

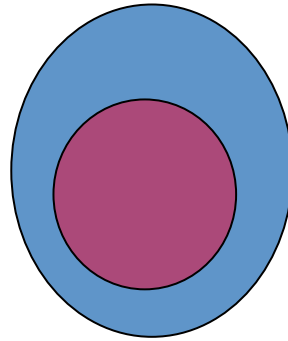
# Cord Blood Collection Training

Michigan Blood Cord Blood Bank  
2011



# Stem Cell Transplant Sources

**Marrow**  
**“Hip”**



**Cord  
Blood**

**Peripheral  
Blood**

# Cord Blood Banking History

- 1988 - First Cord Blood Transplant
  - In France - 5y/o with Fanconi's
  - Recipient is alive and well today
- 1992 - First US Cord Blood Bank
  - New York Blood Center with grant from NHLBI
- 1999 - Michigan Blood Cord Blood Bank established
- 2001 - First Michigan Blood cord blood transplanted
  - Recipient is alive and well today
- 2009 – Michigan Blood shipped 50<sup>th</sup> cord blood unit for transplant



# Recycling at its Best!



**Michigan Blood**

MI blood saves lives.™

# Cord Blood Advantages

- Ease of Collection - no risk to donor
- Absence of donor attrition
- Reduced risk of viral transmission
- Immunologically naïve cells
  - Less stringent matching
  - Less Graft vs. Host Disease
- Significant reduction in time to transplant

# Cord Blood Disadvantages

- Limited Cell Dose
- No Chance for Second Collection
- Greater chance of genetic disease transmission ??

# Private Cord Blood Banks

- Collect ONLY for use within the family
- Charge family a Collection and Storage Fee
- Usually a for-profit entity
- Advertise as “Biologic Insurance”
- Variable level of testing
- No minimum volume or cell count standard for acceptance



# Public Cord Blood Bank

- Collect for use by anyone
- No charge to the family
- Not-for-profit entity
- Fully tested units
- Strict eligibility criteria
- Extensive quality control measures
- Required by 2011 to be FDA licensed



