

BLEEDING OUT

The Disparity in Excess Death Rates Due to Traumatic Bleeding between Rural Trauma Deserts and Urban Areas.

In trauma medicine, the impact of delayed emergency medical care on the excess death rate is a critical concern. The excess death rate, in this context, refers to the increase in mortality that occurs when there is a significant time lag between the occurrence of a traumatic injury and the receipt of effective emergency medical treatment. This delay can significantly affect outcomes for patients who suffer from traumatic injuries, as the "golden hour" principle suggests that outcomes are greatly improved if care is received within the first hour after injury, and effective trauma stabilizing hemostatic products are available.

Factors contributing to an increase in the excess death rate can include distance from medical facilities, lack of immediate access to emergency medical services, and the lack of effective hemostatic products. These delays and product unavailability can lead to worsened conditions for patients, including the progression of internal bleeding, exacerbation of shock, and the onset of secondary complications that could have been prevented or mitigated with prompt treatment with effective trauma stabilizing medical products.

There have been numerous studies which quantify and highlight the disparity in excess death rates between rural and urban areas.[1-3] Remote areas where effective emergency medical care is not available within the time critical time window, have

been termed "Trauma Deserts". During 2008–2010, the annual age-adjusted death rates for unintentional injury were highest in rural counties. During 1999–2014, the age-adjusted death rates for unintentional injuries were approximately 50% higher in rural areas than urban areas. The statistics on fatal vehicle crashes nationwide also highlight the disparity between rural and urban areas. Nearly half of all fatal crashes in the United States occur on rural roads even though only 19% of the population lives in rural areas. An estimated quarter of all Americans live further than a 30 minute drive from a Level 1 or 2 Trauma center, markedly contributing to the excess death rate for such Americans. Each year it is estimated that at least 31,000 injured Americans die of preventable bleeding. Experts call it a health crisis and a "neglected disease". "This is a public health disaster, and it's been going on at least since the '60s," said Dr. John Holcomb, a trauma surgeon with the University of Alabama a Birmingham and leading expert on preventable trauma deaths. Besides the variable of effective emergency medical care with the critical time window, the availability of an effective, trauma-stabilizing hemostatic agent is also critical. One such product is BloodSTOP iX. In a groundbreaking study in a swine model of extremity arterial bleeding (following an accepted Military protocol), the BloodSTOP iX was able to maintain hemostasis longer. After 150 minutes, 100% of the BloodSTOP iX subjects survived, compared to only 55% of the subjects treated with

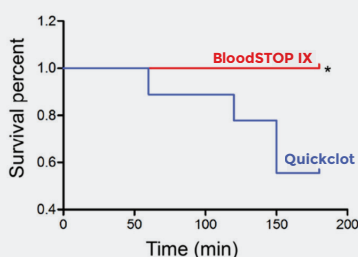


Kaolin gauze.[4] The ability to effectively control and sustain stable hemostasis and MAP (mean arterial pressure) without the need for excessive resuscitation (and maintenance of distal blood flow) supports the use of this dressing as a novel hemorrhage control tool to enhance traumatic injury outcomes in both civilian and military settings. By all measures, BloodSTOP® iX better controlled hemorrhage and averted death in this model of extremity arterial hemorrhage compared to Kaolin gauze.[4]

RESOURCES

1. "Bridging the Gap in Excess Death Rates between Rural and Urban Counties in the United States", Public Health Rep, 135, pp. 177-180, March 2020.
2. "Trauma Deserts in Rural America: Where you live can determine whether you live". Dallas Morning News, November 30, 2023.
3. "Why so many Americans bleed to death after a traumatic injury". Dallas Morning News, November 28, 2023. 2016;17(4):545
4. Comparison of Topical Hemostatic Agents in a Swine Model of Extremity Arterial Hemorrhage: BloodSTOP iX Battle Matrix vs. QuikClot Combat Gauze Li H, Wang L, Alwaal A et al. Comparison of Topical Hemostatic Agents in a Swine Model of Extremity Arterial Hemorrhage: BloodSTOP iX Battle Matrix vs. QuikClot Combat Gauze. nt J Mol Sci.

Comparison of Topical Hemostatic Agents



CONCLUSIONS

Numerous studies have quantified and highlighted the disparity in excess trauma death rates between Rural (Trauma deserts) and Urban areas. This has been identified as a national health crisis and preventable death due to traumatic bleeding has been termed a "neglected disease". These results can be generalized to the 25% of all Americans who live more than a 30 minute drive from a Level I or II trauma center and/or do not have access to effective trauma stabilizing hemostatic medical products. BloodSTOP iX has been shown in published, peer reviewed journal articles, to rapidly and effectively control bleeding, leading to successful outcomes after traumatic injury.

ABOUT LIFESCIENCE PLUS

LifeScience PLUS is a leader in advanced wound care technology. They are committed to developing and marketing innovative total wound care solutions: hemostasis (bleeding control), sealant, moist dressing, contamination prevention, and fast tissue growth generation. Their patented, best-in-class flagship product—BloodSTOP® iX Advanced Hemostat with WoundHEAL®—utilizes our game-changing technology for both acute and chronic wound care.

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