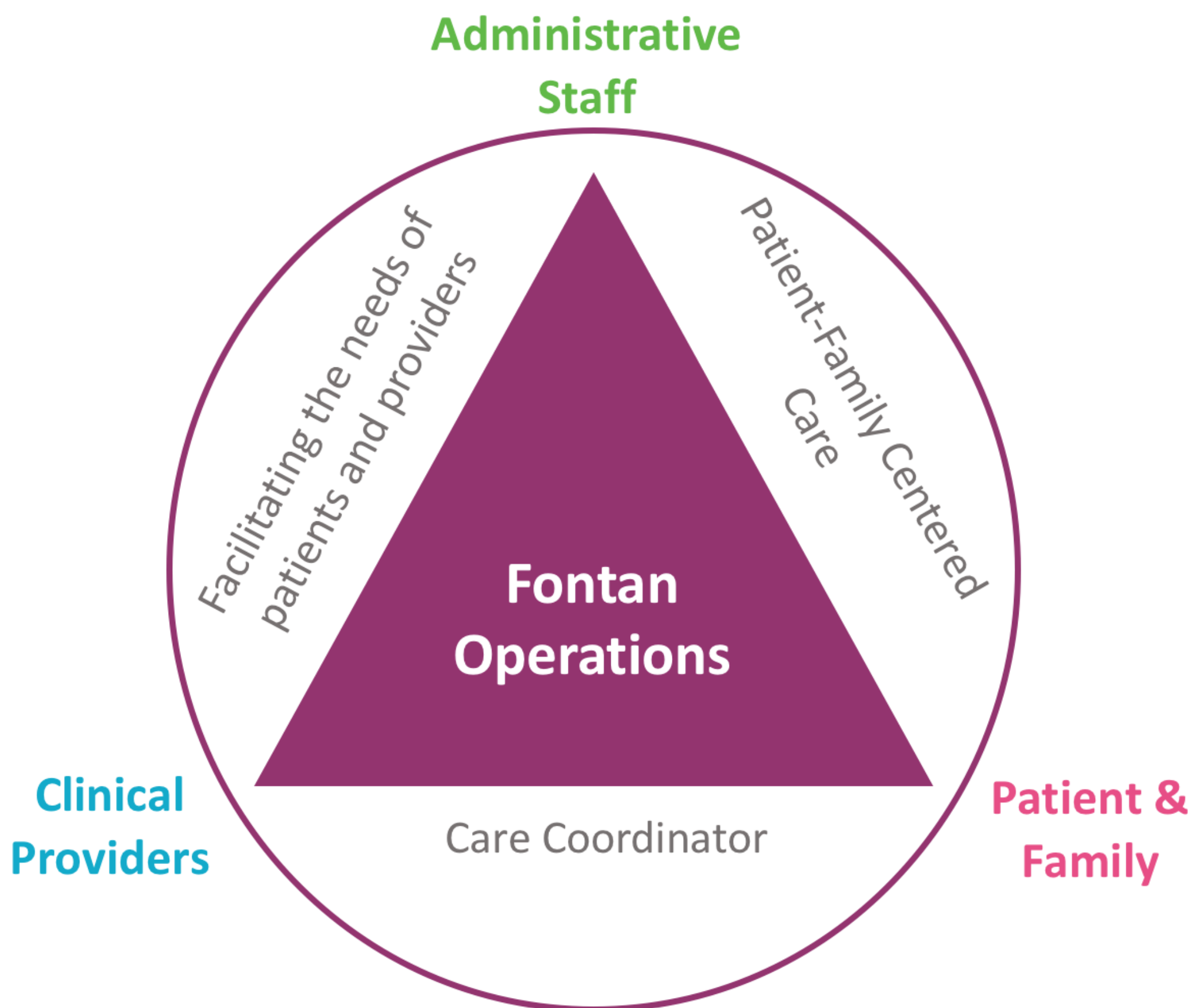


Figure 3: Operational Model for the Fontan Clinic

Advanced liver disease is common in the older patients with Fontan circulation. In select patients, including those with hepatocellular neoplasms, long-term survival may only be possible with a Combined Heart Liver Transplant (CHLT). CCHMC collaborated with the University of Cincinnati Medical Center (UCMC) to provide a care continuum for adult patients in need of CHLT and designed the first iteration of the program in eight months. The physicians from both organizations met to discuss the process and provide input to arrive at a plan for these complex patients.

The figure to the right indicates the organ systems and testing involved for patients seen in the Fontan Clinic. Each patient receives a personalized care plan giving them a comprehensive look at their overall health from their multidisciplinary visit.