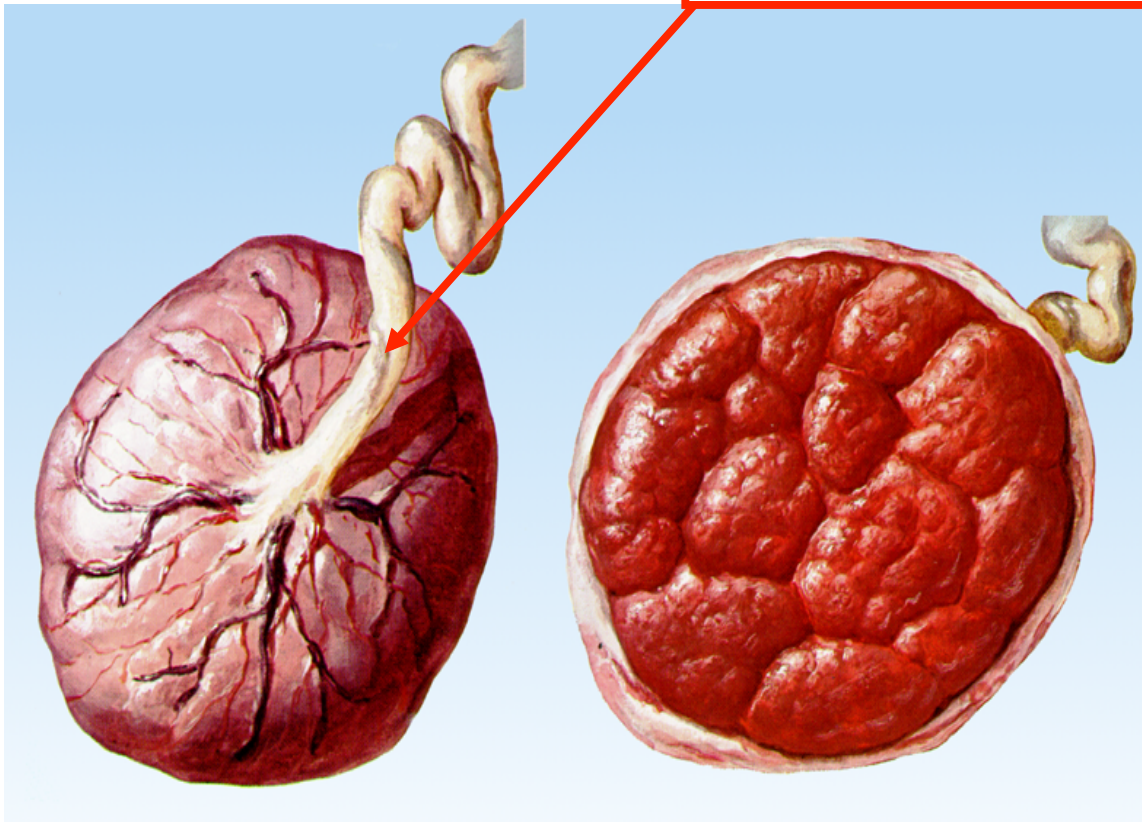
# Program Enrollment

- Brochures supplied to physician offices and prenatal classes for distribution to pregnant patients
- Mother contacts Michigan Blood
  - Preliminary Screen performed
- Kit sent to mother prior to delivery
- Mother completes paperwork, including consent
- Mother brings collection materials to hospital at time of delivery

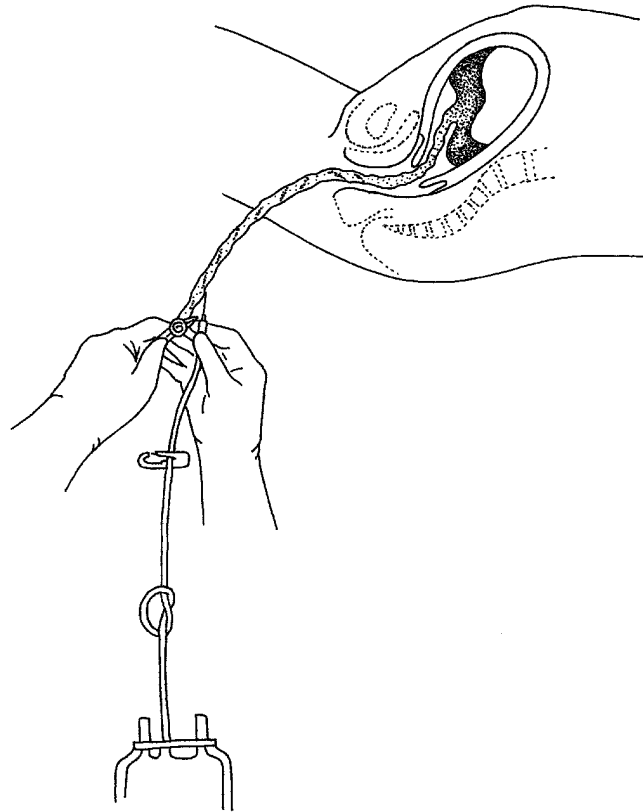


# Hospital Collection

Target is the Umbilical Vein



# Cord Blood Collection – Vaginal Delivery



## Collection – After delivery of baby but before delivery of placenta

- Wipe cord with sterile 4x4 gauze
  - Removes maternal blood that could contaminate graft
- Scrub distal end of cord for 10 seconds with Povidone Iodine
  - Disinfects to prevent bacterial contamination
- With tubing clamp closed, introduce needle into umbilical vein. Release clamp.
  - Prevents introduction of airborne organisms

