General Grant Application Information

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Overview

This information is for Emergency Medical Services (EMS) Officials who are interested in learning more about possible opportunities for support through the new Bipartisan Infrastructure Law (BIL), Section 402 Highway Safety Programs, Section 405 National Priority Safety Programs, the Safe Streets and Road for All (SS4A) Grant Program, or other public funding opportunities.

Most notably, the BIL is expected to provide an increase of approximately 50% in original funding availability for vehicle and highway safety. This includes "improving the compatibility and interoperability of the core highway safety databases of the State with national data systems and data systems of other States, including the National EMS Information System." (BIL, US Public Law 117-58-NOV. 15, 2021, 135 STAT. 797, Section 4C)

Also of note, the U.S. Department of Transportation's (DOT) 2022 National Roadway Safety Strategy (NRSS) emphasizes a safe systems approach that identifies post-crash care as one of five key objectives in creating a transportation system safe for all people. The NRSS identifies several key DOT actions to enable safer post-crash care including "Expand the use of and support for the National EMS Information System- the national database that is used to store EMS data from the U.S. States and Territories- by funding applied research and data quality improvements." (NRSS, p. 30)

The following provides information to inform EMS officials in considering applying for funding specifically to implement the new NEMSIS v3.5 data standard. This information may help justify and quantify the time and expense of this transition. Also provided are additional ideas for projects and proposals that may be appropriate for support under the funding opportunities.

Motor-vehicle crashes and transportation-related events are emphasized in this document to help align with transportation-related available funding opportunities.

Examples of Available Grants

☐ Section 405 National Priority Safety Program

Purpose: The Section 405 program provides grant funding to address selected national priorities for reducing highway deaths and injuries.

- You will need to work with the Traffic Records Coordinating Committee (TRCC) and the State Highway Safety Office (SHSO) in your state to apply for funding.
- Grants must be applied for through your SHSO. Information about your State Highway Safety Office can be found here: https://www.ghsa.org/about/shsos. Reach out to the National Highway Traffic Safety Administration's Office of EMS (NHTSA-OEMS) if you need assistance.
- This grant is defined further in the Code of Federal Regulations, Title 23, Chapter III, Part 1300- Uniform Procedures for State Highway Safety Grant Programs
- 405c specifically mentions improving the compatibility and interoperability of the core highway safety databases of the state with national data systems and data systems of other states, including the National EMS Information System (NEMSIS).
- There is a focus on improving the timeliness and accuracy of traffic safety related data as well as using data to identify traffic safety problems.
- Amount Available to States: $1.764 Billion funding over 5 yrs. (2022-2027), $336,500,000 available in 2022.
- Check with the SHSO in your state about deadlines and funding procedures in your state.

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☐ Section 402 State and Community Highway Safety Grant Program

Purpose: The Section 402 program provides grants to states to improve driver behavior and reduce deaths and injuries from motor vehicle-related crashes.

- A Highway Safety Plan must be submitted and approved for your state that identifies strategies and projects before you can apply for 402 funding. A copy of your state's Highway Safety Plan can be found here: State Highway Safety Plans.
- Each state's Governors' Representative (GR) submits an application to NHTSA for 402 grant funding.
- State/local partners apply to the SHSO who then applies to NHTSA/DOT through the GR. EMS Officials are encouraged to develop long-term relationships with highway safety officials. Information about your State Highway Safety Office can be found here: SHSO Offices Reach out to the National Highway Traffic Safety Administration's Office of EMS (NHTSA-OEMS) if you need assistance.
- The 402 grant falls under the Federal Authority defined here: 402 Grant.
- Amount Available to States: approximately $1.2 Billion funding over 5 yrs. (2023-2027).
- Check with the SHSO in your state about deadlines and funding procedures in your state.

☐ Safe Streets and Roads for All (SS4A)

Purpose: The purpose of SS4A grant program is to improve roadway safety by significantly reducing or eliminating roadway fatality and serious injury through safety action plan development and implementation focused on all users, including pedestrians, bicyclists, public transportation users, motorists, personal conveyance and micro-mobility users, and commercial vehicle operators. The program provides funding to develop the tools to strengthen a community's approach to safety and save lives.

- First year funding is available to develop a plan (implementation grants or action plan grants).
- Approximately $1 Billion in 2022, $5 Billion over the next 5 years.
- Available to regions and localities, not states. Applications should come from a non-state entity.
- Objectives include Safer People, Safer Roads, Safer Vehicles, Safer Speeds, Post-Crash Care
- Website: Safe Streets 4 All.
- Additional Information: Eligible Supplemental Planning and Demonstration Activities
- Apply here: Apply.
- Check website for current deadline.
- Webinar and Instructional Recordings: Webinar.

