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# Organ Donation from Burn-Injured Patients: A National Perspective

Taryn E. Travis, MD, Laura S. Johnson, MD,  
Lauren T. Moffatt, PhD, Ram Subramanian,  
MD, Marion H. Jordan, MD, FACS,  
Jeffrey W. Shupp, MD



MedStar Washington  
Hospital Center

The Burn Center   
MedStar Health



# Disclosures

- No conflicts of interest

# Clinical Case

- 16 yo M involved in house fire after television explosion
- PEA arrest in field, estimated 15 minutes down time
- ACLS by first responders, vital signs regained
- Presented to MWHC with ~50% TBSA burn to back, buttocks, and bilateral lower extremities with inhalation injury and CO intoxication



Mlive.com

# Clinical Case

- GCS 3T without sedation
- Massive fluid resuscitation, vasopressive support, total body cooling
- Referred to WRTC for possible organ donation
- Approximately 36 hours after injury, brain death confirmed

# Clinical Case

- Family wished to pursue organ donation
- Patient donated **lungs** and **kidneys**
  - Despite:
    - Large burn
    - Inhalation injury
    - Hypovolemic shock
    - History of cardiac arrest
    - Confirmed bacteremia

# Current US Transplantation Numbers

- Waiting list candidates as of February 4, 2014: **121,113**
- Active waiting list candidates: **77,205**
- Transplants performed January – November 2013: **26,513**
- Donors January – November 2013: **12,991**

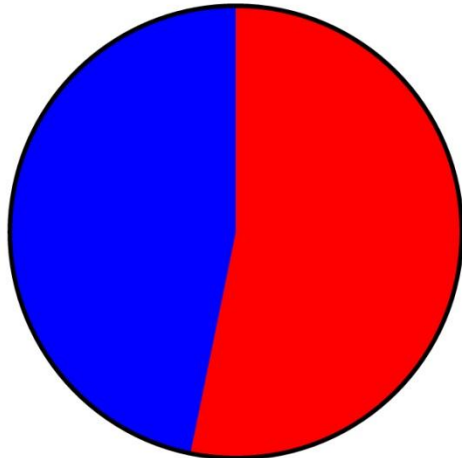
[www.UNOS.org](http://www.UNOS.org)

# Methods

- UNOS Data Query
  - Free-text causes of death categorized as “other”
  - 1994 – 2012
- American Burn Association National Burn Repository
  - Patient characteristics of mortal burn injuries
- National Survey
  - Burn Center Directors
  - Organ Procurement Organization Representatives
  - Transplant Surgeons

