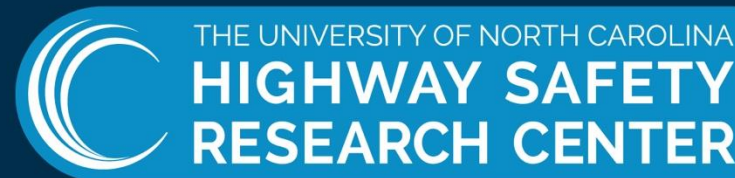


Data that Delivers:

Healthcare (Prehospital and Hospital) Data

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www.hsrmc.unc.edu

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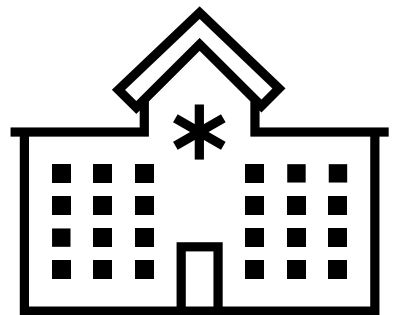


What are Public Health/Healthcare Data Sources?

- Public health data sources are the systems and organizations that collect, analyze, and share information about **population health**
- Public health data include **healthcare data sources**, such as **prehospital** (e.g., Emergency Medical Services) and **hospital** (Emergency Department/Hospital Discharge/Trauma Registry), as well as many others (e.g., Vital Records, Social Determinants of Health, Survey)

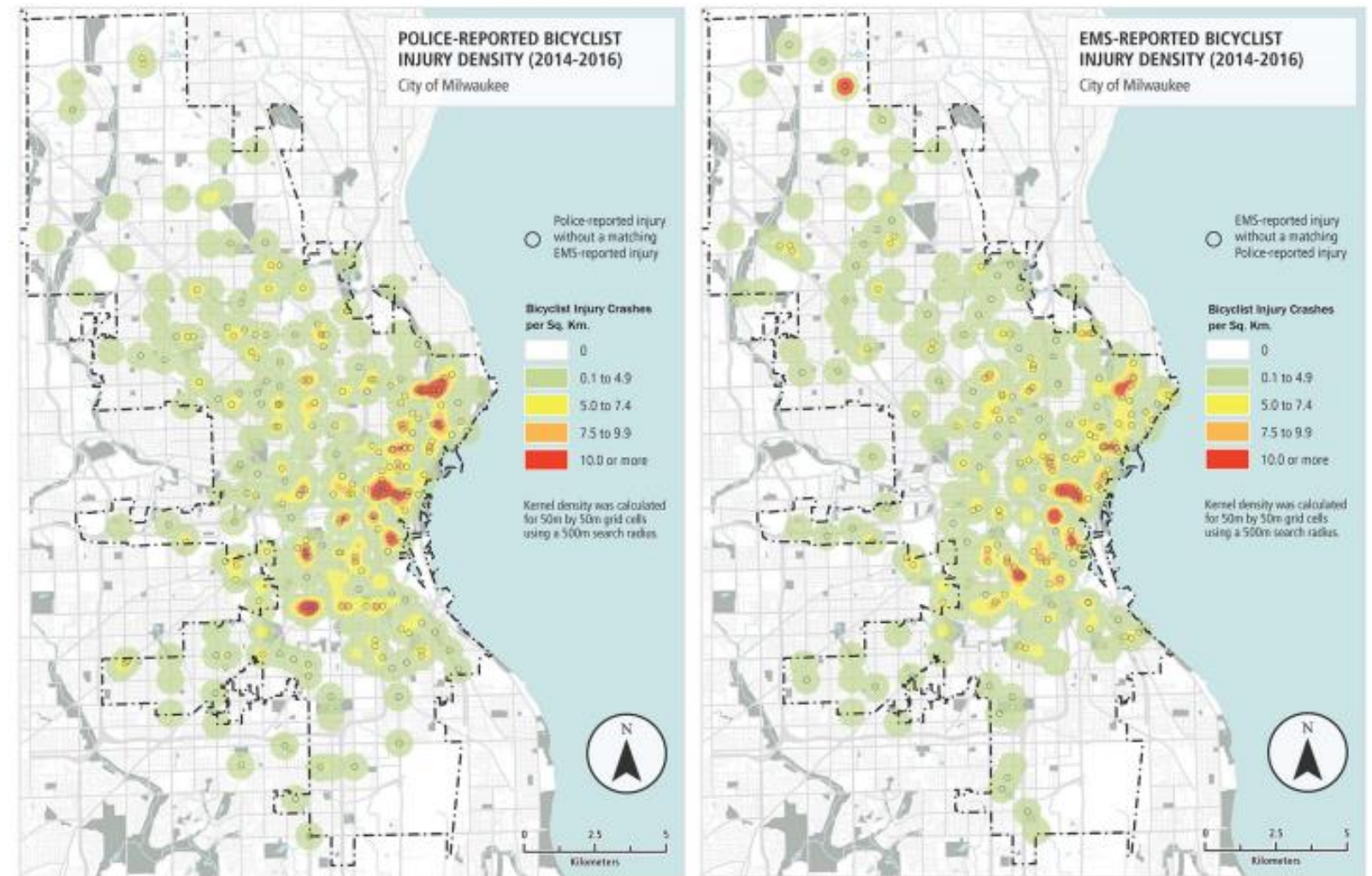
Healthcare Data Can Address Key Limitations of Crash Data

