



## Recommendations on Selection and Use of Personal Protective Equipment and Decontamination Products for First Responders Against Exposure Hazards to Synthetic Opioids, Including Fentanyl and Fentanyl Analogues

### I. BACKGROUND

Increased illicit use of opioids, including synthetic opioids such as fentanyl and its analogue carfentanil, is a source of increased risk to responders. Most routine encounters between patients or detainees and EMS or law enforcement do not present a significant threat of toxic exposure. While there are anecdotal reports of public safety personnel being exposed to opioids during operations, they are largely unconfirmed. To proactively address the potential risks, this document establishes guidance for personal protective equipment selection and use, decontamination, detection, and medical countermeasures for first responders who may be exposed to opioids in the course of their occupational activities. Throughout the remainder of this document, the term synthetic opioids will be used to include fentanyl, fentanyl analogues, morphine analogues, the U-series opioids, and others.

Synthetic opioids (sufentanil, lofentanil, carfentanil, U-47700, and others) are highly toxic organic solids (UN 2811). Synthetic opioids may be found as powders, liquids, nasal sprays, and pills. The particulate size of synthetic opioid powders typically ranges from 0.2 to 2.0  $\mu\text{m}$ , and the powders are easily aerosolized. The powders are both water and lipid soluble and present primarily a respiratory hazard. A secondary dermal hazard exists if there is direct skin contact with large bulk amounts of concentrated threat materials.

Powder-like substances can become airborne and present a respiratory hazard, particularly during activities such as “burping” containers of potential narcotics or “brushing” powdered residues from surfaces. Therefore, during encounters involving these types of materials, actions must be taken to avoid such aerosolization. Covering, wetting or leaving containers unopened are essential safety precautions. Use of proper personal protective equipment and standard safe work practices to prevent inhalation of powders and to minimize direct skin contact with residues should be instituted as soon as the potential presence of such materials is suspected.

*The InterAgency Board for Equipment Standardization and Interoperability (IAB) is a voluntary collaborative panel of emergency preparedness and response practitioners from a wide array of professional disciplines that represents all levels of government and the public safety sector. Based on direct field experience, IAB members advocate for and assist in the development and implementation of performance criteria, standards, and test protocols, and technical, operating, and training requirements for all-hazards incident response equipment with a special emphasis on Chemical, Biological, Radiological, Nuclear, and Explosive (CBRNE) issues.*

Fentanyl and analogues are water soluble, so expedient decontamination (rinsing) of any contacted areas with water is advisable. Fentanyl in its hydrochloride form (the most common street form) is more soluble than the citrate form (medical grade). Both are more soluble than the free base. Consider adding soap to the wash water to account for the slightly soluble free base. Splashing should be kept to a minimum to avoid aerosolization of the materials. Do not use bleach, alcohol-based solutions, or high pH soaps, as they all may enhance dermal absorption of synthetic opioids.

Upon arrival on scene, if there are indicators that you may be entering a clandestine lab of any type, K-9 assets should not be employed. Should you encounter suspected synthetic opioids, remove the K-9 from the area.

The common production methods for synthetic opioids are available for responder awareness within the Laboratory Identifier Tool of the Emergency Response Decision Support System (available free to emergency response personnel in the U.S. and partner countries at [www.chemicalcompanion.org](http://www.chemicalcompanion.org)).

Numerous agencies have produced recommended guidelines for risk assessment and personal safety when dealing with these materials. At times, these recommendations appear to focus on a specific area of public safety response and thus may appear to conflict. To simplify recommendations, the IAB is providing guidance for specific public safety response functions in this document.

On 28 November 2016, the U.S. Department of Health and Human Services (HHS) Centers for Disease Control and Prevention (CDC)'s National Institute for Occupational Safety and Health released "Fentanyl: Preventing Occupational Exposure to Emergency Responders." The most current guidance is available at: <https://www.cdc.gov/niosh/topics/fentanyl/risk.html>. This guidance is based on potential hazards to law enforcement, public health workers, and first responders who may accidentally come into contact with this threat. The guidance includes information related to the performance of a risk assessment and recommended personal protective equipment (PPE).

