

# The Road to Transformation: Ochsner Liver Transplant Program



Ari J Cohen, M.D., FRSCS, FACS  
Head of Transplant Surgery  
Liver Transplant Surgeon  
Surgical Director, Kidney Transplant Program  
Director of Transplant Research  
Ochsner Clinic  
Associate Professor of Surgery, University of Queensland

New Orleans, Louisiana, USA

# Disclosures and Confessions

- None
- This is not a scientific talk

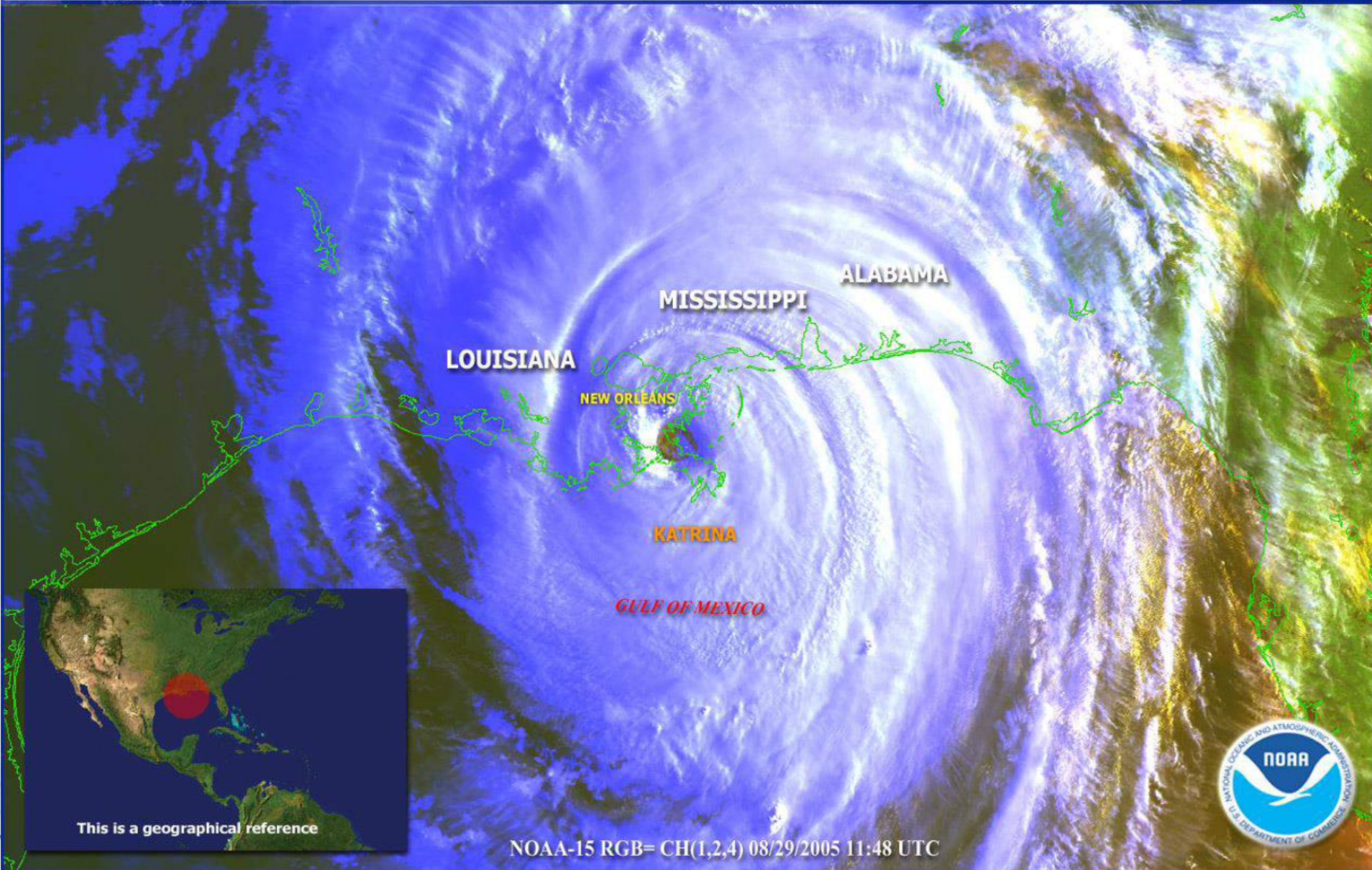
# Today's Agenda

- Starting Point
- Current Situation
- Journey
- Utilization Drivers
- Local Housekeeping
- Liver Fracking Explanation



Hurricane KATRINA has hit land and is moving north at 15mph. It has max sustained winds of 143mph and gust of 165mph.

Credit: NOAA



This is a geographical reference

NOAA-15 RGB= CH(1,2,4) 08/29/2005 11:48 UTC







Story Begins: August 2005  
*Hurricane Katrina*

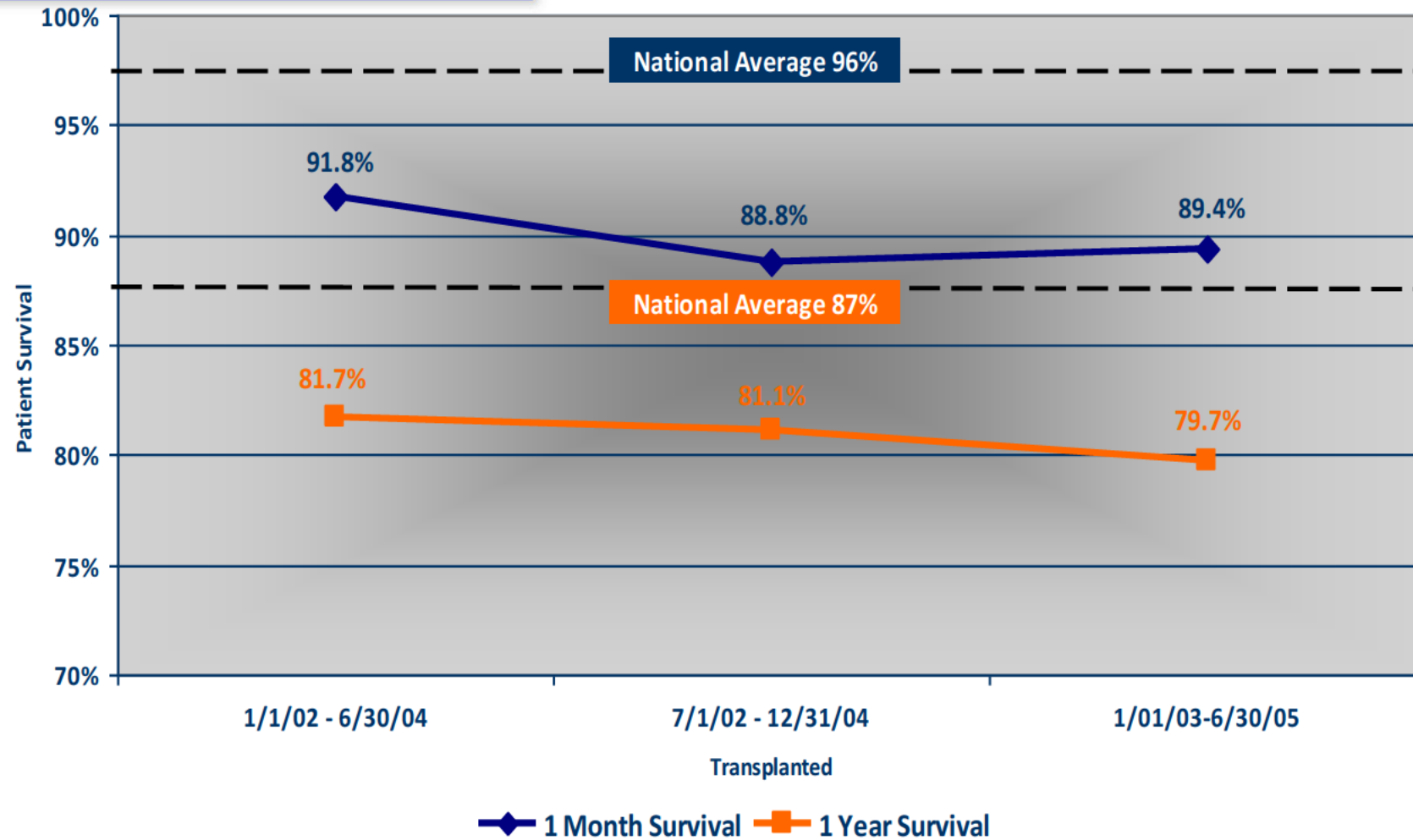
# Where We Started

- Week after Katrina: UNOS and MPSC flagged our liver program for poor outcomes
- Both 1-yr patient/graft survival rates significantly worse than expected
- Performing 95 liver tx/year



# Our Problem

ADULT Single Organ Liver Transplant  
Patient Survival Published by SRTR  
January 1, 2002 - June 30, 2005





