

Background:

The Multidisciplinary Team in the Transplant Program is a small group of diversely trained Medical Professionals with little redundancy in task or training.

- Improving the efficiency by which potential kidney recipients are evaluated and placed on the waiting list is of high priority for improving our financial performance and patient experience.
- Patients of the Solid Organ Transplant Program seek other care at DHMC which would also decrease with less referrals.
- Ultimately, low patient volume could impact our standing with UNOS and CMS.

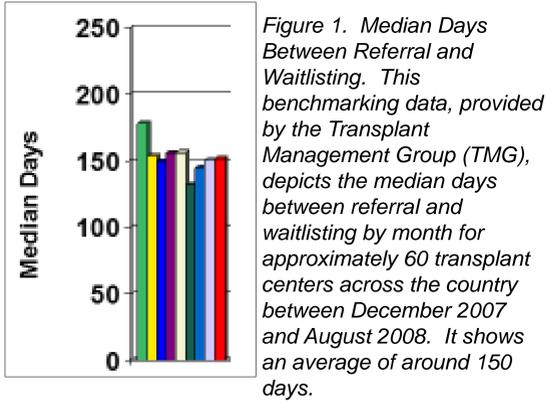


Figure 1. Median Days Between Referral and Waitlisting. This benchmarking data, provided by the Transplant Management Group (TMG), depicts the median days between referral and waitlisting by month for approximately 60 transplant centers across the country between December 2007 and August 2008. It shows an average of around 150 days.

Results:

During the project there was an increase in average number of days between referral and activation on the organ wait list while long established patients were finally activated. Since completion of the project, patients are waiting an average of 175 days to be activated, a 24% reduction and nearing the goal of 150 days.

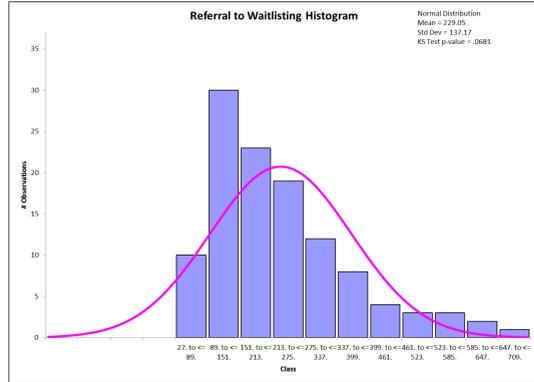


Figure 2. Average Days Between Referral and Waitlisting at Dartmouth Hitchcock. This histogram depicts days between referral and waitlisting for patients activated on the waitlist between November 2014 and November 2017. It shows an average of 229 days with a standard deviation of 137 days.

Figure 3. Average Days Between Referral and Waitlisting by month. This run chart depicts average days between referral and waitlisting by month, from 2016 to present. Before this improvement project there was an average wait of 229 days, during the project the average rose to 290 days, and post-project the average is around 175 days.

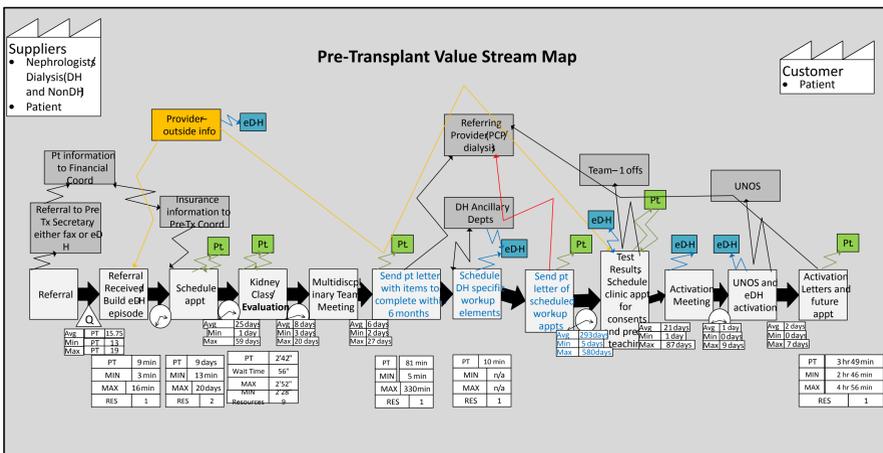
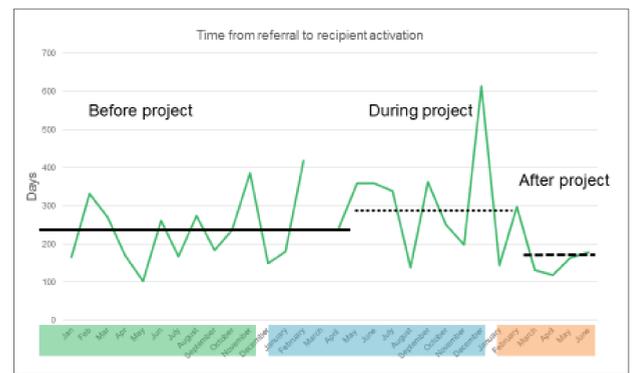


Figure 4. Pre-Transplant Value Stream Map. High-level process map for the pre-transplant workflow from receiving a patient's referral through activating them on the waitlist. Where data was available it represents the average, minimum, and maximum time spent in each process step.

