

A Collaborative Approach: Regional Prehospital Blood Pilot Project to Improve Trauma Care



Northeast Georgia Health System

Challenge

Trauma literature has confirmed hemorrhage to be a leading cause of preventable death in trauma patients. Rapid bleeding control and volume resuscitation are essential in the immediate post-injury phase of care; however, blood product utilization in the prehospital environment remains minimal across the country, with the exception of air medical, literally allowing weather to dictate the care of bleeding patients. The pendulum has not shifted to allow most ground Emergency Medical Services (EMS) to carry blood products for many reasons including but not limited to state EMS laws and paramedic scope of practice, cost and access to product. A team in rural northeast Georgia sought out to fill this critical gap:

- The Regional Trauma Advisory Committee (RTAC) and trauma leaders at the regional trauma center, Northeast Georgia Medical Center, presented this opportunity to improve outcomes in bleeding patients to the Georgia Office of EMS & trauma and the Emergency Medical Services Medical Director Committee (EMSMDAC).
- The presenting team included a Trauma Surgeon, the Trauma Program Manager, a Trauma Advanced Practice Provider and the RTAC Chair, who is also the EMS Director in one of the region's counties.
- The team presented information to support the scope of practice expansion for paramedics in Georgia to allow for initiation and transfusion of blood products in the field.

Change/Interventions

The Georgia Office of EMS & Trauma and the EMSMDAC group granted the regional team the opportunity to complete a pilot prehospital blood project to determine the safety and efficacy of Georgia paramedics initiating blood products in the field.

- Regular meetings were established to develop the framework for the project
- During the planning phase, the goal was to utilize whole blood; however, after analysis of cost and availability, liquid plasma was selected as the best option
- Four pilot EMS services were selected based on volume, acuity and proximity to a trauma center
- A protocol was developed, including patient selection criteria and a separate administration policy detailing equipment, processes and performance improvement
- A training plan and post-licensure skill checklist and examination were developed
- Equipment was secured by working with vendors for a blood warmer, temperature monitoring device and storage coolers
- An exchange process was developed between the four participating EMS services and the hospital blood bank to ensure no products were wasted

Implementation

After ten months planning and training of personnel, the pilot prehospital blood project went live with four EMS agencies carrying two units of liquid plasma. The change now allows for quicker access to a better means of resuscitation for hemorrhaging patients and decreases crystalloid transfusion.



