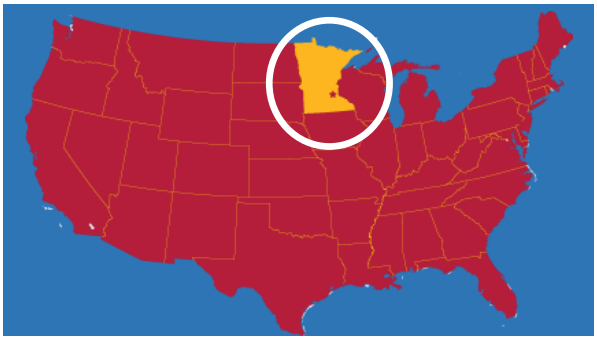
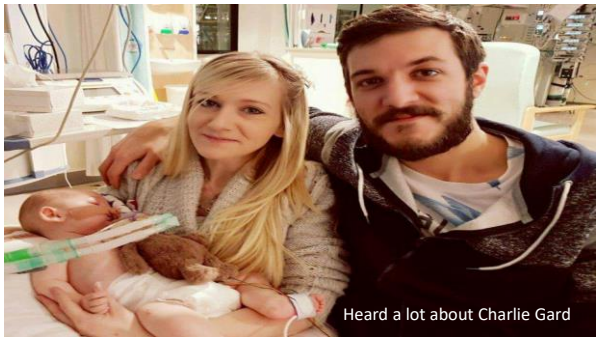
Rationing Organs: U.S. Approach

Oxford Uehiro Centre for Practical Ethics
June 20, 2018

Thaddeus Mason Pope, JD, PhD



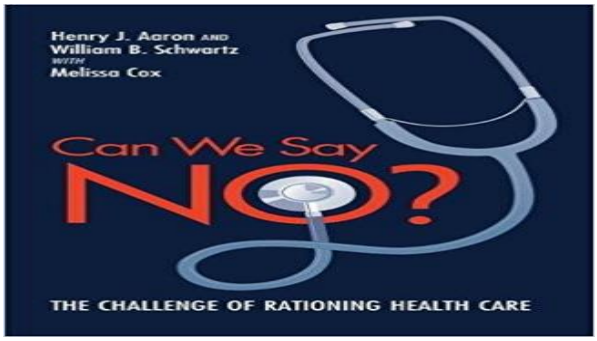
Thank you



"Take him to the **U.S.**"

Why?

"They'll try **anything**."



Human organs - the **only** thing we ration

Roadmap

4

Scarcity

Structure

Principles

By which organs are allocated

Process

3

Livers

Lungs

Kidneys

Scarcity

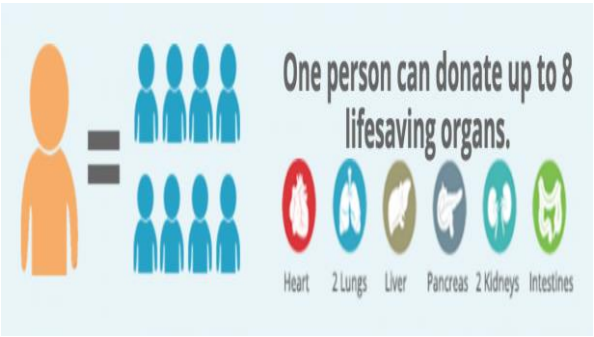
722,000 transplants

(1988 – 2018)

