

Cord Blood Collections for the Texas Cord Blood Bank

Obstetrical Providers
Training Module

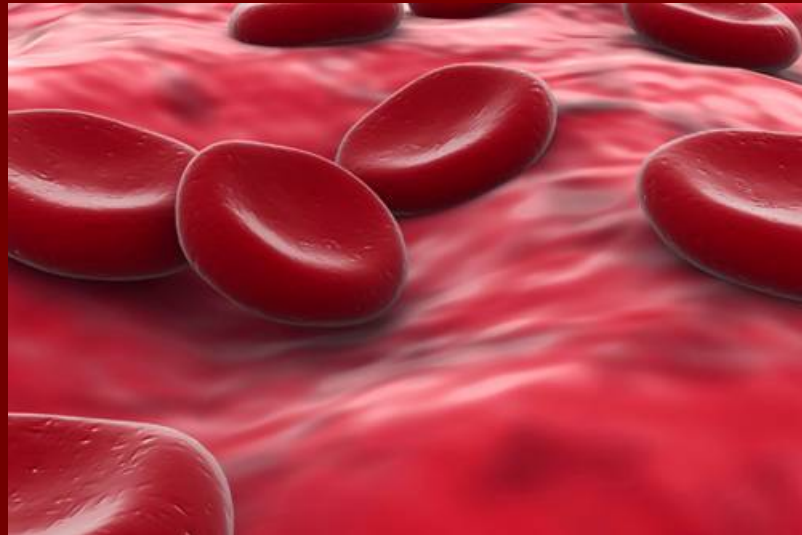
The Texas Cord Blood Bank

- The Texas Cord Blood Bank is a network of maternity hospitals and a central laboratory who are working together to develop an inventory of cord blood units for use in hematopoietic stem cell transplantation
- The goal of the bank is to collect cord blood units that represent the rich ethnic diversity of Texas



Purpose

This training module is intended for the Obstetrical Providers that will collect cord blood at participating hospitals for the Texas Cord Blood Bank. Certification is good for one year following the completion of a short quiz, with a score of 100%



Benefits of Cord Blood in Transplantation



- Availability – since it is fully characterized and frozen in a bank, cord blood is available within days of request for transplantation
- Low viral contamination – cord blood is protected by the maternal-fetal interface.
- More tolerant – lower risk of serious Graft-versus-Host disease following transplantation

Cord Blood Basics

- The residual blood in the placenta after an infant is delivered is a rich source of hematopoietic stem cells – comparable to bone marrow and peripheral blood stem cells
- The more blood collected the better
 - Transplant success directly related to the number of cells in the cord blood unit
 - Collect as soon as possible after delivery



Potential problems in cord blood banking and our approach to minimizing these risks

- Transmission of infection
 - Importance of maternal screening (physical exam and history)
 - Importance of testing
- Transmission of genetic blood disorder
 - Importance of detailed family history
 - Hemoglobinopathy screening on all units
- Mix-up of product
 - Labeling and documentation throughout the process is critical

Banking Standards

Some collected cord blood unit will not meet standards for banking due to

- Small volume
- Infection
- Maternal history
- Contamination
- Mislabeled product



Maternal/Infant safety

- The safety of mother and infant is paramount
 - Only collect if uncomplicated delivery
 - Only collect if documented singleton
 - No change in delivery practice until after the infant is separated from the cord
 - No pressure to collect if any other demands on caregiver team (caregiver fatigue, maternal/infant complications)



Minimizing Infectious Risk to the Transplant Recipient



- Maternal screening
 - Do not collect if known or suspected maternal blood borne infection (HIV, Hepatitis)
 - After collection a detailed maternal history will be performed, by Nurse Coordinator
- Maternal testing
- Cord blood unit testing
 - Frequent contaminants are skin or vaginal organisms
 - minimized by cleansing of the cord at time of collection

Special Infectious Considerations

- May collect if:
 - Maternal pretreatment for Group B streptococcal colonization
 - If active genital herpes or HPV lesions present, then collect cord blood only if Cesarean section delivery
 - Prolonged rupture of membranes if absence of maternal sepsis
- Do not collect if:
 - Known maternal history of active hepatitis or HIV
 - Mother is septic or febrile
 - Foul smelling placenta

