



NCHSE

National Consortium for
Health Science Education



HSEA

Health Science
Educators Association

WEDNESDAY WEBINARS SPRING SEMESTER 2025



March 5, 2025

David K. Tan, M.D., FAEMS

* American Board of Emergency Medicine

- Emergency Medicine
- Emergency Medical Services (EMS)

* Adjunct Professor of Emergency Medicine

- Washington University School of Medicine in St. Louis

* Past President

- National Association of EMS Physicians®



**St. Charles County
Ambulance District**





St. Charles County Ambulance District

Emergency Medical Services (EMS): *An Exciting Way to Start a Career In Healthcare*



David K. Tan, M.D., FAEMS
Chief Medical Officer & Medical Director

Brief Overview of Service/Demographics





Location within the U.S. state of Missouri



593 sq mi
Pop. 405,000





STATISTICS

Here's what we've accomplished this past year for the St. Charles community.



51,471
CALLS FOR
SERVICE IN 2023



1,454,574
TOTAL MILES
TRAVELED



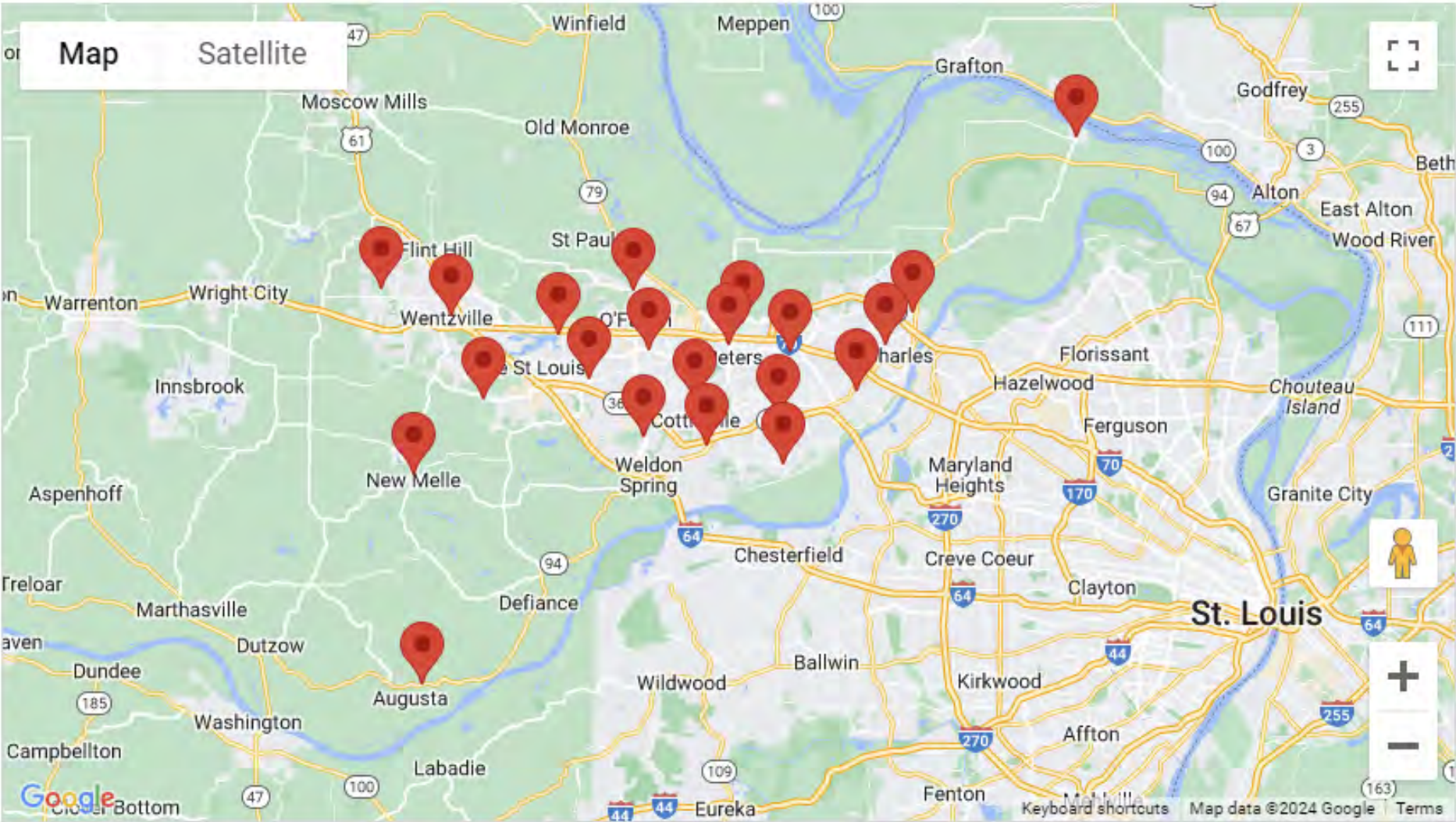
21
CARDIAC
ARREST SAVES



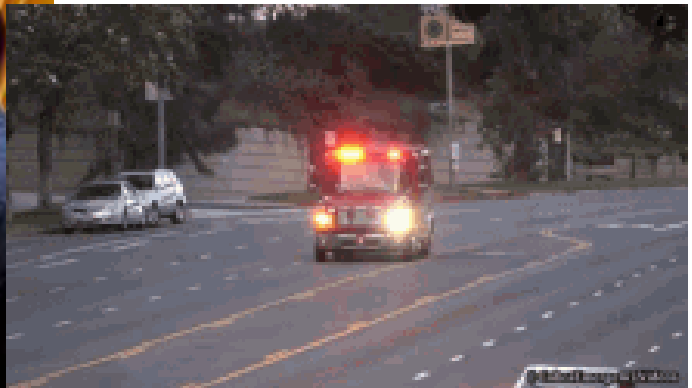
4,314
HOURS OF
TRAINING



Ambulance Stations



EMERGENCY!



Calling 9-1-1 begins a
cascade of emergency
response



Levels of Training in the Cascade of Responders



Emergency Medical Dispatcher (EMD)

Emergency Medical Technician (EMT)

EMT-Paramedic (EMT-P)

Prehospital Nurse (PHRN)

Prehospital Mid-level Providers

EMS Physician



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Prehospital Mid-level Providers

EMS Physician



Emergency Medical Technician (EMT)



- ✱ One semester of training
- ✱ Scope of practice: non-invasive, limited pharmaceuticals
- ✱ Basic Life Support (BLS) clinician
 - The majority of 9-1-1 calls require BLS care
 - Even “major” illness or injury **must** start with solid BLS skills; often a *key* team member (CPR)



EMT-Paramedic (EMT-P)



- * One year of training (after EMT completion)
- * Some programs offer Associate degree
- * Advanced Life Support (ALS) clinician
 - Invasive (sometimes surgical) procedures
 - Advanced pharmacology
 - ALS assessment: most important skill
 - “knowing” more vs “doing” more



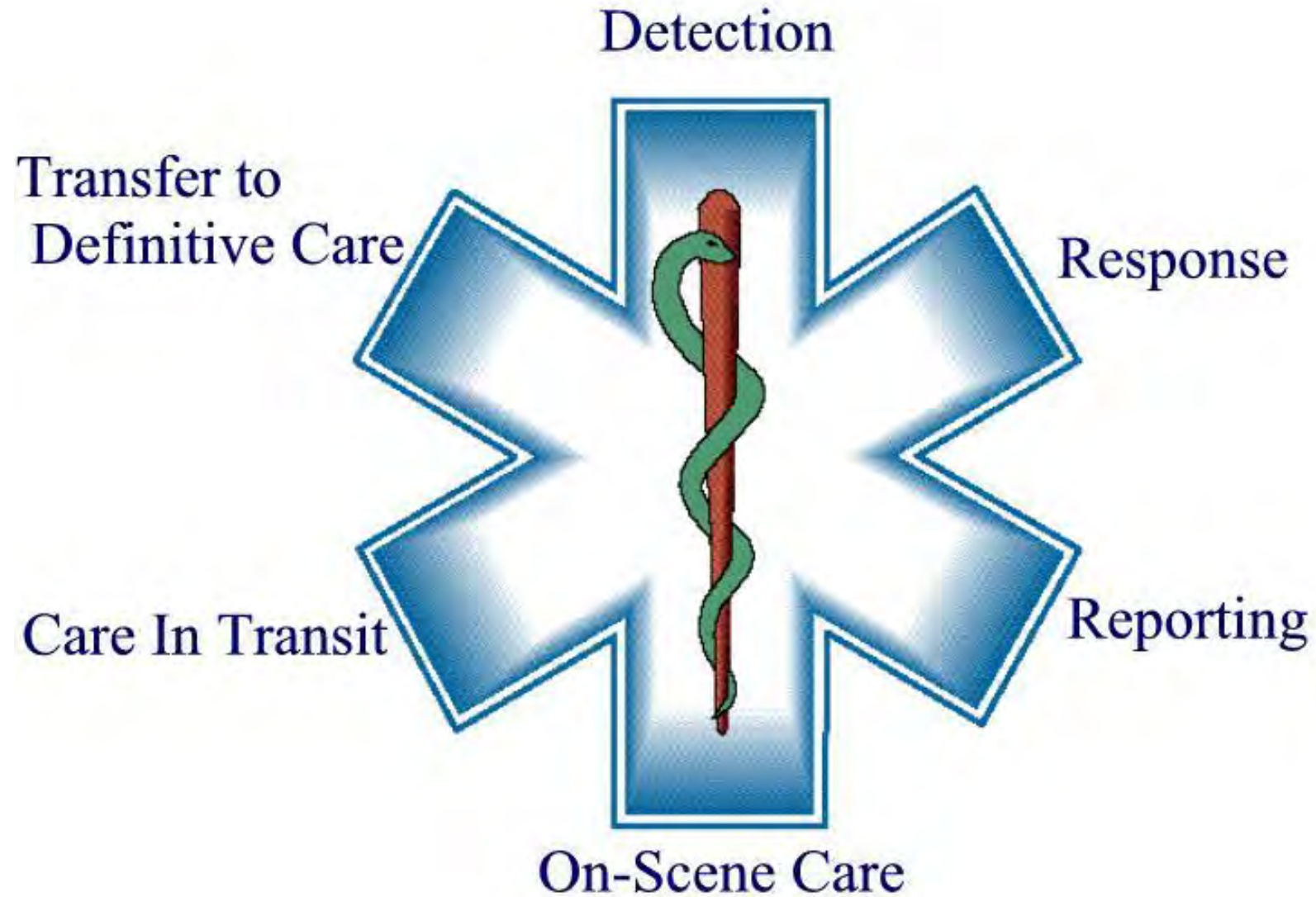
EMS Training Academy



EMS Training Academy

Primary Education – EMT and Paramedic





Continuing Education (CE) Requirements

*Varies by state: Missouri

- EMT: 20 hours per yr
- EMT-P: 28.8 hours per yr
- NRP: 30 hours per yr



Includes variable
categories
required

Continuing Education (CE) Requirements



Medical

- Special Healthcare Needs
- OB Emergencies
- Infectious Diseases
- Pain Management
- Psychiatric and Behavioral Emergencies
- Toxicological Emergencies – Opioids
- Neurological Emergencies – Seizures
- Endocrine Emergencies – Diabetes
- Immunological Emergencies



Operations

- At-Risk Populations
- Ambulance Safety
- Field Triage—Disasters/MCIs
- EMS Provider Hygiene, Safety, and Vaccinations
- EMS Culture of Safety
- Pediatric Transport
- Crew Resource Management
- EMS Research
- Evidence Based Guidelines



Airway/Respiration/Ventilation

- Ventilation
- Oxygenation



Cardiovascular

- Post-Resuscitation Care
- Ventricular Assist Devices
- Stroke
- Cardiac Arrest
- Pediatric Cardiac Arrest



Trauma

- Trauma Triage
- Central Nervous System (CNS) Injury
- Hemorrhage Control



Degrees: Market Analysis

- ✱ Bigger, more competitive agencies (\$)
 - Bachelor's degrees for certain ranks
 - Senior Leadership: Masters and above





Science Teachers



Science Teachers



9-1-1 Callers



John William Jermyn

February 14, 1951 - May 15, 2008



“Slanty Pedal Theory”