Prehospital and hospital data complement (not replace) crash data by helping fill key reporting gaps



Use Case of Healthcare Data #1: Underreporting of Crashes

- Many crashes are not reported to police or do not meet reporting thresholds, especially crashes involving:
 - Pedestrians
 - Cyclists
 - And single-vehicle incidents
- Prehospital/hospital data may capture these missing cases

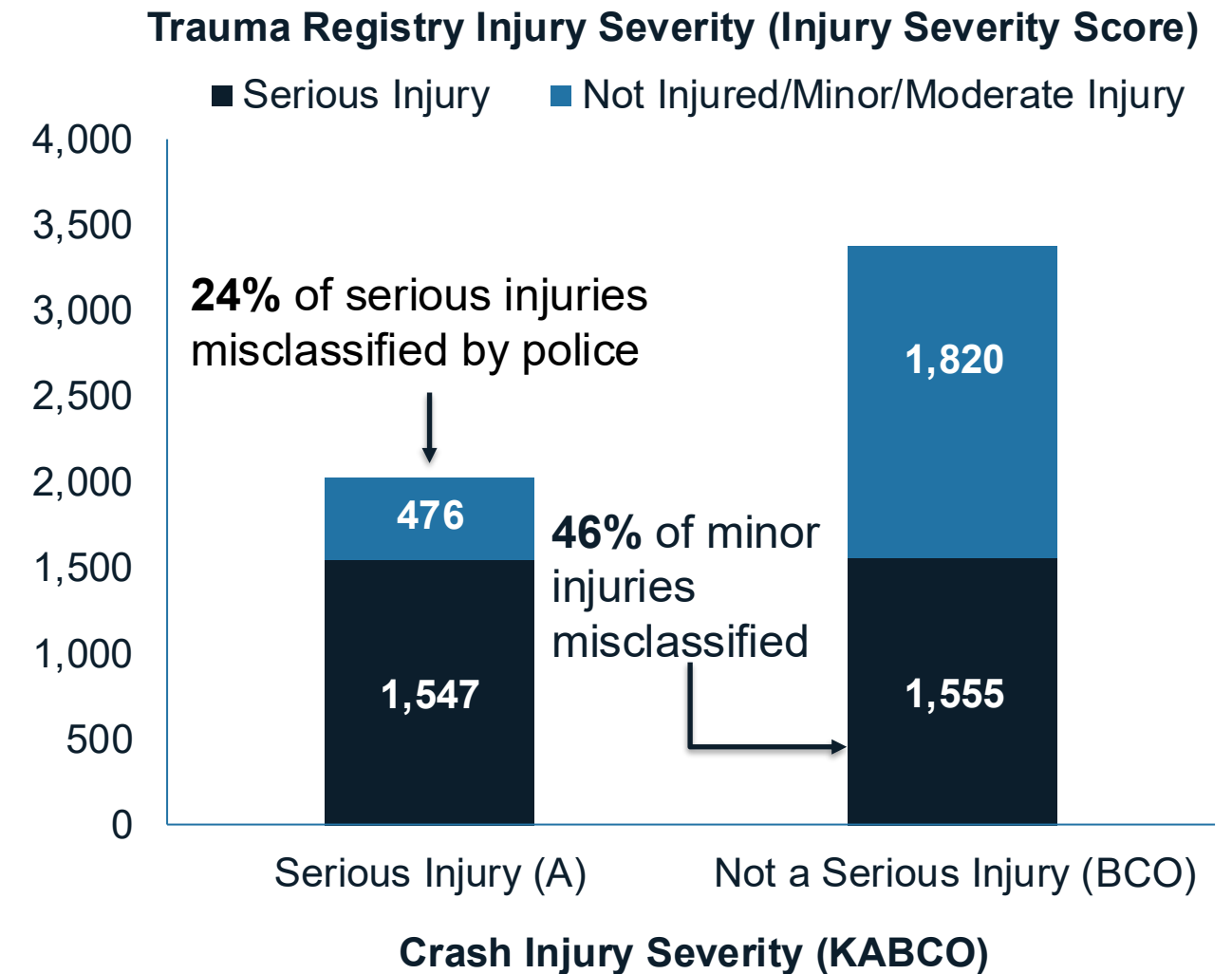


The map on the left shows the locations and density of injury-producing bicyclist crashes