

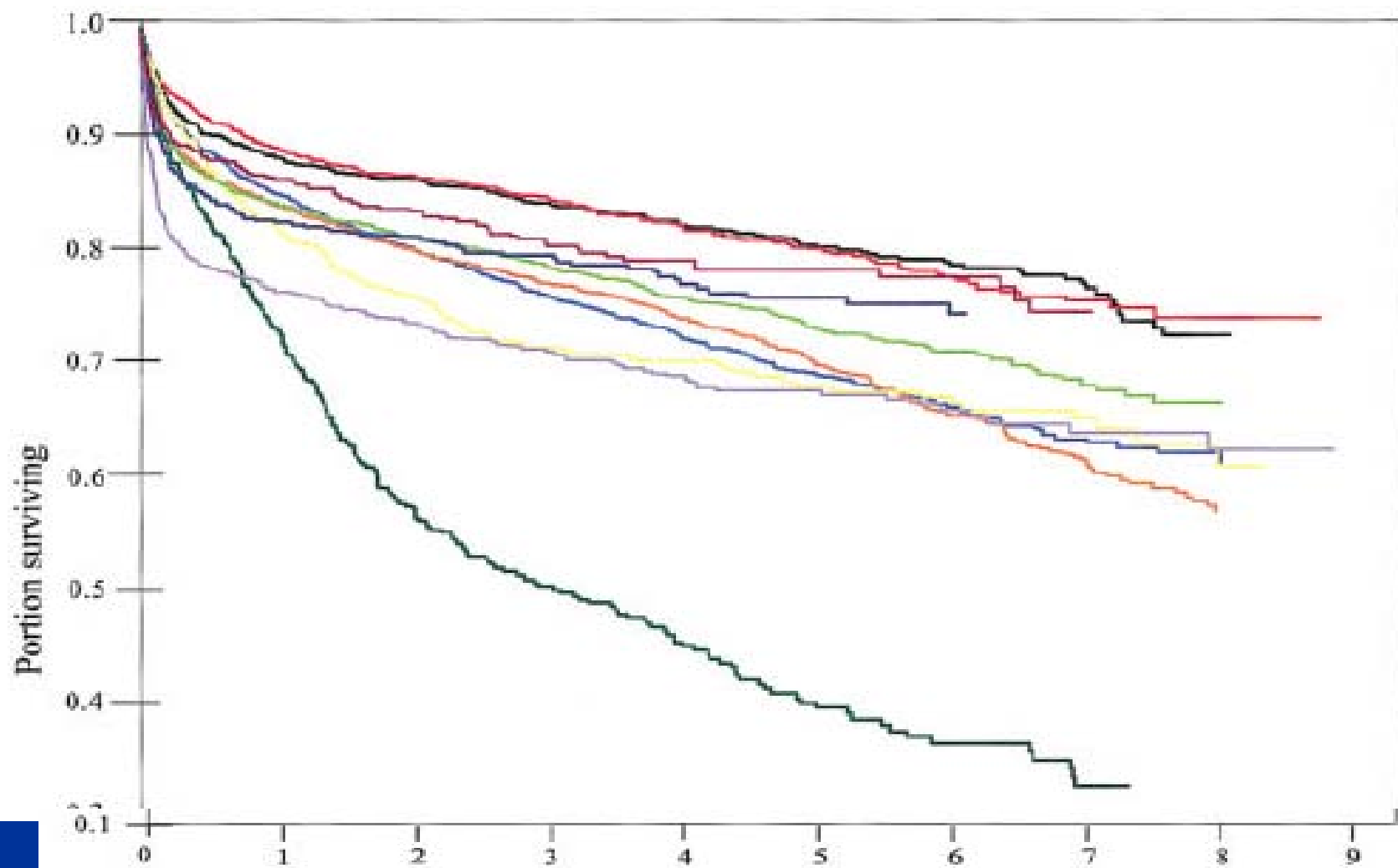
Liver Transplantation for PSC

Outline

- Indications and outcomes for OLT
- Listing
- UNOS numbers pre- and post-MELD
- Issues specific to PSC