## Collection Procedure – cont'd

- Lower bag to allow blood to flow by gravity
- Gently mix every 15-30 seconds
- Wait for vein to collapse and flow to cease
- Typical collection:
  - Takes 2-5 minutes
  - Yields 50-140mls

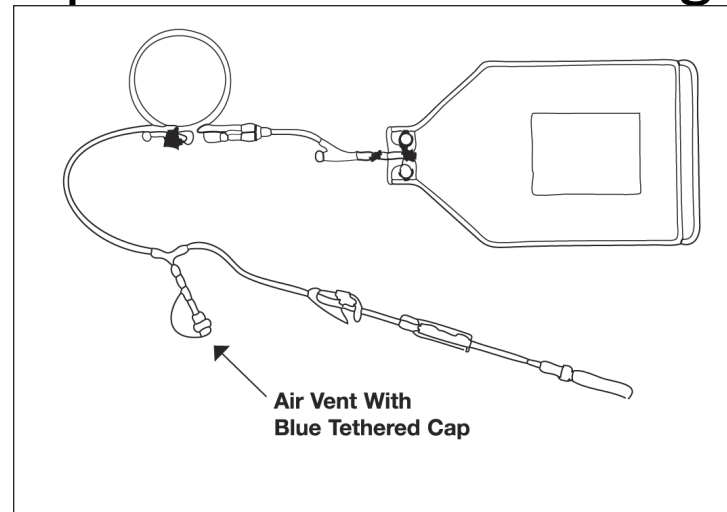
# Collection Procedure – cont'd

- Clamp tubing and remove needle
- Engage Donor Care Needle Guard device
- Tighten pre-tied knots to prevent leakage
- Keep collected unit at room temperature



# Sterile Collection Bag for C/S deliveries

- Collect as per vaginal instructions
- After collection, extend tubing above bag
- Remove blue cap from air vent to drain blood into bag
  - Specially designed vent will filter out airborne contaminants
- Replace blue cap or tie knot in tubing to prevent leakage



# Contraindications for Collection

- Premature Birth (<34 weeks)
- Significant placental tears or signs of infection
- Malodorous placenta/fluid or suspicion of chorioamnionitis
- Evidence of maternal or infant infectious disease
- Excessive maternal bleeding in labor
- Evidence of active genital herpes, suspected prodrome or significant vaginal/perineal HPV infection
- Multiple births
- Congenital abnormalities
- Stillborn infant



# Physical Assessment of Mother and Infant

- Cord bloods eligible for banking must be obtained from healthy infants of healthy mothers
- Document on paperwork if mother or baby exhibits signs of infectious disease

# Physical Assessment of Mom

- Look for physical signs that may indicate high-risk behavior for, or infection with, a relevant communicable disease
  - Evidence of sexually transmitted disease
  - Evidence of nonmedical percutaneous drug use (needle tracks)
  - Evidence of recent tattooing or body piercing
  - Evidence of HIV (disseminated lymphadenopathy, oral thrush, Kaposi's sarcoma)
  - Unexplained jaundice, hepatomegaly, or icterus
  - Evidence of sepsis (unexplained generalized rash or fever)
  - Evidence of recent smallpox immunization

# Why Must I Participate in Training?

- Proper training improves collection quality
- Proper training decreases the risk to recipient of transmission of a communicable disease
- FDA requires documentation of training of the individuals involved in the collection



# Michigan Blood Cord Blood Program

- In 2010
  - 1525 cord blood units collected for our program
  - 149 different clinicians participated in collections
  - Average collection volume = 91mls
  - Range of collection volumes: 15-258mls
- Minimum acceptable volume = 80mls
  - 43% of units collected in 2010 were <80mls
- More volume is always better.



# Questions?

- Feel free to contact me with questions or concerns
- Mary Burroughs, Stem Cell Laboratory Supervisor
  - Phone: 616-233-8598
  - Email: [mburroughs@miblood.org](mailto:mburroughs@miblood.org)



Our Program Can't Exist Without You!