☐ State Electronic Crash Data Collection

Purpose: The National Highway Traffic Safety Administration's National Center for Statistics and Analysis intends to award discretionary grants for the modernization of States' crash data collection systems. These grants are for States to establish or upgrade and standardize their crash data systems to enable electronic data collection, intra-State sharing, and electronic transfer of their crash data to NHTSA in a standardized format using the National Information Exchange Model (NIEM) data transfer protocol.

- Total Program Funding $250 Million.
- Link to Grant: Grants.gov (Opportunity Number: 693JJ92023).
- This notification of funding opportunity (NOFO) is currently under development.
- Prospective applicants are encouraged to use the grants.gov subscription option to register for future updates provided for this opportunity.

Uniform Procedures for State Highway Safety Grant Programs

NHTSA is pleased to announce that The Uniform Procedures for State Highway Safety Grant Programs final rule is available now on NHTSA's website. This final rule affords stakeholders a critical opportunity to leverage funding and requirements provided under BIL. The rule implements the law's provisions, including revisions to existing grant programs, and details requirements for all grants under 23 U.S.C. Chapter 4 and Section 1906.

☐ Bipartisan Infrastructure Law: Uniform Procedures for State Highway Safety Grant Programs

Under the Bipartisan Infrastructure Law (BIL), State highway safety offices have a historic opportunity to make impactful investments on transportation and public safety. There have been transformational changes in the Uniform Procedures for State Highway Safety Grant Programs (https://www.nhtsa.gov/highway-safety-grants-program). The behavioral safety formula grant program final rule implements provisions under BIL, including revisions to existing grant programs, and details requirements for grants under 23 U.S.C. Chapter 4 and Section 1906. This document covers key components of the Triennial Highway Safety Plan, Annual Grant Application, and Annual Report. Uniform Procedures for State Highway Safety Grant Programs

☐ Public Participation and Engagement Part 1: Bipartisan Infrastructure Law

Click on the link below to learn about Public Participation and Engagement requirements for the behavioral safety formula grant program. This document discusses the purpose of Public Participation and Engagement in the implementation of traffic safety grant programs, why it is so critical to achieving success in driving down serious injuries and fatalities, and how to meet Public Participation and Engagement requirements in the Triennial Highway Safety Plan. Public Participation & Engagement

☐ Public Participation and Engagement Part 2: Data Analyses and Engagement Strategies

Under the Bipartisan Infrastructure Law, States can expand existing and implement new ways to connect with communities across their state, with a particular emphasis on engaging those who have been historically underserved by our programs and/or are overrepresented in crashes. Click on the link below to learn about sources for demographic data analysis, important considerations when choosing engagement strategies, and learn about specific engagement techniques States may employ to meaningfully engage with communities they serve. Public Participation and Engagement Part 2: Data Analyses and Engagement Strategies

Background Information to Assist with Applications

☐ What is NEMSIS?

Website: nemsis.org

National Emergency Medical Services Information System (NEMSIS)

Recent NEMSIS updates support improved Motor Vehicle Crash data capture and potential analysis. Better EMS data capture can inform state highway safety partners in better understanding response delays and can allow states to track many quality improvement measures. The National Emergency Medical Services Information System (NEMSIS) is a framework that provides a national standard for patient care reporting by emergency personnel in the out-of-hospital setting. The NEMSIS EMS data standard defines data elements, values, and a standard for data exchange. Patient care reports completed by Emergency Medical Services (EMS) clinicians in the out-of-hospital setting are sent to state-level data repositories then submitted to the National EMS database. This patient care reporting and data exchange system is maintained by requiring all EMS patient care reporting software to be compliant with the NEMSIS standard.

Details: As described in the U.S. Department of Transportation's (DOT) 2022 National Roadway Safety Strategy (NRSS), the National EMS Information System is the national database that is used to store EMS data from U.S. States and Territories. The number of states reporting their EMS data to the National EMS Database has steadily increased over the years with all 50 states, the District of Columbia and three territories reporting data in 2022.

In 2022 more than 52 million EMS activations were submitted by approximately 14,000 EMS agencies to the National EMS Database. In 2021, the total number of reported MVC-related EMS activations in the National Database is 1.4 million. EMS agency submissions to state and national databases often occur shortly after the EMS encounter. At the National level, 80% of EMS activations occurring on any given day, are submitted to the National EMS database in approximately eight days.

The NEMSIS system facilitates quality data submissions by EMS agencies through a standardized EMS dataset. A subset of the patient encounter data (in each record) is submitted to the National EMS Database. The National EMS Database includes 170 data elements collected by EMS clinicians during the patient encounter. Elements include patient demographics (including race/ethnicity), reason for the encounter, injury/illness characteristics, injury/illness severity, medications/procedures given, patent acuity and final patient disposition. No PHI or PII is collected at the National level.