Indications for OLT

- Chronic Hepatitis C
- Alcohol
- NASH
- Hepatocellular carcinoma (HCC)
- Primary biliary cirrhosis (PBC)
- Primary Sclerosing cholangitis (PSC)
- Acute or Chronic Hepatitis B
- Cryptogenic
- Fulminant hepatic failure
- Autoimmune hepatitis
- Wilson's disease, hemochromatosis, alpha-1-antitrypsin def



- PBC
- PSC
- HEP C
- ALD
- HEP B
- Autoimmune
- Cancers
- Metabolic
- Fulminant
- Other

Survival	US Jan 2011	CPMC Patient Survival 2011	2012-Jan
1 yr	88.7%	89.5%	89.7%
3 yr	79.2%	84.2%	85.9%

Listing

- UNOS: United Network for Organ Sharing
- 2/2002: MELD system
 - Range 6-40
- MELD 21-30: Mean time to OLT, 128 days
- MELD 31-40: Mean time to OLT, 29 days
- Status 1: Mean time to OLT, 11 days
- HCC, T1 tumor = MELD 20; T2 = 24

OPTN/UNOS MELD

$MELD = (0.957 \times LN(\text{creatinine}^{**}) + 0.378 \times LN(\text{bilirubin}^{**}) + 1.12 \times LN(\text{INR}^{**}) + 0.643)$

Current Listings (June 2004)

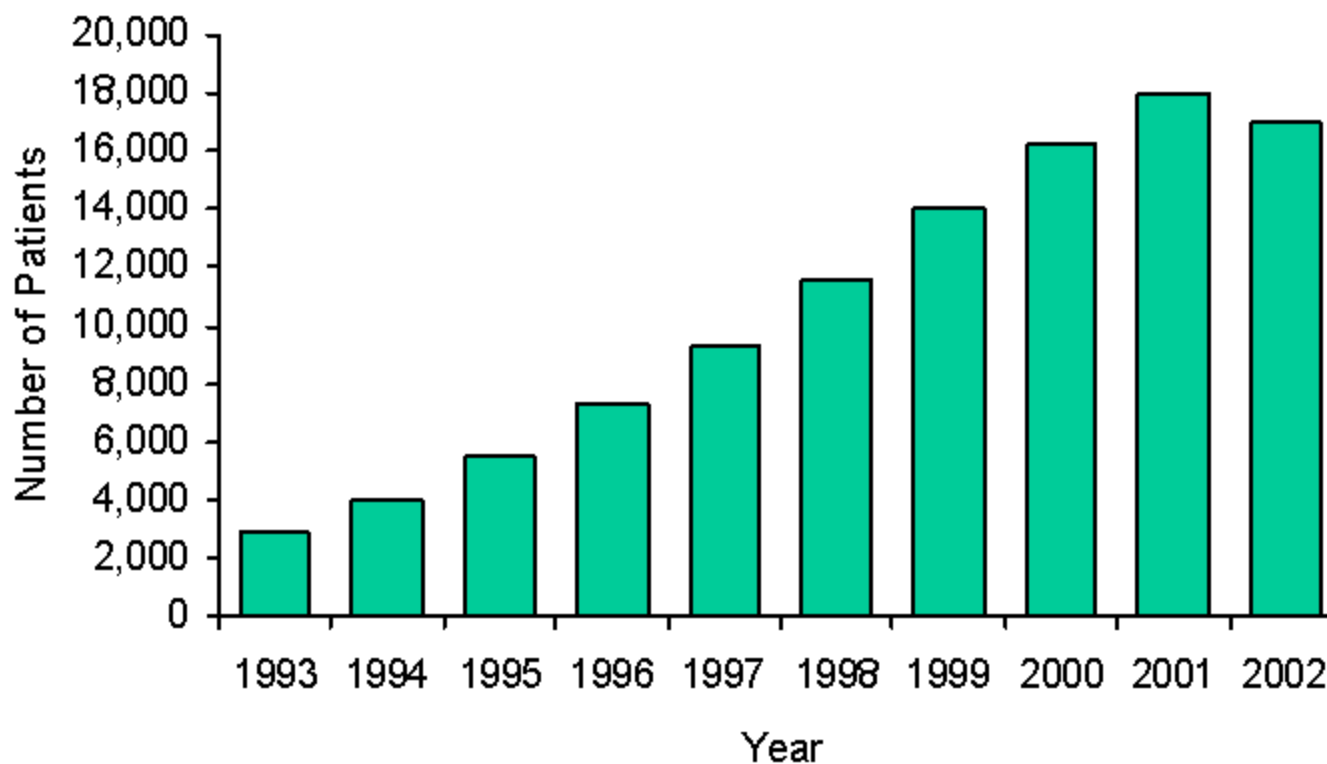
- Currently listed for liver: 17,474
- Kidney: 58,410
- Lung: 3,917
- Heart: 3,505
- Liver in Region 5: 4,213

