The National Academies of SCIENCES • ENGINEERING • MEDICINE

Virtual Meeting August 9, 2021

Personal Protective Equipment (PPE): Perspectives from Emergency Medical Services (EMS)

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Disclaimer

The views expressed in this presentation are those of the author and do not necessarily reflect the official policy or position of Leidos, the Navy, the U.S. Department of Defense nor the U.S. Government.

I have no conflicts of interest.

Agenda

In the next five minutes we will cover

- System
- Occupational risks for paramedicine clinicians
 - Fatality rates
 - Non-fatal injury rates
- Violence
- COVID
- Recommendations

Paramedicine clinicians respond to 40 million calls for assistance each year in the U.S. This makes them a vital component of the healthcare, public health, disaster operations and public safety sectors.



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Annual fatality rate per 100,000 workers in the U.S. for all causes



Maguire BJ, Hunting KL, Smith GS, Levick NR. Occupational Fatalities in EMS: A Hidden Crisis. *Annals of Emergency Medicine*. 2002; 40(6): 625-632.

Occupational fatality rate per 100,000 personnel for FDNY firefighters (Fire) and FDNY EMS clinicians – January to August 2020



Maguire BJ, O'Neill BJ, Gerard DR, Maniscalco PM, Phelps S, Handal KA. Occupational fatalities among EMS clinicians and firefighters in the New York City Fire Department; January to August 2020. *JEMS*. November 19, 2020.

Non-fatal Occupational Injury Rates per 100 FT workers per year in U.S.



Maguire BJ, Hunting KL, Guidotti TL, Smith GS. Occupational Injuries Among Emergency Medical Services Personnel. *Prehosp Emergency Care*. 2005; 9: 405–411.



Annual fatality rate per 100,000 workers in the U.S. for assaults



Maguire BJ, Hunting KL, Smith GS, Levick NR. Occupational Fatalities in EMS: A Hidden Crisis. *Annals of Emergency Medicine*. 2002; 40(6): 625-632.



Maguire BJ, Hunting KL, Guidotti TL, Smith GS. Occupational Injuries Among Emergency Medical Services Personnel. *Prehosp Emergency Care*. 2005; 9: 405–411.



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Infectious disease / COVID











COVID-19 deaths per 100,000 persons for EMS, fire, police, nurses and physicians in the U.S.



Maguire BJ, O'Neill BJ, Phelps S, Maniscalco PM, Gerard DR, Handal KA. COVID-19 fatalities among EMS clinicians. *EMS1*. September 24, 2020.

COVID cases per 1,000 for FDNY Fire and EMS personnel - 2020



The relative risk of infection was 20% higher for EMS than for firefighters.

Prezant DJ Z-OR, Schwartz T, et al,. Medical Leave Associated With COVID-19 Among Emergency Medical System Responders and Firefighters in New York City. *JAMA-Open*. 2020;3(7):e2016094.

Two urgent questions

- Does current PPE put paramedicine clinicians at increased risk?
 - Does body armor that was developed for other professions provide any safety for EMS?
 - Does infectious disease PPE provide protection or increase risks for EMS?
- Can we ask paramedicine clinicians to continue to use PPE?

Recommendations

- EMS is one of the most dangerous professions in America yet there has been almost no dedicated research funding.
 - Research funds are desperately needed. In addition, any funds that are made available for this research should be earmarked to go to EMS researchers.
 - Australia has 30 times the per-capita number of paramedic PhDs than the U.S. Paramedic PhDs are a critical ingredient for the development of the profession.
 - One of the primary reasons the risks are so high and there is so little research on these life-threatening topics, is because there has been little funding and few researchers.





Questions









"Never doubt that a small group of thoughtful, committed citizens can change the world. Indeed, it is the only thing that ever has."

Margaret Mead

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For a full list of the author's publications, go to: <u>https://sites.google.com/site/drbrianjmaguire/publications</u>

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