The injury-related elements in the NEMSIS data standard have been "harmonized" with related elements contained in the National Trauma Data Bank (NTDB), maintained by the American College of Surgeons and the Cardiac Arrest Registry to Enhance Survival (CARES).

A NEMSIS dictionary describing elements contained in the National EMS Database may be found at: NEMSIS Data Dictionary

The number of states reporting their data has increased annually.

Statistical Year	Reporting States/ Territories [1]	Reporting Agencies	Number of Events	Treated and Transported 9-1-1 Response [2]
2009	26	1,673	5,767,090	3,367,668
2010	31	3,529	9,874,748	4,874,061
2011	35	5,395	14,371,941	7,701,605
2012	43	6,415	19,831,189	10,733,925
2013	45	8,183	23,897,212	12,595,958
2014	48	8,785	25,835,729	13,769,286
2015	49	10,137	30,206,450	15,729,516
2016	49	9,993	29,919,652	15,361,777
2017	35	4,016	7,907,829	3,835,110
2018	43	9,599	22,532,890	10,675,178
2019	47	10,062	34,203,087	15,873,573
2020	50	12,319	43,488,767	19,533,036
2021	53	13,949	48,982,990	21,886,915
		TOTALS	**316,819,574**	**134,050,693**

[1] Number of reporting states and territories of the United States as of January 2022.

[2] Only including the events that are 9-1-1 calls, treated and transported by EMS.

Once a state/territory has begun submissions to the National EMS Database, no state has failed to report in subsequent years. A detailed description of the 2020 National EMS Database may be found at: National EMS Database.

This "health information exchange" works because software packages used by EMS clinicians to collect patient encounter information are tested for compliance to the NEMSIS data standard every two years. As a result, all collected data elements share the same definitions and values across the U.S. These software packages are also tested for adherence to a data transmission standard so that data exchange is not disrupted.

Much care is taken to ensure that the data are as clean as possible. All data submitted by states/territories must comply with an XML standard and are exposed to several hundred validation rules.

☐ Why is implementing the v3.5 standard necessary?

NEMSIS EMS data standard is routinely updated to align with current out-of-hospital emergency medical practice and to incorporate new technologies that reduce the data collection burden placed on emergency medical clinicians. The transition from the NEMSIS v3.4 standard to the v3.5 standard includes many updates that will require wide-sweeping changes to data collection systems within states/territories. These changes enhance state and national Motor Vehicle Crash (MVC) surveillance by facilitating rapid export of patient care reports to state (and national) repositories and enhance the assessment of injury severity among patients involved in an MVC-related event.

The new version (v3.5) will require updates to local and state-level software, additional training for emergency medical clinicians, revised state data use agreements, new logic checks for real-time data cleaning and technical updates to state repositories. One important addition to the new v3.5 standard is the introduction of a Universally Unique Identifier (UUID) to group elements such as electronic patient care reports (ePCRs) and other agency resources such as vehicles and personnel in order to track them over time.

☐ How can EMS and hospital data be linked to improve MVC injury severity assessment?

National Trauma Data Bank (NTDB)