US Liver transplants

■ Year	2005	2006	2007	2008
■ Total	12,728	12,472	12,198	12,230
■ Non-Cholestatic Cirrhosis	9,149	9,104	8,883	8,883
■ Cholestatic Liver Disease/Cirrhosis	1,356	1,345	1,198	1,169
■ Malignant Neoplasms	191	216	279	366

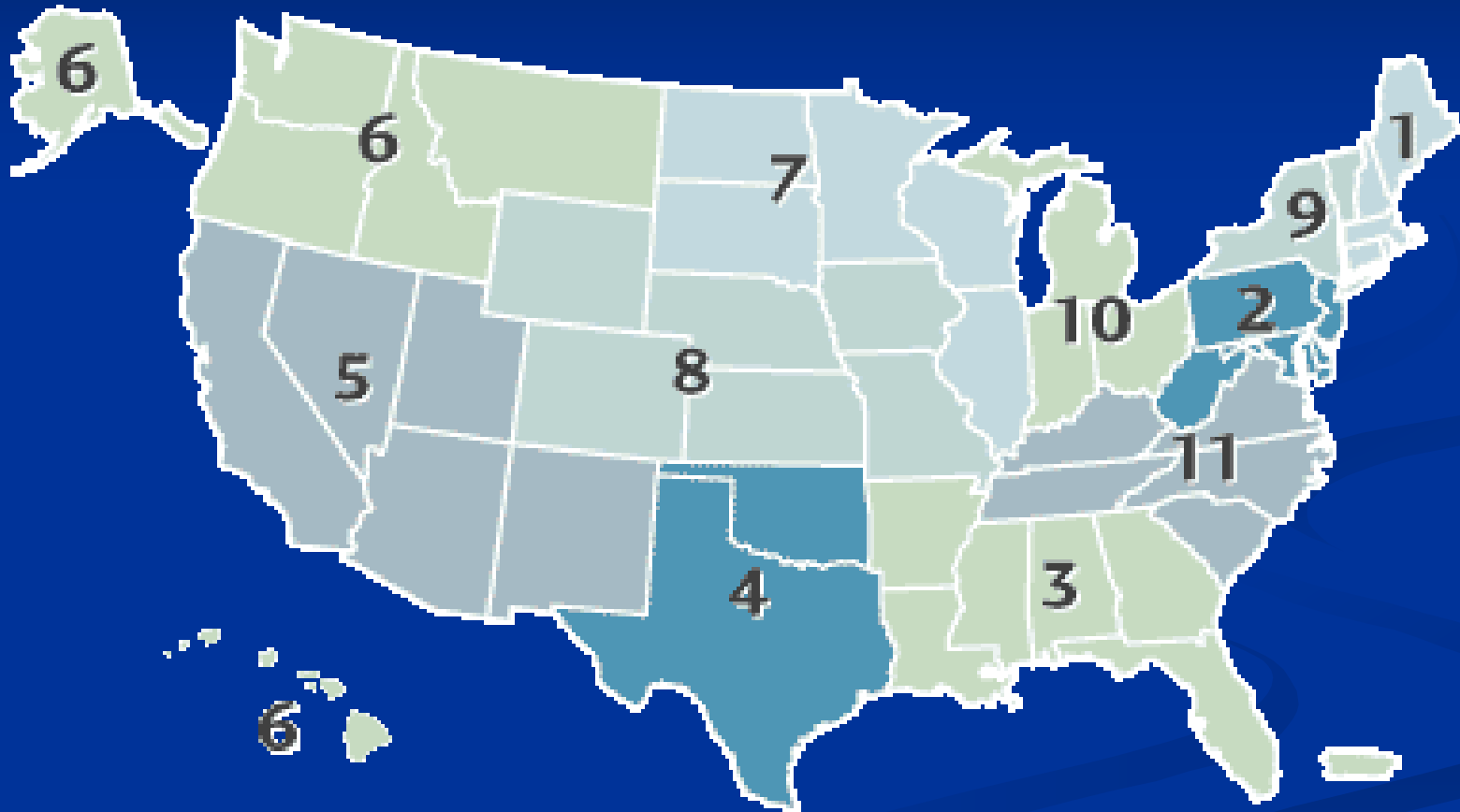
National Liver Waiting List

Figure VII-1. Patients on the Liver Waiting List, 1993-2002



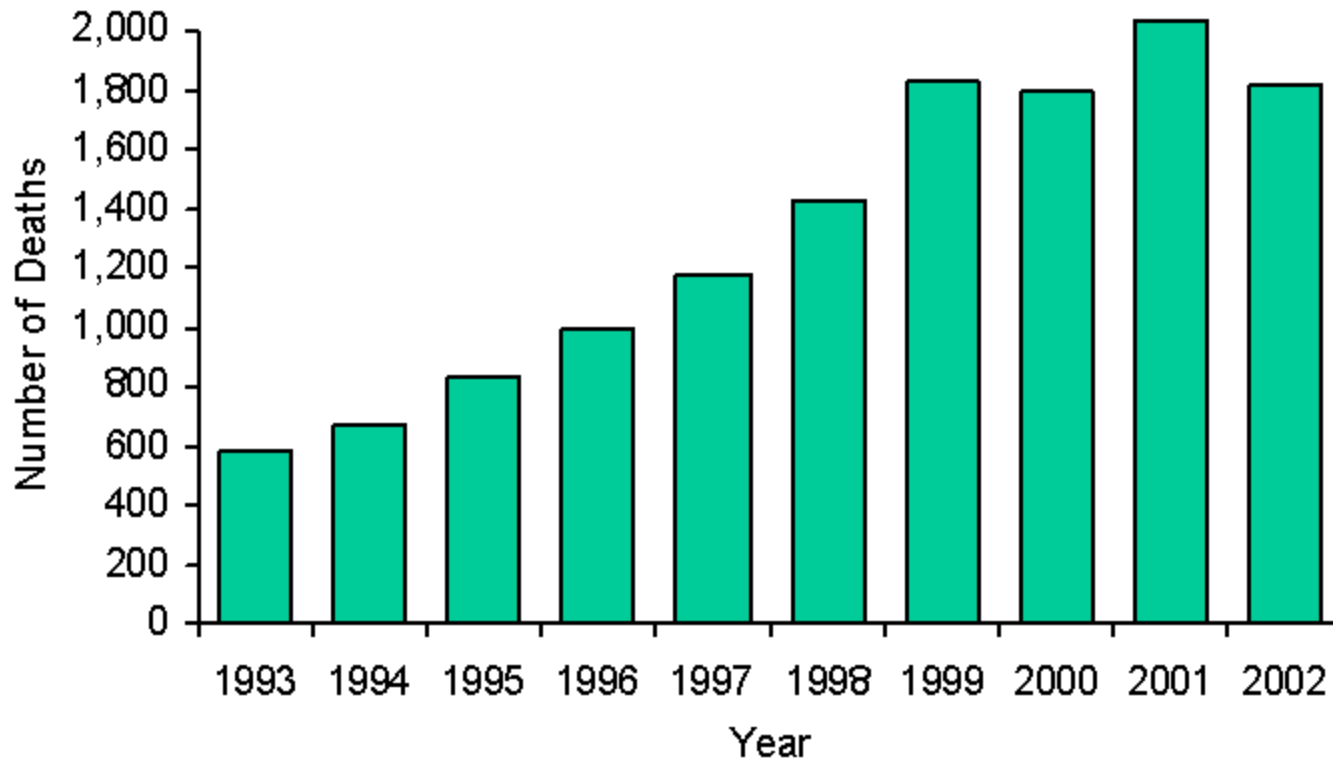
Source: 2003 OPTN/SRTR Annual Report, Table 9.1.

