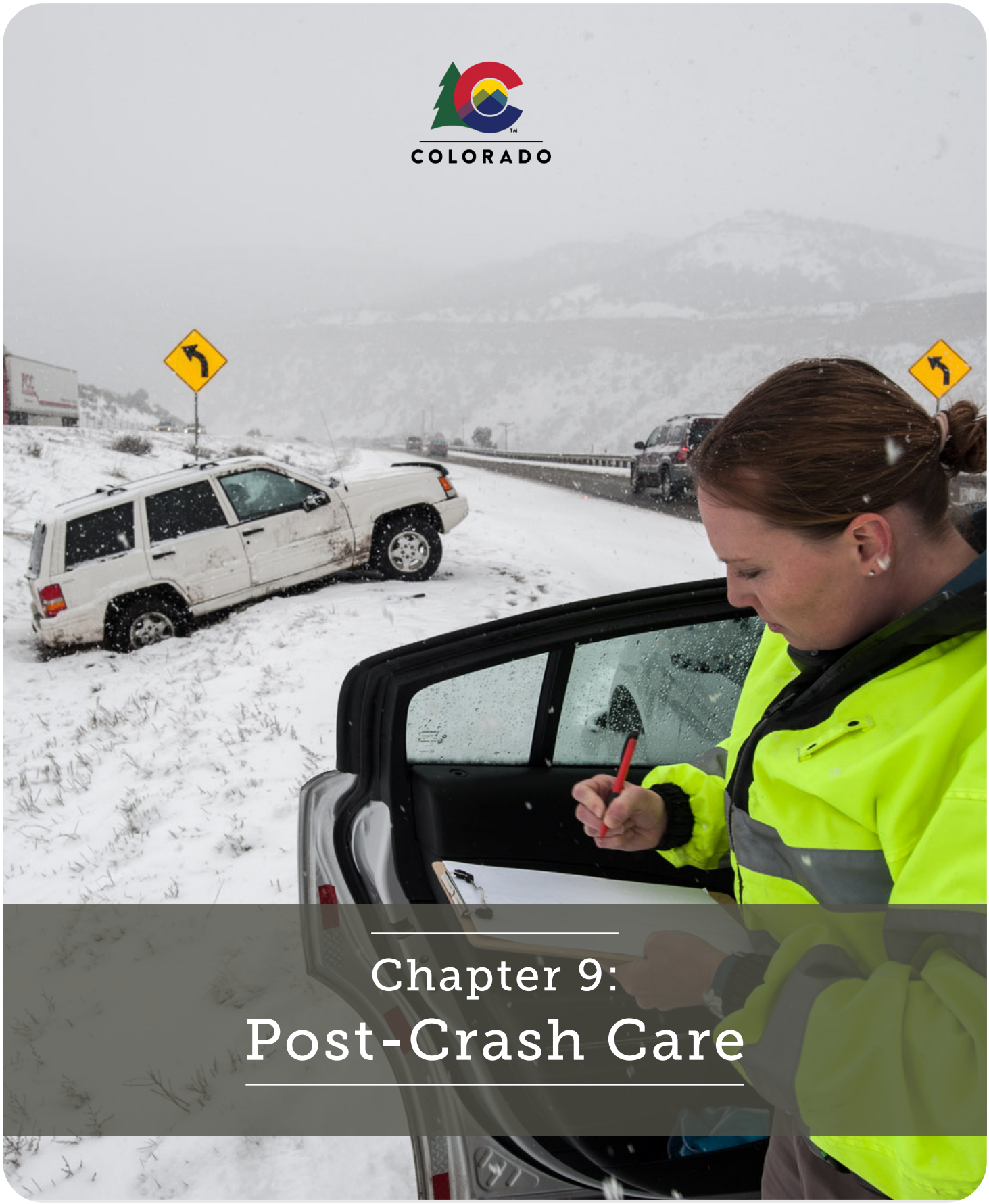

Chapter 9:
Post-Crash Care

Introduction

Post-Crash Care refers to the collective ability to increase survivability of crashes by responding to crashes in a timely manner, minimizing the severity of injuries, preventing secondary crashes, and providing a safe environment for those responding to crashes. All actions in providing effective care for the injured are time-sensitive, starting with activating the emergency care system, continuing with care at the scene, then transporting to a health care center, and finally caring for the victim(s) at the medical facility.

Focus Areas

Post-Crash Care includes two Focus Areas:

Emphasis Area:

Post-Crash Care

Focus Areas:

Traffic Incident Management

Emergency Medical Services

Strategies in the Post-Crash Care Emphasis Area address both Focus Areas.