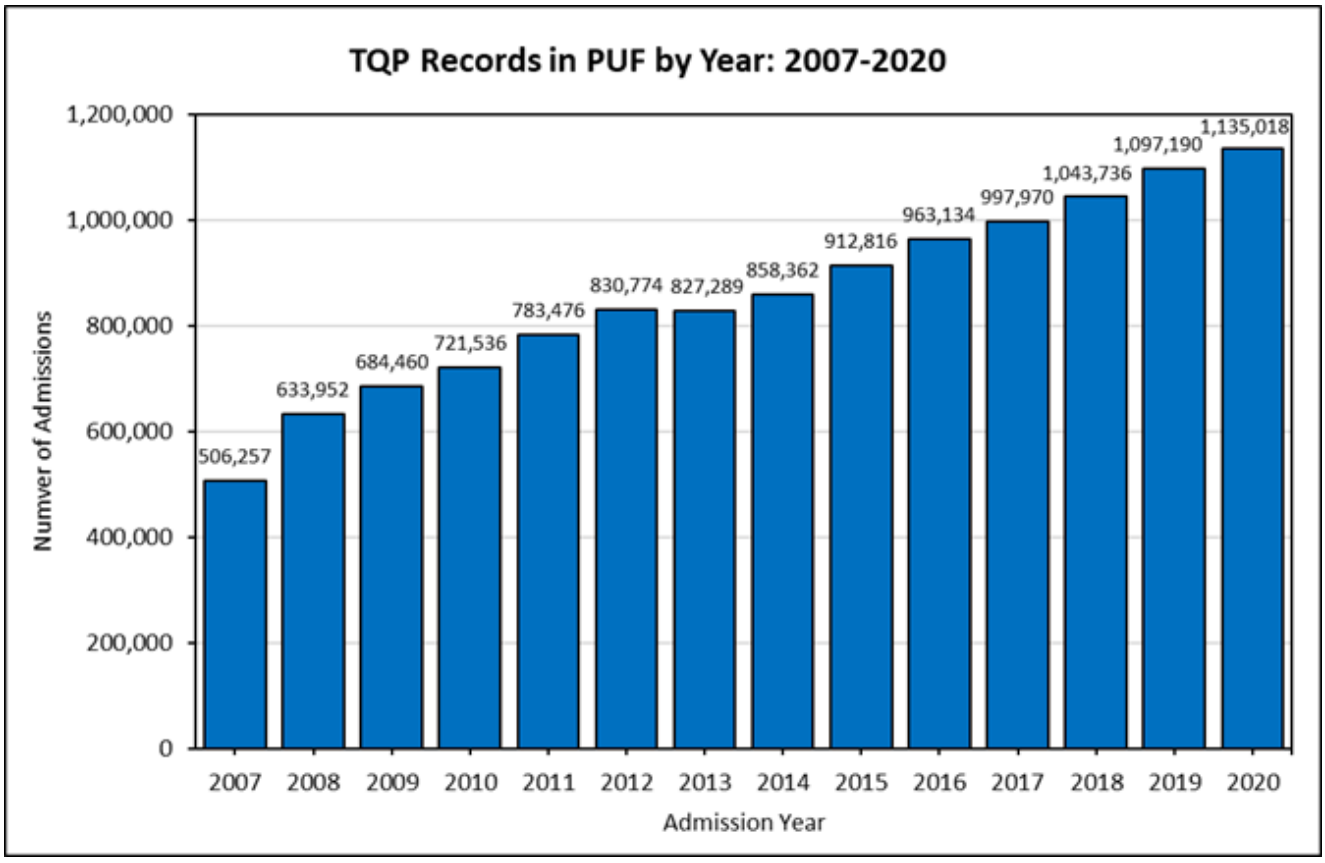
The NTDB provides counts and rates of patients presenting with "serious" injuries to acute care hospitals designated as trauma centers. The American College of Surgeons Committee on Trauma (ACS-COT) maintains the National Trauma Data Bank (NTDB) which includes patient care data collected by hospital trauma registries present in the vast majority of acute care hospitals that are designated as "trauma centers" in the U.S. Approximately 800 acute care hospitals submit over one million records annually to the NTDB (approximately 550 Level-1 and Level-2 adult and pediatric trauma centers and 250 Level-3 centers). Records are "batched" by hospitals and submitted to the NTBD every three months.

Hospital trauma registries participating in NTDB, adhere to the National Trauma Data Standard (NTDS) for data collection. The NTDS includes hospital record abstracted data related to patient demographics, pre-existing conditions, mechanism of injury, vital signs, drug/alcohol screening, diagnostics, treatments, payment, length of stay and discharge disposition. No PHI or PII is collected in the NTDB. NTDS dictates that trauma registry records should be completed and submitted for patients presenting to the hospital with moderate to severe injuries. The NTDS

inclusion criteria requires hospital records for all injured patients presenting to the hospital, and admitted. Thus, patients presenting to hospitals and discharged from emergency departments, would not be included in the NTDB. A copy of the NTDS dictionary may be found at:

National Trauma Data Dictionary

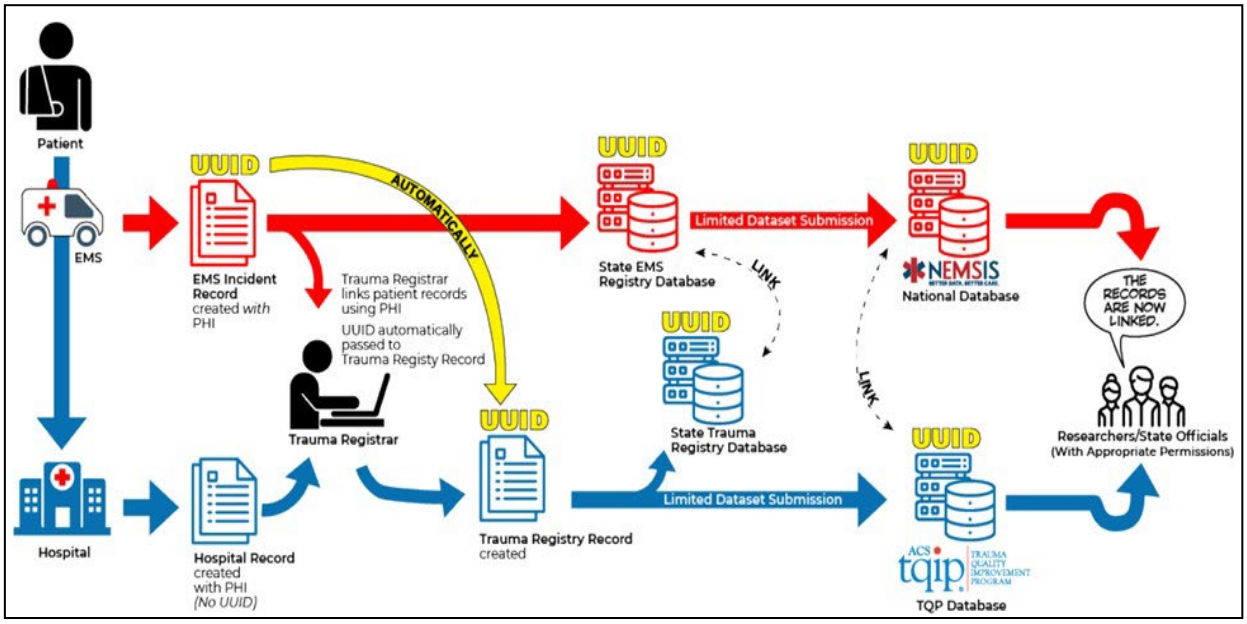
Participation in the NTDB is voluntary, with an increasing number of hospitals participating each year, resulting in more than 1M records per year as seen in the graphic below.



