

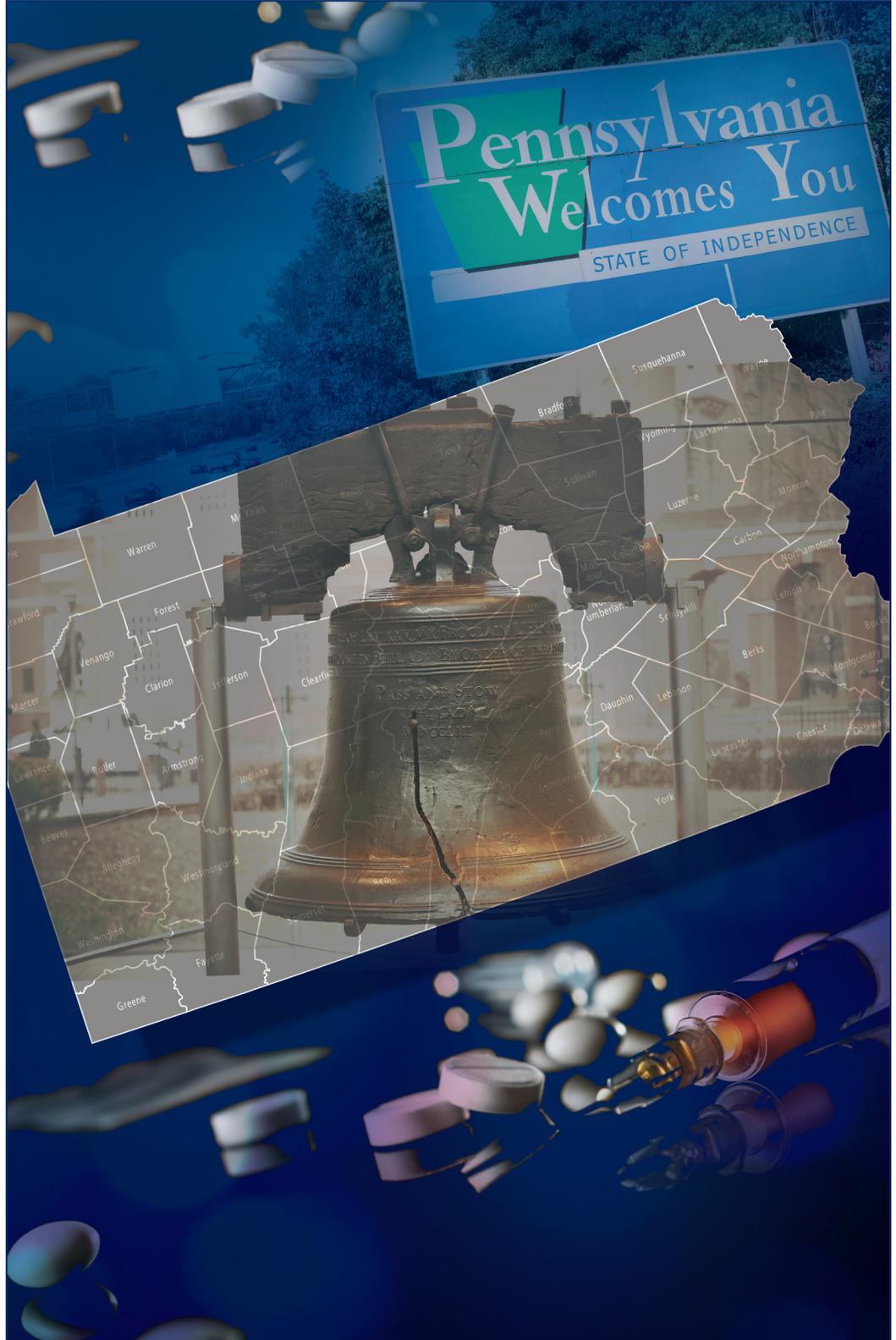
# Illicit Opioid Availability in Pennsylvania, 2020

DEA-PHL-DIR-003-21

NOVEMBER 2020



DEA  
INTELLIGENCE  
REPORT



# Executive Summary

---

The Drug Enforcement Administration (DEA) Philadelphia Field Division (PFD) analyzed intelligence and investigative trends, as well as various data indicators, to assess the current illicit opioid availability threat in Pennsylvania. The analysis revealed an increasing illicit opioid availability in Pennsylvania between 2017 and 2019, showing that it remains among Pennsylvania's most dangerous drug threats, and as demonstrated by the following key findings:

- Law enforcement seized illicit opioids in nearly all Pennsylvania counties; illicit opioids comprised the highest percentage of seized/analyzed drugs.
- The total weight of heroin seized by the DEA in Pennsylvania more than doubled, although the number of seizure incidents remained unchanged.
- Users generally rejected poor-quality illicit opioid products: more than half of the retail quantity heroin seizures in Pennsylvania exceeded 50 percent purity, while most of the highest purity fentanyl exhibits were seized in retail quantities.
- The illicit opioid supply in Pennsylvania shifted to fentanyl once Mexican transnational criminal organizations (TCOs) and Pennsylvania-based distributors realized fentanyl's dramatically increased profit potential.
- The DEA reported significant increases in the number of fentanyl seizures, wholesale quantity fentanyl seizures, total weight of fentanyl seized, and average weight of seized fentanyl in Pennsylvania.
- The total weight of fentanyl-laced tablet (counterfeit controlled prescription drugs) seizures in Pennsylvania increased by 200 percent, with individual seizures containing up to 40,000 tablets.
- The most frequently identified fentanyl-related compounds in Pennsylvania were acetyl fentanyl, fluoroisobutyl fentanyl, and furanyl fentanyl, while 3-methylfentanyl and carfentanil were consistently present.
- Toxicology tests of fatal overdose victims revealed the true impact of illicit opioids in Pennsylvania, with fentanyl presence increasing dramatically since 2014-15.