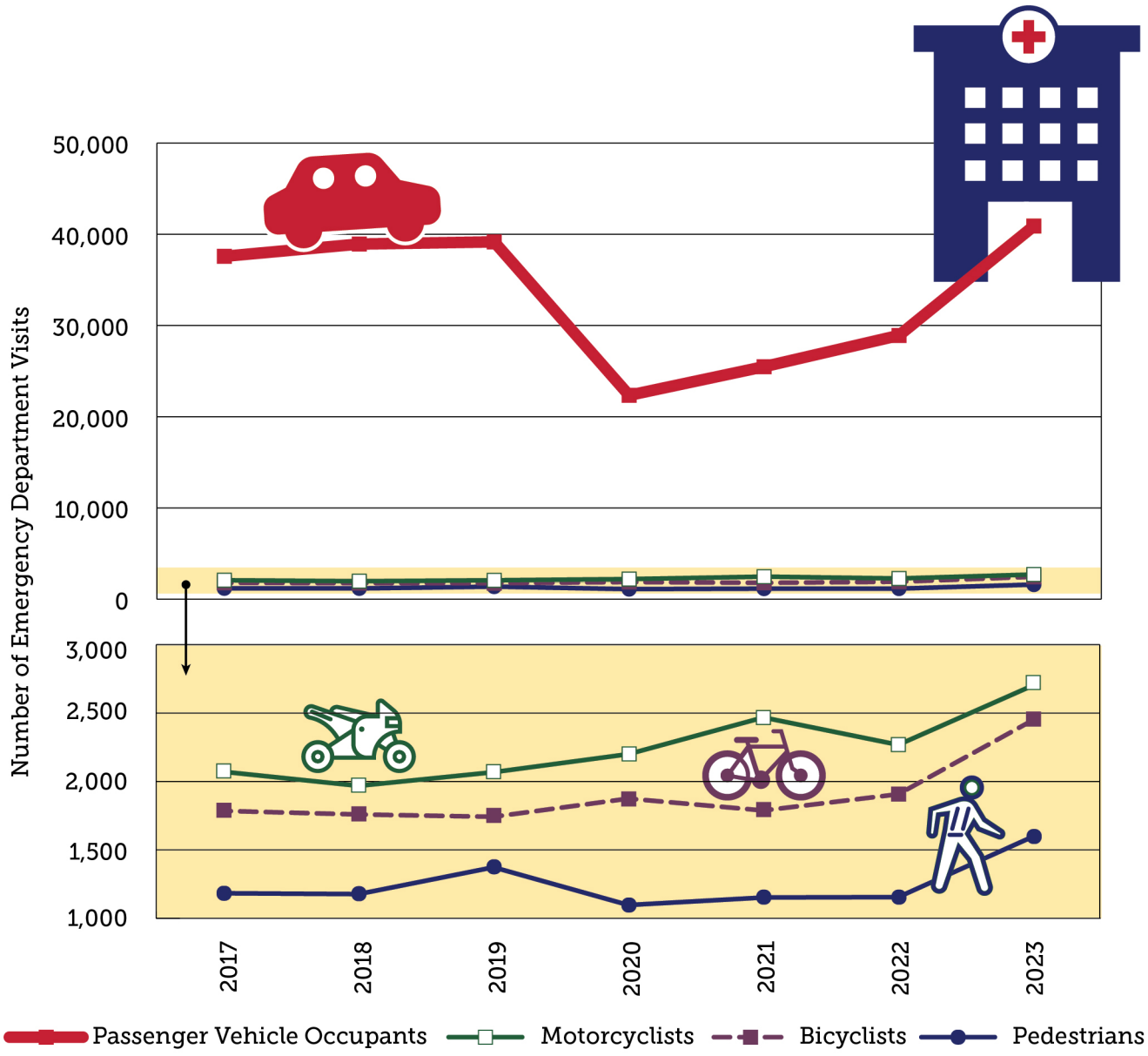

Figure 9-1: Emergency Department Visits by Mode (Source: CDPHE)

According to Colorado Department of Public Health and Environment (CDPHE) data, the number of emergency department visits from roadway crashes have steadily increased across all modes, but particularly for pedestrians, bicyclists, and motorcyclists. From 2017 to 2023, the number of emergency department visits increased by 35% for pedestrians, 37% for bicyclists, and 31% for motorcyclists. In comparison, the number of visits for passenger vehicle occupants increased by 9% over the same period.

Traffic Incident Management

Traffic crashes happen daily on Colorado's roads, necessitating a coordinated effort from all first responders including law enforcement, emergency medical services (EMS), and towing companies to manage the aftermath safely and efficiently.