# Survey Responses

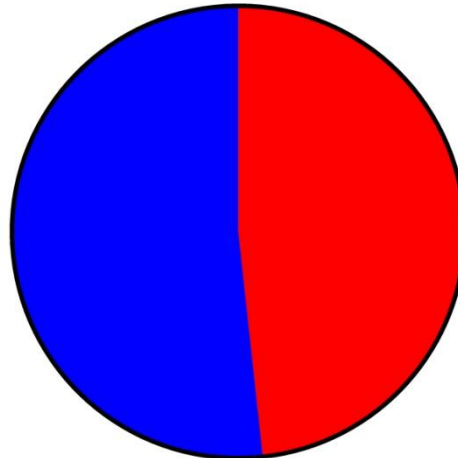
**Burn Center Surveys**



**Total=124**

 **46.77% Responded**  
 **53.23% Did Not Respond**

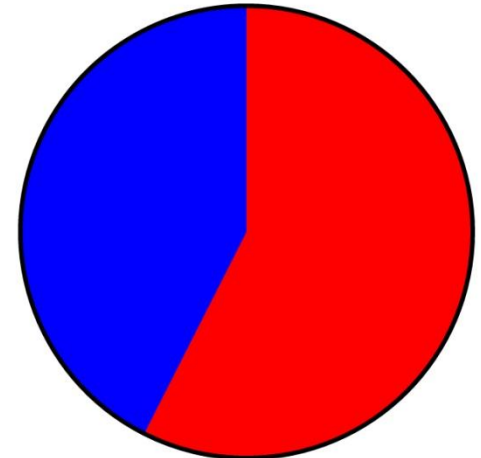
**OPO Surveys**



**Total=58**

 **51.72% Responded**  
 **48.28% Did Not Respond**

**Transplant Center Surveys**

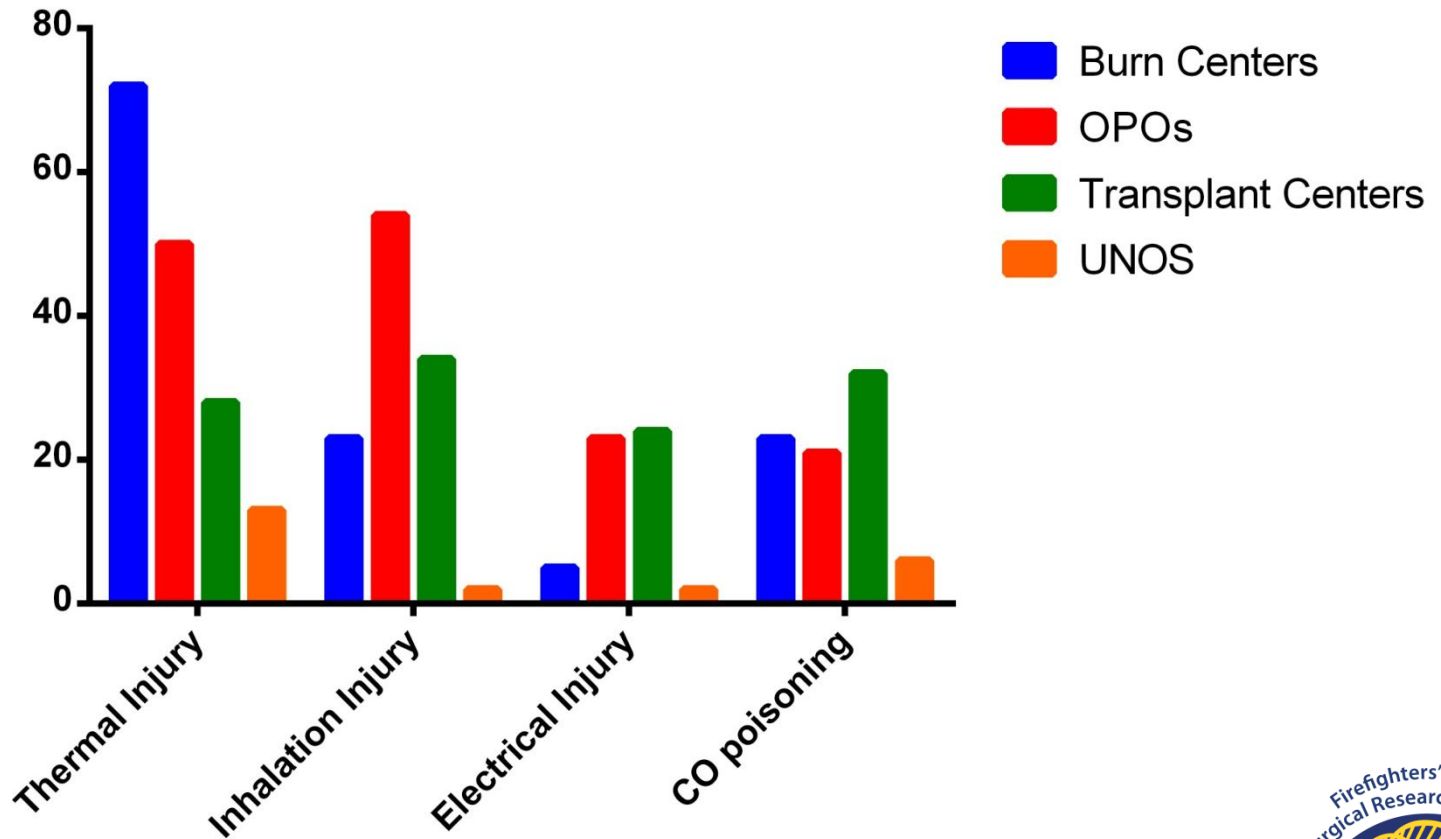