that were only included in the police database, and the map on the right shows the locations and density of crashes that were only included in the EMS database.

Locations of Police & EMS Reported Bicyclist Injuries: City of Milwaukee, 2014-2016 (Schneider et al., 2022)

Use Case of Healthcare Data #2: Injury Severity Accuracy

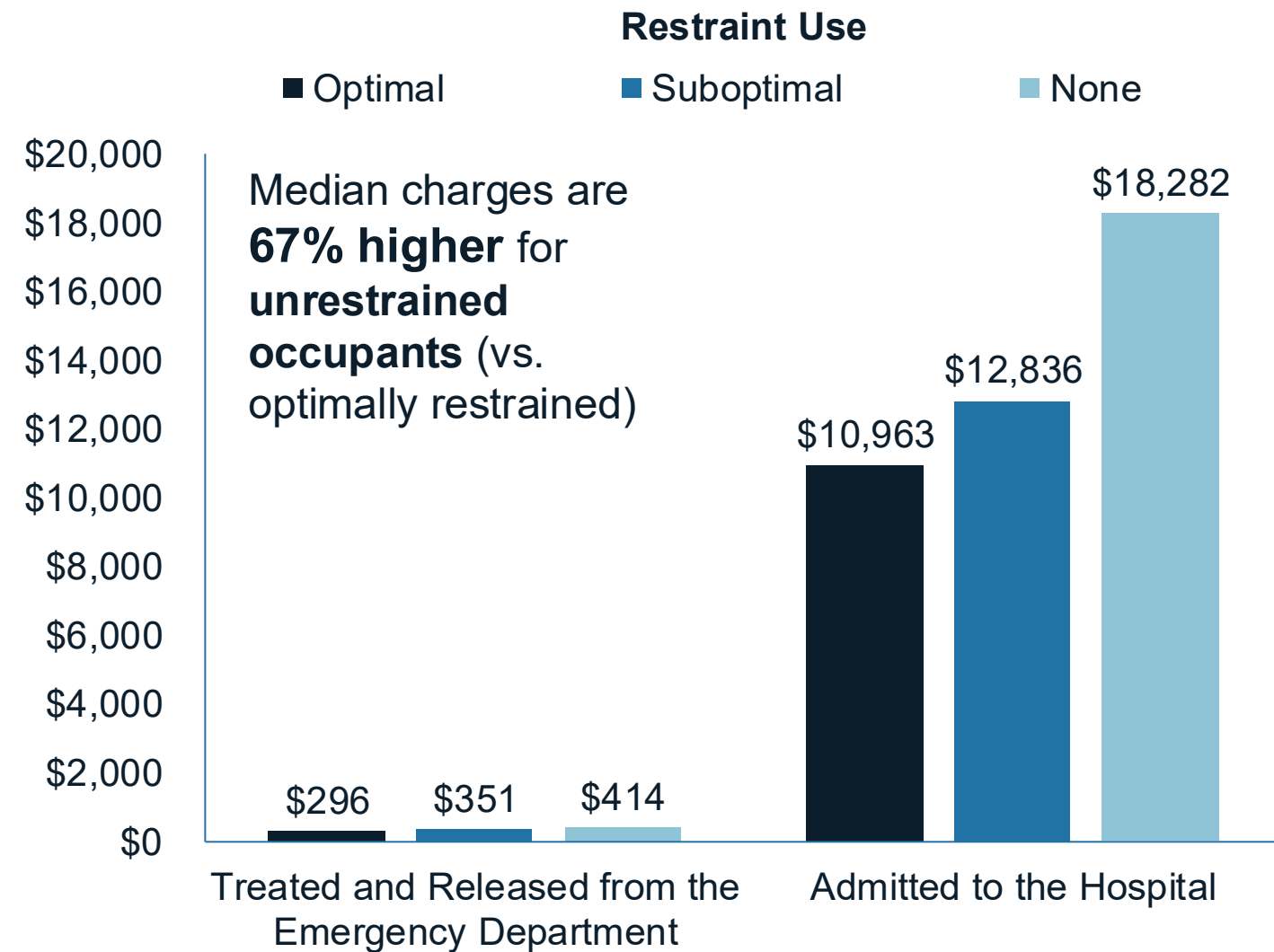
- Police reports often **misclassify** the severity of injuries
- Hospital records provide measures of injury severity based on **clinical information**