(TQP: Trauma Quality Programs and PUF: Participant Use File: https://www.facs.org/quality-programs/trauma/quality/tqp-participant-hub/.)

Linkage between NEMSIS and NTDB

NEMSIS and ACS have worked together to outline a process that allows de-identified NEMSIS and NTDB records to be matched (i.e., linked). Hospital trauma registry abstractors have access to both the original EMS and hospital patient records. By examining PII present in both original records, the trauma registry abstractor identifies records that belong to the same patient and same injury event. Once the abstractor has reasonably "matched" the two records, a universally unique identification number (UUID), generated in the EMS record, is electronically passed to the trauma registry record. Thus, the UUID now resides in both records. When de-identified records are sent to state or national databases i.e., National EMS Database and National Trauma Data Base, the UUID may be "matched" in both independent databases to identify the related records (see below).



The UUID generated by the EMS record is guaranteed to be "unique" throughout time and contains no identifiable information associated with a patient, provider, or institution. The EMS UUID is only found in version 3.5 of the NEMSIS standard. For more information:

Joint Linkage Policy

UUID Guide

Potential Tasks and Expenses Related to the v3.5 Transition

☐ Potential tasks and projects related to the v3.5 transition

Estimated hours/costs were determined through surveys and interviews of state data managers.

Business Rules and Schematron Updates-rules need to be modified to support version 3.5 of NEMSIS	Average 300 hrs., Range 60-700 hrs.
State Data Set- updates will need to be made in collaboration with software vendors	Average 450 hrs., Range of 60-2000 hrs.
Update or Create State Data Dictionary- published compilation of dataset, business rules, and other information such as state specific definitions and use case guides	Average 200 hrs., Range 10-600 hrs.
DUA Updates- update NEMSIS DUA and state contracts with vendor as needed	Average 20 hrs., Range 2 week to 3 mo. turnaround time
Legislative Updates- identify if a specific version needs to be identified in legislation and related rules regarding data sharing	Average 120 hrs., Range 4 mo-1 year turnaround time
Review of Defined lists- review and update	Average 150 hrs., Range 20-375 hrs.
Reporting Metrics- identify current structures and changes needed	Average 185 hrs., Range 60-375 hrs.
Software Updates- collaborate with vendors to update system configurations	Average 185 hrs., Range 60-375 hrs.
Create System Transition Plan- establish and communicate the plan and timeline based on all the determinations for the transition	Average 45 hrs., Range 8-100 hrs.
Provider Training- new processes or procedures related to software updates	Average 115 hrs., Range 8-300 hrs.
Data Exchanges- existing linked data exchanges will need to be updated, highlighting the UUID in v3.5 to assist in data linkage and exchange	Average 50 hrs., Range 10-150 hrs.
Anticipated hours to update State Data Set to v3.5	Average 450 hrs. Total, Range of 60-2000 hrs.)
Anticipated hours to maintain state data set and other resources	Average 25 hours/ month, Range of 2-50 hrs./ month
Anticipated hours to maintain current DEM files	Average 210 hrs./ year, Range of 10-730 hrs./year)

Extra hours or staffing for the projects and tasks listed above to aide in the v3.5 transition	Additional Staff, $80,000/ year

☐ Potential Expenses Associated with the Transition to v3.5

Estimated costs were determined through surveys and interviews of state data managers.