Consenting process



- NO COST TO PATIENT
- Education about the program starts in the obstetrician's office and prenatal classes
- Prior to collection the first consent form must be signed – ideally prior to labor but may be obtained in early labor if the mother had previously received education about cord blood donation and/or had not received narcotics
 - Permission to collect maternal blood samples and cord blood
 - Permission to use the cord blood anonymously for research or quality control

Cord Blood Collection Supplies

- 2-6mL purple tops
- 2-6mL red tops
- Sterile collection bag
- Collection bag label
- 2 biohazard bags



Preparation of the Cord Prior to Collection

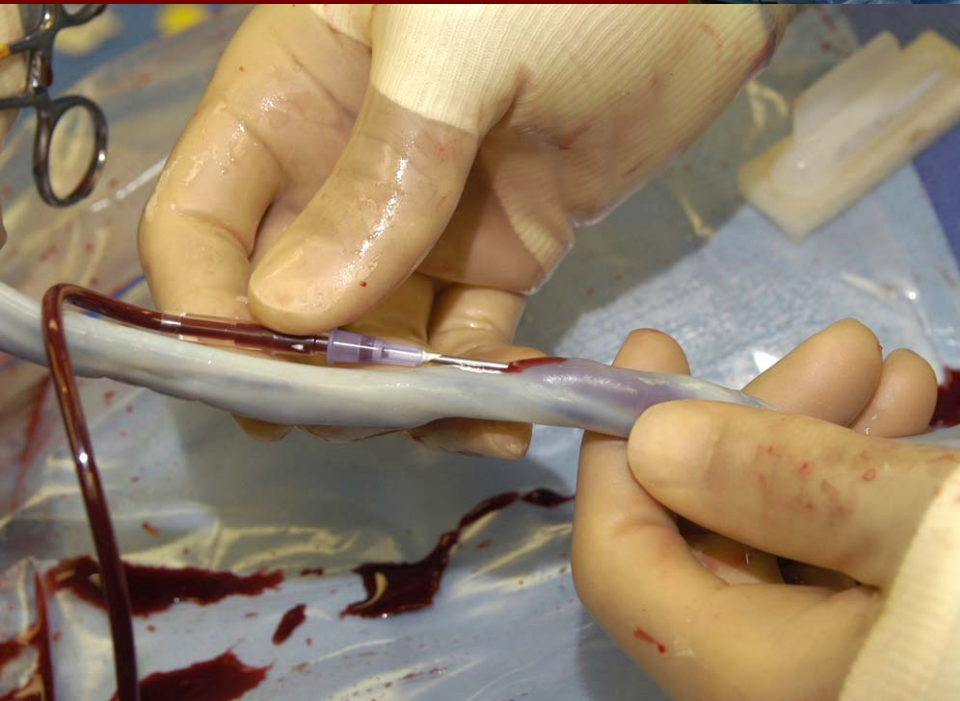
- Dry cord with sterile 4x4 at insertion site and extending out
- Cleanse cord with Chloraprep, using a back and forth motion, for 30 sec
- Delivery kits come with 2 preps
 - 1 for use, 1 for back-up
- Allow cord to dry



Cord Blood Collection Procedure

- Insert needle into umbilical vein, release pinch clamp and allow blood to flow by gravity
- Maternal contractions will facilitate collection
- Gently agitate the collection bag to prevent clotting
- Once all blood flow stops, clamp tubing with pinch clamp and remove the needle from cord
- Slide needle guard over needle to lock in place

Collection of Umbilical Cord Blood



Summary of collections

- Screen patient for eligibility prior to consent
- Clean the cord
- Prevent clotting, gentle agitation
- Confirm labeling
- Safety of mother and infant first



Thank You

- To be certified as a collector for the program you need to take the following 5 question quiz
- Once you achieve 100%, you may begin with collections



The team at the Texas Cord Blood Bank thanks you for your participation in our program!