



Pre-Hospital Hemorrhage Control Update and Emerging Trends

Background

Trauma injuries are a leading cause of death in Wisconsin, and one of the main causes of death in trauma injuries is catastrophic hemorrhage. **In 2024, emergency medical services (EMS) responded to 3,235 emergencies that required bleeding control.** Bleeding and hemorrhage control is an important part of patient care and something bystanders can do to improve the chance of survival for an injured person. National programs such as [Stop the Bleed](#) have drawn attention to this and encouraged training of medical professionals, law enforcement, and members of the public in hemorrhage control.

Training on bleeding control has been a priority for Wisconsin's [Regional Trauma Advisory Councils \(RTACs\)](#) and [Healthcare Emergency Readiness Coalitions \(HERCs\)](#). Since 2022, Wisconsin RTACs have spent over \$107,000 on bleeding control training, supplies, and Stop the Bleed kits, and HERCs have spent over \$91,000. To learn more about training for treating bleeding injuries, see the American College of Surgeon's [Stop the Bleed training website](#).

Understanding trends in injuries and bleeding control is important in prevention activities as well as in prioritizing who should be trained in hemorrhage control. This report examines Wisconsin EMS data from 2019 to 2024 on injuries and bleeding control events. Events examined include emergency responses for injuries excluding poisonings, burns, frostbite, complications of medical care, and injuries caused by foreign bodies entering a natural orifice. Additionally, bleeding control events are defined as EMS responses where any non-general bleeding-related procedure was recorded. Procedure codes selectable by EMS changed in 2024 during the transition from the National Emergency Medical Services Information System (NEMSIS) Version 3.4 to NEMSIS Version 3.5 which may result in differences in the data starting in 2024.

Key Takeaways

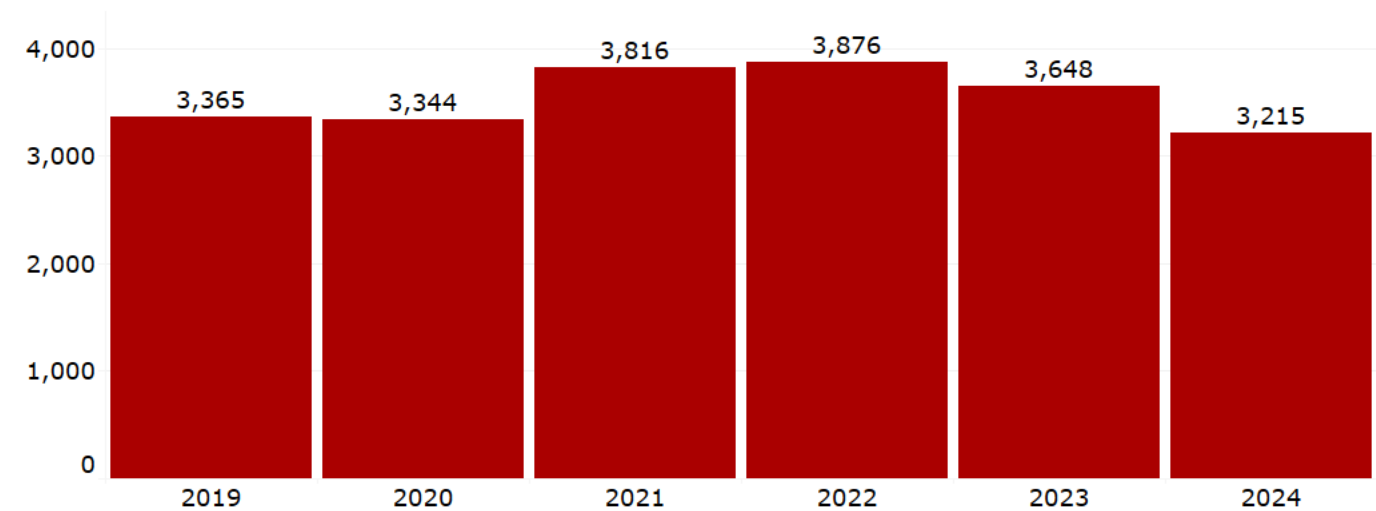
- There were **3,215** EMS responses that required bleeding control procedures in 2024.
- In 2024, bleeding control events made up **4%** of EMS's injury responses included in this report.
- The use of tourniquets has increased from being applied **363** times in 2019 (**11%** of injuries requiring bleeding control) to **565** times in 2024 (**18%** of injuries requiring bleeding control)
- Most bleeding injuries that EMS responds to happen in private residences, demonstrating the importance of hemorrhage control training for the public and law enforcement officers who may be the first to the scene of an injury, especially in rural areas





