Do It For Taylor

FLORIDA WHOLE BLOOD COALITION

Leviticus 17:11;
For the life of the flesh is in the blood

Our Mission

"To develop and sustain an involved, highly-collaborative and productive stakeholder group who can promulgate and implement the on-going use of whole blood and other life-sparing blood products across the State of Florida in the prehospital, hospital and any immediate post-injury settings (or in other relevant emergency crises) using evidence-based guidelines and to actively contribute to a national data registry regarding 9-1-1 emergency blood product use."

Whole Blood Agenda

- Welcome & Introduction
- Pre-hospital Blood Programs in the US
- Creating a WB Program
- WB Protocol Discussion
- Tranexamic Acid (TXA)
- Closing Remarks & Next Steps

FLORIDA
WHOLE BLOOD COALITION

Hot off the Press

Prehospital Emergency Care

ISSN: (Print) (Online) Journal homepage: https://www.tandfonline.com/loi/ipec20

Prehospital Hemorrhage Control and Treatment by Clinicians: A Joint Position Statement

Cherisse Berry, John M. Gallagher, Jeffrey M. Goodloe, Warren C. Dorlac, Jimm Dodd & Peter E. Fischer

Indications

Trauma vs. Medical

Low Titer O + Whole Blood – Medical

History
- Shock is defined as inadequate perfusion of blood and oxygen to the brain, heart and other vital organs
- Medications – Coumadin? Plavix? Aspirin? Pradaxa? Xarelto? Eliquis? (any blood thinners or anticoagulants)
- Beta Blockers and Calcium Channel Blockers may not allow HR to increase appropriately

Key Concepts
- Low Titer O + Whole Blood is now being used to treat critically ill medical patients who have or are at risk for severe hemorrhage

Examples of Patients in Hemorrhagic Shock
- Gastrointestinal (GI) bleed
- Postpartum hemorrhage
- Cirrhotic liver or liver failure
- Vascular – such as an uncontrolled bleeding shunt, fistula or varicose vein
- Urological – especially with recent surgery or procedure
- Potentially a recent surgical patient
- Uncontrolled epistaxis

Criteria
HEMORRHAGIC SHOCK in medical or trauma Adult and Pediatric (≥ 6 yo) patients

Relative Contraindications
- Patient < 6 years old
  - Consult Medical Direction if patient is in hemorrhagic shock and < 6 yo
  - Medical Director may elect to give blood in patients < 6 yo

Contraindications
- Religious objection to receiving whole blood—consult On Call Medical Director

EMT
- Follow General Medical Care Guideline
- Follow appropriate Shock Guideline

Paramedic

For Patients in HEMORRHAGIC SHOCK:
Administer Whole Blood with signs of acute hemorrhagic shock as evidenced by:

- Systolic Blood Pressure < 70 mmHg **OR**
- Systolic Blood Pressure < 90 mmHg with Heart Rate ≥ 110 beats per min **OR**
- ETCO2 < 25 **OR**
- Witnessed cardiac arrest < 5 min prior to provider arrival and continuous CPR throughout downtime **OR**
- Age ≥ 65 yo and SBP ≤ 100 **AND** HR ≥ 100 beats per minute

In general only 500mL (1 unit) of Low Titer O+ Whole Blood (LTO+WB) will be available per patient. If more than 500 mL of Whole Blood is available on scene the following general guidelines apply:

- 6-10 yo are eligible for a total of 500 mL of Whole Blood
  - Consult Medical Direction for further orders, if needed
- 11-13 yo are eligible for a total of 1000 mL of Whole Blood
  - Consult Medical Direction for further orders, if needed
- ≥13 yo are eligible for >1000 mL of Whole Blood
  - Consult Medical Direction for further orders, if needed

Of Note: At this time the unit of LTO+WB does not have volume markings on the bag.

