

**Limitations of CBP OFO's  
Screening Device Used  
to Identify Fentanyl and  
Other Narcotics**





# DHS OIG HIGHLIGHTS

## *Limitations of CBP OFO's Screening Device Used to Identify Fentanyl and Other Narcotics*

September 30, 2019

### **Why We Did This Audit**

On October 26, 2017, President Trump declared the opioid crisis a national Public Health Emergency. According to the Centers for Disease Control and Prevention, more than 28,000 people in the United States overdosed and died from synthetic opioids, such as fentanyl, in 2017.

We conducted this audit to determine to what extent CBP's OFO uses small-scale chemical screening devices at ports of entry to identify fentanyl and other illicit narcotics.

### **What We Recommend**

We made four recommendations to CBP that, when implemented, should help OFO officers better identify fentanyl and other illicit narcotics at ports of entry.

#### **For Further Information:**

Contact our Office of Public Affairs at (202) 981-6000, or email us at [DHS-OIG.OfficePublicAffairs@oig.dhs.gov](mailto:DHS-OIG.OfficePublicAffairs@oig.dhs.gov)

### **What We Found**

Since 2016, U.S. Customs and Border Protection's (CBP) Office of Field Operations (OFO) has spent nearly \$25.6 million on 279 small-scale chemical screening devices to identify fentanyl and other illicit narcotics but not at lower purity levels (10 percent or less). This is concerning because, at the southwest border, OFO predominantly seizes fentanyl at low purity levels. OFO officials stated they were concerned about the dangers of fentanyl, and as a stopgap measure, purchased the new screening devices without conducting comprehensive tests of effectiveness. (Two milligrams of this drug can be lethal, making it a significant contributor to opioid fatalities.) This occurred because OFO purchased the screening devices without requiring comprehensive testing of their capability to identify low purity levels of illicit narcotics.

Another major concern is OFO does not have adequate policies for deploying, using, and updating the small-scale chemical screening devices used to identify fentanyl. The deficiencies occurred because OFO management did not provide oversight to ensure the office updated its guidance on non-intrusive inspection technology when it acquired the screening devices. Currently, OFO cannot ensure that it is protecting the United States from criminals smuggling fentanyl with purity levels less than or equal to 10 percent, thereby increasing the risk of fentanyl or other illicit narcotics entering the country.

### **CBP Response**

CBP concurred with all of our recommendations and is taking or has implemented actions to address them.



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Department of Homeland Security

Washington, DC 20528 / [www.oig.dhs.gov](http://www.oig.dhs.gov)

September 30, 2019

MEMORANDUM FOR: Todd C. Owen  
Executive Assistant Commissioner  
Office of Field Operations  
U.S. Customs and Border Protection

Larry (Dave) Fluty  
Executive Director  
Laboratories and Scientific Services Directorate  
U.S. Customs and Border Protection

FROM: Sondra F. McCauley   
Assistant Inspector General for Audits

SUBJECT: *Limitations of CBP OFO's Screening Device Used to Identify Fentanyl and Other Narcotics*

For your action is our final report, *Limitations of CBP OFO's Screening Device Used to Identify Fentanyl and Other Narcotics*. We incorporated the formal comments provided by your office.

The report contains four recommendations aimed at improving officers' ability to better identify fentanyl and other illicit narcotics at ports of entry. Your office concurred with all four recommendations. Based on information provided in your response to the draft report, we consider all four recommendations open and resolved. Once your office has fully implemented the recommendations, please submit a formal closeout letter to us within 30 days so that we may close the recommendations. The memorandum should be accompanied by evidence of completion of agreed-upon corrective actions and of the disposition of any monetary amounts.

Please send your response or closure request to [OIGAuditsFollowup@oig.dhs.gov](mailto:OIGAuditsFollowup@oig.dhs.gov). Consistent with our responsibility under the *Inspector General Act*, we will provide copies of our report to congressional committees with oversight and appropriation responsibility over the Department of Homeland Security. We will post the report on our website for public dissemination.

Please call me with any questions, or your staff may contact Don Bumgardner, Deputy Assistant Inspector General for Audits, at (202) 981-6000.



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### Background

On October 26, 2017, President Trump declared the opioid crisis a national Public Health Emergency. According to the Centers for Disease Control and Prevention, more than 28,000 people in the United States overdosed and died from synthetic opioids, such as fentanyl, in 2017. Fentanyl is a synthetic opioid that is 40 to 50 times more potent than heroin and 50 to 100 times more potent than morphine. A dose of fentanyl is 1 milligram and it only takes, at most, 2 milligrams for a lethal dose (figure 1). The majority of fentanyl is smuggled into the country primarily through ports of entry (POE) along the southwest land border, international mail, and express consignment couriers.



