

# Blood shortage imperils US ability to treat patients who require blood on any given day

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Our nation's ability to treat the patients who require blood on any given day—from victims of mass-casualty events to those undergoing treatment for cancer—is in serious peril, according to a new viewpoint

paper, "The Bloody Transfusion Problem," [published](#) in the *JAMA*.

John B. Holcomb, M.D., professor in the University of Alabama at Birmingham Division of Trauma and Acute Care Surgery and lead author, paints a picture that extends beyond technical research into the economics, politics, and logistics of solving the country's problems surrounding [blood supply](#) and usage.

These include the alarmingly inadequate supply of blood overall alongside the need for shelf-stable blood products; the near-absence of blood products available in prehospital settings; and the need to sustain consistent research funding for trauma studies of hemorrhagic shock.

Key findings show that fewer than a third of hospitals which received blood components from the American Red Cross in 2019 routinely had platelets ready for transfusions. Among prehospital systems including helicopters and ground ambulances, fewer than 1% have prehospital transfusion programs. And overall, throughout the United States, the rate of blood donation is falling.

In fact, the Red Cross recently declared an emergency blood shortage and reported that the number of U.S. blood donors is at all-time low going back 20 years. The consequences are amplified by a staggering amount of trauma, currently the leading cause of life-years lost among people between one and 75 years of age and costing the United States billions annually.

## **Translating trauma care on the battlefield to the hospital**

Holcomb has been studying these issues for most of his career, which spans from treating soldiers on the battlefield to civilian [trauma care](#);

Holcomb has a wealth of experience as a retired army colonel who served as the Commander of the United States Army Institute of Surgical Research and Trauma Consultant for the Army Surgeon General from 2002 to 2008.

Holcomb describes a seminal moment early in his trauma career. During his surgical residency, he had been trained to resuscitate patients primarily with crystalloid, followed by red cells, plasma, and platelets in sequential order.

"The patients became incredibly deluded and coagulopathic," Holcomb said.

After he first deployed with the Joint Special Operations Command in Somalia in 1983, he started giving fresh whole blood to trauma patients.

"It was remarkable to see the physiologic effect, the lack of coagulopathic bleeding, and how well the patients did with fresh, whole blood available," Holcomb said.

Holcomb identifies that experience as an impetus for his ongoing efforts to advocate for changes in the U.S. civilian and military blood supply. The improvements in outcome Holcomb witnessed on the battlefield have been confirmed by government-sponsored studies, resulting in changes in practice at trauma centers around the world.

Still, Holcomb estimates it will require hundreds of millions of dollars to mitigate injury's societal impact and create lasting change.

## **A battle on several fronts**

Meanwhile, Holcomb sees much work left to be done to address the other problems outlined in his research. One issue of grave concern

surrounds care in the prehospital setting.

According to the paper, "Although the use of prehospital blood products is standard of care within the deployed Department of Defense trauma system only a limited number (

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