The Opioid Threat in Pennsylvania

JOINT INTELLIGENCE REPORT

PittPharmacy

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(U) This product was prepared by the DEA Philadelphia Division and the University of Pittsburgh. Comments and questions may be addressed to the Chief, Analysis and Production Section at DEA.IntelligenceProducts@usdoj.gov. For media/press inquiries call (202) 307-7977.

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Background

The Drug Enforcement Administration (DEA) Philadelphia Field Division (PFD) is responsible for conducting investigations and collecting intelligence related to the importation, distribution, and abuse of controlled substances in, and with connections to, Pennsylvania. As such, the PFD has dedicated considerable resources to cultivate strategies to stem the opioid supply in Pennsylvania, while simultaneously developing a robust cross-disciplinary information sharing platform to ensure collaboration with partners and stakeholders. DEA's role in addressing the opioid crisis expands beyond traditional law enforcement tactics and includes partnerships with public health and treatment entities, policymakers, academia, and the public.

Purpose

Crafting initiatives and strategies to address opioid supply, demand, and misuse requires timely and actionable information and data, which this report endeavors to provide. Previously published PFD reports have assessed specific aspects of opioid supply and the associated impact of abuse. This report presents a comprehensive assessment of the opioid crisis in Pennsylvania, through collection and analysis of supply and demand indicators and intelligence, as well as detailed county level analysis of multiple opioid misuse data sources.

Scope

This assessment analyzes the opioid crisis via three components: **Supply**, **Demand**, and **Impact**. The **Supply** section identifies and defines the types of opioids available, the level of availability, and the law enforcement response to combating supply, as measured through DEA and law enforcement investigative information and data sources. The **Demand** section summarizes intelligence gathered from drug users, substance use disorder treatment professionals, physicians, and pharmacists regarding the current and historical demand for opioids, as well as efforts underway to reduce the demand throughout the Commonwealth. Finally, the **Impact** section analyzes multiple data sources, including fatal overdose data, naloxone administration data, and workforce and economic impact data to assess the impact of opioid misuse from several perspectives. Also included are several Case Studies of counties achieving success in combating the opioid crisis in their respective regions. Whenever possible, multi-year data was collected and analyzed in an effort to assess the totality of the opioid crisis and to evaluate changes over time.

The PFD worked jointly with the University of Pittsburgh School of Pharmacy's Program Evaluation Research Unit (PERU), Pennsylvania Opioid Overdose Reduction Technical Assistance Center (TAC) in the analysis of specific data contained in this assessment. The TAC was funded in 2016 by the Pennsylvania Commission on Crime and Delinquency (PCCD). The goal of the TAC is to support Pennsylvania counties in achieving their vision of eliminating overdose and ensuring the health, safety, and well-being of individuals with Substance Use Disorder and those surrounding them.

KEY FINDINGS

- The high availability and corresponding demand leading to the misuse of illicit and prescription opioids is a crisis without geographic, demographic, or socioeconomic boundaries in Pennsylvania.
- Heroin sourced from Mexican transnational criminal organizations (TCOs) presents a persistent and pervasive drug threat in Pennsylvania.
- The heroin threat to Pennsylvania is exacerbated by the unprecedented proliferation of clandestinely produced fentanyl and fentanyl-related substances.
- Heroin and fentanyl availability in Pennsylvania are ubiquitous and impacting more than 97 percent of counties.
- Implementation of legislation influencing prescription opioid prescribing has resulted in a decrease in availability; however, a corresponding decrease in demand is less certain.
- Pennsylvania experienced 5,456 drug-related overdose deaths in 2017. This number represents a rate of 43 deaths per 100,000, far exceeding the national average of 22 per 100,000 in 2017.[1]
- Increased fentanyl availability and misuse contributed to a 65 percent overall increase in drug-related overdose deaths in Pennsylvania between 2015 and 2017.
- Interviews of drug users and treatment personnel indicate that users often experience multiple overdoses in the course of their drug use, and widespread naloxone availability has resulted in many lives saved; however, naloxone availability is one component of a continuum of care in a person with opioid use disorder's prevention, intervention, treatment and long term recovery.
- Multi-disciplinary efforts between public health and public safety have resulted in documented progress in some Pennsylvania counties, thereby establishing a model for implementing strategies and achieving success in combating the opioid crisis.

ACKNOWLEDGMENTS

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Supply

DEA's mission, in conjunction with law enforcement partners, is to reduce the illicit drug supply, including opioids, through investigation and prosecution of international, regional, and local controlled substance law violators. As part of the overall mission, the DEA Diversion Control Division endeavors to prevent, detect, and investigate the diversion of controlled pharmaceuticals and listed chemicals from legitimate sources. Finally, the DEA's mission is supported by a comprehensive national drug intelligence program to collect, analyze, and disseminate strategic and operational drug intelligence information to inform investigators, management, and policymakers of trends in licit and illicit drug supply.

The PFD Intelligence Program conducted extensive review and analysis of law enforcement investigative data and intelligence gleaned from various sources to define and describe the complexities of the opioid supply in Pennsylvania. This section details the current availability and distribution methods of opioids, inclusive of opioid controlled prescription drugs, heroin, fentanyl, fentanyl-related substances, and non-prescription synthetic opioids in Pennsylvania.

Opioid Controlled Prescription Drugs (CPDs)

Drugs and other substances that are considered controlled substances under the Controlled Substances Act (CSA) are divided into five Schedules (I with highest potential for misuse to V with the lowest potential for misuse) depending upon the drug's acceptable medical use and the drug's misuse or dependency potential. Controlled Prescription Drugs (CPDs), specifically the Schedule II opioids oxycodone and hydrocodone, are widely available in Pennsylvania. Significant quantities of oxycodone and hydrocodone are prescribed each year; however, the overall number of dosage units prescribed of these products has declined since 2015. Concurrently, the enactment of a revamped Prescription Drug Monitoring Program (PDMP) took place in 2016 and collects information on all filled prescriptions for controlled substances.[2] This information aims to aid health care providers in safely prescribing CPDs.

The vast majority of oxycodone and hydrocodone products prescribed are for legitimate medical purpose; however, some products become available in the illicit drug supply through diversion. While it is not possible to quantify the exact amount of prescription opioids available in the illicit drug supply, there may be a link between a higher quantity of pills prescribed and dispensed through legitimate circulation and a greater potential for diversion to the illicit drug market for possible misuse.

Availability

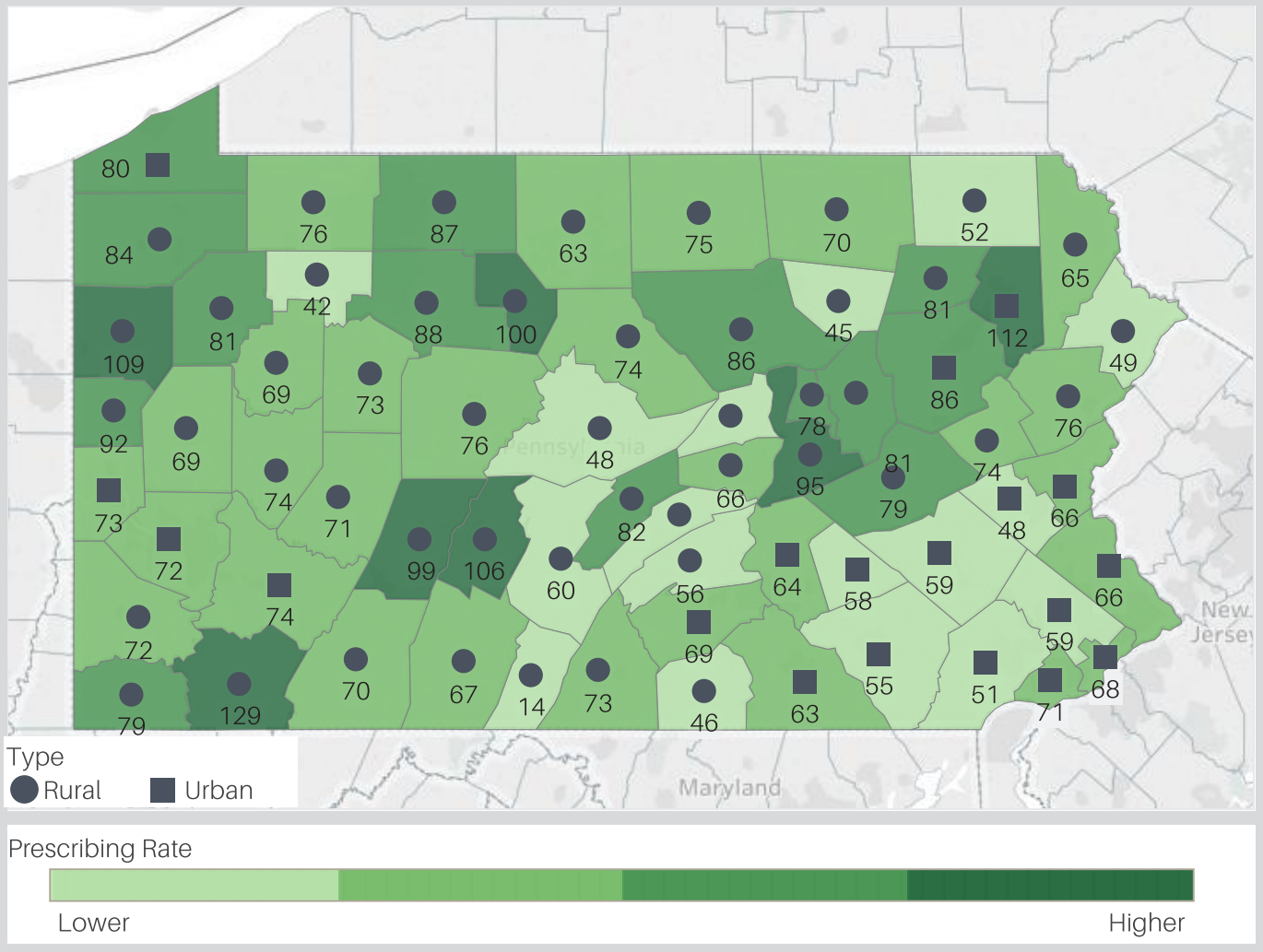
Nationally, the overall opioid prescribing rate declined from 2012 to 2016, and in 2016, the prescribing rate fell to the lowest level in more than 10 years, at 66.5 prescriptions per 100 persons.[3]

According to data from the Centers for Disease Control (CDC), Pennsylvania practitioners wrote an average of 69.5 opioid prescriptions per 100 persons in 2016 (most recent data available), the 26th highest in the country. This ranking was a drop from Pennsylvania having the sixth highest rate in the country in both 2014 and 2015.[4]

At the county level, Pennsylvania ranged from 13.8 (Fulton County) to 128.8 (Fayette County) opioid prescriptions per 100 persons in 2016 (see Figure 1).[5] More than 60 percent of Pennsylvania counties had prescribing rates above the national prescribing rate in 2016.