**Figure 1. Lethal Dose of Fentanyl**  
Source: CBP *Frontline*, Vol. 10, Issue 1

During congressional testimony in May 2018, a U.S. Customs and Border Protection (CBP) senior official stated fentanyl seized at the southwest border POEs contains purities of less than 10 percent. The CBP official explained the majority of fentanyl in the international mail and express consignment environment are at purities of more than 90 percent. The fentanyl at lower purities seized at the southwest land border is often ready for sale to an end-user, while higher purity fentanyl seized in other environments is often intended to be mixed and repackaged by a distributor. In March 2019, CBP issued its *Strategy to Combat Opioids*, an action plan highlighting what CBP will accomplish to aggressively identify and interrupt the opioid supply from entering the country.

CBP plays a vital role in interdicting illicit narcotics before they enter POEs into the United States. CBP's Office of Field Operations (OFO) is responsible for illicit narcotics interdiction at 328 air, land, and sea ports. If CBP OFO officers find suspected narcotics during a search, they perform presumptive testing<sup>1</sup> to immediately identify and seize illicit substances to prevent their entry into the United States. This role is particularly important given the rise of the opioid epidemic. Additionally, OFO officers can send samples of the seized substances to CBP's Laboratories and Scientific Services Directorate (LSSD)<sup>2</sup> for confirmatory testing. LSSD's Interdiction Technology Branch is the technical authority responsible for the acquisition, initial deployment, train-the-trainer testing, and evaluation of small-scale non-intrusive inspection

<sup>1</sup> Presumptive testing results is a reasonable basis for belief a controlled substance is present, but is not conclusive.

<sup>2</sup> LSSD is the forensic and scientific arm of CBP, providing forensic and scientific testing in several areas including narcotics enforcement. LSSD coordinates technical and scientific support to all CBP border protection activities.



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(NII) systems, which CBP officers use to detect and prevent illicit drugs from entering the United States.

### **Identification and Handling of Illicit Narcotics**

CBP officers use color-changing narcotics field test kits (test kits) for presumptive identification of suspected drugs. Narcotics such as cocaine, heroin, and methamphetamine have their own test kits, which require officers to open the package and potentially expose themselves to the unknown substance. At the time of our audit, CBP officers did not have access to a test kit for fentanyl. As of March 2019, LSSD was performing suitability tests and developing a training program using test strips to identify fentanyl before CBP distributed them to the POEs. Figure 2 shows a narcotics field test kit.



**Figure 2. Narcotics Field Test Kit**

Source: DHS Office of Inspector General (OIG) photo

In March 2015, the Drug Enforcement Administration (DEA) issued a nationwide alert to law enforcement about the dangers of improperly handling fentanyl. The DEA warned that just by touching fentanyl or accidentally inhaling the substance during an enforcement action or while field-testing could result in absorption through the skin. As a result, the DEA urged officers to use safety precautions, and if possible, avoid extracting samples during field-testing if officers suspect fentanyl. In September 2017, the then-DHS Office of Health Affairs published a document clarifying the facts of fentanyl exposure. The document explained that an incidental skin exposure to fentanyl was extremely unlikely to cause immediate harm to a person and



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soap and water could remove fentanyl from the skin.<sup>3</sup> The DHS workforce was instructed to wear personal protective equipment (i.e., gloves, respiratory protection, and eye protection) when exposed to suspected drugs.

CBP recognized the need for officers to quickly and safely identify synthetic drugs, such as fentanyl, without having to touch the substances. As a result, OFO acquired 94 small-scale NII chemical screening devices (12 devices in 2016 and 82 devices in 2017) and deployed 84 of the devices to various air, land, and sea POEs.<sup>4</sup> The small-scale handheld chemical screening device contains two types of identification technology – Raman and Fourier Transform Infrared (FTIR).

- **Raman Technology.** When using Raman technology, an officer is not always required to open a package, but instead has a laser light that can scan through translucent packaging materials. The device analyzes the light signature of the substance and creates a spectrum or “fingerprint.”<sup>5</sup> The device then compares the scanned spectrum to its internal library and if it detects a match, it reveals the chemical name. Raman technology does not work on substances that are dark and cannot penetrate opaque containers.
- **FTIR Technology.** An officer is required to handle the sample when using the FTIR technology. The officer places a small amount (about 300 milligrams or the size of a pea) of the unknown substance on the device, which establishes a spectrum for the specific chemical. Similar to the Raman, the device compares the spectrum or “fingerprint” to its library and, if a match is available in the library, provides the officer with the name of the substance.

### **Fentanyl Seizures and Funding for Additional Devices**

On January 26, 2019, CBP officers seized 254 pounds of suspected fentanyl hidden inside an 18-wheeler that attempted to cross at the Nogales, Arizona POE. At the time, this was the largest potential fentanyl seizure CBP recorded at any POE. However, subsequent DEA laboratory analysis determined the packages contained about 30 pounds of fentanyl.<sup>6</sup> Since 2016, 80 percent or more of fentanyl seized by OFO was at POEs along the southwest border of the United States (Table 1). Due to the multiple variants of fentanyl and other synthetic narcotics, CBP cannot provide an accurate estimate of the amounts of fentanyl and other illicit narcotics that are illegally entering the country through POEs.

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<sup>3</sup> The most common route of incidental exposure is by inhaling the powdered drug.

<sup>4</sup> OFO Headquarters retained 10 devices for training purposes.