## II. PERSONAL PROTECTIVE EQUIPMENT RECOMMENDATIONS

The IAB recommends applying standard specifications, design attributes, test methods, and performance criteria when selecting PPE for first responders who may be occupationally exposed to synthetic opioids. These recommendations are intended to complement and supplement information provided by the CDC/NIOSH and the DEA, enabling responder organizations to make effective procurement and deployment choices addressing a wide range of missions, response environments, and varied work conditions.

### WARNING

*Personal protective equipment alone is not sufficient to ensure protection from synthetic opioids. Each organization is responsible for conducting its own risk assessment to determine the appropriate PPE for its individual members. In addition, each organization must develop **specific standard operating procedures** related to the **selection, use** (including proper donning and doffing), and **care** (decontamination, possible reuse, or disposal) of PPE, and **repeatedly train** its members in these procedures.*

Recommendations for PPE protection levels for emergency response personnel are based on a risk level determined by two major factors: (1) the PPE wearer's possible exposure to synthetic opioids, and (2) the wearer's operational response function. Please note that the potential exposure risk levels, defined in **Table 1**, are dynamic and may evolve throughout the response, requiring constant monitoring to ensure PPE remains commensurate with the risk.

**Table 1. Definitions of Exposure Risk Levels and Operational Response Functions**

| Potential Synthetic Opioid Exposure Risk     | Definition   |
|--|--|
| Minimal (no visible product)                 | Law enforcement, fire, or EMS response to a suspected opioid overdose with no visible product evident.   |
| Moderate (small volume)                      | Law enforcement, fire, or EMS response to a suspected opioid overdose with a small volume of known or suspected product evident. Law enforcement operation where small volumes of suspected materials are confiscated.   |
| Moderate (large volume)                      | Response to a suspected opioid storage or distribution facility, with or without patients.   |
| High (milling lab) [particulates]            | Response to a suspected opioid milling operation where synthetic opioids are mixed with binders or other illicit materials to produce a street-level product. There is a high likelihood that threat materials will be suspended in the ambient air.   |
| High (production lab) [chemicals]            | Response to a suspected opioid production laboratory, which potentially also includes a milling operation, where the laboratory produces the illicit materials using any combination of chemical precursors. There is a high likelihood that threat materials will be suspended in the ambient air.  |
| Operational Response Function                | Definition   |
| Emergency Medical Service (EMS) Patient Care | Emergency medical services commonly respond to incidents involving potential opioid overdoses. Patient care is the primary operational responsibility.   |
| Law Enforcement (Patrol)                     | The variety of positions in law enforcement make exposure unique to the separate areas and job responsibilities. Officers should assume that direct contact with a synthetic opioid product is possible. Law enforcement functions such as detention, investigation, and/or arrest of suspects are the primary operational responsibilities. Please note that law enforcement officers often have EMS/first response functions that may affect their choice of PPE (see EMS Patient Care for appropriate PPE). |
| Structural Fire                              | The structural fire section is focused on a fire-based response which results in the identification of a suspected synthetic opioid, incidental to a fire, with fire suppression being the primary operational responsibility.   |
| Decon Operations                             | The primary function of decon operations personnel is decontaminating people, equipment, and property. For small-scale incidents with minimal to moderate risk of exposure, decontamination operations may not be required, and therefore it is listed as not applicable in <b>Table 2</b> .   |

| Operational Response Function      | Definition  |
|------------------------------------|---|
| Special Operations                 | Special operations in the context of this paper includes teams formed for specific responses to hazardous materials, bombs, and clandestine laboratories, technical rescues, and potential hostage situations. The deployment of special operations teams to an event potentially involving synthetic opioids may also include other hazards specific to the nature of the operation, and thus require other appropriate PPE. |
| Investigations/Evidence Collection | The investigation and evidence collection phase of an incident may take place prior to the hazard being completely mitigated; therefore, recommended protection levels depend on the ambient threat at the time of entry. The primary responsibilities for investigations and evidence collection personnel include intelligence gathering, product identification, and packaging/securing evidence.                          |

These two major factors combine to produce one of six possible risk-based PPE levels:

- **Low Risk PPE** is dictated by the nature of service provided, (e.g., EMS, and the routine exposure precautions for all patient contact dictated by CDC guidance and the state/local jurisdiction).
- **Moderate Risk, Small Volume PPE** is an increased protection level corresponding to increased likelihood of responder exposure to a small volume of threat materials.
- **Moderate Risk, Large Volume PPE** is an increased protection level corresponding to increased likelihood of responder exposure to a large volume of threat materials.
- **High Risk (Particulates) PPE** is a high level of recommended protection, corresponding to high likelihood of responder exposure to particulates.
- **High Risk (Chemical) PPE** is the highest recommended protection level, corresponding to high likelihood of responder exposure to chemicals and particulates.
- **Firefighting PPE** corresponds to the fire threat as the predominant hazard to the responder.