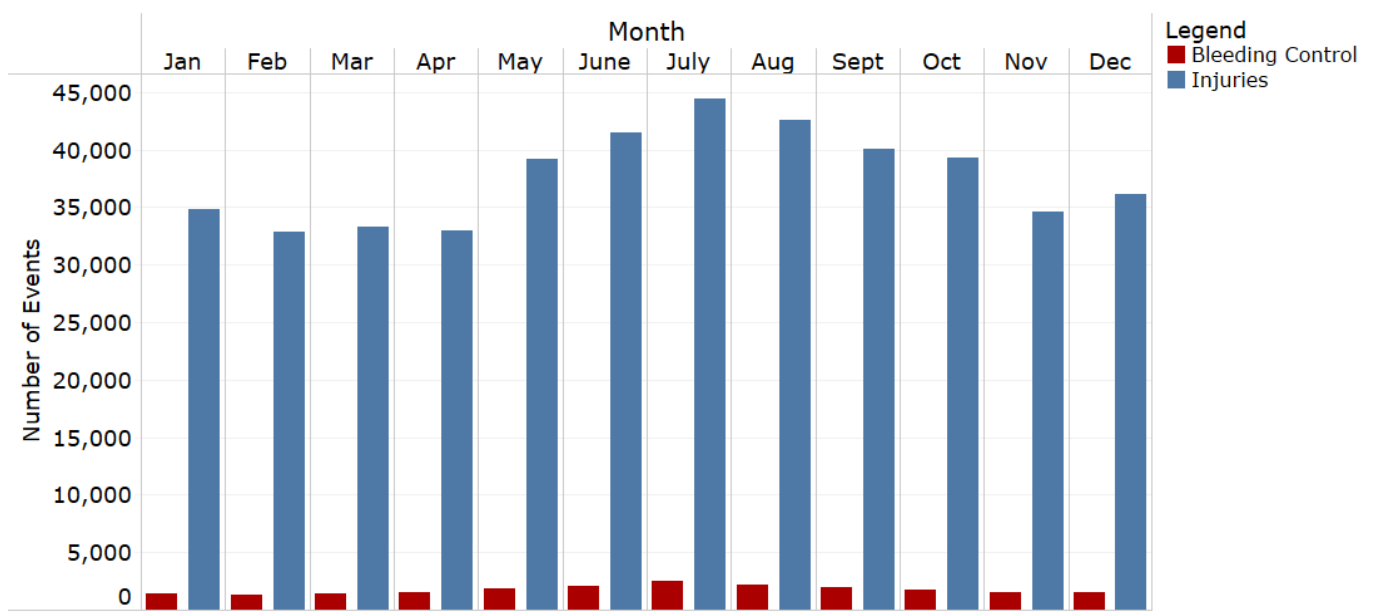
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Bleeding Control Events by Year



Bleeding control events increased in 2021 and decreased through 2023 and 2024. This decrease may be because of differences in how bleeding control procedures were recorded in NEMSIS Version 3.4 versus NEMSIS Version 3.5.