<sup>5</sup> A spectrum is a graphical representation of a substance’s chemical properties. Each chemical has a unique spectrum, much like a fingerprint.

<sup>6</sup> The laboratory also confirmed cocaine, heroin, and methamphetamine in the packages.



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**Table 1: Comparison of Fentanyl Seized from FY 2016 to 2019 at the Southwest Border and POEs Nationwide**

Location	FY 2016	FY 2017	FY 2018	FY 2019*	Total
	(in pounds)				
Southwest POEs	542.9	1,576.7	1,444.2	969.1	4,532.9
Total OFO Fentanyl Seized at POEs Nationwide	596.2	1,893.6	1,805.9	1,021.5	5,317.2
<b>% of Fentanyl Seizures at Southwest Border</b>	<b>91.1%</b>	<b>83.3%</b>	<b>80.0%</b>	<b>94.9%</b>	<b>85.3%</b>

Source: DHS OIG analysis of data from OFO’s Seized Assets and Case Tracking System  
\*As of March 31, 2019

Note: Total fentanyl seizures do not match the amounts reported in CBP’s *Strategy to Combat Opioid* and OFO could not resolve the differences.

In January 2018, the President signed into law the *International Narcotics Trafficking Emergency Response by Detecting Incoming Contraband with Technology (INTERDICT) Act*.<sup>7</sup> The intent of the *INTERDICT Act* is to improve CBP’s ability to interdict fentanyl and other synthetic opioids and narcotics illegally imported into the United States. This law allows the allocation of \$9 million to acquire personnel, chemical screening devices, and scientists to prevent, detect, and interdict the unlawful importation of fentanyl, other synthetic opioids, narcotics, and psychoactive substances.

### Results of Audit

#### **CBP Purchased and Is Using Chemical Screening Devices with Limitations in Identifying Fentanyl**

Despite the prevalence of fentanyl being smuggled at the southwest land border, the small-scale chemical screening devices that CBP purchased and uses in the field cannot identify this substance at purity levels of 10 percent or less. This occurred because, prior to purchasing the devices, CBP OFO management did not require comprehensive testing of their capability to identify illicit narcotics. According to OFO officials, they acquired the new screening devices based on their concern about the dangers of fentanyl. However, they did not conduct comprehensive testing of the devices’ capabilities.

<sup>7</sup> Public Law 115-112, January 10, 2018



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The DEA reported in the *2016 National Drug Threat Assessment* that in 2015 there was a marked surge of illicit fentanyl pressed into counterfeit prescription opioids and smuggled from Mexico into the United States. To detect and prevent illicit drugs from entering into the United States, according to CBP Directive 3340-036A, *Non-Intrusive Inspection (NII) Technology*, CBP uses small-scale NII technologies (i.e., chemical screening device). To combat the illegal entry of fentanyl into the United States, in 2016 and 2017, OFO spent nearly \$8.1 million on 94 small-scale chemical screening devices. In September 2018, due to CBP's continuing concern about OFO officer safety and in response to the *INTERDICT Act*, OFO purchased an additional 185 devices for nearly \$17.5 million, distributing them to various POEs between November 2018 and March 2019.

However, OFO purchased these 279 chemical screening devices without conducting lower-limit testing. In 2016, OFO had field kits to presumptively identify opioids, such as heroin, in suspected substances but did not have field test kits that could do the same for fentanyl. Instead, OFO relied on confirmation from a laboratory after sending a sample for full-service analysis. For this reason, in May 2016, OFO requested that LSSD conduct a pilot in an operational setting to test the ability of six different small-scale chemical screening devices to identify the presence of fentanyl. Even though, according to the DEA, fentanyl seized across the United States in 2015 “ranged between a trace and 9 percent pure,” OFO and LSSD did not consider testing fentanyl at different purity levels in the pilot.

**DEA defines purity as a measure of the amount of an illicit substance present in a sample compared to other substances in the sample such as adulterants, diluents, or solvents.**

In the pilot, which was conducted at the San Ysidro POE from July to September 2016, LSSD was directed to test, identify, and document all “white powder” substances seized by OFO. Four of 99 “white powder” substances contained fentanyl, but none of the six chemical screening devices were able to identify fentanyl 100 percent of the time. Nevertheless, before the pilot's conclusion, OFO decided to purchase and deploy 12 units of the only device tested that had both the Raman and FTIR technology. This device was only able to identify fentanyl 50 percent of the time (two of four tests) during the pilot. OFO made the purchase since it did not have any devices along the southwest border that could potentially identify fentanyl at all.

In September 2016, LSSD wrote an After Action Report on the pilot's results. In the report, LSSD noted OFO's initial purchase of 12 devices and suggested OFO consider purchasing a less costly device (less than one-fourth the cost) with only Raman technology to deploy to smaller POEs. While not directly stated, the lower cost would allow OFO to acquire more devices to deploy to POEs. Despite LSSD's recommendation, the following year, OFO acquired an





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additional 82 of the more costly device because OFO management preferred having a device with a library of chemicals, including narcotics and explosives. This is the only device with both Raman and FTIR technology. As a result, in 2016 and 2017, OFO spent a total of nearly \$8.1 million on 94 chemical screening devices that have limitations in identifying low-purity levels of fentanyl.