# Recovery/Survival



# Ideal Transplant Program

**Break Down Silos Accountability/Transparency**



**Structural Change**

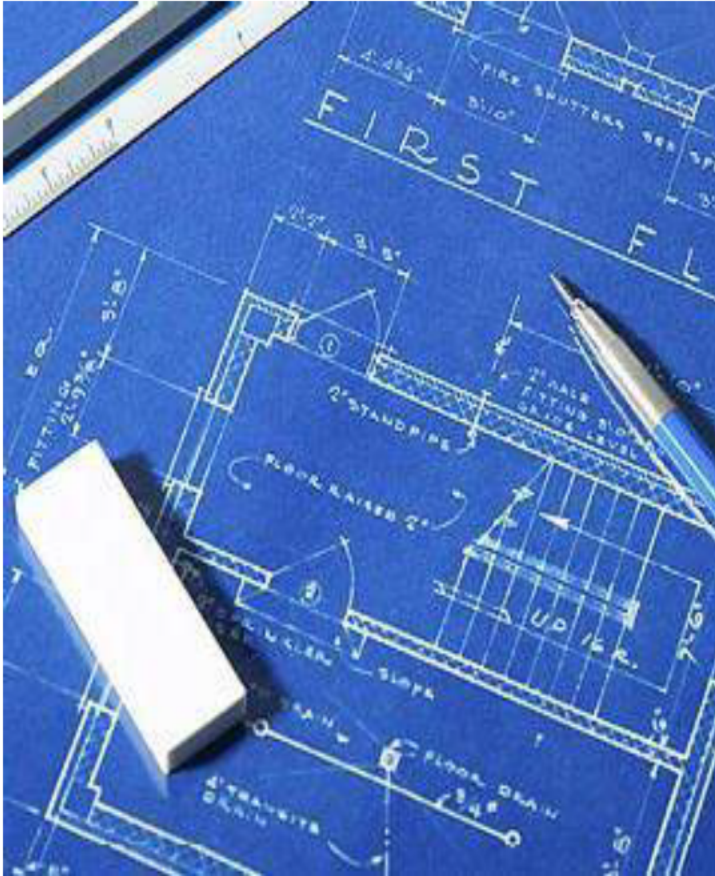


**Metrics-Driven**





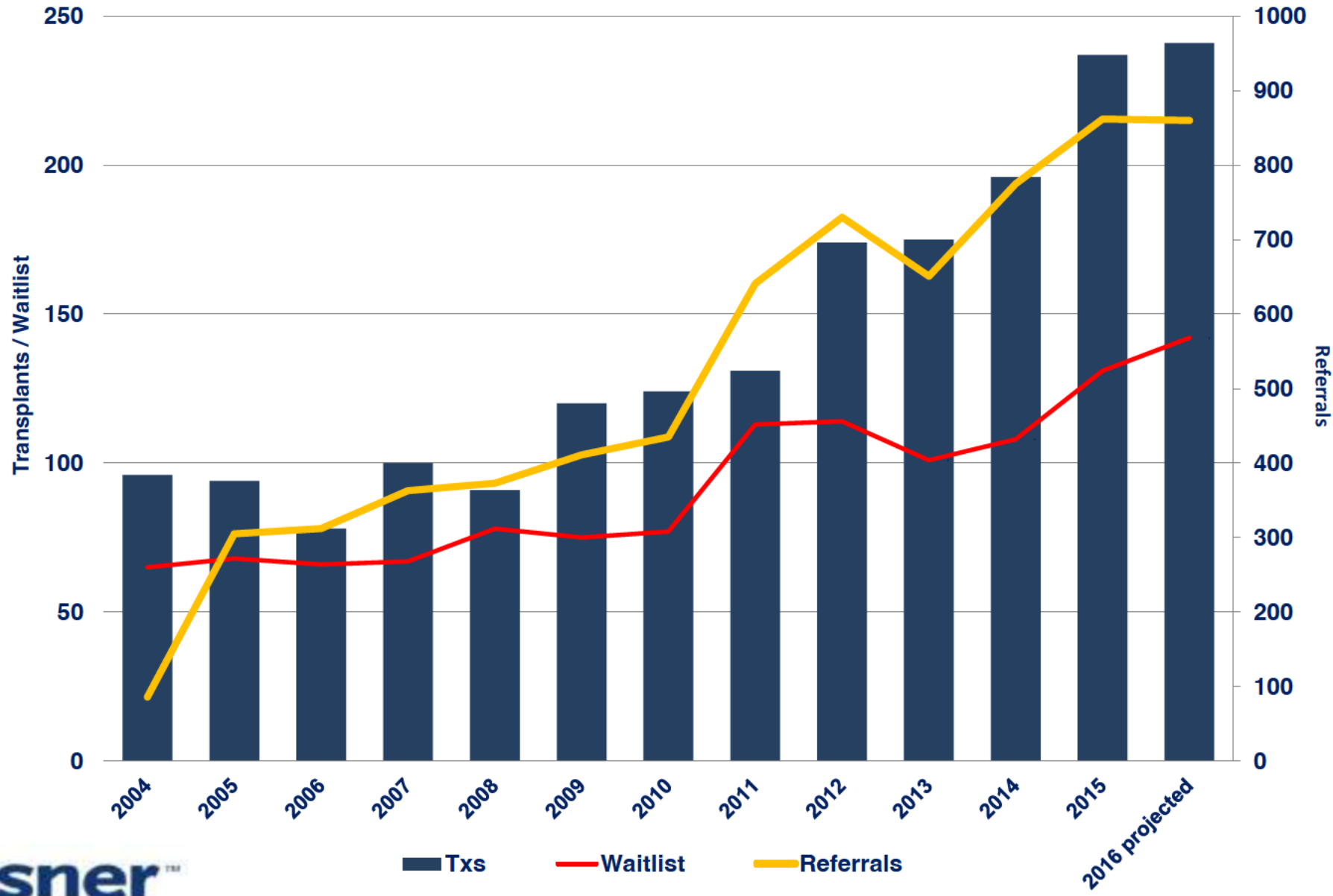
# Blueprint



- Patient-centered care
- Multi-disciplinary team
- Strong leadership
- Group decision-making
- Transparency
- Protocol-driven care
- Metrics-driven
- Quality-focused
- Collaborative