**Total=221**

 **42.53% Responded**  
 **57.47% Did Not Respond**

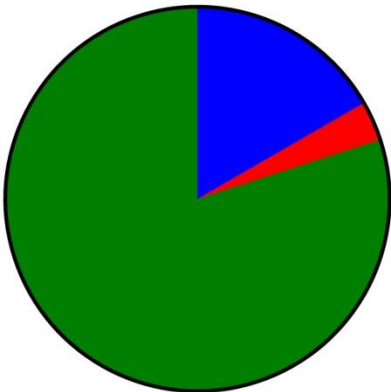


# Estimated Donor Numbers



# OPO Experiences

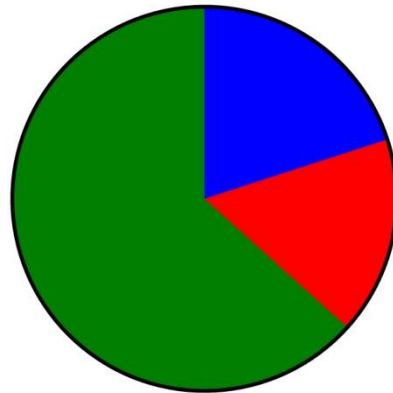
Inhalation Injury



Total=30

80.00% Yes  
3.33% No  
16.67% I don't know

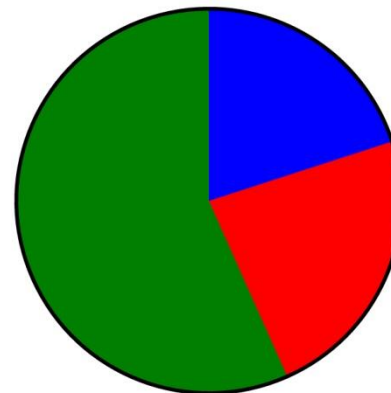