The manufacturer of the chemical screening device OFO purchased in 2016 and 2017 also did not test the device's capability to detect narcotics. Because OFO and LSSD did not consider purity levels in its testing before 2018, we contacted the manufacturer to discuss the types of independent testing it had performed on the dual-technology device OFO chose to purchase. Representatives with the manufacturer stated they never tested the chemical screening device for its accuracy to detect and identify narcotics. They further explained they only tested the device's ability to detect explosives and chemical warfare agents because the original intent was to combine the Raman and FTIR technology into a single device for the U.S. Navy Emergency Ordnance Disposal unit.

In June 2018, LSSD staff completed an informal internal review of the screening device's ability to identify low-purity levels of fentanyl to confirm their suspicions regarding the device's detection capabilities. According to National Institute of Standards and Technology (NIST)<sup>8</sup> officials, to determine a device's capability to identify fentanyl, testing should be done multiple times, at various purity levels, and in environments that replicate field conditions (i.e., varying humidity, heat, and potential contaminants). Although LSSD tested the device in its laboratory's controlled environment instead of a field environment, the testing confirmed the chemical screening device could not identify fentanyl of 10 percent purity levels either in mixtures of lactose or mannitol (the most common cutting agents<sup>9</sup> associated with fentanyl). An LSSD official explained the laboratory did not share results of this testing with OFO because it was a self-initiated test.

An example from the field confirms the device may be able to identify the cutting agent, but not fentanyl. In August 2018, at the Hidalgo, Texas POE, an OFO officer found almost 2,000 pills concealed on a traveler. The officer used the chemical screening device, which indicated the pills were oxycodone. In subsequent analysis by an external laboratory, the pills also tested positive for fentanyl. Without knowing about LSSD's testing results, in September 2018,

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<sup>8</sup> NIST works to promote U.S. innovation and industrial competitiveness by advancing measurement science, standards, and technology. Although NIST does not create the standards the scientific community uses, NIST comprises the subject matter experts who provide technical expertise in scientific standards for both the private and public sector.

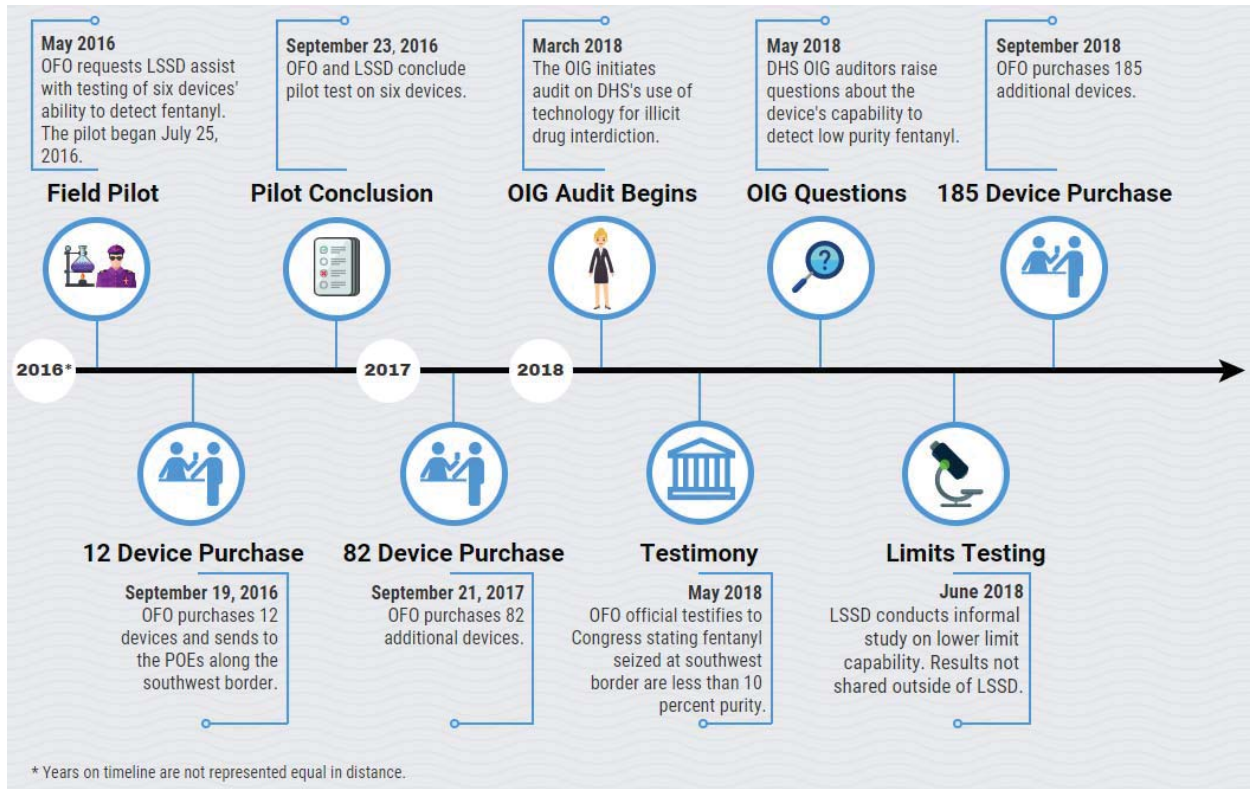
<sup>9</sup> Cutting agents are diluents used to modify or intensify the effects of an illicit drug.