Attendance at NEMSIS Annual Meeting- participation supports development and implementation of new versions	$2,000/ year
Hosting/ Storage/ Computer Resources/ CAD integration	Average $1,000/ year, Range of 0-$4,000/ year
Ongoing maintenance of data exchange and integrations	Specific to each state
Increased costs for travel and training agencies in v3.5	Specific to each state
Trauma Integration changes- including software development and integration as well as training	$60,000

☐ Recommended Transportation-Related Areas of Focus

USDOT National Roadway Safety Strategy (NRSS) released Jan. 2022

- Document found here: National Roadway Safety Strategy.
- 5 Key Objectives: Safer People, Safer Roads, Safer Vehicles, Safer Speeds, Post-Crash Care.
- Eliminate struck by injuries and fatalities.
- Funding applied research and data quality improvements (NEMSIS).
- Improvement of post-crash care data focus (NEMSIS).
- Identify barriers to submitting patient care reports for MVCs quickly after scene care.
- Improve provider education surrounding the documentation of race/ethnicity.
- Provider training regarding the calculation of a Revised Trauma Score for MVC patients.
- Committed to zero roadway fatalities and serious injuries.
- Look for opportunities to simultaneously address safety, equity, and climate.
- Linkage of data and data exchange that will be enhanced by v3.5 and the UUID.
- Shorten EMS response times to the scene of an MVC.
- Preventing deaths of children left in hot cars.
- FARS data shows 40% of motor vehicle fatalities happen post-crash.
- First 6 mo. of 2022 saw an increase in MVC fatalities of 18%.

A Safe System Approach incorporates the following principles: (taken from the NRSS document, p. 6)

- Death and Serious Injuries are Unacceptable. While no crashes are desirable, the Safe System Approach prioritizes the elimination of crashes that result in death and serious injuries since no one should experience either when using the transportation system.
- Humans Make Mistakes. People will inevitably make mistakes and decisions that can lead or contribute to crashes, but the transportation system can be designed and operated to accommodate certain types and levels of human mistakes, and avoid death and serious injuries when a crash occurs.
- Humans Are Vulnerable. People have physical limits for tolerating crash forces before death or serious injury occurs; therefore, it is critical to design and operate a transportation system that is human-centric and accommodates physical human vulnerabilities.
- Responsibility is Shared. All stakeholders – including government at all levels, industry, nonprofit/advocacy, researchers, and the public – are vital to preventing fatalities and serious injuries on our roadways.
- Safety is Proactive. Proactive tools should be used to identify and address safety issues in the transportation system, rather than waiting for crashes to occur and reacting afterwards.
- Redundancy is Crucial. Reducing risks requires that all parts of the transportation system be strengthened, so that if one part fails, the other parts still protect people.

Objectives and Implementation (taken from the NRSS document, p. 11)

Implementation of the NRSS will be arranged around five complementary objectives corresponding to the Safe System Approach elements:

- Safer People: Encourage safe, responsible behavior by people who use our roads and create conditions that prioritize their ability to reach their destination unharmed.
- Safer Roads: Design roadway environments to mitigate human mistakes and account for injury tolerances, to encourage safer behaviors, and to facilitate safe travel by the most vulnerable users.
- Safer Vehicles: Expand the availability of vehicle systems and features that help to prevent crashes and minimize the impact of crashes on both occupants and non-occupants.
- Safer Speeds: Promote safer speeds in all roadway environments through a combination of thoughtful, context-appropriate roadway design, targeted education and outreach campaigns, and enforcement.
- Post-Crash Care: Enhance the survivability of crashes through expedient access to emergency medical care, while creating a safe working environment for vital first responders and preventing secondary crashes through robust traffic incident management practices.

Key Departmental Actions to Enable Safer Post-Crash Care (taken from the NRSS document, p. 30)

- Develop and implement an outreach plan for EMS personnel for on-scene safety and traffic incident training.
- Advance Traffic Incident Management training and technologies targeted at improved responder and motorist safety.
- Expand the use of and support for the National Emergency Medical Services Information System — the national database that is used to store EMS data from the U.S. states and territories — by funding applied research and data quality improvements.
- Improve the delivery of EMS throughout the nation in collaboration with the Federal Interagency Committee on Emergency Medical Services and the National Emergency Medical Services Advisory Council by focusing on shortening ambulance on-scene response times.

☐ Resources for Post-Crash Care/Transportation-Related Response

Post-Crash Care: EMS Response to MVC-Related Injuries PPT

Presentation, updated monthly, with trends over time directly related to MVC-related EMS response

Location: Post-Crash Care

Tableau Dashboard Reports: Interactive, current data

- Motor Vehicle Crash Dashboard.
- MVC Severity Dashboard.
- 911 Call Complaint Dashboard.
- EMS Performance Measures Dashboard.

Location:

Public: Public Dashboards

State-Specific: State Dashboards

EMS Case Definitions: Standardization of what elements constitute inclusion for research

- MVC with car/truck.
- MVC with motorcycle.
- MVC with pedestrian.