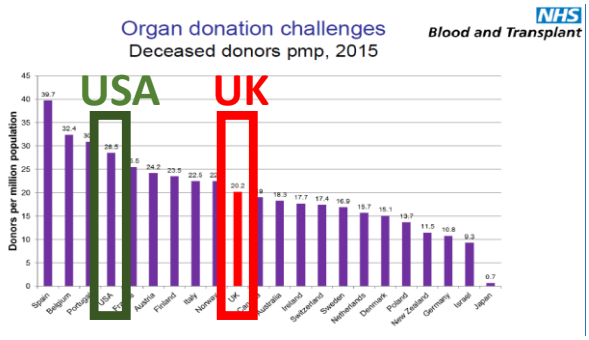
2017

10,000 donors

35,000 transplants

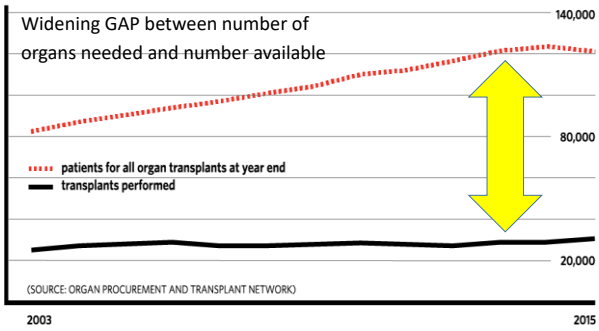


Impressive numbers



BUT

Not enough



35K < 115K

Supply < Demand

Supply

35,000 transplants

29,000 Deceased

6000 Living

Living donors usually "directed" to **family**

Focus on 29,000 annual **deceased** donor transplants

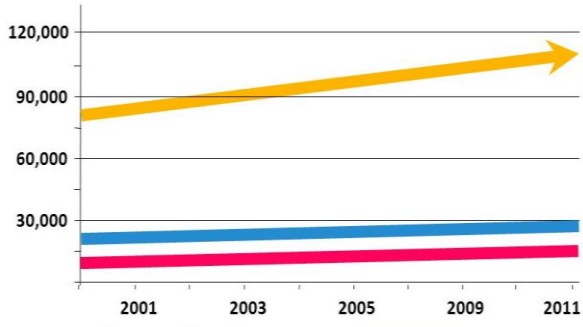
Where do we get deceased donor organs?

Opt-in

Innovating ways to increase **supply**

- Opt-out
- Market
- Devices
- Xenotransplantation
- Stem cell (esp. embryonic)
- Expand definition “death”
- Transplant tourism

Supply is **flat**



Up

Down

Usually after brain death

VIEWPOINT

The 50-Year Legacy of the Harvard Report on Brain Death

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On August 5, 1968, an ad hoc committee at Harvard Medical School published a landmark report that laid the groundwork for a new definition of death, based on neurological criteria.[1] The authors, under the leadership of anesthesiologist Henry Beecher, stated that their primary purpose was to "define irreversible coma as a new criterion for death." The concept of brain death has guided clinical practice for 50 years even though vigorous debate about its legitimacy has never ceased.

The Committee, Its Contexts, and Its Recommendations

The development of positive pressure ventilators in the

Beecher's committee produced th
teria. Coma could be considered irreve
declared dead if, over a 24-hour period
respond to stimuli, had no spontane
breathing, and had no reflexes; a flat
gram provided valuable confirmation
brain function. These criteria clarified
der which clinicians could withdraw li
teria also facilitated organ transplants
cians to declare the donor dead prior t
ventilator and cardiac arrest. This perm
of organs in an optimal condition while
legal responsibility from the clinicians fo

Under attack

Demand

115,000

Organ	Candidates
Kidney	95,188
Liver	13,962
Pancreas	891
Kidney / Pancreas	1,667
Heart	4,022
Lung	1,450

Organ	Candidates	Transplants
Kidney	95,188	19,849
Liver	13,962	8,082
Pancreas	891	213
Kidney / Pancreas	1,667	789
Heart	4,022	3,244
Lung	1,450	2,449