The two most commonly prescribed opioid CPDs in Pennsylvania are oxycodone and hydrocodone. In 2017, Pennsylvania pharmacies filled more than 2.4 million prescriptions for almost 260 million dosage units of oxycodone products, and 1.6 million prescriptions for 146 million dosage units of hydrocodone products.[6] The total dosage units of oxycodone and hydrocodone products dispensed in 2017 equates to approximately 32 dosage units for every Pennsylvanian.[7]

(U) Figure 1. Opioid Prescriptions per 100 persons by Pennsylvania County, 2016



Source: Centers for Disease Control

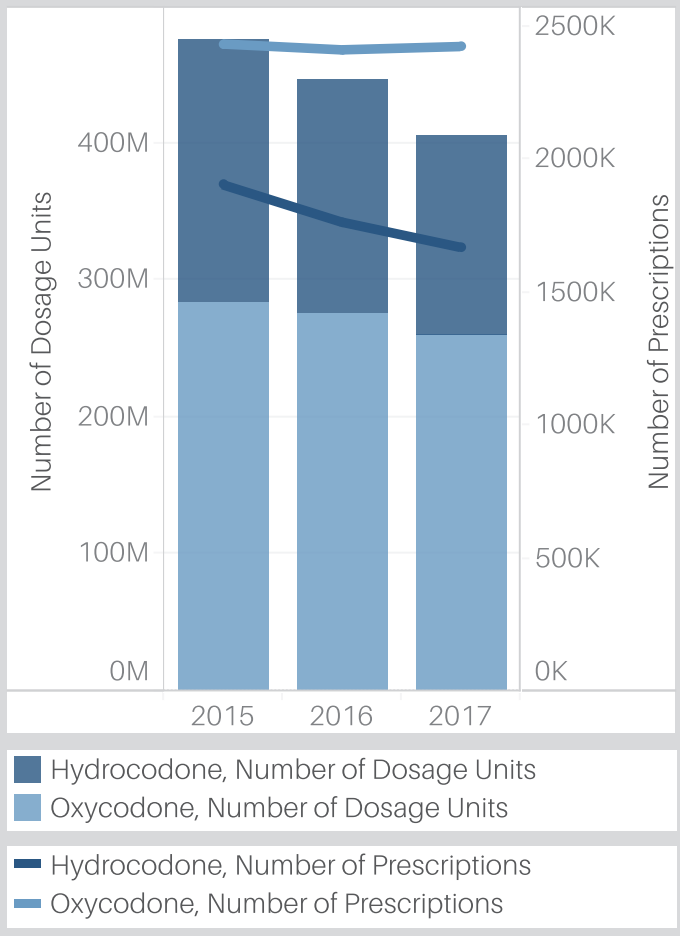
The total number of dosage units dispensed in 2017 declined approximately 6 percent for oxycodone and approximately 14 percent for hydrocodone from 2016; comparing 2017 to 2015 showed an even greater decline of approximately 8 percent for oxycodone and approximately 24 percent for hydrocodone (see Figure 2).

The Pennsylvania Prescription Drug Monitoring Program

The Pennsylvania Prescription Drug Monitoring Program (PDMP) collects information on Schedule II-V Controlled Substances dispensed in Pennsylvania. Prescribers and dispensers are required to register and query the PDMP before prescribing or dispensing an opioid or benzodiazepine drug product under a set of predefined conditions available on the PDMP website. This information helps health care providers safely prescribe controlled substances and helps patients get the treatment they need. As of January 2018, the Pennsylvania PDMP is sharing data with 16 other states and Washington, DC, helping prescribers and pharmacists to obtain a more complete picture of their patients' controlled substance prescription histories.

Source: Pennsylvania Department of Health (PA-DOH)

(U) Figure 2. Number of Prescriptions and Dosage Units of Oxycodone and Hydrocodone Products Dispensed by Pennsylvania Pharmacies, 2015-2017



Source: Pennsylvania Department of Health, University of Pittsburgh School of Pharmacy, Program Evaluation Research Unit

Pharmaceutical Fentanyl

According to DEA investigations, a small amount of pharmaceutical fentanyl, usually in the form of transdermal patches or lozenges, is diverted for misuse; thus, the majority of the fentanyl available in Pennsylvania is clandestinely produced and imported (see *Fentanyl* section for more information). To minimize the future availability of pharmaceutical fentanyl, House Bill 1987 was introduced in the Pennsylvania House of Representatives in December 2017 to amend the circumstances under which pharmaceutical fentanyl could be dispensed. The bill calls for fentanyl to be dispensed only during surgery that occurs in a health care facility or to patients in hospice. If enacted, the measure would be effective 60 days later and expire in 2 years.[8]

Laboratory Analysis

Among nationwide exhibits, Pennsylvania ranked eighth in the country in the highest number of opioid CPD exhibits reported to National Forensic Laboratory Information System (NFLIS)[a] in calendar year 2017.[9]

Analysis of NFLIS data indicated that opioid CPDs[b] comprised 8.5 percent of law enforcement's seized and analyzed drug exhibits in Pennsylvania among the broad drug categories of heroin, cocaine, fentanyl, methamphetamine, prescription opioids, fentanyl related substances (FRSs), and non-prescription synthetic opioids (NPSOs), in 2017, which does not reflect a significant change from 2016.[10] Data reported to NFLIS contains multiple drug fields, therefore, exhibits found to contain opioid CPDs may also have contained other drugs.

Within the category of opioid CPDs, oxycodone comprised the largest portion (60 percent); a decrease of 20 percent was noted in oxycodone presence between 2017 and 2016. As the number of pills prescribed has decreased in recent years, the funneling of oxycodone into the illicit drug supply has also decreased, therefore making it less likely to be seized by law enforcement. Of interest, the presence of tramadol, a Schedule IV opioid analgesic approved for the treatment of pain in adults,[11] in seized and analyzed drug exhibits increased more than 100 percent from 2016 to 2017, and accounted for

[a] NFLIS is a DEA program that systematically collects drug chemistry analysis results, as well as other related information, from cases analyzed by participating state, local, and federal forensic laboratories. These laboratories analyze substances secured in law enforcement operations across the country. NFLIS data are used to support drug regulatory and scheduling efforts as well as to inform drug policy, drug enforcement, and health initiatives both nationally and in local communities. Data in the NFLIS database are based on case- and item/exhibit-level information analyzed by forensic laboratories. It should be noted that NFLIS data are not "real time," as participating laboratories report to NFLIS on different schedules and delays in evidence analysis can create backlogs on occasion. Further, during exhibit analysis, laboratories may identify several distinct drug reports within an exhibit; therefore a single exhibit reported to NFLIS may include several individual drug reports. All identified distinct drug reports are stored in the NFLIS database.

[b] Inclusive of oxycodone, oxymorphone, hydrocodone, hydromorphone, morphine, and tramadol.

approximately 14 percent of exhibits within the opioid CPD category in 2017. Investigative reporting indicates that prescribers in Pennsylvania may be offering tramadol to patients as an alternative to oxycodone and hydrocodone products.[12] In addition, tramadol has been identified in recent seizures of clandestinely produced fentanyl, discussed in greater detail in the *Fentanyl* section of this report.

A source of supply for opioid CPDs in the illicit drug market is unscrupulous physicians who write prescriptions in exchange for cash payments. These doctors often see a high volume of patients and do not perform a medical examination before writing prescriptions.

A recent DEA investigation involved a physician who owned and operated two pain management practices, suspected to be "pill mills" in the greater Philadelphia area. Significant numbers of patients traveled long distances from areas outside of Philadelphia, and from neighboring states, to see this physician. The number of patients visiting the two practices was unusually high when compared to other practitioners in the area. Many patients received similar quantities, types, and strengths of medication, all of which are in demand on the illicit drug market in the Philadelphia area. Investigators identified numerous drug trafficking organizations (DTOs) that used the two medical practices to obtain oxycodone prescriptions, which were filled and the pills re-sold for profit.[13] Prescription data indicated that the medical practices were writing hundreds of oxycodone prescriptions for tens of thousands of pills on a monthly basis.[14]

In the past, diverted CPDs were largely supplied by local DTOs that recruited "patients" to complain of ailments, resulting in a prescription for opioids, benzodiazepines, or other drugs. The "patients" then gave the filled prescription to the DTO in exchange for payment. DEA investigative reporting indicates this practice has declined in Pennsylvania recently. It is likely that the revamped PDMP has curtailed this tactic by making it more difficult for patients to "doctor shop" (see *Role of the PDMP* section below).[15]

Criminal organizations also transport opioid CPDs into Pennsylvania from other areas. For example, several investigations conducted by DEA in western Pennsylvania revealed that prescription drugs destined for the illicit drug market were transported from Detroit, MI and several locations in Florida. In most cases, individuals obtained the diverted opioid CPDs out-of-state and subsequently transported to the Pittsburgh area; in other cases, individuals saw out-of-state physicians and brought paper prescriptions back to Pennsylvania, where they were filled at Pittsburgh area pharmacies, and the pills subsequently sold.[16]

Role of the PDMP in Drug Trafficking Investigations

PDMP data plays an important role in law enforcement investigations of "doctor-shopping" patients and of prescribers operating outside the scope of medical practice. The Pennsylvania Department of Health (PA-DOH), PDMP office reported an 86 percent decrease in patients who doctor shop (visit 5+ doctors and 5+ pharmacies in a 3 month period) for Schedule II drugs in the first year of the PDMP.[17] Further, two-thirds of the more than 110 pharmacists interviewed by DEA reported a decrease in doctor shopping since the implementation of the PDMP.[18]

A recent DEA investigation involved a physician who owned a family practice and was prescribing large quantities of prescription narcotics, particularly oxycodone, outside the usual course of professional practice and without legitimate medical purpose. A review of PDMP data revealed the doctor wrote approximately 56,000 prescriptions for Schedule II controlled substances over a 59 month period and that prescriptions were written every day, including Saturdays and Sundays. The number of Schedule II dosage units prescribed totaled over six million, most of which were for oxycodone, as well as hydrocodone and fentanyl. At the time, this physician was the top oxycodone prescriber in Pennsylvania, and at least 13 of his patients ultimately died from a drug overdose.

In December 2017, the physician was indicted on 19 counts of federal charges in the Middle District of Pennsylvania, including unlawful distribution and dispensing of controlled substances, causing the death of five patients by the unlawful distribution and dispensing of controlled substances, and maintaining two drug-involved premises.[19]

Pricing

CPDs sold on the illicit market in Pennsylvania vary in price depending on the type of CPD, the area in which they are sold, and the relationship between dealer and buyer. Many CPDs sell for approximately $1 per milligram,[c] a long-known standard street price for CPDs. For example, oxycodone 30 mg tablets are sold for a range of $15 to $50 per tablet, depending on the location, and this range is common for cities throughout Pennsylvania. Hydrocodone prices also range close to $1 per milligram throughout Pennsylvania.

Buprenorphine (Suboxone®), used in treatment for opioid addiction, is sold in tablet and strip forms in Pennsylvania and is diverted for misuse when offered for sale or in trade for other opioids or illicit substances. Prices on the illicit market range from $6 to $10 per strip and $10 to $20 per tablet.[20]

Heroin

Heroin sourced from Mexican transnational criminal organizations (TCOs) presents a persistent and pervasive drug threat in Pennsylvania. Mexican TCOs, working in conjunction with regional and local distributors, supply Pennsylvania with wholesale[d] quantities of inexpensive, yet very pure heroin to meet user demand throughout Pennsylvania. The heroin threat to Pennsylvania is exacerbated by the recent re-emergence and unprecedented proliferation of fentanyl and Fentanyl Related Substances (FRSs) used as highly potent heroin adulterants or substitutes with increasing frequency (see *Fentanyl* section below).