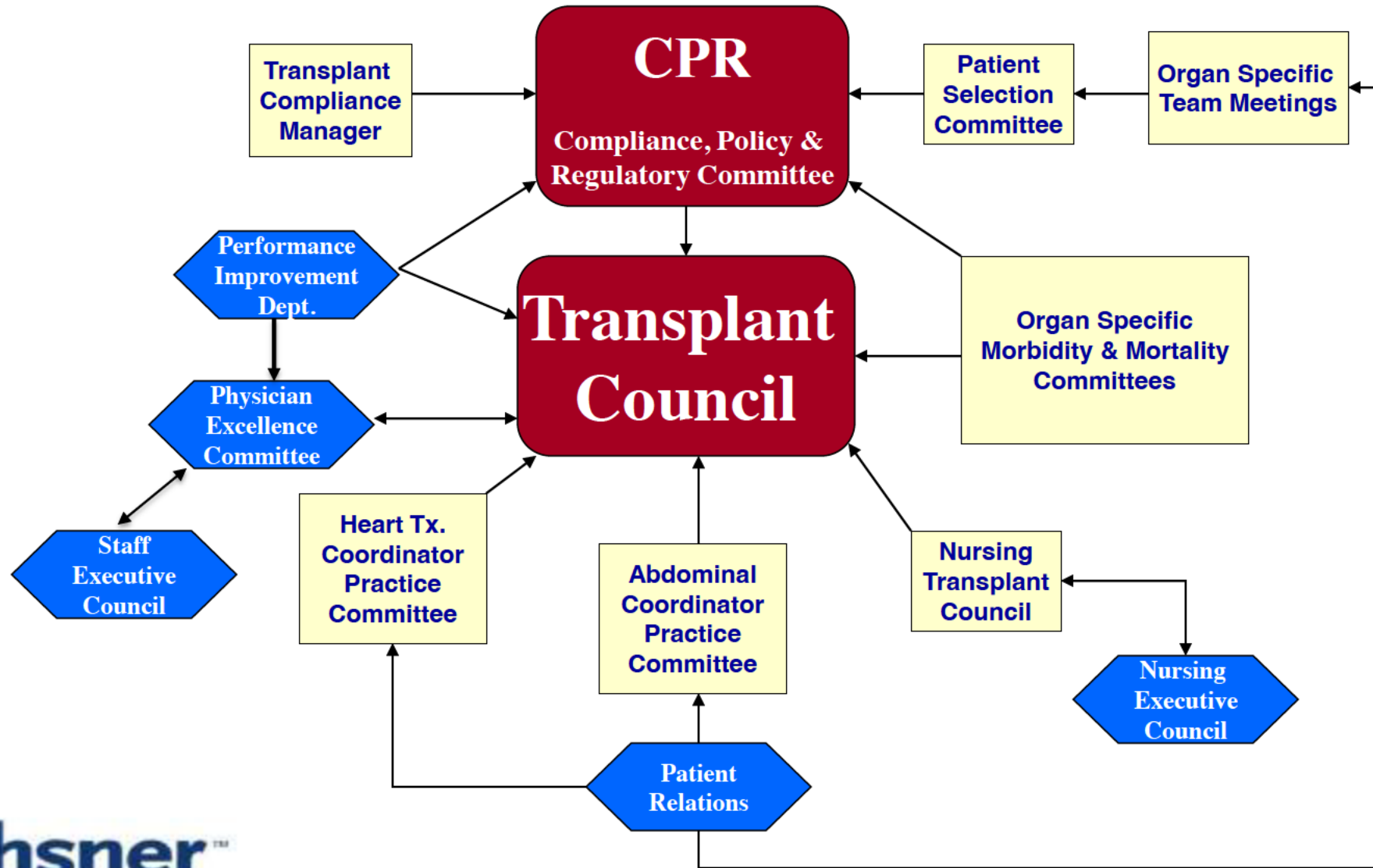
# Liver Transplant Activity 2004 - 2016



# Top 20 Liver Transplant Centers by Volume

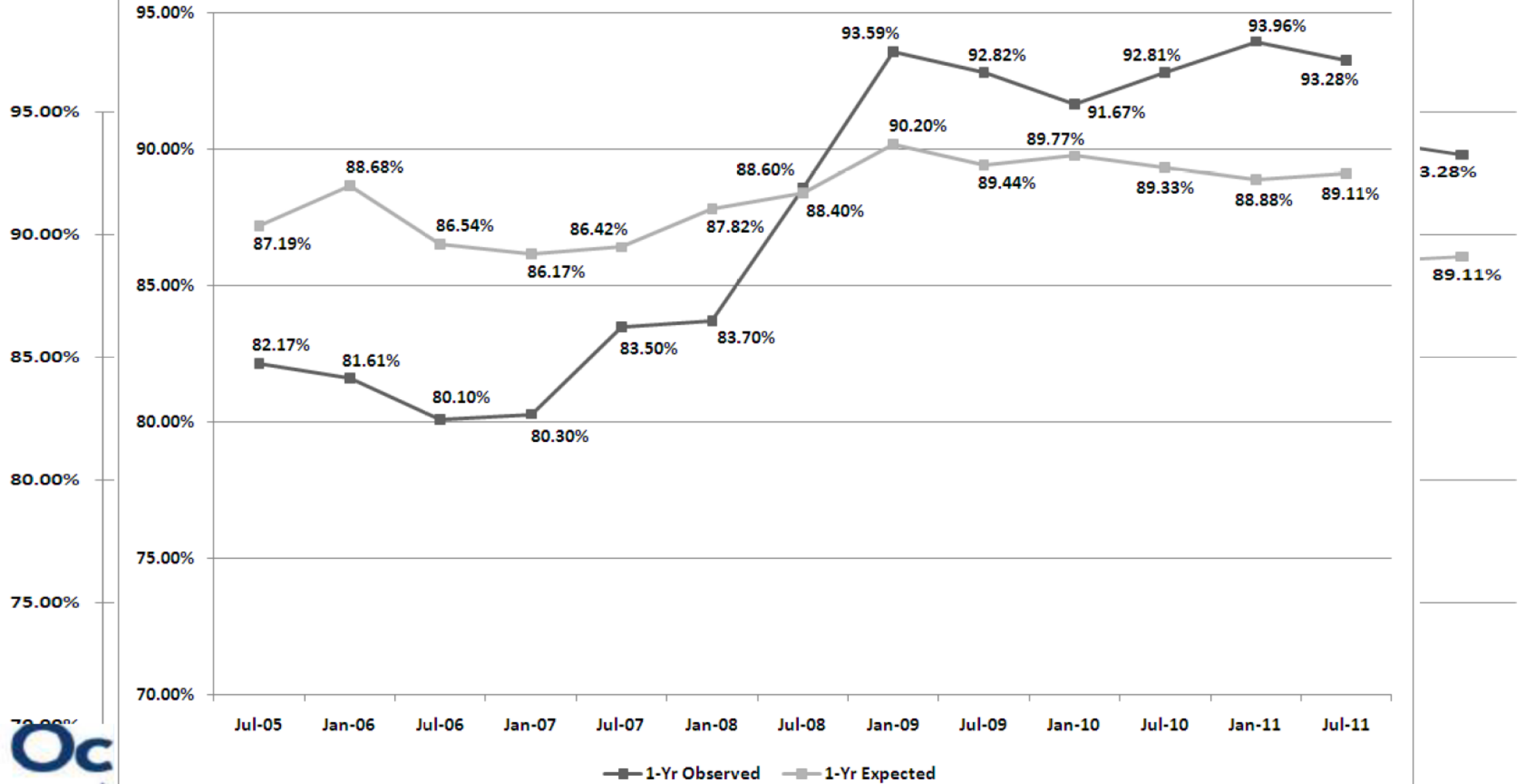
2014 Volume Rank	Liver Transplants	2014 Tx Volume	2013 Tx Volume	2012 Tx Volume	2015 Tx Volume	1-yr patient survival
1	LAOF-TX1 Ochsner Foundation Hospital	196	175	174	237	Statistically Higher
2	CAUC-TX1 UCLA Medical Center	168	175	169	154	As Expected
3	FLSL-TX1 Mayo Clinic Florida	157	146	165	150	As Expected
3	CASF-TX1 Univ of CA San Francisco Med Ctr	157	146	139	167	As Expected
4	GAEM-TX1 Emory University Hospital	154	137	111	141	As Expected
5	TNVU-TX1 Vanderbilt Univ Med Ctr	152	119	98	133	As Expected
6	NYCP-TX1 New York-Presbyterian/Columbia	142	110	123	115	As Expected
7	INIM-TX1 Indiana University Health	141	114	133	145	As Expected
8	OHCC-TX1 Cleveland Clinic Foundation	132	128	143	129	As Expected
9	FLJM-TX1 Jackson Memorial Hospital	122	109	115	126	As Expected
10	PAUP-TX1 The Hosp of the Univ of PA	117	137	125	141	As Expected
10	TNMH-TX1 Methodist University Hospital	115	115	117	116	As Expected
11	MDUM-TX1 Univ of Maryland Med System	115	90	86	147	As Expected
12	ILNM-TX1 Northwestern Memorial Hospital	108	113	109	85	As Expected
13	NYMS-TX1 Mount Sinai Med Center	107	93	108	117	As Expected
14	KSUK-TX1 University of Kansas Hospital	106	114	77	87	Statistically Higher
15	DCGU-TX1 Georgetown Univ Med Ctr	102	91	116	81	As Expected
16	CAUH-TX1 Keck Hospital of USC	101	80	84	125	Statistically Higher
17	ALUA-TX1 Univ of Alabama Hospital	98	95	110	115	As Expected
17	MNMC-TX1 Rochester Methodist Hosp- Mayo Clinic	98	102	95	110	As Expected
18	NEUN-TX1 The Nebraska Medical Center	94	111	96	96	As Expected
19	MOBH-TX1 Barnes-Jewish Hospital	93	99	92	98	As Expected
20	TXTX-TX1 Baylor University Medical Center	91	98	88	118	As Expected

# Quality Assurance Performance Improvement





# ADULT Liver Transplant 1-Year Patient Survival Observed vs Expected



# Liver Transplant Expected 1-Year Outcomes

## 6-Month Cohorts

LIVER Statistics as of 4/10/12	7/1/07 - 12/31/07	1/1/08 - 6/30/08	7/1/08 - 12/31/08	1/1/09 - 6/30/09	7/1/09 - 12/31/09	1/1/10 - 6/30/10	7/1/10 - 12/31/10	1/1/11 - 6/30/11	7/1/11 - 12/31/11	1/1/12 - 6/30/12	
n=	43	38	35	50	57	53	51	42	58	40	
1-Year Observed Survival	90.70%	89.47%	97.14%	96.00%	94.74%	94.34%	86.27%	92.86%	98.28%	100.00%	
1-Year Expected Survival	91.44%	88.48%	92.30%	88.20%	91.49%	90.32%	89.57%	90.69%	89.49%	90.77%	
# Observed Deaths	4.00	5.00	1.00	2.00	3.00	3.00	7.00	3.00	1.00	-	
# Expected Deaths	3.76	3.91	2.84	6.37	5.09	5.01	5.85	4.00	6.47	3.91	
Rate Variance Test (Observed Rate - Expected Rate)											
1	-0.74%	0.99%	4.84%	7.80%	3.25%	4.02%	-3.30%	2.17%	8.79%	9.23%	
If # 1 above <0%, use following thresholds to determine compliance*:											
2	one-sided p value	0.500	0.355	0.224	0.051	0.253	0.264	0.370	0.433	0.012	0.020
3	observed deaths / expected deaths	1.06	1.28	0.35	0.31	0.59	0.60	1.20	0.75	0.15	-
4	observed deaths - expected deaths	0.24	1.09	(1.84)	(4.37)	(2.09)	(2.01)	1.15	(1.00)	(5.47)	(3.91)
	Compliant?	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes

All three thresholds must be crossed over for non compliance when observed survival is less than expected survival.

