STATE OF MICHIGAN
DEPARTMENT OF HEALTH AND HUMAN SERVICES
LANSING

GRETCHEN WHITMER
GOVERNOR

ROBERT GORDON
DIRECTOR

MICHIGAN EMS COORDINATION COMMITTEE MEETING
MINUTES
Friday, January 17, 2020
9:30 a.m.
Livingston County EMS
1911 Tooley Rd
Howell, MI 48855

Call to Order: The meeting was called to order at 9:33 a.m. by Dr. Edwards.

Attendance:
Present: A. Abbas (via phone); Dr. C. Brent; D. Condino (via phone); C. Haney for K. Cummings; Dr. K.D. Edwards; Dr. M. Fill; R. Rank for G. Flynn (via phone); B. Forbush; W. Hart; F. Jalloul (via phone); B. Kincaid; L. Martin; K. Miller; S. Myers; M. Nye; D. Pratt (via phone); A. Sledge; E. Smith (via phone); Dr. R. Smith (via phone); T. Sorensen; A. Sundberg (via phone); B. Trevithick; G. Wadaga (via phone); K. Wilkinson; Dr. S. Wise; J. Wyatt.

Absent: C. Baker; C. Lake; Representative J. Yaroch**.**

BETP Representatives: S. Kerr; E. Bergquist; N. Babb; E. Worden; T. Godde; A. Pantaleo; D. Flory (via phone); E. Hendy (via phone); K. Kuhl; J. Wagner; L. Bailey (via phone); Scott Minaudo; Dr. S. Mishra; T. Forbush; A. Stephens (via phone); D. Kapnick (via phone).

Guests: Richard Cronkright, Genesee County Sherriff Office; Derrick Bunge, Brighton Area Fire Department; Damon Gorelick, DEMCA; Erik Lyons, Lansing Community College; Dr. McGraw, Oakland County MCA; Jason Hanifen, White Lake Fire; Yehuda Kranczer, Hatzalah of Michigan; Dr. Orr, Tri County MCA; Jonathan Hockman, Dorsey Schools; Marvin Helmker, Lansing Community College; Avrohom Soloff, Hatzalah of Michigan; Dr. Pastoor, Dorsey Schools; Vince Waryas, Alliance Mobile Health; Dr. R. D. Jackson, Sparrow Hospital; Carol Robinet, Superior (via phone); R. Dunne, DEMCA; J. Boyd; Dave Boomer, Tri County MCA; Damon Obiden, WMRMCC; Angela Madden, MAAS; Dr. Strong, DEMCA; Sara Welter, Livingston County EMS; Chris Patrello, Ascension Genesys; Denise Landis, Survival Flight; Jason MacDonald, MMR/MAAS; Dr. Noel Wagner, Saginaw-Tuscola MCA; Ving Tran, Saginaw-Tuscola MCA; Eric Snidersich, Saginaw-Tuscola MCA; Lance Corey, Kent County EMS (via phone); B. Chandler, MCEP (via phone).

Approval of Agenda: Motion to approve the agenda (Nye, Forbush). Motion carried.

Approval of Minutes: Motion to approve the minutes from 11/22/2019 with change (Nye, Wilkinson). Motion carried. Action item: remove the word "state" prior to strategic national stockpile in Dr. Edwards report.

Introduction of Special Guests:
Sabrina Kerr introduced Richard Cronkright to the group. He is from the Genesee County Sherriff Office and is interested in replacing Casey Tafoya as the EMSCC Law Enforcement representative.

Communications:
None.

Announcements:
Reminders of upcoming educational opportunities: None.

Old Business & Committee Reports:
EMS Systems/Strategic Planning Update – S. Kerr for K. Wahl

- Administrative Rules-comments were received and are still being worked on. These will be sent out to everyone when they are complete. The plan is to vote on them in March.
- The March meeting will be a short EMSCC meeting followed by a strategic planning session. This will be held at the Leona Center, 2125 University Park Drive, in Okemos. This date is the same day as the start of Bay College Conference.
- The Interfacility Roundtable will be held next week at 1:00 p.m. on Thursday, January 23, 2020 at the BETP office.
- Auditor General audit is winding down but still active.
- The agency licensing module went live on January 1st. It is going well so far, and adjustments are continuing to be made to make it more user friendly. Any suggestions should be submitted to the EMS office at MDHHS-MichiganEMS@michigan.gov.
- Sabrina asked the committee about having the EMSCC meeting at the conference center in Okemos. No discussion or action occurred.
- Tammy Forbush is leaving our office. Sabrina thanked her for her service, and she received a round of applause.

Emergency Preparedness Update – Dr. Edwards

- The first disaster management emergency preparedness course will be hosted in March at the University of Michigan in Ann Arbor. This is setting the stage for a larger, second training in June. Regions can push that information out when it is available.
- The pediatric surge tabletop exercise is something you may be asked to be involved with through winter and into spring. Each of the regions is required, through APSR, to develop a pediatric surge annex to add into their operations response documents and plans. One of the components is this pediatric surge exercise.
- The Special Pathogens Response Network tabletop exercise will be on January 29, 2020. This is setting the stage for the full-scale exercise on April 24, 2020.
- There will be a hands-on burn surge facility training on March 10, 2020 in Ann Arbor. The BETP will be developing flip books.
- A NDLS Class will be held on February 13, 2020 at the BETP office. Registration is through MI-TRAIN and there are prerequisites to be aware of.

- 18th annual district one regional symposium on February 10, 2020 at Kellogg Center. There is no cost to attend and there will be credits offered. Dr. Edwards thanked WMU and Terrie Godde for assistance with credits.

Trauma Systems Report – E. Worden

- Jeff Boyd's position on STAC is vacant and needs to be filled. The application is on the website. The title is Life Support Agency Manager member of the EMSCC.
- There are 15 hospitals left to go through the verification designation process.
- By the end of 2020, 129 facilities will have asked for and will have received a site visist.
- This is the last year of the appointments on STAC right now, so they will be looking at the membership by the end of 2020.
- The database coordinator position is still posted.
- Systems of care meetings are scheduled for February 11 and 13, 2020 at Livingston County EMS. The department has written a white paper that will be disseminated.
- ESO has acquired all existing trauma registries outside of ImageTrend.