Production

Heroin distributed in Pennsylvania originates from sources in South America and Mexico, as reporting from the DEA's Heroin Signature Program (HSP)[e] indicates that retail heroin in Pennsylvania is predominantly derived from South American and Mexican grown poppies.[f] Analysis of DEA Heroin Domestic Monitoring Program (HDMP)[g] purchase data shows that heroin marketed in Pittsburgh and Philadelphia is consistently among the most pure and inexpensive in the United States. From at least 1999 to 2016 (the most recent HDMP purchase data available), heroin exhibits acquired in Philadelphia had the highest documented purity level and were the cheapest in price among all HDMP heroin markets.

Availability

Metrics of drug availability, including laboratory analysis, drug seizures, and investigative reporting, indicate that heroin availability continues to rise in Pennsylvania, especially among rural counties;[21] however, a concurrent increase in availability of fentanyl in Pennsylvania has become evident in recent years, including incidents of fentanyl sold as heroin. Although the increase of fentanyl in Pennsylvania may affect future availability of heroin, such impact has yet to be fully assessed. And while law enforcement indicators show that heroin is abundant throughout Pennsylvania, reports from user populations and treatment professionals suggest that the ability to obtain unadulterated heroin (i.e., heroin devoid of fentanyl) at the retail level is becoming more difficult.

[c] All dollar amounts in this report are in U.S. currency.
[d] "Wholesale" is defined herein as having a net weight of 1,000 or more grams.
[e] The Heroin Signature Program is operated by DEA Special Testing and Research Laboratory to identify and quantify the geographic source region, purity, and chemical components of heroin seized in the United States.
[f] Classification as defined by DEA Special Testing and Research Laboratory for analysis of heroin signatures.
[g] Retail-level heroin purchase program that analyzes geographic source, price, purity, adulterants, and diluents of heroin sold at the street-level in 27 U.S. cities.

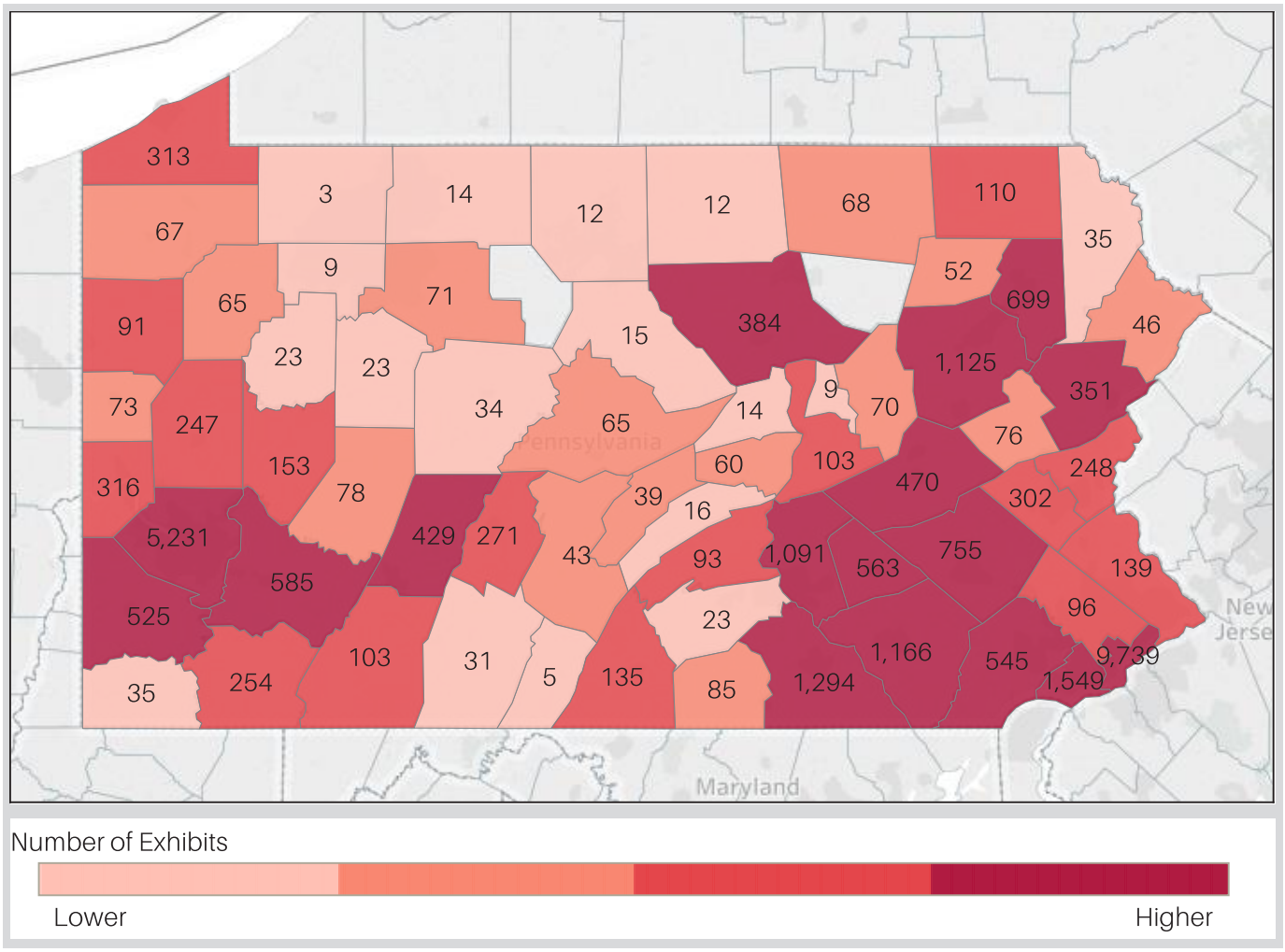
Laboratory Analysis

Among nationwide exhibits, Pennsylvania ranked second in the country (after Ohio) in the highest number of heroin exhibits reported to NFLIS in calendar year 2017.[22]

Heroin was the most frequent drug seized, analyzed, and reported to NFLIS in Pennsylvania in 2017, comprising approximately 38 percent of exhibits among the broad drug categories of heroin, cocaine, fentanyl, methamphetamine, prescription opioids, FRSs, and NPSOs.[23] The number of heroin exhibits seized in Pennsylvania and reported to NFLIS increased 56 percent from 2006 to 2016.[24] Data reported to NFLIS contains multiple drug fields, therefore, exhibits found to contain heroin may also have contained other drugs.

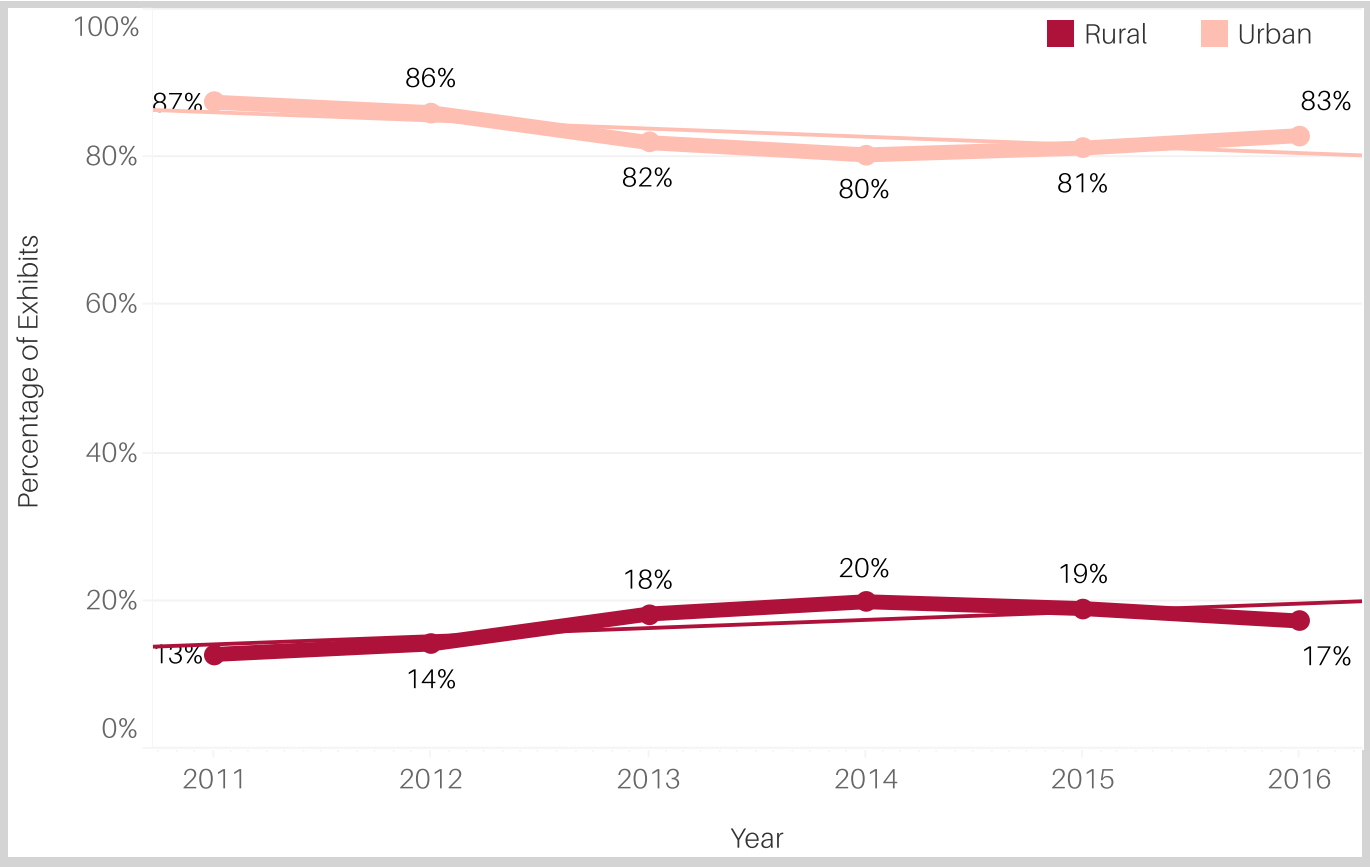
A review of NFLIS data found that heroin was seized in 97 percent of Pennsylvania counties in 2017 (see Figure 3). Philadelphia and Allegheny county seizures accounted for almost half of the total analyzed heroin exhibits in

(U) Figure 3. Seized and Analyzed Heroin Exhibits by Pennsylvania County, 2017



Source: NFLIS

(U) Figure 4. Percentage of Heroin Exhibits Seized in Urban and Rural Counties, Pennsylvania, 2011-2016



Source: NFLIS

2017, with approximately 32 and approximately 17 percent, respectively.[25] However, despite the concentration of heroin seizures occurring in the two most populated areas of Pennsylvania, heroin presence is ubiquitous in drug markets throughout the Commonwealth.

More than 80 percent of 2016 analyzed heroin exhibits reported to NFLIS were seized in urban counties;[26] however, longitudinal analysis of NFLIS data reveals an upward trajectory of rural heroin seizures since 2011 (see Figure 4).[27] While the increase in rural county heroin seizures could reflect increased law enforcement focus on heroin in those counties, the rising statewide increase in heroin seizures indicates increased availability throughout the Commonwealth, including in rural counties.

