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# Creating a Culture of Safety in EMS:
## for Clinicians and Patients

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# Ambulance crash in Newport sends four to hospital

by Thomas Farrar | Tue, December 2, 2025 at 10:36 AM
**Updated** Tue, December 2, 2025 at 4:10 PM


*(Photo Tuckerman Fire Department and Volunteer Ambulance Service)*

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NEWPORT, Ark. (KATV) — *UPDATE* --

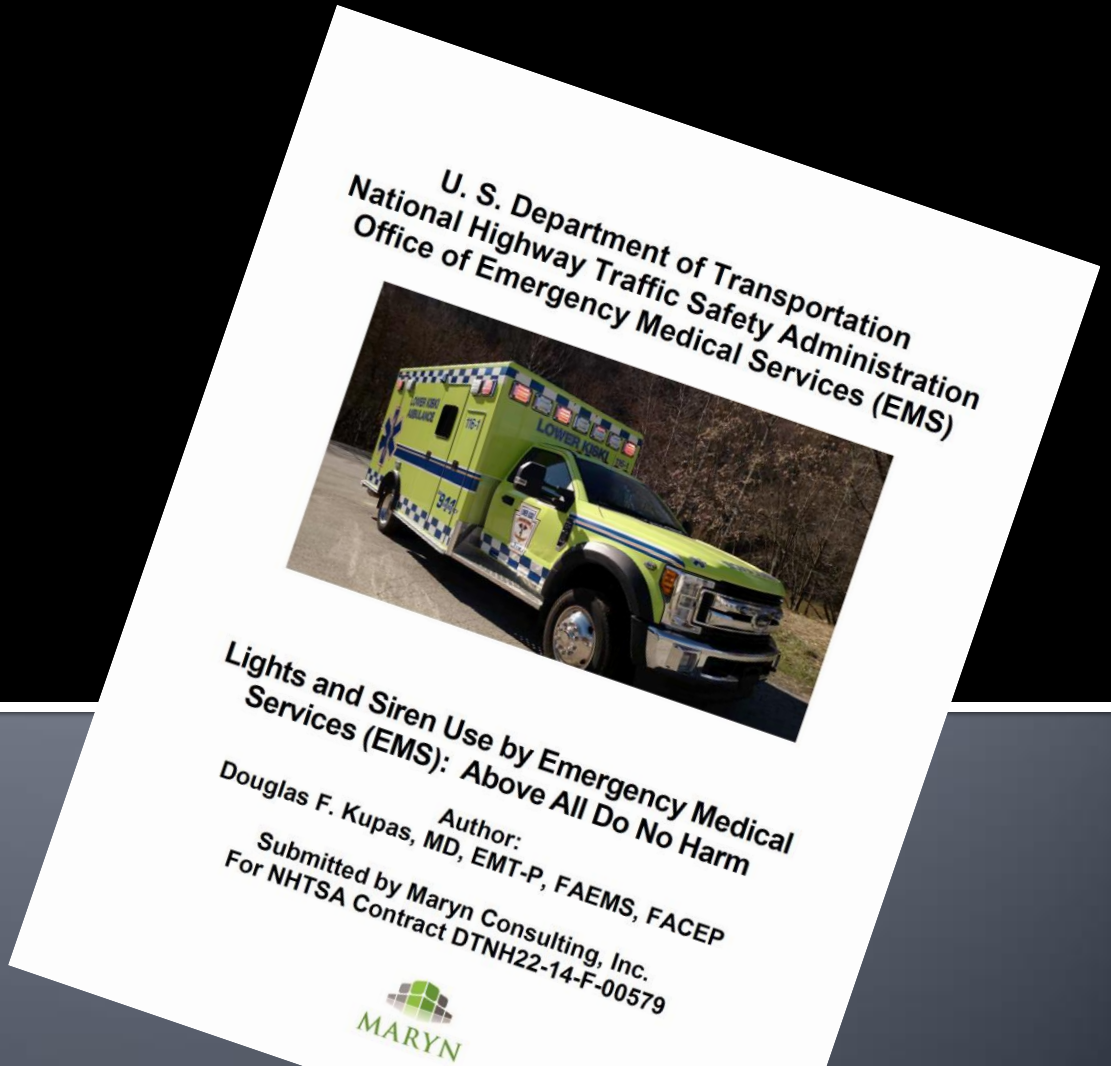
The Tuckerman Fire Department and Volunteer Ambulance Service say that two of the injured were with the department and that they were treated and released from the hospital Monday night.


A Lower Kiski Ambulance was involved in a violent crash in Pittsburgh's Lincoln-Lemington-Belmar neighborhood on Feb. 21st, 2024.

KDKA PHOTOJOURNALIST RAN

# Lights & Siren Use by EMS:

## Above All,
## Do No Harm




## Available at:
## ems.gov

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POSITION STATEMENTS

# Joint Position Statement on EMS Performance Measures Beyond Response Times

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# Outline


**<u>The Problem</u>**

Patient Safety

EMS Clinician Safety

Creating a Culture of Safety

# Outline

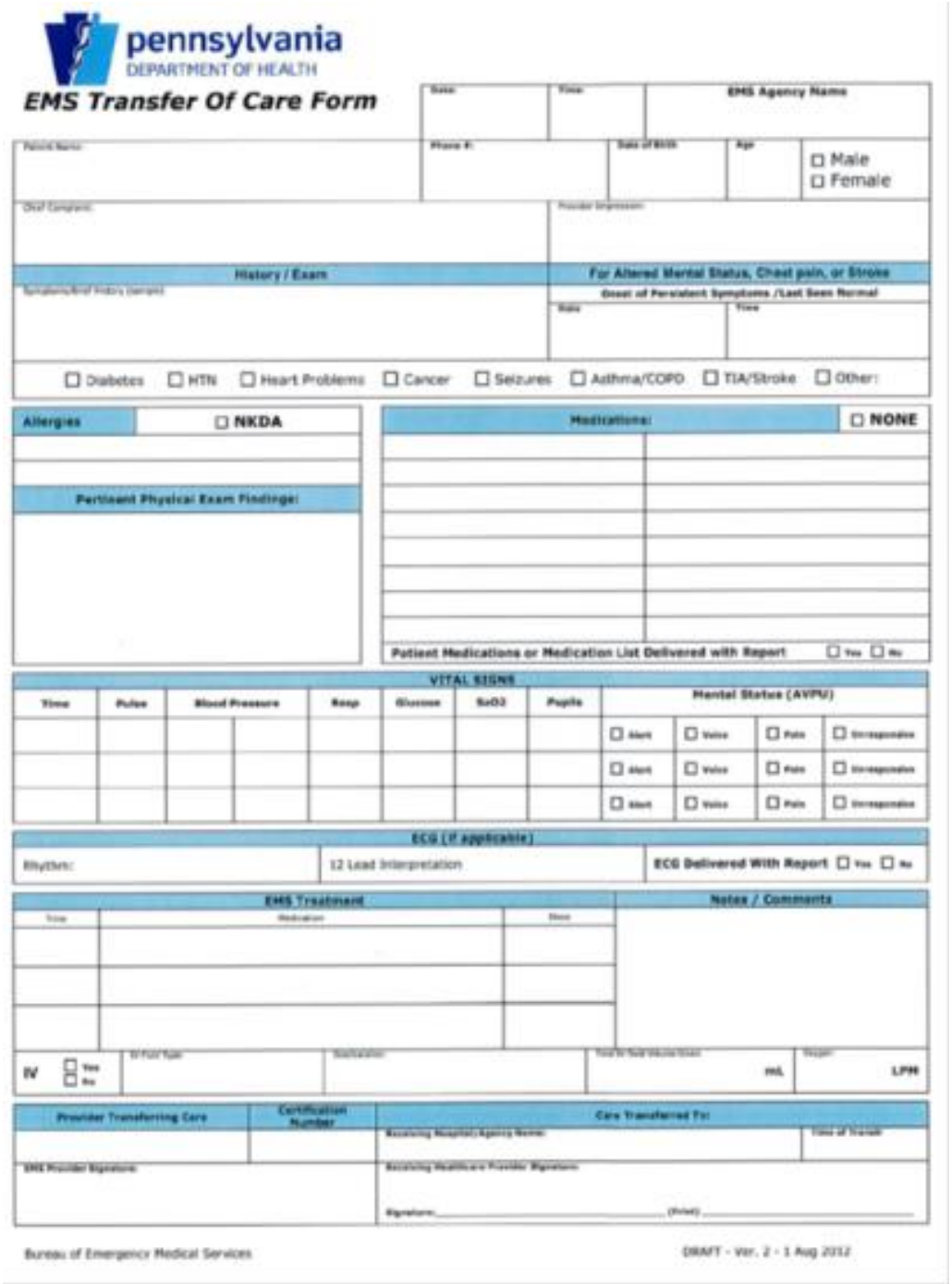
**Patient Safety**

- **Transition/ Hand-over**
- **Checklists**
- **Medications**
- **Equipment**

# Opportunity for Safety
# Hand-off/Hand-over/ Transfer of Care

# Transfer of Care
# EMS to Emergency Department

- “Time Out” for EMS at time of hand-over
- Verbal report
- Opportunity to ask questions
- Written report



pennsylvania
DEPARTMENT OF HEALTH

**EMS Transfer Of Care Form**

Date: | Time: | EMS Agency Name

Patient Name: | Phone #: | Date of Birth: | Age | ☐ Male ☐ Female

Chief Complaint: | Provider Impression:

**History / Exam** | **For Altered Mental Status, Chest pain, or Stroke**

Symptoms/Brief History (sample) | Onset of Persistent Symptoms /Last Seen Normal: Date | Time

☐ Diabetes ☐ HTN ☐ Heart Problems ☐ Cancer ☐ Seizures ☐ Asthma/COPD ☐ TIA/Stroke ☐ Other:

**Allergies** ☐ NKDA

**Pertinent Physical Exam Findings:**

**Medications:** ☐ NONE

Patient Medications or Medication List Delivered with Report ☐ Yes ☐ No

**VITAL SIGNS**

| Time | Pulse | Blood Pressure | | Resp | Glucose | SpO2 | Pupils | Mental Status (AVPU) | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | ☐ Alert | ☐ Voice | ☐ Pain | ☐ Unresponsive |
| | | | | | | | | ☐ Alert | ☐ Voice | ☐ Pain | ☐ Unresponsive |
| | | | | | | | | ☐ Alert | ☐ Voice | ☐ Pain | ☐ Unresponsive |

**ECG (if applicable)**

Rhythm: | 12 Lead Interpretation | ECG Delivered With Report ☐ Yes ☐ No

**EMS Treatment** | **Notes / Comments**

| Time | Medication | Dose |
|---|---|---|
| | | |
| | | |
| | | |

IV ☐ Yes ☐ No | IV Fluid Type: | Site/Location: | Total IV Fluid Volume Given: mL | Oxygen: LPM

| Provider Transferring Care | Certification Number | Care Transferred To: Receiving Hospital/Agency Name: | Time of Transfer |
|---|---|---|---|
| EMS Provider Signature: | | Receiving Healthcare Provider Signature: Signature:_____ (Print)_____ | |

Bureau of Emergency Medical Services

DRAFT - Ver. 2 - 1 Aug 2012

# EMS Transfer of Care Report

# Opportunity for Safety Checklists

- Ensures care based upon best guidelines
- Helpful in high stress/ complex situations
- Proven to reduce medical adverse events

# Refusal of Treatment Checklist Pennsylvania Statewide EMS Protocol

Pennsylvania Department of Health Operations 111– BLS – Adult/Peds

**EMS Patient Refusal Checklist**

EMS Agency: _____ Date: _____ Time: _____

Patient Name: _____ Age: _____ Phone #: _____

Incident Location: _____ Incident # _____

Situation of Injury/Illness: _____

***Check marks in shaded areas require consult with Medical Command before patient release***

**Patient Assessment:**

Suspected serious injury or illness based upon patient History, mechanism of injury, or physical examination: ___ Yes ___ No

18 years of age or older: ___ Yes ___ No

Patient Oriented to:
- Person ___ Yes ___ No
- Place ___ Yes ___ No
- Time ___ Yes ___ No
- Event ___ Yes ___ No

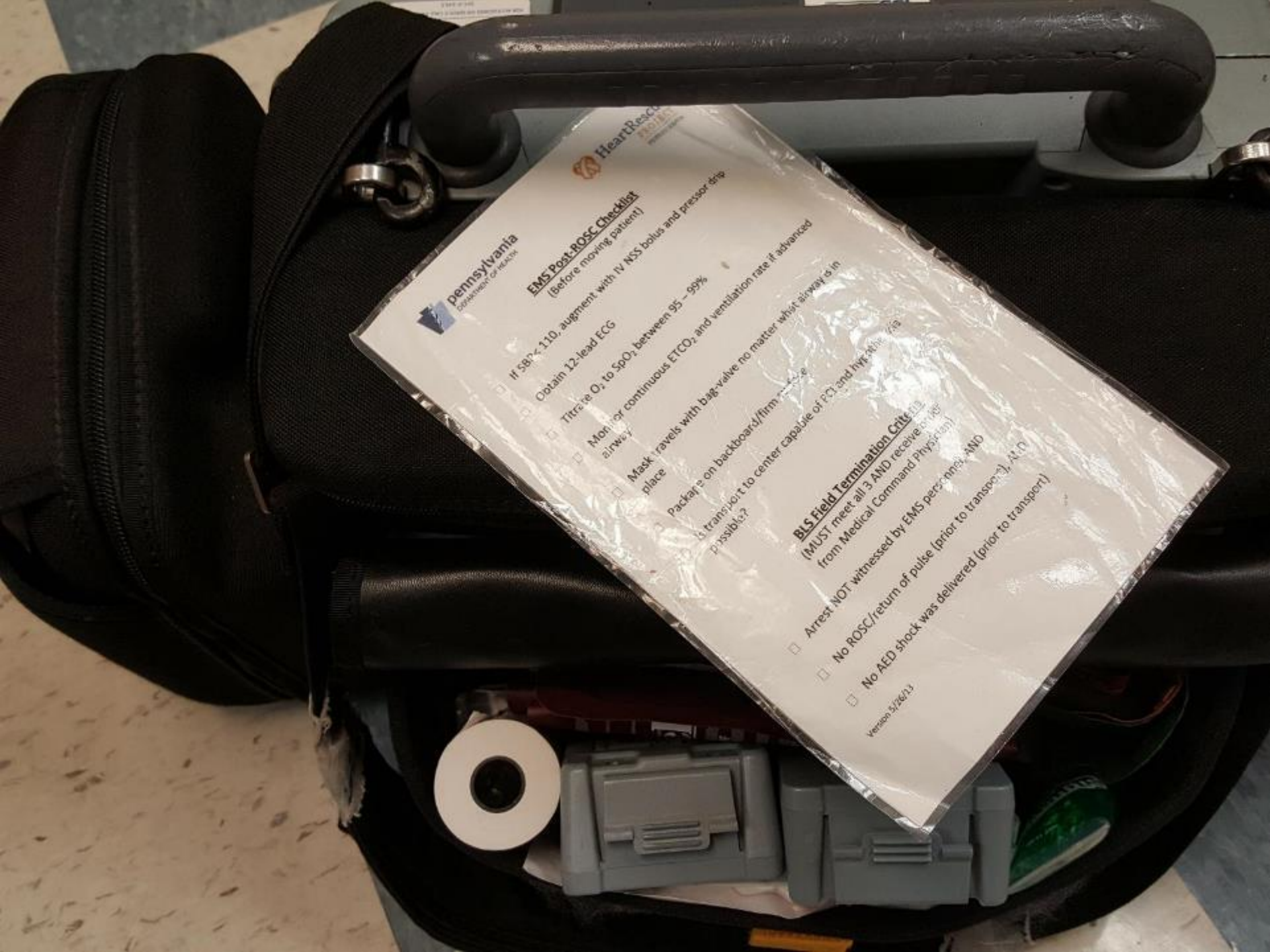
Any evidence of:
- Suicide attempt? ___ Yes ___ No
- Head Injury? ___ Yes ___ No
- Intoxication? ___ Yes ___ No
- Chest Pain? ___ Yes ___ No
- Dyspnea? ___ Yes ___ No
- Syncope? ___ Yes ___ No

| **Vital Signs:** | | ***Consult Medical Command if:*** |
|---|---|---|
| Pulse | _____ | <50bpm or >100 bpm |
| Sys BP | _____ | <100 mm Hg or > 200 mm Hg |
| Dia BP | _____ | <50 mm Hg or > 100 mm Hg |
| Resp | _____ | < 12rpm or > 24rpm |

**If altered mental status or diabetic** –(ALS only)-
Chemstrip/Glucometer: _____mg/dl < 60mg/dl

**If chest pain, S.O.B. or altered mental status --**
SpO2 (if available): _____% < 95%

Risks explained to patient: _____
Patient understands clinical situation __Yes __No
Patient verbalizes understanding of risks __Yes __No
Patient's plan to seek further medical evaluation: _____


pennsylvania
DEPARTMENT OF HEALTH
EMS Post-ROSC Checklist
(before moving patient)
If SBP < 110, augment with IV NSS bolus and pressor drip
Obtain 12-lead ECG
Titrate $O_2$ to $SpO_2$ between 95 – 99%
Monitor continuous $ETCO_2$ and ventilation rate if advanced airway
Mask travels with bag-valve no matter what airway is in place
Package on backboard/firm surface
Is transport to center capable of PCI and hypothermia possible?
BLS Field Termination Criteria
(MUST meet all 3 AND receive order from Medical Command Physician)
Arrest NOT witnessed by EMS personnel AND
No ROSC/return of pulse (prior to transport), AND
No AED shock was delivered (prior to transport)
Version 5/26/13

# Medication Safety Issues in EMS

- Safety issues with EMS medication storage and use:
  - Space limits organization of medications
  - Less providers to double check dosing
  - Temperature changes affect medication potency
  - Technology (infusion pumps) less practical


Kupas DF, Shayhorn, et al. Prehosp Emerg Care 2012 Jan;16(1):67-75

# Have you looked in your agency's drug bag/box?


1156863
ENALAPRILAT
INJECTION
FOR IV USE ONLY
1.25 mg/mL
(Anhydrous equivalent)
OXYTOCIN
INJECTION, USP
(SYNTHETIC)
10 USP Units/mL
For IV Infusion or IM Use
1 mL
Rx only

# Opportunity for Safety Technology

- Technology can reduce errors due to human factors, for example:
  - Capnography eliminates misplaced endotracheal tubes
  - Environmental carbon monoxide monitoring ensures scene safety and identifies CO poisoning
- Caution – technology can both reduce and create patient safety issues

Patient “seatbelts”

# Outline

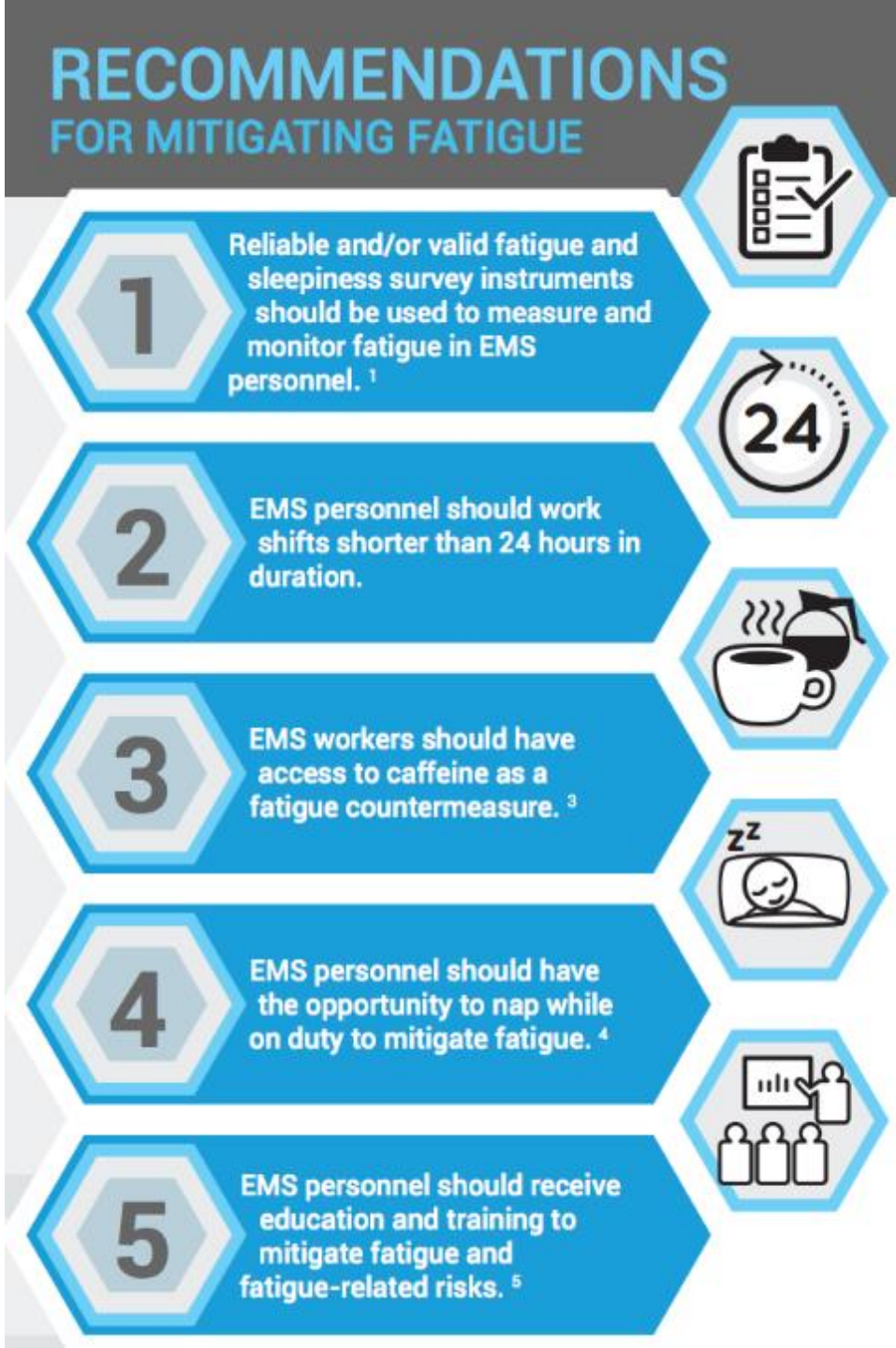
**EMS Clinician Safety**

- **Human Factors**
- **Vehicle Operations**
- **Vehicle Design**
- **Outside of the Vehicle**

# Human Factors

- Fatigue
  - 21 hours awake = 0.08 BAC
  - **Shifts/ Duty Hour Limits**

- **NHTSA Evidence-based EMS Fatigue Guidelines**



Instructions | FAQ | Definitions | Print

# Emergency Medical Services

## Shift Schedule Fatigue Risk Analyzer

This tool can be used to perform fatigue risk analysis on simple repeating shift work schedules.
Use the buttons at the top of the page to view the Instructions, Frequently Asked Questions, and Definitions.
Customize values in each field to see the risk level for various schedules. See the Standard Work Week example below, and modify as necessary:

| Shift Start Time | Shift Duration (Hours) | Days On | Days Off | Commute Time (Minutes) | Napping | Pattern Repeats |
|---|---|---|---|---|---|---|
| 21:00 | 12 | 3 | 2 | 31-60 | No | 4 |

**High Risk** Hide Analysis Details

| Pattern Repeat | Average Effectiveness | Minimum Effectiveness | Risk Level |
|---|---|---|---|
| 1 (Day 1-3) | 76.3 | 63.1 | High Risk |
| 2 (Day 6-8) | 72.5 | 60.3 | High Risk |
| 3 (Day 11-13) | 71.9 | 59.9 | High Risk |
| 4 (Day 16-18) | 71.8 | 59.8 | High Risk |
| **Overall** | **73.1** | **59.8** | **High Risk** |

## Schedule Recommendations

**Fatigue can occur under any circumstances, but allowing adequate time for sleep and recovery can help reduce risk. Here are some specific adjustments which can be made to this schedule that will help reduce risk and increase estimated effectiveness.**

1. **Fatigue will be worse when working during the night. To reduce risk, try selecting a start time between 0600-1800, shortening the shift duration, or permitting napping on-shift.**
2. **Permitting napping on shift may help reduce fatigue risk and improve effectiveness for this schedule.**
3. **Fatigue will accumulate over the course of a schedule. To reduce risk, try shortening the number of times a schedule repeats, shortening the number of days on, or increasing the number of days off between shifts.**

www.emsfatigue.org
https://www.emsfatiguerisk.ibrinc.org/

# Human Factors

- Distractions (Sterile Cockpit Concept)
  - Radio
  - Cell phone
  - Pager
  - Texting


LOWER KISKI
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116-1

# Seatbelt Policy – Front and Back

# Outside of the Vehicle

- Wellness Program
- Back Injury Prevention
  - Weight of bags/ equipment
  - Power-lift stretchers
  - Stair devices
- High-visibility wear
  - **ANSI II/III highway requirements**
  - **Boots on the ground = Hi-Viz policy**

# Are your clinicians safe on the road?

**TactiCOOL**


**MediCOOL**


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# EMS Safety Culture

Must be required and supported from top management to frontline providers

# Indianapolis EMS

# EMS Culture of Safety

- **Start a Safety Committee**
  - In PA, 5% reduction in Worker's Comp insurance
- **Safety Rounds in vehicles, drug bags, and stations**
- **Event Reporting (non-punitive)**
- **Pay attention to fatigue/ scheduling**
- **Thoughtful Vehicle Design**
  - Forward facing seats
- **Agency Policies**
  - Wear seatbelts/restraints at almost all times!
  - Distracted Driver/Sterile Cockpit
  - Drug storage/ pharmaceutical practices

# Conclusion

## EMS Medical Director must set example