Each organization should determine the risk level based on an assessment of the specific mission responsibilities and work environment that may include the presence of specific hazards and the likelihood of exposure during operations. This risk assessment should consider:

- The amount and reliability of available information regarding the potential presence of synthetic opioids
- The first responder’s expected proximity to bulk materials
- The duration of the first responder’s proximity to materials

**A. PPE Selection**

The PPE recommendations in **Table 2** and **Table 3** are given in terms of a garment type (body protection), gloves, and eye/face/respiratory protection devices.

Table 2. Recommended Personal Protective Equipment by Operational Response Function

| Potential Synthetic Opioid Exposure Risk                              | Operational Response Function |                          |                 |  |                                     |                  |
|---|-------------------------------|--------------------------|-----------------|--|-------------------------------------|------------------|
|   | EMS Patient Care              | Law Enforcement (patrol) | Structural Fire | Special Operations (Hazmat, Technical Rescue, SWAT, EOD, etc.) | Investigations/ Evidence Collection | Decon Operations |
| Minimal (no visible product)  | I                             | I                        | III             | I  | I                                   | N/A              |
| Moderate (small volume; known or suspected product visible; patients) | II                            | II                       | III             | II   | II                                  | N/A              |
| Moderate (large volume storage/distribution)                          | IV                            | IV                       | III             | IV   | IV                                  | IV               |
| High (milling lab) [particulates]                                     | Do Not Enter                  |                          | III             | V  | V                                   | V                |
| High (production lab) [chemicals]                                     | Do Not Enter                  |                          | III             | VI   | VI                                  | V                |

Note: PPE requirements will be determined by the situation. Standard operating procedures may also be appropriate if the risk is acceptable.

As the principal hazard for exposure to synthetic opioids and their analogues is respiratory, some form of respiratory protection is recommended whenever there is moderate risk or higher. In all cases, first responders should wear some form of gloves to prevent potential transfer of opioid powders and residues to their bodies, where later re-aerosolization could cause subsequent exposure by inhalation or through mucous membranes. As the risk increases, full skin coverage is recommended for the same reason. Personal protective equipment recommendations for high-risk situations include full skin coverage provided by a certified ensemble that integrates suitable respiratory protection. Production laboratories may include various liquid chemicals; thus, in such cases, the ensemble must provide dermal and respiratory protection from vapors and liquids.

Where fire risks exist, the primary hazard present is assumed to be exposure to thermal and physical hazards. The recommended PPE is a protective ensemble consisting of structural fire fighting protective garments, helmets, hoods, gloves, and footwear worn with self-contained breathing apparatus (SCBA), which will afford an appropriate level of dermal and respiratory protection for all risk levels against synthetic opioids and their analogues. Specific recommendations are provided for each PPE category: garments, gloves, eye/face/respiratory protection devices, and footwear).

Table 3 describes the recommended PPE items in terms of their physical features and general performance characteristics. Several alternative configurations are suggested, along with approaches for their integration as an overall ensemble.

