

Tissue Transplant:

A simple call to start but a much more complex task to complete

Walter L. Kemp, MD

Deputy State Medical Examiner

Montana State Forensic Science Division



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Disclaimer: I have received no financial support for attendance at this meeting — my thoughts and opinions are my own and unbiased

My Background History with Tissue Procurement Organizations

- Dallas (seamless)
- Montana (not so seamless)

Early Experiences in Montana

- Release for tissue procurement given on one case. No blood was obtained for toxicology.
- Refusal to accept tissue post-autopsy
- Lack of understanding of Montana geography and death investigation system by tissue coordinators
- Numerous phone calls, with some occurring before my own knowledge of the death

Jacob's belated holiday gift will last a lifetime.

A few months after the Christmas that Jacob Seyle was 11, he got an unexpected and most precious gift: his right arm. Jacob received a tissue transplant that enabled him to keep his right arm rather than have it amputated.

Jacob was fortunate to be a candidate for this procedure, unlike the young boy he met whose cancer in his lower leg resulted in amputation. Jacob's mother Deborah Seyle knows the procedure has saved her and her son from the added pain and grief of amputating his right arm. "Even though I trained in the sciences as a biologist, I was unfamiliar with the benefits of tissue donation or transplantation," said Deborah. "We are now big proponents of organ and tissue donation. Jacob thinks it's very special that he got a donated gift."

"I know I will learn a lot from this and someday will be able to help other people, especially kids, who have to deal with hard things," said Jacob. "I've already been able to help a few and it felt great."



Enlightenment Period

- Significant risk of infection using tissue recovered post-autopsy
 - Percent positive cultures before autopsy: 22
 - Percent positive cultures after autopsy: 38¹

1. Forsell JH and Liesman J. 2000. Analysis of potential causes of positive microbiological cultures in tissue donors. *Cell and Tissue Banking* 1: 111-115.

Continued Enlightenment

- Told I was being nominated for Medical Examiner/Coroner Advisory Committee
- Told I was chosen for MECC
- At first phone conference, found out that 60-70% of transplantable tissue is recovered from medical examiner/coroner cases

Who Starts the Tissue Procurement Process?

- Death in hospital
 - To participate in Medicare reimbursements, hospitals are required by the federal government to report
 - Hospital calls triage center (in Colorado), which then informs the tissue procurement agency

Who Starts the Tissue Procurement Process?

- Death out of hospital
 - Montana Highway Patrol officers
 - Medical examiners/coroners

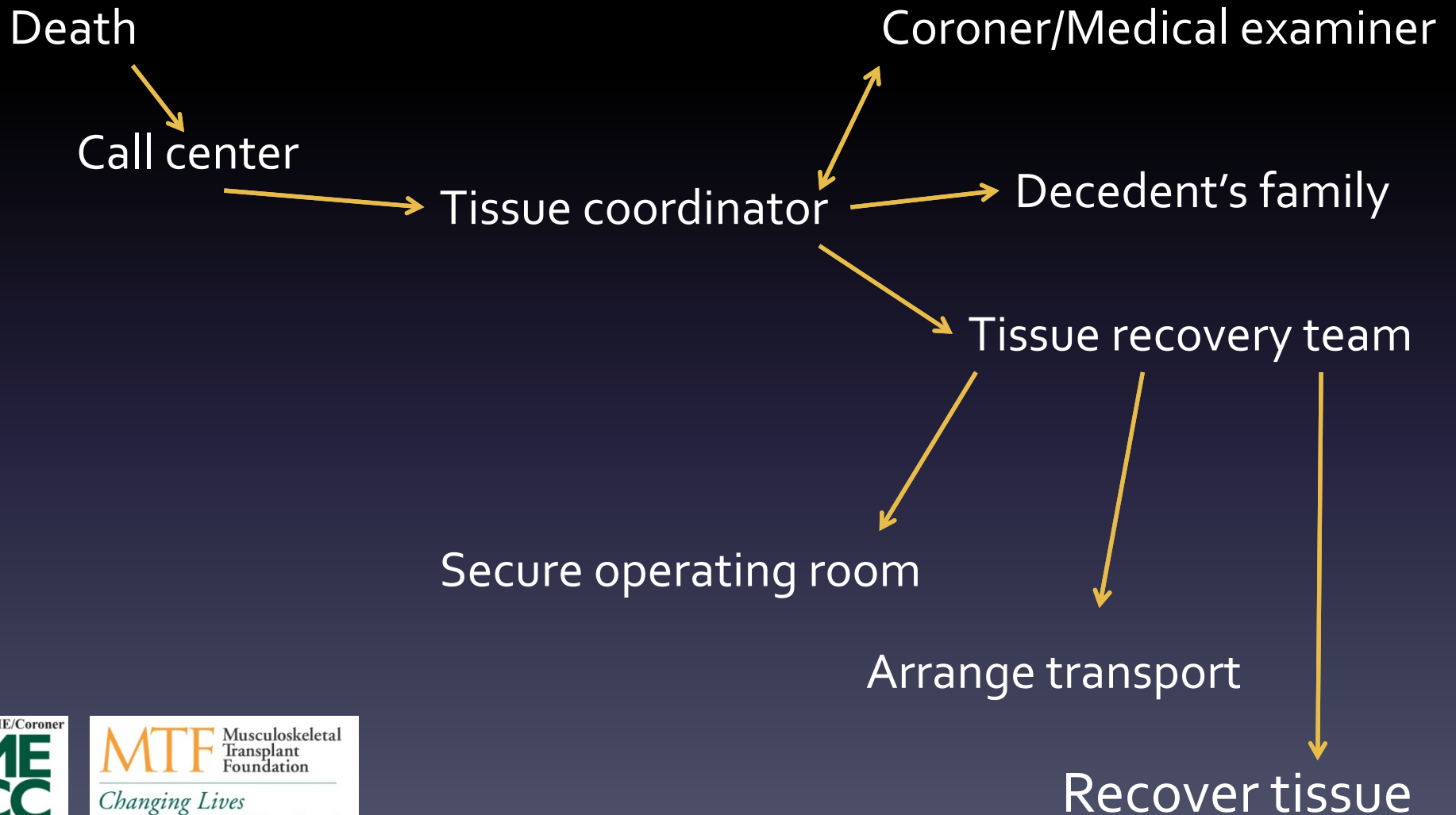
What Information does the Tissue Procurement Agency Need?