Number of Injuries and Bleeding Control Events by Month, 2024



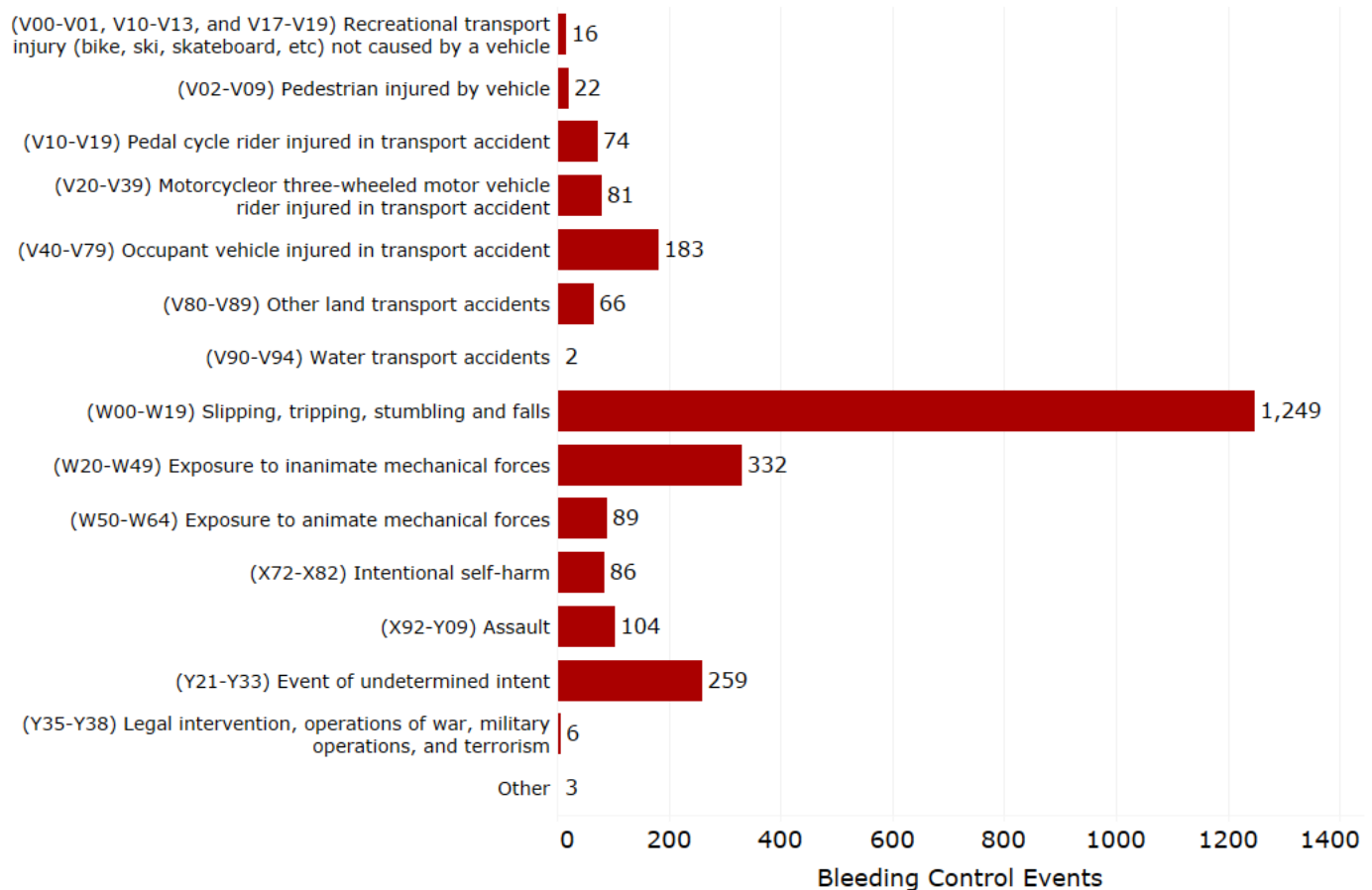
Injuries and bleeding control events tend to be higher during the summer months as more people engage in activities that may cause injury. Bleeding control events follow this trend as well.





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Bleeding Control Events by Cause of Injury Category, 2024