**Table 3.** Recommended Personal Protective Equipment Descriptions

| PPE Recommendations                             | Skin Protection  | Eye/Face/Respiratory Protection  |
|---|--|--|
| <b>Low Risk PPE (I)</b>                         | <ul style="list-style-type: none"> <li>Nitrile gloves, certified to NFPA 1999 (Single Use Examination Gloves)</li> <li>Uniform</li> </ul>  | <ul style="list-style-type: none"> <li>None</li> </ul>   |
| <b>Moderate Risk / Small Volume Hazard (II)</b> | <ul style="list-style-type: none"> <li>Nitrile gloves, certified to NFPA 1999 (Single Use Examination Gloves)</li> <li>Uniform</li> </ul>  | <ul style="list-style-type: none"> <li>P100 Filtering face piece respirator with safety glasses</li> </ul>   |
| <b>Fire Risk (III)</b>                          | <ul style="list-style-type: none"> <li>Structural fire fighting protective ensemble (garments, helmet, hood, gloves, and footwear), certified to NFPA 1971</li> </ul>  | <ul style="list-style-type: none"> <li>Self-contained breathing apparatus, certified to NFPA 1981</li> </ul>   |
| <b>Moderate Risk / High Volume Hazard (IV)</b>  | <ul style="list-style-type: none"> <li>Nitrile gloves, certified to NFPA 1999 (Single Use Examination Gloves)</li> <li>Uniform</li> <li>Long sleeve and/or sleeve covers</li> </ul>  | <ul style="list-style-type: none"> <li>P100 Filtering face piece respirator with non-vented or indirect vented goggles; Half mask air-purifying respirator (APR) with P100 filters and non-vented or indirect vented goggles; or full-facepiece APR with P100 filters</li> </ul> |
| <b>High Risk / Particulate Hazard (V)</b>       | <ul style="list-style-type: none"> <li>Multiple-use emergency medical protective ensemble (garments, gloves, and footwear), certified to NFPA 1999; or Class 4 or 4R protective ensemble (garment, gloves, footwear) certified to NFPA 1994</li> </ul> | <ul style="list-style-type: none"> <li>Full-facepiece APR with P100 filters; powered air-purifying respirator (PAPR) with high-efficiency particulate air (HEPA) filter; or self-contained breathing apparatus, certified to NFPA 1981</li> </ul>                                |
| <b>High Risk / Chemical Hazard (VI)</b>         | <ul style="list-style-type: none"> <li>Class 3, 3R or higher protective ensemble (garments, gloves, footwear) certified to NFPA 1994 or NFPA 1991</li> </ul>   | <ul style="list-style-type: none"> <li>Full facepiece chemical , biological, radiological, nuclear (CBRN) APR or CBRN PAPR; or self-contained breathing apparatus, certified to NFPA 1981</li> </ul>   |

The **Appendix** provides specific certifications, standards, and performance levels for recommended PPE. These should be reviewed before procuring any equipment. It also provides links to sites which provide assistance in locating certified products where applicable.

Tables 2 and 3 must be used together to determine the specifications for the respective PPE items.

**B. PPE Use – Donning**

The selected PPE must be donned in the correct order to provide effective protection against contact with synthetic opioids. The specific donning order depends on the PPE items comprising the ensemble, as the donning process is affected by how interfaces are formed. All PPE should be donned in accordance with an established SOP, under supervision, and with assistance as needed.

| WARNING   |
|---|
| <p><i>While taping may be recommended for some interfaces, it is important to use tape that does not degrade protection. For example, when tape is removed during doffing (particularly a tape with strong adhesive, such as duct tape) it can tear the garment. <b>Respirators should never be taped to the hood of a protective coverall or other PPE—this can disrupt the fit of the respirator, which affects its protective performance.</b></i></p> |

### C. PPE Use – Doffing

Extreme care must be exercised when doffing PPE following use where contamination has occurred or is suspected. A specific sequence for doffing the PPE must be followed, in an order that prevents any contamination transfer from the PPE to the wearer or others. The following considerations should be included in operating procedures for doffing ensembles with known or suspected contamination:

- The wearer must assume that any surface could be contaminated.
- All doffing must be performed under supervision and with assistance as needed.
- The *last items removed* should be the face/eye protection or respirator, and inner gloves.
- Any time the wearer or an individual assisting the wearer in the doffing process touches a potentially contaminated surface or PPE item, the wearer or assisting individual must rinse his/her gloved hands with an appropriate decontamination solution that does not cause the gloves to degrade.
- For some types of ensembles, it is possible to cut off the garment to permit easier doffing without contacting contaminated surfaces. If cutting of the garment is performed, then the procedures used for the cutting process should be accounted for in the garment's design (e.g., the placement of seams and closures).

### D. Additional Considerations in PPE Selection and Use

Each organization should ensure that it develops specific SOPs covering all elements of use including donning, doffing, and disposing of PPE following use. If PPE is contaminated, it must be isolated, contained, and disposed in accordance with federal, state, and local regulations, as applicable to the specific jurisdiction. Finally, all organizations that engage in response operations where responders may need to use PPE against synthetic opioid exposure must annually train their members in these procedures.