NFLIS analysis indicates that heroin is most frequently identified as the only substance in such exhibits (without controlled or non-controlled adulterants). In 2017, approximately 59 percent of heroin seizures reported to NFLIS from Pennsylvania showed the presence of heroin by itself, which is a decrease from 84 percent in 2016 (Appendix E, Figure E1). The 25 percent decrease in heroin identified by itself can be attributed, at least in part, to a concurrent 200 percent increase between 2016 and 2017 in the presence of fentanyl in NFLIS-reported submissions. An additional one percent of 2017 heroin seizures tested positive for heroin with at least one non-controlled adulterant. When reported,[h] the primary non-controlled heroin adulterants in Pennsylvania in 2017

[h] Testing and analysis of adulterants varies by laboratory.

were caffeine, quinine, procaine, and xylazine. The overall presence of non-controlled substances in heroin exhibits has decreased sharply since 2012.[28]

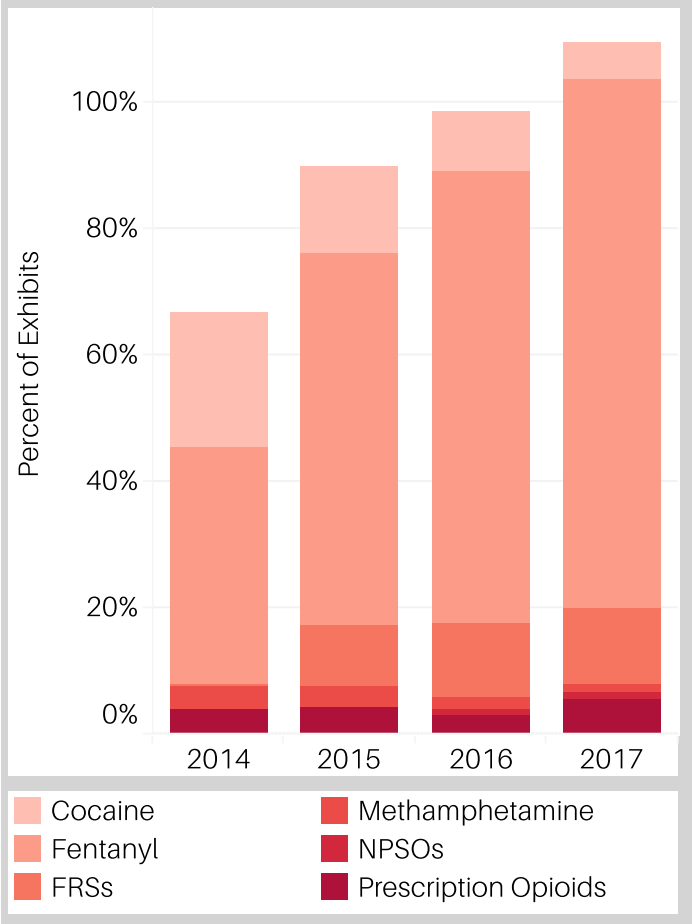
The remaining 40 percent of 2017 heroin exhibits indicated the presence of at least one other illicit substance. Among these exhibits, fentanyl was the substance found most frequently. Approximately 83 percent of 2017 multi-substance heroin seizures also had fentanyl, a 122 percent increase since 2014. Analysis of NFLIS data revealed that illicitly manufactured FRSs and the NPSO U-47700 emerged as new heroin adulterants since 2014 and 2015, respectively. Figure 5[i] demonstrates the multi-year increase in the presence of fentanyl with heroin, the appearance of FRSs and U-47700 as heroin adulterants, and the corresponding decrease in the presence of cocaine and methamphetamine combined with heroin.[29]

As discussed later in this report, fentanyl availability in Pennsylvania is increasing rapidly. The increased presence of fentanyl and FRSs as heroin adulterants likely reflects recent increased production and distribution of the substances by Mexican TCOs responsible for supplying heroin to Pennsylvania. In addition, due to several factors, including relative ease of production and increased profit margin of fentanyl compared to heroin, it is possible that increasing availability of fentanyl and FRSs will reduce wholesale demand for heroin and consequently reduce heroin production.

Drug Seizures

Regionally, the DEA seized and analyzed more than 1,200 kilograms of heroin in 2016 and 2017.[30] In Pennsylvania, DEA investigative reporting reflects a steady increase in the number of heroin exhibits seized and submitted to DEA laboratories for analysis over the past 6 years. Concurrent increases are also apparent in the gross weight and average weight per seizure for heroin seizures submitted to DEA laboratories for analysis. The average weight per DEA reported seizure in 2016 was 425 grams;

(U) Figure 5. Drugs (Excerpted) Found in Combination with Heroin in Seized and Analyzed Drug Exhibits, Pennsylvania, 2014-2017



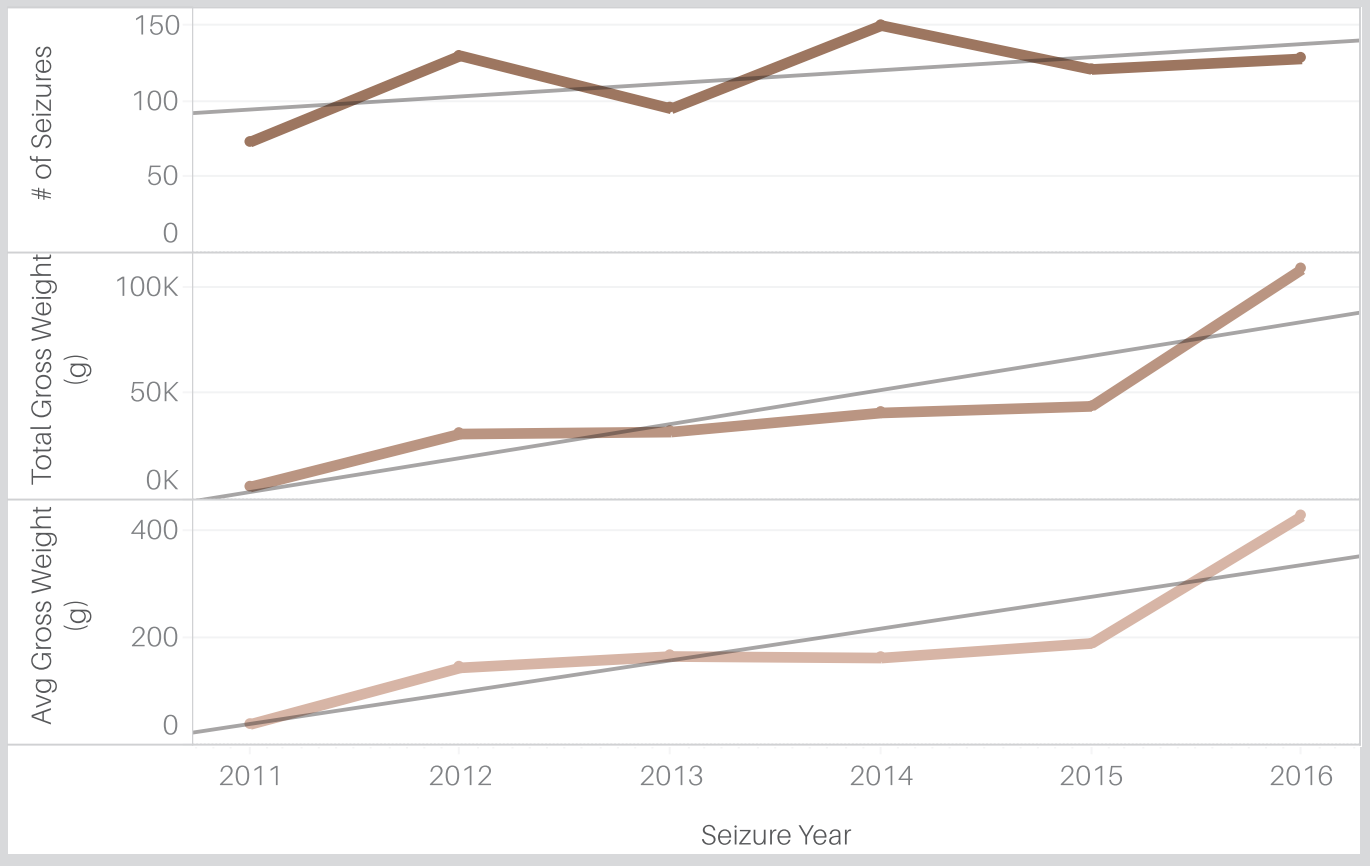
Source: NFLIS

this is more than double the average of 161 grams reported in 2014 (see Figure 6).[31] Calendar year 2017 seizure data was excluded, due to exhibits pending laboratory analysis.

Seizure data provided by the Pennsylvania State Police (PSP) serves as an additional statewide indicator of drug availability by volume. PSP reported heroin seizures totaling more than 295 kilograms between 2014 and 2017, with a peak of 90 kilograms in 2014, slight declines in 2015 and 2016, and nearly 70 kilograms in 2017.[32]

i Numbers may be above 100% due to presence of multiple drugs in one exhibit. For example, an exhibit may contain cocaine, heroin, and fentanyl, of which both cocaine and fentanyl would be represented in the Figure. Heroin seized by the DEA Philadelphia, New York, and New Jersey Field Divisions (combined) and analyzed by a DEA laboratory.

(U) Figure 6. Heroin Seizures in Pennsylvania by DEA Philadelphia Field Division, 2011-2016



Source: DEA Philadelphia Field Division

Trafficking and Distribution

Transportation

Philadelphia is a primary wholesale market for heroin trafficked primarily by Mexican TCOs. The city also serves as a secondary wholesale market for heroin transported in from U.S. ports of entry and transshipment areas such as the Southwest border, New York City, Chicago, and the Caribbean (primarily the Dominican Republic and Puerto Rico), and out to other parts of the Mid-Atlantic region, as well as into New England. Philadelphia-based heroin traffickers supply large portions of Pennsylvania, with additional source regions of northern New Jersey, Ohio, and Michigan providing wholesale, bulk retail, and retail quantities of heroin, namely to Pittsburgh and western Pennsylvania.

Hispanic DTOs (mostly Mexican, Dominican, and Puerto Rican) dominate the transportation of heroin into and within Pennsylvania. Several DEA cases have involved Dominican DTO members with a permanent or semi-permanent presence in Mexico entrenched with command and control elements of Mexican TCOs. Investigations also revealed that Mexican TCOs employ Caucasians to transport wholesale quantities of heroin in vehicles across the country and into Pennsylvania. Available intelligence indicates that Hispanic, African American, and Caucasian DTOs distribute heroin at the retail level throughout Pennsylvania.

In a recent DEA investigation in Pennsylvania, a confidential source was provided on consignment three kilograms of heroin and five kilograms of fentanyl by a Dominican intermediary from a Mexican source of

supply. Pursuant to further investigation, six kilograms of heroin were seized from a stash location affiliated with the local organization.