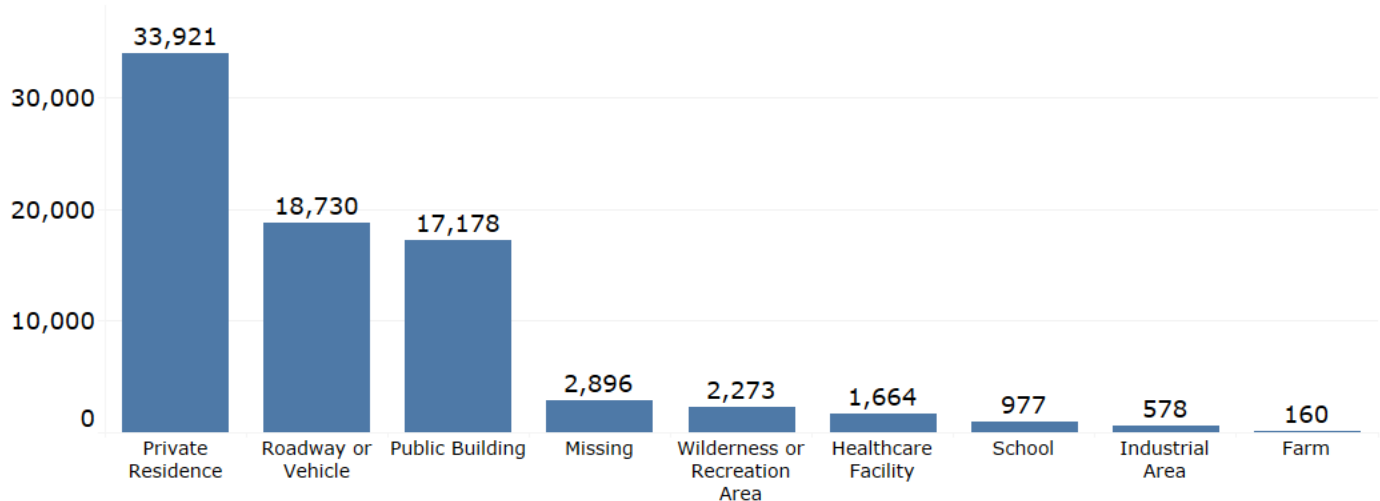
This graph shows the distribution of bleeding events in which a cause of injury ICD-10 code was recorded by EMS. [Falls](#) were the most common cause of injuries where bleeding control procedures were used, highlighting the importance of fall prevention activities to address a [higher rate of deaths from falling compared to the national average](#). Additionally, accidents with inanimate mechanical forces (such as being struck or cut by objects, tools, or injury by accidental firearm discharge) and [motor vehicle-related injuries](#) were another common cause of bleeding events. These trends match closely to the distribution of injuries that EMS responds to.



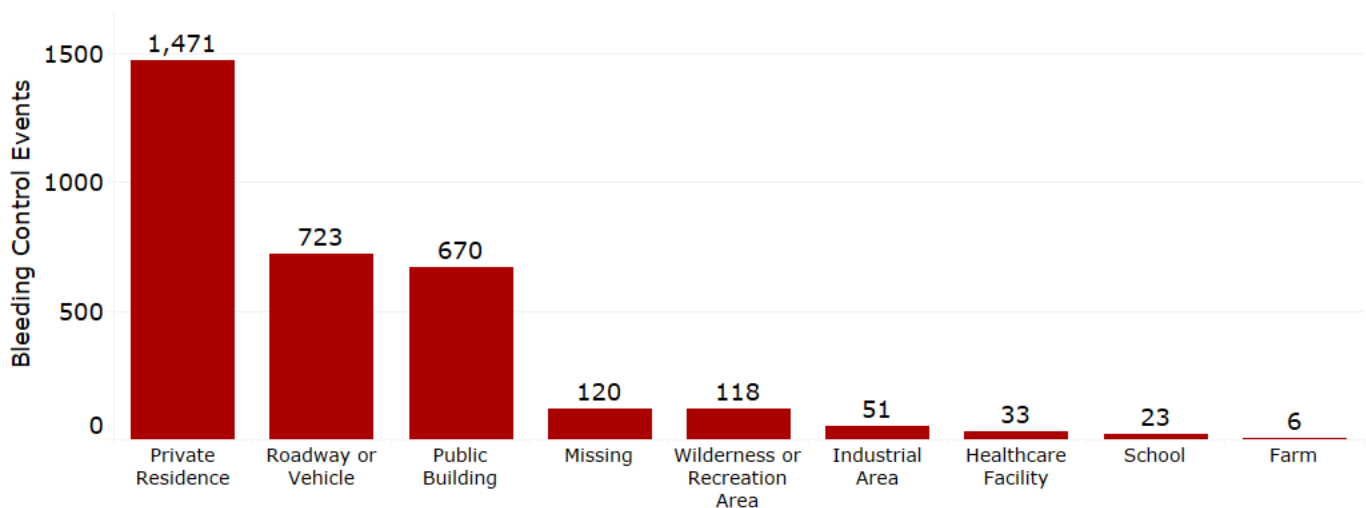


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EMS Injury Events by Incident Location, 2024