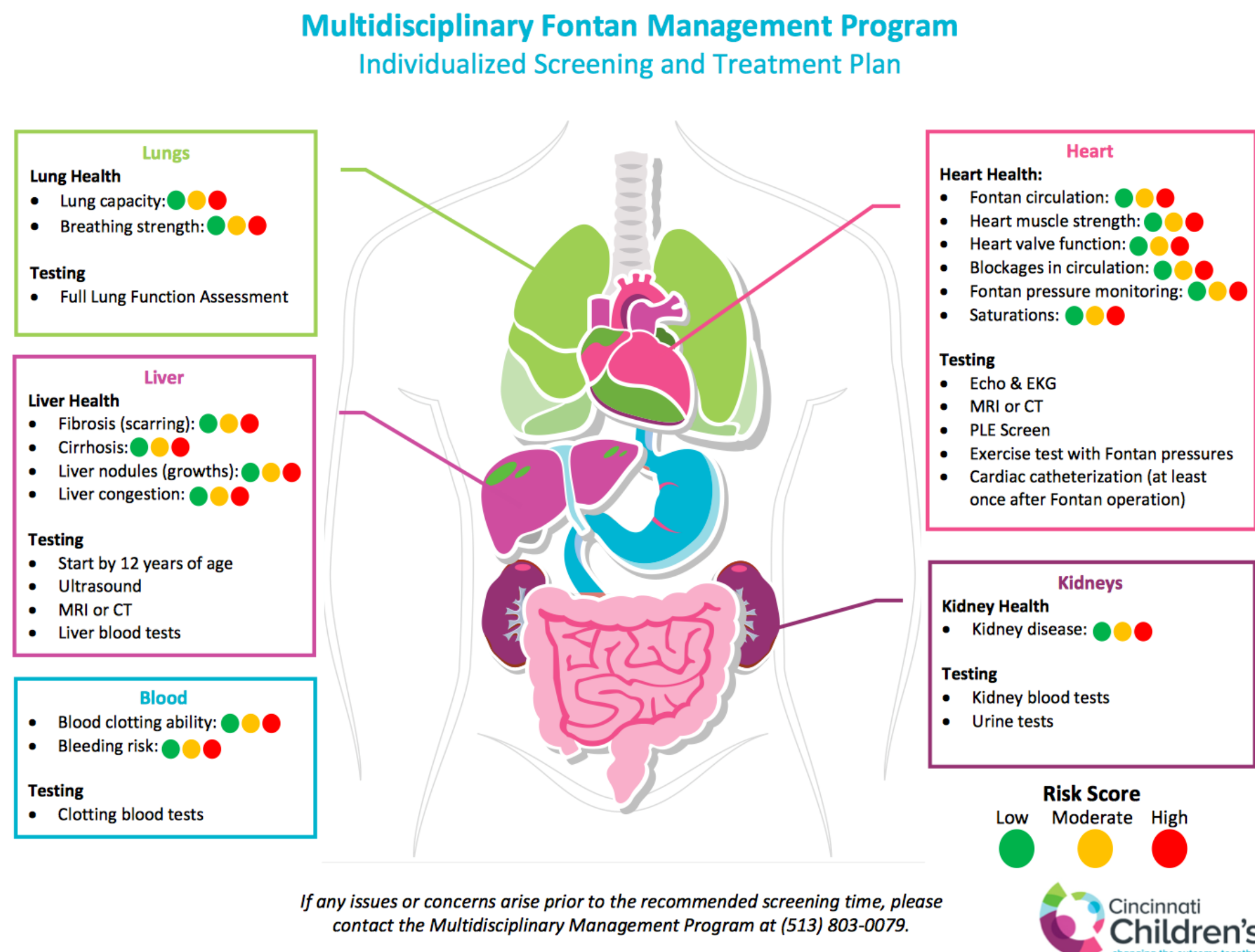


Figure 4: Patient Handout for Multi-specialty Care

Results

Since the start of the initiative (Figure 5), clinic visit volume has grown by over 165% (71 encounters in Year 1, 188 encounters in Year 3). Additional specialties have been added to allow for more personalized and comprehensive care for patients.