### E. Basis of IAB PPE Recommendations

Wherever possible, these PPE recommendations are based on recognized consensus standards that have been applied to PPE, including protective clothing and respiratory equipment. *Referenced standards and attributes should be part of any purchase specifications for selecting PPE.*

## III. DECONTAMINATION RECOMMENDATIONS

### A. Personal Decontamination

Areas of direct skin contact with any residue suspected of containing synthetic opioids should be immediately washed with copious amounts of water. As soon as feasible, skin surfaces should be additionally washed with soap and water. Use of alcohol-based hand disinfectants or hypochlorite bleach solutions must be avoided as they may enhance skin absorption of fentanyl analogues.

### B. PPE Decontamination

Contaminated PPE should be removed using techniques that prevent aerosolizing powdered contaminants while avoiding unprotected contact with the outer layers of the PPE. All items should be isolated for further decontamination or disposal. Consider decontaminating the surface of the PPE prior to doffing using a highly absorbent wipe, like Fibertect™, and a peracetic acid (5%) or hydrogen peroxide-based (10%) decontamination solution. Minimize the use of free chlorine-based decontamination solutions, such as dichloroisocyanuric acid, on PPE surfaces as they may deteriorate the PPE materials.

Should potential exposure to synthetic opioids occur during firefighting operations, the PPE should be lightly wetted, removed, and stored in a bag until proper washing can be performed.

#### WARNING

*Care must be taken in decontaminating PPE. Many recommended decontaminants are not designed for use on PPE. Improper decontamination processes or solutions can damage single-use PPE during the doffing process and cause exposure. Further, the impact of decontamination on multiple-use PPE items (e.g., respirator facepieces or the seams of multi-use garments) is not fully known. Multi-use PPE should be carefully inspected after decontamination and any deterioration monitored.*

*A common (and improper) approach to decontamination is to increase the strength of a decontamination solution to improve effectiveness. This should NEVER be attempted when decontaminating PPE.*

### C. Contaminated Surface and Equipment Decontamination

Contaminated surface areas should be decontaminated using one of the following:

- Dahlgren Decon solution
- a 5% solution of peracetic acid
- a 10% hydrogen peroxide
- a 12% dichlor/trichlor solution (dichloro- or trichloroisocyanuric acids)

#### WARNING

*Never mix dichloro- or trichloroisocyanuric acids with hypochlorite (bleach) compounds, as severe chemical reactions can occur. Never use these decontamination solutions on human skin.*

For jurisdictions that routinely employ environmental health resources to ensure community protection following an event, PPE recommendations in line with the Decon Operations sector should be employed.

### D. Basis of IAB Decontamination Recommendations

Decontamination recommendations are based upon scientific studies available at the time of this document's development.

## IV. DETECTION RECOMMENDATIONS

Do not interact with samples without appropriate PPE. In the case of synthetic opioids, the first determination should be whether detection and identification of the material will change the response. If the answer is no, then strong consideration should be given to not interacting with the threat material for detection purposes. Instead, while wearing appropriate PPE, it should be packaged and provided to law enforcement for laboratory testing.

Always develop incident-specific detection strategies to inform the selection of risk control measures and the overall status of the emergency.

The detection strategy should include the following detector performance characteristics:



- Linear range
- Limit of detection
- Cross sensitivities
- Response times
- Interferences
- Recommended operating environment
- Detector specificity
- Quantitative/qualitative capabilities
- Operating requirements

In responses to incidents involving potential synthetic opioids, the hazard is assumed to be present, usually because a synthetic opioid is visible or a patient is exhibiting symptoms of opioid exposure. If there is no visible material, a trace technique is required. Trace techniques can measure amounts less than 1 microgram, which are difficult to see without amplification. For this reason, samples are generally taken by “swiping” a surface and thermally desorbing the threat off the swab into the instrument of interest. When bulk samples are available (great than 1 microgram), a variety of options for detection are available, each with its own pros and cons. **Table 4** lists technologies for which there is data demonstrating their performance for the detection of synthetic opioids.