Bleeding Control Events by Incident Location, 2024



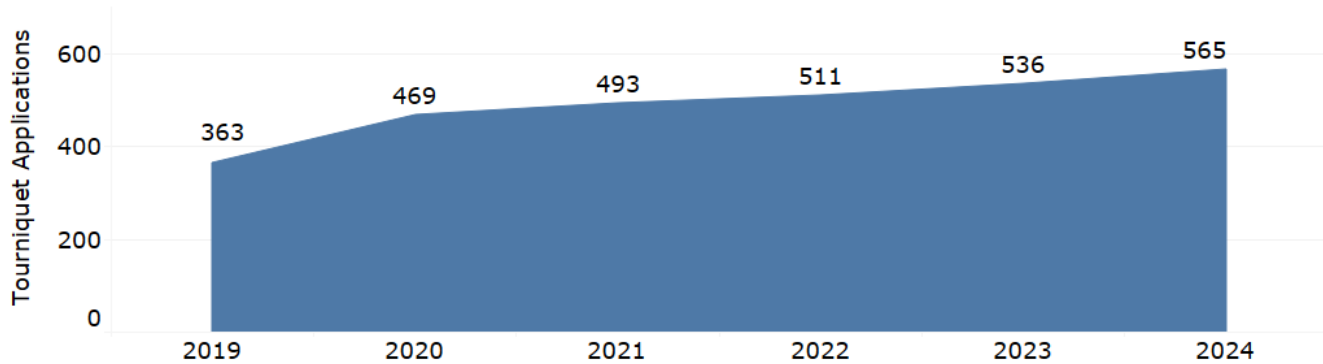
Bleeding and injury events primarily happen at private residences. Overall, the places that bleeding events occur mirror the places in which injuries happen.



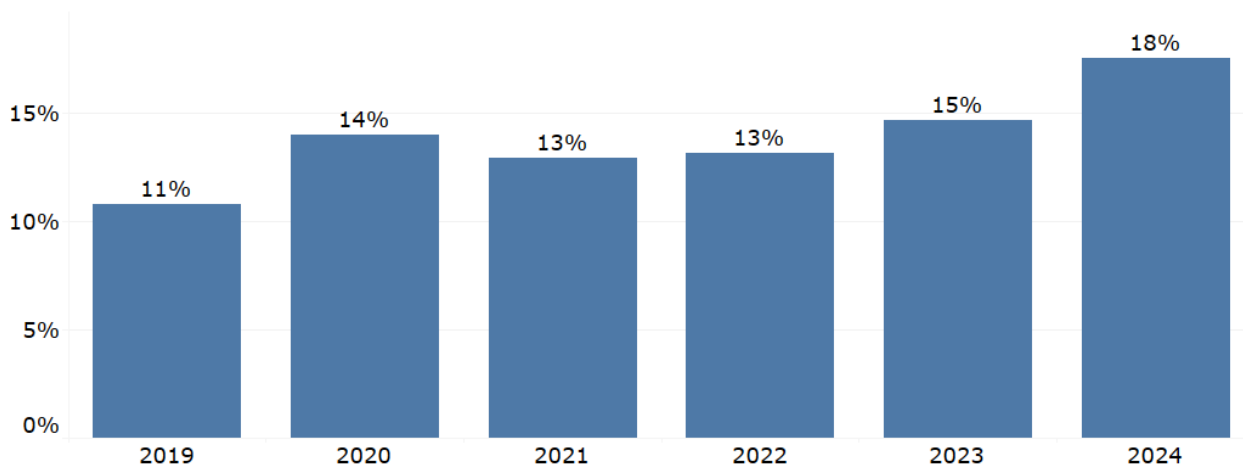


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Tourniquet Application by Year



Tourniquet Application as a Percent of Bleeding Events



Tourniquets use has increased each year as bleeding events have increased, with increased usage during bleeding events in 2024 compared to previous years. These numbers include both application of a tourniquet by EMS as well as by law enforcement or bystanders. Data on tourniquet applications examines both incidents where tourniquet application is recorded as a procedure performed by EMS as well as if the patient care narrative indicates a tourniquet was used.

Healthcare or law enforcement professionals interested in hemorrhage control training can reach out to their local [RTAC](#) or visit the American College of Surgeon's [Stop the Bleed website](#) to see if local training is available. Lay individuals interested in training on how to treat bleeding injuries can visit the American College of Surgeon's Stop the Bleed [training website](#) to sign up for an in-person class or access an interactive online course.

Additional questions about this report can be directed to DHSTrauma@dhs.wisconsin.gov.

