

LIVER TRANSPLANTATION

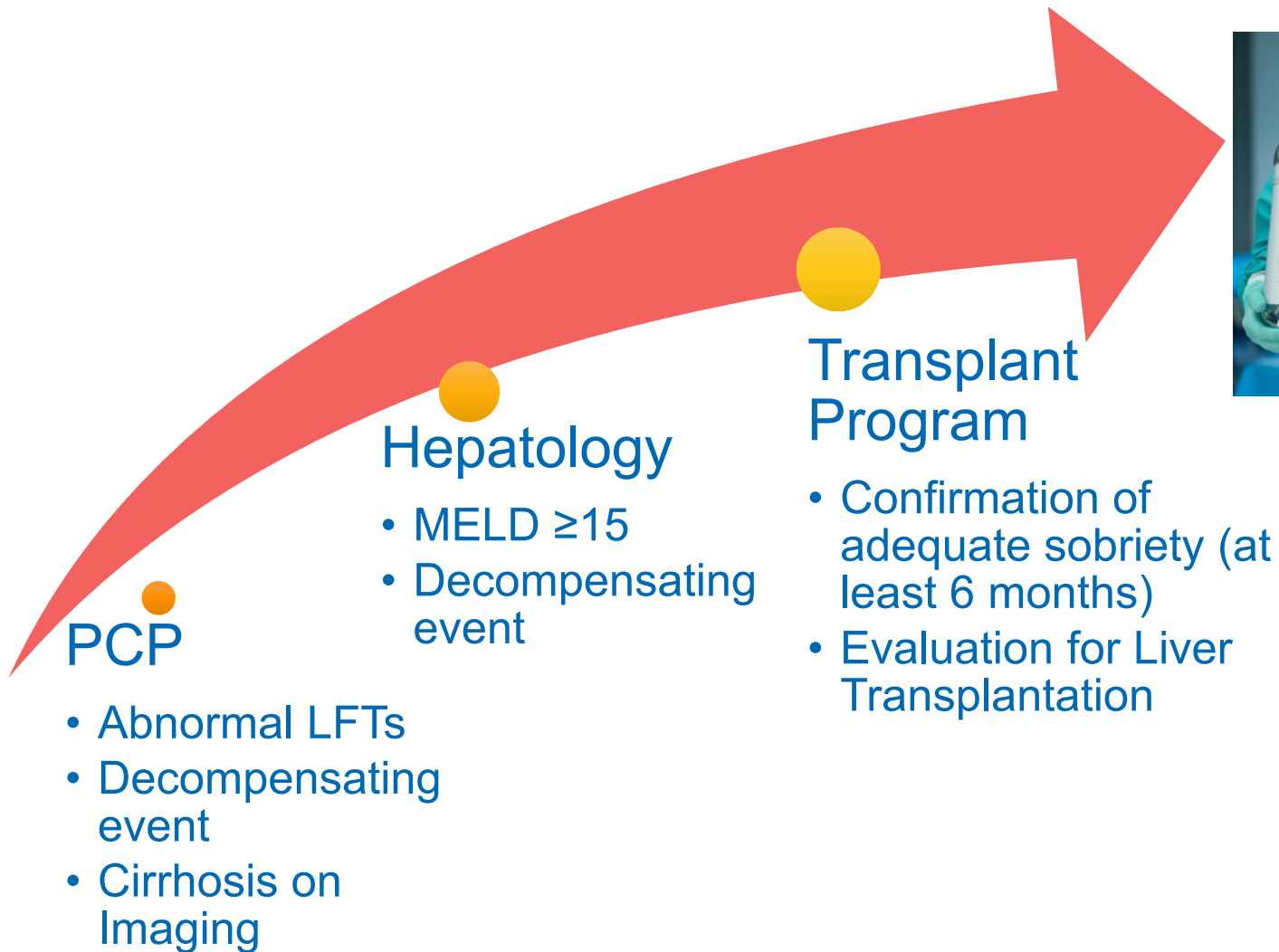
Lynn M. Allison, BSN RN CCTC
Roger L. Jenkins Transplant Institute
Lahey Hospital & Medical Center

Objectives

- **Explain Transplant Evaluation Process**
 - Transplant candidate requirements
 - UNOS region / OPO donor classifications
- **Waiting List Management**
 - MELD
- **What Happens When a Liver Becomes Available**
 - Today's the day! Or tonight!
- **Define Role of Transplant Coordinator**
 - Preoperative
 - Postoperative
- **Looking After Recipients After Liver Transplant**
 - Role of nurses