Comparative Analysis of Injury Severity Using Linked Crash-Trauma Registry Data: North Carolina, 2018
(Adapted from Taylor et al., 2024)

Use Case of Healthcare Data #3: Telling a More Compelling Story

Healthcare data adds **human** and **economic context** to traffic injuries, making findings more actionable and persuasive to the public, policymakers, and other safety stakeholders



Median Hospital Charges (2008 Dollars) for Motor Vehicle Occupants 1-3 Years Sitting in Backseat of Vehicle: 11 States, 2005-2008 (Adapted from Sauber-Schatz et al., 2015)

Use Case of Healthcare Data #4: Measuring Success

- Crash data alone cannot be used to evaluate all safety programs and policies, especially behavioral countermeasures
- Healthcare data can address this need (often alongside qualitative/observational data)

Whole Blood

N.C. county EMS launches prehospital blood program to save trauma patients faster

Cabarrus County EMS and Atrium Health Cabarrus are now delivering blood transfusions in the field, using rapid infusers and mobile blood units

November 20, 2025 08:17 AM

Prehospital transfusion programs can reduce morbidity and mortality related to major trauma, including motor vehicle crashes, but **crash data lack the clinical detail needed** to evaluate their impact

Use Case of Healthcare Data #5: Performance Tracking

Georgia Traffic Safety Facts

2023 Data

Table 4. Motor Vehicle Traffic-Related Serious Injuries and Percent of Total Serious Injuries by Injury Surveillance Source, 2023