SAFD COG Version 1.1 January 1, 2019

Low Titer O+ Whole Blood – Trauma

History
- What was the mechanism of injury – blunt (MVC, fall, blow to body) vs. penetrating (stabbing, GSW, foreign body)?
- Did a medical condition contribute to the mechanism of injury? Other medical conditions?
- Medications – Coumadin? Plavix? Aspirin? Pradaxa? Xarelto? Eliquis? (any blood thinners or anticoagulants)
- Beta Blockers and Calcium Channel Blockers may not allow HR to increase appropriately

Key Concepts
- Low Titer O + Whole Blood is now being used to treat severely injured trauma patients who have or are at risk for severe hemorrhage

MARCHES Protocol
- **M**assive bleeding control
- **A**irway – NPA/OPA/ Crich
- **R**espiratory – decompress chest if tension pneumothorax, occlusive dressing for open pneumothoraces
- **C**irculation- IV/IO Tqx, pelvic binder, wound packing
- **H**ypothermia care
- **E**ye injuries – cover with rigid shield and no pressure on the eye
- **S**pinal motion restriction if indicated

Criteria
HEMORRHAGIC SHOCK in medical or trauma Adult and Pediatric (≥ 6 yo) patients

Relative Contraindications
- Patient < 6 years old
  - Consult Medical Direction if patient is in hemorrhagic shock and < 6 yo
  - Medical Director may elect to give blood in patients < 6 yo

Contraindications
- Religious objection to receiving whole blood—consult On Call Medical Director

EMT
- Follow Trauma General Patient Care Guideline
- Follow appropriate Trauma Guideline

Paramedic

For Patients in HEMORRHAGIC SHOCK:
Administer Whole Blood with signs of acute hemorrhagic shock as evidenced by:

- Systolic Blood Pressure < 70 mmHg **OR**
- Systolic Blood Pressure < 90 mmHg with Heart Rate ≥ 110 beats per min **OR**
- ETCO2 < 25 **OR**
- Witnessed traumatic arrest < 5 min prior to provider arrival and continuous CPR throughout downtime **OR**
- Age ≥ 65 yo and SBP ≤ 100 **AND** HR ≥ 100 beats per minute

In general only 500mL (1 unit) of Low Titer O+ Whole Blood (LTO+WB) will be available per patient. If more than 500 mL of Whole Blood is available onscene the following general guidelines apply:

- 6-10 yo are eligible for 500 mL of Whole Blood
  - Consult Medical Direction for further orders, if needed
- 11-13 yo are eligible for 1000 mL of Whole Blood
  - Consult Medical Direction for further orders, if needed
- ≥13 yo are eligible for >1000 mL of Whole Blood
  - Consult Medical Direction for further orders, if needed

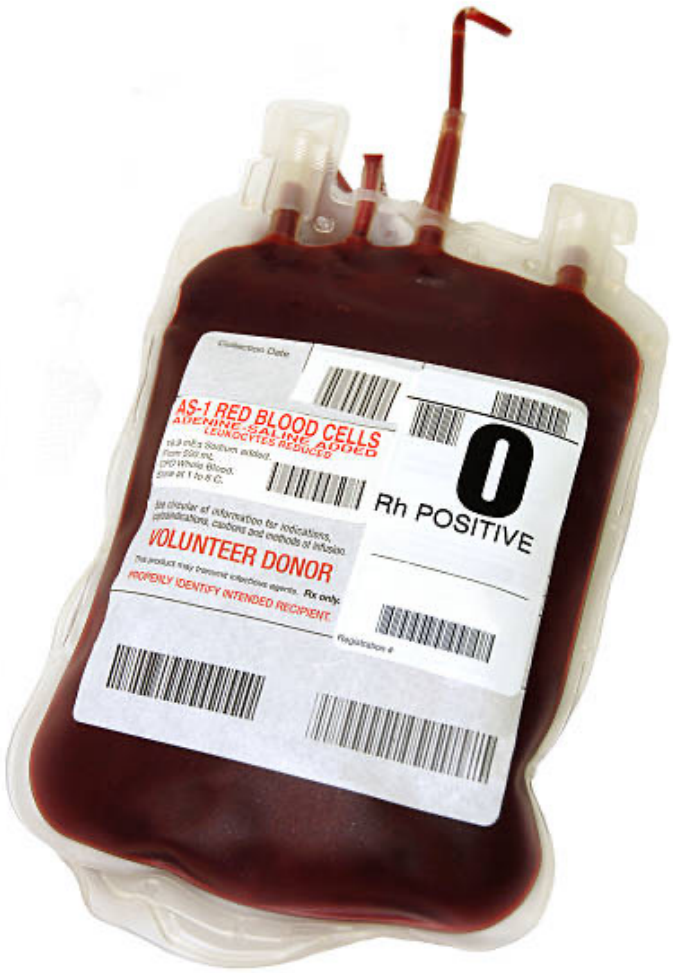
Of Note: At this time the LTO+WB does not have volume markings on the bag.

