



City of Dallas

Overview of Dallas Fire-Rescue Blood Transfusion Pilot Program

**Public Safety Committee
February 12, 2024**

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Presentation Overview



- Background
- Historical Context
- Program Goals
- Potential Benefits
- Program Logistics
- Program Deployment
- Next Steps



Background



- Major bleeding is the leading cause of death in individuals under the age of 46 involved in major trauma in the United States.*
- Currently, patients in severe shock caused by significant blood loss are treated with blood transfusions upon arrival at regional trauma centers.
- Transfusion of blood by EMS prehospital can potentially reduce the negative impacts of blood loss and the risk of death from uncontrolled bleeding.

*Chambers JA, Seastedt K, Krell R, Caterson E, Levy M, Turner N. "Stop the Bleed": A U.S. Military Installation's Model for Implementation of a Rapid Hemorrhage Control Program. Mil Med. 2019 Mar 01;184(3-4):67-71.



Historical Context



- During the past 50 years, military experience has shown that early blood transfusions benefit soldiers injured on the battlefield.*
- Historically, civilian paramedics have treated severe bleeding with pressure, tourniquets, and IV infusion of saline. Patients only receive blood transfusion in Trauma Centers.
- Over the past 10 years, several EMS systems have begun blood transfusion programs.
- Blood transfusions initiated by EMS can save lives, especially when the time it takes to get to the patient and transport them to the Trauma Center exceeds 30 minutes.

*Prehospital hemostatic resuscitation to achieve zero preventable deaths after traumatic injury. Spinella PC, Cap AP. Curr Opin Hematol. 2017;24:529–535.



Program Goals:



- A result of over two years of research and collaboration, this Program will aim to:
 - Expand treatment options for patients with severe shock without delaying transport times to a trauma center.
 - Serve the highest number of potential patients through strategic placement & appropriate dispatching of limited resources
 - Act as good stewards of a limited blood supply

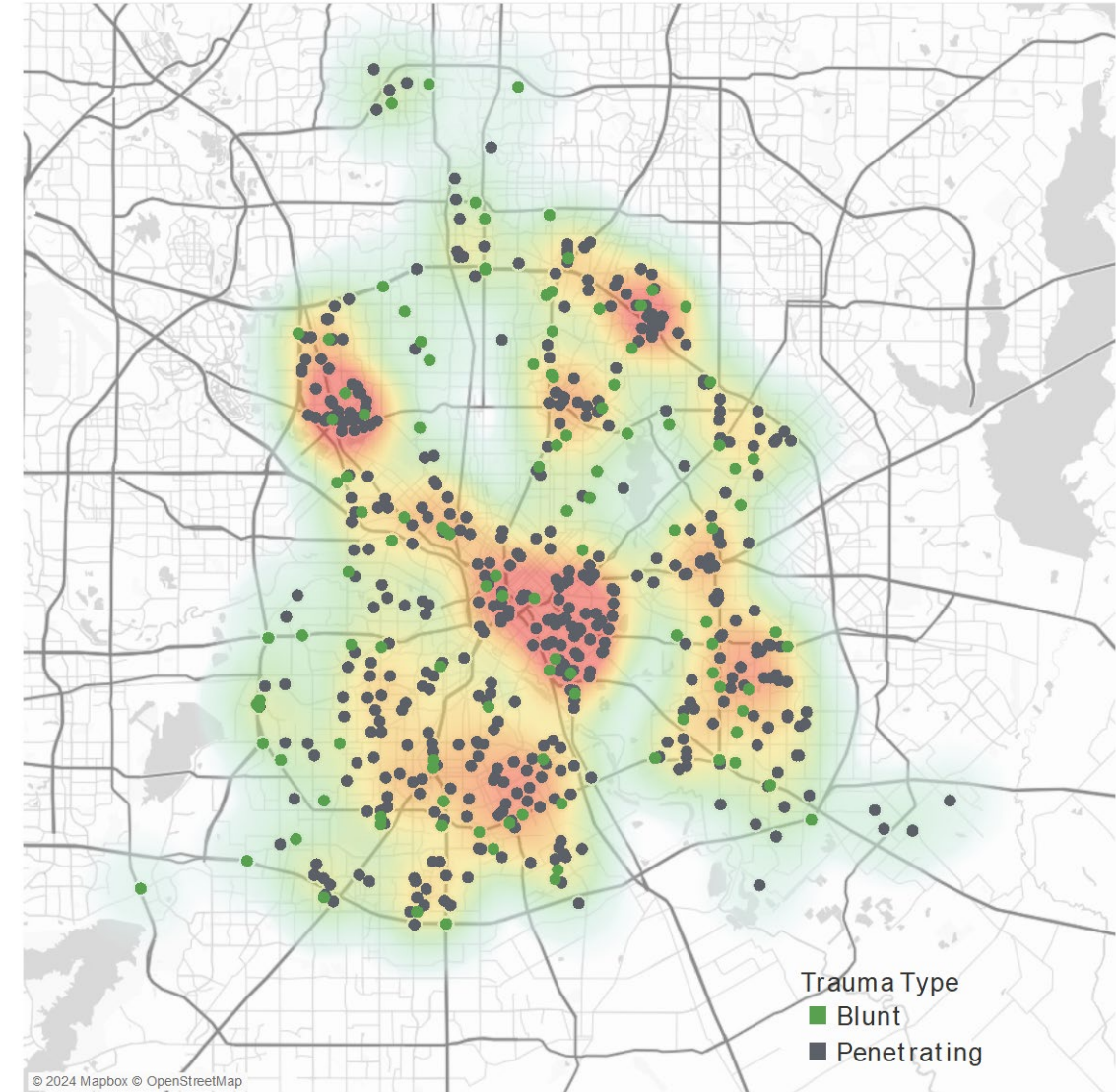


Potential Benefits



- In 2023, **674** patients were identified that were potential recipients of EMS blood transfusion.

Injury Type



etrating
Blunt

Trauma Type
■ Blunt
■ Penetrating



Program Logistics



- DFR and Parkland Health are in discussions to partner for this program.
- Blood would be carried on DFR EMS Supervisor vehicles in specialized coolers.
- Transfusions would occur using a compact blood-warming unit and specialized tubing*.
- Unused blood would be exchanged for new units at predetermined intervals to prevent expiration of blood products.

*The tubing is the only consumable product. The blood warming unit, cooler, and battery are re-useable.



Program Deployment



- DFR EMS Supervisors will be automatically dispatched to incidents involving patients who would have the highest potential to benefit from blood transfusion.
- Blood transfusions will be initiated for trauma patients with signs of severe blood loss and shock.
 - Other patients with major bleeding (GI bleed) may also be candidates for transfusion.
- Treatment guidelines for administration will be designed based on scientific evidence and best practices.



Quality Management



- All incidents where a patient received blood products will be reviewed by the DFR Office of the Medical Director (OMD).
- DFR OMD will monitor for appropriate use of blood and patient outcomes.
- The DFR OMD will report on blood transfusion data monthly to EMS leadership.



Next Steps



- If partnership with a blood supplier is finalized during Spring of 2024, DFR would aim to:
 - Develop treatment Guidelines and DFR Procedures, Spring '24
 - Finalize Pilot Program logistics and details, Early Summer '24
 - Launch Pilot Program, Late Summer '24





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