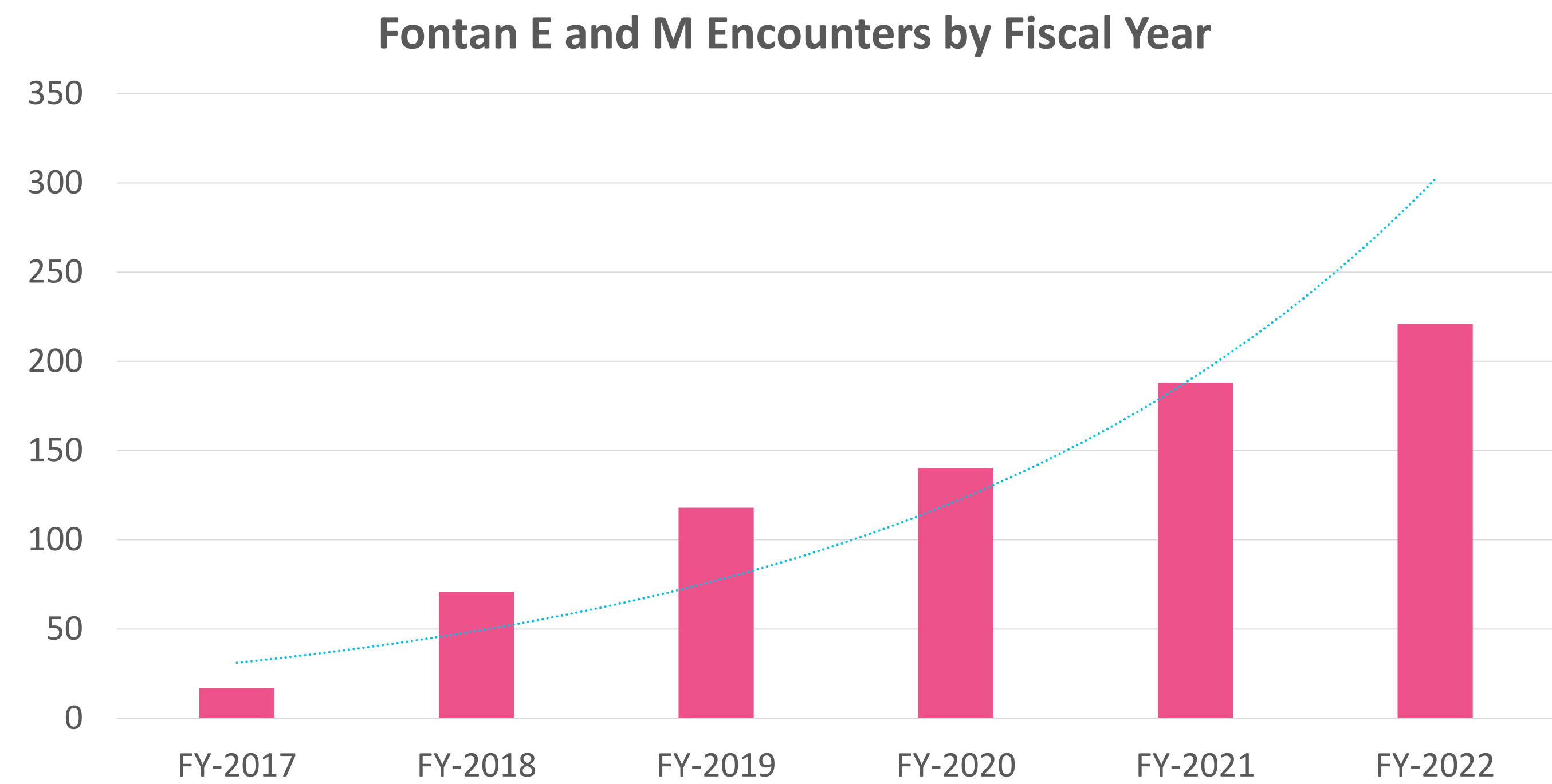


Figure 5: Volume by Fiscal Year

Cost reduction (Figure 6) was a large benefit for patients as they only pay one hospital facility charge for a combined visit as opposed to one for each specialty visit.

| | 1 Clinic Visit | 2 Clinic Visits | 3 Clinic Visits | 4 Clinic Visits |
|-------------|----------------|-----------------|-----------------|-----------------|
| 2 Providers | \$155 | \$310 | \$465 | \$620 |
| 3 Providers | \$310 | \$620 | \$930 | \$1,240 |
| 4 Providers | \$465 | \$930 | \$1,395 | \$1,860 |

Figure 6: Clinic Affordability: Charge Reduction

Four Fontan CHLT's have been performed since the start of the program. Three of these patients were followed by the Fontan Clinic and are alive >1 year post-transplant. Our team has worked closely with UCMC to ensure there are no gaps in care for our adult patients. We have a common care team that communicates closely when a patient is undergoing the CHLT to have a plan for post-operative care and follow up. Adult hepatologists and surgeons have been involved in both the Fontan clinic and CHLTs. A retainer was put in place between the two organizations in order to provide adult care within 30 minutes of communication to the other organization.

Conclusion

The Fontan Clinic and CHLT program have experienced initial success with great buy-in from the other specialties included in decision making process for treatment, follow-up care, and research. This approach reduced costs and redundant testing by meeting as a multidisciplinary team prior to seeing the patient in order to provide clear and concise care, with the multi-organ transplant program as the final option. The Fontan Clinic continues to monitor the needs of the patient population and modify/add other specialties to the clinic creating a personalized visit for each patient.