



SCIENTIFIC  
REGISTRY OF  
TRANSPLANT  
RECIPIENTS

# Role of drug overdose in the increase in deceased donors

Melissa Skeans, MS

# Disclosures

Melissa Skeans, MS

Biostatistician

SRTR, Minneapolis, MN, USA

I have no financial relationships to disclose within the past 12 months relevant to my presentation. The ACCME defines “relevant” financial relationships as financial relationships in any amount occurring within the past 12 months that create a conflict of interest.

My presentation does not include discussion of off-label or investigational use.

I do/do not intend to reference unlabeled/unapproved uses of drugs or products in my presentation.

This work was supported wholly or in part by HRSA contract HSH-250-2015-00009C. The content is the responsibility of the authors alone and does not necessarily reflect the views or policies of the Department of HHS, nor does mention of trade names, commercial products, or organizations imply endorsement by the U.S. Government.



SCIENTIFIC REGISTRY OF  
TRANSPLANT RECIPIENTS

# **Overdose Deaths Drive Down U.S. Life Expectancy – Again**

**- *Wall Street Journal***

**Study: Despite decline in prescriptions, opioid deaths skyrocketing due to heroin and synthetic drugs**

**- *Washington Post***

**New York City Sues Drug Companies Over Opioid Crisis**

**- *New York Times***

**Omissions On Death Certificates Lead To Undercounting Of Opioid Overdoses**

**- *National Public Radio***

**U.S. Public Health Service's Commissioned Corps fight opioid epidemic and other challenges**

**- *USA Today***

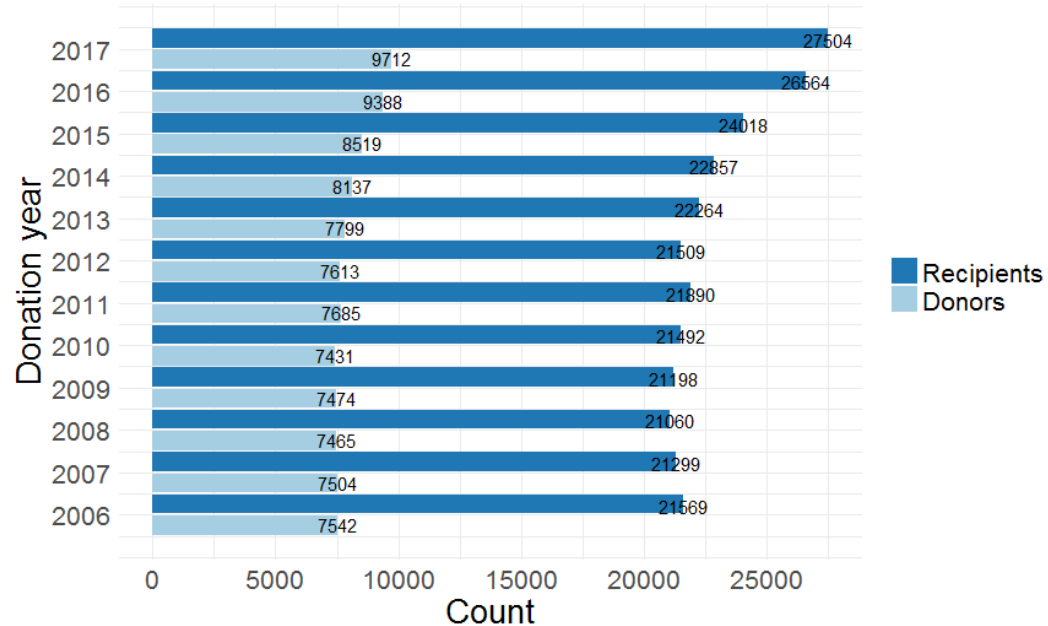


SCIENTIFIC REGISTRY OF  
TRANSPLANT RECIPIENTS

# Background

- Many sources attribute deceased donor increases to the opioid epidemic.
- We examined data to find out how much overdose deaths have changed and how they contribute to donor increases.

Numbers of transplant recipients and donors by year



# Methods

## Using SRTR standard analytic files

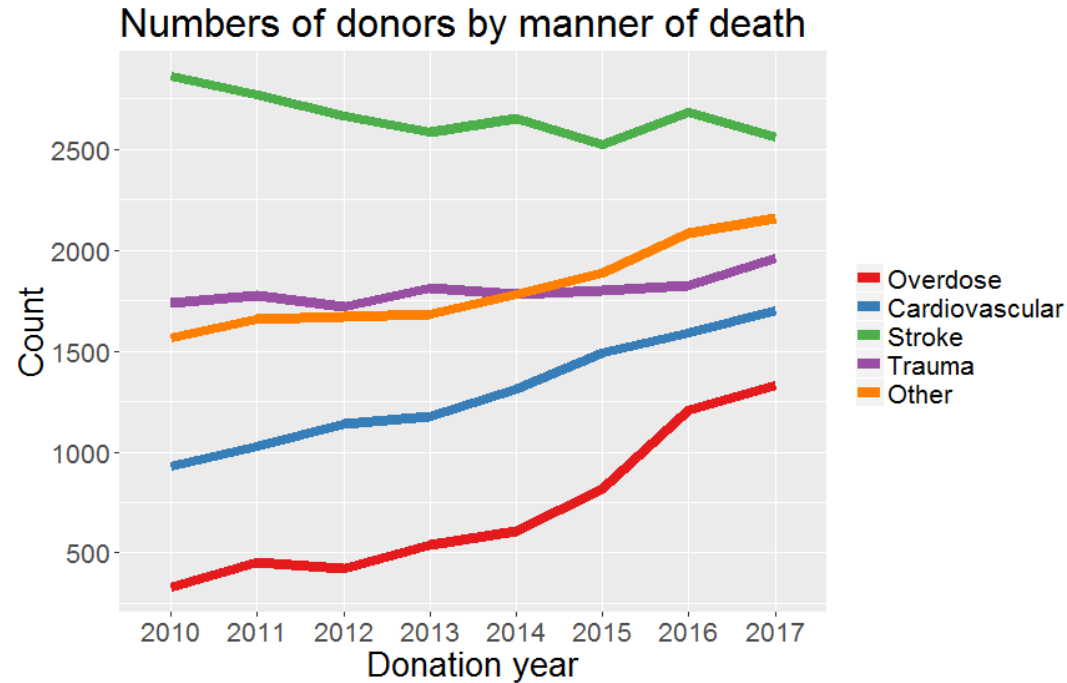
- Deceased donors 2006-2017 with at least 1 organ transplanted.
- Classified cause of death as **drug overdose** if indicated in *mechanism of death* field, or if text specified overdose.
- Data specific to “opioid overdose” not available.

## From Deceased Donor Registration

Mechanism of Death*	DROWNING
	SEIZURE
	ASPHYXIATION
	ELECTRICAL
	STAB
	SIDS
	DEATH FROM NATURAL CAUSES
	<b>DRUG INTOXICATION</b>
	CARDIOVASCULAR
	GUNSHOT WOUND
	BLUNT INJURY
	INTRACRANIAL HEMORRHAGE/STROKE
	NONE OF THE ABOVE

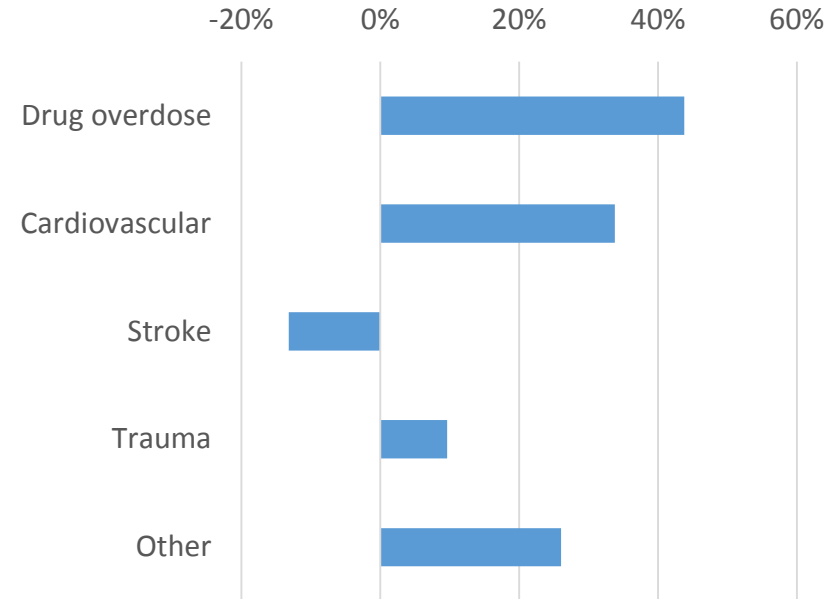
# Deceased donors by manner of death, 2010-17

- Overdose: 331 to 1328, 4-fold ↑ in number, 3-fold ↑ in proportion.
- Other causes
  - Cardiovascular: 932 to 1701, 83% ↑
  - Trauma: 1740 to 1959, 13% ↑
  - Other: 1568 to 2161, 38% ↑
  - Stroke: 2863 to 2563, 11% ↓



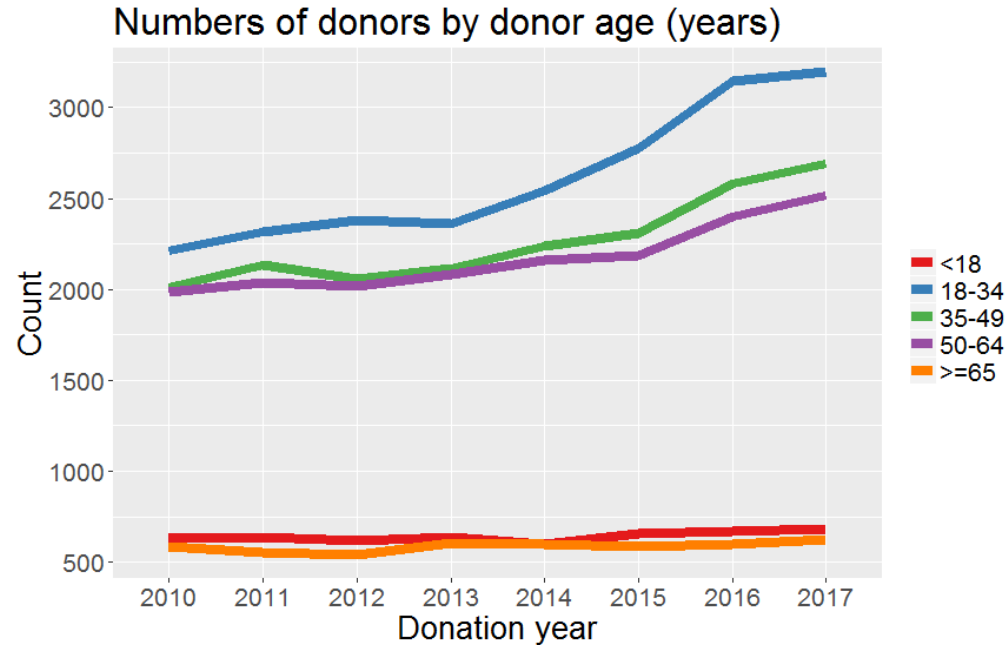
# Drug overdose as % of donor increase, 2010-17

- Denominator: donor  $\uparrow$ , 2010-17
- Numerator: cause-specific donor  $\uparrow$
- Percent = proportion of donor  $\uparrow$  attributed to each cause of death
- Drug overdoses account for largest increases in donors by cause, 44%
- 34% of  $\uparrow$  due to CV deaths, 10% trauma, 26% other



# Deceased donors by age, 2010-17

- Little change in numbers of donors aged <18 or  $\geq 65$  years
- Age 18-34:  $\uparrow$  975 donors, 46%
- Age 35-49:  $\uparrow$  688 donors, 35%
- Age 50-64:  $\uparrow$  526 donors, 27%