EMS Medical Director Report – Dr. Fales

- Dr. Fales gave a presentation with highlights from the NAEMSP. This presentation will be added to the minutes.
    - Bruce asked if QATF has a timeline on reviewing Ketamine. Emily addressed. She is hoping the QATF will be able to look at the state protocols in January. Dr. Fales said the best thing to do is push the right dose slowly. A position paper will be coming out from NASEMSO and others. Bruce also asked about the shortage of Ketamine. Epinephrine is also shortage. Emily is aware of both shortages. Joel Wyatt asked about the reasoning behind mechanical CPR. Dr. Fales addressed and said an improvement wasn't able to be demonstrated at the ROSC level. This doesn't mean there isn't a role for it. Bruce asked about the if the study on Traumatic Brain Injury could result in protocol changes and Dr. Fales addressed.
    - Questions can be emailed to Dr. Fales at falesw@michigan.gov.
    - Dr. Edwards introduced the new members and reminded everyone to sign in.

Committee Reports:

Quality Assurance – Dr. Edwards

- Dr. Edwards went over the special hearing and presented the QATF's decision to the group. **The QATF's motion is to support the Berrien County MCA that the actions and decisions of the medical control authority were in accordance with the department**

approved protocols and state law. Motion to support the recommendation by the QATF. (Kincaid, Wilkinson). Approved.

- The next meeting is January 24, 2020.

Ambulance Operations – M. Nye

- The committee has not met.

Medical Control Authority – B. Trevithick

- The committee has not met.

Compliance and Licensing – K. Cummings

- The committee has not met.

Education – K. Wilkinson

- The committee has not met.

By-Laws – Bruce Trevithick

- Bruce is temporarily helping with the bylaws and nominations. The committee did meet last week, and they are down to three committee members. The committee started review of the bylaws and got through about a third. The goal is to present for a vote in May. They will go out at least 30 days in advance.
- Subcommittee nominations: There are openings, and the terms are expired, as the terms are annual. If you are interested in serving on a subcommittee, please provide email those to MDHHS-MichiganEMS@michigan.gov. The recommendations will be done at the March meeting.
- The committee is asking to extend the terms for now. Vice Chair for the EMSCC is vacant due to Jeff Boyd's retirement. **Motion to reappoint all existing subcommittee members and Dr. Edwards as chair until the March 20, 2020 EMSCC meeting (Trevithick, Forbush). Approved.**
- Tony Sorensen asked about all of Jeff Boyd's subcommittee vacancies. Bruce said according to the bylaws, all of the subcommittees are open and will send out a list. STAC and QATF are different in the bylaws than the rest of the subcommittees. Joel Wyatt asked a procedural question. Bruce said normally this would happen in November, so we were ready for the year. Kolby Miller asked if QATF was recommended by Bylaws. Bruce said no. The group discussed QATF. Interested parties should email Nicole here. Joel asked about a summary of the subcommittees and responsibilities can be sent out. Sabrina said we are working on incorporating all the subcommittees into the website. Bruce said Bylaws is a lot of work. Monty said this is usually done as a slate, rather than each individual member. Chris Haney asked about selections. Sabrina addressed. Emily addressed balance on the committees. Tony expressed concern that both Lisa and Chris are both from Southeast Michigan.

Data Task Force – B. Kincaid

- Bonnie Kincaid reported they will be doing due diligence to find people that will meet quorum as they did not have a quorum at the last meeting. The next meeting is February 26, 2020. Bonnie reported ImageTrend is broken at the moment. Johnny explained the issue to the group. Bonnie said they are working on validating data. Tony asked about who is the on the committee so they could chat about it with any of their members that aren't participating, if any.

Legislative – B. Trevithick

- HB4998
  - This legislation would prohibit healthcare professionals, etc. from asking about immigration status**.** Because of the way the bill is currently written, the committee does not support this legislation in its current form**. Motion to support the committee's recommendation that EMSCC does not support HB4998 in its current form (Kincaid, Wilkinson). Approved.**

- SB674
  - This legislation would remove air ambulance from CON. The current proposal is to have an air MCA rules. All of the flight services have been attending these meetings. Emily is the contact for this, please email her at Bergquiste@michigan.gov with questions.
  - Bill Hart discussed his history with CON. When he looked at this legislation, it looked like it was cleaning up CON and he doesn't have an issue with this from his perspective.
  - Kevin discussed the work with the air ambulance ad hoc group and gave some history. The ability to determine need was reduced. Whether this legislation passes, they still won't have the ability to determine need.
  - Dr. Fales discussed this from a federal perspective.
  - Denise Landis from Michigan Medicine spoke about this. The Michigan Association of Air Medical Services was asking CON was to stay in place until the rules were complete to replace CON. They spoke to the legislature.
  - No action was taken.

- Federal Legislation regarding mailing of opioid and illicit drugs.
  - The committee looked at this but had no recommendation.
  - No action was taken.

- Issues
  - **Potential bill to allow EMS personnel to carry pepper spray.**
    - The legislative committee did not think this was a good idea and there are a lot of potential downsides. Tony Sorensen asked if there was legislation today that prohibits it. Bruce Trevithick said not that the

committee is aware of, but some MCAs have protocols. Terrie Godde said there are limits on size and potency in federal law. Monty Nye discussed legality further. Tony Sorensen asked if this law could be included in the minutes. The Michigan law can be found here.

- No action was taken.

- **Requiring patients to disclose if they are carrying weapons.**
  - The legislative committee had questions on how this would be implemented. CPL was discussed. It requires disclosure to police but not EMS. This is something that may need to be looked at. Bill Forbush said if a decent assessment was done, the provider should have known there was a weapon. Joel Wyatt asked what would happen if it was left to the agencies. The group discussed. Bruce said it would be helpful to have a general idea if the EMSCC would support this if it came out. Dr. Brent discussed unintended consequences for those that can't disclose due to being unconscious or altered status. Kolby Miller asked what would happen to someone who didn't disclose. Rick Cronkright said it would go to the gun board. Eileen said perhaps this entire concept belongs in a larger conversation about violence, as there can be other weapons. Dr. Fill said there is a big difference between a holstered CPL holder and a gang member with a knife. Monty suggested this go to the Safety Committee and Emily said it is already on the agenda for next month. Joel Wyatt said this isn't a new concept and safety is of great concern. He discussed concerns with language. Dr. Edwards seconded that the EMSCC Safety committee should discuss this issue and Bruce will get with Rep. Yaroch.
  - No action was taken.