Interstate 95 acts as a primary trafficking corridor for eastern Pennsylvania and connects Philadelphia to domestic source cities north (New York, Newark) and south (Atlanta, Miami). Wholesale quantities of heroin are transported through Pennsylvania in tractor-trailers (commingled among legitimate cargo) and in personal and rental vehicles, often containing concealed compartments. Regional distributors, such as those from Wilmington, Delaware, also use Interstate 95 to travel into Philadelphia and purchase wholesale quantities of heroin for further distribution. Other common routes used by drug transporters transiting the Philadelphia area include Interstate 476; U.S. Routes 1, 322, and 422; and the Pennsylvania Turnpike. East-West oriented Interstates 80, 81, and 76 act as additional drug trafficking routes between Philadelphia and Pittsburgh, and connect Pittsburgh with drug markets in Ohio.

Recently, in a joint DEA and Philadelphia District Attorney's Office investigation, law enforcement personnel seized approximately 1 kilogram of suspected heroin from a concealed floor compartment of a vehicle occupied by two suspected local traffickers (Hispanic males). The suspected heroin was packaged within vacuum-sealed bags and was supplied by a Dominican male from New York.

Packaging

Heroin sold at the retail level is packaged in small plastic or glassine bags, with the heroin (usually in powder form) contained within folded paper (see Figure 7). Bulk retail quantities of heroin are typically packaged in "logs" of ten "bundles", each bundle containing approximately 13 baggies. "Loose" heroin powder is also sold in multi-gram quantities and commonly packaged in the torn corner of a plastic bag. While it is still fairly common for individual bags of retail-quantity packaging to be stamped with a "brand" or logo, the role of heroin packaging "mills" make it less likely that a particular marking is exclusive to a specific DTO or distribution point. Heroin mills are essentially large-scale, high volume packaging operations dedicating to breaking down and repackaging wholesale quantities of heroin in preparation for street level distribution.

Wholesale quantities of heroin are generally packaged in kilogram quantity brick form, wrapped with plastic wrap or layers of packaging/duct tape (see Figure 8). An emerging trend in heroin availability in Pennsylvania is visible in the wholesale quantities of heroin and fentanyl seized together but packaged separately.

(U) Figure 7. Heroin Packaged and Stamped for Retail Sale in Philadelphia

Source: DEA Philadelphia Field Division

For example, DEA, working in conjunction with the Philadelphia District Attorney's Office, recently seized approximately 13 kilograms of heroin and approximately 10 kilograms of fentanyl from a Mexican national and a U.S. citizen with ties to Mexico. As evident in Figure 8, different packaging and brick shapes distinguished the heroin from the fentanyl. This packaging method suggests that heroin and fentanyl are produced separately but trafficked together. DEA laboratory reporting indicates that mixing of fentanyl and heroin at the wholesale level is minimal.[33]

(U) Figure 8. Wholesale Heroin and Fentanyl Seizure in Philadelphia

Source: DEA Philadelphia Field Division

Pricing

DEA investigative reporting indicates that heroin pricing has decreased statewide over the past several years. In 2017, the reported price of heroin in Pennsylvania ranged from $48 to $150 per gram; $2,000 to $5,000 per ounce; and $50,000 to $80,000 per kilogram. Calendar year 2017 heroin prices reflect a marked decrease since 2006, during which time the reported price of heroin was $65 to $300 per gram; $2,100 to $6,000 per ounce; and $95,000 to $200,000 per kilogram. While retail prices of heroin have decreased rather conservatively, the average statewide wholesale kilogram price of heroin has decreased approximately 56 percent since 2006.

The current profit margin for heroin trafficked in Pennsylvania is staggering. Per investigative reporting, a typical "baggie" of heroin in Pennsylvania contains an approximate average of 0.02 grams of product with a price of $10. One kilogram of heroin, without adulteration, can create approximately 50,000 bags—packaged at a bag weight of 0.02 grams—with an approximate street value of $500,000. Therefore, an average kilogram investment of $65,000 can lead to a conservative approximate profit of $435,000. As previously mentioned, many DTOs adulterate wholesale quality heroin with controlled and non-controlled substances to increase overall product volume. In turn, the number of baggies created from one kilogram of heroin increases with adulteration, which increases the profit margin of heroin sales exponentially.

Financial

Given the cash-based nature of the illicit and diverted drug market, opioid sales in Pennsylvania generate a significant volume of bulk cash for DTOs operating in Pennsylvania. Subsets of DTOs or independent groups specializing in the movement of bulk currency often collect and transport cash owed to sources of supply. DEA investigations continue to highlight the storage and transportation of bulk currency for ultimate repatriation to domestic and foreign sources of supply. In a more recent trend, subjects involved in the movement or laundering of suspected drug proceeds are increasingly seeking "mirror transactions" over traditional bulk money movement and value transfer typologies. Investigative intelligence indicates mirror transactions (traits of which are similar to hawala transfers[i]), involve the collection and count verification of bulk cash at one location/country (usually drug market areas) and the immediate payout of said funds at another location (usually drug source countries, transshipment locations, etc.). Structured bank deposits, the use of international wire money transfer services, trade-based money laundering, and the operation of "front" companies, as well as the comingling of funds within operational businesses, and the use of internet funds transfer services are also known methods to move drug proceeds to domestic and foreign sources. Finally, an emerging trend in Pennsylvania indicates that the procurement of illicit or diverted substances via the Internet is most likely to be associated with payments in digital currency.

During the first half of calendar year 2018, DEA personnel, working with a local law enforcement partner, seized more than $1 million in cash from a Pennsylvania residence being used as a suspected illicit proceeds stash site associated with a poly-drug DTO (see Figure 9). While this is considered a sizeable seizure of currency, it is estimated to be only a small representation of the volume of proceeds generated by illicit drug markets in Pennsylvania.

[i] A system or agency for transferring money whereby the money is paid to an agent who then instructs a remote associate to pay the final recipient.

(U) Figure 9. Seizure of more than $1 million in Pennsylvania

Source: DEA Philadelphia Field Division

Fentanyl, Fentanyl-Related Substances, Non-Prescription Synthetic Opioids

Fentanyl is a Schedule II synthetic opioid[k] approved for legitimate use as a painkiller and anesthetic. However, the drug's extremely strong opioid properties make it an attractive drug of misuse for both heroin and prescription opioid users. Clandestinely produced fentanyl, typically manufactured in China and Mexico and smuggled into the United States, is primarily responsible for the ongoing fentanyl epidemic. Clandestinely produced fentanyl re-emerged in the illicit drug market in Pennsylvania in 2013,[34] followed shortly thereafter by the introduction of FRSs.[l]

FRSs are in the fentanyl chemical family, with similar pharmacological effects, but have minor variations in chemical structure. Most of these substances are not approved for use in humans, therefore information about potency and lethal dosage are frequently unknown.[35] NPSOs have similar sources of supply as FRSs.

Pharmaceutical fentanyl[36] is also abused and diverted, although this occurs on a much smaller scale. Based on investigations and source reporting, the fentanyl discussed in this and subsequent sections relates to the clandestinely produced fentanyl supply and market.

Production

Investigative intelligence indicates that wholesale quantities of clandestinely produced fentanyl supplied to Pennsylvania are primarily sourced from Mexican TCOs. Available intelligence suggests that the fentanyl trafficked by Mexican TCOs is either produced in Mexico using fentanyl precursors sourced from China or transshipped via Mexico after being synthesized in China.[37] Over the last several years, the Mexican TCOs that have been increasingly involved in the production and distribution of the white powder heroin that dominates supply throughout the northeastern United States are now supplying the same market with fentanyl.[38] In November 2017, confirmation of fentanyl production in Mexico occurred when Mexican authorities located a clandestine fentanyl laboratory in the state of Sinaloa, Mexico.[39] Compared to the poppy cultivation and processing cycle of heroin production, fentanyl production is less labor intensive, less vulnerable to environmental factors, production sites are less detectable, and the product offers a higher profit margin for Mexican TCOs.[40]

To date, reports of fentanyl production in Pennsylvania have been very limited. However, the "recipes" for the production of both fentanyl precursors and fentanyl are available on the Open Net. In May 2018, authorities in western Pennsylvania responded to a suspected methamphetamine laboratory located within a hotel room;[41] subsequent information indicated the site was likely used to produce small batches of fentanyl for distribution.[42]

[k] In this document, the phrase "synthetic opioid" refers to only those substances which are classified as opioids and have no plant-based material in their production (i.e. fentanyl, FRS, and other novel opioids) and therefore does not include heroin.

[l] Fentanyl related substances are in the fentanyl chemical family, with similar pharmacological effects, but with minor variations in the chemical structure.

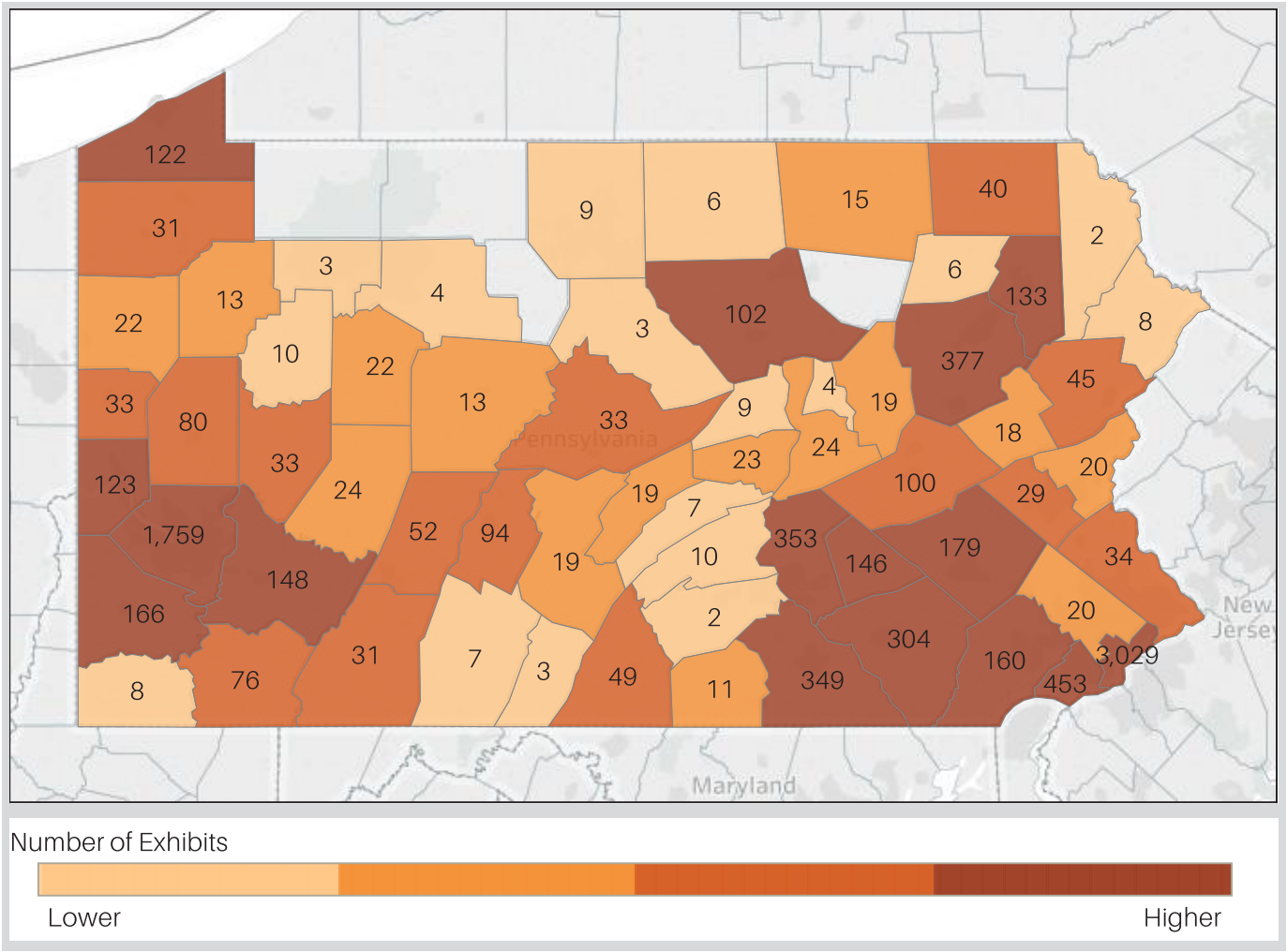
Laboratory Analysis

Among nationwide exhibits, Pennsylvania ranked second in the country (after Ohio) in the highest number of fentanyl exhibits reported to NFLIS in calendar year 2017; this represents an increase of 156 percent from exhibits reported in calendar year 2016, during which Pennsylvania ranked third in the nation for fentanyl exhibits.[43]