## Details

---

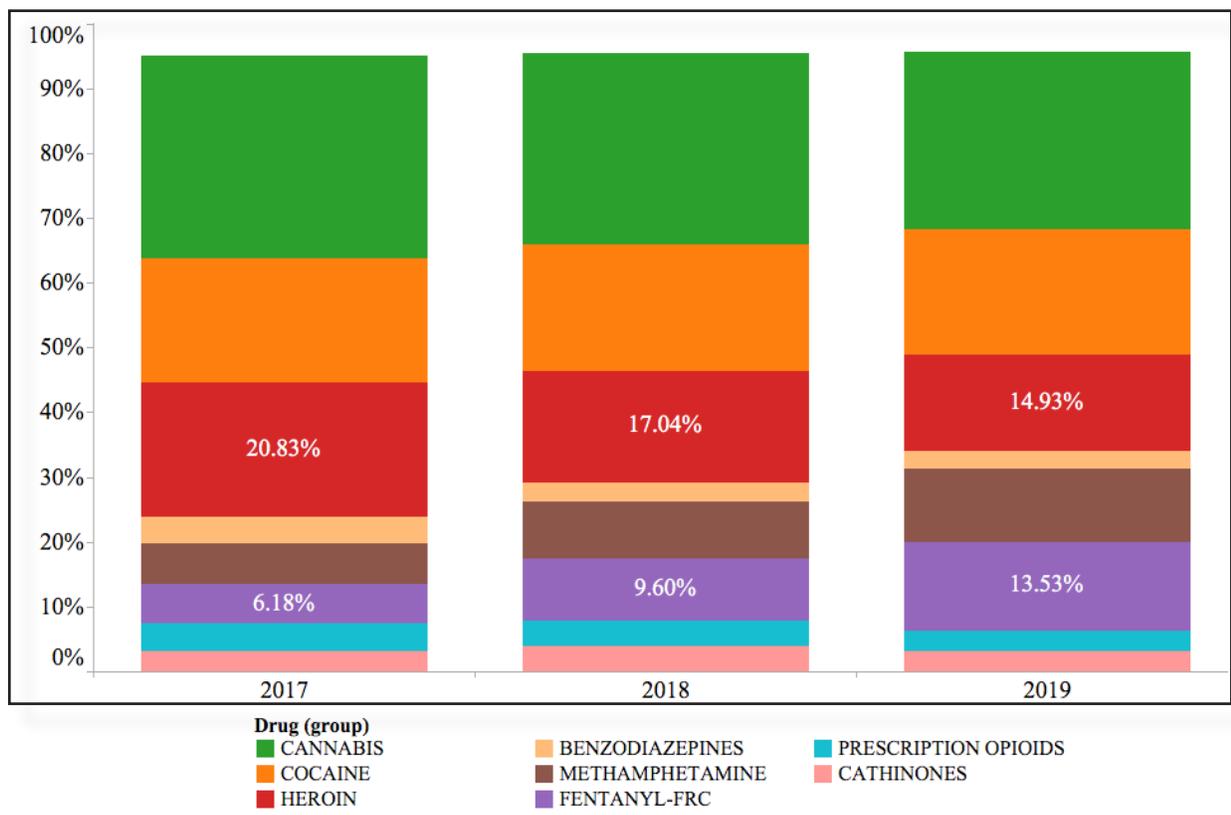
The increasing availability of illicit opioids is the most significant drug threat in Pennsylvania. The PFD monitors this threat closely, periodically reviewing multiple data indicators, in conjunction with investigative information, to continually assess the threat, then share analytical findings with stakeholders in federal, state, and municipal governments. In 2018, the PFD published *The Opioid Threat in Pennsylvania* which assessed the supply, demand, and abuse of opioids in the Commonwealth through 2016. This product updates current availability of illicit opioids in Pennsylvania based on 2017-2019 data, as the diversity and volume of supply evolved rapidly and prolonged an epidemic.

Illicit opioids, to include heroin, fentanyl, and fentanyl-related compounds (FRC) sourced from Mexican and Chinese suppliers, remain a pervasive drug threat in Pennsylvania, where PFD offices, state/local law enforcement agencies, and other stakeholders report persistent increases in various indicators that demonstrate availability, such as the volume of illicit opioid seizures by law enforcement, identification of seized drugs as illicit opioids by laboratory analysis, and drug-related

overdose deaths. According to information identified from numerous investigations, the production locations, trafficking methods and routes, and local distribution organizations remain consistent with previous reporting. However, the increase in heroin and fentanyl availability as measured by seizures and overdose deaths, the impact of evolving heroin and fentanyl purity, and the introduction of myriad FRCs into Pennsylvania’s illicit drug market since 2017 are the most significant findings resulting from this analysis.