Referral for Liver Transplantation

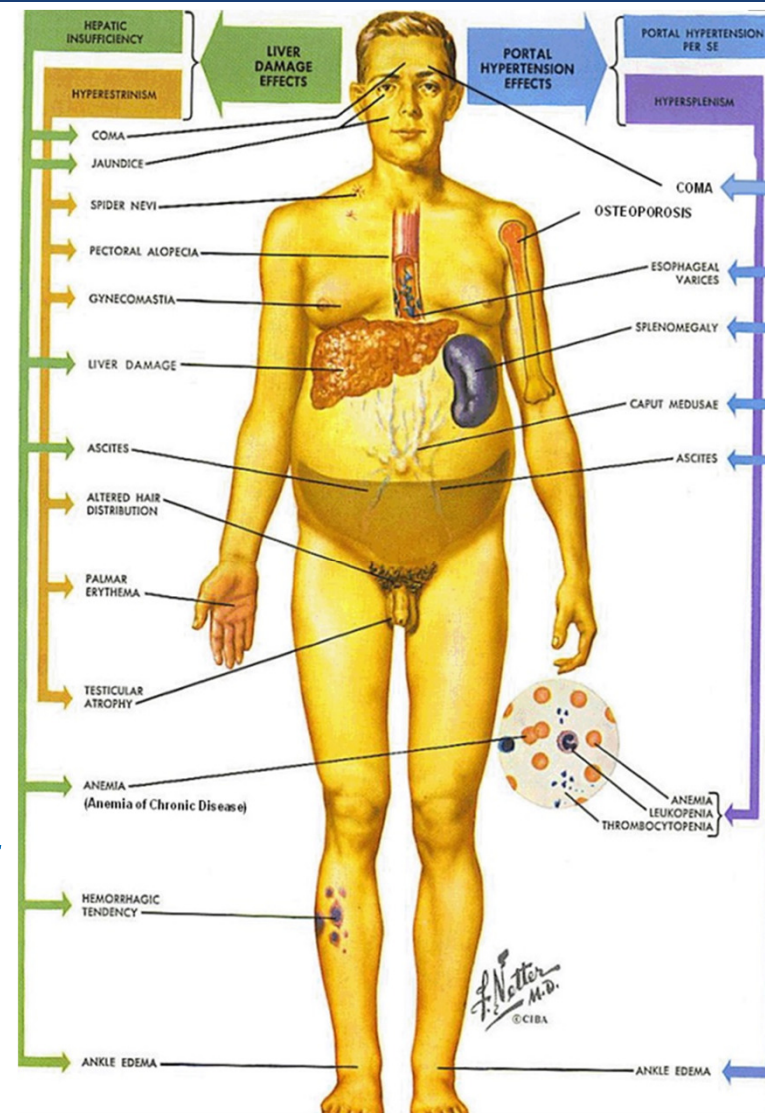


Etiologies of Liver Disease

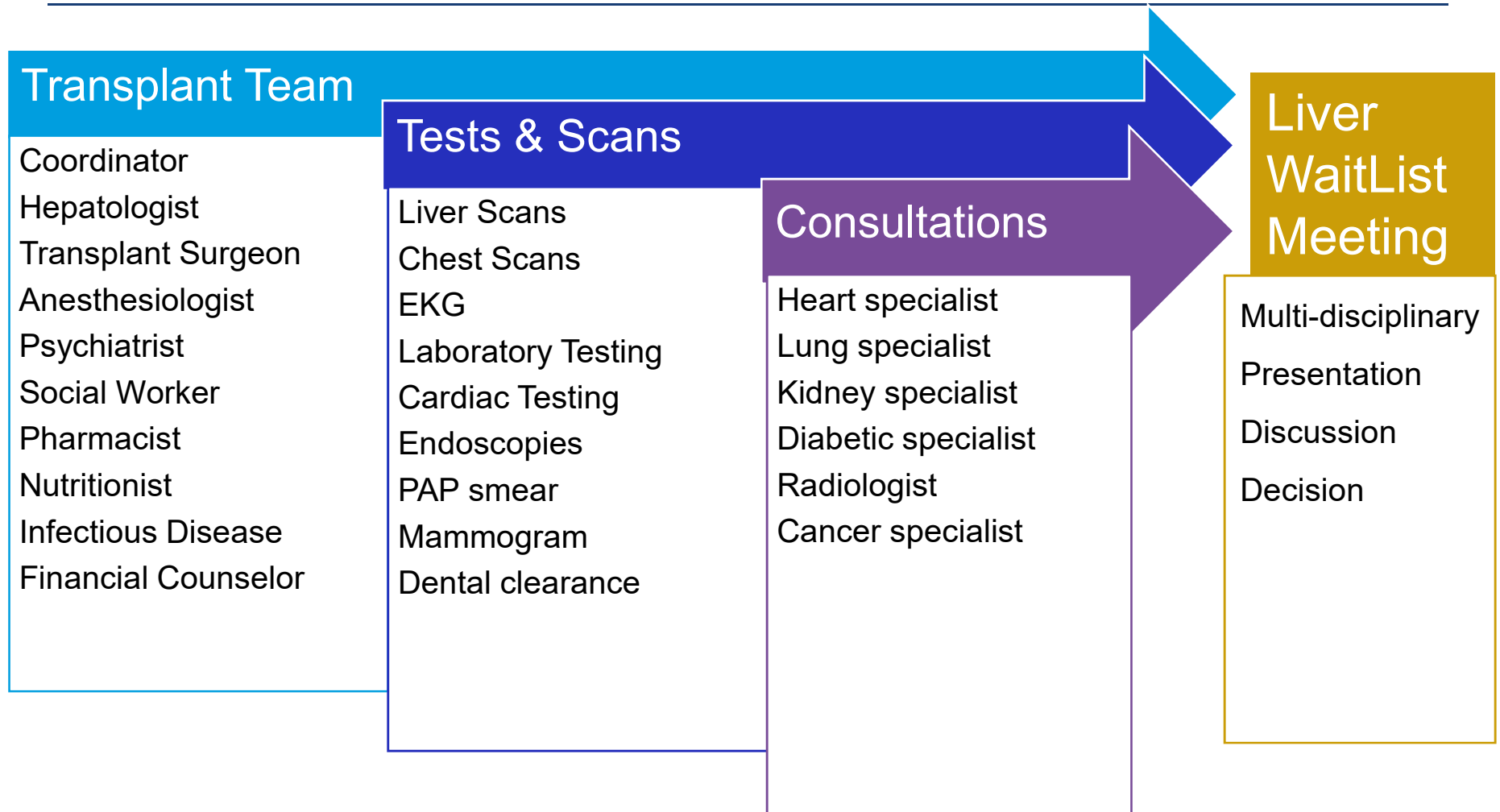
-
- Hepatitis C
 - Alcohol / EtOH
 - NASH
 - Cryptogenic
 - PBC
 - PSC
 - Autoimmune Hepatitis
 - Hepatitis B (acute/chronic)
 - Hepatitis A
 - Fulminant Liver Failure
 - Polycystic Liver Disease
 - Budd Chiari
 - Sarcoidosis
 - Biliary Atresia
 - Alpha 1 Antitrypsin Deficiency
 - Hemochromatosis
 - Wilson's Disease
 - Cystic Fibrosis

Complications of cirrhosis

- Jaundice
- Bleeding from stomach or esophagus (varices)
- Confusion and agitation (encephalopathy)
- Easy bruising and bleeding (coagulopathy)
- Swollen abdomen due to fluid accumulation (ascites)
- Increased risk of infections
- Malnutrition and deconditioning (loss of muscle mass)
- Liver cancer (hepatocellular carcinoma, HCC)



Evaluation Process



Our patients are listed in the region 1 liver waiting list

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UNOS Regions

- Country divided into 11 regions
- NE is Region 1:

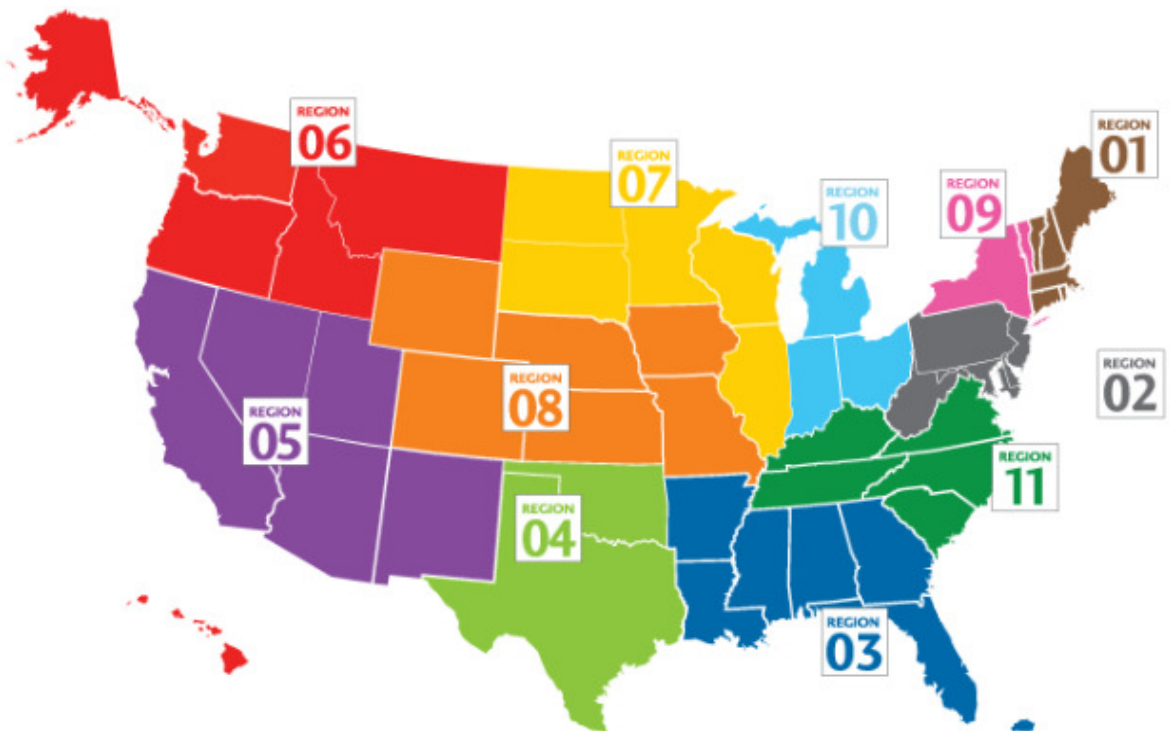
MA

NH

ME

CT

RI

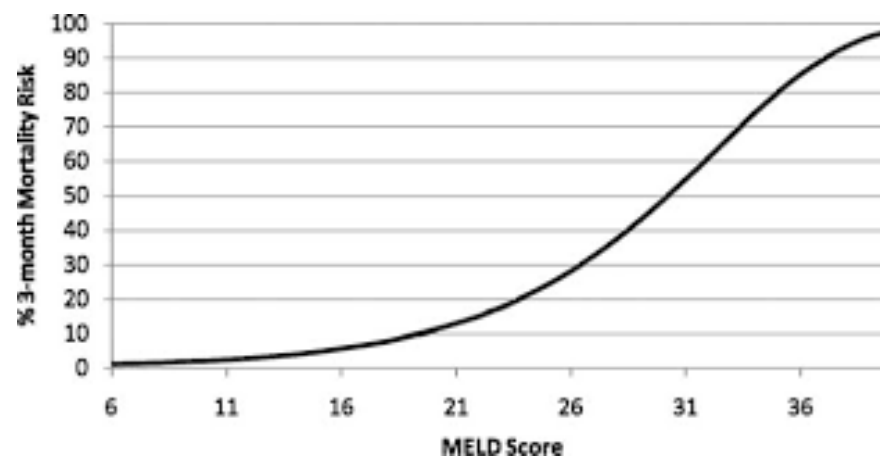


- www.UNOS.org

Order on the liver transplant waiting list is according to MELD score

Seq#	Center	Name	ABO	Score
43	****_****	***, ***	A	33.00
44	****_****	***, ***	A	30.00
45	****_****	***, ***	A	29.00
46	****_****	***, ***	A	28.00
47	****_****	***, ***	A	27.00
48	****_****	***, ***	A	26.00
49	****_****	***, ***	A	26.00
50	****_****	***, ***	A	25.00
51	****_****	***, ***	A	25.00
52	****_****	***, ***	A	25.00
53	****_****	***, ***	A	25.00
54	****_****	***, ***	A	25.00
55	****_****	***, ***	A	25.00
56	****_****	***, ***	A	25.00
57	****_****	***, ***	A	25.00
58	****_****	***, ***	A	24.00
59	****_****	***, ***	A	24.00
60	****_****	***, ***	A	24.00
61	****_****	***, ***	A	24.00
62	****_****	***, ***	A	24.00
63	****_****	***, ***	A	24.00
64	****_****	***, ***	A	24.00
65	****_****	***, ***	A	24.00
66	****_****	***, ***	A	23.00
67	****_****	***, ***	A	23.00
68	****_****	***, ***	A	23.00
69	****_****	***, ***	A	23.00
70	****_****	***, ***	A	22.00
71	****_****	***, ***	A	22.00
72	****_****	***, ***	A	22.00
73	****_****	***, ***	A	22.00
74	****_****	***, ***	A	22.00
75	****_****	***, ***	A	22.00
76	****_****	***, ***	AB	22.00
77	****_****	***, ***	A	21.00
78	****_****	***, ***	A	21.00
79	****_****	***, ***	A	21.00
80	****_****	***, ***	A	21.00
81	****_****	***, ***	A	21.00
82	****_****	***, ***	AB	21.00
83	****_****	***, ***	A	20.00
84	****_****	***, ***	A	20.00

- MELD score = $3.78 \times \ln[\text{serum bilirubin (mg/dL)}] + 11.2 \times \ln[\text{INR}] + 9.57 \times \ln[\text{serum creatinine (mg/dL)}] + 6.43$

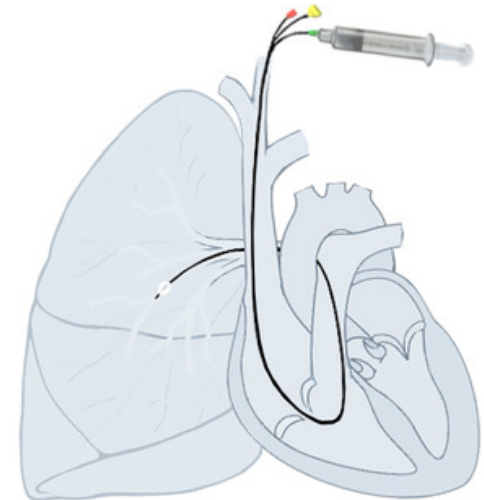


- MELD score predicts mortality

Some recipients qualify for extra (exception) points on waitlist in addition to their MELD score...