Similarly, Pennsylvania ranked third in the country in 2017 in the number of FRSs exhibits reported to NFLIS (behind Ohio and New Jersey); the number of FRSs exhibits analyzed and reported from Pennsylvania increased 138 percent from 2016.[44] More than 18 distinct FRSs were seized, analyzed, and reported to NFLIS from Pennsylvania in 2017, of which furanyl fentanyl was the most frequently identified, followed by acetyl fentanyl, p-fluoroisobutyryl fentanyl, 3-methylfentanyl, and carfentanil.[45]

Analysis of seized drug exhibits reported to NFLIS found that fentanyl was the third most frequently seized, analyzed, and reported drug in Pennsylvania in 2017, representing approximately 23 percent of exhibits within the broad drug categories of heroin, cocaine, fentanyl, methamphetamine, prescription opioids, FRSs, and

(U) Figure 10. Seized and Analyzed Fentanyl and Fentanyl-Related Substance Exhibits by Pennsylvania County, 2017



Source: NFLIS

NPSOs.[46] Data reported to NFLIS contains multiple drug fields; therefore, exhibits found to contain fentanyl and/or FRSs may also have contained other drugs. Analysis of seized and analyzed drug exhibits revealed the primary non-controlled adulterants to fentanyl were similar to heroin and included caffeine, quinine, and xylazine in Pennsylvania in 2017.

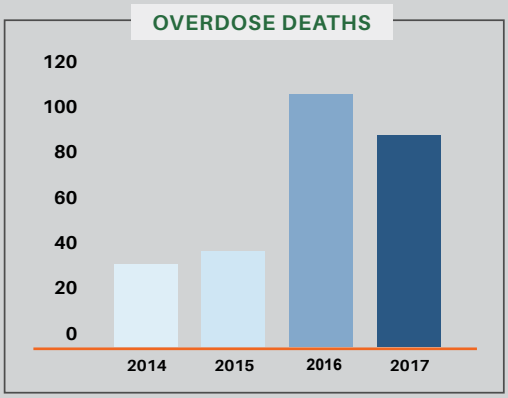
In 2017, fentanyl or a FRS was seized in 95 percent of Pennsylvania counties (see Figure 10). Fentanyl and FRS exhibits seized in 2017 in Philadelphia (approximately 33 percent) and Allegheny (approximately 20 percent) counties accounted for more than half of the statewide total, combined.[47] However, the widespread presence of fentanyl and FRSs shows the pervasive threat posed by these substances as they infiltrate every part of the Commonwealth's illicit drug market. Interestingly, FRSs were found at higher relative percentages in rural counties than urban counties.

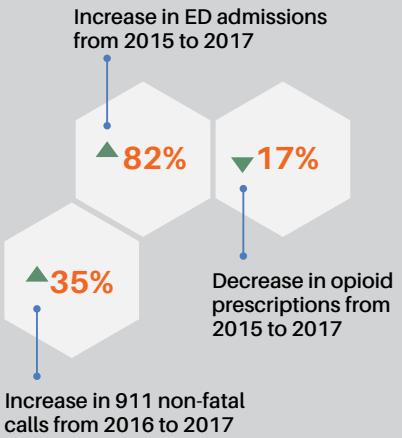
The inclusion of fentanyl and FRSs in the illicit drug market generates questions regarding fentanyl marketing and sales techniques; user knowledge and/or pursuit of fentanyl versus heroin, and the potential for fentanyl to supplant heroin in the user market. While in previous years it was common for street-level drug traffickers to be unaware that the substance they distributed contained fentanyl, recent DEA investigations have identified knowledge and active marketing of fentanyl by street-level drug traffickers. Undercover and confidential sources have specifically negotiated for fentanyl and street-level distributors are known to warn customers regarding the potency of the product, even if they do not explicitly disclose that it contains fentanyl. In contrast, investigations also revealed

BEAVER COUNTY CASE STUDY

Coalition

The Beaver County Behavioral Health (BCBH) Single County Authority (SCA) convened a Drug Abuse Coalition in October 2012 as a direct response to the local opioid overdose crisis. The sectors in attendance were: The Drug Enforcement Administration (DEA), the Beaver County District Attorney, school directors, persons in recovery, law enforcement officers, and substance use disorder treatment, medication-assisted treatment, and prevention service providers.





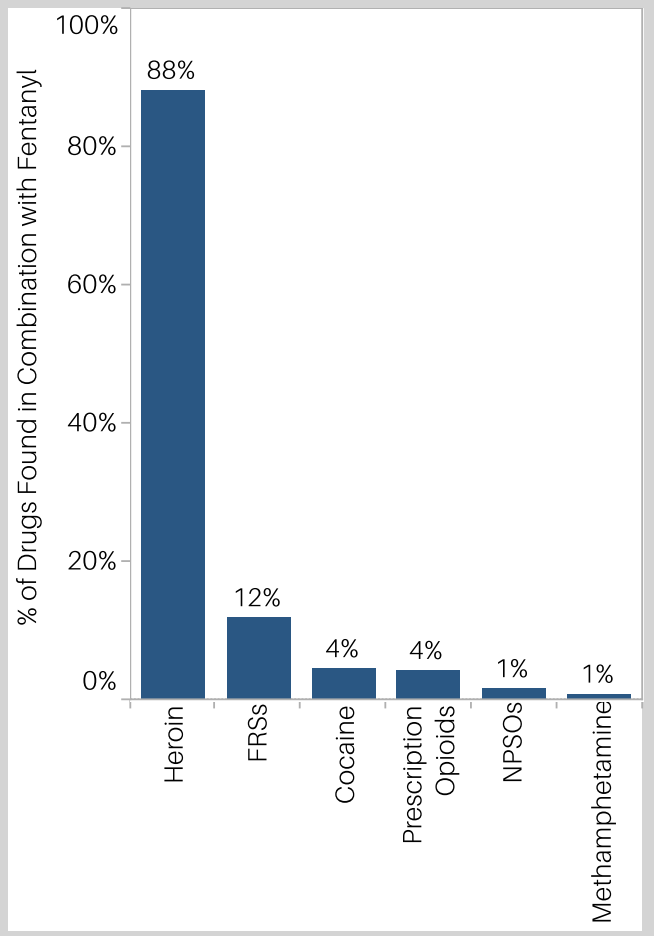
Major Accomplishments

Over the past six years, the Coalition has implemented: 1) Four annual Drug Abuse Coalition town hall meetings, with attendance exceeding 300; 2) Community education forums; 3) Placement of 19 Prescription Drug Take Back Boxes in the courthouse and police stations across Beaver County; 4) In excess of 3,000 pounds of drugs destroyed from Take Back Boxes and National Drug Take Back efforts in 2016-2018 to date; 5) Narcan distribution to colleges, schools, police departments, fire departments, EMS, substance use disorder treatment nonprofits, county housing authority, and county offices; 6) Narcan training conducted for nonprofits, educators, police, and county employees; 7) Successful launch of magistrate level and county-wide, court-based drug diversion programs; and 8) Hiring of Peer Review Specialist.

QUOTE FROM THE COUNTY

"In light of the frightening overdose trends and statistics evidenced throughout Beaver County in recent years, the continued collaboration and commitment of our Coalition demonstrates the difference a community can make."

(U) Figure 11. Drugs (Excerpted) Found in Combination with Fentanyl in Analyzed Drug Exhibits, Pennsylvania, 2017



Source: NFLIS

organizations who make efforts to avoid fentanyl or who do not use stamps or markings because of the perceived law enforcement attention it draws.[48] The prosecution of drug sources of supply is discussed further in the *Efforts to Address Supply* section of this report.

According to DEA's Fentanyl Signature Profiling Program[m] (FSPP), in 2017, fentanyl seized and analyzed in the United States averaged 5.1 percent pure. FSPP analysis indicates that fentanyl available in the United States can range from 0.1 percent to 97.8 percent pure depending on the source of the fentanyl.[49] DEA and Customs and Border Protection (CBP) reporting indicates that fentanyl sourced from China is typically seized in smaller quantities but with purities commonly testing above 90 percent. By comparison, fentanyl trafficked overland into the United States from Mexico is typically seized in larger, bulk quantities but with much lower purity, with exhibits on average testing at less than 10 percent pure.[50]

According to DEA laboratory analysis of fentanyl seizures obtained in Pennsylvania, the overall average purity for 300 powder exhibits seized during calendar year 2017 was 6.5 percent.[51] Although these purities are much lower than that of average heroin purities, fentanyl is significantly more potent than heroin,[52] resulting in a higher rate of fatal and non-fatal overdoses.

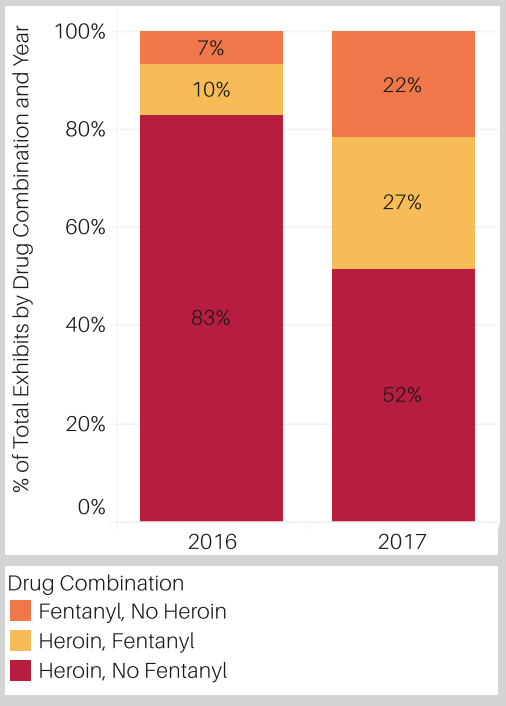
More recently, regional open source articles have referenced instances and concerns over fentanyl mixed with other non-heroin illicit substances, to include cocaine and methamphetamine; however, based on available information, such mixing is the exception in Pennsylvania.[53] In 2017, approximately 62 percent of fentanyl seizures reported to NFLIS from Pennsylvania was considered to be a multi-substance sample, which is similar to 64 percent in 2016 (see Appendix E, Figure E2). In drug seizure analysis of multi-substance samples containing fentanyl, heroin was the most frequently identified other substance (88 percent) in 2017. The presence of cocaine was noted in less than five percent of multi-substance exhibits containing fentanyl in 2017[54] (see Figure 11).