Average Median Wait Time

Kidney 5 years

Liver 11 months

Heart 4 months

Lung 4 months

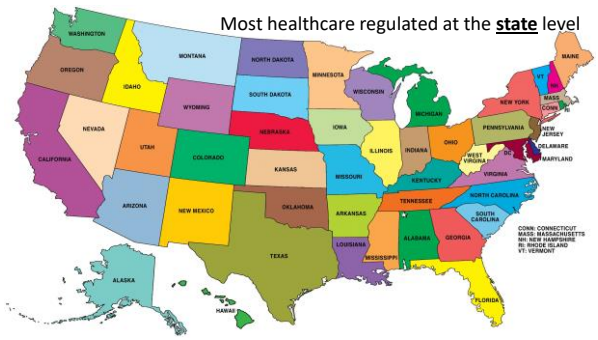
20 die every day

from lack of organs

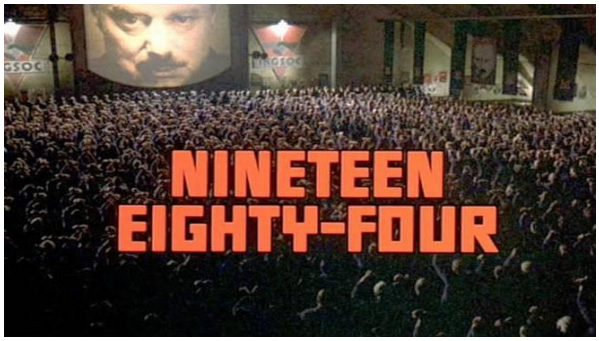
That's **scarcity** of deceased donor organs

How are they allocated?

Structure



1984



1983

The Food and Drug Administration

immunosuppressant
decreased morbidity
& enabled **routine**
transplantation

1984

"national resource"

"public good"

National Organ Transplant Act

"**streamline** the organ distribution process"

Organ Procurement & Transplantation Network (OPTN)

2 Key roles

(1) Maintain **names** of individuals who need transplants

(2) When organs become available, **match** organs with appropriate patients

USGOV **contracts** with private non-profit to run OPTN

UNOS℠

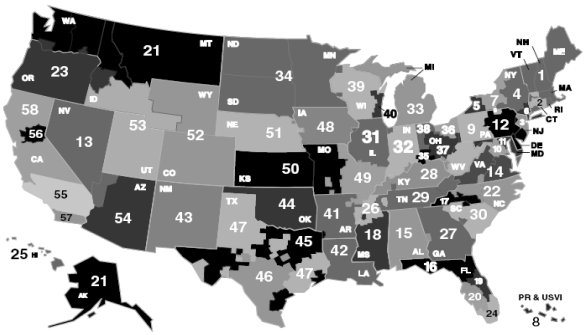
UNITED NETWORK FOR ORGAN SHARING

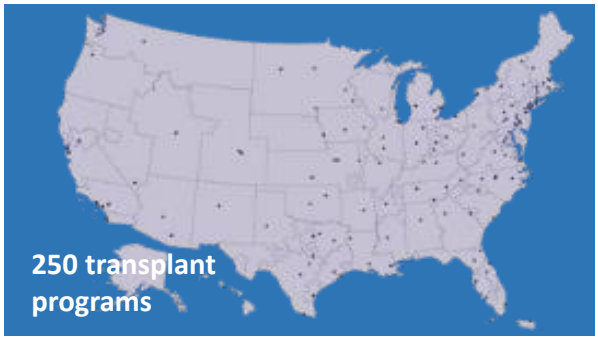
UNOS does the rationing

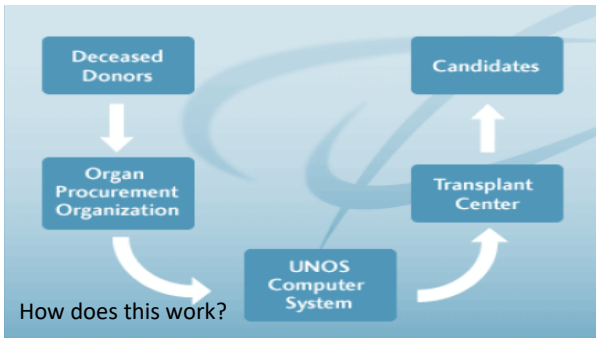
We will focus on **UNOS**

"network"

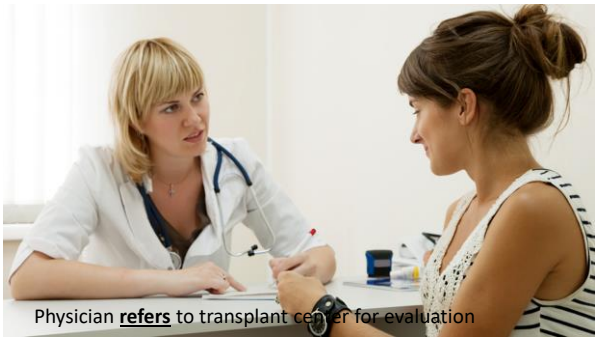
2 Other players







Candidate



Physician **refers** to transplant center for evaluation

Transplant center will **evaluate** you

Medical condition

Family support

Financial situation

$600,000

+ $7000/mo.