Thermal Injury



Total=30

63.33% Yes  
16.67% No  
20.00% I don't know

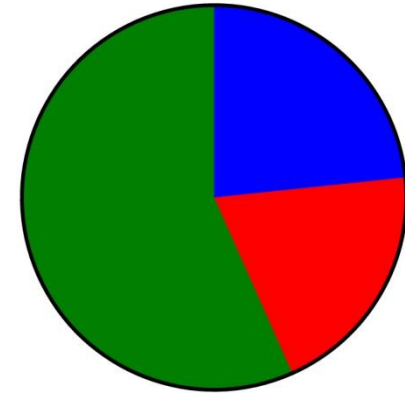
Electrical Injury



Total=30

56.67% Yes  
23.33% No  
20.00% I don't know

CO Poisoning

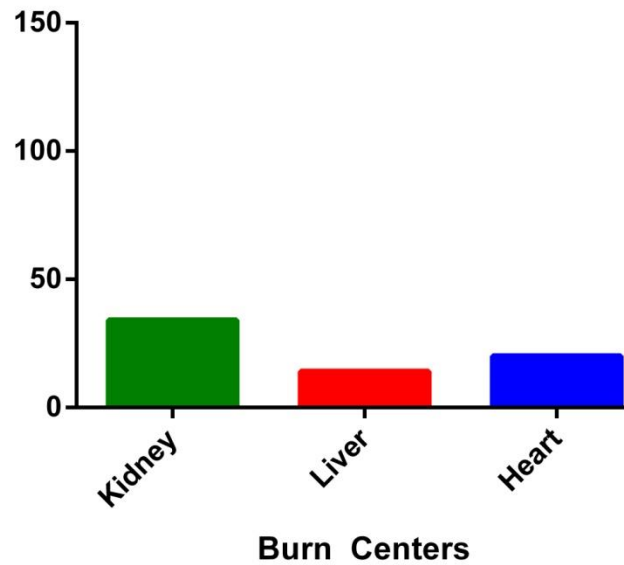


Total=30

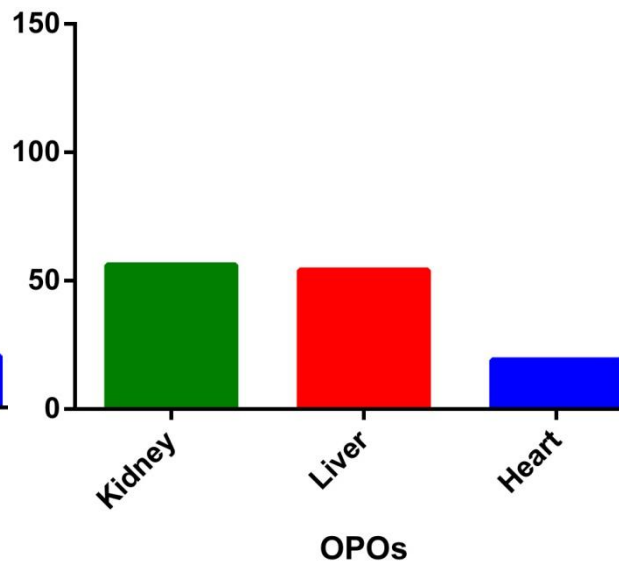
56.67% Yes  
20.00% No  
23.33% I don't know