- 1) Hepatopulmonary points- ABG on Ra & 100% NRB every 3 months
- 2) Portopulmonary points- RHC every 3 months
- 3) Hepatocellular Carcinoma- MRI/ CT every 3 months

All exceptions points are allocated based on rules determined by UNOS and regional Liver Review Board



Number of patients on waiting lists

113,000+

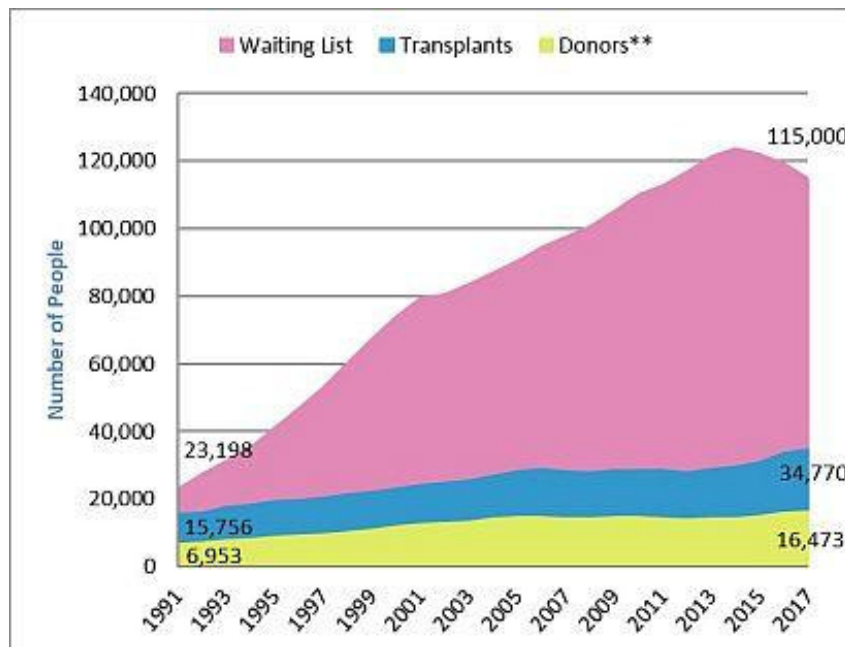
Number of men, women and children on the national transplant waiting list as of January 2019.

36,528

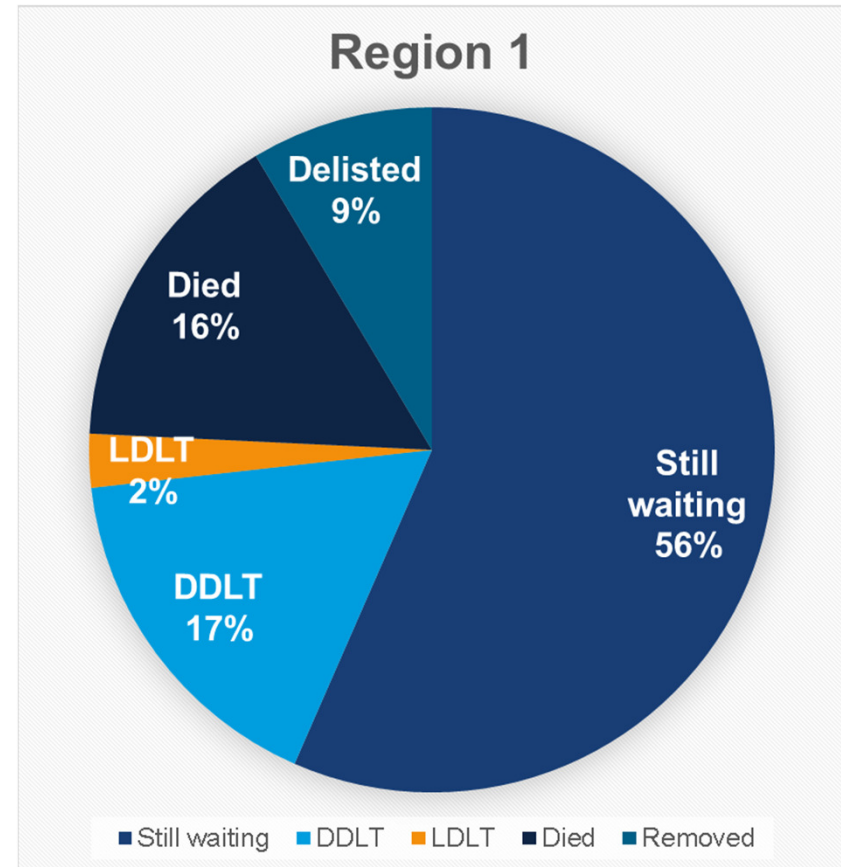
transplants were performed in 2018.**

20

people die **each day** waiting for a transplant.



All organs waiting list



After 1 year on the liver waiting list in Region 1 (MELD 15-24)

Where can we find them a new liver?

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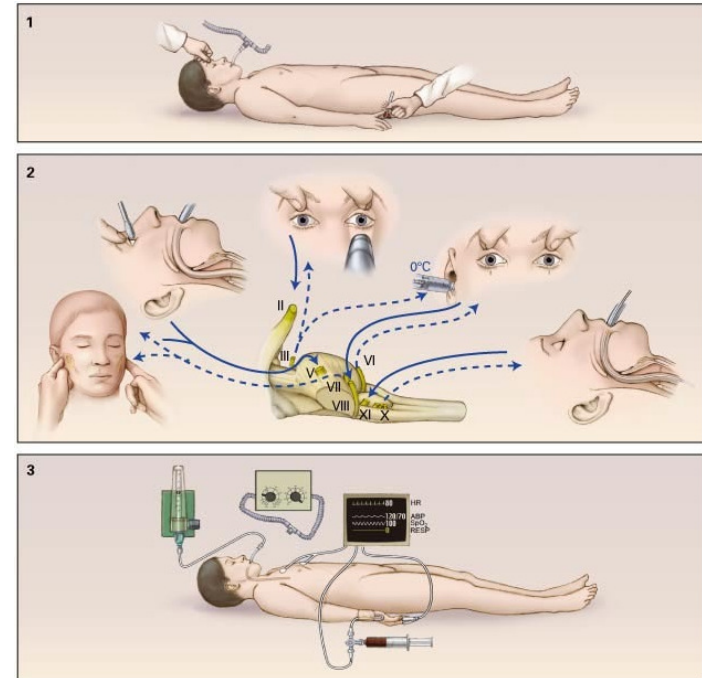
From:
**DECEASED
DONORS**