Indications

Medical Indications

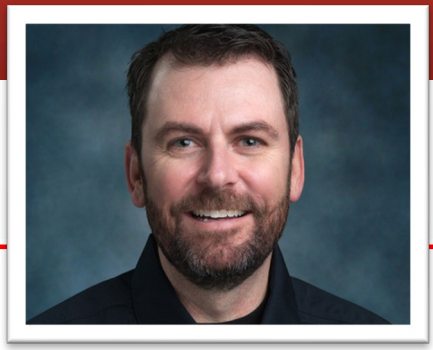
- Gastrointestinal (GI) bleed
- Postpartum hemorrhage
- Cirrhotic liver or liver failure
- Vascular – shunt, fistula or varicose vein
- Urological – recent surgery or procedure
- Potentially a recent surgical patient
- Uncontrolled epistaxis

Packed Red Cells vs. Whole Blood



NEW ORLEANS EMS

Vital Sign Criteria



Paramedic

For Patients in HEMORRHAGIC SHOCK:
Administer Whole Blood with signs of acute hemorrhagic shock as evidenced by:

- Systolic Blood Pressure < 70 mmHg **OR**
- Systolic Blood Pressure < 90 mmHg with Heart Rate ≥ 110 beats per min **OR**
- ETCO2 < 25 **OR**
- Witnessed traumatic arrest < 5 min prior to provider arrival and continuous CPR throughout downtime **OR**
- Age ≥ 65 yo and SBP ≤ 100 **AND** HR ≥ 100 beats per minute

Shock Index

identification of SHOCK INDEX

= HR / SBP

NORMAL SI <0.7

SHOCK INDEX >1.0

Most specific predictor of hyperlactatemia & 28-day mortality

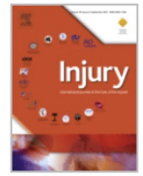
$ETCO^2$ Value in Trauma patients

- ETCO2 is a useful pre-hospital point-of-care tool to aid triage of trauma patients as it may identify hemorrhaging patients and predict mortality.

ELSEVIER

Injury

Volume 52, Issue 9, September 2021, Pages 2502-2507



"Low initial pre-hospital end-tidal carbon dioxide predicts inferior clinical outcomes in trauma patients"

Mary Kate Bryant [a b], Jaclyn N Portelli Tremont [a b], Zachary Patel [a], Nicole Cook [a], Pascal Udekwu [a], Trista Reid [b], Rebecca G Maine [c], Scott M Moore [a]