Many lack **access** to waiting list

But we'll focus on the **list itself**

Good candidate → TC add to "list"

Non-U.S. = **1%** organ wait list

Turn from the candidate to the

Donor

Hospitals **must notify** local OPO of potential organs

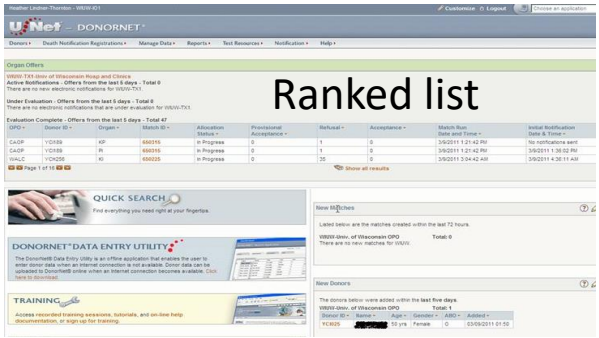
OPO will obtain **consent** for donation once donor BD

OPO gathers **information about donor** and enters data into UNOS program

organ size and condition, blood type, and tissue type

Matching

UNOS computer system **ranks** candidates based on the allocation policy for that organ



UNOS or OPO **contacts transplant centers** with patients on the computer-generated ranked list.

What determines

Ranking

on the list

Principles

UNOS℠

Private non-profit

Allocation policies must satisfy

2 principles

"achieve the **best use** of donated organs"

Utility

Efficiency

"promote **patient access** to transplantation"

Equality

Fairness

Utility

~~Maximize **social** benefit~~

~~Give to those who will do most "good"~~

Medical benefit

Key measure

Maximize **life-years** gained

But utility is **not** the only allocation principle

Justice

Minimize **disparities** in opportunity among similarly situated candidates

Justice & Utility often **conflict**

Justice	Utility
Most urgently in need	Less likely to live longer

Justice	Utility
Waiting longest	Will not benefit most

Utility	Justice
Maximize QALYs	Disfavor older

UNOS must honor **both** principles

UNOS does **not** allocate organs to produce maximum medical good

UNOS is concerned not only with **amount** of medical good

But also with how the good is **distributed**

Process

3 organs

Livers
Lungs
Kidneys

Livers

Candidates 14,000
Transplants 8000

Before 2002

wait time

Liver went to patient **added** to list **first**

Justice

Utility

After 2002

Need

Still

Justice

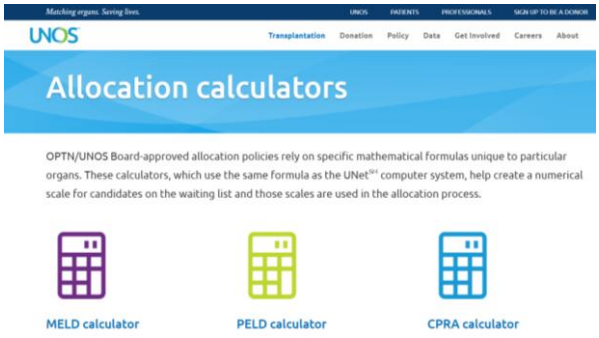
Utility

Now a different notion of justice

Model for End-Stage Liver Disease (MELD)

Score

how urgently patient needs liver transplant **in next 3 months**



6 → 40

Less ill — Gravely ill

35 ICU

25 Still at home

Highest MELD gets the liver

Main factor

Short term mortality risk

66yo MELD 35

before

22yo MELD 25

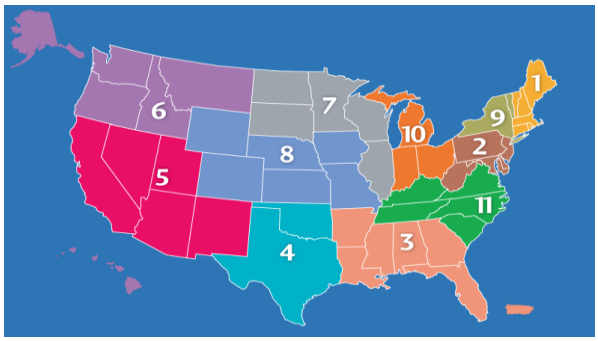
BUT

22yo MELD 25 likely to **live longer** with liver – more QALYs

Justice	Utility
Most urgently in need	Less likely to live longer

Justice	Utility
↑	↓

Time for Geography



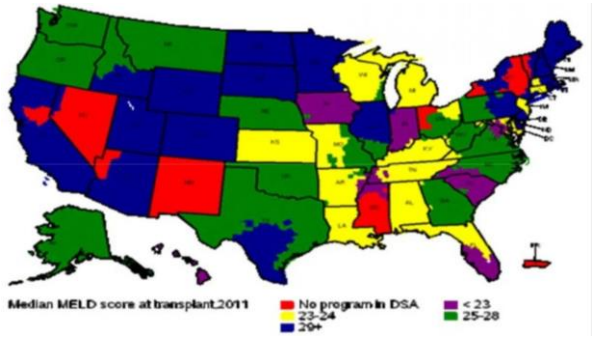
Not 1 list

58 lists

Highest MELD gets the liver

Highest MELD **in your OPO service area**

Variability



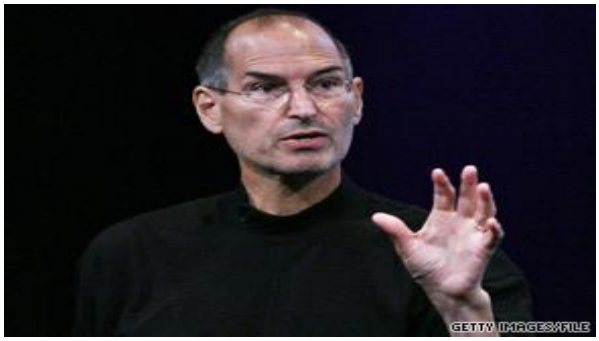
Median MELD

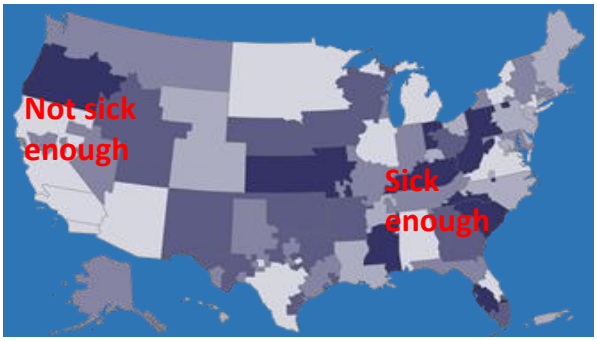
Indiana = 20

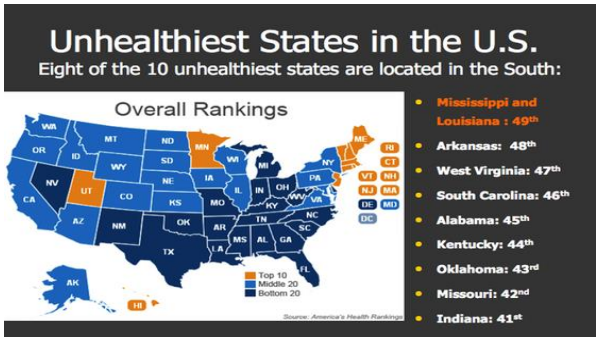
Los Angeles = 40

Wait list **varies**

days to years







Debate on geographical priority

Utility

reasons for locality

Lower ischemia time

Better organs

More willing to donate

But . . . **not** going to patients who could most benefit

Justice

reasons for locality

National system

Geography **not** morally relevant (treat Miami and Memphis same)

Lungs

Candidates	1450
Transplants	2450

Like livers, wait time plays limited role

Goal

Reduce waitlist deaths

Lung allocation score

1 - 100

Most weight

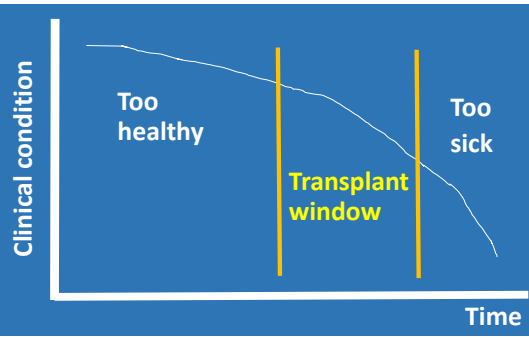
Risk of death w/o transplant (urgency)

Some weight

Probability of post-transplant survival (utility)

Must be sick . . .

But not **too** sick



Justice	Utility
Urgent need rank 1st	Too sick to benefit most

Utility	Justice
Avoid futile TP	Deny sick in need

Covered

Livers

Lungs

Kidneys

Candidates	95,000
Transplants	20,000

Before 2014

Waiting time

Fairness / Utility


Alternate RRT = dialysis

No urgency factor

like livers and lungs

BUT

Push for

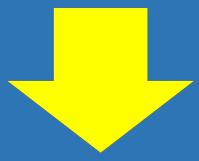
more utility


Old recipients

After 2014

More emphasis on utility

Better kidneys



Healthier patients

Every kidney gets Kidney Donor Profile Index (KDPI) score

How long kidney is likely to function compared to other kidneys

Each kidney candidate gets an individual Estimated Post-Transplant **Survival** (EPTS) score

Top 20% kidneys

first offered to patients likely to last longest

BUT

Limit to utility

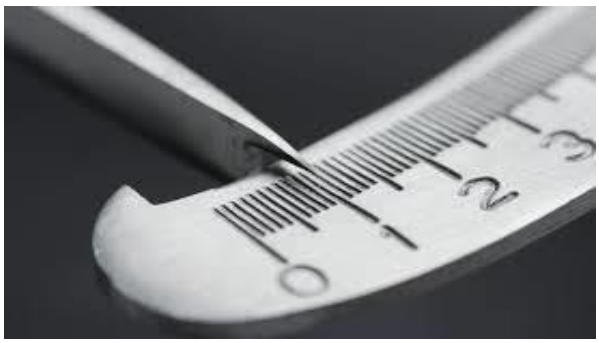
Not age matching

Young → young

Old → old

Remaining 80% still **wait time**

Conclusion



Coming up

Heart allocation changes

- Modify adult heart allocation
  12/2016 Board action
- Clarification of adult heart allocation
  8/2017 Executive Committee action
- Review board guidance on HCM and RCM exceptions
  8/2018 Board action

Liver allocation changes

- Enhancing liver distribution
  12/2017 Board action
- Establishing a National Liver Review Board
  6/2017 Board action

VCA allocation changes

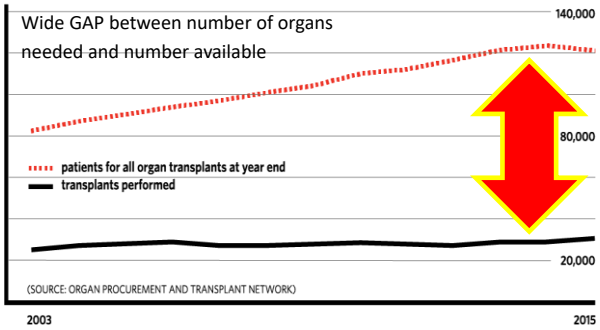
- List covered body parts - 1 of 2
  6/2016 Board action
- List covered body parts - 2 of 2 - Effective 9/1/2018
  6/2016 Board action

Update transplant hospital definition
12/2016 Board action

Pending implementation and notice to members

Modifications to the distribution of deceased donor lungs
6/2018 Board action

Flux



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