Group	N=	Mean Days from Referral to Listing	Median	Standard Deviation
0-1 cancelled appointment	54 patients	272 days	224 days	164 days
2-3 cancelled appointments	14 patients	243 days	239 days	121 days
4+ cancelled appointments	3 patients	160 days	104 days	103 days

Figure 5. Long wait between referral and listing NOT due to number of cancelled appointments.

Process Improvement Method:

Lean Six Sigma tools, such as Value Stream Mapping and Fishbone Diagrams were used to help focus the team on identifying process problems and root causes. Then a review of available data was used in order to validate potential root causes. Many potential problems raised by the team were not able to be validated by the data, and this data review helped the team begin to view their work more objectively. The team began to understand that lack of transparency and unstandardized processes were responsible for the long wait for patients.

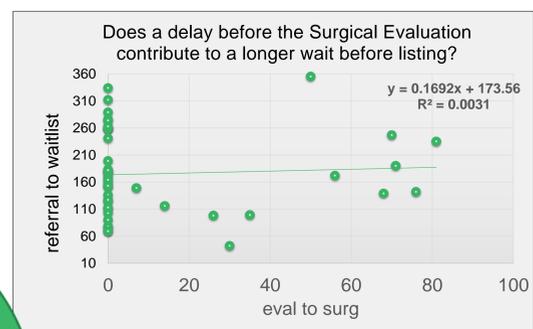


Figure 6. Up to 3 month wait before surgical evaluation does not contribute to a longer wait between referral and activation on the waitlist.

Successes:

- Increased team competence in data collection and analysis
- Prioritized work that would increase staff satisfaction
- Formalized and documented important components of pre-transplant work

Challenges:

- Team struggled identifying time to dedicate to project work
- Difficulty remaining Patient-Focused with many team-dynamic issues discussed
- CHANGE!

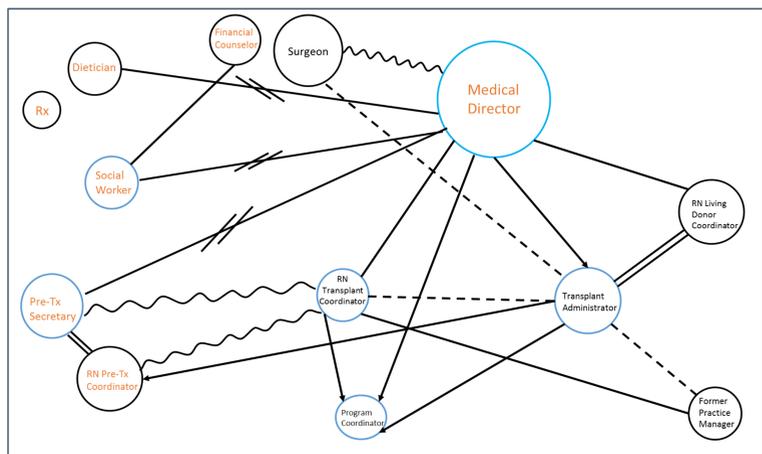


Figure 7. Influence map depicting the relationships between members of the Multidisciplinary team. Size of circle represents amount of influence and arrow type and directionality shows direction of influence.

Effective Meeting Rules	Efficient Meeting Rules	Professional Meeting Rules
Agenda: sent early, specifies objective(s) and moderator and minute taker assignments	Meetings need to start and end on time, attendees may leave at scheduled end time	Be respectful of your colleagues and in your conversations about patients
One person talks at a time	Participants must come to the meeting prepared	Challenge the idea or process – Not the person
Express ideas and opinions in the meeting, not after the meeting	No backtracking for late participants	Regard each person's input as important – Everyone gets their say, not necessarily their way
Follow through with "parking lot" items	No gossiping or side conversations	Silence cell phones
Person displaying on screen needs to turn off email notifications	Stay on topic	Attendees only use their computers when they are needed – Closed otherwise
	Accept when a topic has been closed	

Figure 8. New meeting ground rules for Solid Organ Transplant Program.

Figure 9. New Visual Management Board for Pre-Transplant process.

Moving Forward:

The team is enforcing Ground Rules for meetings that were developed during the project to increase meeting effectiveness. The team is also maintaining the Visual Management Board that was implemented to improve communication, transparency, and tracking of patients through the pre-transplant workflow.