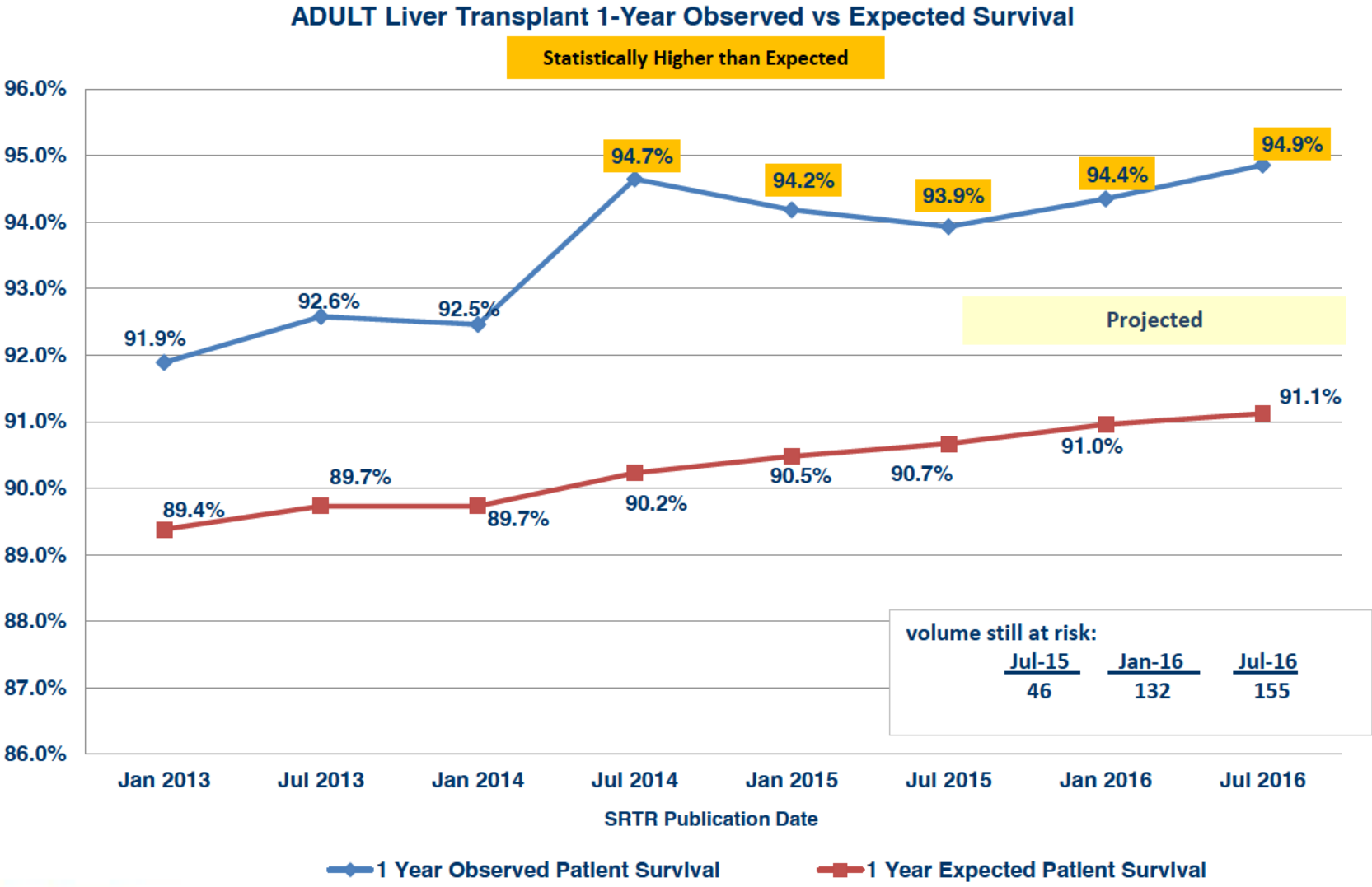
Projections

**Thresholds:**

- one-sided p value < .05
- observed / expected > 1.5
- observed - expected > 3.0