Data from laboratory-analyzed drug seizure exhibits, housed in the National Forensic Laboratory Information System (NFLIS), is a reliable indicator of existing and emerging trends in drug availability.<sup>a</sup> Analysis of NFLIS data for drug seizure exhibits revealed that illicit opioids comprised nearly thirty percent of seized and analyzed drugs in Pennsylvania in 2019 (see Figure 1), and were seized in 97 percent of Pennsylvania counties between 2017 and 2019 (see Figure 2).<sup>b</sup>

**(U) Figure 1. Seized and Analyzed Drug Exhibits by Group (Excerpted), Pennsylvania, 2017-2019**



Source: National Forensic Laboratory Information System

a. The DEA NFLIS collects results from drug chemistry analyses conducted by state, local, and federal forensic laboratories across the country. NFLIS provides analytical results of drugs seized by law enforcement and is a source of information for monitoring drug trafficking and availability in the United States.  
 b. Montgomery and Bucks counties had seizures of illicit opioids, but were not included in the map due to incomplete data (see Footnote c).



Figure 4 shows more than six kilograms of wholesale-packaged unadulterated heroin supplied by Mexican sources and seized from a Philadelphia residence in 2019.

**(U) Figure 4. Heroin Kilograms Seized in Philadelphia, 2019**



*Source: DEA Philadelphia Field Division*

## Heroin Combinations

At the time of importation into the United States, wholesale quantities of heroin rarely contain other controlled substances. This trend continues once wholesale quantities of heroin arrive in Pennsylvania, as laboratory analysis revealed that no additional controlled substances were identified in more than 80 percent of DEA heroin seizures between one and five kilograms, and in all heroin seizures greater than five kilograms in Pennsylvania between 2017 and 2019.

Distribution organizations in Pennsylvania typically maximize their profit by cutting, i.e., mixing other controlled substances and/or other adulterants<sup>d</sup> or diluents<sup>e</sup> with the primary illicit controlled substance to increase the volume of product packaged for street-level retail sale. For example, a kilogram of heroin can be purchased in Philadelphia for approximately \$60,000, which represents a potential profit of about \$42,000 per kilogram to the foreign source of supply. Regional and local distribution organizations then repackage that kilogram into approximately 50,000 bags for street sale (without further cutting) at about \$10 per bag, generating more than \$500,000 in sales. Historically, regional and local distributors mixed heroin with adulterants such as caffeine, procaine, quinine, and lidocaine to increase their profits, but sacrificed some quality of the final product for users. However, as noted below, users in Pennsylvania demand and can easily recognize a better quality, higher purity product; therefore, excessive diluting can negatively impact retail sales.

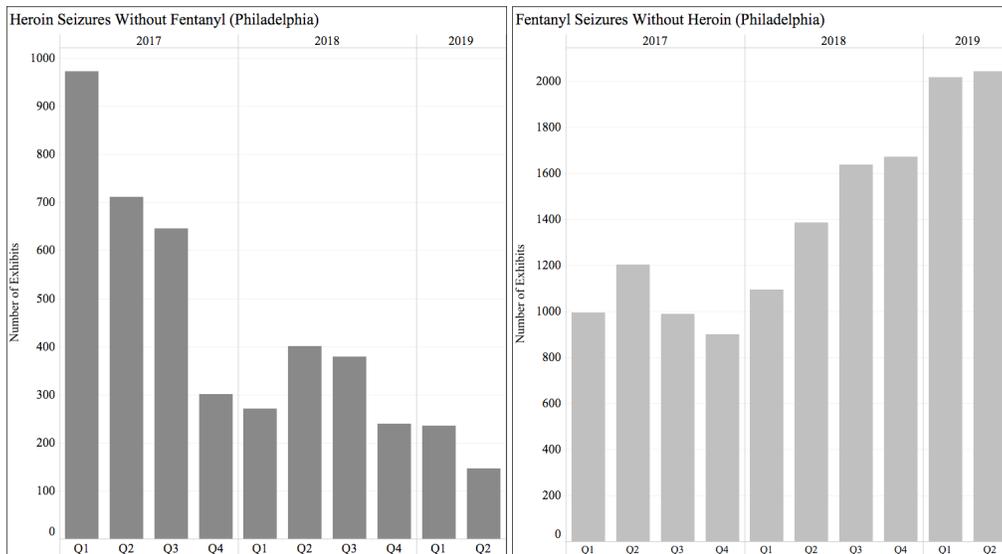
The emergence of fentanyl in 2013 allowed distributors to “cut” or mix it with heroin, and enabled them to increase profits without sacrificing product quality. Such mixing continues, as confirmed by investigative intelligence and laboratory analysis. Users report that it is increasingly difficult to find heroin at the retail level that has NOT been mixed with fentanyl. Concurrently, the presence of fentanyl found alone (without other controlled substances) continues to increase (see Figure 5). As traffickers recognized, then sought to maximize, the increased profit potential of fentanyl over heroin (discussed in the Fentanyl section), the illicit opioid market in Pennsylvania shifted gradually to fentanyl.