**Table 4.** Technology Recommendations for Synthetic Opioid Detection by Exposure Risk

| Potential Synthetic Opioid Exposure Risk                                     | Technology Recommendations   |
|--|--|
| <b>Minimal (no visible product)</b>  | Trace – Thermal Desorption Mass Spectrometry<br>Trace – Ion Mobility Spectroscopy  |
| <b>Moderate (small volume; known or suspected product visible; patients)</b> | Trace – Thermal Desorption Mass Spectrometry<br>Trace – Ion Mobility Spectroscopy<br>Bulk – Raman Spectroscopy<br>Bulk – Infrared Spectroscopy   |
| <b>Moderate (large volume storage/distribution)</b>                          | Trace – Thermal Desorption Mass Spectrometry<br>Trace – Ion Mobility Spectroscopy<br>Bulk – Raman Spectroscopy<br>Bulk – Infrared Spectroscopy<br>Bulk – Colorimetric  |
| <b>High (milling lab) [particulates]</b>                                     | Trace – Thermal Desorption Mass Spectrometry<br>Trace – Ion Mobility Spectroscopy<br>Bulk – Raman Spectroscopy<br>Bulk – Infrared Spectroscopy<br>Bulk – Colorimetric<br>General – Dust Meter<br>General – Oxygen/Lower Explosives Limit   |
| <b>High (production lab) [chemicals]</b>                                     | Trace – Thermal Desorption Mass Spectrometry<br>Trace – Ion Mobility Spectroscopy<br>Bulk – Raman Spectroscopy<br>Bulk – Infrared Spectroscopy<br>Bulk – Colorimetric<br>General – Dust Meter<br>General – Oxygen/Lower Explosives Limit/Carbon Monoxide<br>General – Photoionization Detector |

**A. Drug Enforcement Administration**

The DEA released a guidance document entitled “Fentanyl – A Briefing Guide for First Responders” (<https://www.dea.gov/druginfo/fentanyl.shtml>) earlier this year. The document provides the following guidance regarding sampling and detection of suspected fentanyl materials:

*If the presence of fentanyl or any synthetic opioid is suspected, personnel should immediately contact the appropriate officials within their agency who have been trained to handle hazardous materials, or contact the nearest DEA field office for assistance. Having specially trained law enforcement (or hazardous materials “HAZMAT” incident response team) professionals equipped with the necessary equipment, to include Level “A” PPE, on-site to assess the situation prior to exposure or contamination is recommended. This includes situations involving unknown powdered substances and/or pill milling or encapsulating operations.*

**B. Laboratory Response Network**

The CDC established a network of laboratories known as the Laboratory Response Network (LRN) to respond to biological (LRN-B) and chemical (LRN-C) threats. These laboratories are located at state public health laboratories throughout the country and can be a vital resource to first responders with respect to suspected opioid exposures. Some LRN-C laboratories have the capability to rapidly identify opioids, including fentanyl and related analogues when an exposure is suspected.

Contact the LRN-C laboratory in your jurisdiction for guidance, prior to bringing samples to the laboratory. If you do not know who your LRN contact is, contact your local FBI WMD Coordinator for assistance.

**V. MEDICAL COUNTERMEASURES**

All first responders, particularly law enforcement, should be aware of several significant side effects that could complicate their contacts with overdose patients. Communities, states, and drug treatment professionals across the US have begun to support the use of naloxone to reduce the number of opioid overdose-related deaths. Naloxone (brand name Narcan) is a safe, rapid, and easily administered antidote previously used only by medical personnel to reverse the effects of opioid overdoses. In cases of accidental overdose where patients have difficulty breathing or stop breathing, first responders can use naloxone to save the patients’ lives. For this reason, the IAB supports the position of state and local jurisdictions in favor of making naloxone available to law enforcement to facilitate its timely use in reversing opioid overdoses.

**A. Naloxone**

Naloxone is available over-the-counter in many jurisdictions. Naloxone is a liquid, administered intramuscularly by auto-injection, as a nasal spray, or intravenously by a medical professional to counteract an overdose. Opioid overdose symptoms include excessive sleepiness, not responding to loud voices, inadequate or absent breathing, and cyanosis (patient appears blue). If a patient possesses paraphernalia consistent with opioid use, has a history of overdose and/or a medical history consistent with opioid use, and shows symptoms of an overdose, responders may administer naloxone.

Shortly after the naloxone is administered, overdose symptoms should diminish and normal breathing and cognition should return. It is important to have an Emergency Medical Technician (EMT) or other medical personnel respond to the scene and handle further contact with the patient. The patient must be transported to

the appropriate medical facility for monitoring and treatment. It is appropriate and may be necessary to provide the patient with more than one dose of naloxone.