Temperature and Repeat Vital Signs

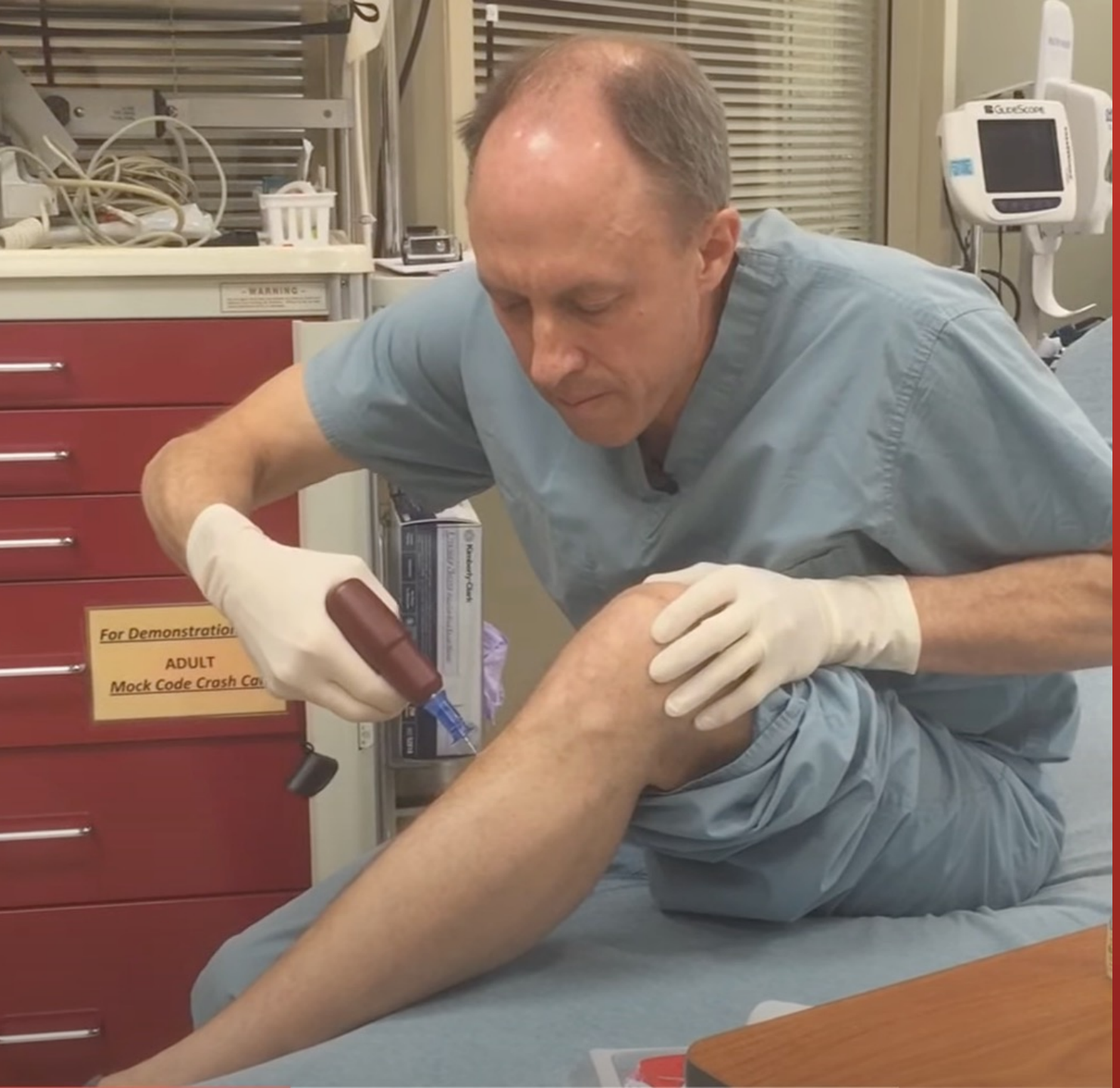
Capt. Mark Golino

Loudoun County, VA

Whole Blood Dosing

David Long

Tidewater EMS



Route of Administration

IV vs. IO

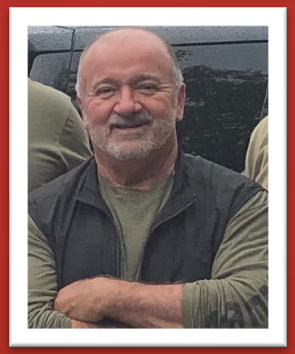
Minimum size of IV catheter?

Should Whole Blood Impact Scene Time?

Chief Heath Clark

Stay or Go?

Rendezvous procedure?



WB to Patients in Cardiac Arrest?

Chiefs Coyle and Clark

Dr. Paul Pepe

Pre-Hospital Calcium?