These teams collectively engage in Traffic Incident Management (TIM) with the objectives of reducing crash duration, restoring normal traffic flow, and maintaining safety at the crash scene. According to crash data, there were 4,679 secondary crashes in Colorado from 2021 to 2023, resulting in 177 serious injuries and 28 fatalities. A secondary crash is defined as a crash occurring within an incident scene area or within a traffic queue, including the opposite direction, resulting from an original crash. Such crashes are particularly dangerous for crash response teams.

To improve safety at crash sites, Colorado is actively enhancing training programs, expanding the use of technology for better communication with drivers and responders, and increasing public awareness through campaigns. Colorado has a statewide TIM program to coordinate efforts and to facilitate continuous dialogue on best practices.

Emergency Medical Services

The effects from a crash linger well beyond the initial impact. EMS are vital in this life-saving process through rapid response and appropriate care.

According to 2018-2022 data from the Fatality Analysis Reporting System (FARS) published by the National Highway Traffic Safety Administration (NHTSA), 60% of fatalities from Colorado crashes died at the scene, while five percent died en route to medical services, and 35% succumbed to their injuries later. Immediate medical intervention is critical, as it often determines whether a crash results in an injury or escalates to a fatality.

To deliver the highest standard of care and minimize injury severity and long-term costs, it is essential that EMS systems are adequately staffed and equipped. According to the CDPHE, 911 response calls increased 13% from 2019 to 2022, and interfacility transport has increased by 17%, both of which are higher than the 2.9% statewide population growth in the same period. The expansive geography of Colorado and the disparate density of services between urban and rural regions result in a wide variability in response time and consistency of care. Enhancing EMS effectiveness involves developing a comprehensive trauma system, elevating the level of care provided by trauma centers, and standardizing EMS practices to reduce variability in care. Colorado's EMS efforts are led by the State Emergency Medical and Trauma Services Advisory Council (SEMTAC).

Post-Crash Care Strategies

The following five strategies help to advance the standard of practice for both TIM and EMS activities across Colorado and promote multidisciplinary coordination.

PC1: Improve collection of post-crash care data

Improve data collection, analysis, and dissemination procedures to allow for increased integration of data between safety partners.

Quality data are needed to inform practitioners on the process and outcomes of activities that address post-crash care. Data enables a better understanding of the impact of timely response, quality of care, and adherence to performance metrics. For example, post-crash care practitioners can review 911 data to analyze the elapsed time between notification and the dispatch of field resources. Since agencies vary in size and sophistication, there is a range in data capabilities and metrics across Colorado. Activities for this strategy include examining methods to improve data integration and standardization.

PC2: Improve quality of care

Develop processes to improve quality of care for those involved in crashes from onset of crash through treatment.

Agencies and organizations involved with post-crash care understand the programs and initiatives that need to be performed to improve quality of care; however, implementation is challenging. Documented processes that include prioritized actions and milestones to track progress are needed. The SEMTAC is an existing collaborative group that can facilitate prioritized activities to improve quality of care.

PC3: Provide education on post-crash care best-practices

Implement programs to educate practitioners and the public on best practices on post-crash care activities.

It is important for practitioners to receive the necessary training and education to fully understand the challenges that limit progress on addressing post-crash care and the promising activities that can help to overcome these concerns. Furthermore, education and opportunities to collaborate with other partners can help to identify efficiencies. Organizations like the SEMTAC could help to establish and monitor an improved post-crash care education program.

PC4: Enhance programs in light of differences in post-crash care outcomes

Evaluate opportunities to improve post-crash care environment and determine opportunities to enhance programs and activities.

A major gap in providing quality post crash care is the notable difference between urban and rural areas in the time between a crash and when a victim arrives at a hospital. The remoteness of crash locations and the lower density of EMS providers and facilities in rural areas contribute to longer response times. Activities such as implementing new technologies can help to address these challenges.

PC5: Support statewide traffic incident management (TIM) activities

Continue to support statewide TIM activities.

Colorado has an extensive statewide TIM program that includes activities that provide education and training opportunities, deploy safety patrols, and host an electronic resource library. This strategy focuses on continuing and enhancing these existing activities and strengthening the connection between incident management with the other Emphasis Areas. Education and training also can reduce secondary crashes on the roadway as activities are optimized and resources are shared between agencies and organizations.

EMS professionals are often first responders in emergencies, where they encounter patients suffering from severe trauma, hemorrhage, or other critical conditions requiring immediate medical intervention. Transfusions administered closer to the time of injuries using whole blood increase the chance of survival. Whole blood contains all blood components – red blood cells, platelets, and plasma. The integration of whole blood into pre-hospital care enhances the capacity of EMS to save lives and improve outcomes in emergency situations. Colorado has a Whole Blood Coalition with the mission to implement whole blood programs statewide.