Patients receiving naloxone may show signs of opioid withdrawal, such as restlessness, agitation, nausea, vomiting, increased sweating, trembling, and headache. Rarely, patients may experience seizures, heart rhythm changes, or pulmonary edema. Patients experiencing these symptoms can be disruptive and will be very uncomfortable, angry, and possibly violent. As the naloxone wears off, the patient can exhibit the underlying effects of the opioid. For more information on the opioid overdose triad of symptoms, see the World Health Organization information sheet on opioid overdose at: [http://www.who.int/substance\\_abuse/information-sheet/en](http://www.who.int/substance_abuse/information-sheet/en).

## **B. Recommendations for Implementation**

The IAB recommends that jurisdictions implementing or considering implementing responder-administered naloxone for opiate overdoses consider the following:

1. Confirm there are no state or jurisdictional statutes or regulations precluding law enforcement officers from functioning in this capacity.
2. Seek medical advice from a local EMS Medical Director.
3. Establish an opioid overdose treatment protocol within jurisdictional guidance and requirements.
4. Implement training for responders on opioid overdose treatment.
5. Implement response protocol with interdisciplinary representation.

**APPENDIX – DETAILED SPECIFICATIONS/STANDARDS FOR RECOMMENDED PPE WITH ASSOCIATED STANDARDIZED EQUIPMENT LIST<sup>1</sup> (SEL) LINKS**

| Item   | Description and Specifications  | SEL Item No.   |
|--|---|--|
| Uniform                                      | Standard shirt and pants or coverall used by organization in course of normal duties; generally pants with short or long sleeve shirt<br><br><i>For moderate risk/high volume hazard, long sleeve shirt should be worn or sleeve covers provided if short sleeve shirt is worn</i>              | 01ZA-05-UNDR<br>01ZA-05-UNFR   |
| Uniform                                      |   |  |
| Uniform                                      |   |  |
| Nitrile gloves                               | Disposable nitrile gloves certified as single-use emergency medical examination gloves in accordance with NFPA 1999 or meeting ASTM D6319; nitrile rubber is recommended over latex rubber due to large incidence of latex allergies among US population  | 01EM-03-GLME   |
| Nitrile gloves                               |   |  |
| Nitrile gloves                               |   |  |
| P100 filtering facepiece respirator          | Disposable filtering facepiece respirator with P100 filter classification certified by NIOSH in accordance with 42 CFR Part 84. For a list of certified products, see: <a href="https://www2a.cdc.gov/drds/cel/cel_form_code.asp">https://www2a.cdc.gov/drds/cel/cel_form_code.asp</a>          | 01AR-06-DISP   |
| P100 filtering facepiece respirator          |   |  |
| Safety glasses                               | Safety glasses that meet ANSI/ISEA Z87.1  | 01ZA-03-EYEP   |
| Structural fire fighting protective ensemble | Structural firefighting protective ensemble consisting of garment (coat and pants or coverall), helmet, hood, gloves, and footwear, with all items certified to NFPA 1971; ensemble elements should be selected for compatibility and interoperability  | 01SF-01-GARM<br>01SF-01-HMLT<br>01SF-01-HOOD<br>01SF-01-GLOV<br>01SF-01-FTWR |
| Self-contained breathing apparatus           | Open circuit, self-contained breathing apparatus with CBRN protection, certified to NFPA 1981, with or without Personal Alert Safety System (PASS) device<br><br><i>Consider additional respirator protection when worn for high risk/particulate or high risk/chemical hazard applications</i> | 01AR-01-SCBA   |
| Self-contained breathing apparatus           |   |  |
| Self-contained breathing apparatus           |   |  |
| Sleeve covers                                | Disposable or washable sleeve protectives with elasticized ends; covers may be constructed of any textile or coated material and should worn over end of gloves and extend to upper arm leaving no exposed skin   | No specific SEL item   |
| Goggles                                      | Cover style goggles that are either non-vented or indirect vented that meet ANSI/ISEA Z87.1   | 01ZA-03-EYEP   |

<sup>1</sup> The Standardized Equipment List (SEL) is a list of generic equipment items recommended by the IAB to local, tribal, state, and federal government organizations in preparing for and responding to all-hazards mass casualty events, with an emphasis on CBRNE. An interactive version of the SEL is available at <https://iab.gov/SELint.aspx>

| Item   | Description and Specifications  | SEL Item No.   |
|--|---|--|
| Half mask APR with P100 filters                    | <p>Reusable, elastomeric, tightfitting half mask air-purifying respirator with filters meeting P100 particulate classification certified by NIOSH in accordance with 42 CFR Part 84. For a list of certified products, see:<br/> <a href="https://www2a.cdc.gov/drds/cel/cel_form_code.asp">https://www2a.cdc.gov/drds/cel/cel_form_code.asp</a></p> <p><i>Respirator must be worn with goggles to provide cover all mucous membrane areas of wearer's face</i></p>   | 01AR-06-REUS   |
| Full facepiece APR with P100 filters               | <p>Reusable, elastomeric, tight fitting, full facepiece air-purifying respirator with filters meeting P100 particulate classification certified by NIOSH in accordance with 42 CFR Part 84. For a list of certified products, see:<br/> <a href="https://www2a.cdc.gov/drds/cel/cel_form_code.asp">https://www2a.cdc.gov/drds/cel/cel_form_code.asp</a></p>   | 01AR-06-REUS   |
| Multiple-use emergency medical protective ensemble | <p>Full protective ensemble consisting of multiple-use emergency medical garment, single-use examination gloves worn underneath either cleaning or utility gloves or multiple-use work gloves, with appropriate footwear</p> <p><i>Overall ensemble and selected respiratory protection must be certified to NFPA 1999</i></p>  | 01EM-02-GARM<br>01EM-03-GLME<br>01EM-03-GLCL<br>01EM-03-GLMW<br>01EM-04-FTWC<br>01EM-04-FTWF |
| Class 4 or 4R protective ensemble                  | <p>Full protective ensemble designed for particulate and biological aerosol protection, consisting of garment, gloves, with appropriate footwear</p> <p><i>Overall ensemble and selected respiratory protection must be certified to NFPA 1994, Class 4 or 4R; Type 4R ensembles affords greater strength, durability, and ruggedness</i></p>   | 01CB-04-ENSM   |
| PAPR with HEPA filter                              | <p>Reusable, elastomeric, tightfitting full facepiece powered air purifying respirator with high-efficiency particulate air (HEPA) filter or loose-fitted (hooded) powered air purifying respirator with HEPA filter certified by NIOSH in accordance with 42 CFR Part 84. For a list of certified products, see:<br/> <a href="https://www2a.cdc.gov/drds/cel/cel_form_code.asp">https://www2a.cdc.gov/drds/cel/cel_form_code.asp</a></p>  | 01AR-03-PAPM   |
| Class 3, 3R or higher protective ensemble          | <p>Full protective ensemble designed for low levels of chemical liquid and vapor protection, consisting of garment, gloves, with appropriate footwear</p> <p><i>Overall ensemble and selected respiratory protection must be certified to NFPA 1994, Class 3 or 3R; alternatively, higher level ensembles can be employed that include Class 2 or 2R, Class 1, or NFPA 1991 compliant ensembles; Type R ensembles afford greater strength, durability, and ruggedness for the same class of ensemble; The specific level of protection should be based on a hazard and risk assessment that accounts for the specific anticipated chemical exposure hazards</i></p> | 01CB-03-ENSM   |

| Item      | Description and Specifications  | SEL Item No. |
|-----------|---|--------------|
| CBRN/APR  | Reusable, elastomeric, tight fitting, full facepiece air-purifying respirator provided with CBRN cartridges or canisters certified by NIOSH in accordance with 42 CFR Part 84 and the NIOSH Statement of Standard for CBRN APR. For a list of certified products, see:<br><a href="https://www2a.cdc.gov/drds/cel/cel_form_code.asp">https://www2a.cdc.gov/drds/cel/cel_form_code.asp</a>   | 01AR-02-APR  |
| CBRN/PAPR | Reusable, elastomeric, tight fitting full facepiece powered air purifying respirator or loose-fitted (hooded) powered air purifying respirator provided with CBRN cartridges or canisters certified by NIOSH in accordance with 42 CFR Part 84 and the NIOSH Statement of Standard for CBRN PAPR. For a list of certified products, see:<br><a href="https://www2a.cdc.gov/drds/cel/cel_form_code.asp">https://www2a.cdc.gov/drds/cel/cel_form_code.asp</a> | 01AR-03-PAPA |