# Outcomes

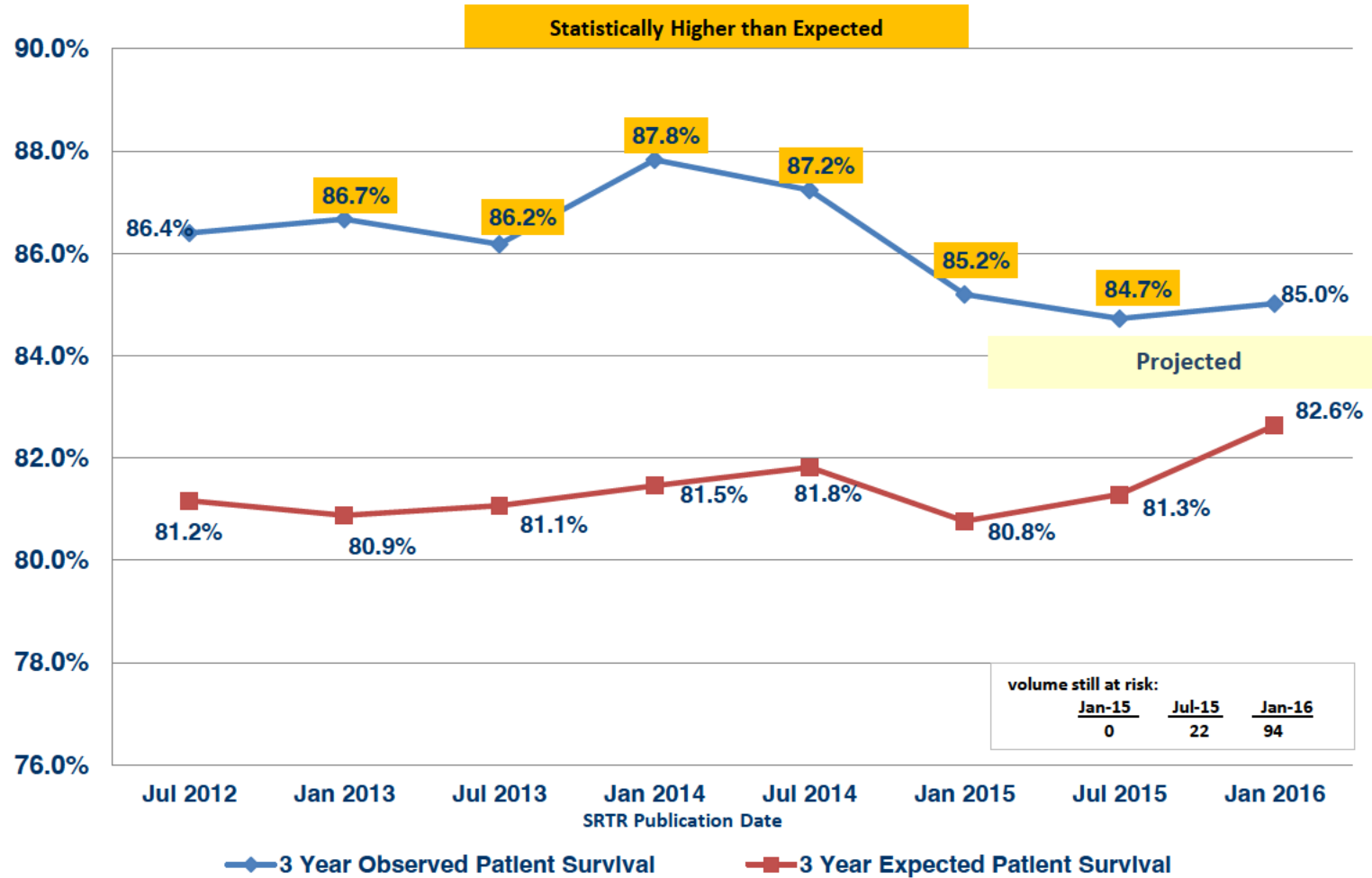


Source:  
 SRTR Jan 2013 – Jan 2015  
 Projections Jul 2015 – Jul 2016

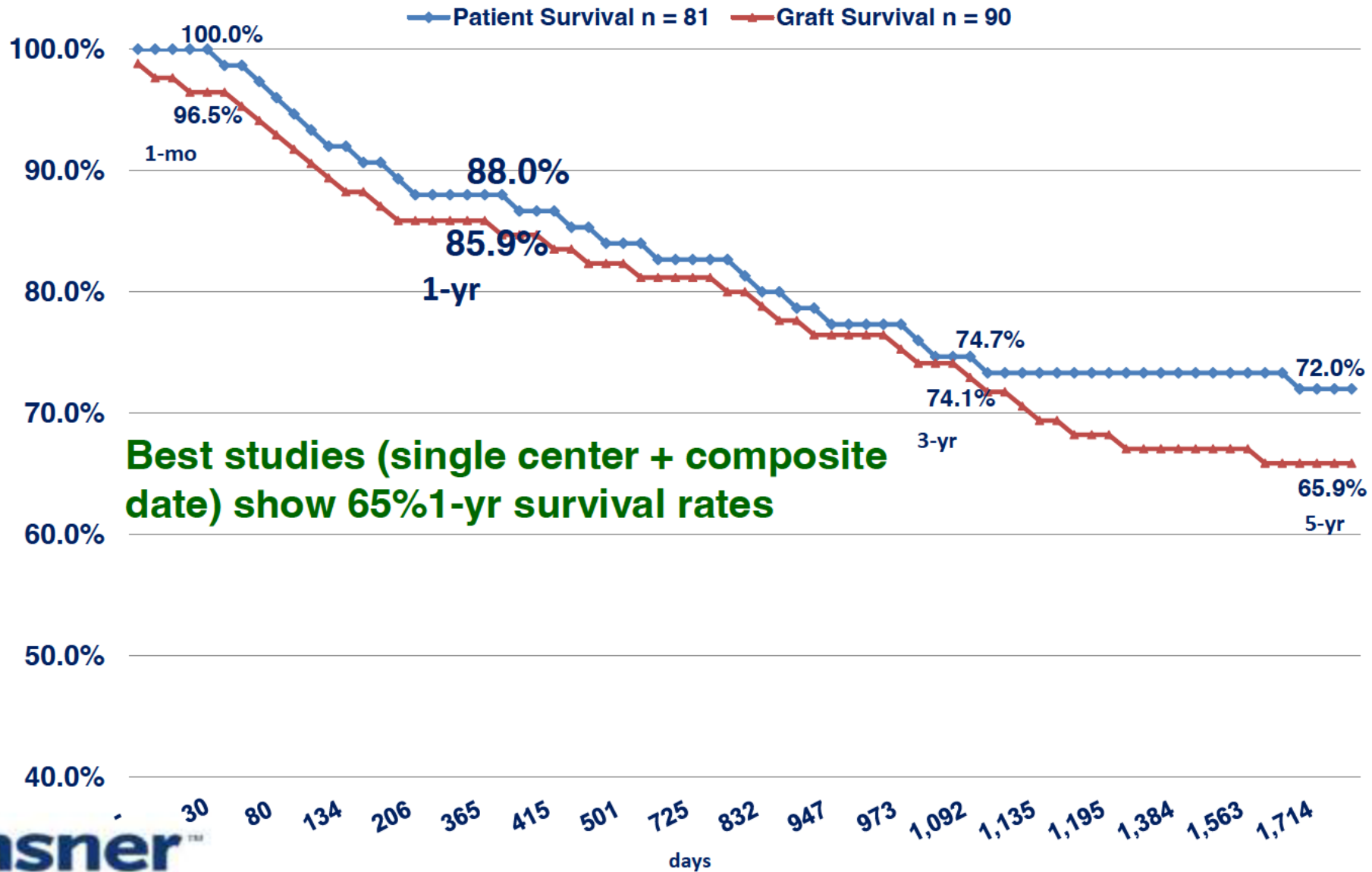


# Outcomes

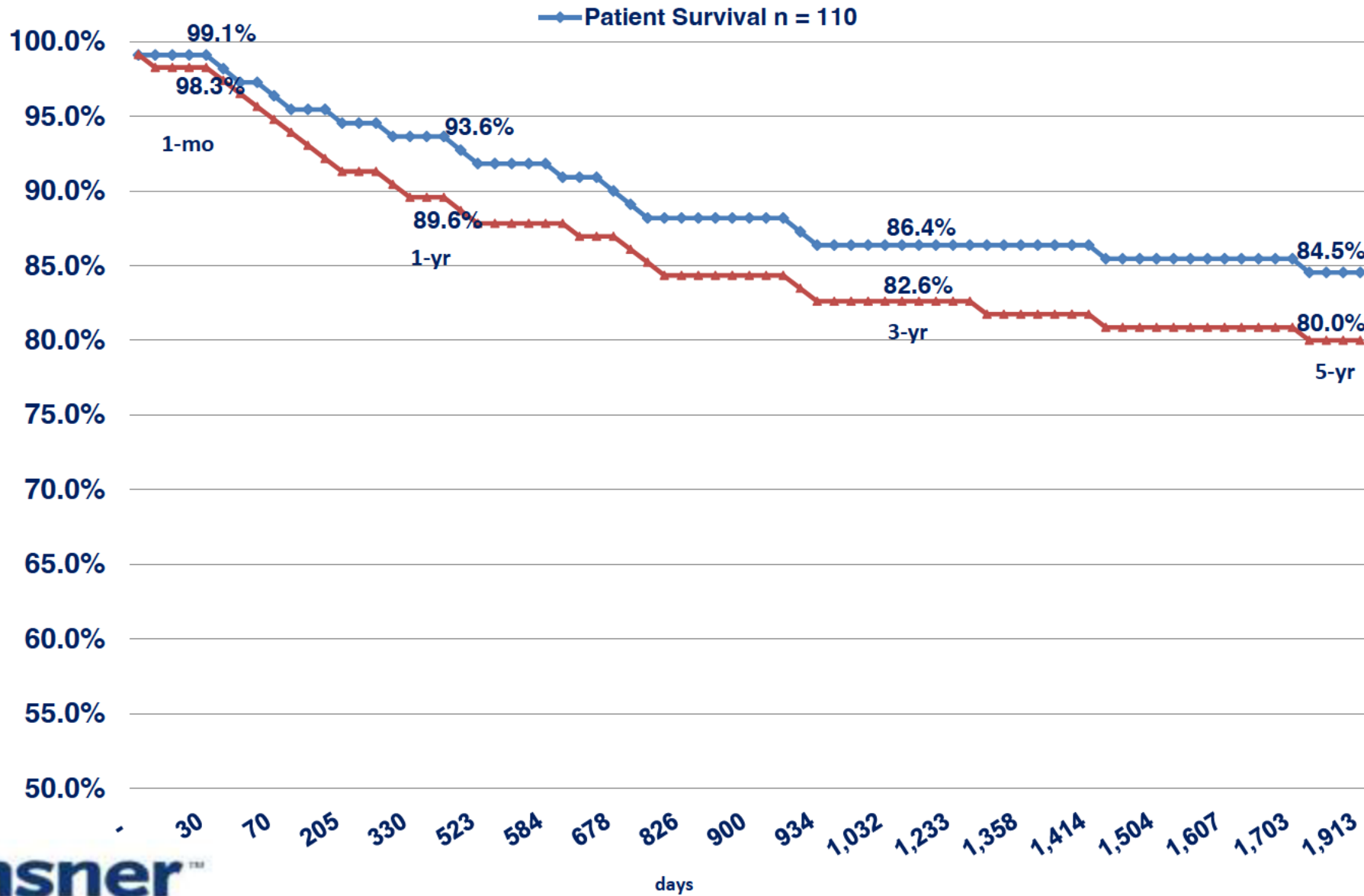
## ADULT Liver Transplant 3-Year Observed vs Expected Survival