Dr. Marino and Major Dransfield, NOEMS

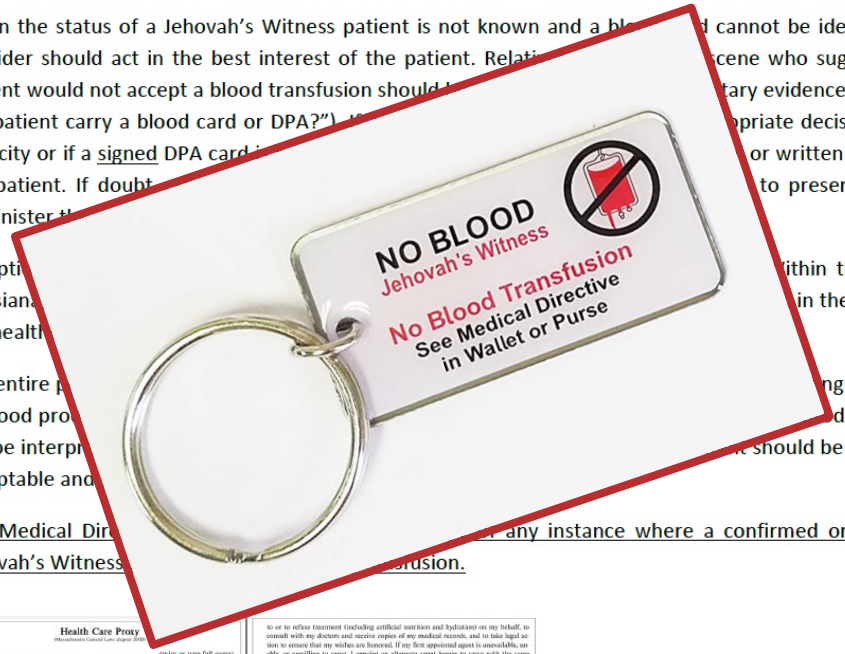
David Long, TEMS

New Orleans EMS Trauma Blood Administration Criteria & Guidelines
updated 12-01-22

IV. Blood Product Consent

As noted in the inclusion criteria, patients have the right to object to the receipt of blood products – the most common reason for refusal is religious belief. Jehovah's Witnesses reference several passages of the Bible when choosing to abstain from blood transfusion (including whole blood, pRBCs, and plasma). Many members of Jehovah's Witness carry a Durable Power of Attorney card (DPA) that identifies their and their church's stance of blood transfusion. A patient's signed DPA card is considered equivalent to an advanced directive.

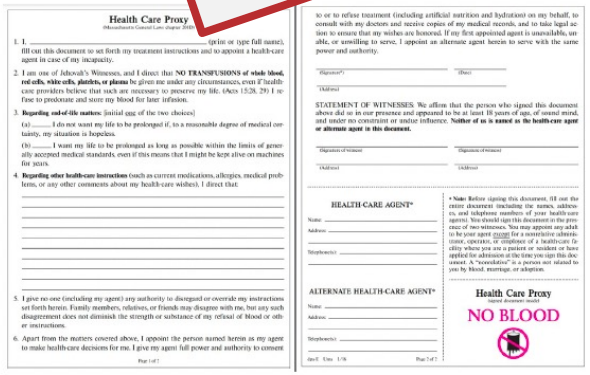
When the status of a Jehovah's Witness patient is not known and a bl d cannot be identified, the provider should act in the best interest of the patient. Relati cene who suggest that a patient would not accept a blood transfusion should tary evidence (e.g. "does the patient carry a blood card or DPA?"). opriate decision making capacity or if a signed DPA card or written decision of the patient. If doubt to preserve life and administer th



Excepti ithin the state of Louisian in the opinion of the health

The entire p ng the receipt of blood pro ducts should not be interpr t should be considered acceptable and

The Medical Dir any instance where a confirmed or suspected Jehovah's Witness rusion.


Health Care Proxy

1. I, _____ (print or type full name), fill out this document to set forth my treatment instructions and to appoint a health-care agent in case of my incapacity.
2. I am one of Jehovah's Witnesses, and I direct that **NO TRANSFUSIONS of whole blood, red cells, white cells, platelets, or plasma** be given me under any circumstances, even if health-care providers believe that such are necessary to preserve my life. (Acts 15:28, 29) I refuse to predonate and store my blood for later infusion.
3. **Regarding end-of-life matters:** [initial one of the two choices]
(a) _____ I do not want my life to be prolonged if, to a reasonable degree of medical certainty, my situation is hopeless.
(b) _____ I want my life to be prolonged as long as possible within the limits of generally accepted medical standards, even if this means that I might be kept alive on machines for years.
4. **Regarding other health-care instructions** (such as current medications, allergies, medical problems, or any other comments about my health-care wishes), I direct that:
5. I give no one (including my agent) any authority to disregard or override my instructions set forth herein. Family members, relatives, or friends may disagree with me, but any such disagreement does not diminish the strength or substance of my refusal of blood or other instructions.
6. Apart from the matters covered above, I appoint the person named herein as my agent to make health-care decisions for me. I give my agent full power and authority to consent

to or to refuse treatment (including artificial nutrition and hydration) on my behalf, to consult with my doctors and receive copies of my medical records, and to take legal action to ensure that my wishes are honored. If my first appointed agent is unavailable, unable, or unwilling to serve, I appoint an alternate agent herein to serve with the same power and authority.