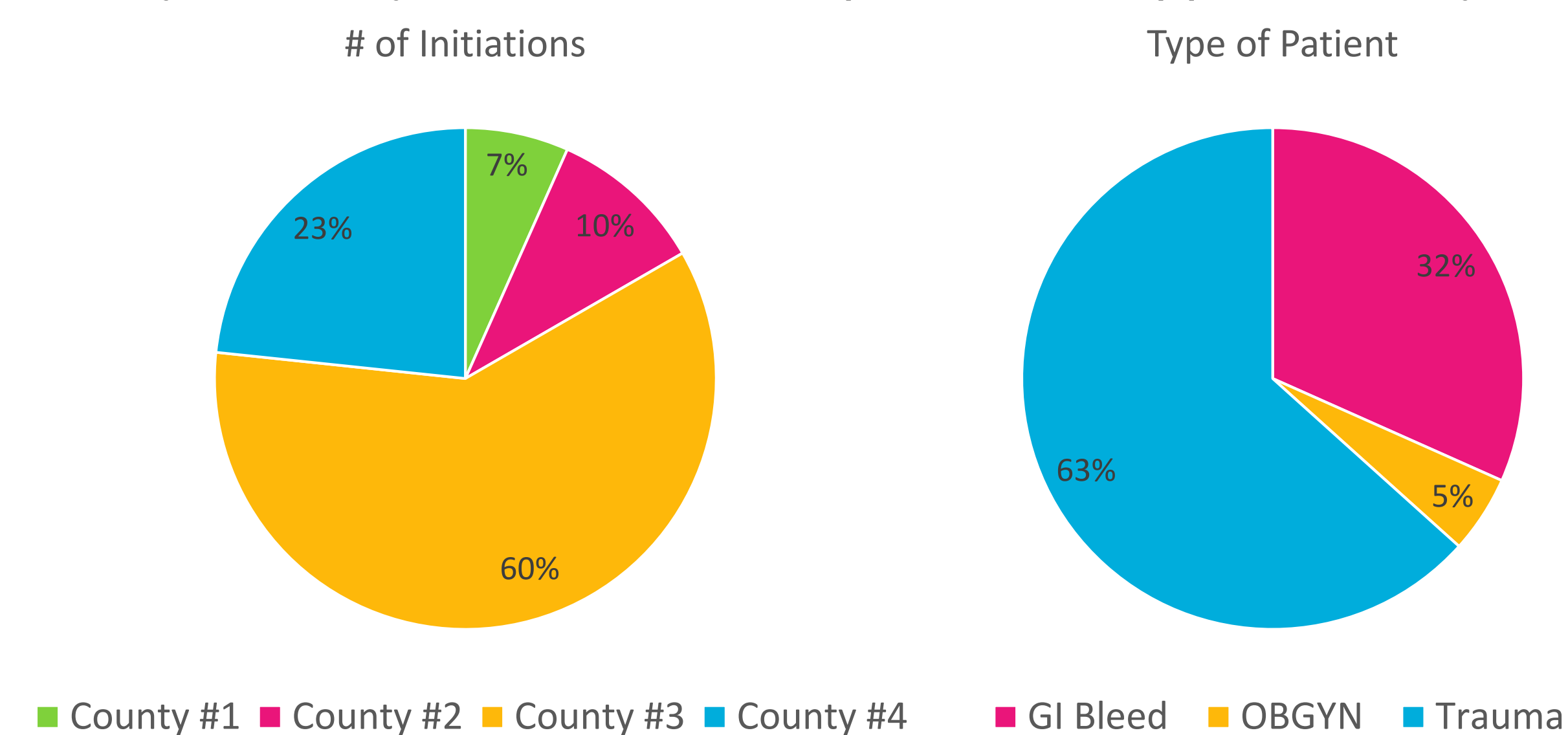
Pictured above: Jackson County EMS members, Holden Nunn, Chris Hensley and Tylor Murphy

Measuring the Effects of Change

The overall purpose of the project was to prove the safety and efficacy of pre-hospital providers initiating and transfusing blood products. To measure effects of the implemented change, a performance improvement (PI) process was established and includes:

- Daily temperature monitoring and tracking
- Completing post-transfusion evaluation and sharing with trauma center PI team
- Primary review by the Trauma Program Manager (TPM) and the Blood Bank Manager then secondary review by the Trauma Surgeon who provides medical oversight for the project
- Regular performance improvement meetings by all four services and project leadership to review each case for the appropriateness of patient selection and for adherence to the established protocols

In the 17 months since go-live, there have been 60 initiations of blood products in the field by these four services. Each event has been reviewed and deemed appropriate, per the established protocol. There have been zero adverse reactions. Ongoing data collection and preliminary analysis validates the advantages of administering plasma in hemodynamically unstable trauma patients as opposed to crystalloid



The team has done a follow up presentation for the state agencies and oversight groups. The pilot project has gained support and work is ongoing to determine if blood product initiation in the pre-hospital setting can be replicated across the state, particularly in rural Georgia areas.