## Livers Retransplanted > 90 Days 2005-2015 Patient & Graft Survival

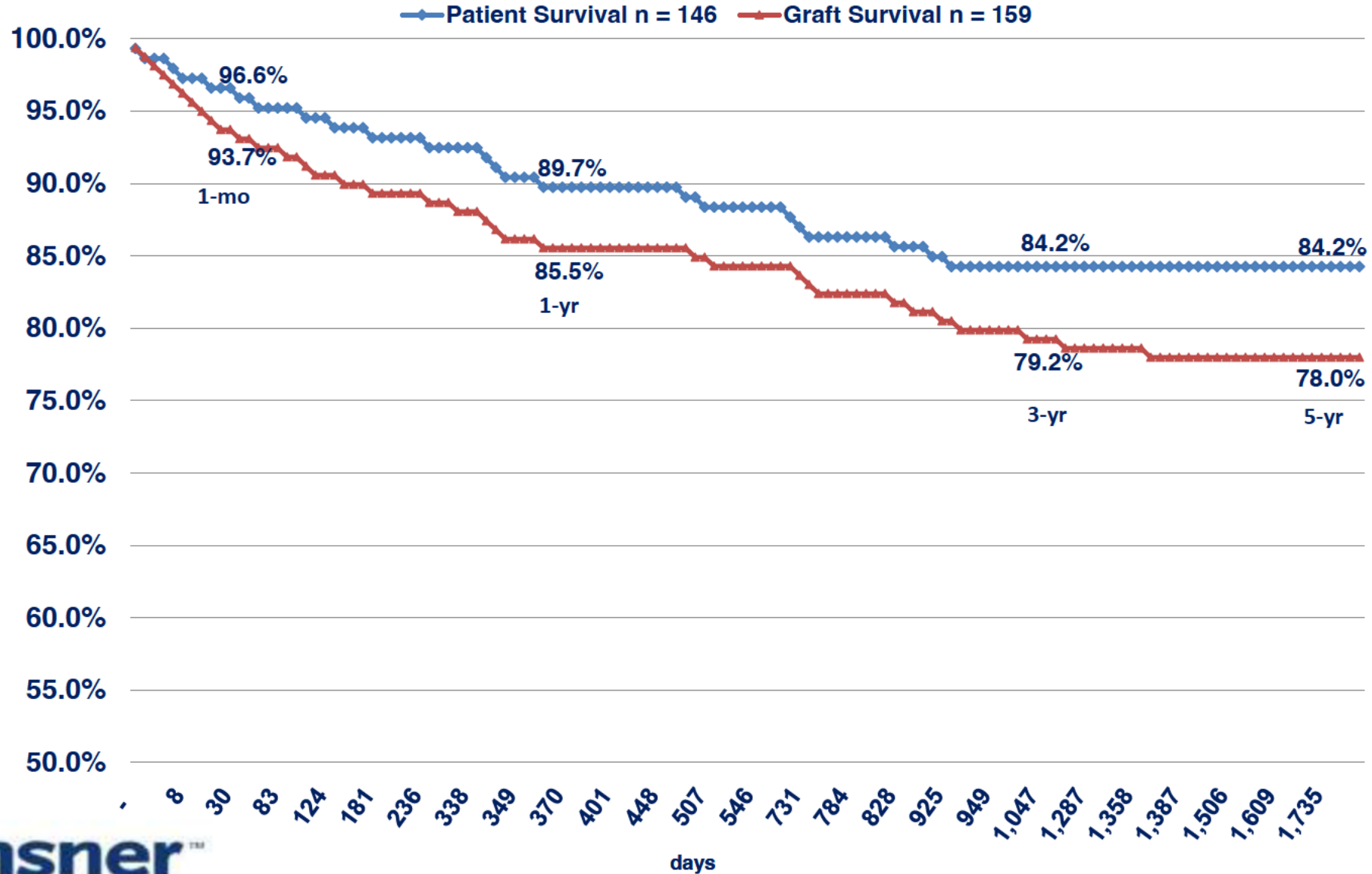


## Liver Transplant in Patients with BMI $\geq 40$ 2005 - 2015 Patient & Graft Survival





## Liver Transplants with Portal Vein Thrombosis 2005 - 2015 Patient & Graft Survival



# Why Does This Matter?

Table 5

Percent Transplanted for Waitlist Patients (excludes recipients of transplants from living donors \*)

Patients placed on waitlist at this center between 07/01/2009 and 06/30/2012

Center: Ochsner Foundation Hospital (LAOF)

Organ: LI: Liver

Characteristic	Percent transplanted at time periods since waitlisting									
	This Center					United States				
	N	30 day	1 year	2 years	3 years	N	30 day	1 year	2 years	3 years
<b>Medical Urgency Status at Listing</b>										
Status 1A	20	70.0	70.0	70.0	70.0	1,386	58.4	59.0	59.1	59.1
Status 1B	0	-	-	-	-	44	52.3	65.9	68.2	68.2
MELD 6-10	73	32.9	71.2	78.1	78.1	6,501	4.4	33.5	43.8	45.8
MELD 11-14	85	11.8	52.9	60.0	62.4	7,419	3.6	27.5	35.8	39.2
MELD 15-20	173	19.1	65.9	72.3	73.4	8,144	7.9	40.1	47.1	49.4
MELD 21-30	139	56.8	84.2	85.6	85.6	5,536	31.9	59.9	61.9	62.4
MELD 31-40	43	76.7	81.4	81.4	81.4	3,038	58.1	64.6	64.7	64.8

Source: SRTR 2016

Average monthly spending for 30 MELD  
is 10 times higher than for 20 MELD  
(\$22,685 vs. \$2,030)



This sign was seen on  
Royal Street during  
French Quarter Festival



# What Does It Take to Sustain Excellence?



# What Do Our Customers\* Want?

## Patient Experience

- Access
- Quality
- Cost
- Great work environment



*\*Patients, payers, referring MDs, employees*

# Efficiency x Empathy x Environment = Experience



7 AM	Registration, Vital, Labs, Med-Rec, Consents
8 AM	Group Education
9 AM	Round Robin: Surgeon, Hepatologist, Social Worker, Financial Coordinator, Dietician, ID
12 PM	Break for Lunch
1 PM	Ultrasound
2 PM	Chest X-Ray
4 PM	Cardiology

# Katherine Heigl – Brilliant Actress!





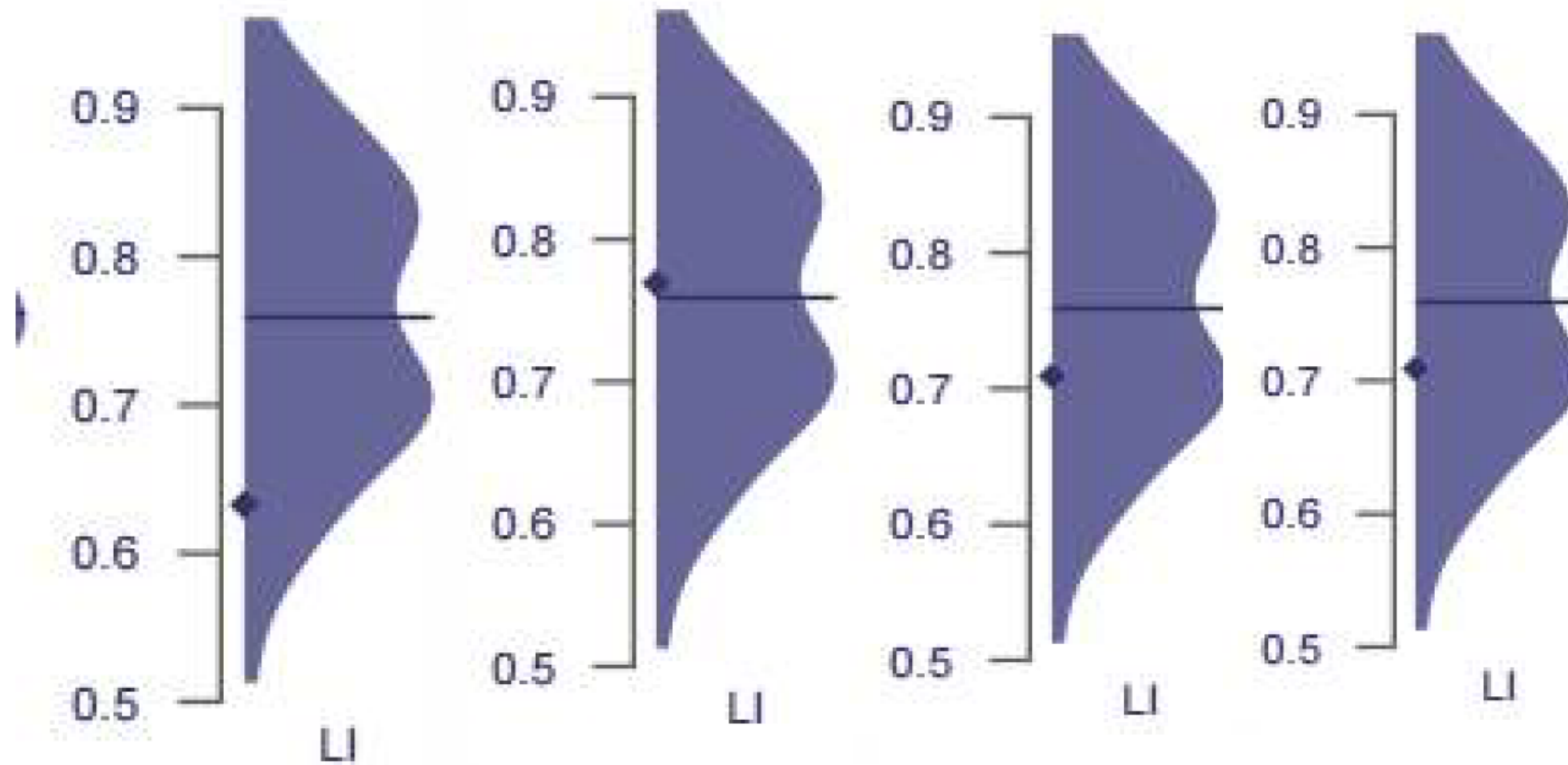
# Our Last Ten Years



- More than doubled liver transplant volume by increasing number of imported livers
- Outcomes improved from bottom 5% in 2005 to top 5% in nation for last 5 years
- Median wait time has ranged from 1.8 – 2.2 months (currently 2.1 months)