Available intelligence indicates that instances in which fentanyl is sold as a substitute for heroin are increasing, with an expanding number of DTOs adding fentanyl to their product line as an adulterant or substitute for heroin.[55] Drug seizure analysis supports this trend, revealing a decrease in multi-substance heroin seizures absent fentanyl, with a concurrent increase in fentanyl exhibits without heroin[56] (see Figure 12).

In addition, recent DEA investigations in Pennsylvania involved seizures of fentanyl mixed with tramadol (see

[m] DEA's FSPP performs in-depth chemical analyses on fentanyl and fentanyl-related exhibits obtained from seizures made throughout the United States. Analytical methodologies developed by DEA give in-depth reporting on seizures and also link seizures for intelligence purposes. FSPP data is not intended to reflect U.S. market share, but is rather a snapshot of current trends.

(U) Figure 12. Analyzed Drug Exhibits with the Presence of Heroin and Fentanyl, Pennsylvania, 2016-2017



Source: NFLIS

Figure 13). Of note, NFLIS data indicates that the number of laboratory-analyzed tramadol exhibits found to contain fentanyl doubled from 39 in 2016 to 78 in 207 in Pennsylvania.[57]

In a 3-day period in July 2018, Philadelphia experienced more than 165 overdoses related to a mixture of heroin, fentanyl, and the synthetic cannabinoid 5F-ADB, packaged and sold in marked bags. This was the first identification of this mixture, and investigative intelligence indicates that is may be a marketing technique by dealers trying to entice new customers with a novel drug combination.[58]

Drug Seizures

A review of DEA investigative data revealed that regional[n] fentanyl seizures increased over 290 percent from 2016 to 2017.[59] In addition, the number of wholesale seizures grew from 12 in 2016 to more than 40 in 2017. Individual seizures of more than 7 kilograms of fentanyl have occurred with increasing frequency since 2016,

(U) Figure 13. Seizure of Fentanyl/Tramadol Powder in Philadelphia

Source: DEA Philadelphia Field Division

to include a seizure of approximately 30 kilograms of fentanyl reportedly destined for delivery to a Philadelphia address when seized pursuant to a traffic stop in Illinois in September 2017.[60]

Fentanyl seizures reported by PSP showed a marked uptick in total seized weight in 2017, to include more than 65 kilograms total. This represents a sharp increase from previous years when seizures totaled less than 10 grams per year.[61] As a statewide indicator of drug availability by volume, PSP fentanyl seizure trends mirror those of DEA in Pennsylvania.

Trafficking and Distribution

Wholesale fentanyl supplied by Mexican TCOs is generally packaged in poly-drug loads and transported to Pennsylvania using the same routes/methods as heroin, with states such as New York, New Jersey, Ohio, and Michigan serving as additional source locations for Pennsylvania. Regional and local distribution organizations and methods are similar to those discussed in the previous heroin section.[62]

A recent DEA investigation identified the use of a commercial airline to smuggle two kilograms of fentanyl (and 5 kilograms of cocaine) from Los Angeles to Philadelphia in checked baggage. The passenger claimed to have made several prior trips to Philadelphia (see Figure 14).

[n] Fentanyl seized by the DEA Philadelphia, New York, and New Jersey Field Divisions and analyzed by a DEA laboratory.

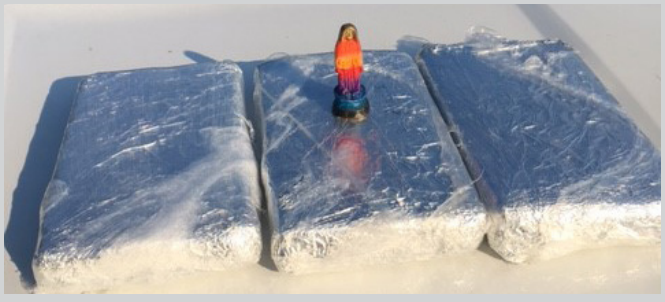
(U) Figure 14. Seizure of Fentanyl from Luggage of Philadelphia-Bound Passenger on Commercial Airline

Source: DEA Los Angeles Field Division

More commonly, fentanyl is secreted in commercial and/or passenger vehicles, as in a recent investigation that led to the seizure of three kilograms of fentanyl from a passenger vehicle in White Haven, Pennsylvania (see Figure 15). The 3 kilograms had a total average purity of approximately 9.2 percent.

The ease of procuring fentanyl, FRSs, and NPSOs online from both Open Net and Dark Web vendors has greatly increased the accessibility of these products to individual users and distributors. Investigations reveal that these products are purchased online in quantities ranging from personal use to wholesale amounts and that they are primarily sourced from China.[63] Law enforcement partners operating in Pennsylvania have reported local and broader redistribution of fentanyl and FRSs obtained online from Chinese sources.

(U) Figure 15. Seizure of Fentanyl from Passenger Vehicle in White Haven, Pennsylvania



Source: DEA Philadelphia Field Division

For example, a recent investigation involved a Pennsylvania-based subject accused of importing and distributing wholesale quantities of fentanyl via the Dark Web. Two fatal overdoses in Oregon were reportedly tied to the Pennsylvania-based supplier, who was also the subject of investigation by agencies in the Western District of Pennsylvania and the District of North Dakota. The investigation uncovered over 3,700 transactions involving a heroin/fentanyl mixture; the transactions totaled more than 7 kilograms of the mixture and generated more than $284,000 worth of Bitcoin. Indications are that the fentanyl was shipped in packages originating from China and Hong Kong.[64]

In another investigation, two Pennsylvania-based subjects were arrested and accused of importing fentanyl and carfentanil from China to Pennsylvania through transactions made on the Dark Web. One of the subjects experienced an overdose related to the handling of the substances. "During the investigation, authorities seized approximately 300 grams of fentanyl while an additional 400 to 500 grams of carfentanil were documented as having been ordered and shipped from China."[65]

Intelligence from federal law enforcement partners indicate that street gangs engaged in the distribution of illicit substances increasingly view the Dark Net and virtual currencies as less risky venues through which to further their criminal activity. These investigations have highlighted eastern Pennsylvania as a destination for international parcels suspected of containing fentanyl/FRSs.[66] International courier and mail services ship the packages to Pennsylvania or other parts of the United States. Efforts taken to avoid law enforcement detection include the use of code words for advertising the products (FRSs are marketed online as "research chemicals"),

the misrepresentation of package contents on shipping forms, the shipping of multiple packages related to one order, and the strategic routing of packages through intermediary countries.[67]

It is worth noting that the law enforcement dismantling of large, centralized Dark Web marketplaces previously used to procure illicit products have resulted in diminished confidence in the venue type among vendors, customers, and site administrators.[68] The current Dark Web environment is considered to be much more fragmented in nature, with "the current landscape" containing "a limited number of unstable, unpopular, and short lived marketplaces."[69] Currently, alternate venues, including those on the Open Net, are being explored by parties "seeking to meet the demands for illicit goods and services."[70] Given this development, it is likely that the Open Net and other venues will continue to be explored for the marketing/purchasing of "research chemicals" and "pharmaceutical products" which may contain fentanyl/FRSs.

Packaging and Pricing

At the retail and wholesale levels, fentanyl is packaged much in the same way heroin is packaged. Typical street-level packaging includes glassine bags or waxed bags, sometimes further contained within folded paper, and bulk retail quantities have been observed in the corners of plastic bags. Wholesale quantities of fentanyl are commonly packaged in brick form, with the exterior wrapped in varying forms of tape and/or cellophane. When efforts are made to distinguish the fentanyl from other substances being transported with it, the "brick" or kilogram-quantity may be in a non-rectangular shape or have distinct markings.[71]

In a recent DEA investigation, approximately 8 kilograms of fentanyl were concealed within a functional fire extinguisher and transported to Philadelphia for removal and sale. The extinguisher had labels/markings indicating that it was likely sold and/or manufactured in Mexico (see Figure 16).

Wholesale fentanyl is generally estimated to be less expensive than wholesale heroin. Because fentanyl is a more potent substance compared to heroin, a kilogram of fentanyl can yield many more doses, thereby making it more profitable.[72] However, this comparative savings is not always passed further along the distribution chain. The profit margin for fentanyl is maximized even further when heroin prices (or even slightly less than heroin prices) are charged for adulterated fentanyl (sometimes marketed as "synthetic heroin"). Based on available DEA investigations, a kilogram of fentanyl sourced from Mexico can be purchased in Pennsylvania for $53,000 to $55,000.[73]

Barring variables in product purity, a baggie of purported heroin containing exclusively fentanyl is comprised of approximately 90 percent adulterant and 10 percent fentanyl, which equates to approximately 2 milligrams of fentanyl per baggie.[74] Packaged at an average product weight of 0.02 grams per bag, one kilogram of fentanyl can produce 500,000 bags with a street value of $10 each. Therefore, an average $54,000 investment for 1 kilogram of fentanyl can yield an approximate $5 million profit. A similar profit margin is attainable for DTOs pressing fentanyl into counterfeit oxycodone pills, which also typically contain 2 milligrams of fentanyl and sell for $10 to $20 per pill.[75]

(U) Figure 16. Seizure of Fentanyl Concealed in Operational Fire Extinguisher in Philadelphia

Source: DEA Philadelphia Field Division

Forms

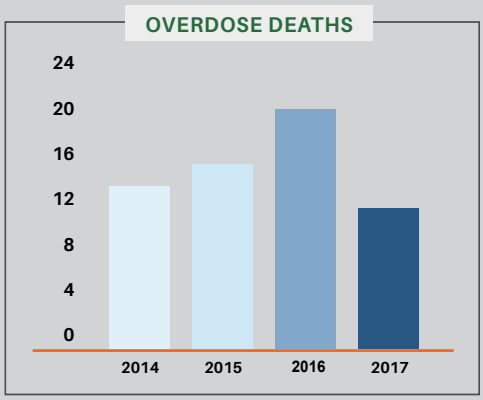
Seized drug exhibits containing fentanyl or FRSs are generally in powder form; however, liquids, tablets, fentanyl-soaked paper, and nasal spray have also been observed in Pennsylvania seizures.