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OFO purchased 185 devices for nearly \$17.5 million and distributed them to various POEs between November 2018 and March 2019.

Figure 3 shows a timeline of the acquisition and testing of the chemical screening device.



**Figure 3. Timeline of OFO’s Chemical Screening Device**

Source: DHS OIG analysis of OFO data

### CBP Does Not Have Adequate Policies for Its Chemical Screening Device

According to the Government Accountability Office’s (GAO) *Standards for Internal Control in the Federal Government*, a key factor in improving accountability in achieving an entity’s mission is to implement an effective internal control system. Internal controls help an entity adapt to shifting environments, evolving demands, changing risks, and new priorities. An effective way to achieve accountability is to implement control activities through policies.<sup>10</sup> According to GAO, management should communicate policies and procedures to personnel so they can implement control activities for their assigned responsibilities. However, CBP OFO does not have adequate policies regarding its small-scale chemical screening device. In particular, OFO

<sup>10</sup> GAO, *Standards for Internal Controls in the Federal Government*, GAO-14-704G, September 2014, Principle 12 – Implement Control Activities



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did not establish: 1) a plan for deploying the chemical screening device; 2) guidance on using the chemical screening device; and 3) policy on updating the chemical screening device. This occurred because OFO management did not provide oversight to ensure the organization updated its guidance on NII small-scale technology when it acquired the chemical screening device. Additionally, the standard operating procedure (SOP) for the device remains in draft.

### **No Plan for Deploying Chemical Screening Device**

OFO did not provide guidance by developing a strategic deployment plan prior to distributing the chemical screening devices to the POEs. According to GAO best practices, “an entity determines its mission, sets a strategic plan, establishes entity objectives, and formulates plans to achieve its objectives.”

Absent a formal deployment plan, OFO sent the first 12 devices to the 4 field offices along the southwest border to disseminate to POEs in their respective jurisdictions. OFO officials stated the following year they prioritized the deployment of 82 additional devices to International Mail Facilities and then distributed the remaining devices to larger POEs with high seizure rates. After the purchase of 185 devices in September 2018, OFO again distributed them to various POEs between November 2018 and March 2019, without a strategic deployment plan.

### **Lack of Guidance on Standard Use of Chemical Screening Device**

CBP has not issued guidance on standard use of the screening device it purchased. During site visits at 11 POEs, we observed officers used the device inconsistently. For example, OFO officers at four POEs stated they were required to use the device every time they suspected illicit narcotics. At the other seven POEs, OFO officers stated they did not use the device because they were not readily available, there was limited need, or the officers preferred to use narcotics field test kits or other equipment. Regardless of whether they had access to a chemical screening device, the officers at these seven POEs continued to rely on narcotic field test kits to identify illicit substances.

OFO initiated an SOP in October 2018 containing procedures for operating the chemical screening device. However, the draft SOP lacked instructions on obtaining approvals to use the device, when to use the device, and how officers should document use of the device in presumptive testing. As of April 2019, the SOP was still in draft and OFO had not provided a release date to CBP personnel.



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### No Policy on Updating Chemical Screening Device

OFO does not have a policy for ensuring the chemical screening device at the POEs have the most up-to-date spectral database library and operating system. According to the device’s training manual, both are required for optimal performance. We found inconsistencies in both the libraries and software on 19 small-scale chemical screening devices used at the POEs we visited.

Specifically, we found that there were six different spectral databases for 19 devices, as shown in Table 2. Each device comes with an internal library of about 14,000 unique chemical spectra or “fingerprints.” As new chemicals are encountered, their “fingerprints” must be added to the internal libraries of the device to ensure identification.

**Table 2: Spectral Database Versions by Device**

Number of Drug Spectral in Devices’ Database	Number of Devices
14,363	4
14,422	10
14,452	1
14,474	1
14,477	2
14,812	1
<b>Total</b>	<b>19</b>

Source: DHS OIG observations of devices during site visits

However, the chemical screening devices are not interconnected and OFO personnel must manually update the internal library with new drugs, drug combinations, analogues,<sup>11</sup> or variations. Such updates are extremely important for drugs like fentanyl, which can have thousands of constantly evolving analogues, each with a unique chemical “fingerprint.” Although one small-scale chemical screening device might presumptively identify an analogue of a fentanyl sample, another device may not detect and identify the fentanyl analogue, even when using the same sample, if the device is not up-to-date.

In addition to the different spectral databases, about 42 percent (8 of 19) of the devices we observed did not have the most current software version. At the time of our visits, between August and November 2018, the latest operating version available was from February 2018. However, we found eight of the devices had the December 2017 software version and had been operating with out-of-date software for 6 to 9 months.