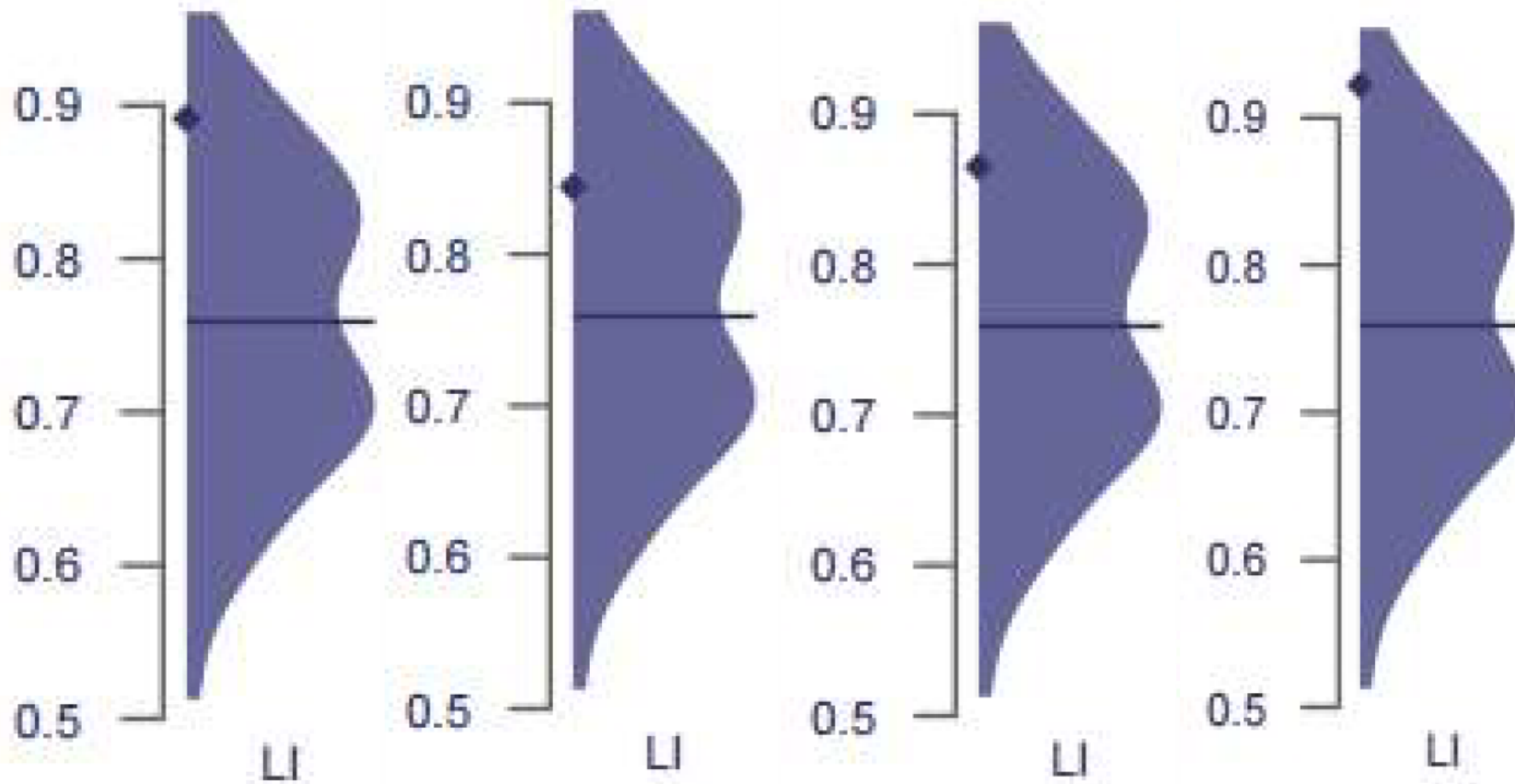
# What Drives Aggressive Utilization?

**CAOP 0.84 p<0.01 NYFL 0.96 CASD 0.97 UTOP 0.95**



# What Drives Aggressive Utilization?

FLUF 1.15  $p < 0.01$  GALL 1.11  $p < 0.01$  ALOB 1.07  $p < 0.01$  LAOP 1.13  $p < 0.01$



# Five Years Ago



- Threats
- Terrors
- Trepidation



# Building Trusting Relationships



- Same focus: Patient
- Integrity
- Honesty
- Removal of egos
- Level playing field – no games
- Open meeting policy
- Email transparency

# On-Call Staff Member

## AOC on call



The report lists AOCs on call for the week of August 22, 2016

8/22/16	8a - 8a	Joey Boudreaux
8/23/16	8a - 8a	Joey Boudreaux
8/24/16	8a - 8a	Tiffany Haydel
8/25/16	8a - 8a	Tiffany Haydel
8/26/16	8a - 8a	Kirsten Heintz
8/27/16	8a - 8a	Kirsten Heintz
8/28/16	8a - 8a	Kirsten Heintz

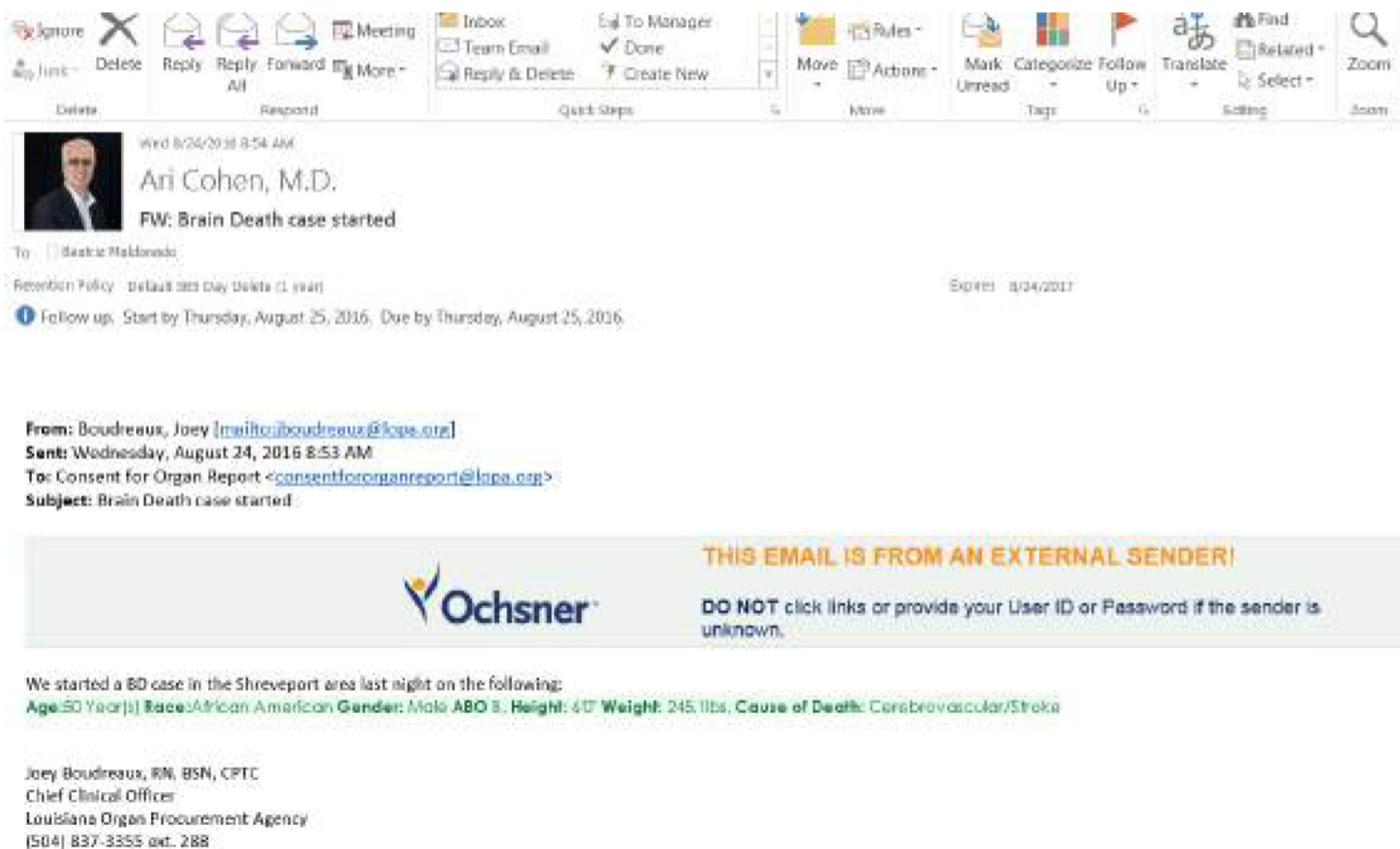
# Daily Referrals

8/23/2016

AGE	RACE	GENDER	ABO	GCS	WEIGHT	ADMISSION COURSE AND CURENT DX
9 Y	U	F		3	66	MR# K32666471 GCS 3 ADMIT DX: S/P CARDIAC ARREST ASPHYXIATION - HANGING FOUND WITH A SCARF AROUND HER NECK HANGING FROM BED MOM AND DAD ARE AT THE POLICE STATION BEING QUESTIONED POSSIBLE SEXUAL ASSAULT PMH: UNK AT THE TIME SEDATION/PRESSORS: VERSED FENTANYL BRAIN DEATH STUDIES: NONE PT IS FULL CODE ZIP CODE: 71108 ACCIDENT CITY LOCATION: SHREVEPORT  LOPA ONSITE NOTE- 8/18/16 @ 0830- AT LAKS FOR PATIENT IN PICU, ADMITTED 8/17/16 @ APPROXIMATELY 2013 WITH CARDIAC/RESPIRATORY ARREST SECONDARY TO ASPHYXIATION FROM STRANGULATION. PAST MED HX UNKNOWN, NO PAST SUR SOCIAL HX KNOWN AT THIS TIME. GCV