MISSOURI



Bottom Line: Answering Calls for Help and Saving Lives



Cardiac Arrest
Clinical Summary - Adult Non-Traumatic

Year
2024

Year	Incidents	% ROSC	% Survival	% Capno	% ROSC 12 Lead	Defib	Vector Change	DSED	Amio	Esmolol	Hamilton	POCUS	
2024	216	40.28%	16.67%	95.37%	71.26%	25		6	6	14	3	17	6
1	27	29.63%	11.11%	100.00%	87.50%								
2	20	40.00%	20.00%	95.00%	75.00%								
3	14	42.86%	14.29%	92.86%	66.67%								
4	22	50.00%	18.18%	95.45%	81.82%								
5	17	52.94%	17.65%	88.24%	66.67%								
6	22	54.55%	18.18%	100.00%	66.67%								
7	17	23.53%		100.00%	75.00%								
8	16	50.00%	18.75%	93.75%	75.00%								
9	18	11.11%		100.00%		5		2	2	2	6	1	
10	18	44.44%	27.78%	100.00%	87.50%	9	2		5		7	2	
11	12	58.33%	50.00%	75.00%	42.86%	6	3	3	5	1	2	2	
12	13	30.77%	15.38%	92.31%	75.00%	5	1	1	2		2	1	
Total	216	40.28%	16.67%	95.37%	71.26%	25	6	6	14	3	17	6	

As of Feb

As of Feb 18th

36
Count of Survival

16.67%
Survival to Discharge

(Blank)

Count of Awaiting Outcome

53.70%
Witnessed

87
Count of ROSC

40.28%
ROSC

47.69%
Bystander CPR

15.74%
Bystander AED

Career in EMS

- * Most will serve their entire career working the ambulance and answering calls for help
- * It is **HIGHLY** rewarding



Career in EMS: Subspecialties

- ✱ Some, however, seek to serve on Special Teams beyond working only on the ambulance



Special Teams



Honor Guard

St. Charles County Ambulance District Honor Guard was founded...

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Tactical EMS Unit (TEMS)

In 2006, SCCAD formed a unique partnership with St. Charles Count...

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Technical Response Unit

The Technical Response Unit was established to deploy in-field...

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US&R Medical Specialists

Tornadoes, floods, confined spaces, and emergencies involving...

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Preventive Medicine Bureau/P.R.



Car Seat Installation

Did you know that more than half of child safety seats currently...

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File of Life

File of Life is a free Ambulance District program that can save...

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Halloween Safety

Since 2010, the District has partnered with State Farm...

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Lifesaver CPR for Businesses

The first minutes following a cardiac arrest are the most critical, and...

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Rapid Access

When responding to 9-1-1 calls, Paramedics occasionally find...

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Scouts

Whether it's a dozen Daisies, a bunch of Brownies or a crowd of...

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Speaking Engagements

Interested in having a representative from St. Charles...

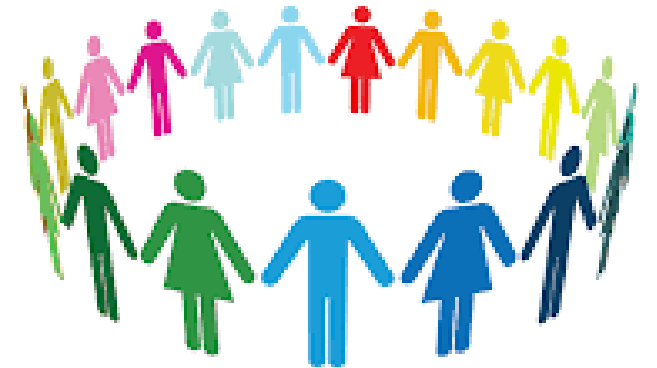
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Station Tours

Would your civic organization, pre-school or church group like to tou...

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COMMUNITY connections

Connecting with the Community



Substance Use Recovery Response Team (SURRT)

St. Charles County Ambulance District's Substance Use Recovery Response Team [SURRT] is a unique approach to treatment referral that debuted in 2017 and later was named Community Impact Program of the Year by the American Ambulance Association.



Connecting with the Community



Mobile Integrated Health (MIH)

St. Charles County Ambulance District paramedics offer much more than 9-1-1 response and transport to the hospital! Mobile Integrated Health (MIH) is a service provided to our citizens to close the gap between physicians, hospitals, and ancillary care. The program aims to provide more healthcare services directly to patients on-location, minimize unwarranted trips to the hospital, and reduce frequent admissions for the same conditions.



Sparking a Bigger Dream in Healthcare

- ✱ EMS may serve as a catalyst to launch careers in other healthcare fields:
 - EMS instructor/educator
 - Nurse
 - Mid-level Provider (physician assistant/nurse prac.)
 - Executive Health Administration
 - Physician



A Moment of Honesty...the darker side

✱ Not everything is awesome in EMS





CENTERS FOR DISEASE
CONTROL AND PREVENTION



Suicides Among First Responders: A Call to Action

April 6, 2021 by Hope M. Tiesman, PhD; Katherine L. Elkins, MPH; Melissa Brown, DrPH; Suzanne Marsh, MPA; and Leslie M. Carson, MPH, MSW





- * “part of the job”
- * Perceived stigma; fear of being labelled “unfit” for duty



* Data confounders

- Multiple jobs
- Volunteers

* The industry *is* getting better at addressing these issues



I believe the good outweighs the bad



Summary

- ✱ Beyond the traditional 9-1-1 response, EMTs and paramedics have transformed healthcare around the world.
- ✱ EMS doesn't bring patients to healthcare. EMS *is* healthcare.



Summary

- * EMTs and paramedics save lives every day in their communities. When people experience the worst day of their lives, EMS is there for them.



Summary

- * An EMS career enables students to live the exciting world of patient care at its most urgent and gives them a rewarding and fulfilling career in public service.
- * Many EMS professionals may also be sparked to enter numerous other healthcare professions in hospitals, clinics, educational institutions, and more.





Thank You...



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