Further illustrating increased mixing of heroin with other controlled substances at the retail level in Pennsylvania, laboratory analysis revealed that more than 90 percent of retail heroin exhibits contained at least one additional controlled substance in 2019 (compared to less than half in 2017). Among these combinations, heroin was most frequently mixed with fentanyl or FRCs; however, tramadol recently emerged as a popular adulterant in street-level seizures.

d. An adulterant is a pharmacologically active substance that is added to heroin to enhance or mimic the effect of heroin. Adulterants can be added to heroin shipments immediately after production, in transit, or prior to distribution.

e. A diluent is an inert ingredient (pharmacologically inactive compound) used to increase the bulk of a finished product. Typical diluents are sugars, starches, and inorganic salts.

**(U) Figure 5. Heroin and Fentanyl Seized and Analyzed Drug Exhibits, Philadelphia, 2017-2019 (Q2)**



Source: National Forensic Laboratory Information System

Figure 6 shows an example of mixing of substances at the retail level, with more than 15,000 bags of heroin and fentanyl mixed and packaged for sale in Philadelphia.

**(U) Figure 6. Heroin/Fentanyl Bags Packaged for Retail Sale, Philadelphia, 2018**



Source: DEA Philadelphia Field Division

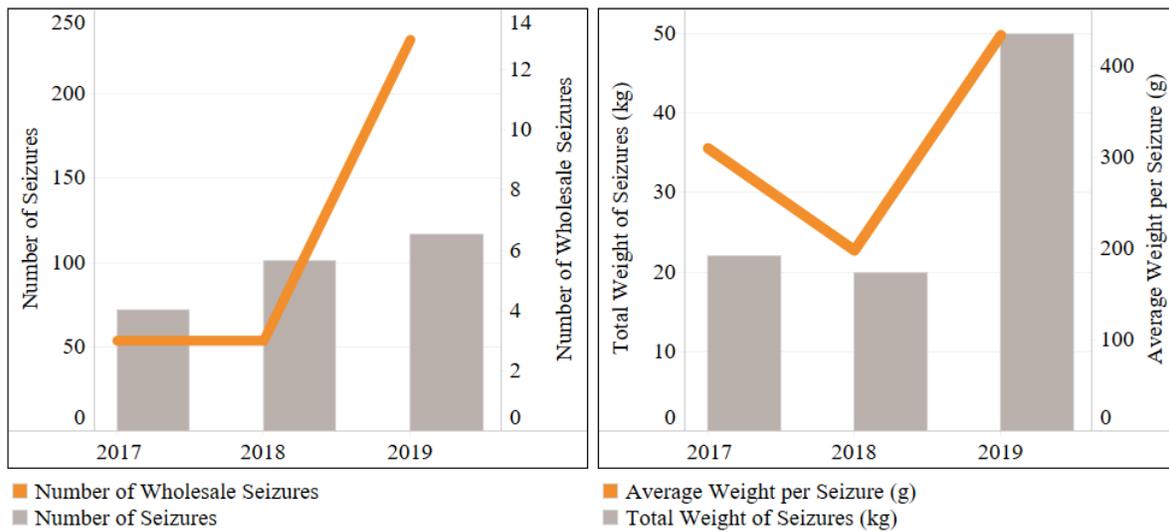
## Heroin Purity

Heroin purity in Pennsylvania has been a hallmark of dubious distinction, historically ranked among the highest in the country. A review of quantitated laboratory analyzed exhibits found that all of DEA's wholesale heroin seizures in Pennsylvania between 2017 and 2019 exceeded 90 percent purity, indicating that wholesale quantities were not mixed with adulterants or diluents. Notably, more than half of the retail quantity (<1-50 grams) heroin seizures in Pennsylvania, whether already packaged or awaiting packaging for retail sale, were found with purities exceeding 50 percent. This data confirms anecdotal reporting that low-quality heroin is rejected in the user market; therefore, local distributors must limit diluents that solely increase the volume of product. User demand for highly potent illicit opioids, combined with the prospect of increased profits for Mexican sources of supply, facilitated the emergence and increasing presence of fentanyl in Pennsylvania's illicit drug supply beginning in 2013.

# Fentanyl Availability

Fentanyl is approximately 50 times stronger than heroin; therefore, significant increases in fentanyl availability pose an even greater danger to users. Since its emergence in 2013, fentanyl availability surged in Pennsylvania, clearly demonstrated by increases in the total weight of DEA seizures, the number of wholesale quantity seizures, and the average weight of fentanyl per seizure. Specifically, the PFD reported a more than 60 percent increase in the number of fentanyl seizures (regardless of weight) and a more than 130 percent increase in the total weight of fentanyl seized in Pennsylvania between 2017 and 2019, while the number of DEA wholesale fentanyl seizures in Pennsylvania increased more than 300 percent and the average weight per seizure rose to nearly 500 grams (see Figure 7).

**(U) Figure 7. Fentanyl Seized by DEA in Pennsylvania, 2017-2019**



Source: DEA Philadelphia Field Division

Figure 8 shows more than ten kilograms of fentanyl (sourced directly from Mexico) seized pursuant to a Pennsylvania traffic stop in 2019.

Similar to heroin, wholesale quantities of fentanyl are not often adulterated with other controlled substances prior to smuggling into the United States and shipment to Pennsylvania. Laboratory analysis revealed that no additional controlled substances were identified in more than 70 percent of DEA fentanyl seizures between one and five kilograms, and in 100 percent of fentanyl seizures greater than five kilograms in Pennsylvania.

