American College of Emergency Physicians®
ADVANCING EMERGENCY CARE

POLICY STATEMENT

Approved April 2024

# *Prehospital Blood Administration in Hemorrhagic Shock*

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The American College of Emergency Physicians believes that the administration of prehospital blood may reduce coagulopathy and improve mortality in certain trauma patients. Given the conflicting data on the efficacy of prehospital blood administration and taking into account the substantial logistical challenges such a program can pose for certain systems, individual medical directors must determine whether the cost-benefit analysis in their system warrants establishing such a resource-intensive operation. Key considerations include:

- Efforts to establish a prehospital blood program should not supersede efforts to optimize the fundamental components of trauma management within a given system.
- The administration of whole blood (WB) or blood products should not delay the core components of prehospital trauma management, including prompt hemorrhage control, basic airway management (excluding the placement of an advanced airway), and rapid transport to definitive care.
- The administration of WB or blood products in the prehospital setting is a relatively low-risk intervention in patients suffering from hemorrhagic shock.
- The administration of WB or blood products is more likely to benefit patients suffering from severe injuries, with anticipated prehospital times that are greater than 40 minutes, and/or transport times greater than 20 minutes.
- WB may be of greater benefit than component therapy. If component therapy is used, plasma should be prioritized over packed red blood cells (pRBCs).
- In all systems, a restrictive approach to crystalloid fluids should be adhered to when caring for patients in hemorrhagic shock.

Additional studies are urgently needed to examine the efficacy of WB administration, and to identify the subset(s) of patients most likely to benefit from receiving WB or blood products. Given its highly plausible biological mechanism, there is a strong potential that future studies will strengthen the support for administering whole blood or blood products to patients in hemorrhagic shock in the prehospital setting, particularly in certain patient

populations. Future studies should consider dichotomizing blunt versus penetrating trauma, and comparing outcomes across various prehospital and transport times. It may also be useful to examine whether there is an upper limit to prehospital times, beyond which blood administration loses efficacy. Given that death from hemorrhage typically occurs early on in a patient's hospital course, and that the incidence of death from traumatic brain injury (TBI), organ failure, and sepsis rises over time, future studies should consider using three to six hour mortality as their primary endpoint.