# Organ Types

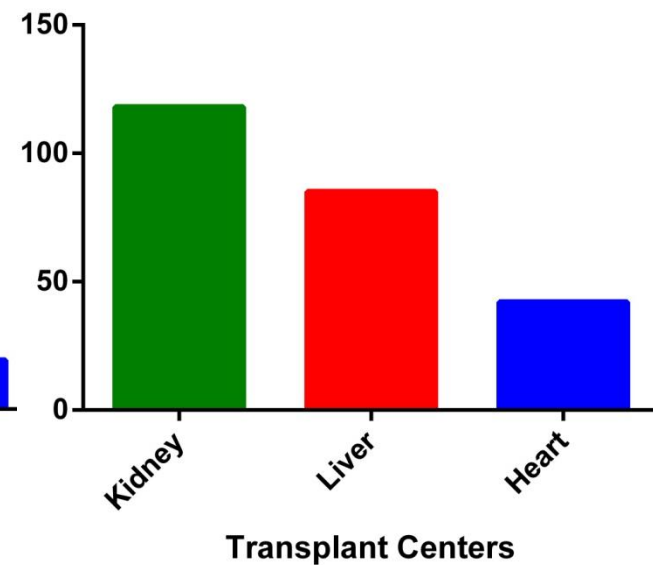
Organs Donated



Organs Procured

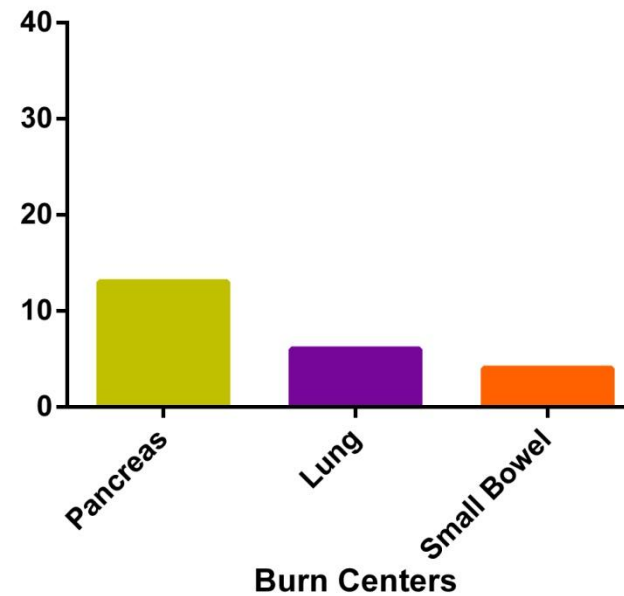


Organs Transplanted

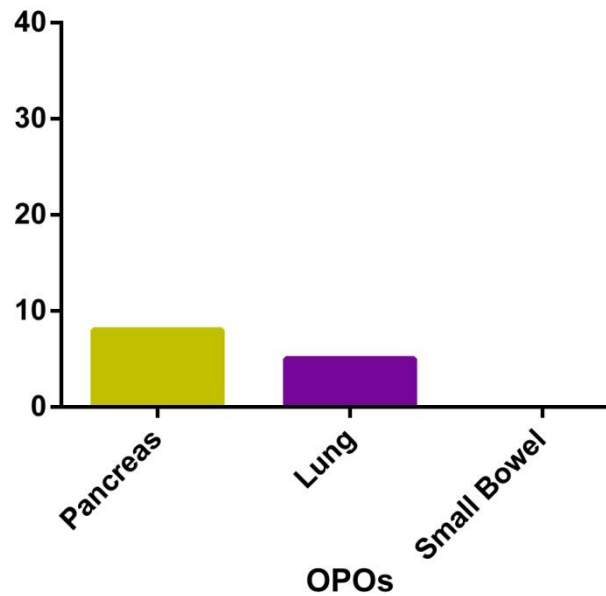


# Organ Types

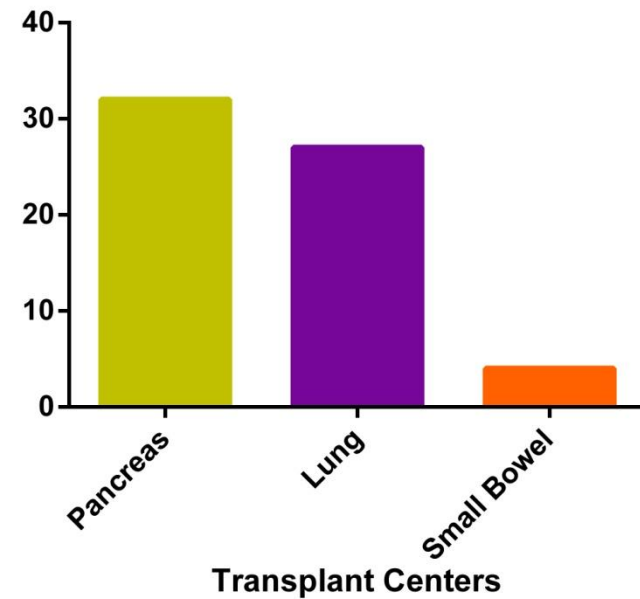
Organs Donated



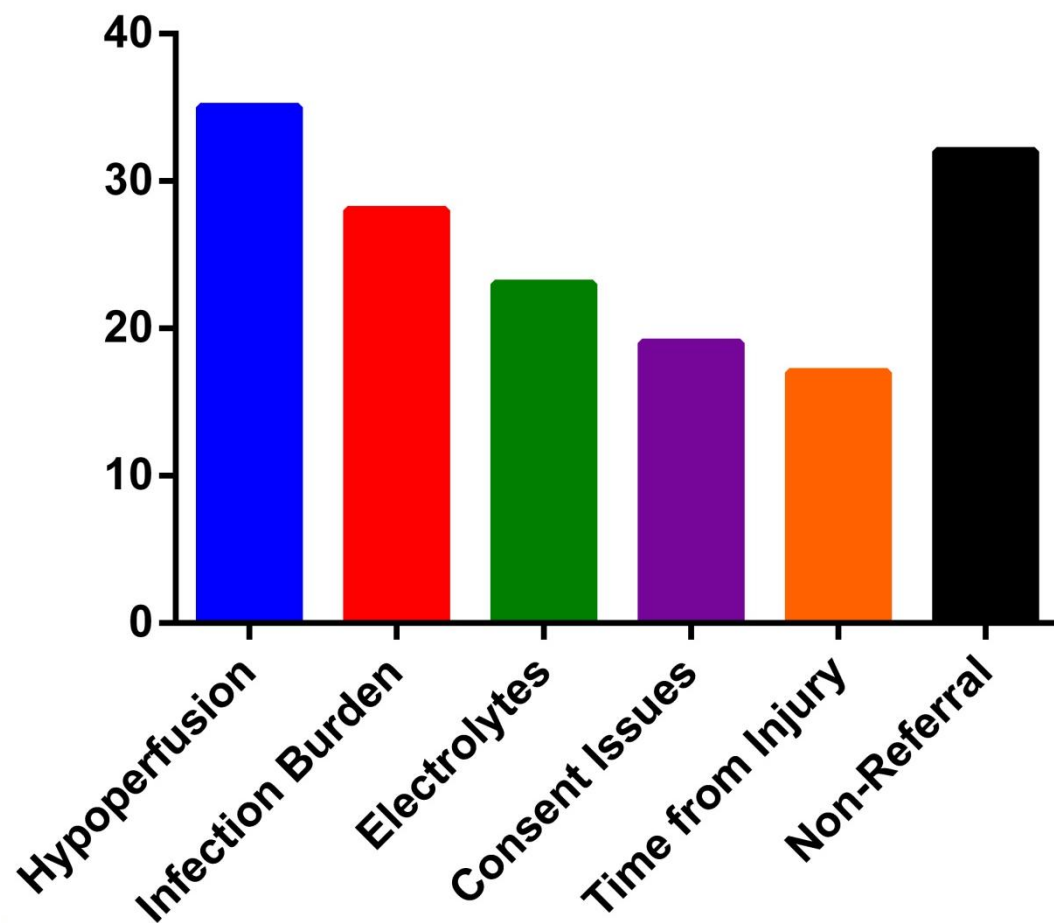
Organs Procured



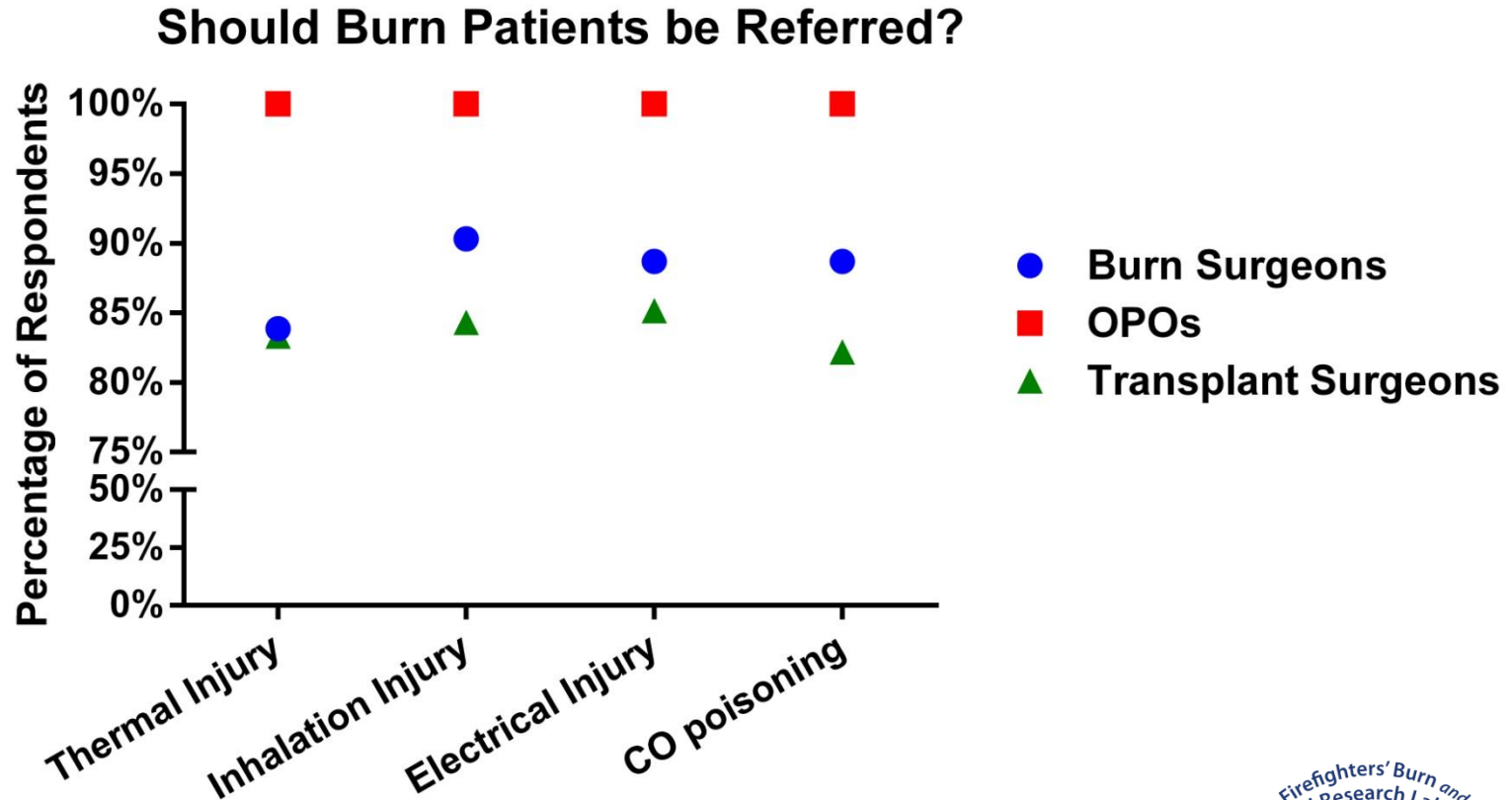
Organs Transplanted



# Barriers to Successful Organ Recovery



# The Question of Referral



# Conclusions

- Data from this national survey indicate that there are more mortally burn-injured patients acting as organ donors than currently available UNOS data would suggest

# Conclusions

- There is still disagreement as to which patients should be referred for organ donation, though not amongst organ procurement organizations



# Conclusions

- Burn injured patients have the ability to contribute to the pool of greatly needed donor organs and a consensus is needed to guide practice in the burn community

# Limitations

- Database Data
  - Inaccurate entries
  - Incomplete entries
  - Limited details
- Survey Data
  - Incomplete responses
  - Recall bias
  - Question interpretation

# Acknowledgements

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- Advice and insight:
  - Bridget Cavanagh – Busby
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- Mentors:
  - Jeffrey Shupp, MD
  - Lauren Moffatt, PhD
  - Marion Jordan, MD
- Survey Respondents across the country

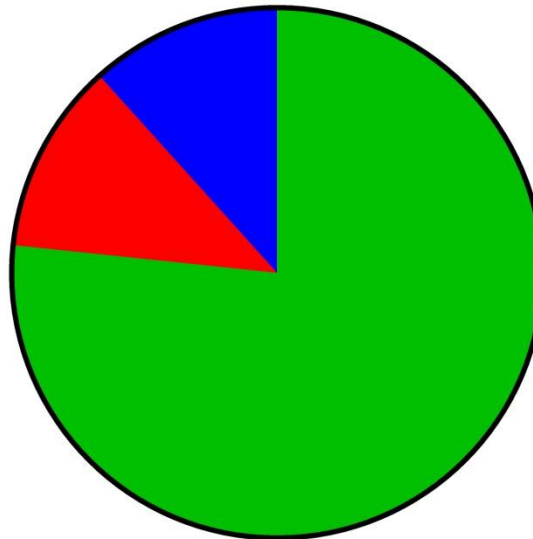
# Potential Burn-Injured Donors

Age Group (years)	Deaths in NBR	Deaths With No Comorbidities
0-19.9	533	180
20-29.9	329	172
30-39.9	412	170
40-49.9	645	180
50-59.9	820	192
Total	2,739	894

# Burn Center Directors

“If you were caring for a patient with a non survivable thermal injury, inhalation injury, electrical injury, or CO poisoning, would you consider employing advanced measures such as CVVH, steroids, or inotropes to preserve organs for donation?”

## Advanced Measures



Total=60