**(U) Figure 8. Ten Kilograms of Fentanyl Seized in Pennsylvania, 2019**



Source: DEA Philadelphia Field Division

Fentanyl profits, especially for foreign sources of supply, are higher than heroin profits due to lower costs and relative ease of production. Similar to heroin, local distributors repackage fentanyl for retail distribution; however, due to its extreme potency, fentanyl must be cut with other substances. A kilogram of fentanyl purchased from a source in Mexico can be cut into multiple kilograms locally

to increase the quantity of product available for retail sale, which increases profits dramatically throughout the local distribution chain. The availability of fentanyl allows retail distributors to offer a high-quality fentanyl-based product to users at or below the cost of a lesser quality heroin-based product, yet realize a higher profit. Using the example noted in the Heroin section earlier, a kilogram of fentanyl, once cut, can result in 250,000 bags packaged for retail sale, thereby increasing profits to more than \$2.5 million. With well-established heroin demand, user markets, and distribution infrastructure in Pennsylvania, introducing fentanyl into the illicit supply presented a lucrative opportunity to Mexican traffickers.

## Fentanyl Purity

The purity of fentanyl shipped from China commonly tests above 90 percent, with DEA reporting indicating that, in addition to producing fentanyl within Mexico, Mexican traffickers order fentanyl from China, cut it, and smuggle it into the United States. These methods account for the lower purities (averaging less than 10 percent pure) commonly associated with Mexican-sourced fentanyl.

The purity of Mexican-supplied fentanyl, as measured in content by weight, is lower than heroin due to the increased potency of fentanyl. For example, one kilogram of fentanyl product smuggled into the United States actually contains a small amount of fentanyl (less than 10 percent) mixed with other substances, whereas one kilogram of heroin product contains a far greater portion of heroin. For the same reason, a quantity of fentanyl sold at the retail level presents a higher risk to the user than the same quantity of heroin.

An analysis of fentanyl purity from DEA seizures in Pennsylvania shows significantly increasing percentages of higher-purity seizures (between five and ten percent), regardless of weight, from 2017 to 2019 (see Figure 9). Furthermore, and of greater concern, nearly all of the 2019 analyzed exhibits that exceeded 10 percent purity were seized in quantities of less than 50 grams (not wholesale quantities). This is a clear indicator of a dangerous and increasingly potent fentanyl product available to users throughout the Commonwealth.

**(U) Figure 9. Percentage of DEA Fentanyl Seizures in Pennsylvania by Purity Band, 2017-2019**

Purity Band	2017	2018	2019
<1-4.9%	83.33%	58.75%	37.50%
5-9.9%	13.33%	32.50%	46.88%
>10%	3.33%	8.75%	20.31%

Source: DEA Philadelphia Field Division

## Fentanyl-Laced Tablets

Fentanyl is primarily seized in powder form in Pennsylvania; however, since 2016, laboratory analysis increasingly discovered fentanyl in counterfeit controlled prescription drugs (CPDs) available in the local drug supply. For example, PFD investigators seized more than 20,000 counterfeit oxycodone pills from a Philadelphia residence in October 2018. The tablets, similar to those shown in Figure 10, appeared as authentic oxycodone tablets, but laboratory analysis confirmed the presence of fentanyl. Counterfeit pill sources include Mexican TCOs, which produced and smuggled millions of counterfeit pills into the United States in the last few years, as well as local production operations that are occasionally encountered and dismantled by authorities. The PFD recently published a report entitled *Counterfeit Controlled Prescription Drug Availability in Pennsylvania and Delaware* which provides detailed analysis of this emerging trend and threat.

Fentanyl-laced tablets (counterfeit CPDs) comprised more than 10 percent of the total weight of DEA's fentanyl seizures in Pennsylvania during 2019 (compared to .05 percent in 2018). Also during

U) Figure 10. Comparison of Counterfeit Pills to Authentic Oxycodone 30mg Pills



Authentic Oxycodone 30mg Pill



Seized Counterfeit Oxycodone 30mg Pills

Source: DEA Philadelphia Field Division

2019, PFD investigations yielded individual seizures ranging from 100 to 40,000 tablets of counterfeit CPDs containing fentanyl. Analysis of NFLIS data also shows the percentage of tablet exhibits containing fentanyl that were seized by law enforcement in Pennsylvania grew from 2017 to 2019. In addition, the number of Pennsylvania counties reporting such seizures grew concurrently (from 12 in 2017 to 20 in 2019), further illustrating the increased availability of these new products in the illicit drug supply.