- **Allowing 16-year olds to become MFRs.**
  - The thought process is that we have a shortage, and this would allow people to get involved earlier. Some thought this was a good idea, and some thought it was a concern with hiring and staffing issues. Bill Forbush said the concept is not horrible but how it would be implemented would need to be figured out. Tony Sorensen said it would be nice to know how other states do this. Alyson Sundberg spoke to insurance concerns. Terrie Godde said NR allows any age to take MFR and are looking at changing EMT to allow 17-year olds. This would take a legislative change. Dr. Jackson from Sparrow Hospital spoke about his history of being an EMT at age 16. He spoke about mentoring providers. Bill Forbush said MiREMS and MAFC are wrapping up a needs assessment and are starting on a grant funded project with recommendations. One is getting people started on a farm team underage. These organizations will be coming out in favor of a cadet type program. Bill Hart spoke about issues with licensing at a young age. Kolby Miller said he would like to

see 16-year olds licensed as MFRs and agencies that can't do it shouldn't. Monty Nye agreed with Bill Forbush and said this is a trade. Cadet programs would ensure a mentor is with them. Monty said they oppose the licensing at 16. Alyson said there are many organizations that support this. From the recruitment standpoint, she supports. She said MFRs aren't required to do clinicals, but they don't bring in students under 18 because they wouldn't be hired. Dr. Fill spoke about potentially having an educational license with limits on it. Sabrina would have to look at the statute. No action was taken. Bruce will take the feedback back to Rep. Yaroch. Steve Myers said there are two sides, rural and transporting units at the BLS level. MFR vehicles being driven by 16-year olds were discussed. Bill Hart said these topics today are good discussions for this committee.

- No action was taken.

Rural – G. Wadaga

- The committee has not met but will meet this coming Tuesday.

Pediatric Emergency Medicine – S. Mishra

- Dr. Mishra gave an update on what she has been working on for the last month since she started. Dr. Mishra can be reached at mishras@michigan.gov.
  - They are working hard to forge groups to work on the following:
    - Facility recognition for pediatric readiness.
    - Pediatric Med Surge Plan.
    - Burn Surge Plan.
    - Pediatric Champions at the EMS agencies.
      - Steve Myers asked about the criteria and Dr. Mishra addressed.
    - Transfer agreements and guidelines.

EMS Safety Ad Hoc – E. Bergquist for C. Lake

- They have been talking about armed patient and will be looking at survey NASEMSO pulled together. This will be discussed at the next meeting.
- The first EMS Safety themed webinar is on Wednesday at 1800 and this will be posted on MI-TRAIN after the fact.
- A read along group will be started. Emily presented the book, *Trauma Stewardship: An Everyday Guide to Caring for Self While Caring for Others*, by Laura Van Dernoot Lipsky with Connie Burk, to the group. This was in the Wednesday Update. If you are not receiving the updates, please let Nicole know at babbn@michigan.gov.
- The subcommittees section of the website is being worked on.

Critical Care Ad Hoc – E. Bergquist

- They have been meeting regularly and are working on modules. Emily made a spreadsheet of what all the other states are doing. Twenty-eight states have something in place. This list is attached to the minutes. The critical care committee will be looking at this at the next meeting. Bruce said Emily did a great job on the spreadsheet.

Community Integrated Paramedicine Workgroup – K. Kuhl

- Krisy said there will no meetings until after the strategic planning in March.
- There will be a CP track at EMS Expo.
- There will also be a CP showcase at EMS Expo.
- There will be a provider workgroup.
- Krisy is attending a conference in Georgia in February.
- CIP is on the agenda for QATF next week to start developing the CIP suite of protocols.
- Superior, Livingston, and CAAS are not online at this time.
- Chris Haney asked about protocols. Krisy will meet with Bonnie Kincaid on this. Krisy said it is system protocols that will be looked at next week.

New Business:

- **None.**

Membership Round Table Report:

- Alicia Sledge reported the 2020 Traffic Safety Summit will be held on March 10 and 11, 2020 at the Kellogg Center in East Lansing. Registration information can be found here.
- Sabrina Kerr had EMS staff give some updates:
  - Terrie give an update on Education.
    - Webinars are being started again. There will be a credit for each category on the website, except Pediatric Medication Administration. There will also be Pediatric dates scheduled, as well.
    - January is Human Trafficking Awareness month.
    - Terrie went over statistics from a study on suicide.
    - Ben Vernon will be speaking at the Region 1 Symposium.
  - Anthony Pantaleo gave an update on opioids.
  - Johnny Wagner said again that Report Writer in ImageTrend is down.
- Bill Hart reported Director Gordon will be going around the state for direction on mental health. Bill encourages those that can make the meetings to stand up for EMS. Luce County has hired 4 full time EMTS to see if that staff can be supported rather than relying on volunteers.

- Dr. Edwards thanked Jeff Boyd for his work on this committee and the subcommittees. He also thanked everyone for their work. He spoke about the opportunity to change lives.

Public Comment:

- Marvin Helmker commented on Bill Forbush's comments from the last meeting and is in support of his comments. He spoke about history of interpretation of the interfacility issues that will be discussed next week.