UNOS Regions



Deaths on Waiting List

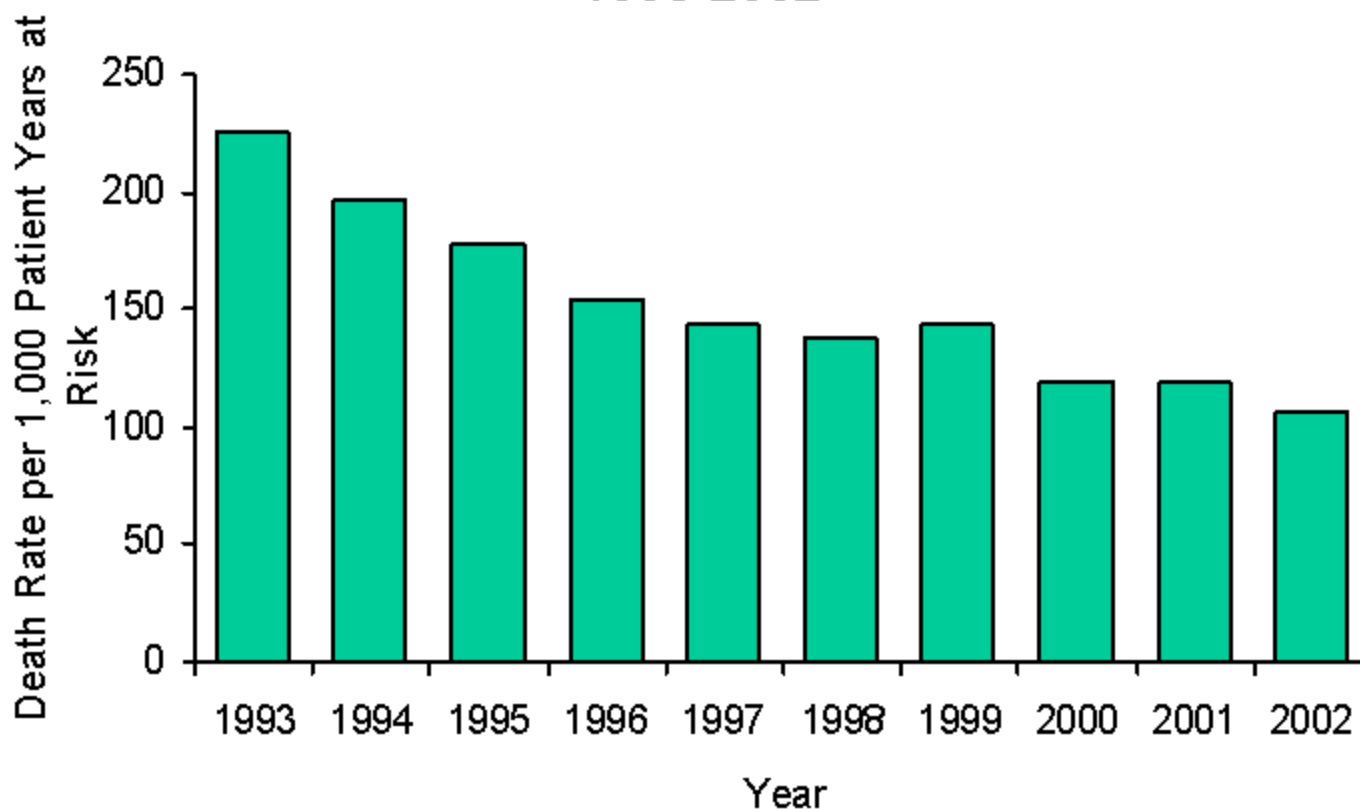
Figure VII-5. Deaths on the Liver Waiting List, 1993-2002



Source: 2003 OPTN/SRTR Annual Report, Table 9.3.