## Fentanyl-related Compound Availability

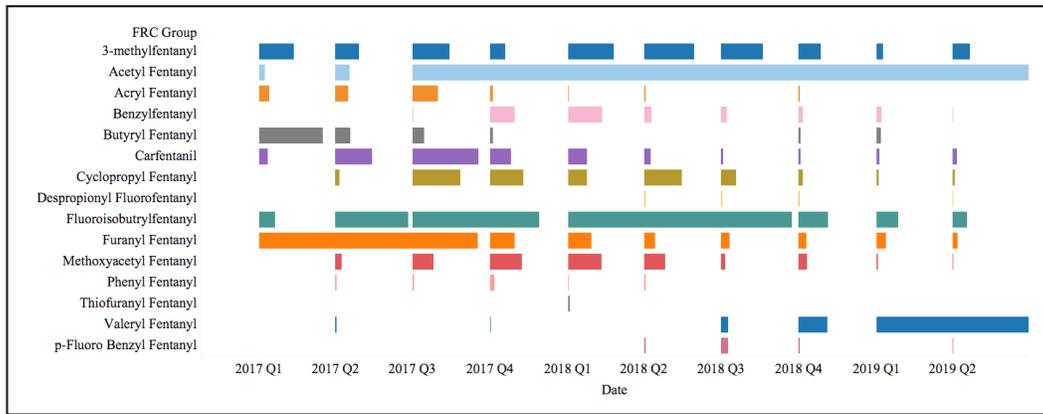
Fentanyl-related compounds are in the fentanyl chemical family, with often similar pharmacological effects, yet minor variations in chemical structure. FRCs emerged in the Pennsylvania illicit drug market shortly after fentanyl appeared in 2013. Some distributors sought to avert widespread attention to fentanyl by providing users with a high quality, potent product that sold as heroin or fentanyl. This potent product contained FRCs that may not have been federally or state controlled at the time. Most of these substances are not approved for use in humans; therefore, information about potency and lethal dosages are frequently unknown.

FRCs were almost exclusively shipped from China and supplied through internet-based orders shipped via mail and parcel services; however, DEA investigations are identifying emerging source locations such as India, particularly since the Chinese government enacted controls over all FRCs in May 2019. Unlike fentanyl, Mexican TCOs do not appear to frequently produce FRCs clandestinely; rather TCOs generally acquire them in finished form from Chinese or other foreign sources to smuggle into the United States. Intelligence and laboratory analysis indicate that some FRCs enter the drug supply at the regional or local level, where they are mixed with other controlled or non-controlled substances during packaging for retail sale. According to laboratory analysis, FRCs are frequently found with a higher than 90 percent purity, thus presenting a grave threat to mostly unsuspecting users.

Analysis of NFLIS data showed 15 distinct FRCs seized in Pennsylvania between 2017 and 2019. Overall, the most frequently identified FRCs were acetyl fentanyl, fluoroisobutyl fentanyl, and furanyl fentanyl. A closer look at individual FRCs show that furanyl fentanyl was the most frequently identified FRC in 2017, but decreased considerably in 2019. Conversely, valeryl fentanyl was noted minimally in 2017, but was the second most frequently identified in 2019. The extremely potent FRC carfentanil was first identified in Pennsylvania during 2016 and has since remained present.<sup>f</sup>

f. Carfentanil is a Schedule II opioid used for large animals and is 100 times more potent than fentanyl.

**(U) Figure 11. Fentanyl-related Compound Analyzed Exhibits, Pennsylvania, 2017-2019 (Q2)**

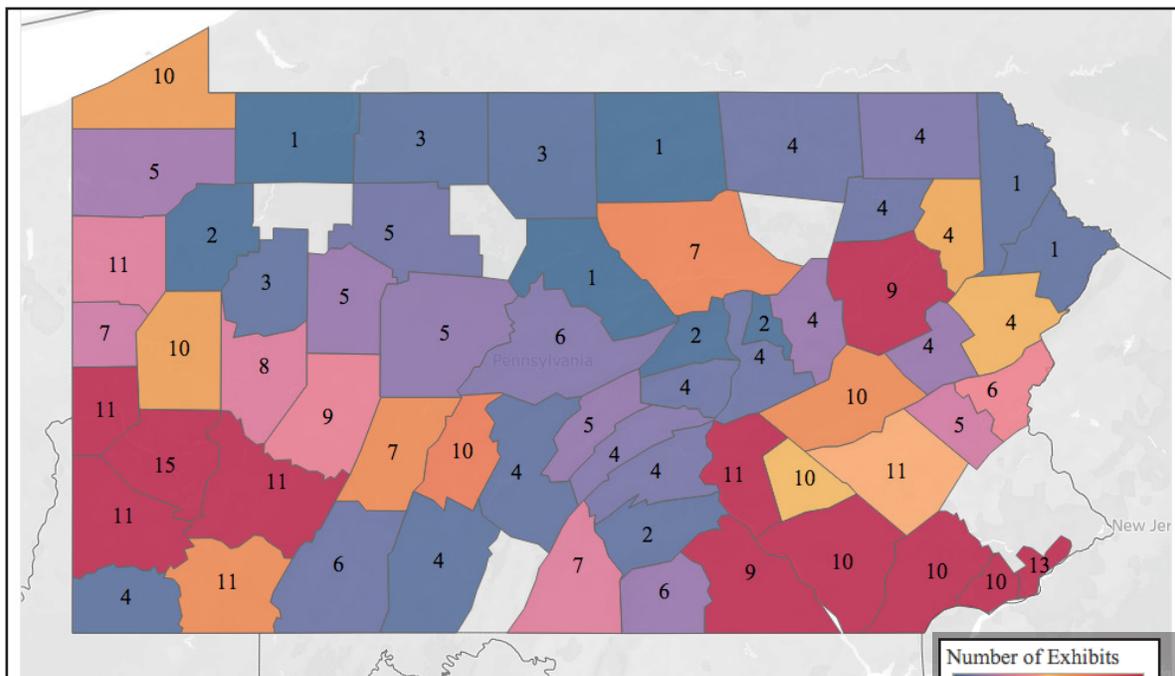


Source: National Forensic Laboratory Information System

Figure 11 shows the presence of individual FRCs each quarter, with the length of the bar indicating the volume of analyzed exhibits; only 5 of the 15 distinct FRCs were present throughout the reviewed period: 3-methylfentanyl, acetyl fentanyl, carfentanil, fluoroisobutyryl fentanyl, and furanyl fentanyl.