- Name, height, weight, sex, date of birth, time of death (and how determined)
- Patient family contact information
- Autopsy information: external only, complete, toxicology
- Body cooling information: Currently cooled? How long cooled?
- Any signs of intravenous drug abuse

What Information does the Tissue Procurement Agency Need?

- Probable cause of death
- Hospital admission course (if applicable)
- Plasma dilution information—to insure that sample taken for serologic testing is representative of decedent's blood and not donors blood (if applicable)

General Process



Contacting Family

- Preferably by tissue coordinator (specifically trained for this role); however, the call can be introduced to the family by a nurse, coroner, or ME investigator
 - 72 questions asked by tissue coordinator
- Prefer to determine donor suitability first

Timeframe

- After:
 - Initial notification of death made
 - Donor suitability determined
 - Family contacted
- For bone and soft tissue, if cooled, 24 hours from asystole to first incision; if not cooled within 12 hours of death, 15 hours to first incision.

Timeframe

- For heart valves, time constraints are not to first incision, but to being placed on ice.
- After being placed on ice, tissue must be cryogenically frozen within 72 hours

Benefits to the Medical Examiner/Coroner

- Access to the 72 questions asked to the family by the tissue coordinator
- Recovery notes and photos
 - Pulmonary thromboembolus and tendon abnormality

Benefits to the Medical Examiner/Coroner

- Physical examination assessment made by tissue recovery team
- Culture results
- Cardiac pathology report

Uses of Tissue Recovered

- Bone
 - Orthopedic surgeries
 - Cancellous chips for packing around hardware or to fill defects
 - Long bone segments: to prevent amputation
 - One donor can help 50 people
 - Can help speed recovery

Uses of Tissue Recovered

- Tendon/ligaments—most common in sports medicine, such as ACL repair
- Skin
 - Severe burn victims
 - Reconstruction (large wounds, hernia repairs, non-cosmetic)

Other Tissues Recovered

- Heart valves
- Saphenous veins
 - Cardiac bypass, peripheral vascular disease (to prevent amputation), renal dialysis
- Descending thoracic aorta
- Aorto-iliac artery
- Nerves

Current Experience

- Coroner who had driven 120 miles (a 3-1/2 hour trip), waited 2-1/2 hours for valve recovery on infant before returning—"I was just thinking it might be for one of my grandchildren."
- If necessary, I wait—external one day, internal the next, or external during the day and autopsy during the night
- Facilitating better communication between LifeCenter Northwest/Sight Life and medical examiners/coroners in Montana

*I agree with Priscilla Turner,
the system does not have to be adversarial!!



Is My Experience in Montana Unique?

- No—the Musculoskeletal Transplant Foundation formed the Medical Examiner/Coroner Advisory Committee to facilitate communication between medical examiners/coroners and tissue procurement organizations (not just in Montana, but nationwide)
- Through communication and education, each group can better understand the other's needs, which will improve tissue recovery, thereby enhancing and saving lives



Conclusion

- The efforts of tissue procurement agencies are intrusive—but not by choice, instead by necessity
- Our involvement is one step, but a crucial step, and a relatively easy step compared to that which follows
- Organ and soft tissue transplants save and enhance lives
- We need to promote tissue procurement efforts to our associated agencies (coroners, law enforcement, and medical personnel)



Thank you