<sup>11</sup> An analogue is a chemical whose structure is related to that of another chemical substance, but whose chemical and physical properties are different.



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### Conclusion

The threat of opioids, such as synthetic opioids like fentanyl, has reached epidemic levels. Fentanyl continues to be smuggled into the United States through the southwest border and other POEs across the United States. Given the infiltration of fentanyl, it is imperative for CBP OFO to have effective technology and an ability to accurately identify fentanyl entering the country. Otherwise, OFO will miss opportunities to intercept low purity levels of this highly lethal narcotic, which can result in increased trafficking, addiction, overdose, and related deaths across the United States. Without updated guidance, inconsistencies in OFO's use of screening devices may continue and the risk of fentanyl entering the country may continue to rise.

### Recommendations

**Recommendation #1:** We recommend the LSSD Executive Director conduct a comprehensive analysis on the ability of any chemical screening device to identify the presence of fentanyl and other narcotics at lower purity levels in field environments, perform reproducibility test runs, and obtain a third-party verification of the results.

**Recommendation #2:** We recommend the OFO Executive Assistant Commissioner develop and implement a strategy, based on the outcome of the comprehensive analysis from Recommendation #1, to:

- ensure deployed chemical screening devices are able to identify narcotics at purity levels less than or equal to 10 percent, or provide ports of entry with an alternate method for identifying narcotics at lower purity levels; and
- test any new chemical screening devices to understand their abilities and limitations in identifying narcotics at various purity levels before CBP commits to their acquisition.

**Recommendation #3:** We recommend the OFO Executive Assistant Commissioner develop a formal strategy to deploy and use small-scale chemical screening devices and keep them updated. The strategy should address short- and long-term goals including:

- how the equipment will be deployed;
- a process for approving the equipment for use;
- how and when the equipment will be used;
- how and when officers should document and report on equipment usage; and
- how and when to update the equipment software and spectral database, including timetables for updates and monitoring.



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**Recommendation #4:** We recommend the LSSD Executive Director, in collaboration with the OFO Executive Assistant Commissioner, develop and implement a plan for the long-term development of a centralized spectral database for the chemical screening devices. This plan should include:

- how newly identified spectra will be collected, stored, and distributed to devices at the ports of entry, and
- identification of parties responsible for updates and maintenance of the spectral library.

### Management Comments and OIG Analysis

CBP concurred with all four recommendations and is taking or has implemented actions to address them. CBP is working with the manufacturer to increase the functionality of the devices currently deployed. Further, in May 2019, CBP issued an SOP outlining the use of the device for presumptive testing of substances. Appendix A contains CBP management comments in their entirety. We also received technical comments on the draft report and revised the report as appropriate. We consider all recommendations resolved and open. A summary of CBP's responses and our analysis follows.

**CBP Response to Recommendation 1:** LSSD concurred with the recommendation. LSSD will conduct a comprehensive analysis of the ability of any chemical screening device to identify the presence of low-purity narcotics in field environments, perform reproducibility test runs, and obtain third-party verification of the test results. LSSD estimated a completion date of June 30, 2020.

**OIG Analysis of CBP Comments:** LSSD has taken steps to satisfy the intent of this recommendation. We consider this recommendation resolved, but it will remain open until LSSD provides documentation to support that all planned corrective actions are completed.

**CBP Response to Recommendation 2:** OFO concurred with the recommendation. Based on the outcome of LSSD's comprehensive analysis, OFO will update policies to ensure newly deployed devices are able to presumptively identify the presence of fentanyl and other narcotics at various purity levels prior to CBP committing to purchase them. In addition, OFO will deploy test strips and work with the manufacturer to increase the functionality of currently deployed devices. OFO estimated a completion date of July 31, 2020.

**OIG Analysis of CBP Comments:** OFO has taken steps to satisfy the intent of this recommendation. We consider this recommendation resolved, but it will



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remain open until OFO provides documentation to support that all planned corrective actions are completed.

**CBP Response to Recommendation 3:** OFO concurred with the recommendation. OFO will update the strategy, policy, and training on the deployment, usage, and maintenance of chemical screening devices. Prior to obligating and committing funds, OFO will test new devices to determine their ability to presumptively identify narcotics at various purity levels. OFO estimated a completion date of July 31, 2020.

**OIG Analysis of CBP Comments:** OFO has taken steps to satisfy the intent of this recommendation. We consider this recommendation resolved, but it will remain open until OFO provides documentation to support that all planned corrective actions are completed.

**CBP Responses to Recommendation 4:** LSSD concurred with the recommendation. LSSD will develop and implement a plan that maintains a centralized spectral database for chemical screening devices. The plan will include the strategy for collecting, storing, and distributing newly identified spectra, and outline coordination on updating and deploying the spectral database. LSSD estimated a completion date of July 31, 2020.

**OIG Analysis of LSSD Comments:** LSSD has taken steps to satisfy the intent of this recommendation. We consider this recommendation resolved, but it will remain open until OFO provides documentation to support that all planned corrective actions are completed.