Authorities seized FRCs in 63 of Pennsylvania’s 67 counties during the 2017-2019 period.<sup>9</sup> Figure 12 shows the volume of analyzed exhibits by color, concentrated primarily in the Philadelphia, Pittsburgh, and Harrisburg/Lancaster/York metropolitan areas, while also showing the variety of FRCs found in each county by number. Notably, Allegheny and Philadelphia counties reported 15 and 13 distinct FRCs, respectively, during the analyzed time period. This is a strong indicator of evolving diversity in the illicit opioid drug supply in Pennsylvania’s two largest distribution markets and primary source areas for the rest of the Commonwealth.

**(U) Figure 12. Number and Distinct Types of Fentanyl-related Compound Analyzed Exhibits by Pennsylvania County, 2017-2019<sup>h</sup>**



Source: National Forensic Laboratory Information System

g. Montgomery and Bucks counties had seizures of FRC, but were not included due to incomplete data (see Footnote h).  
 h. Montgomery and Bucks counties use a private laboratory for drug chemistry analysis - this data is not included in NFLIS at this time. The lack of reported data herein does not indicate a lack of presence of these drugs in those counties.

Laboratory-analyzed FRCs in Pennsylvania were primarily seized in powder form, and often found in combination with other illicit opioids. Analysis of NFLIS data found that approximately 60 percent of FRC-positive exhibits contained fentanyl, while about 40 percent contained heroin. This further illustrates the adulteration of drugs occurring at the local level, as previously documented herein.

Two PFD investigations exemplify this threat: first, PFD investigators, while investigating a Philadelphia-based distribution organization in 2019, seized more than 700 grams of purported heroin from a Philadelphia residence; laboratory analysis subsequently confirmed the presence of valeryl fentanyl, fentanyl, and heroin in the seized powder. Second, demonstrating the evolution of FRC availability and forms, authorities seized counterfeit oxycodone tablets containing carfentanil in western Pennsylvania in 2019 (see Figure 13). The investigation revealed that local sources purchased the carfentanil tablets from Dark Web sources with virtual currency and then received them via mail/parcel delivery.

**(U) Figure 13. Counterfeit Oxycodone Pills Containing Carfentanil Seized in Western Pennsylvania, 2019**



Source: DEA Philadelphia Field Division

## Illicit Opioid-related Overdose Deaths

The public impact of increasing illicit opioid availability in Pennsylvania is best observed through the inordinate number of overdose deaths occurring in recent years. Specifically, fentanyl's emergence into Pennsylvania's illicit drug supply was immediately confirmed by a sharp increase in fentanyl-related overdose deaths, first noted in 2014-15. Since then, fentanyl surpassed heroin as the primary drug found in toxicology tests of Pennsylvania's overdose decedents, with rates climbing each year, further demonstrating increasing fentanyl availability coupled with fentanyl's gradual supplanting of heroin in the user market (see Figure 14).