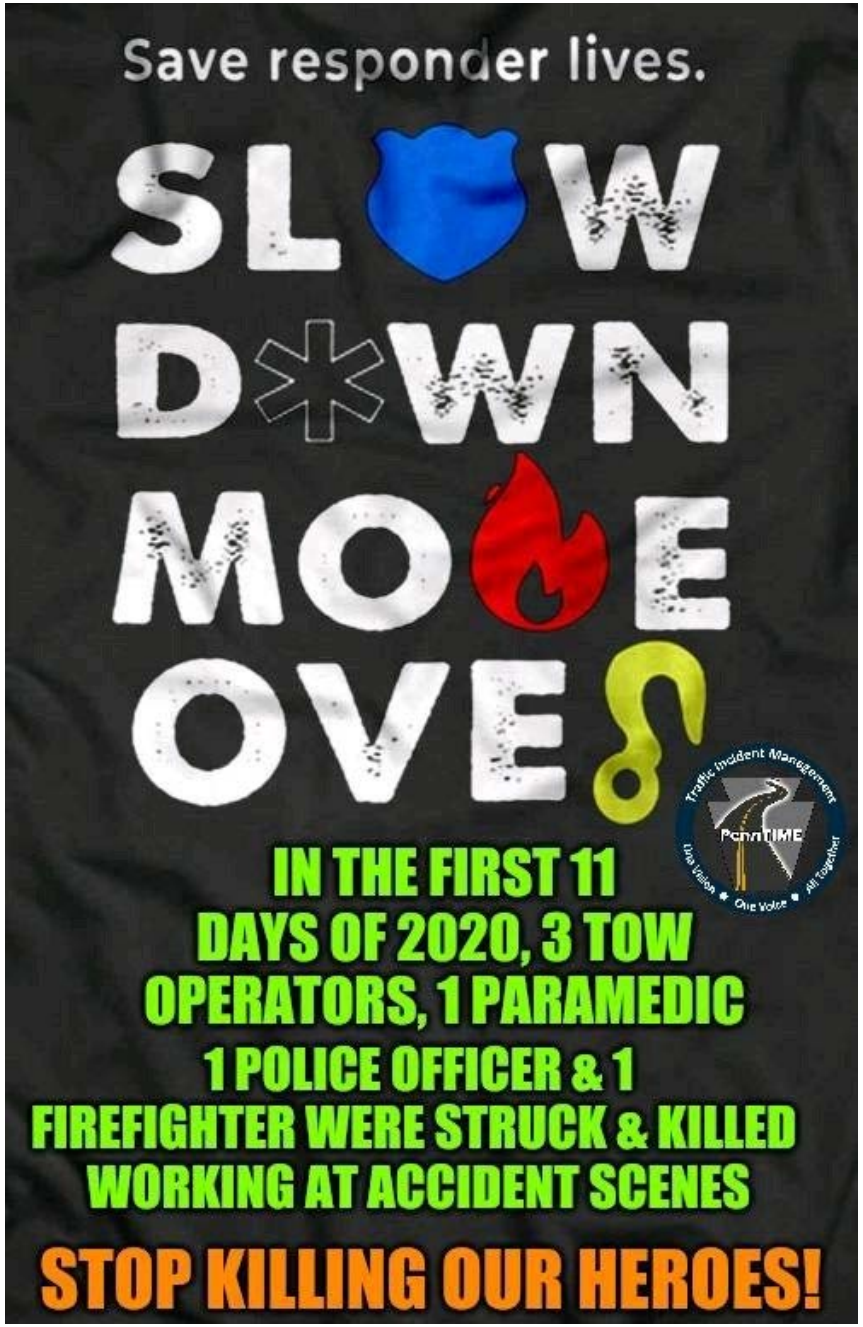
Adjournment: Motion to adjourn at 11:44 a.m. (Sorensen, Trevithick). Motion carried.

NEXT MEETING: *March 20, 2020 at Livingston County EMS*

Alabama	Endorsement	http://www.alabamapublichealth.gov/ems/assets/individual.cc.app052819.pdf
Alaska	By Agency License	http://www.legis.state.ak.us/basis/aac.asp#7.26.330
Arizona	Not that I can find	
Arkansas	Not specifically, but they have a *specialty* level	https://www.healthy.arkansas.gov/images/uploads/rules/Rules_and_Regulations_2018.pdf
California	License	https://govt.westlaw.com/calregs/Document/I7B09549AF0F34FA28FD4130EA9206981?viewType=FullText&originationContext=documenttoc&transitionType=CategoryPageItem&contextData=(sc.Default)
Colorado	Endorsement	https://www.colorado.gov/pacific/cdphe/paramedic-critical-care-endorsement
Connecticut	Mobile Intensive Care (agencies and personnel)	https://eregulations.ct.gov/eRegsPortal/Browse/RCSA/Title_19aSubtitle_19a-179Section_19a-179-12/
Delaware	Agencies, saw gap, added protocols	https://www.dhss.delaware.gov/dph/ems/files/demsocreport2018.pdf
Florida	For neonate only	https://www.flrules.org/gateway/ChapterHome.asp?Chapter=64J-1
Georgia	Specialty care, seem specific about scope	http://rules.sos.ga.gov/GAC/511-9-2
Hawaii	No	https://health.hawaii.gov/ems/files/2018/09/SO2018.pdf
Idaho	Yes, agency	https://adminrules.idaho.gov/rules/current/16/160102.pdf
Illinois	Yes, per vehicle staffing	http://www.dph.illinois.gov/sites/default/files/forms/publicationsopremscriticalcaretransportapplication.pdf
Indiana	Specialty care, with physician oversight (836 IAC 2-2-3(k)	https://www.in.gov/dhs/3531.htm
Iowa	Endorsement	https://www.legis.iowa.gov/docs/ACO/IAC/LINC/10-12-2016.Chapter.641.131.pdf
Kansas	Uses certification, must have one present on all transports	http://www.ksbems.org/ems/?page_id=4021
Kentucky	Endorsement	https://apps.legislature.ky.gov/law/kar/202/007/701.pdf
Lousiana	No?	
Maine	Agency and Personnel (state or UMBC)	https://www.maine.gov/ems/providers/training/pift.html
Maryland	Specialty care designation	https://www.miemss.org/home/commercial-ambulance
Massachusetts	No	
Michigan		
Minnesota	No	
Mississippi	Yes, personnel and vehicle	https://msdh.ms.gov/msdhsite/_static/resources/8155.pdf
Missouri	Locally through Medical director, protocols, and education	
Montana	No	
Nebraska	No	
Nevada	Yes, endoresment	https://www.leg.state.nv.us/Division/Legal/LawLibrary/NAC/NAC-450B.html#NAC450BSec381
New Hampshire	No	
New Jersey	Yes, 3 levels	https://www.state.nj.us/health/ems/documents/reg-enforcement/njac841r.pdf
New Mexico	Yes, provider and agency	http://164.64.110.134/parts/title07/07.027.0011.html
New York	EMT-CC, yes	https://www.nysenate.gov/legislation/laws/PBH/A30
North Carolina	Specialty Care Services	http://reports.oah.state.nc.us/ncac/title%2010a%20-%20health%20and%20human%20services/chapter%2013%20-%20nc%20medical%20care%20commission/subchapter%20p/subchapter%20p%20rules.pdf
North Dakota	Flight Only	
Ohio	Have a committee, recommending endorsement	https://www.ems.ohio.gov/links/ems_ccc_minutes0619.pdf
Oklahoma	Yes	https://www.ok.gov/health2/documents/EMS%20Regulations%209-11-2016.pdf
Oregon	No	
Pennsylvania	Yes, agency and personnel	http://www.pacodeandbulletin.gov/Display/pabull?file=/secure/pabulletin/data/vol49/49-26/974.html
Rhode Island	No	
South Carolina	No	
South Dakota	No	
Tennessee	Yes	https://www.tn.gov/health/health-program-areas/health-professional-boards/ems-board/ems-board/licensure.html
Texas	Yes, vehicles (MICU)	https://texreg.sos.state.tx.us/public/readtac$ext.TacPage?sl=T&app=9&p_dir=F&p_rloc=182739&p_tloc=14819&p_ploc=1&pg=2&p_tac=&ti=25&pt=1&ch=157&rl=11
Utah	No, but paramedic "inter-facility" licenses	
Vermont	Yes, endorsement	https://www.healthvermont.gov/sites/default/files/VermontCCPGuidanceMemo.pdf
Virginia	Only for air	
Washington	No, sort of like special study	https://app.leg.wa.gov/wac/default.aspx?cite=246-976-024
West Virginia	Yes, both	https://www.wvoems.org/ems-programs/personnel-certification/mccp
Wisconsin	Yes	https://www.dhs.wisconsin.gov/ems/licensing/critical-care.htm
Wyoming	No	

NAEMSP Highlights

But First


Save responder lives.
SLOW
DOWN
MOVE
OVER
IN THE FIRST 11
DAYS OF 2020, 3 TOW
OPERATORS, 1 PARAMEDIC
1 POLICE OFFICER & 1
FIREFIGHTER WERE STRUCK & KILLED
WORKING AT ACCIDENT SCENES
STOP KILLING OUR HEROES!
Traffic Incident Management
PennTIME
One Vision
One Voice
All Together

- Good Showing for Michigan
- National EMS Medical Directors Course and Practicum
  - Course Director: Dr. Bob Swor
  - Faculty: Drs. Rob Dunne and Bill Fales
- Council of EMS Fellowship Program Directors
  - Chair: Dr. Noel Wagner
- Educational Presentations
- Research Abstracts

Pediatric Medication Errors: What We Know and Where We Need To Go

John Hoyle, MD - WMed

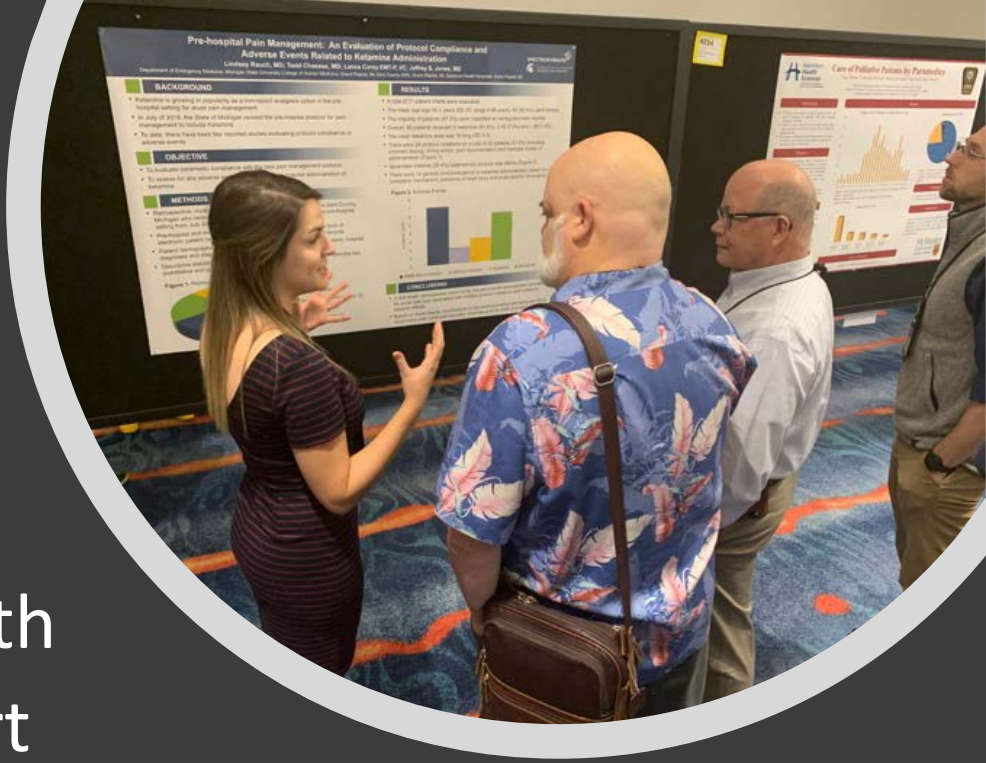
Medication dosing errors for prehospital pediatric patients may be as high as 60% of all doses. Dr. Hoyle described the results of an intervention to decrease pediatric medication errors from a federally-funded study of 15 EMS agencies in Michigan. Dosing errors, errors of omission, and errors of commission that occurred in 142 pediatric patient simulations were discussed, including some that will surprise you. Techniques used to defeat these errors were also be discussed.

Our EMS Workforce, Where Is It Going and Why Is It Overworked and Underpaid?

There continues to be a drastic decline in the EMS workforce in the U.S., and there are fewer individuals going into EMS in the U.S. each year. This presentation addressed the epidemiology of this loss.

John Hoyle, MD and
Glen Ekblad, DO - WMed

PREHOSPITAL PAIN MANAGEMENT: AN EVALUATION OF PROTOCOL COMPLIANCE AND ADVERSE EVENTS RELATED TO KETAMINE ADMINISTRATION



- Lindsey Rauch, Todd Chassee, Jeffrey Jones
  - Michigan State University; Spectrum Health

- Conclusion: In this small, retrospective cohort study, prehospital administration of ketamine for acute pain under the new state model was associated with multiple protocol violations and numerous adverse effects. Based on these results, modifications to the existing pain management protocol are planned in conjunction with continued educational improvements for EMS providers.

PILOT STUDY: EMERGENCY MEDICAL SERVICE-RELATED VIOLENCE IN THE OUT-OF-HOSPITAL SETTING IN SOUTHEAST MICHIGAN

- Ross Touriel, Robert Dunne, Robert Swor, Terry Kowalenko
  - William Beaumont School of Medicine, Oakland University

- Conclusion: Over half of responding EMS personnel experienced work-related violence within the previous 6 months in Southeast Michigan. Further research and analysis may help guide and improve agency policy that directly affect safety of out of hospital healthcare providers.

WORKING TOWARD THE "IDEAL" RESPONSE TO OUT-OF-HOSPITAL CARDIAC ARREST: A POTENTIAL ROLE FOR MULTI-DISCIPLINARY TRAINING AND DEBRIEFING

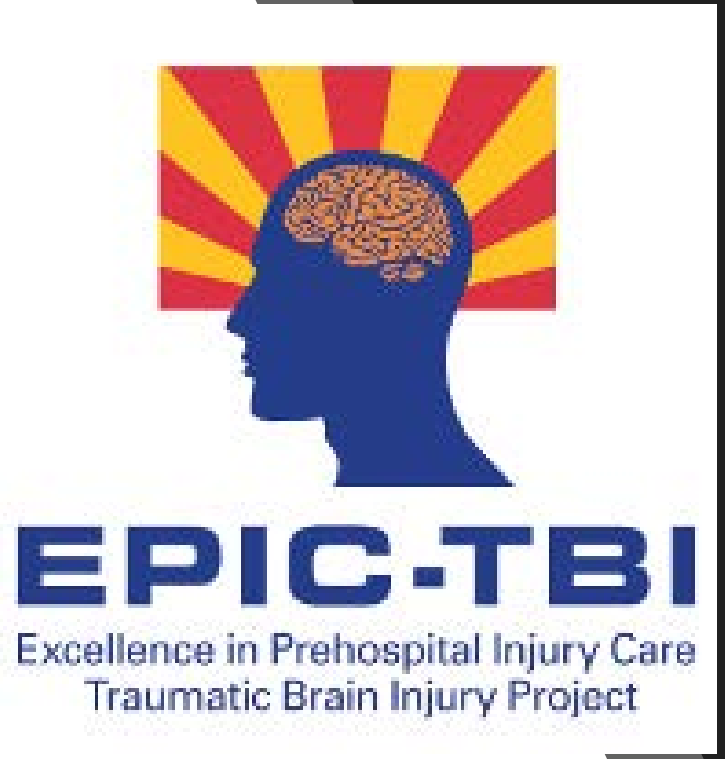
- Samantha Iovan, Mahshid Abir, Sydney Fouche, Samantha Iovan, Brahmajee Nallamothu, EPOC Team, Cardiac Arrest Registry to Enhance Survival (CARES) Surveillance Group
  - University of Michigan
- Conclusions: Multidisciplinary collaboration before and after an event was identified by EMS system stakeholders as an innovative approach to improving OHCA outcomes, and a strategy that may move the needle toward the "ideal" OHCA response.

COMPARISON OF PREHOSPITAL RETURN OF SPONTANEOUS CIRCULATION RATES OF MANUAL ONLY OR MECHANICAL-ASSISTED CPR USING THE LUCAS-2: A RETROSPECTIVE STUDY

- Raphael Szymanski, Joshua Mastenbrook, Duncan Vos, Kristina Le, Ron Slagell, Cheryl Dickson
  - Western Michigan University School of Medicine

- Conclusion: No difference in prehospital ROSC rates among adult non-traumatic cardiac arrest patients when comparing mechanical-assisted and manual-only CPR. These results are consistent with other larger multiagency mechanical CPR studies.

STATEWIDE IMPLEMENTATION OF THE PREHOSPITAL TRAUMATIC BRAIN INJURY GUIDELINES IN CHILDREN: RESULTS OF THE EPIC4KIDS STUDY



Conclusion: In the first controlled multisystem study of its kind, implementation of the EMS TBI guidelines was independently associated with a dramatic increase in adjusted survival among children with severe TBI and those with severe TBI who received positive-pressure ventilation. As with the overall EPIC Study (across all ages), the findings in children revealed a “therapeutic sweetspot” in the severe cohort and this group comprised three-quarters of the patients. These results support widespread implementation ofthe EMS TBI guidelines in children.

Impact of Implementing the EMS TBI Treatment Guidelines

Key Findings: Statewide implementation of the Prehospital TBI Treatment Guidelines was independently associated with improvement in survival:

1. Among patients with severe TBI
2. Among intubated patients with severe TBI

POPULATION

21,852
Moderate, severe, and critical Traumatic Brain Injury patients

Pre-implementation (P1): 15,228
Post-implementation (P3): 6,624

TIMEFRAME

1/1/2007 to 6/30/2015

LOCATION

133

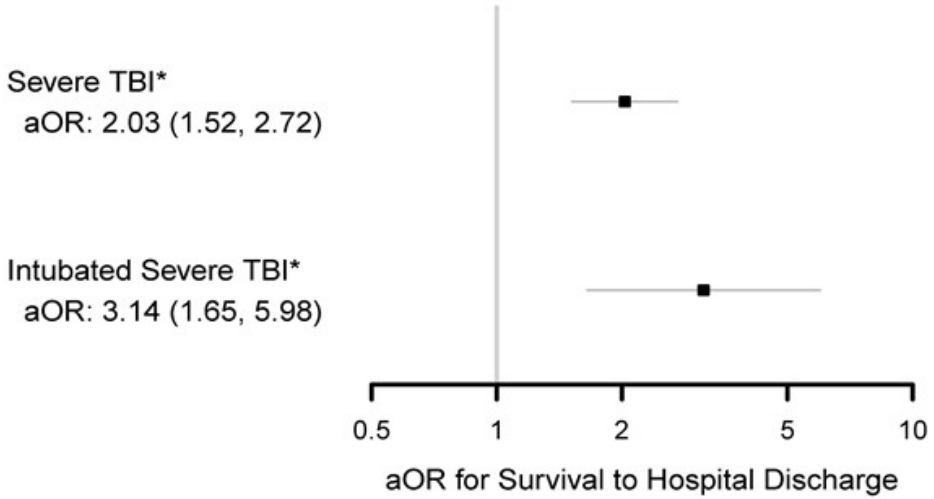
EMS agencies across Arizona

IMPLEMENTATION:
11,000 Arizona EMS Providers trained in TBI treatment guideline care

Primary EMS Goal in Adult/Ped TBI:
Avoid/Treat the TBI "H-Bombs"

NO	YES
Hyperventilation	O2 SAT ≥ 90
Hypoxia	SBP ≥ 90
Hypotension	ETCO2 35-45

Survival Improvement in Severe TBI*



*Severe TBI is defined as head injury severity score of 3-4

Conclusions: Adjusted survival doubled among patients with severe TBI and tripled in the severe, intubated cohort. These findings support the widespread implementation of the prehospital TBI treatment guidelines.

Spaite, et al. Impact of Statewide Implementation of the Prehospital Traumatic Brain Injury Treatment Guidelines. May 8, 2019, *JAMA Surg.*

JAMA Surgery

https://epic.arizona.edu/

Questions?

falesw@michigan.gov

PREHOSPITAL PAIN MANAGEMENT: AN EVALUATION OF PROTOCOL COMPLIANCE AND ADVERSE EVENTS RELATED TO KETAMINE ADMINISTRATION

Lindsey Rauch, Todd Chassee, Jeffrey Jones, Michigan State University; Spectrum Health

Background: As the opioid crisis continues there has been increasing interest in alternative analgesia options for acute pain in the prehospital setting. In July of 2018, the State of Michigan revised the prehospital model protocol for pain management to include ketamine as a non-opioid analgesia alternative. To date, there have been few reported studies evaluating protocol compliance or adverse events.

Objective: The goal of this study was to evaluate paramedic compliance with the updated pain management protocol in addition to assessing for any adverse events related to the prehospital administration of ketamine.

Methods: This was a retrospective, multi-agency, multi-center chart review of patients in Kent County, Michigan who received ketamine in the prehospital setting following revisions to the new protocol after July 1, 2018. Both prehospital and emergency department data were reviewed in the form of electronic patient care reports and emergency department records. Patient demographics, protocol compliance, adverse medication reactions, hospital diagnoses and disposition were assessed. Descriptive statistics (mean, SD) and frequency tables were used to describe the key quantitative and qualitative variables.

Results: A total of 71 patient charts were evaluated during a one year study period. The mean age was 56.3 years (SD 25, range 4-98); 43 (60.6%) were female. The majority of patients (87.3%) were classified as having traumatic injuries. Overall, 65 patients received IV ketamine (91.6%), 5 intranasal (7.0%) and 1 intramuscular (1.4%). The mean ketamine dose was 16.0mg (SD 5.0). There were a total of 22 protocol violations (31.0%) including incorrect dosing, timing errors, poor documentation, and improper routes of administration. Eighteen patients (25.4%) experienced adverse side effects ranging from confusion to complete dissociation and altered mental status interfering in hospital care. There were 14 general contraindications to ketamine administration based on chief complaint, mechanism, presence of head injury and acute alcohol intoxication.

Conclusion: In this small, retrospective cohort study, prehospital administration of ketamine for acute pain under the new state model was associated with multiple protocol violations and numerous adverse effects. Based on these results, modifications to the existing pain management protocol are planned in conjunction with continued educational improvements for emergency medical services (EMS) providers.

COMPARISON OF PREHOSPITAL RETURN OF SPONTANEOUS CIRCULATION RATES OF MANUALONLY OR MECHANICAL-ASSISTED CARDIOPULMONARY RESUSCITATION (CPR) USING THE LUCAS-2: A RETROSPECTIVE STUDY

Raphael Szymanski, Joshua Mastenbrook, Duncan Vos, Kristina Le, Ron Slagell, Cheryl Dickson, Western Michigan University School of Medicine

Introduction: We hypothesized that the implementation of a mechanical cardiopulmonary resuscitation (CPR) device would increase the prehospital ROSC rate within a large midwestern city served by a single tiered advanced life support (ALS) system with basic life support (BLS) fire department first response, as compared with standard manual CPR. Several studies have examined the impact of the LUCAS-2 among emergency medical services (EMS) systems, however, the variability across systems can inject biases and confounding variables. We focused our investigation on the effect of the introduction of a LUCAS-2 into a single EMS system.

Methods: Adult non-traumatic cardiac arrest records, between 01/24/2008 and 10/28/2017, were extracted from the local EMS ePCR to complete a chi-square retrospective analysis comparing ROSC rates before and after the implementation of a LUCAS-2 on 7/1/2011. Logistic regression was used to assess the impact of CPR method, response time, age, gender, individual initiating CPR, witnessed arrest status, individual placing the automated external defibrillator (AED), and presence of an initial shockable rhythm, on ROSC.

Results: From an initial dataset of 857 cardiac arrest records, only 264 (74 pre-LUCAS period) met inclusion criteria and had complete information. The ROSC rates were 29.7% (22/74) and 29.5% (56/190), respectively, for manual-only and LUCAS-assisted CPR patients (p.0.9673). Logistic regression revealed a significant association between only 2 of the independent variables and achievement of ROSC: arrest witnessed (OR 3.104; 95%CI:1.896–5.081; $p<0.0001$), and initial rhythm shockable (OR 2.785; 95%CI:1.492–5.199; $p<0.0013$).

Conclusions: Analyses employed support the null hypothesis that there is no difference in prehospital ROSC rates among adult non-traumatic cardiac arrest patients when comparing mechanical-assisted and manual-only CPR. These results are consistent with other larger multiagency mechanical CPR studies. Systems with limited personnel might consider augmenting their resuscitations with a mechanical CPR device, although costs and system design should be reviewed. Secondary analysis of independent variables suggests that prehospital cardiac arrest patients with a witnessed arrest or an initial rhythm that is shockable, have a higher likelihood of attaining ROSC. The power of our primary objective was limited by the sample size. Additionally, we were not able to adequately assess the quality of CPR among the 2 comparison groups with lack of consistent EtCO2 data.

PILOT STUDY: EMERGENCY MEDICAL SERVICE RELATED VIOLENCE IN THE OUT-OF-HOSPITAL SETTING IN SOUTHEAST MICHIGAN

Ross Touriel, Robert Dunne, Robert Swor, Terry Kowalenko, Willaim Beaumont School of Medicine, Oakland University

Purpose: To determine the prevalence and type of violence perpetrated against Southeast Michigan (MI) EMS personnel, and characteristics of the victims in an out of hospital setting.

Methods: Over 1900 EMS personnel from urban and suburban counties in Southeastern Michigan were sent an online survey asking about their experience with violence while working in the out of hospital care setting within the previous 6 months. Violence was categorized as verbal threat, intimidation, physical assault, sexual harassment, sexual assault, and stalking. A $10 gift card incentive was provided. A recruitment script was read at EMS meetings. This was a pilot study that was limited to the first 150 respondents and ran for 3 months. Descriptive statistical analysis was done with an odds ratio, P-Value, and 2 samples independent T-Tests analysis.

Results: There were 137 respondents with 55% reporting to be a victim of violence within the previous 6 months. The average age of respondents was 36.32 years (SD . 10.52). There were 66 paramedics (50.00%), 65 EMTs (49.24%), and 1 (0.76%) medical first responder. The average years of experience holding this position was 10.94 years (SD . 9.20). Eighty-four (70.59%) respondents reported primarily carrying out 9-1-1/advanced life support transport while 35 primarily performed basic life support services. The respondents were comprised of 19 (15.97%) females and 100 (84.03%) males. Perpetrators were primarily patients and occasionally family members. Substance abuse and/or mental health issues were frequently associated with violence. While not common, females were more often to report violence perpetrated by a coworker than males (OR 5.17 95%Cl:1.67,16.0). Paramedics had increased odds of experiencing unintentional injuries compared to EMTs (OR 2.13, 95%CI:1.01, 4.54). Overall, 9-1-1 responders were more likely to experience violence than non-emergency responders (OR . 3.14 95%Cl:1.38, 7.11) and experienced more incidents involving patients with mental health issues (OR. 3.14 95%CI:1.38, 7.11).

Conclusion: Over half of responding EMS personnel experienced work-related violence within the previous 6 months in Southeast Michigan. Further research and analysis may help guide and improve agency policy that directly affect safety of out of hospital healthcare providers.

WORKING TOWARD THE “IDEAL” RESPONSE TO OUT-OF-HOSPITAL CARDIAC ARREST: A POTENTIAL ROLE FOR MULTI-DISCIPLINARY TRAINING AND DEBRIEFING

Samantha Iovan, Mahshid Abir, Sydney Fouche, Samantha Iovan, Brahmajee Nallamothu, EPOC Team, Cardiac Arrest Registry to Enhance Survival (CARES) Surveillance Group, University of Michigan

Background: Current evidence indicates that an important step toward improving survival rates for out-of-hospital cardiac arrest (OHCA) is to address care processes before, during, and after resuscitation. To date, there is a lack of consensus on what constitutes an ideal scenario for care processes across the OHCA chain of survival–including inter-stakeholder (emergency medical services [EMS], police, fire, and dispatch) coordination.

Purpose: This study explores factors that may help improve OHCA survival, defined as sustained return of spontaneous circulation (ROSC) in the field with pulse upon emergency department [ED] arrival.

Methods: This sequential mixed methods study used data from the Michigan Cardiac Arrest Registry to Enhance Survival (MICARES) to evaluate variation in OHCA outcomes across EMS agencies using mixed effects logistical regression while controlling for key demographic, response, and rhythm related covariates. EMS systems were sampled based on OHCA survival rates, geographic location, and urbanicity. We visited 3 low-, 2 middle-, and 4 high-survival EMS systems across Michigan. In each community, we conducted key informant interviews with field staff, mid-level managers, and leadership from aforementioned stakeholder groups, as well as a multidisciplinary focus group.

Results: Promoting collaboration through multidisciplinary OHCA training—in high performance CPR and automated external defibrillator (AED) application—and debriefing after events emerged as an ideal scenario for improving OHCA response. Although not all EMS systems engaged in these activities in a formal way, respondents indicated a desire for greater interaction with other EMS system stakeholders. Multidisciplinary interactions allow agencies to better understand each other’s roles and capabilities during an OHCA response. Informants indicated that training together promotes improved communication between stakeholders during OHCA response and optimizes resuscitation skills of all responders. Formal multidisciplinary debriefing was perceived as important for stakeholders to learn the outcome of OHCA events and receive feedback. Both training and debriefing in a multidisciplinary way were proposed as ideal scenarios to improve handoffs between stakeholders during response.

Conclusions: Multidisciplinary collaboration before and after an event was identified by EMS system stakeholders as an innovative approach to improving OHCA outcomes, and a strategy that may move the needle toward the “ideal” OHCA response.

STATEWIDE IMPLEMENTATION OF THE PREHOSPITAL TRAUMATIC BRAIN INJURY GUIDELINES IN CHILDREN: RESULTS OF THE EPIC4KIDS STUDY

Daniel Spaite, Bentley Bobrow, Joshua Gaither, Bruce Barnhart, Samuel Keim, Vatsal Chikani, Kurt Denninghoff, Terry Mullins, David Adelson, Amber Rice, Chad Viscusi, Chengcheng Hu, University of Arizona College of Medicine-Phoenix

Background: It is difficult to overstate the impact of traumatic brain injury (TBI) onsociety. In an attempt to improve outcomesfrom this massive public health problem, the EPIC Study implemented the national emergency medical services (EMS) TBI Guidelines in a statewide initiative throughout Arizona (>11,000 providers trained, 133 agencies). Because of their particularly high risk, children comprised an important special population in this effort and here we report the preplanned pediatric subgroup analysis ("EPIC4Kids"-NIH R01NS071049).

Methods: Intention-to-treat study using a before/after controlled design in children with moderate to
critically severe TBI transported directly to or transferred to a trauma center. Outcome: Survival-to-discharge. Interventions: Avoidance/treatment of hypoxia (SpO2<90%), prevention/ correction of hyperventilation (EtCO2 35–45mmHg), and avoidance/treatment of hypotension [age < 10: SBP<(70mmHg . 2[age in years]): age _ 10: SBP < 90mmHg]. Inclusion: Age <21; CDC-Barell Matrix-Type 1; 1/1/ 2007–6/30/2015. The severity-based subgroup analyses were based upon the following a priori cohorts [Head Region Severity Score (IDC-based AIS equivalent)]: Moderate . 1–2; Severe . 3–4; Critical . 5–6. The pre-implementation (P1) and post-implementation (P3) cohorts were compared using logistic regression (Firth's approach when comparisons had small event numbers), adjusting for risk factors/confounders.

Results: Included were 4014 cases [P1.2993 (74.6%), P3.1021 (25.4%); median age . 15 (IQR 5, 18); 67.2% male]. The all-severity P3 vs P1 cohort analysis yielded adjusted odds (aOR) of 1.19 (95%CI:0.82–1.74, p.0.355) for survival. In severe TBI [P1.1938, P3.769 (75.3% of postintervention cases)], but not moderate or critical TBI, adjusted survival was significantly improved after implementation [aOR . 5.03 (1.37–29.7; p.0.012)]. Survival also improved among severe patients who received positive pressure ventilation [bag-valve-mask, supraglottic airway, or intubation (P1.331, P3.98); aOR . 7.48 (1.41–93.4; p.0.014)]. Improvement in survival in the severe, intubated subgroup (P1.285, P3.68) approached significance [aOR. 5.34 (0.90–75.3; p.0.069].

Conclusion: In the first controlled multisystem study of its kind, implementation of the EMS TBI guidelines was independently associated with a dramatic increase in adjusted survival among children with severe TBI and those with severe TBI who received positive-pressure ventilation. As with the overall EPIC Study (across all ages), the findings in children revealed a "therapeutic sweetspot" in the severe cohort and this group comprised three-quarters of the patients. These results support widespread implementation of the EMS TBI guidelines in children.