The Gift of Life

Organ Donation and its Challenges
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Give the most precious gift of all.... LIFE!
Nebraska Organ Recovery System (NORS)

• Federally designated as an organ procurement organization (OPO)
• Tasked with facilitating organ donation and recovery process for a designated service area
• Independent of hospitals and transplant centers
• Also facilitates tissue recovery
  – Bones, connective tissue, heart valves, and veins
Types of Organ Donation

• Living Donation
  – About 1 in 4 transplants

• Cadaveric Donation
  – Majority of transplants form this type of donation
What can be recovered?

ONE Organ Donor can save up to 8 lives!
Some Simple Math

• 120,000 people currently waiting for life-saving transplants nationally
  • 77 organs transplanted daily
  • 144 people added to the waiting list daily (1 every 10 minutes)
  • 18 people die daily

= an increase of 49 people added to the waiting list daily

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Nebraska Data

- ~16,000 deaths
- ~6,000 hospital deaths
- Less than 100 potential organ donation candidates
- 2013 76 organ donors
  - 260 organs transplanted
Why such a small number of organ donors?

• In order for organs to be viable for transplantation...
  – Must have little to no warm ischemic time (time the organs are not receiving oxygen-rich blood flow to the time they are perfused with cold solution)
  – Transplant must occur within a short timeframe after recovery
    • Anywhere from 4 hours for a heart to 10 hours for a liver
  – Proper testing and diagnostics must occur before recovery of organs, to ensure good function for the recipient and minimize risk of disease transmission
Criteria for Organ Donation

- Non-survivable injury or illness
- Mechanically ventilated patient
  - Ventilation ensures proper oxygenation to the organs
- Brain dead or a high likelihood of death soon after discontinuing life sustaining treatments/therapies
- No age restrictions, few medical restrictions, organ function is very important
Process Overview

- Education and training
- Referral from hospital
- Evaluation of eligibility
- Authorization for donation
- Organ suitability evaluation
- Organ allocation/matching
- Organ recovery
- Organ transportation
- Organ transplantation

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Education and Training

• 106 hospitals in Nebraska
  – 52 have the potential for an organ donor
• 25,000 nurses (over 6,000 in a critical care setting)
• 4,500 physicians
• We need to train nearly 30,000 people to assist with the donation process

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Education and Training

• Role of hospital staff
  – Referral of potential donors
  – Support of the potential donor’s family
  – Direct potential donor’s hospital care

• Usually around 50 hospital staff have been in contact with the patient and/or the family before NORS has any contact with them
Referral from Hospital

• Hospital initiates the referral of potential donors based on agreed upon criteria, known as clinical triggers
  • This should be done within 1 hour of potential donor meeting triggers

• 650 referrals annually
  – Initial information and triage by 3rd party answering service
  – 99% of referrals come from 22 hospitals
Evaluation of Eligibility

• Potential donor referrals
  – On-site evaluation by NORS staff in the Omaha and Lincoln area
  – Phone evaluation on all other referrals
  – On average the referral is made 30-35 hours before the potential donor’s death
Authorization for Donation

- ~ 90 discussions about organ donation happen annually
- 52% of licensed drivers are registered
  - 35% of potential donor referrals are registered
  - legal decision-maker is responsible for authorizing donation if a potential donor is not registered
- 51.4% of non-registered donors are consented by his or her legal decision maker
- 65% overall consent rate
Organ Suitability Evaluation

Average time from authorization for donation to actual recovery of donated organs is 24-72 hours

- Logistical considerations
  - Infectious disease testing, tissue typing and ABO typing
    - Denver lab-VRL Testing Lab
    - Kansas City lab-Midwest Transplant Network Testing Lab
    - Tissue typing-UNMC HLA Lab
    - ABO typing
Organ Suitability Evaluation

• Organ Function Testing
  – Donor Labs-Trending
    • Chemistry panel
    • ABGs
    • Blood counts
    • Cultures
  – Organ specific testing
    • Echocardiogram
    • Bronchoscopy
  – Other diagnostic tests
    • CT scan
    • Heart catheterization
Organ Allocation/Matching

• Donor is matched against the entire waiting list for each transplantable organ
• Sickest and/or best candidates show up higher on the list
  – Local
  – Regional
  – National

  Blood type, tissue type, recipient condition, organ condition, size, location, and risk for transmission of an infectious disease status of the donor affects organs placement
Organ Recovery

• 4 – 6 hour procedure
• Recovery Personnel
  – Hospital operating room staff
    • Circulating nurse
    • Scrub tech
    • Anesthesia
  – NORS coordinator(s)
  – Transplant center(s) recovery surgeon
  – Transplant center(s) coordinator(s)
Organ Transportation

- **Thoracic organs**- recovered by the accepting transplant center(s) and transported by them
  - Local recovery-by ambulance
  - Not local recovery-by plane
- **Abdominal organs**- if accepted by local transplant center are transported by recovery team to transplant center.
- **Abdominal organs**- if accepted by center other than local center can be recovered by accepting facility or local recovery surgeon.
  - If recovered by local recovery surgeon flown either by charter or commercial plane to accepting facility location.
Organ Transplantation

- Allowable cold ischemic time (from the time blood flow stops and organ is perfused with cold solution until it is re-perfused)
  - Heart: 4 hours
  - Lung: 4-6 hours
  - Liver/Intestine: 8-10 hours
  - Pancreas: 18 hours
  - Kidneys: 24-72 hours
• The average donation from time of referral through transplantation of organs takes ~ 3-4 days
• More than 100 medical professionals come in contact with the donor, the donor’s family, and/or the donor’s organs
• Each donation is different from one case to the next