Overall Decline in Mortality

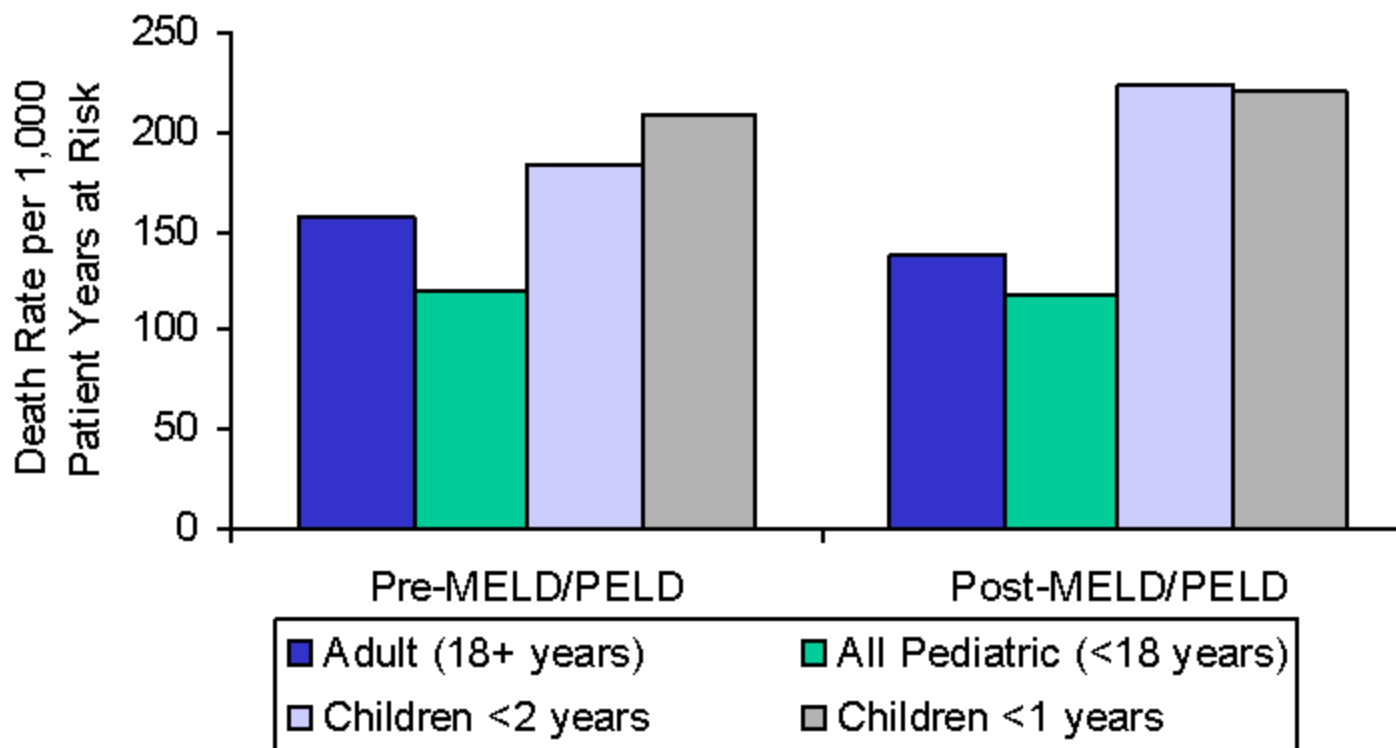
Figure VII-6. Death Rate per 1,000 Patient Years at Risk, 1993-2002



Source: 2003 OPTN/SRTR Annual Report, Table 9.3.

Mortality with MELD

Figure X-6. Deaths per 1,000 Patient Years on the Liver Waiting List Before and After Implementation of MELD/PELD



Source: SRTR Analysis. Data as of August 1, 2003.

Issues specific to PSC

Diet

■ Pre-transplant

- If ascites and/or edema, low salt!!!
- If malnourished, encourage PO intake
- If obese, encourage weight loss, low fat
- Protein intake (vegetable) generally recommended

■ Post-transplant

- Low fat, low cholesterol
- Calcium
- Magnesium

- Retrospective **analysis of the UNOS database** 2002 until October 2006 for AIH, PSC, and PBC
- Estimated patient survival at 1 and 5 years

LDLT was	95.5%	92.5%
DDLT was	90.9%	84.9%
Estimated graft survival at 1		5 years
LDLT	87.9%	84.3%
DDLT	85.9%	78.6%
- On MVA analysis after adjusting for age and MELD score, the effect of donor type was not found to be significant

■ [Kashyap R](#) et al. J Gastrointest Surg. 2010 Sep;14(9):1362-9.

PSC and OLT

- **Recurrent PSC occurs 2-5% per year**
- **ECD increases risk**
- **Colectomy before/during decreases risk of recurrence**
- **Risk of colon cancer: increased after OLT, yearly colonoscopy is recommended**
- **Risk of IBD flare decreased after OLT, (vs. those with CUC and no OLT)**
- **Clinical and colon histological findings lesser in OLT pts [IBD March 2011]**

Thank you