**(U) Figure 14. Presence of Illicit Opioids in Overdose Deaths, Pennsylvania, 2014-2019<sup>i</sup>**

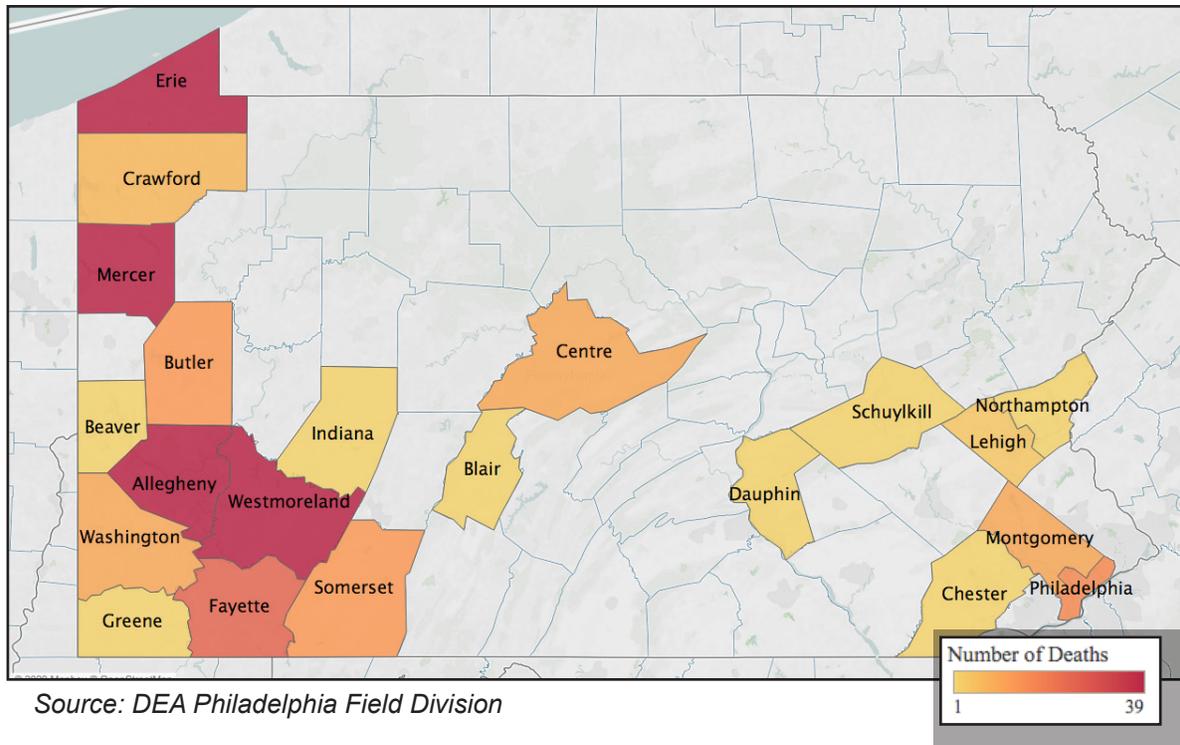
<b>DRUG CATEGORY</b>	<b>2014</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>
<b>FENTANYL</b>	14%	27%	47%	67%	70%	73%
<b>FRC</b>		4%	5%	18%	23%	14%
<b>HEROIN</b>	52%	53%	43%	38%	35%	30%

Source: DEA Philadelphia Field Division

The presence of FRCs in overdose deaths increased significantly between 2016 and 2017 (similar to fentanyl) and maintained about a 20 percent presence between 2017 and 2019. The most potent FRC, carfentanil, was noted in more than 150 deaths between 2017 and 2019, peaking at approximately 100 related deaths in 2017. Carfentanil-related deaths were reported in more than 20 Pennsylvania counties, but concentrated in western Pennsylvania (see Figure 15).

i. 2019 data is not finalized as of October 2020; data displayed includes 46 counties with finalized 2019 data.

(U) Figure 15. Carfentanil-related Overdose Deaths by Pennsylvania County, 2017-2019<sup>j</sup>



## Outlook

The trends and analytical findings documented herein show that illicit opioid availability will likely continue to evolve and remain the top drug threat to Pennsylvania for the foreseeable future. Insatiable demand for a high-quality opioid product is now satisfied primarily by fentanyl, which is more dangerous to users, yet more cost-effective for suppliers to produce, transport, and distribute. Mexican TCOs, supported by numerous distribution networks scattered throughout the Commonwealth, will persist in supplying a robust opioid market in Pennsylvania. This will potentially attract new and former users seeking a presumed “safe” method of ingestion by continuing to produce counterfeit CPDs containing fentanyl and FRCs.

Mexican TCOs, supported by numerous distribution networks scattered throughout the Commonwealth, will persist in supplying a robust opioid market in Pennsylvania and potentially attract new or former users seeking a presumed “safe” method of ingestion by continuing to produce counterfeit CPDs containing fentanyl and FRCs. High demand that is met with a steadily increasing illicit opioid supply will ultimately result in consistent, if not increased, levels of fatal and non-fatal overdoses overall in Pennsylvania, as well as those specifically attributed to illicit opioids. Therefore, persistent vigilance of the illicit opioid threat is critical, and the PFD will continue monitoring it through data indicators and trends derived from its investigations.

j. Data was provided by Pennsylvania Coroners and Medical Examiners; however, it is possible that not all carfentanil death reports were received and therefore, the map may underrepresent the number of carfentanil-related deaths during the specified time period.

DEA PRB 10-05-20-32



(U) This product was prepared by the DEA Intelligence Program - Philadelphia Field Division. Comments and questions may be addressed to the Indicator Programs Section at: [DEA.IntelligenceProducts@usdoj.gov](mailto:DEA.IntelligenceProducts@usdoj.gov). For media/press inquiries, call: (202) 307-7977.

**DFN-701-03--Destroy 2 years after issuance or when the DEA Intelligence Report is superseded or obsolete.**



# DEA Intelligence Product Feedback Database



Name of Organization: \_\_\_\_\_  
 Point of Contact: \_\_\_\_\_ Telephone Number: \_\_\_\_\_  
 Email: \_\_\_\_\_

DEA Product #: DEA- \_\_\_\_\_  
 Title: \_\_\_\_\_

	Very Satisfied	Somewhat Satisfied	Neither Satisfied nor Dissatisfied	Somewhat Dissatisfied	Very Dissatisfied
Overall satisfaction with DEA Product	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Readability/Understanding of DEA Product	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Value/Usefulness of NNP Product	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Report Increased my Understanding or Knowledge of the report subject	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Product Relevance to my agency's mission	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
How will you use this report? (Check all that apply)	<input type="checkbox"/> Policy Formulation <input type="checkbox"/> Situational Awareness <input type="checkbox"/> Operational Planning <input type="checkbox"/> Training <input type="checkbox"/> Resource Allocation <input type="checkbox"/> Other				

Additional Comments: