EMS Workforce Longevity and Wellness

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Disclosures

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EMS Workforce

- Who’s in our workforce?
- How do we measure our workforce?
- What challenges make our workforce “at risk"

THE HILL

Ambulance, EMT first responders face 'crippling workforce shortage'

BY NATHANIEL WEIXEL - 10/27/21 06:00 AM EDT

129 COMMENTS

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NEWS

EMS agencies struggling to fill EMT, paramedic positions

Laura Fitzgerald Port Huron Times Herald

May 19, 2021

Labor crisis creating 'gut-wrenching' reality for Ohio's EMS providers, help needed

Ryan Cantzler Guest columnist

Published 8:10 a.m. ET Dec. 7, 2021 | Updated 9:51 a.m. ET Dec. 8, 2021

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CORONAVIRUS

EMS services warn of 'crippling labor shortage' undermining 911 system

"We're not bleeding any longer – we're hemorrhaging," one ambulance service operator said of a decadelong worker shortage exacerbated by the pandemic.

October 2021

AAA and NAEMT
Directed a letter to Congress
to address these concerns

AMERICAN AMBULANCE ASSOCIATION
Caring for people—first.

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Congressional Letter on the EMS Workforce Shortage

WRITTEN BY AAA STAFF ON OCTOBER 4, 2021. POSTED IN EXECUTIVE, HUMAN RESOURCES, LEGISLATIVE, RECRUITMENT & RETENTION, REGULATORY.

October 1, 2021

The Honorable Nancy Pelosi
Speaker of the House
U.S. House of Representatives
Washington, DC 20515

The Honorable Charles Schumer
Majority Leader
United States Senate
Washington, DC 20510

The Honorable Kevin McCarthy
Minority Leader
U.S. House of Representatives
Washington, DC 20515

The Honorable Mitch McConnell
Minority Leader
United States Senate
Washington, DC 20510

Dear Speaker Pelosi, Majority Leader Schumer, Minority Leader McConnell & Minority Leader McCarthy,

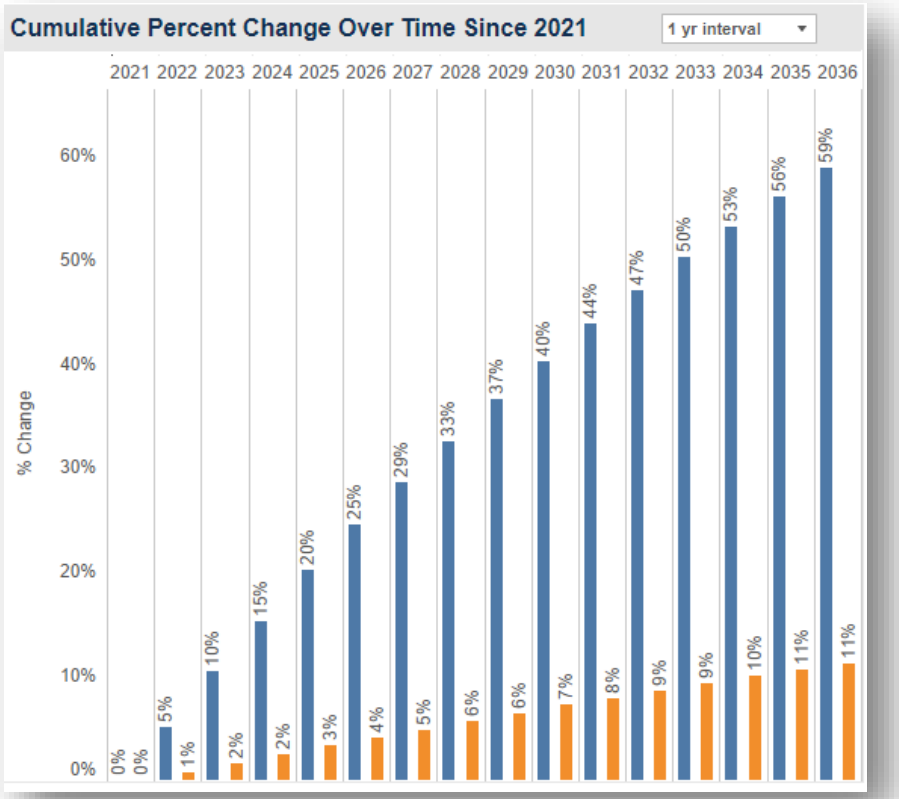
Our paramedics and emergency medical technicians (EMTs), as well as the organizations that they serve, take on substantial risk every day to treat and transport patients that call 9-1-1. But our nation's EMS system is facing a crippling workforce shortage, a long-term problem that has been building for more than a decade. It threatens to undermine our emergency 9-1-1

Federal Forecasting…

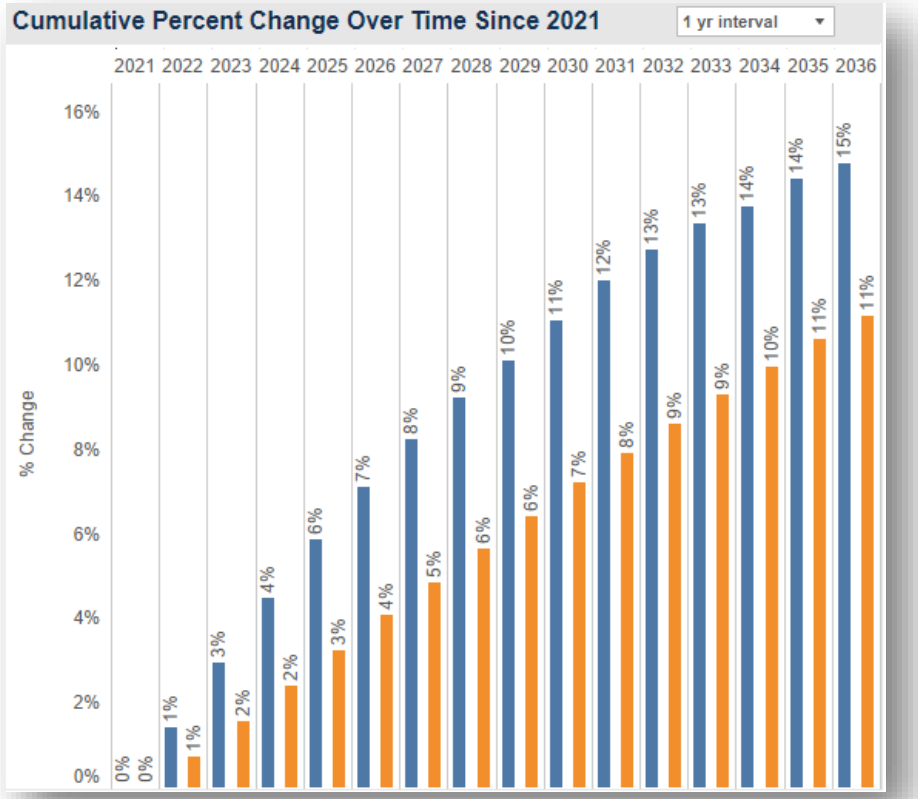
HRSA Forecasting

Supply

Demand



Paramedic

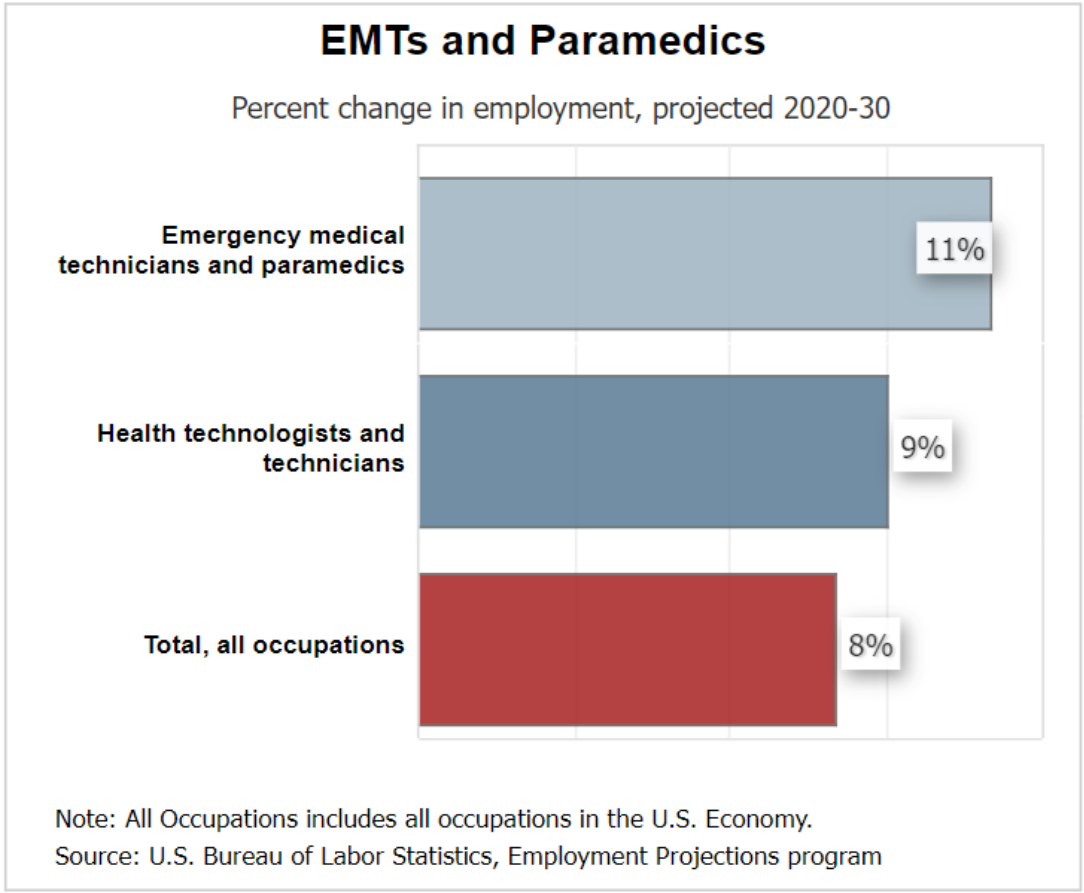


EMT

The EMS Workforce

Changing Paradigm

- From 2014-2060, population will increase by 31%
- To meet the growing population needs for 2030, workforce demand may increase by 11%



Colby. Current Population Reports; US Dept of Commerce. 2015.
https://www.bls.gov/ooh/healthcare/emts-and-paramedics.htm#tab-6

CHALLENGE!

Data concerning workforce is poorly defined and not well collected

EMS Workforce Planning & Development

GUIDELINES FOR STATE ADOPTION

NHTSA 2013

Critical Policy Issues

Twelve critical policy issues were identified for further research and consideration for the development of the EMS Workforce Agenda. These were:

1. Establish consistent definitions for provider levels and workforce terms (e.g., credentialing, registration, certification, and licensure).
2. To manage the capacity of EMS education, more complete data particularly on proprietary and agency-based programs is necessary.
3. Affiliation with an agency is often required in EMS education programs although the requirements vary widely among states. This results in difficult assessment of the impact of affiliation on the supply of EMS workers.
4. Although rural areas consistently report a shortage of workers, there is no quantitative data indicating there is a shortage of EMTs or paramedics. [illegible] are not increasing at a rate that suggests a shortage exists. [illegible] relationship between EMS workforce factors [illegible] that is done is based on

Highlights of Critical Policy Issues

- Need Consistent definitions
- "No *quantitative data indicating there is a shortage* of EMTs or paramedics"
- Little data showing a relationship between EMS workforce factors and patient outcome
- Qualitative evidence suggests that retaining workers is challenge
- Lack of data inhibits EMS workforce planning

The National Association of State Emergency Medical Services Officials

The Collective Voice of the Nation's EMS Systems

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EMS Workforce

Overview

In 2004, the EMS Workforce Agenda for the Future (Workforce Agenda) published by
systems have sufficient numbers of well educated, adequately prepared, and appropri
valued, well compensated, healthy, and safe. The Workforce Agenda identifies four co
workforce that will thrive and be a driving force for achieving an integrated, communit
2) education and certification; 3) workforce planning and development; and 4) the safe
workforce.

NHTSA has since funded two projects with NASEMSO (EMS Workforce Planning and
EMS Workforce) to advance these four components.

Final project documents and other related materials are linked below.

Documents & Resources

Documents

- EMS Workforce Planning & Development: Guidelines for State Adoption (Oct 2014). *This is the first generation of EMS workforce-related guidelines. These guidelines are developed as a tool and they do not address issues related to staffing, ambulance distribution and access or population-based supply, demand and needs assessments.*
- Measuring the EMS Workforce – Report Compendium (2023). *Four reports created from the NHTSA-funded* Measuring the EMS Workforce *project. Individual reports are linked below.*
  - Identifying Ideal Measures and Processes (June 2023)

Resources

- National EMS Workforce Data Definitions (2014). *Created*
  Research with funding from NHTSA, this is a tool to impro
  workforce data nationally and to facilitate data- driven EM
- Kansas data as referenced on page 23 in the *EMS Workfo*
  for State Adoption document.

2024

Measuring the Emergency Medical Services Workforce

IDENTIFYING PRIORITY UNKNOWNS

MARCH 2024

COOPERATIVE AGREEMENT #693JJ92050001-0001

National Association of State EMS Officials
Falls Church, VA

How many clinicians?

Somewhere between 250,000 and 1 million!

Quick Facts: EMTs and Paramedics	
2021 Median Pay	$36,930 per year $17.76 per hour
Typical Entry-Level Education	Postsecondary nondegree award
Work Experience in a Related Occupation	See How to Become One
On-the-job Training	None
Number of Jobs, 2021	261,000
Job Outlook, 2021-31	7% (As fast as average)
Employment Change, 2021-31	17,900

Bureau of labor Statistics

261,000

2020 NATIONAL EMERGENCY MEDICAL SERVICES ASSESSMENT

NASEMSO

Totals by State

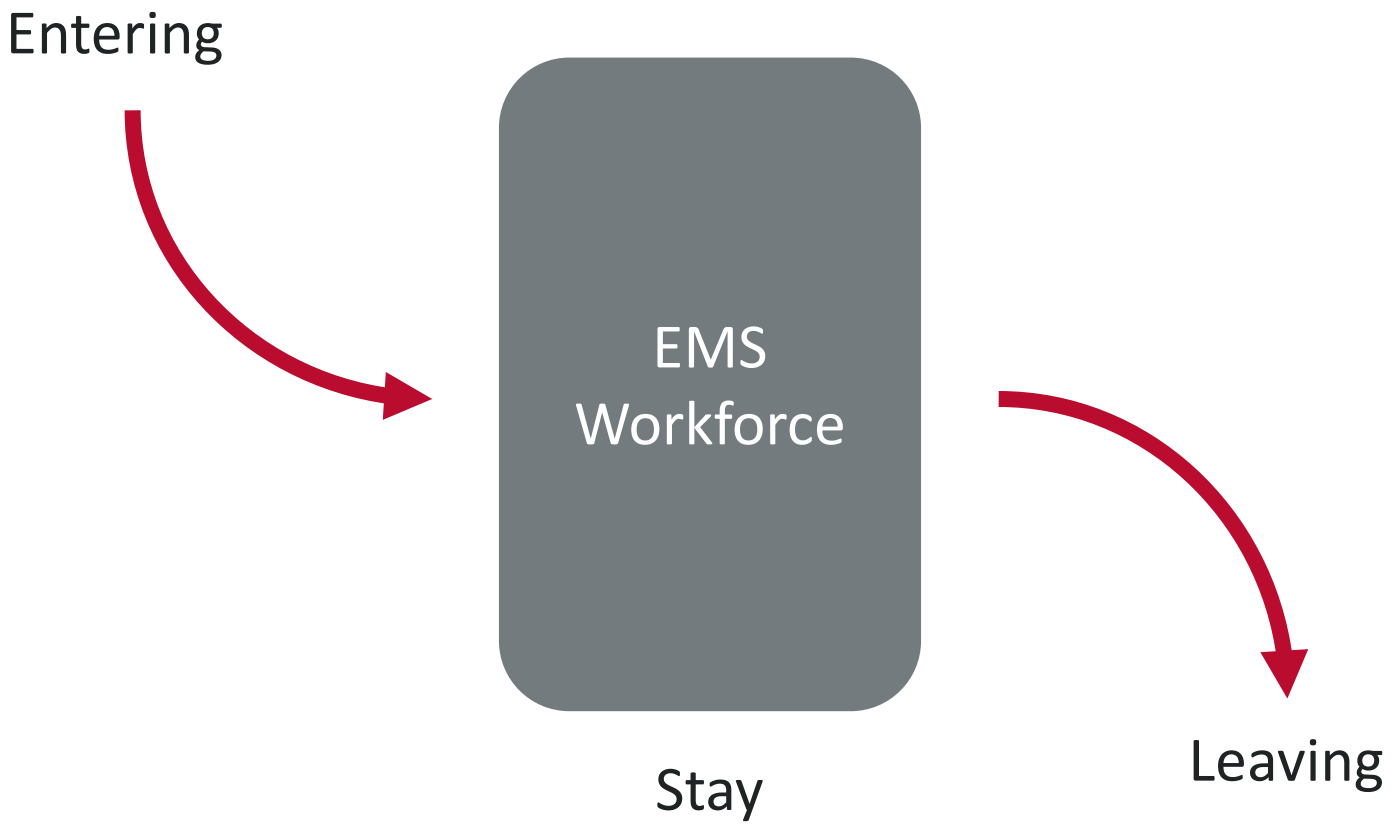
Table 28

# of Responding States	Mean	Median	Min	Max	Total
54	19,497	12,129	110	91,236	1,052,842

National Assessment

1,052,842

Understand Concepts of Workforce Evaluation

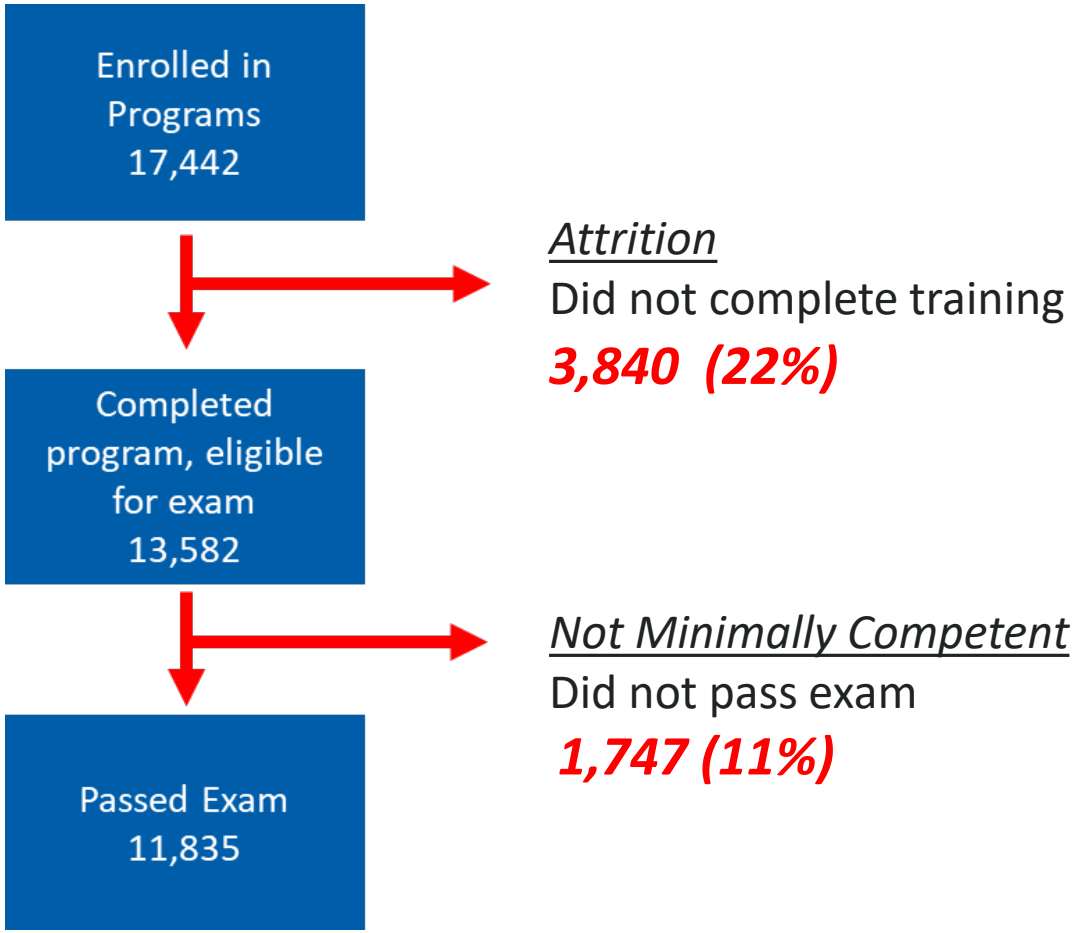


Entering the Workforce

Starts when someone applies for a program, they are now part of “Possible EMS clinicians”

They can leave this process in a couple ways:

- Do not complete training program (attrition from program)
- Do not attain certification (not minimally competent)



ORIGINAL RESEARCH
Emergency Medical Services

JACEP OPEN WILEY

Paramedic educational program attrition accounts for significant loss of potential EMS workforce

Matthew Ball MD[1] | Jonathan R. Powell MPA, NRP[2,3] | Christopher B. Gage MHS, NRP[2,3] | Katelynn A. Kapalo PhD[2] | Jordan D. Kurth PhD[2] | Lisa Collard AS[4] | Michael G. Miller EdD, RN[4] | Ashish R. Panchal MD, PhD[2,3,5]

Attrition is the largest challenge to Entry into the field

Leaving the Workforce

This is the true number of EMS clinicians who leave the workforce

This is challenging to measure, since many leaving takes many forms:

- Leaves the workforce for different career
- Leaves the workforce but maintains a “card”
- Leaves a state to go somewhere else
- Leaves an agency for another

Turnover Rates (Overall!)

The Longitudinal Study of Turnover and the Cost of Turnover in Emergency Medical Services

P. Daniel Patterson, PhD, MPH, Cheryl B. Jones, PhD, RN, Michael W. Hubble, PhD, MBA, NREMTP, Matthew Carr, BS, NREMTP, Matthew D. Weaver, BS, NREMTP, John Engberg, PhD, Nicholas Castle, PhD

Followed 40 EMS agencies over a 6-month period with internet, telephone, and on-site data collection methods

Weighted median annual turnover rate = 7.5% (IQR: 5.2%, 10.8%)

PREHOSPITAL EMERGENCY CARE 2010;14:209–221

Most recently, agency level evaluation

Quantitative analysis by AAA surveyed

- 171 agencies (RR=31%) with leadership responding
- Representing 14% fire, 41% private

Turnover rates 2022, (2023) with 2024 open job rates

Occupation	Overall Turnover	Open Rate
Full-time EMT	**30%** (31%)[6]	**21%** (19%)
Part-time EMT	**40%** (31%)	**36%** (27%)
Full-time Paramedic	**34%** (22%)	**35%** (24%)
Part-time Paramedic	**23%** (22%)	**41%** (48%)
Supervisor	**14%** (21%)	**08%** (09%)
Dispatch	**34%** (29%)	**17%** (13%)

Leaving the Workforce

We know that the rate varies by service type

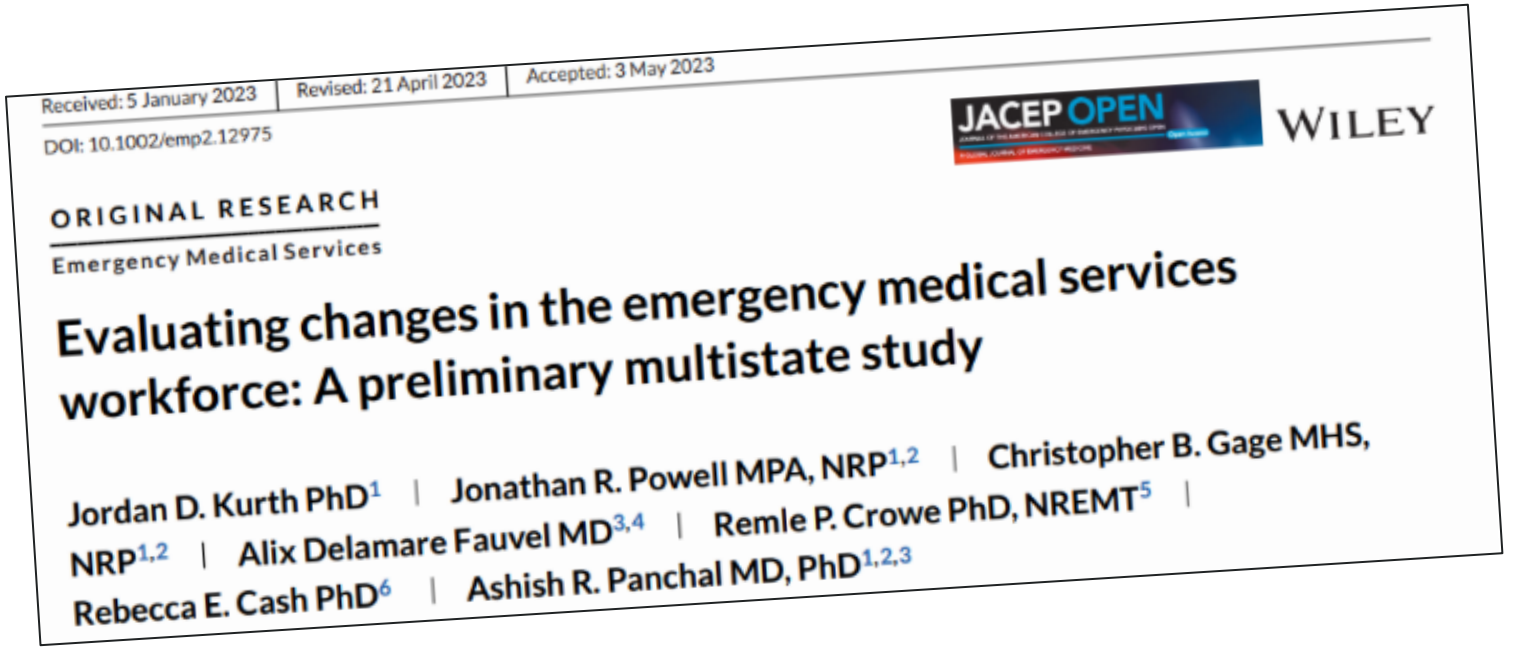
Range appears to be from 5% to 30% per agency type

Overall national samples demonstrated individual turnover to be approximately 7-8% pre-COVID

NEED MORE EVALUATIONS AND BETTER DATA!

Multi-state Population Based Evaluation

- 9 states that required NREMT recertification
- Looked at EMS clinicians entering, leaving and staying



Received: 5 January 2023 | Revised: 21 April 2023 | Accepted: 3 May 2023

DOI: 10.1002/emp2.12975

JACEP OPEN

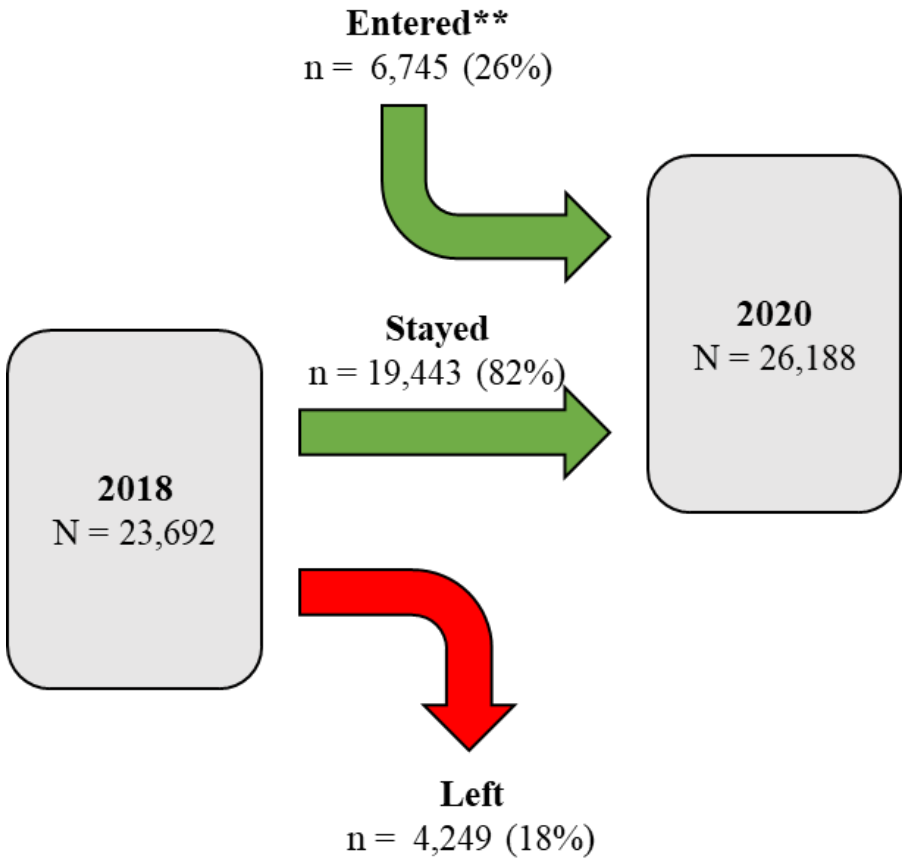
WILEY

ORIGINAL RESEARCH

Emergency Medical Services

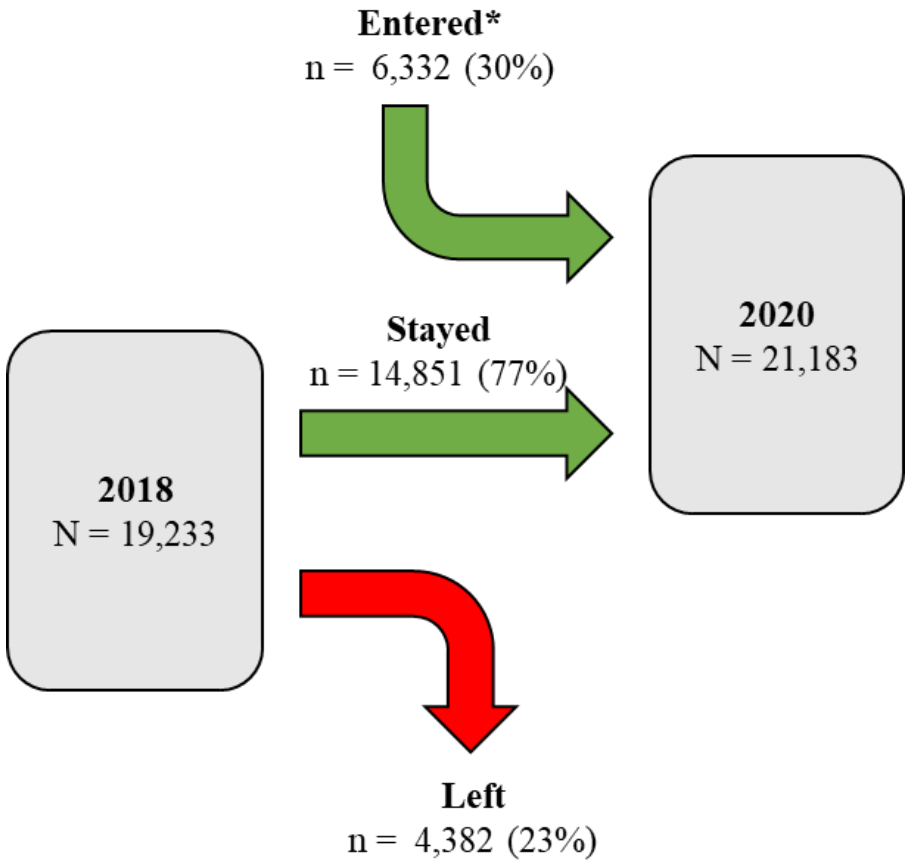
Evaluating changes in the emergency medical services workforce: A preliminary multistate study

Jordan D. Kurth PhD[1] | Jonathan R. Powell MPA, NRP[1,2] | Christopher B. Gage MHS, NRP[1,2] | Alix Delamare Fauvel MD[3,4] | Remle P. Crowe PhD, NREMT[5] | Rebecca E. Cash PhD[6] | Ashish R. Panchal MD, PhD[1,2,3]



Certified Workforce

Left: 18%



Patient Care Workforce

Left: 23%

What drives EMS clinicians to leave?

Characteristics associated with Leaving EMS

Pay

Education

Benefits

Dissatisfaction

Career change

Feedback

Hours

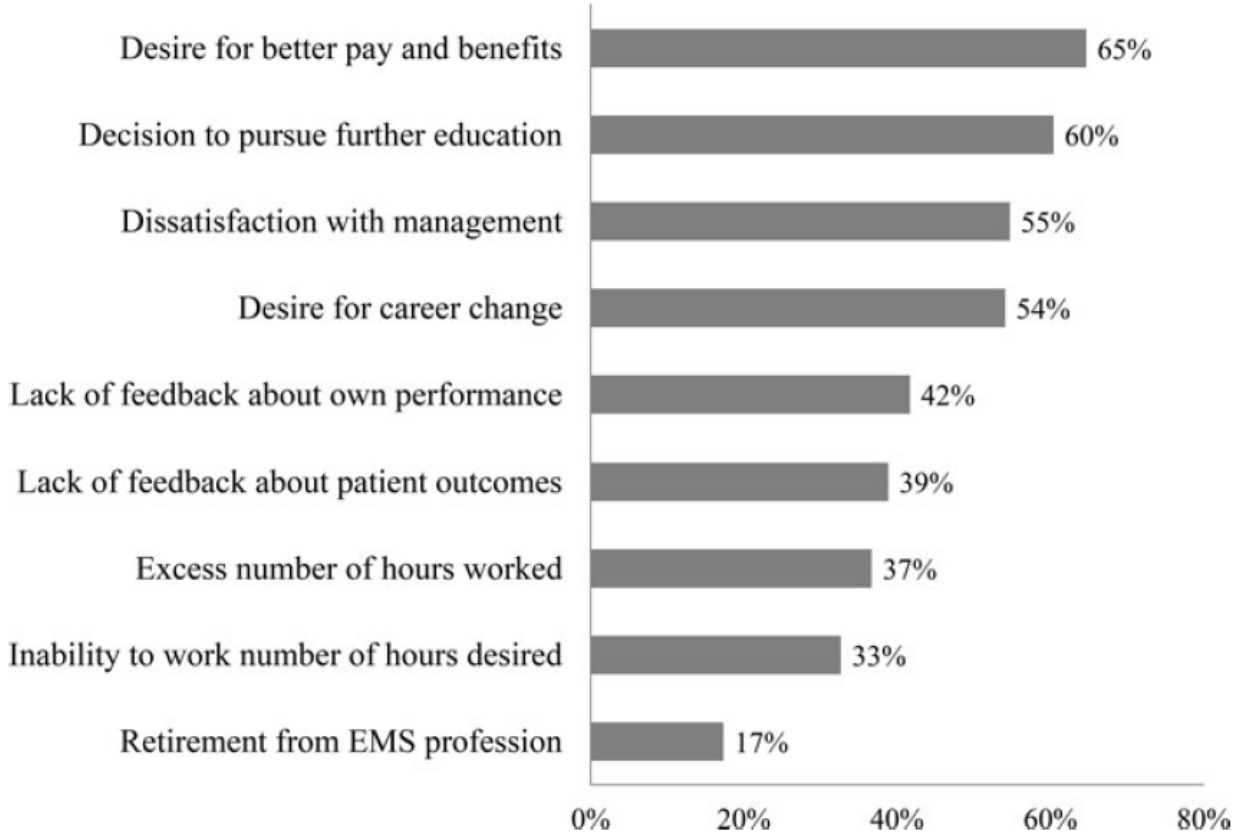


Figure: Percentage reporting that each factor was important in their decision to leave EMS. *Rivard et. al. PEC 2018; 22:28-33*

Changed since COVID…

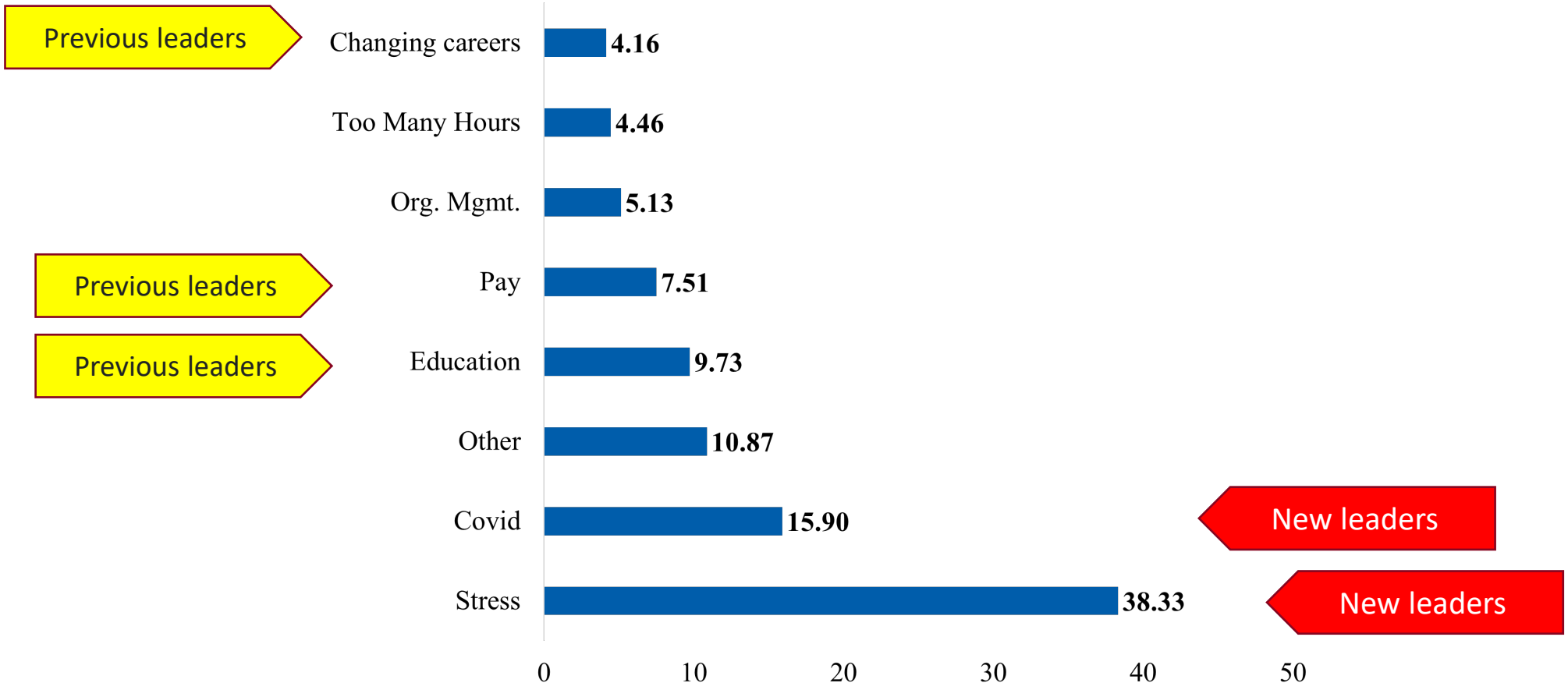


Figure 1. Reported reasons for leaving the EMS profession since COVID-19 (%). Abbreviations: Org. Mgmt., Organizational Management.

Work Burden on EMS Clinicians

In one study, 75% of respondents report > 41 hours or more of average work hours

To make ends meet, they depend on:

57%
Overtime

56%
Additional jobs

71%
Either OT or additional jobs

Rivard et. al. PEC 2020;24:657–664

Does this make people leave?

TABLE 3. The unadjusted and adjusted odds ratios of dissatisfaction with job and intentions of leaving the profession for respondents who depended on additional income to make ends meet

	Unadjusted OR (95% CI)	Adjusted OR (95% CI)*
Dissatisfied with EMS job	2.29 (1.97 – 2.66)	1.92 (1.64 – 2.44)
Intending to leave EMS within 1 year	1.49 (1.28 – 1.72)	1.32 (1.14 – 1.54)
Intending to leave EMS within 5 years	1.27 (1.18 – 1.37)	1.16 (1.07 – 1.25)

*Controlling for sex, age, race, certification level, agency type, employment status, and urbanicity.
Abbreviations- OR: Odds Ratio; CI: Confidence Interval.

Dependence on additional income to make ends meet leads to higher odds of dissatisfaction and intention to leave EMS

Rivard et. al. PEC 2020;24:657–664

Tied to Wellness and Mental Health

- Fatigue
- Injury
- Violence
- Burnout
- Suicide

Fatigue in EMS

- Poor sleep quality and fatigue are common
- 55% EMS clinicians were fatigued
- Association of fatigue with injury, adverse events and compromised safety!

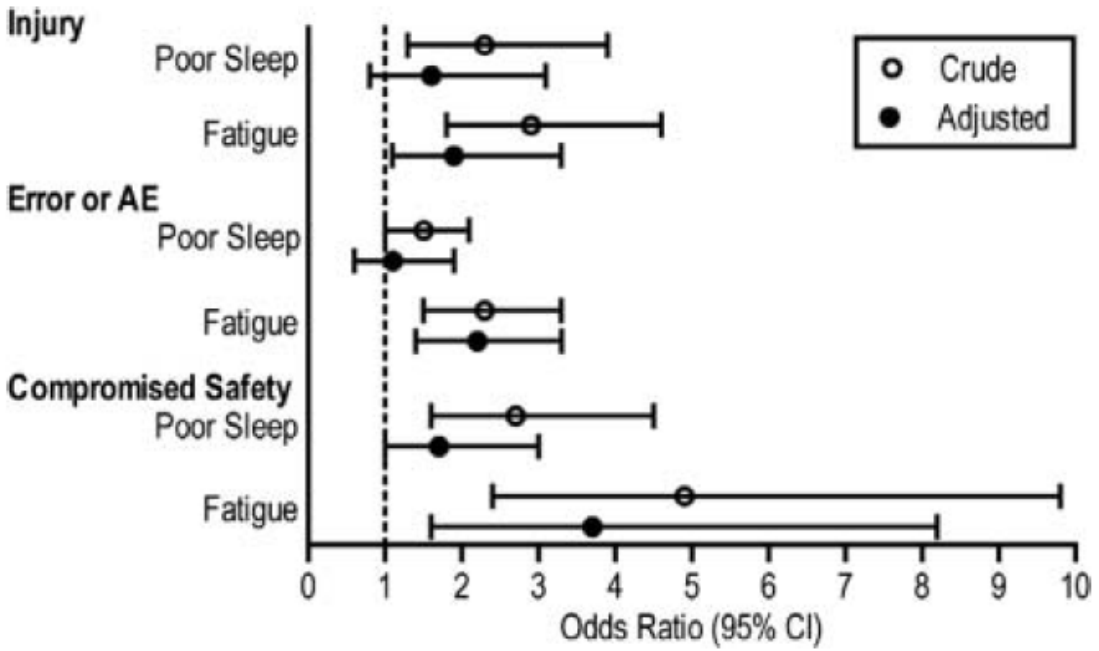


FIGURE 2 , Crude and cluster/confounding-adjusted odds of safety outcomes associated with poor sleep and fatigue. Adjusted odds ratios (ORs) are from Table 3. These ORs were adjusted for clustering within agencies and confounding. AE = adverse event; CI = confidence interval.

Patterson et. al. PEC 2012; 16:1, 86-97

Injury assessment

National Electronic Injury Surveillance System (NEISS-Work)- identifies injuries treated in the participating hospitals from admissions information and ED chart review by a records abstraction.

Table 1: Demographics of injured EMS workers treated in US hospital emergency departments, 2019

	Number of injuries[a]	95% confidence interval	Percent
Total	21,500	(13,400, 29,600)	100
Sex			
Male	12,600	(7,500, 17,700)	58
Female	9,000	(5,200, 12,800)	42

3-4%
Population of 500k -700k providers

Injury

- Cross-sectional evaluation of EMS clinicians (n=13,218) and their reported injuries on the job (all types)
  - Injury rate of ***27%*** in past 12 months.

Table 2 Prevalence of occupational hazards and mitigation strategies

Occupational safety concern	n (%)
Any occupational injury in the past 12 months	3608 (27)
Type of occupation injury* (>1 possible)	
Back injury	2220 (17)
Needlestick	227 (2)
Other	1831 (14)

Powell JR et. al. Occup Environ Med 2023;80:644–649

Injuries decreased with good support!

Table 3 Factors associated with any occupational injury in the past 12 months

	Occupational injury	
Variable	**Unadjusted OR (95% CI)**	**Adjusted OR (95% CI)**
Patient lifting policy		
No	1.00 (referent)	1.00 (referent)
Yes	0.67 (0.62, 0.73)	0.73 (0.67, 0.80)
Patient lifting training		
No	1.00 (referent)	1.00 (referent)
Yes	0.60 (0.55, 0.65)	0.74 (0.67, 0.81)
Use of powered stretcher		
Never	1.00 (referent)	1.00 (referent)
Sometimes	1.08 (0.96, 1.21)	1.07 (0.95, 1.21)
Always	0.92 (0.83, 1.02)	0.87 (0.78, 0.97)

Lifting Policy

Lifting Training

Powered Stretcher

Violence

- Estimates of career prevalence of violence range from ***57-93%*** in EMS professionals reporting experiencing an act of verbal or physical violence.

  (Gormley et. al. PEC 2016: 20(4):439).

- This was mirrored in a Canadian study (75%)

  (Bigham PEC 2014;18(4), 489)

Violence

Cross-sectional evaluation of EMS professionals (n=13,218) and their reported ***64%*** of EMS professionals experience occupational violence.

Table 2. Types of violence experienced by EMS providers reporting occupational violence, (64%, n=8,444).

Type(s) of Violence Experienced	Frequency (%)
Cursing	8,288 (97.6%)
Punching	3,687 (43.8%)
Spitting	3,290 (39.1%)
Biting	1,054 (12.7%)
Struck with an object	1,076 (12.9%)
Stabbing + Shooting	299 (3.6%)

Powell JR et. al. Occup Environ Med 2023;80:644–649

Burnout

High prevalence of burnout in EMS professionals

National sample of 10,540 EMS professionals.

Effected in many dimensions

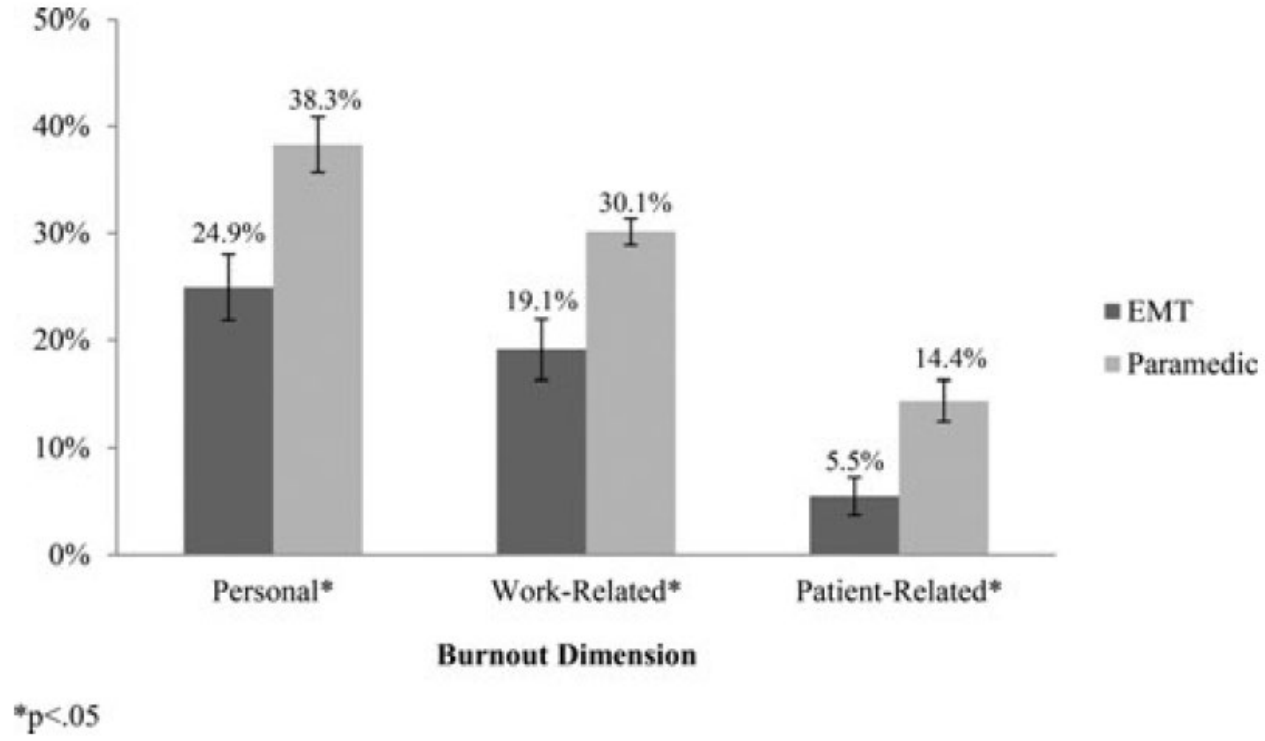
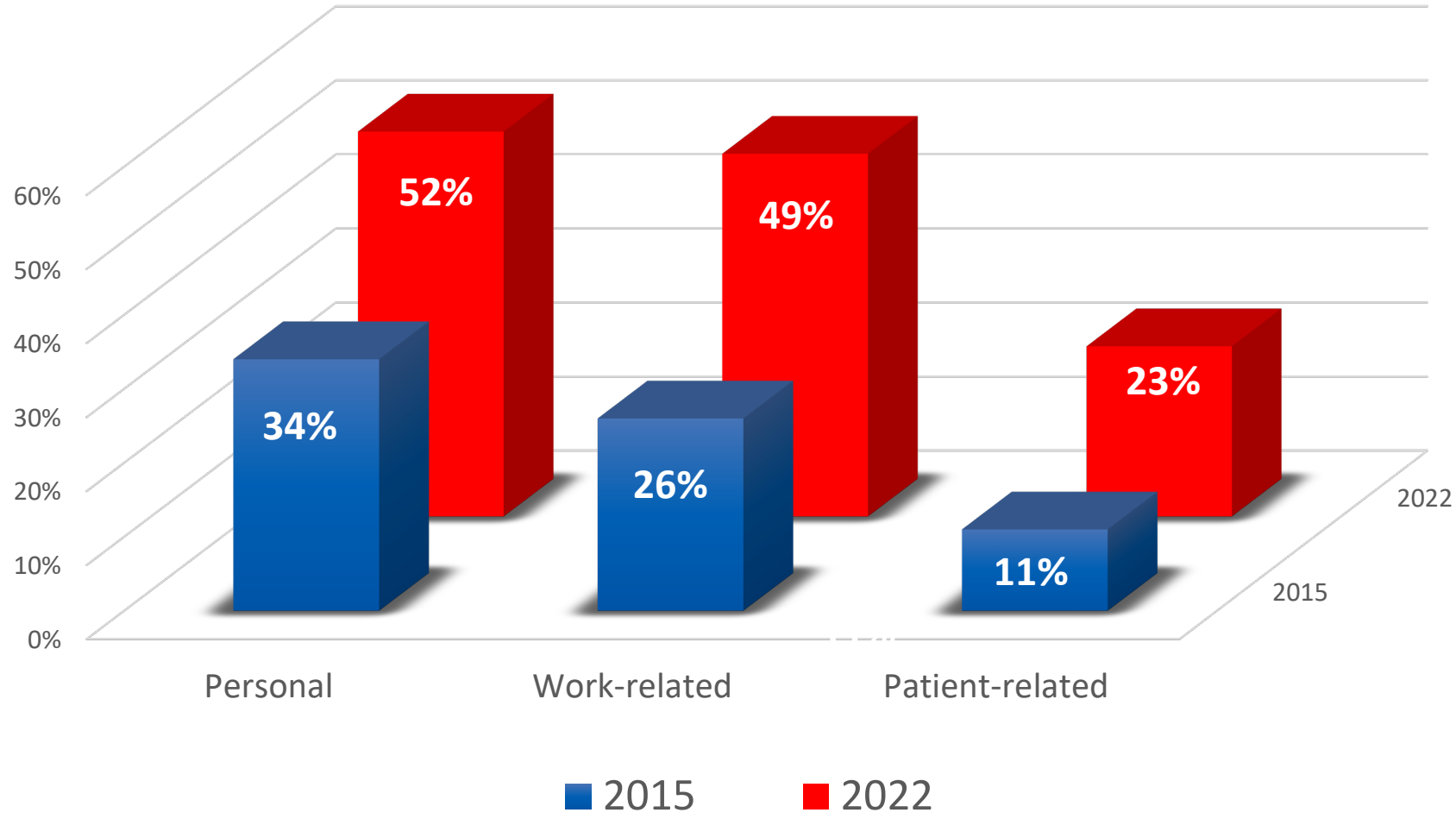


FIGURE 1. Prevalence of burnout by dimension among nationally-certified EMTs and paramedics.

Crowe et. al. 2018; 22(2), 229-236

Post COVID Burnout Rates



Associated with Leaving

	Odds Ratio (95% CI)	p-value	
10 or More Sickness Absence Days in Last 12 Months	1.96 (1.32-2.93)	<0.001	✓
Likely to Leave EMS Profession within Next 12 Months	2.85 (2.01-4.05)	<0.001	✓

Suicide Risk

- Not many studies on EMS clinicians' risk of suicide from occupational exposure.
- Fire fighters who have witnessed 1 or more deaths by suicide have an increased adjusted odds of
  - suicidal ideation (OR 1.71)
  - suicide attempts (OR 2.00).
- Firefighters with >11 suicide exposures had a lifetime suicide ideation rate of 61%

Stanley et. al. J Affective Disord. 2015;187, 163

Suicide

Manual evaluation of Arizona death registry of all adults to identify records with an occupations that included an EMT certification.

Mortality OR = 2.43 for EMT compared to non-EMT.

TABLE 1. Demographic and event characteristics between EMT and Non-EMT populations

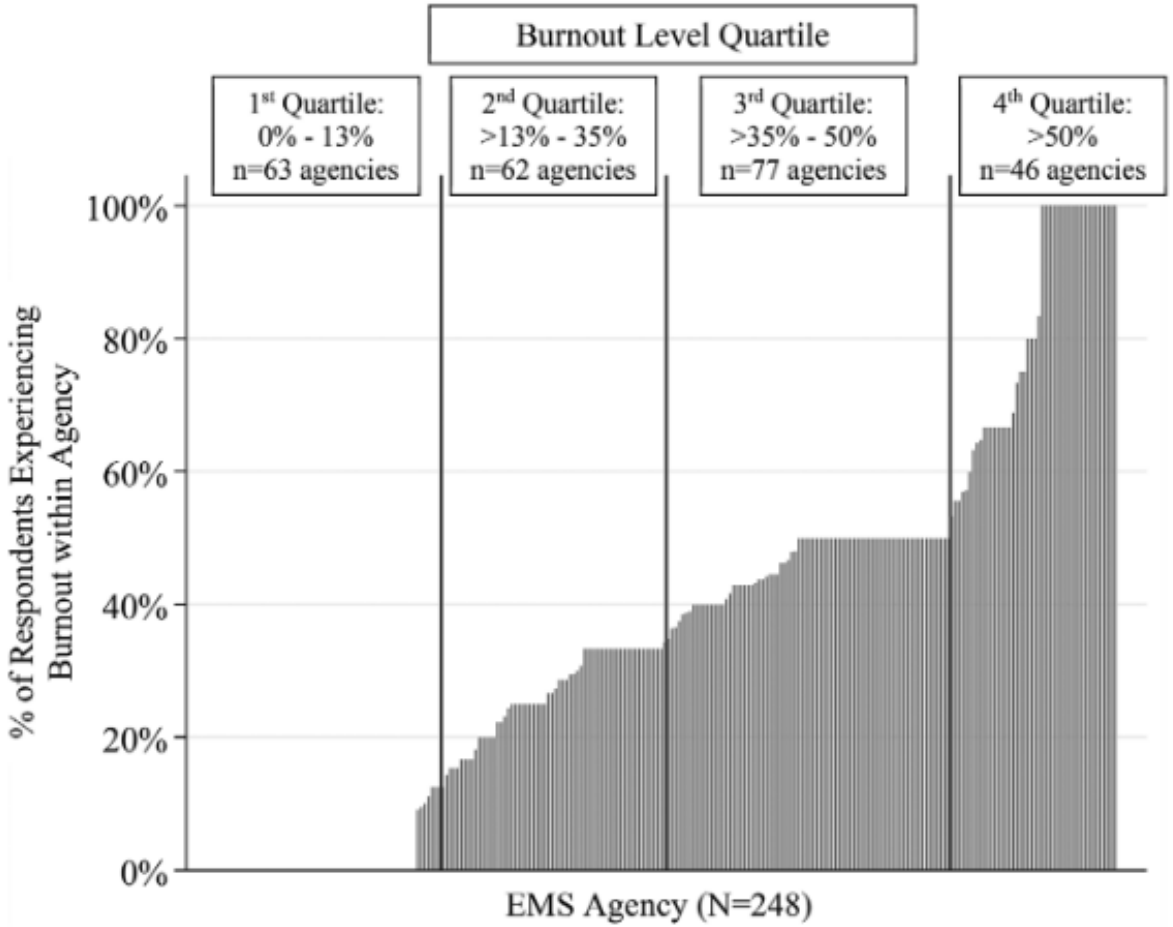
	Non-EMT, *N* (%)	EMT, *N* (%)	Chi-square p-value
Total deaths	349,793	1,205	
Cause of death: Suicide	7,775 (2.2%)	63 (5.2%)	<0.0001
18–34	12,298 (3.5%)	102 (8.4%)	
35–54	36,194 (10.3%)	191 (15.8%)	
55–74	110,621 (31.6%)	381 (31.6%)	
>75	190,680 (54.5%)	531 (44.0%)	
Male	184,987 (52.8%)	1,127 (93.5%)	<0.0001
White non-Hispanic	280,766 (80.2%)	972 (80.6%)	

Vigil et. al. 2019; 23(3), 340-345

You can have a positive impact!!

Burnout varies by Agency

Percent of respondents experiencing burnout by agency



Crowe et. al. 2020 JACEPOPEN 1; 6-16

WE CAN MAKE A DIFFERENCE!

Protective:

- Feedback from medical directors
- Participatory environment
- Supportive culture
- Training

TABLE 5 Job resources reported by respondents and their association with work-related burnout

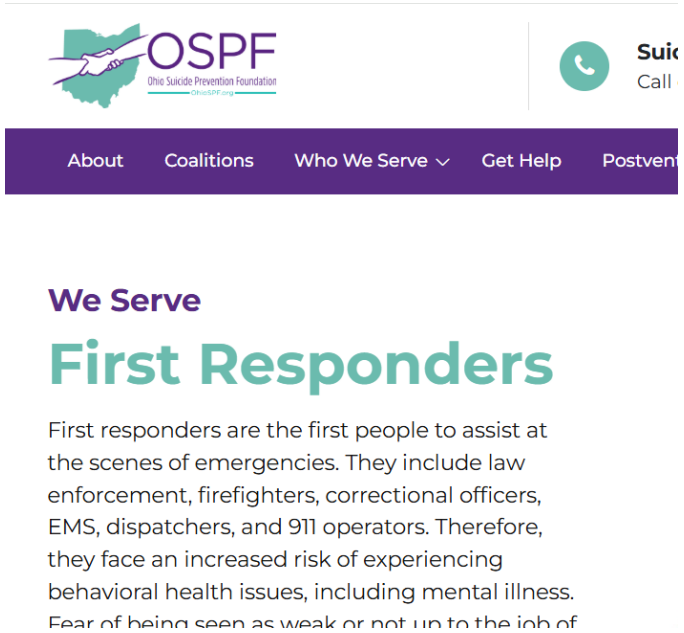
Job resources	% (n)	Adjusted OR (95% CI)[a]
Performance feedback		
Medical director (Yes)	33.6 (425)	0.46 (0.34–0.61)*
Supervisor (Yes)	58.5 (740)	0.36 (0.28–0.47)*
Participatory environment		
Personnel input is well received (Yes)	60.4 (764)	0.25 (0.20–0.33)*
Supportive environment		
Management support (Yes)	67.1 (848)	0.20 (0.15–0.27)*
Respect from supervisor (Yes)	87.0 (1101)	0.19 (0.13–0.28)*
Respect from co-workers (Yes)	93.3 (1178)	0.22 (0.13–0.36)*
Knowledge		
Adequate orientation (Yes)	58.5 (741)	0.36 (0.28–0.45)*
Adequate training (Yes)	67.6 (856)	0.35 (0.27–0.45)*

Crowe et. al. 2020 JACEPOPEN 1; 6-16

Support our teams!

ResponderSTRONG NDRI Ventures

Ohio Suicide Prevention Foundation



National Volunteer Fire Council

SHARE THE LOAD™
A SUPPORT PROGRAM FOR FIREFIGHTERS AND EMTs

Support through *PEER SUPPORT*!

- Peer support generally refers to a variety of formal/informal social or emotional assistance to a peer
- Formal peer support often led by trained peer supporters, each with their own training courses, tools, and goals
- Goal:
    - Empathetic ear
    - Low-level psychological intervention
    - Identify peers at risk to themselves/others
    - facilitate a conduit for professional help

Peer Support is the First piece

- First responder Evidence?
  - Really not great due to low fidelity (Bowers 2025)
  - Does address stigma, increasing engagement, and offer cultural fit
- We do know!
  - 49 RCT's of peer support MH services showed a small, but significant, effect on personal recovery, anxiety symptoms
  - 2 RCT's independent of hospital services enhanced self-advocacy, no benefit on clinical outcomes

PEER SUPPORT – DO IT!

- A necessary part of team support!
- Lots of Programs:
  - IAFF,
  - First responder foundation
  - and much more!
- Highlights there is benefit!

Thank You

Questions?

THE OHIO STATE UNIVERSITY
WEXNER MEDICAL CENTER