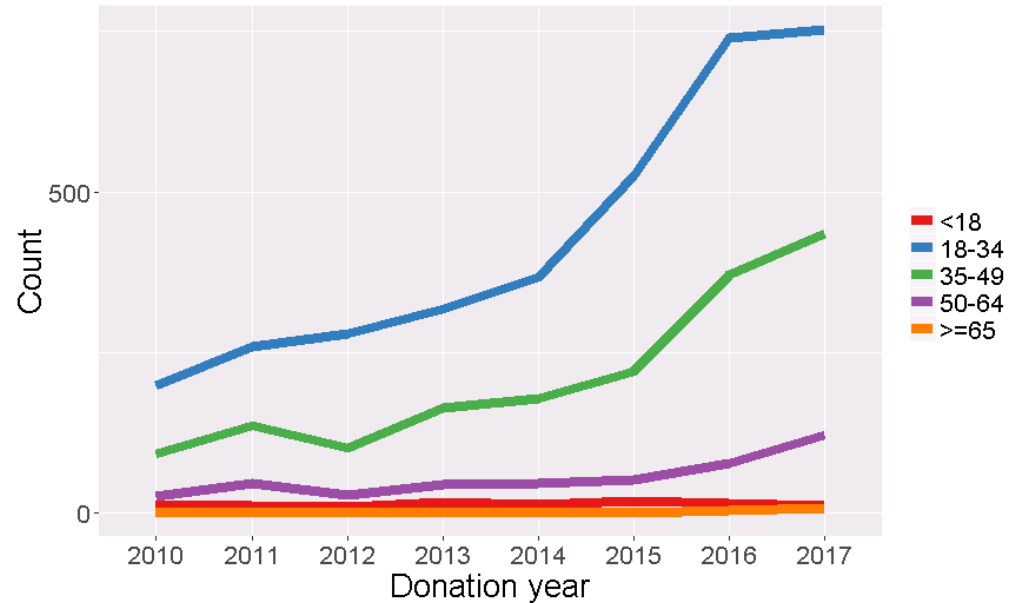




# Donors who died of overdose, by age, 2010-17

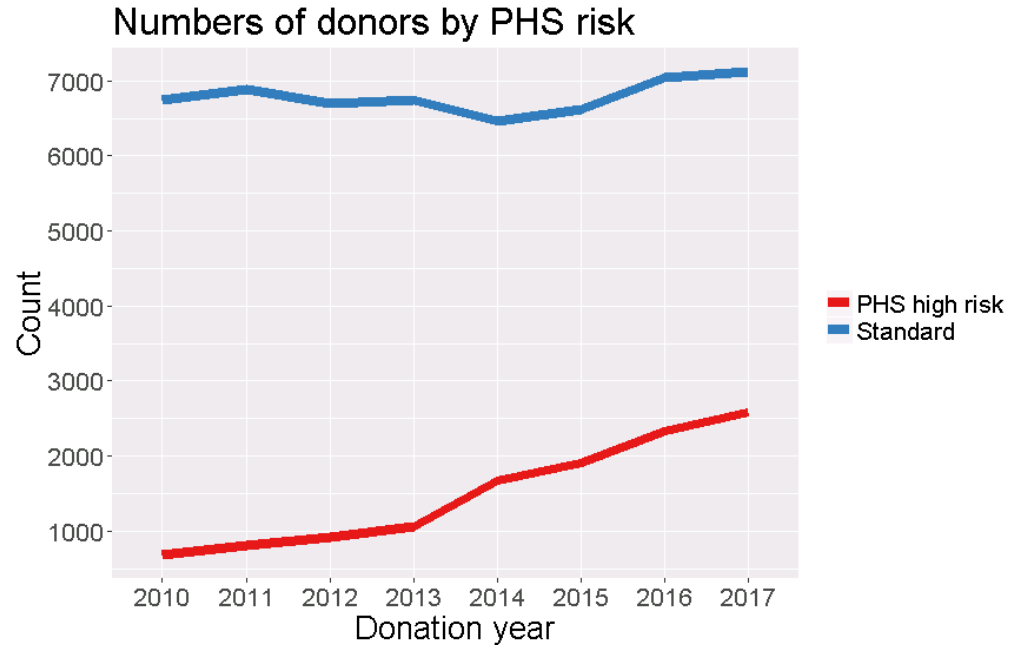
- Few drug overdoses among donors aged <18 or ≥65 years
- Age 18-34: ↑ 553 donors, 214%
- Age 35-49: ↑ 342 donors, 251%
- Age 50-64: ↑ 95 donors, 202%
- Non-overdose deaths ↑ 21% among donors aged 18-64 years

Numbers of overdose deaths by donor age (years)



# Deceased donors by PHS risk, 2010-17

- Public Health Service (PHS) high-risk donors at increased risk of transmitting HIV, HBV, HCV
- PHS high risk donors ↑ 2010-17
  - From 676 to 2587, 2.8-fold ↑
  - From 9% to 27% of total
- In 2017, 72% of drug overdose deaths were PHS high risk, but only 37% of PHS high risk were drug overdose deaths.



# Conclusions

- Drug overdose deaths have contributed to increases in deceased donors.
- Cannot quantify specific impact of opioids; data not obtained on DDR.
- CV and “other” deaths also increased considerably.
  - Some may be misclassified overdose/opioid deaths.
  - Some are PHS high-risk organs now more usable due to improved detection and treatment techniques.
- Moving forward, need to monitor outcomes of these transplants.