Sustaining the Change

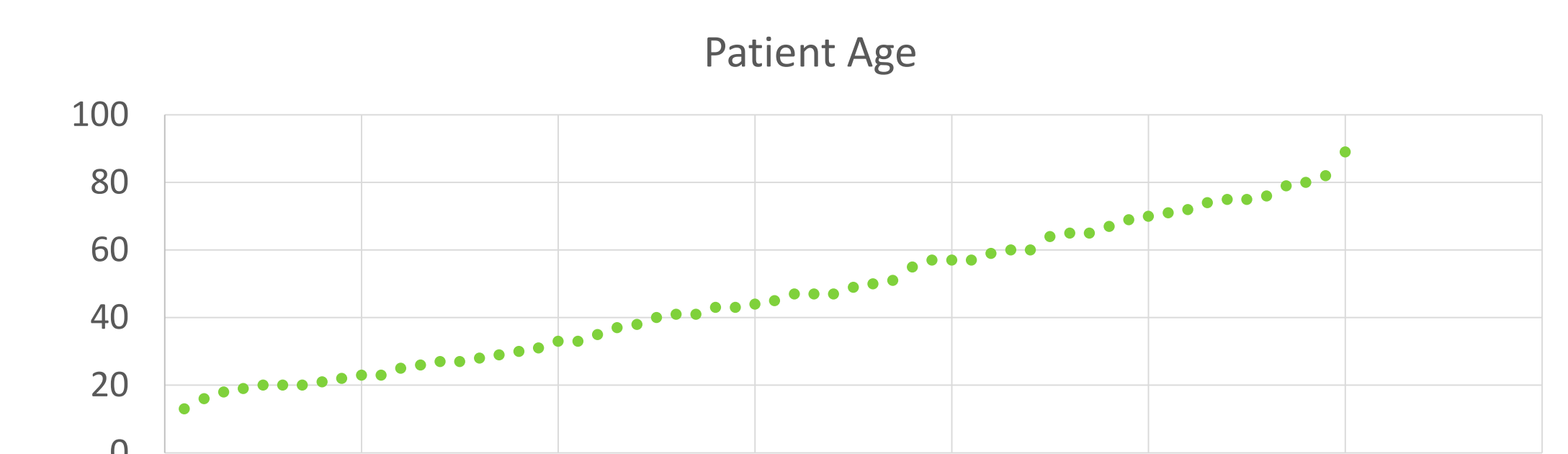
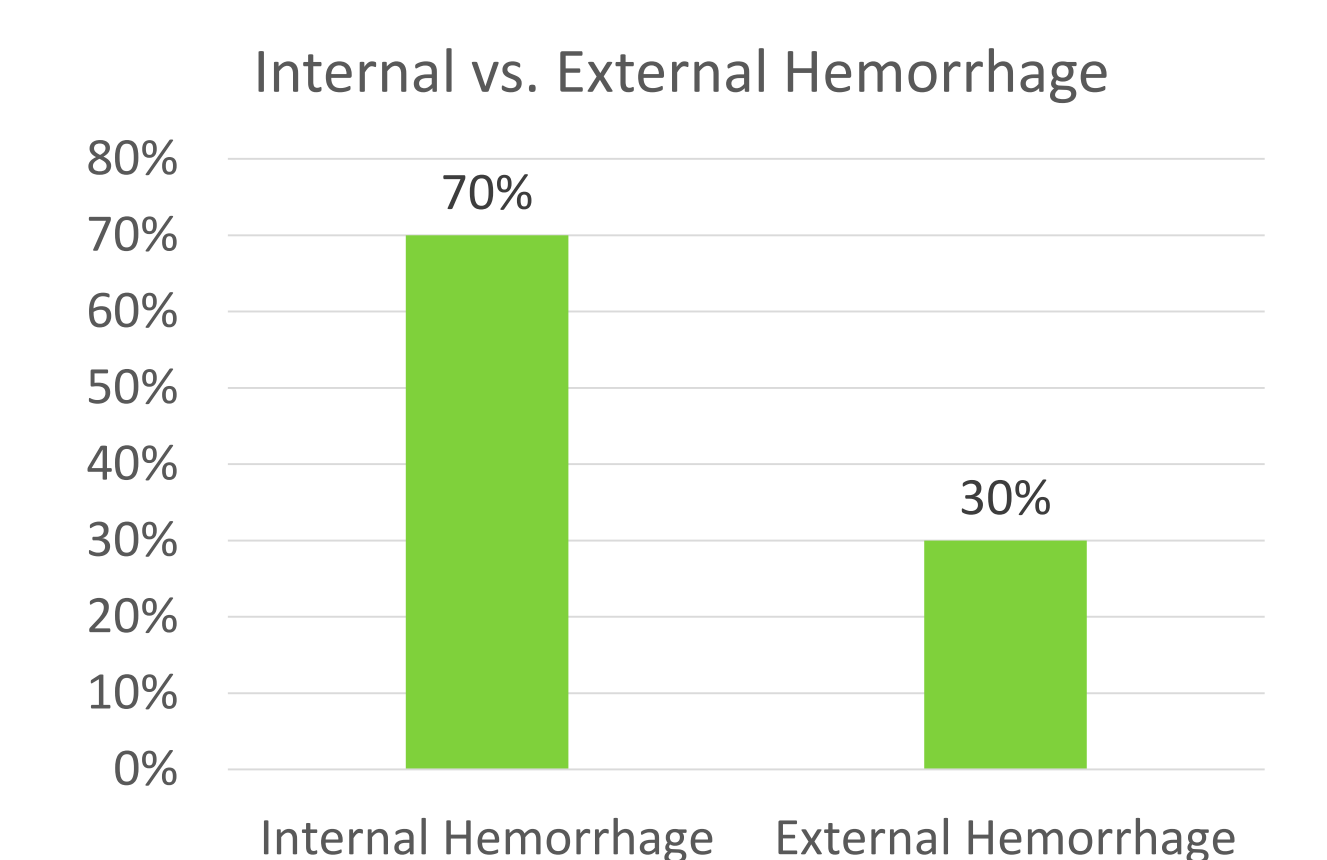
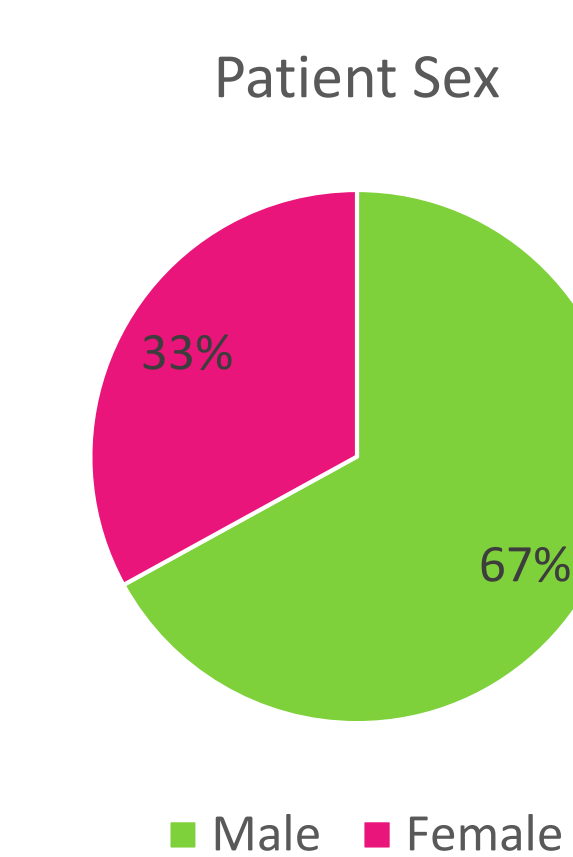
The change has sustained through:

- Collaboration and commitment from all involved stakeholders
- Frequent email communication among stakeholders
- Routine PI meetings to share lessons learned and evaluate effectiveness
- Continued education for low volume, high risk skill, including simulation opportunities
- Open and direct communication between the hospital blood bank, the prehospital blood pilot project leaders and the EMS services

The pilot project remains in progress and data has been collected for 17 months. One service is now trialing an additional cooler using whole blood. There have been nine initiations of whole blood.



More Data



Team Members

- Jesse Gibson, MBA, BSN, RN, TCRN, Trauma Program Manager
- Kyle Gibson, MSN, APRN, AGACNP-BC, TCRN, Trauma & Surgical Critical Care Nurse Practitioner
- Nathan Creel, MD, Trauma & Surgical Critical Care

