Mississippi First Responders Work-Related Opioid Exposure Survey

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BACKGROUND
Accidental overdose

- Absorbed through the skin/inhaled
- A single particle can cause an overdose
The increasing nonmedical use of powerful synthetic opioids presents a special risk for first responders.
METHODS

SurveyMonkey

MSDH

Law enforcement

EMS
OBJECTIVES

To determine the frequency of harmful health effects to first responders from occupational exposure to opioids.

To evaluate first responders’ knowledge of existing protective measures against accidental opioid exposure and overdoses.

To measure the use of protective work equipment and naloxone administration in cases of accidental opioid exposure and overdose.
RESULTS

- Demographic information
- Exposure and health effects
- Altitude & Awareness
- Exposure prevention training & use
- Opioid-related mental health issue
- Naloxone in emergency/overdose situation.
Demographic information
(N=366)

- Male: 86.5%
- Non-Hispanic: 96.0%
- White: 90.4%
- Attend college: 88.9%
- Full-time: 84.4%
- >5 years: 70.7%
Please indicate the department where you work the most hours as a first responder:

- Police: 47.5%
- EMS: 35.2%
- Fire: 11.2%
- Other: 5.5%
- Rescue: 0.5%
Exposure to opioids

- Exposed to opioids: 71.7%
- Health effects: 99.4%

How you exposed:
- Accidental injection: 0.3%
- Accidental ingestion: 1.3%
- Inhalation: 24.3%
- Skin Contact: 36.5%
What substances you were exposed to:

- Prescription pain medicines: 62.2%
- Unknown: 44.4%
- Combination of opioids and...: 33.0%
- Heroin: 29.8%
- Combination of different...: 27.9%
- Methadone: 24.4%
- Carfentanil: 2.8%
Attitude and awareness

Are you aware of the NIOSH/CDC recommendations for preventing occupational opioid exposures of first responders?

30.1% Yes

No
How concerned are you about developing health effects from exposure to opioids through work.
### Training /policy

<table>
<thead>
<tr>
<th>Question</th>
<th>Yes</th>
<th>No</th>
<th>Don't know</th>
</tr>
</thead>
<tbody>
<tr>
<td>Does your employer have a written Protection Program Policy (PPP) on drug overdose responses?</td>
<td>42.0%</td>
<td>33.5%</td>
<td>24.5%</td>
</tr>
<tr>
<td>Does your employer offer training on how to use equipment and procedures to prevent opioids exposure?</td>
<td>59.2%</td>
<td>30.9%</td>
<td>9.9%</td>
</tr>
</tbody>
</table>
Type of drug overdose response training

Lectures: 53.1%
Videos: 41.6%
Online training
Written materials
In-person training
Quiz

27.9%
Offer nothing
Received training on when to wear protection to prevent exposure to opioids

- Gloves: 73.2%
- Safety glasses/goggles: 50.0%
- Protective clothes: 44.3%
- Respirators: 38.3%
- No training: 24.1%
Do you wear any of the following personal protection to prevent exposure to opioids?

<table>
<thead>
<tr>
<th>Protection Type</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gloves</td>
<td>90.0%</td>
</tr>
<tr>
<td>Safety glasses/goggles</td>
<td>29.6%</td>
</tr>
<tr>
<td>Protective clothes</td>
<td>19.0%</td>
</tr>
<tr>
<td>Respirators</td>
<td>12.2%</td>
</tr>
<tr>
<td>None of them</td>
<td>9.4%</td>
</tr>
</tbody>
</table>
State specific questions

• Income
• Mental health (ever, type)
• Training content
• Naloxone (training, access, frequency, to whom)
What is your household annual income level?

- $70,000+: 43.9%
- $30,000-$49,999: 26.7%
- $50,000-$69,999: 22.4%
- <$30,000: 7.1%
Mental health

Have you ever experienced any mental health issues after occupational exposure to opioids?

- None of them: 59.6%
- Anxiety: 7.5%
- Disturbing images: 7.8%
- Depression: 8.2%
- Sleep disturbance: 12.2%
- Irritability: 18.8%
Content of training

<table>
<thead>
<tr>
<th>ANSWER CHOICES</th>
<th>RESPONSES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Recognizing opioid overdose</td>
<td>52.5%</td>
</tr>
<tr>
<td>Performing rescue breathing and chest compression</td>
<td>43.9%</td>
</tr>
<tr>
<td>Discussing different types of opioid substances and their substance-specific</td>
<td>37.3%</td>
</tr>
<tr>
<td>effects</td>
<td></td>
</tr>
<tr>
<td>Training to avoid risks associated with exposure to potent synthetic opioids,</td>
<td>32.5%</td>
</tr>
<tr>
<td>such as carfentanil</td>
<td></td>
</tr>
<tr>
<td>Discussing state laws and regulations regarding first response to opioid</td>
<td>31.0%</td>
</tr>
<tr>
<td>overdose, including the Good Samaritan Law</td>
<td></td>
</tr>
<tr>
<td>Acquiring knowledge about different formulations of naloxone</td>
<td>28.6%</td>
</tr>
<tr>
<td>I have not received any training</td>
<td>26.3%</td>
</tr>
<tr>
<td>None of the above</td>
<td>16.5%</td>
</tr>
</tbody>
</table>

Total Respondents: 255
Naloxone: Opioids overdose antidote

Given the rapid rise of opioid overdoses, naloxone is allowed without a written prescription in emergency.

Naloxone works by blocking or reversing the effects of opioids.
Naloxone

How often do you administer naloxone?

- Rarely: 12.9%
- Always: 13.7%
- Most of the time: 15.7%
- Never: 57.6%

Receive training: 54.9%
Access in emergency: 53.3%
To whom do you administer naloxone?

- Opioid users suffering from acute overdose: 27.1%
- Peers suffering from accidental occupational exposure: 4.7%
- Both of them: 23.1%
- None of them: 45.1%
DISCUSSION

Mean Age
44.7 years

Working hours per week
50.8 hours

Correlation
$r=0.229^{**}$
P=0.001

$y = -0.4276x + 68.231$
$R^2 = 0.0524$
Frequency

EVER have opioids exposure in work **28.3%**

Average exposure times last year **12.4**

Average exposure times per week **2.5**
An N95 respirator is more effective than a surgical mask at protecting workers from exposure to opioids.

A properly fitted respirator can protect workers from on-the-job exposure to opioids.
Use of protection

- 44.31% responders were not required to attend training about protection from opioid exposure.
- 71.8% employer provide personal protection to use in responding to possible exposure.

Requirement is needed

- N95 filtering face piece (16.7%) and surgical mask (8.9%) are required to use when in close contact with a person who is suspected of experiencing an overdose of opioids.

Provide more protection
CONCLUSIONS

- This pilot project evaluated the exposure and health effects of opioid drugs among first responders in Mississippi.

- The unique state-specific information will provide an insight of opioid prevention strategies as well as policy making in Mississippi.
Acknowledgements

Mississippi Law Enforcement Association

Mississippi Emergency Medical Service

Mississippi State Department of Health Pharmacy