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## Critical Timing- Liver Transplantation

### THE CASE

Screening patients for a liver transplant at a major US Health System was a complex and tangled process that could last for months and require repeat screening tests, as findings on initial tests became too dated to be relied upon. For example, a patient might be examined by a Hepatologist on a given day, but would have to return because an Anesthesiologist was not available. Upon returning, he or she might be met by an entirely new and unfamiliar group of physicians. The process contributed to a disjointed flow of diagnostic procedures, complex and often duplicated records, and uncertain, confused, and anxious patients. Being placed on the transplant list is of utmost importance to the patient. The average wait time at our client hospital between referral and acceptance to

transplant list for a US based non-chemically dependent patient was 98 days. It was nearly twice as long, 195 days, for chemically dependent patients. Much too long a wait for patients whose very lives depended on the placement process.

### OUTCOME SUMMARY

Within 12 months of initiating the program, wait times for non-chemically dependent patients fell from 98 days to 40 days or fewer.

### THE CHALLENGE

The most critical goal was established. The wait time for non-chemically dependent patients to be screened and listed for transplant was to be halved.

## TRANSPLANT AND TIMING DILEMMAS

The liver is the second largest organ in your body and is located under your rib cage on the right side. It weighs about three pounds and is shaped like a football that is flat on one side.

The liver performs many jobs in your body. It processes what you eat and drink into energy and nutrients your body can use. The liver also removes harmful substances from your blood.

A liver transplant is the process of replacing a sick liver with a donated, healthy liver. Liver transplants require that the blood type and body size of the donor match the person receiving the transplant. Currently more than 6,000 liver transplants are performed each year in the United States. Liver transplant surgery usually takes between four and twelve hours. Most patients stay in the hospital for up to three weeks after surgery

Livers are donated in the spirit of altruism and are a limited national resource; thus, it is only right that donor livers be allocated in a fair manner.

Under the current environment of liver transplantation, there are several factors to be considered in the timing and acceptance into the liver transplantation program. These include expected patient survival with and without liver transplantation, patient's

morbidity and quality of life before and after liver transplantation and overall resource utilization.

Statistical models have been developed for patients with chronic liver disease. By applying these models in patients being considered for liver transplantation, a window of optimal timing of liver transplantation may be defined in such way that the survival gain is maximized and perioperative mortality minimized.

Likewise, a number of pre-transplant morbidity indicators such as Child-Pugh score, UNOS status, and renal insufficiency have been found to have a profound influence on post-transplant morbidity, thus resource utilization.

An increasing number of investigators have measured and documented a dramatic improvement in the quality of life of patients before and after liver transplantation. As the waiting time and uncertainty of the outcome of liver transplantation increase, consideration of these factors may be useful for physicians evaluating transplant candidates to make best-informed decisions in the selection of candidates and timing for liver transplantation.<sup>1</sup>

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<sup>1</sup> Kim WR, Dickson er, Mayo Medical School and Division of Gastroenterology and Hepatology, Mayo Clinic and Foundation, Rochester, MN, US

## THE TEAM

The team consisted of specialists from every step of the screening process:

- Transplant surgeons
- Hepatologists
- Hepatologist medical director
- An Anesthesiologist
- Nurses
- Transport personnel
- Transplant secretaries
- Schedulers
- Coordinators
- A social worker
- Administrators
- The surgical director

The mere assembly of these specialists in the same room constituted a significant advance, because many of the team members did not realize how extreme the extended wait times had become, as that performance data was not shared department-wide. Nor were they aware of how badly a delay in one step of the process could affect the execution of the next. The first day of conversation and discussion was an eye-opener for many.

## SOLUTIONS

Working with a team from Orion Advisory, the client team employed the FasTrac™ methodology of collaborative problem solving. Utilizing the valuable insights of the people who most likely understand the problem in minute detail, FasTrac™ is a collaborative approach to problem-solving. A sponsor and team define a problem and its scope. Then, through a process of basic collaborative analysis, ideas for improvement are determined. The team is then responsible for completing the implementation of the solutions. The Liver Transplant Team identified the multiple solutions to drive down wait time for patients to be placed on the transplant list. These three were most notable:

### Solution 1

Screening days were shifted to earlier in the week. This allowed any issues that might have been discovered, clinical or otherwise, to be addressed in a timely manner. This proposal met some resistance initially, but the concerns were resolved when initial data and records of patient experiences showed substantial improvement.

### Solution 2

An educational “patient packet” of materials was designed that explained every step of the process from screening to post-transplant therapies. This packet reduced patient anxiety by offering them a comprehensive education of the process that allowed the patients to anticipate and prepare for events as they appeared on the horizon. Patients understood the care they were receiving and the care they would be receiving, and they accepted a significant degree of responsibility for their health.

### Solution 3

The process was changed so the patient was “tied to the physician”. The physician who ordered the tests now read the results, and made the final recommendation to place or not to place the patient on the transplant list. One physician involved in the process improvements noted: “... so if I am ordering the tests, I am going to be the one to use these tests, and ultimately make the recommendation... there is such a whole difference in the process.....if we have a problem with the patient, if there is a question, [we know] who should be contacted, rather than just trying to shotgun the question to everybody and see who is going to respond.”

## ORION ADVISORY, LLC

Orion Advisory, LLC has extensive experience working on cross-departmental processes to enable great transformation, while also solving immediate problems. We specialize in partnering with healthcare administrative and clinical leaders and their teams to create local ownership and accountability that empowers them to get things done. We equip our clients with the tools and capability to deliver on their goals and align the culture of the organization around common purpose.

## RESULTS

When the clinical screening appointments were concentrated on Mondays and Tuesdays, cancellations almost disappeared. The schedule became full and stayed full. The new cooperation and coordination between Hepatologists and Anesthesiologists had a dramatic effect on the time that elapsed between screening and listing. Within 12 months of initiating the program, wait times for non-chemically dependent patients fell from 98 days to 40 days or fewer.

Screening and listing became a seamless process that led to increases in patient confidence, more positive attitudes, a greater sense of personal responsibility, and less anxiety. There was a steep decline in the number of calls from patients wanting to know about their status, treatment procedures, and responses to therapeutics. These improvements were attributed to the comprehensiveness of the material developed for the patient packet.

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## TEAM IMPACT

*"I think you know, the true strength of this project was the changes that were put into effect were based on recommendations of the people who were really the experts in the process. I wish we could do this across the board with so many more changes or decisions we make. Because rather than somebody putting this out there as top down and say we need to change the way we are doing things, we have our people making recommendations that they know will have a real impact on the goal."*

...Physician Sponsor

*"FasTrac provided the framework for drawing all this out and making it happen in a logical way."*

...Team Member

*"I don't think we knew all of the reasons for the delays, especially from an administrative side. You guys got the answer from the clinical side. You each knew your own piece and why it was taking so long, but I don't think the people in the last phase [of evaluation] knew why the first phase [of evaluation] was so delayed. That was pretty enlightening."*

...Manager, Sponsor

*"We eliminated a lot of redundancy. The process on our end [Anesthesiology] of evaluating these patients was such a waste of time and resources because one physician would see the patient, and after two months another physician on the schedule would have to essentially start over to relearn the patient and repeat the same tests. There was no consistent system of distributing our findings or recommendations and opinions. I think it is by far better now, just looking from my own perspective."*

...Anesthesiologist