**Organ donors are the real
heroes. I'm here today
because of one. I'm
forever grateful, forever
humbled by that.**

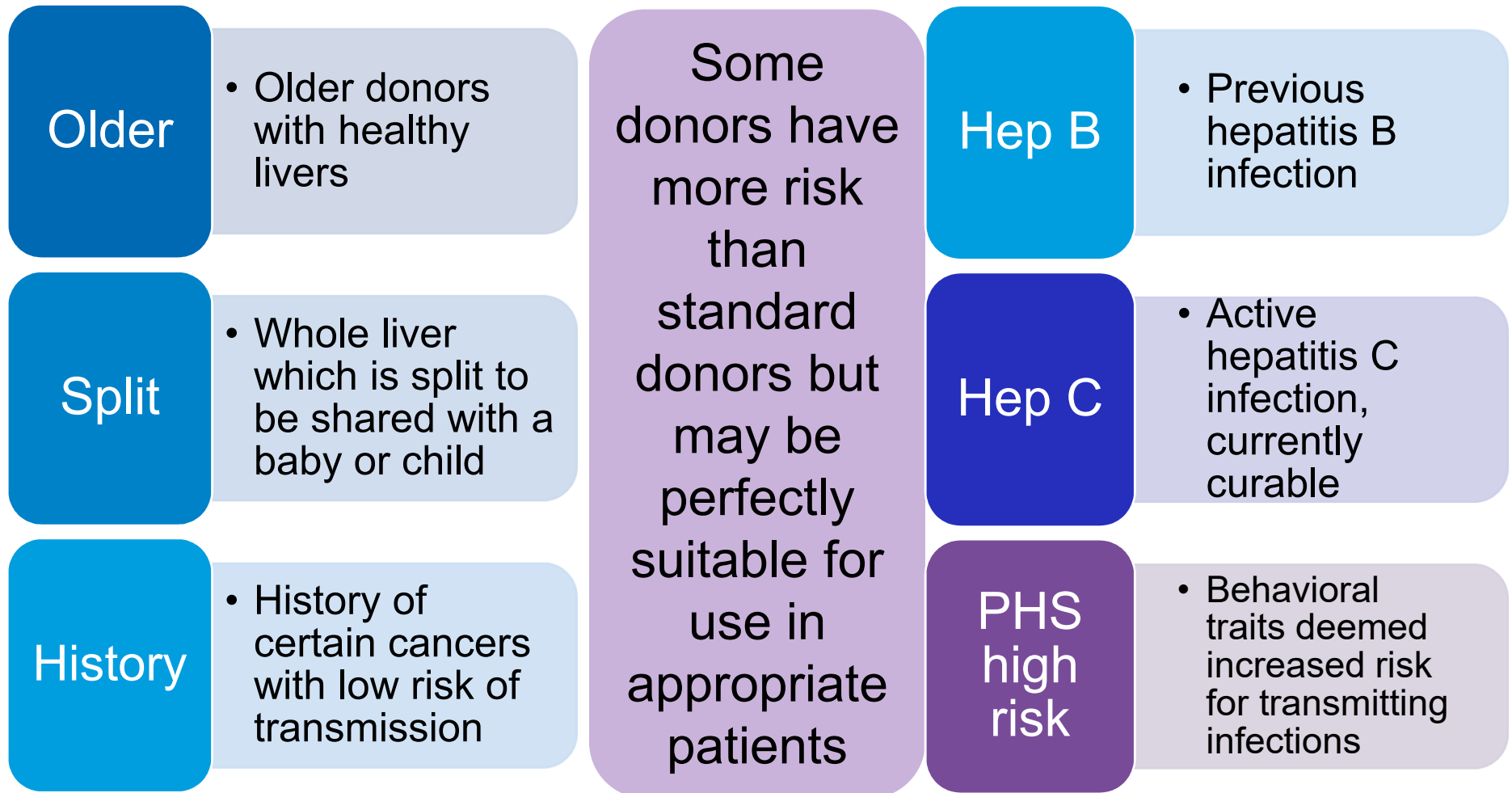
From:
**LIVING
DONORS**

Deceased donors- Standard Criteria

- Definition of *brain death*: complete and irreversible cessation of the whole brain activity including the brain stem
- Standard livers are from brain dead donors who are young, without a history of any medical problems, who had an acute event leading to brain death (not a prolonged illness)



Deceased donors – Expanded Criteria



Deceased Donor Liver Transplant

Could be called ANYTIME of the day or night with a liver offer and need to come to the hospital ASAP for admission and preparation