Location: Case Definitions

Research: Current and historical EMS data

- Annual Research Dataset
- OLAP Data Cube
- Custom Queries with statistician support: Contact nemsis@hsc.utah.edu

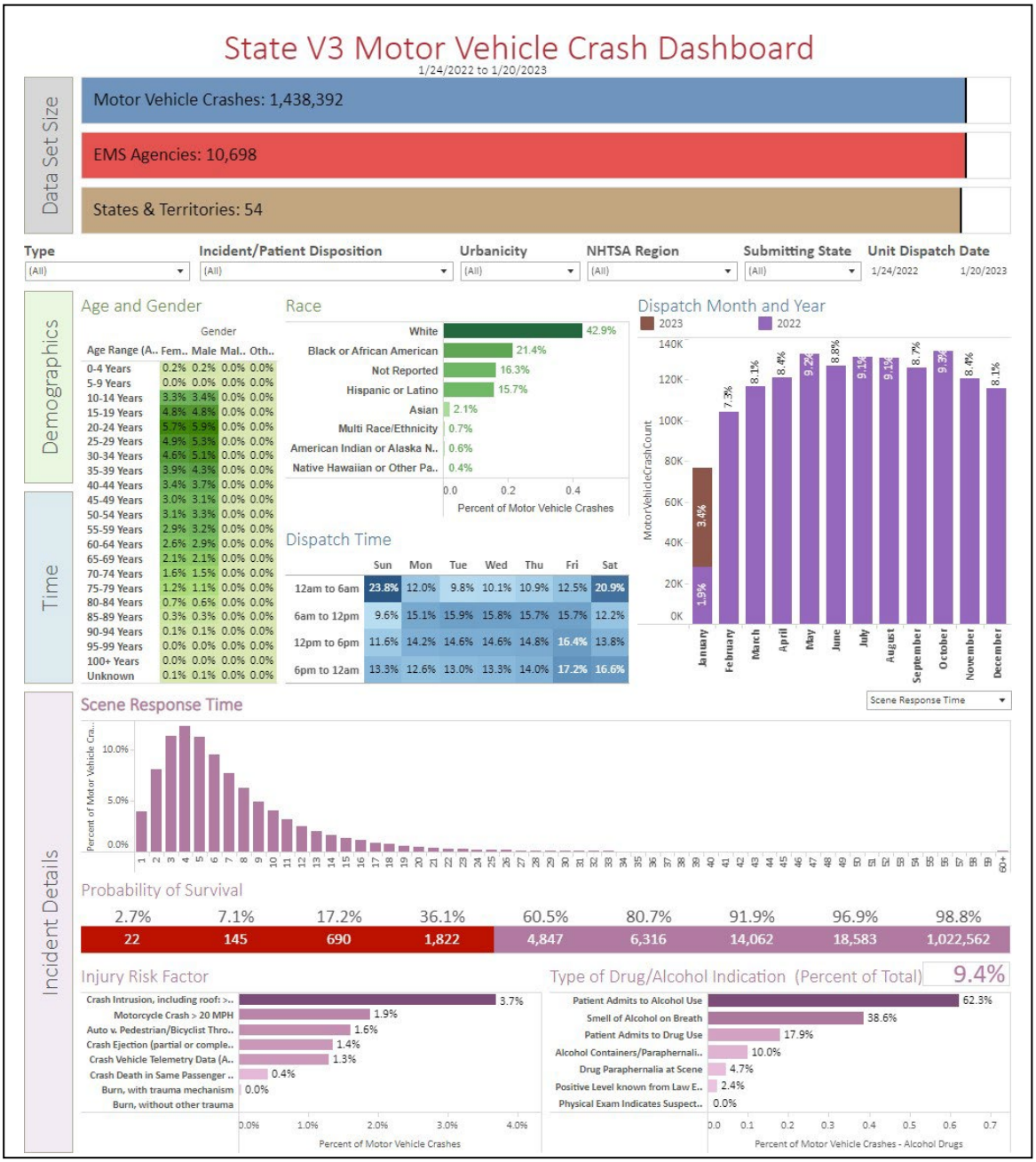
☐ Examples of State Projects

Several State Safety Plans can be found online, and a few are highlighted below. Consider contacting state EMS managers directly to ask if grant applications can be shared for learning opportunities and best practice development.

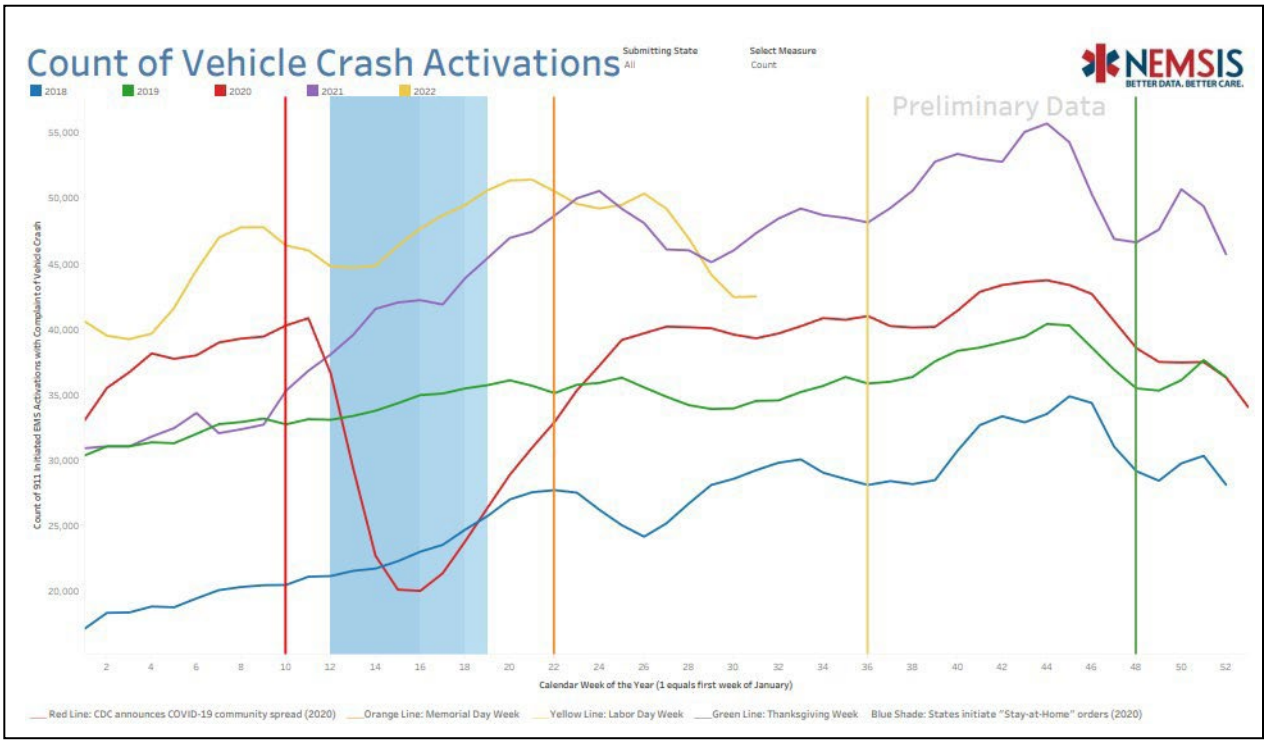
- Georgia's 2022 Highway Safety Plan can be found at the link below. Several grants related to EMS and traffic safety information system improvements can be found on p.174-175 & 223-253. For example, their project titled "OEMS GEMSIS Elite" targets using 405c funds to transition to v3.5 (p.236). Georgia's Highway Safety Plan.
- Utah's 2022 Highway Safety Plan can be found at the link below. One project titled "EMS Prehospital Data Reporting" targets 405c funds and references transitioning to v3.5 and can be found on p. 81. Utah's Highway Safety Plan.
- New Jersey's Highway Safety Plan can be found at the link below. One project titled "Traffic Record Information System" targets using 405c funds and can be found on p.132, and evidence-based enforcement that requires analysis of relevant data is also discussed on p.133. New Jersey's Highway Safety Plan.
- Maryland's Strategic Highway Safety Plan can be found at the link below. They utilize a data-driven approach to analyze crash trends and develop specific targets and strategies in several areas. Maryland's Highway Safety Plan.

☐ Other Resources

- Consider including an image of the State v3 Motor Vehicle Crash Dashboard highlighting data in your state and setting target goals, found here: [State Motor Vehicle Crash Dashboard.](#) (State credentials required).



- Consider referencing the State EMS by the Numbers Dashboard from your state and using the information displayed to set target goals and strategies. Dashboard found here: State EMS by the Numbers Dashboard. (State credentials required).



- State Fact Sheets Highlighting Benefits of the Bipartisan Infrastructure Law in your state: Bipartisan Infrastructure Law

Grant Writing Resources (No endorsement intended)

General information about federal grants and federal grant funding opportunities: Grant Opportunities.

Resources for grant seekers from the U.S. Dept. Of Transportation: Grant Resources.

Custom Assistance

Please reach out to the TAC (nemsis@hsc.utah.edu) or create a Help Desk Ticket if you need a specific report or data to support a funding application. The TAC welcomes the opportunity to assist states, territories, and agencies in advocating for support needed to provide excellent EMS care.

Disclaimer

Information and resources provided in this document do not guarantee successful funding applications. Products and external links are not endorsed by the NEMSIS TAC and are provided for informational convenience. There are many resources for successful grant writing available – both free and at a cost.