### Objective, Scope, and Methodology

The Department of Homeland Security Office of Inspector General was established by the *Homeland Security Act of 2002* (Public Law 107-296) by amendment to the *Inspector General Act of 1978*.

We conducted this audit to determine to what extent CBP uses small-scale chemical screening devices at the POEs to identify fentanyl and other illicit narcotics. To achieve our audit objective, we:

- reviewed the policies, procedures, memoranda, and muster documents related to small-scale chemical screening devices;
- interviewed CBP OFO officials from NII and Tactical Operations divisions, as well as officers, training officers, senior leadership, and supervisors at



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- the different field offices and POEs to gain an understanding of how the devices were deployed to the various POEs and how they were used;
- interviewed officials from LSSD, DEA, NIST, and officials from the manufacturer of the chemical screening device to gain an understanding of the available technology used to identify illicit narcotics, and identify any scientific standards, best practices, and testing completed in and outside of DHS on the small-scale chemical screening device;
  - attended training on the small-scale chemical screening device to gain an understanding of how officers are trained and certified to use it;
  - reviewed scientific assessment documents, contract documents, and training documents to gain an understanding of the scientific community's assessment and OFO's reasoning for the purchase of the small-scale chemical screening device; and
  - obtained a briefing from officials at the Joint Inter Agency Taskforce – South to gain an understanding of drug flow into the United States.

We obtained a list of all sites to which OFO deployed the chemical screening devices as of August 2018, and judgmentally selected air, land, and sea POEs along the southwest, southeast, and northern borders to conduct site visits. We excluded chemical screening devices OFO purchased but transferred to the U.S. Border Patrol from our review, as well as devices that Border Patrol purchased directly. We physically inspected the small-scale chemical screening devices at the POEs to identify the software and library versions on the devices. We also observed use of the chemical screening devices at various locations when the opportunities presented themselves. Specifically we visited:

- Detroit Field Office (Detroit bridge and tunnel, Detroit airport, and Port Huron land port);
- Laredo Field Office (Laredo Field Office, Laredo land ports, Brownsville land ports and seaport, Progreso land port, Donna land port, Hidalgo land port, Pharr land port, and Anzalduas land port); and
- Miami Field Office (Fort Lauderdale airport, Port Everglades seaport, Miami airport, and Miami seaport)

We used OFO's Seized Assets and Case Tracking System (SEACATS) drug seizure data to calculate the amount of fentanyl OFO seized at POEs. Because we did not materially rely on the data from the system to support findings, conclusions, or recommendations in this report, we performed limited data reliability testing. We compared the total amount of fentanyl seized to the amount reported in the March 2019 *Strategy to Combat Opioids*. When the amounts did not match, we asked OFO about the discrepancy. OFO personnel stated because SEACATS is a live system, the amounts change based on data updates, confirmatory laboratory testing results, and timing of when the reports were run. We requested OFO rerun the SEACATS data and again





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found the amounts did not reconcile. Based on these tests, we concluded the data was of undetermined reliability. However, when this data is viewed in context with other available evidence, we believe the opinions, conclusions, and recommendations in this report are valid.

We reviewed CBP OFO's internal controls over processes for small-scale chemical screening devices by observing control activities and comparing them to standard operating procedures. However, we determined the controls were insufficient and not supported by standard operating procedures.

We conducted this performance audit between March 2018 and April 2019 pursuant to the *Inspector General Act of 1978*, as amended, and according to generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based upon our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based upon our audit objectives.

The Office of Audits major contributors to this report are Christine Haynes, Director; Loretta Atkinson, Audit Manager; Enrique Leal, Auditor-in-Charge; Julian Brown, Auditor; Renee Foote, Auditor; Ryan Ten Eyck, Program Analyst; Clarence Brown, Auditor; Deborah Mouton-Miller, Communications Analyst; and Ebenezer Jackson, Independent Referencer.



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**Appendix A**  
**CBP Comments to the Draft Report**

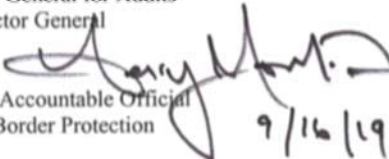
1300 Pennsylvania Avenue NW  
Washington, DC 20229



**U.S. Customs and  
Border Protection**

September 16, 2019

MEMORANDUM FOR: Sondra F. McCauley  
Assistant Inspector General for Audits  
Office of the Inspector General

FROM: Henry A. Moak, Jr.   
Senior Component Accountable Official  
U.S. Customs and Border Protection

SUBJECT: Management Response to Draft Report: "Limitations of CBP  
OFO's Screening Device Used to Identify Fentanyl and Other  
Narcotics" (Project No. 18-074-AUD-DHS)

Thank you for the opportunity to review and comment on this draft report. The U.S. Customs and Border Protection (CBP) appreciates the work of the Office of Inspector General (OIG) in planning and conducting its review and issuing this report.