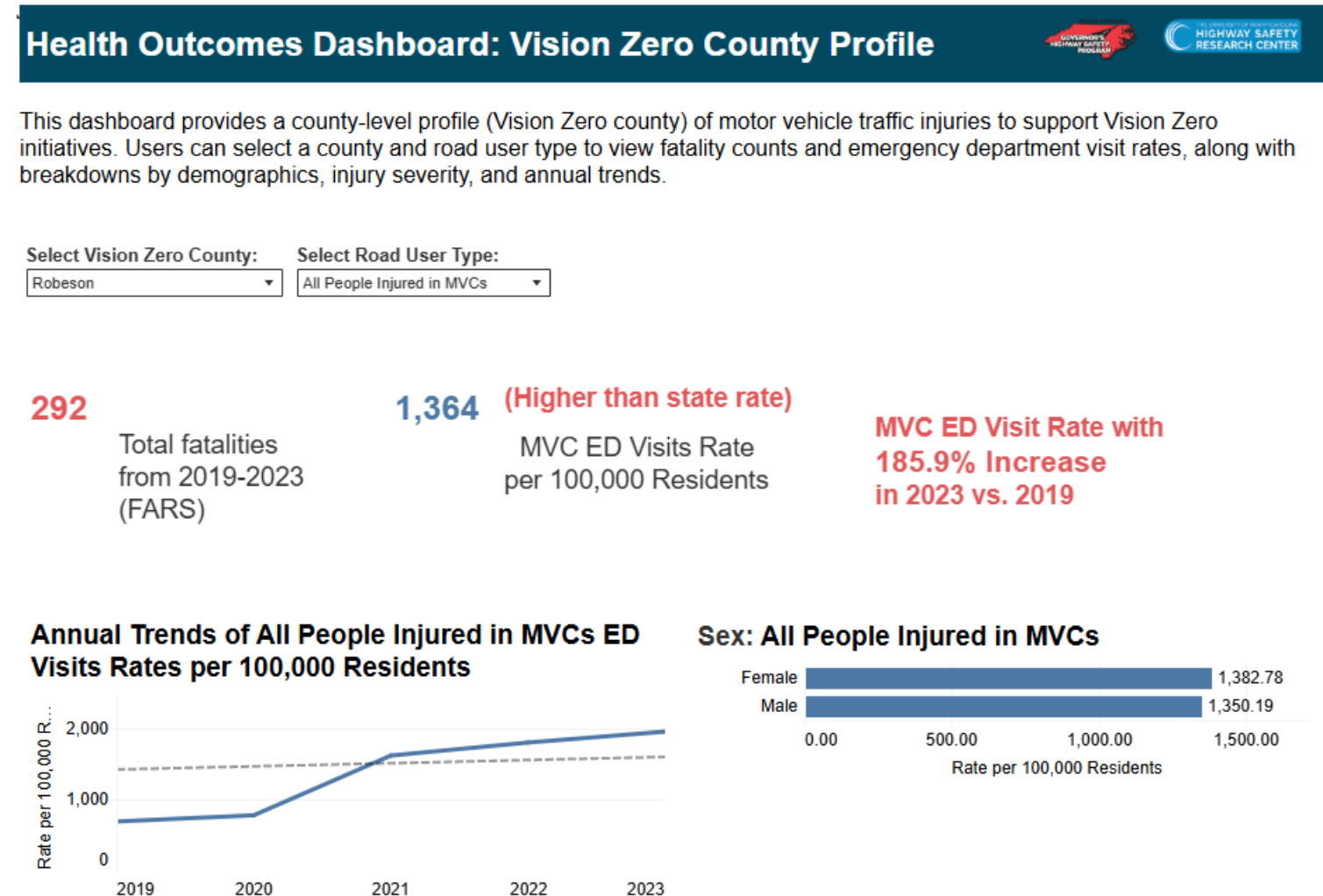
Person Type	Police-Reported Suspected Serious Crash Injuries		Emergency Medical Services		Trauma Center		Emergency Room		Hospitalizations	
	Count	Percent	Count	Percent	Count	Percent	Count	Percent	Count	Percent
Motor Vehicle Occupant	6,263	77%	36,746	88%	9,860	79%	66,502	64%	4,090	47%
Motorcyclists	892	11%	2,862	7%	1,217	10%	4,000	4%	1,253	14%
Pedestrians	564	7%	2,161	5%	1,087	9%	1,879	2%	732	9%
Bicyclists	117	1%	309	1%	275	2%	404	0%	101	1%
Other / Unspecified	335	4%	624	1%	3	--	30,362	29%	2,519	29%
All Person Types	8,660	100%	42,802	100%	12,442	100%	103,147	100%	8,695	100%

Source: CODES 2023, DPH-OHIP Hospital Inpatient Discharge and Emergency Room Visit Only Data 2023, GEMSIS 2023

- The **State of Georgia** includes EMS, trauma center, emergency department, and hospitalization statistics as part of their annual outputs
- **Georgia Traffic Safety Facts:** <https://www.gahighwaysafety.org/georgia-traffic-safety-facts/>

Where to Start with Healthcare Data

- Recruit Vision Zero coalition members from:
 - Local health departments,
 - EMS agencies,
 - And treatment centers (e.g., hospitals, rehabilitation centers)
- These partners can support data access, analysis, and interpretation
- To monitor trends, explore the **N.C. Health Outcomes Dashboard**:
<https://ncvisionzero.org/visualizations/health-outcomes-dashboard/>



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- **NC OEMS/NC EMS Data System Data Attribution & Disclaimer:** The NC OEMS and the NC EMS Data System supports state, regional and local EMS and healthcare related service delivery from a patient care, resource allocation, and regulatory perspective. This report was not prepared in collaboration with investigators of the NC EMS Data System and does not necessarily reflect the opinions or views of the NC OEMS, ESO or the study sites participating in the NC EMS Data System.

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