(Signature*) (Date)

(Address)

STATEMENT OF WITNESSES We affirm that the person who signed this document above did so in our presence and appeared to be at least 18 years of age, of sound mind, and under no constraint or undue influence. **Neither of us is named as the health-care agent or alternate agent in this document.**

(Signature of Witness) (Signature of Witness)

(Address) (Address)

HEALTH-CARE AGENT*

Name

Address

Telephone(s)

ALTERNATE HEALTH-CARE AGENT*

Name

Address

Telephone(s)

* **Note:** Before signing this document, fill out the entire document (including the names, addresses, and telephone numbers of your health-care agents). You should sign this document in the presence of two witnesses. You may appoint any adult to be your agent except for a nonrestrictive administrator, operator, or employee of a healthcare facility where you are a patient or resident or have applied for admission at the time you sign this document. A "nonrelative" is a person not related to you by blood, marriage, or adoption.

Health Care Proxy
(signed document needed)

NO BLOOD

Example:
Durable Power of Attorney (DPA) card for Jehovah's Witness patients. This document folds so that the **NO BLOOD** *portion is clearly visible.*

Patient Consent

Dr. Marino and Capt. Dransfield, NOEMS

What About Pediatrics?

Age Cutoffs

Vital Sign Criteria

Dosing strategies

PBCFR Protocol

ADMINISTRATION

- For Adult and Pediatric dosages, titrate to maintain peripheral pulses
- Flow blood products through warmer to completion and/or hemodynamic stability
- Pressure infuser or LifeFlow fluid infuser shall be utilized
- Document transfusion start time

- **WHOLE BLOOD**:
  - **Adult**
    - Titrate to maintain peripheral pulses
    - Max 2 units
  - **Pediatric**
  - 5-years old to signs of puberty
    - 10mL/kg
    - May repeat 1x prn
    - Max 1 unit
    - LifeFlow delivers 10mL per squeeze of the trigger
    - Refer to HANDTEVY app to determine vital sign parameters and exact dose
  - For patients under 5-years of age, contact the On-Call Medical Director for orders to administer Whole Blood

PALM BEACH COUNTY FIRE RESCUE

PBCFR Protocol

Pediatrics

SBP < 70 mmHg

SBP < 80 mmHg AND HR > 120 bpm

Adults

- SBP < 70 mmHg
- SBP < 90 mmHg AND HR > 110 bpm
- Age ≥ 65: SBP < 100 mmHg AND HR > 100 bpm

Data from a St. Louis Children's Hospital

- **22 WB transfusions in last 12 months**
- **3 Deaths (Tracheal lac, IVC transection, GSW brainstem)**

Age Breakdown

- 13 YR and over = 13 patients (9 GSW, 3 MVC, 1 Auto-Ped)
- 5 – 12 YR = 5 patients (4 MVC, 1 GSW)
- Less than 5 YR = 3 patients (All GSW)

Equipment

Credo Cooler

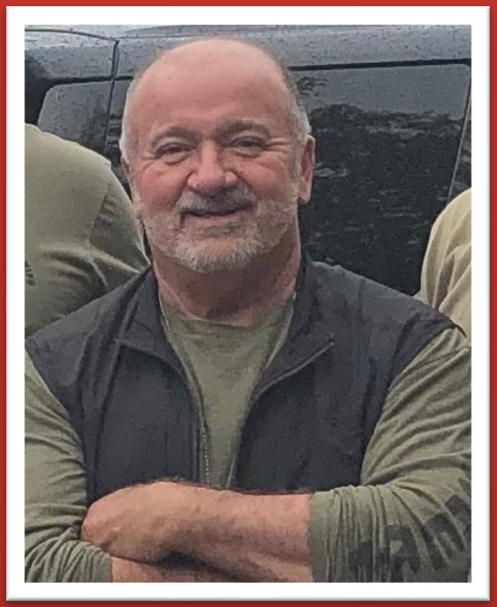
Equipment

Speed

Heat

BSO Air 85

Chief Heath Clark



Is TXA in Your Protocol?

Dr. Paul Pepe

Florida Whole Blood Coalition (Public Folder)

Do It For Taylor

FLORIDA WHOLE BLOOD COALITION

Leviticus 17:11;
For the life of the flesh is in the blood