MOD Type		
8/18/2016	6:17:49AM	GV GOING ONSITE FOR INITIAL REFERRAL.
8/18/2016	1:40:25PM	CONTINUE TO FOLLOW.
8/19/2016	6:21:17AM	CONTINUE TO FOLLOW.
8/19/2016	10:13:21PM	CONTINUE TO FOLLOW.
8/20/2016	7:15:44AM	CONTINUE TO FOLLOW.
8/20/2016	8:58:37PM	CONTINUE TO FOLLOW.
8/21/2016	8:25:37PM	CONTINUE TO FOLLOW.
8/22/2016	7:33:17AM	CONTINUE TO FOLLOW.
8/22/2016	5:48:55PM	CONTINUE TO FOLLOW.
8/23/2016	6:36:50AM	CONTINUE TO FOLLOW. CLOSE AFTER PEG/TRACH.

# Cases in Progress



The screenshot shows an email client interface with a toolbar at the top containing icons for Ignore, Delete, Reply, Forward, Meeting, and more. Below the toolbar, the email header shows the sender as Ari Cohen, M.D., with a subject line "FW: Brain Death case started". The recipient is listed as Bencie Maldonado. A follow-up reminder is visible: "Follow up, Start by Thursday, August 25, 2016, Due by Thursday, August 25, 2016". The email body contains the following text:

**From:** Boudreaux, Joey [mailto:[jboudreaux@lopa.org](mailto:jboudreaux@lopa.org)]  
**Sent:** Wednesday, August 24, 2016 8:53 AM  
**To:** Consent for Organ Report <[consentfororganreport@lopa.org](mailto:consentfororganreport@lopa.org)>  
**Subject:** Brain Death case started

**THIS EMAIL IS FROM AN EXTERNAL SENDER!**  
DO NOT click links or provide your User ID or Password if the sender is unknown.

We started a BD case in the Shreveport area last night on the following:  
**Age:** 50 Year(s) **Race:** African American **Gender:** Male **ABO:** B **Height:** 6'0" **Weight:** 245 lbs. **Cause of Death:** Cerebrovascular/Stroke

Joey Boudreaux, RN, BSN, CPTC  
Chief Clinical Officer  
Louisiana Organ Procurement Agency  
(504) 837-3355 ext. 288



# Today



- Trust
- Transparency
- Teamwork

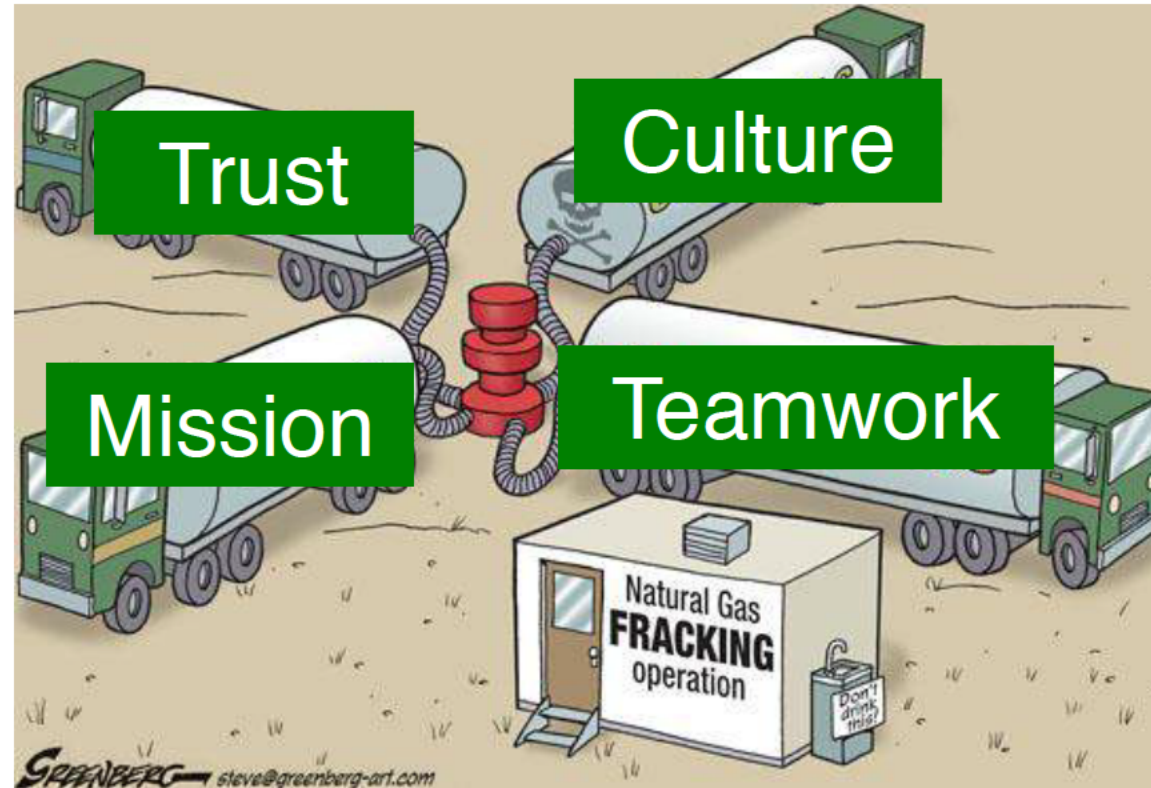
# Fracking (or Hydraulic Fracturing)

Process of extracting natural gas from shale rock layers deep within the earth



*Fracking makes it possible to extract resources once unreachable with conventional technologies*

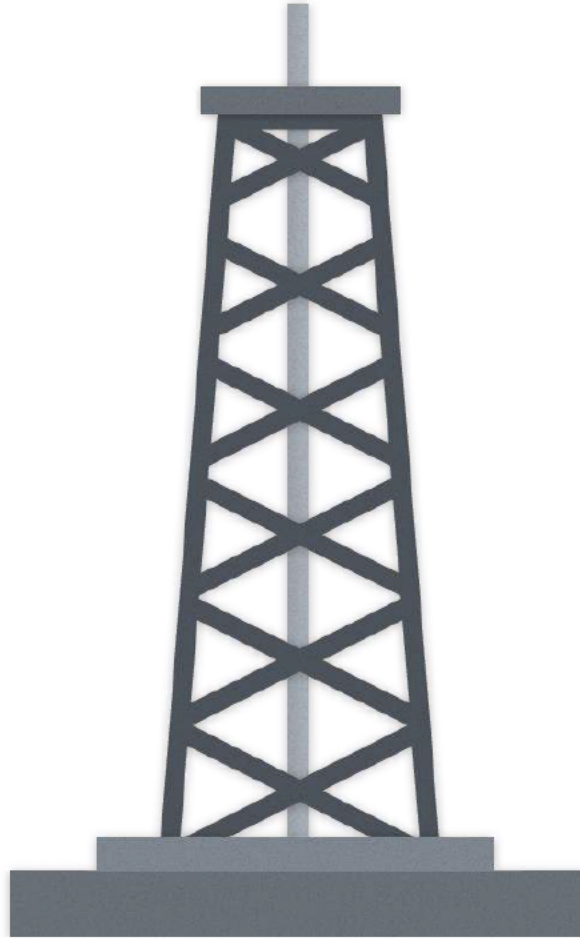
# Liver Fracking



## Partnership

We work with OPOs across nation and remote surgeon partners to prevent livers from being buried

# Frackable Livers



- ✓ HBV core
- ✓ DCD
- ✓ CDC
- ✓ LFT > 500
- ✓ HCV
- ✓ BMI > 40
- ✓ Age > 65
- ✓ Import – Fatty livers