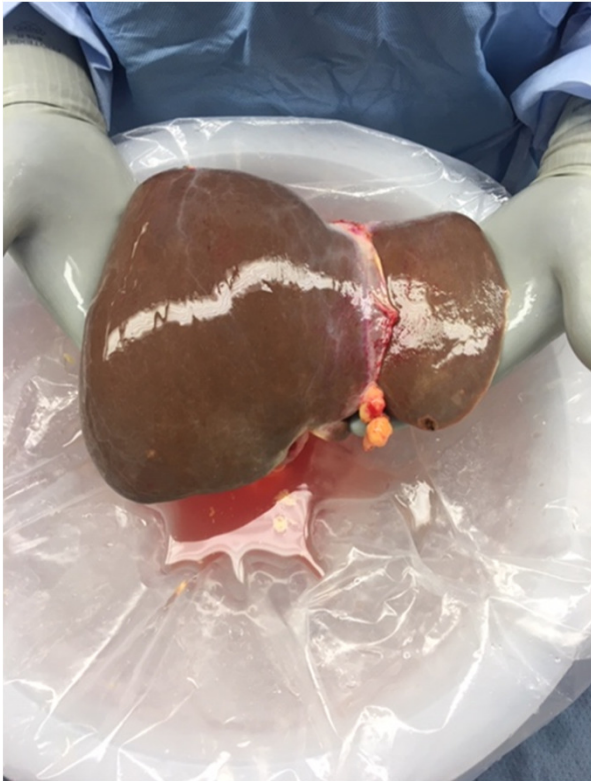


Surgery on average takes 4-8 hours

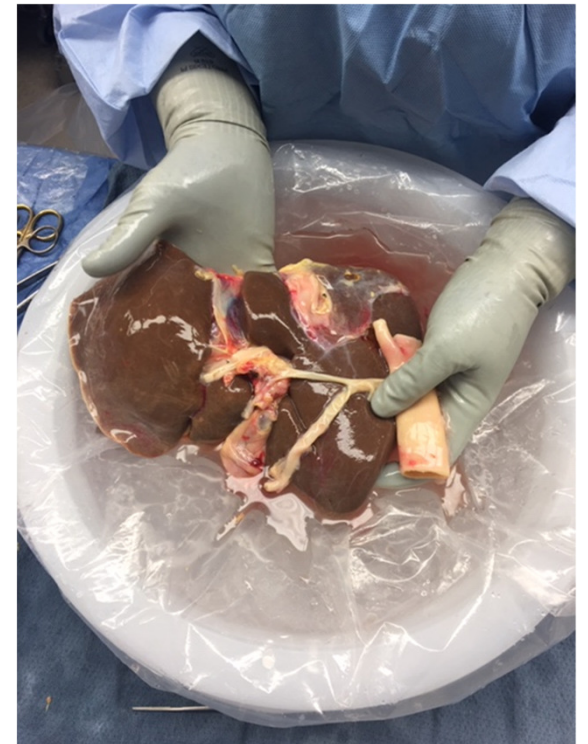


Deceased Donor Liver Transplant

Arrival to OR



Back bench prep



Deceased Donor Liver Transplant

Hepatectomy



Implantation



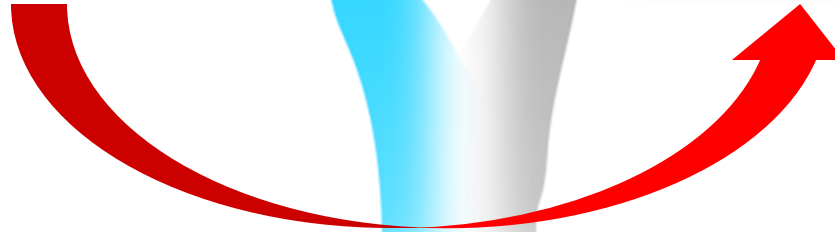
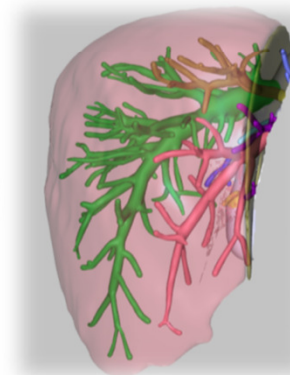
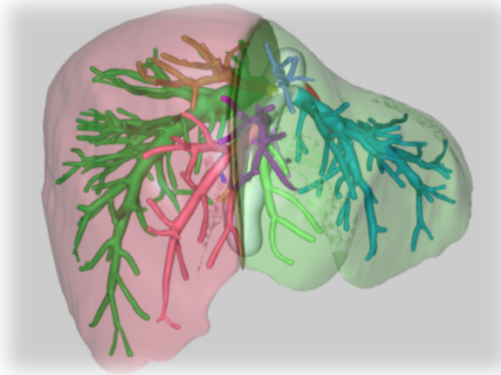
Re-perfusion



Living Donor Liver Transplantation (LDLT)

Living donor –
portion of their
liver removed...

Recipient –
...portion of donor
liver transplanted

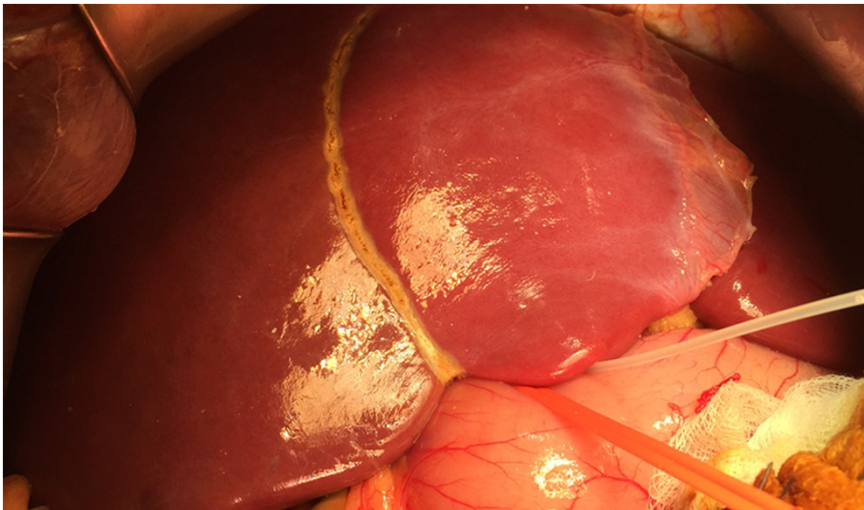
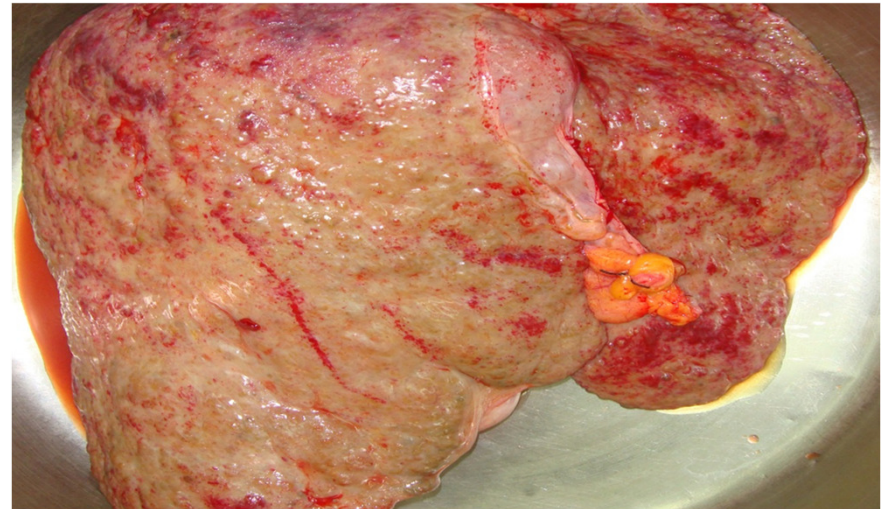


Living Donor Transplantation

Recipients do not have wait until their MELD increases before receiving a new liver

Considered an elective procedure, the surgery can be scheduled for a time when the recipient is sick enough to justify transplantation, yet in the best possible clinical condition

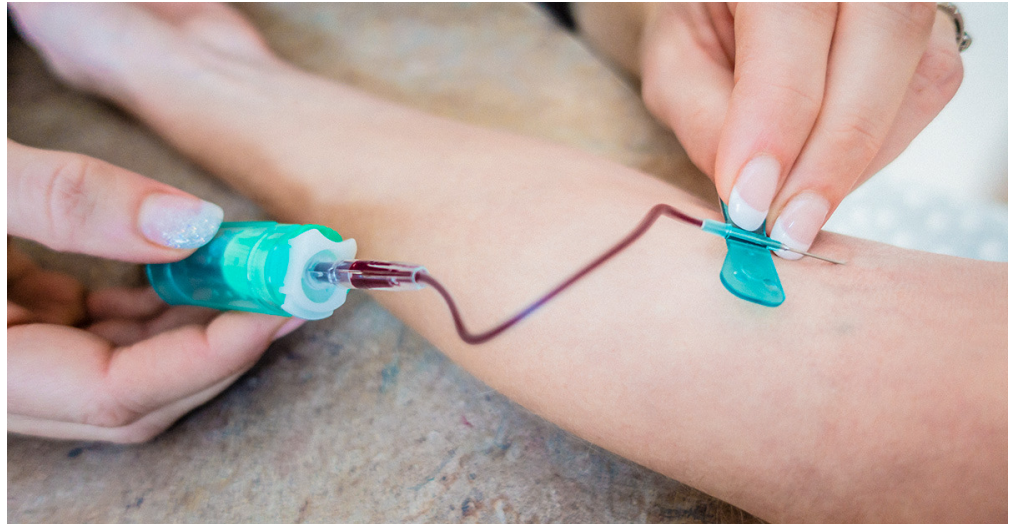
Donor liver out of the body for a short time



Inpatient post op course

Immediate recovery phase in PACU or SICU

- ☐ Daily lab tests to evaluation organ function and medication levels
- ☐ Diet advancement



Inpatient post op course

Frequent meetings with Post Transplant Coordinator to review:

- ☐ What to expect in recovery period
- ☐ Medication teaching
- ☐ Signs and symptoms
 - ☐ Infection
 - ☐ Rejection
- ☐ How/when to contact transplant team
- ☐ Reinforce discharge plan
 - ☐ Home or Rehab
- ☐ Follow up appointment schedule
 - ☐ Frequent blood work
 - ☐ Holding immunosuppression
 - ☐ Drain removal



Inpatient post op course

PT/OT assessment
Home or rehab



Role of Transplant Coordinator

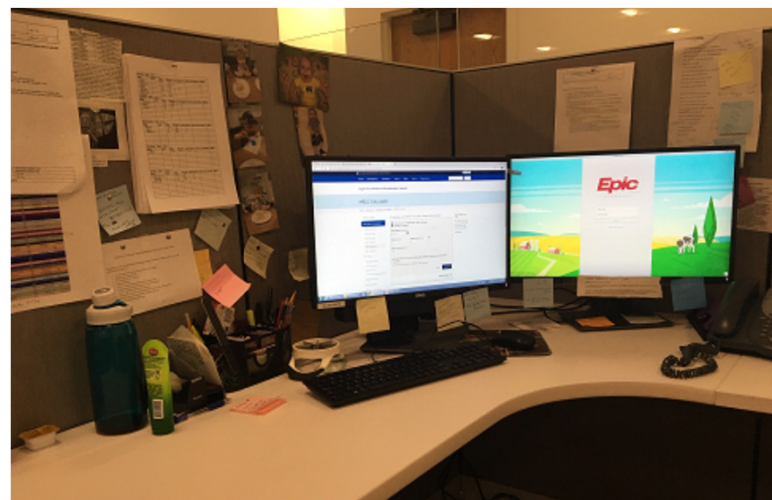
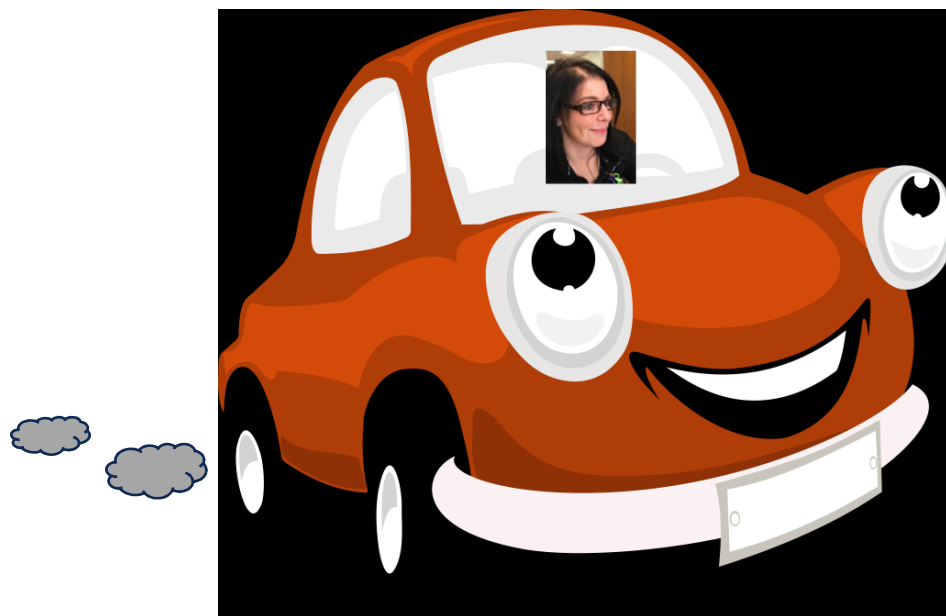
- Nurse responsible for coordination of the evaluation and preparation of patients for organ **transplantation**, and long-term management of patients after **transplant**
- Pre and post liver coordinator
- Many coordinators have previous inpatient experience looking after transplant patients, though this is not a prerequisite requirement
- All coordinators have a special interest in liver or kidney disease and organ transplantation



One day in the life of a pre-transplant coordinator

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Lahey Hospital & Medical Center

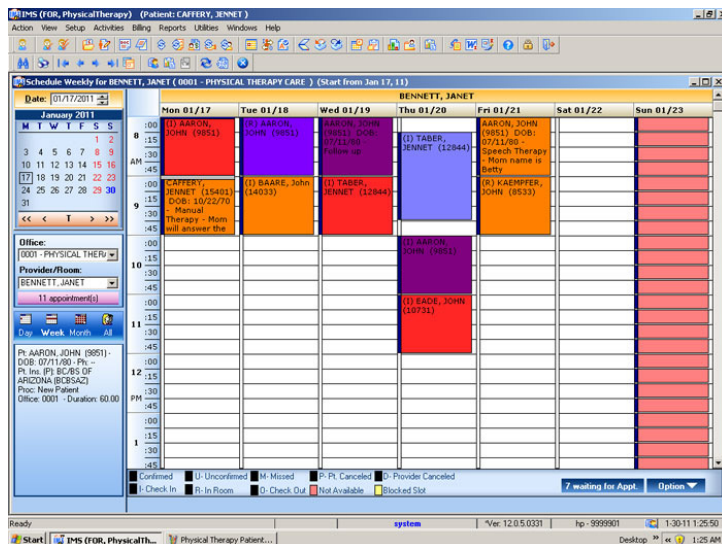
0700hrs – Arrive at the office



One day in the life of a pre-transplant coordinator

0700-0840

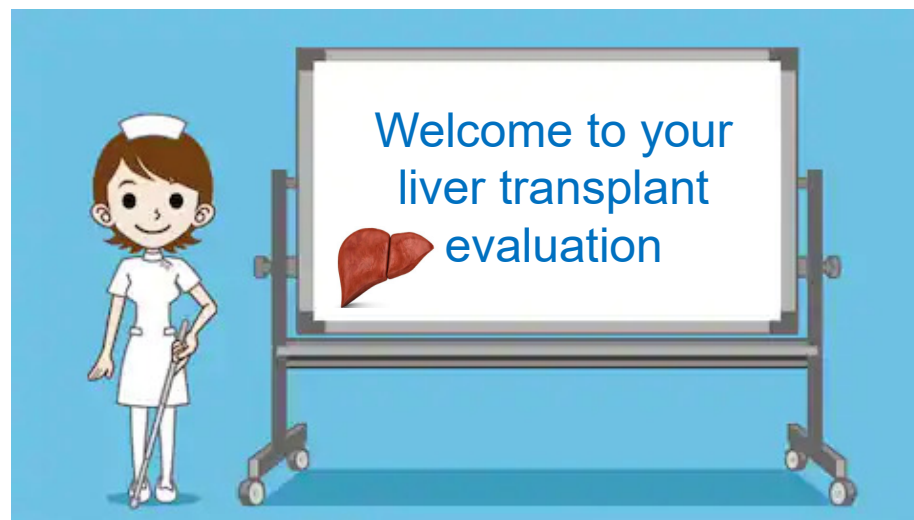
- Chart Review
- Clinic appointment preparation



One day in the life of a pre-transplant coordinator

Beth Israel Lahey Health 
Lahey Hospital & Medical Center

0845-0930 – Teach weekly patient education seminar



One day in the life of a pre-transplant coordinator

Beth Israel Lahey Health
Lahey Hospital & Medical Center

0940-1100 –Prepare for next day's transplant candidate selection meeting

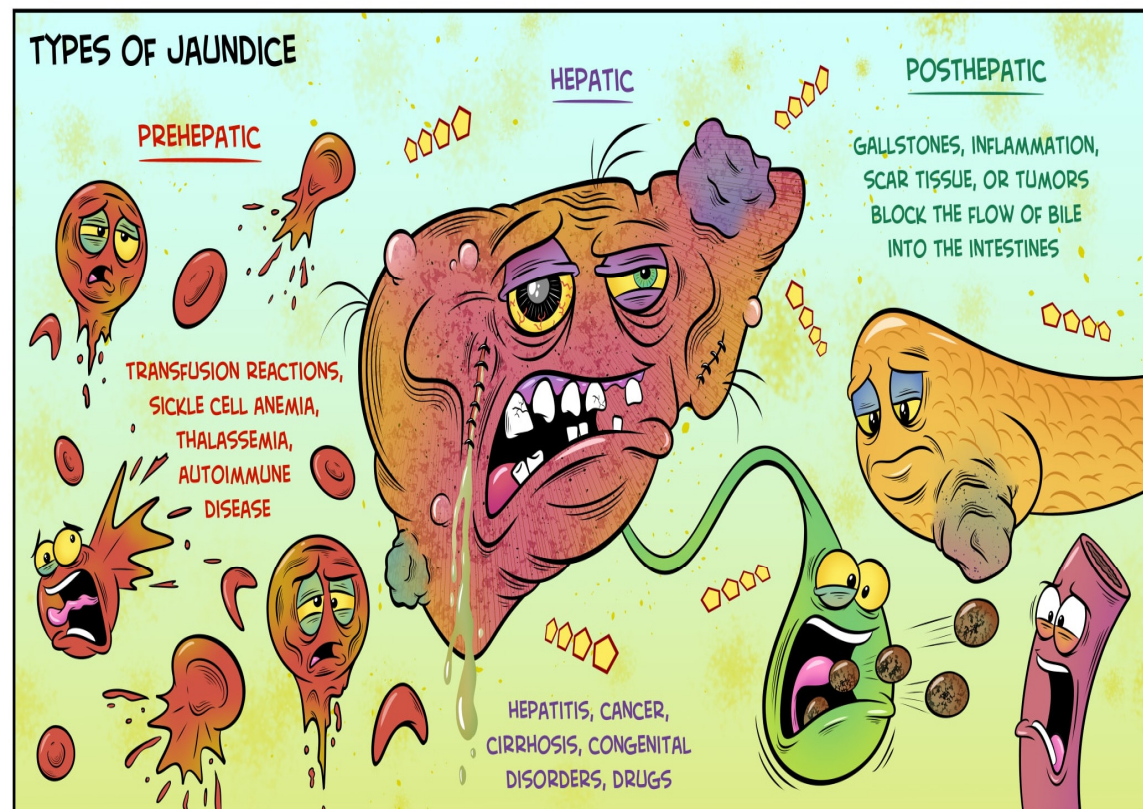


One day in the life of a pre-transplant coordinator

Beth Israel Lahey Health
Lahey Hospital & Medical Center

1100-1700hrs

- Clinic appointments for patient undergoing transplant evaluation
- Lab result review
- Medication Refills
- Phone Triage



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One day in the life of a pre-transplant coordinator

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1430hrs – emergently list an acute liver failure patient



One day in the life of a post-transplant coordinator

0700hrs – Arrive at the office



One day in the life of a post-transplant coordinator

0705-0800

- Chart Review
- Clinic appointment preparation



One day in the life of a post-transplant coordinator

0800-0930- Rounding with transplant team



One day in the life of a post-transplant coordinator

1000-1700

- Clinic appointments
- Lab result review
- Medication Refill
- Phone Triage
- Maintain surveillance lists



Transplant Recipient Follow up

Regular appointments with blood work in the office to ensure close follow up (patient acuity specific) :

- Weekly for 1 month
- Every other week for 1 month
- Monthly for 2 months
- Every 3 months x 2
- Twice a year to yearly for life



Normal referral back to local GI (if needed) provider
between 6-12 months post transplant

Transplant Recipient Follow up

- Frequent medication changes
- Take medications as prescribed
- Avoid raw seafood, unpasteurized foods, grapefruit
- Good hand-washing
- Vaccinations
- Use sunscreen (hats!)
- No smoking
- No alcohol
- Use gloves when gardening
- Reconnect with your primary care doctor
- Maintain a healthy diet and regular exercise



Questions



Thank you

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Lahey Hospital & Medical Center



LIVER TRANSPLANTATION

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