The Xenotransplantation Breakthrough: A Groundbreaking Approach to Increasing Organ Supply

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I have no conflict of interests related to this talk.
Views are mine and do not represent official OPTN policy.
Do we really need xenotransplants?

- Are we successful?
- Have we failed?
Success is real

2021 | Most lives ever saved in one year

More than 40,000 lifesaving transplants – a first!

Record numbers of kidney, heart & liver transplants

11th record year in a row for deceased donation

*Based on OPTN data as of Jan. 10, 2022. Data subject to change based on future data submission or correction.

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Transplants numbers over time

National Transplants by Year (All Donors)

Year
1990 2000 2010 2020
N
0 5k 10k 15k 20k 25k 30k 35k 40k
Donor numbers over time

National Donors Recovered by Year (Deceased Donors)
Kidney transplants
Thoracic and liver transplants

National Thoracic Transplants by Year (All Donors)

National Liver Transplants by Year (All Donors)
Main street, Annapolis MD
What about the demand for transplants?
Transplant demand: Pittsburgh + St Louis
Waitlist additions

National Waitlist Additions by Year

- Year: 1990 to 2020
- Number of Waitlist Additions: 10k to 70k

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Candidates on the list

Year

Candidates on list during the year

0

50000

100000


What about transplant outcomes?
Waitlist mortality rate

National SRTR Liver Waitlist Mortality Rate

Who has oversight of xenotransplants?

- FDA regulates as a biologic: Center for Biologics Evaluation and research
- FDA regulates genetic engineering of animals: Center for Veterinary Medicine
- PHS policy: Humane Care and Use of Laboratory Animals
- OPTN: no direct role; legal authority limited by statute to human organs. OPTN policy has potential impact on xenotransplantation
Xenotransplant potential impacts

Supply of organs
Improved patient outcomes
Equity
Logistics
Cost