CBP is pleased that the OIG recognized its use of multi-layered defenses and advanced technology to prevent opioids and other illicit drugs from entering the United States while effecting its vital role of interdicting illicit narcotics. CBP Office of Field Operations (OFO) is responsible for illicit narcotics interdiction at 328 air, land and sea ports. One stratum of CBP's multi-layered approach to detect and prevent illicit drugs from entering into the United States is the use small-scale non-intrusive inspection (NII) technologies.

The OFO, Cargo and Conveyance Security Directorate, NII Division, continues to support its mission of delivering the best-value technological tools and processes that enable CBP officers to perform safe, reliable, effective, and efficient NIIs to prevent, detect and interdict contraband and emerging threats at the ports of entry. OFO places value in continuous improvement by enhancing and expanding the NII portfolio through technology refresh while sustaining NII capabilities and supporting the CBP mission of enhancing the Nation's global economic competitiveness by enabling legitimate trade and travel.

CBP's Operations Support, Laboratories Scientific Services Directorate (LSSD) has deployed immunoassay test strips to aid in the identification of narcotics at lower purity levels, including fentanyl. In support of LSSD's efforts, OFO has enhanced the training



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to the field personnel. Additionally, LSSD and OFO are working with the manufacturer to increase the functionality of the devices currently deployed. And, in May 2019, the Standard Operating Procedures (SOP) for the presumptive testing of substances was issued. This SOP Outlines which outlines the use of handheld equipment that supports the deployment, approval for usage, how and when the equipment will be used, reporting on usage, as well as detailed guidance on how and when to update the software and spectral database.

CBP concurs with the four recommendations in the draft report. Attached find our detailed response to each recommendation. Technical comments have been previously provided under separate cover.

Again, thank you for the opportunity to review and comment on this draft report. Please feel free to contact me if you have any questions. We look forward to working with you again in the future.

Attachment



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**Attachment: Management Response to Recommendations Contained  
in 18-074-AUD-DHS**

OIG recommended that the LSSD Executive Director:

**Recommendation 1:** Conduct a comprehensive analysis on the ability of any chemical screening device to identify the presence of fentanyl and other narcotics at lower purity levels in field environments, perform reproducible test runs, and obtain a third-party verification of the results.

**Response:** Concur. LSSD will conduct a comprehensive analysis on the ability of any chemical screening device to identify the presence of low purity narcotics in field environments, perform reproducibility test runs, and a third-party verification of the test results. Estimated Date of Completion (ECD): June 30, 2020.

OIG recommended that the OFO Executive Assistant Commissioner:

**Recommendation 2:** Develop and implement a strategy, based on the outcome of the comprehensive analysis from Recommendation #1, to:

- ensure deployed chemical screening devices are able to identify narcotics at purity levels less than or equal 10 percent, or provide ports of entry with an alternate method for identifying narcotics at lower purity levels; and
- test any new purchases of chemical screening devices to understand their ability and limitations in identifying narcotics at various purity levels before CBP commits to their acquisition.

**Response:** Concur. Based on the outcome of LSSD's comprehensive analysis of chemical screening devices, OFO will update the purchasing and testing requirements policies to ensure newly deployed chemical screening devices designed to identify narcotics are able to presumptively identify the presence of fentanyl and other narcotics at various purity levels in field environments in a reasonable time prior to CBP's obligation and commitment to purchase. In support of LSSD's efforts, OFO will deploy immunoassay test strips, provide enhanced training to field locations to aid in the identification of dangerous narcotics such as fentanyl, and work with the manufacturer to increase the functionality of currently deployed devices. ECD: July 31, 2020.



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**Recommendation 3:** Develop a formal strategy to deploy, use, and keep small-scale chemical screening devices updated. The strategy should address short- and long-term goals including:

- how the equipment will be deployed;
- a process for approving the equipment for use;
- how and when the equipment is to be used;
- how and when officers should document and report on equipment usage; and
- how and when to update the equipment software and spectral database, including timetables for updates and monitoring.

**Response:** Concur. OFO will update the strategy, policy and training on the deployment, usage, and maintenance of chemical screening devices. The strategy, policy and training will address short- and long-term goals including: how the equipment will be deployed; a process for approving the equipment for use; how and when the equipment is to be used; how and when officers should document and report on equipment usage; and how and when to update the equipment software and spectral database, including timetables for updates and monitoring.

Prior to obligating and committing funds, OFO will test new chemical screening devices for use at the ports of entry to determine the ability to presumptively identify narcotics at various purity levels. Moreover, OFO will update the purchasing and testing requirements and policies as technologies improve. ECD: July 31, 2020

OIG recommended that the LSSD Executive Director, in collaboration with the OFO Executive Assistant Commissioner:

**Recommendation 4:** Develop and implement a plan for the long-term development of a centralized spectral database for the chemical screening devices. This plan should include:

- how newly identified spectra will be collected, stored, and distributed to devices at the ports of entry, and
- identification of parties responsible for updates and maintenance of the spectral library.

**Response:** Concur. LSSD will develop and implement a plan that maintains a centralized spectral database for chemical screening devices. This plan will include the strategy for the collection, storing and distribution of newly identified spectra. It will also outline coordination between LSSD and OFO on updates and deployments of the spectral database. ECD: July 31, 2020



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**Appendix B**  
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