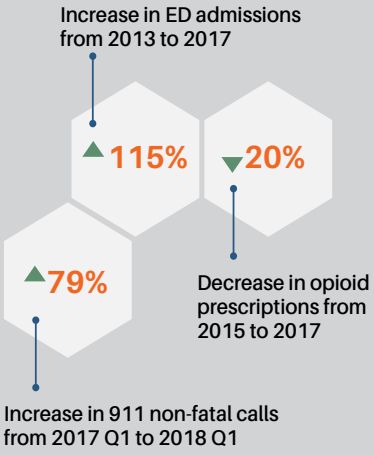
The availability of clandestinely produced fentanyl, FRSs, and/or NPSOs in tablet form is an emerging threat in Pennsylvania. Several recent law enforcement investigations have identified regional DTOs purchasing fentanyl and FRSs from Open Net and Dark Web sources, obtaining pill press machines illegitimately, and producing large quantities of tablets disguised as oxycodone.[76] Specifically, law enforcement partners seized three such operations in Philadelphia and its suburbs since December 2017. The following describes one of several illegal pill production operations dismantled by Philadelphia area law enforcement: The PFD began collaborating with the Homeland Security Investigations - Philadelphia Cyber Task Force in April 2018 to target subjects in the Philadelphia area responsible for the importation of pill press machines, pill dies, and other paraphernalia used in the manufacturing of counterfeit opioids such as oxycodone and Percocet®. In May 2018, the Task Force executed a search warrant at a clandestine laboratory in Philadelphia responsible for producing fake Percocet® and oxycodone pills. Agents, in conjunction with Pennsylvania State Police (PSP), including the PSP Clandestine Laboratory Response Team (CLRT), seized two industrial pill press machines, pill press dies, five kilograms of unidentified powder, 500 unidentified pills, empty vessels of caffeine powders, and

CENTRE COUNTY CASE STUDY

Coalition

In May 2016, the Centre County Heroin and Opioid Prevention and Education (HOPE) Initiative was created. Members include those from the prevention, treatment, and recovery communities; agencies involved in the criminal justice system; and members of the community affected by addiction. In the past year, members of the HOPE Initiative have been meeting monthly to determine what they can do to make their Vision of eliminating substance abuse, drug overdoses, and drug overdose deaths in Centre County a reality.





Major Accomplishments

Working collaboratively, the HOPE Initiative has achieved the following: 1) Distributing Naloxone to all municipal police and EMS departments in the county; 2) Tracking the use of Naloxone with first responders and Centre County 911; 3) Installing six additional prescription drug collection boxes in the county, accounting for over 2,845 pounds of drugs being properly disposed of; 4) Holding a Prescription Drug Take Back Day sponsored by the Centre County Sheriff's Department on April 28, 2018 in Philipsburg and Spring Mills, yielding 106 pounds of disposed drugs in areas with no permanent collection boxes; 5) Continuing outreach efforts to educate the community about the disease of addiction, and to remove the stigma associated with it; and 6) Hosting two town hall meetings with DA's office.

QUOTE FROM THE COUNTY

"The Centre County HOPE Initiative will work to eliminate substance abuse, drug overdoses, and drug overdose deaths in Centre County."

acetaminophen and marijuana. The defendant admitted to manufacturing up to 10,000 counterfeit Percocet® and oxycodone pills, and that the pill press dies and one of the pill press machines came from China. The investigation revealed that multiple Philadelphia addresses were used as shipment destinations to conceal the location of the clandestine tableting laboratory, and that the contents of a pattern of prior shipments from China to the defendant's Philadelphia addresses were declared to Customs as dog chains and drill bit parts (see Figure 17).

(U) Figure 17. Two industrial sized pill press machines seized in Philadelphia from a clandestine laboratory

Source: Homeland Security Investigations – Philadelphia/ Pennsylvania State Police

A DEA investigation in western Pennsylvania identified counterfeit oxycodone 30 milligram tablets containing a combination of fentanyl and tramadol. The tablets were supplied via a New York source to a subject in western Pennsylvania who also supplies cocaine and heroin[77] (see Figure 18).

(U) Figure 18. Seizure of fentanyl tablets in Western Pennsylvania

Source: DEA Philadelphia Field Division

Efforts to Address Supply

In addition to conducting complex investigations targeting drug suppliers, DEA, in conjunction with law enforcement partners, endeavors to stem the illicit opioid supply through its investigative and regulatory authorities, as well as special initiatives or projects, to include:

Temporary Scheduling of Fentanyl-Related Substances

On December 29, 2017, DEA announced the intent to issue an order temporarily scheduling FRSs that are not currently listed in any Schedule of the Controlled Substances Act. As stated in the press release, "given the gravity of the ongoing fentanyl-related overdose crisis in the United States, protection of the public safety demands the utilization of 21 U.S.C. 811(h) in a manner that cannot be readily circumvented by drug traffickers. Specifically, in issuing the upcoming temporary scheduling order, DEA will exercise its authority to avoid an imminent hazard to the public safety by placing all FRSs in Schedule I. These substances—including those that have not yet been introduced by traffickers into the U.S. market—present a significant risk to the public health and safety and need to be controlled under section 811(h) to avoid an imminent hazard to public safety. It should also be noted that none of the substances that will be temporarily controlled has an accepted medical use in the United States."[78] The scheduling of these illicit substances allows for investigation and prosecution of sources of supply, as well as regional and local distributors, who previously evaded consequences due to lack of federal scheduling of these emerging substances.

Drug Delivery Resulting in Death Prosecutions

Holding drug suppliers accountable for harm is an important deterrent to co-conspirators. As such, Pennsylvania Title 18 § 2506 states that "a person commits a felony of the first degree if the person intentionally administers, dispenses, delivers, gives, prescribes, sells or distributes

any controlled substance or counterfeit controlled substance in violation of section 13(a)(14) or (30) of the act of April 14, 1972 (P.L.233, No.64), known as The Controlled Substance, Drug, Device and Cosmetic Act, and another person dies as a result of using the substance . . . A person convicted under subsection (a) shall be sentenced to a term of imprisonment which shall be fixed by the court at not more than 40 years." The charging of violations under Pennsylvania Title 18 § 2506 for what is commonly known as "drug delivery resulting in death" occurred in 205 cases in 2017, an increase of more than 1000 percent since 2013.[79]

Similarly, United States Attorney's Offices in Pennsylvania's three Judicial Districts have charged defendants under 21 U.S. Code § 841, which states that "any person who violates subsection(a) of this section shall be sentenced as follows to a term of imprisonment . . . if death or serious bodily injury results from the use of such substance shall be not less than 20 years or more than life." For example, the Western District of Pennsylvania has charged this on more than 40 occasions since 2014, with all defendants who proceeded to trial being found guilty or entering a guilty plea.[80]

A DEA investigation was initiated in 2015 in response to the outbreak of 80 heroin-related overdoses that occurred within and around Washington County, Pennsylvania, including six deaths. Heroin stamp bags that were recovered from several overdose scenes were stamped with the logo "Made in Colombia" and later connected to a DTO. After laboratory analysis, law enforcement learned these stamp bags contained a mixture of fentanyl and heroin which directly contributed to the fatal and non-fatal overdoses. In February 2016, based upon extensive evidence and testimony, a federal Grand Jury seated in the Western District of Pennsylvania returned a four-count indictment against the leader of this DTO, three counts of the indictment were for trafficking heroin and fentanyl, which resulted in serious bodily injury. Count four of the indictment further charged this individual with conspiring to distribute and distribution of heroin and fentanyl, which resulted in serious bodily injury to at least two people in August 2015. The individual pled guilty in December 2016 was sentenced to 84 months in federal prison.[81]

Controlled Prescription Drug Collection

Leftover medications provide a significant source of abused CPDs in the United States. DEA's National Prescription Drug Take-Back Day initiative seeks to reduce the supply of unused, expired, or unwanted prescription drugs. In April 2018, DEA's 15th Take-Back Day took place at 217 collection sites across Pennsylvania, collecting 37,290 pounds of prescription drugs. Approximately half of the total was collected in the Philadelphia metropolitan area and surrounding counties.

In addition to the DEA Take-Back Day initiatives, the PA-DOH has stationed 734 permanent drug drop-off boxes throughout the state. Drop-off boxes are stationed at local police precincts, government buildings, and other public safety buildings.

For community members that are homebound or unable to go to a drop-off location or Take-Back event, drug dissolving bags and local on-call medication pick up programs can be found throughout the Commonwealth. One such program is Operation Dump, offered through the Allegheny County Sheriff's office, where a resident can call the office to send an officer to pick up medications directly from the person's home.

Overdose Information Network (ODIN)

The Pennsylvania Overdose Information Network (ODIN) is a statewide, centralized collection application for criminal justice agencies to capture overdose, naloxone administration, and drug investigative information. ODIN was developed by the Pennsylvania State Police and implemented in March 2018 in response to the Commonwealth's opioid use and overdose epidemic. ODIN is designed to provide criminal justice, government officials, community leaders, and policymakers reliable, real-time information to make data-driven decisions when

combating drug issues compromising public health and safety.

ODIN collects characteristics of overdoses and naloxone administration details, tracks overdose reversal outcomes, and provides investigators with real-time access to drug markings associated with lethal drugs as well as investigative leads for many types of drug investigations. This real-time access aids criminal justice and public health agencies in anticipating and quickly reacting and responding to dramatic spikes in overdoses.

Analysis of ODIN data is being used to drive policy and decision-making in education, treatment, prevention and legislation. It also assists criminal justice agencies in connecting and furthering drug investigations as well as understanding their response to overdose incidents and how to mitigate the challenges to resources.

High Intensity Drug Trafficking Area Heroin Response Strategy

The Heroin Response Strategy (HRS) is a public health-public safety partnership between the High Intensity Drug Trafficking Area (HIDTA) program and the CDC. Beginning in 2015 among five HIDTAs in 15 states, the HRS mission—to reduce rates of fatal and non-fatal overdose by supporting collaborative efforts between public health and public safety agencies at the federal, state, and local level—expanded in 2017 to include ten HIDTAs in 22 states. The HRS addresses increasing levels of overdose in a multi-faceted and cross-disciplinary manner—to include law enforcement, response, treatment and recovery, and prevention. Specifically, the HRS provides funding for a Drug Intelligence Officer and a Public Health Analyst in each participating state to work with public health and public safety agencies to improve data sharing that informs the scope of the opioid problem, increase sharing of criminal intelligence, and either support existing or help develop programs designed to fulfill the HRS mission.

HRS efforts to address supply are embodied in the network of Drug Intelligence Officers (DIOs) now stationed in each of twenty-two states. DIOs serve as communication points within their respective states for reporting cross-jurisdictional links among drug trafficking organizations, disseminating interstate drug intelligence, referring investigative leads, and enhancing drug investigations. DIOs accomplish their objectives primarily by collecting information on drug-related felony arrests of out-of-state and out-of-local area residents, then notifying the respective DIO or law enforcement contact in arrestees' home jurisdictions either for their information or for further investigative action. Such information can lead to increased intelligence sharing among law enforcement agencies regionally and improve the impact of investigations into major opioid suppliers.[82]

Physician Education

The introduction of pain as the fifth vital sign in medicine and the increased availability of opioid pain relievers in the late 20th century led to an increased population utilizing opioids and/or developing Substance Use Disorders (SUD)/Opioid Use Disorders (OUD). According to the CDC, the number of prescription opioids dispensed to Americans quadrupled between 1999 and 2014, with primary care providers accounting for half of the opioids dispensed.[83] The alarming number of prescription opioids dispensed and rate of SUD/OUD led states and the CDC to review the prescribing guidelines for opioids and begin partnering with local providers to assist in educating other providers on safe prescribing practices.

Between 2016 and 2017, the PA-DOH, the CDC, and other medical organizations created and/or revised their prescribing guidelines related to opioids. These newly adopted guidelines provide medical professionals and the public an overview of the best practices for opioid prescribing to ensure that providers are not over prescribing opioids. The PA DOH created a series of prescribing guidelines for target audiences including, but not limited to: dentists, emergency departments, providers of treatment for non-chronic cancer pain, and Obstetrician/Gynecologists. Prescribing guidelines include information on when it would be appropriate for a

EFFORTS TO ADDRESS SUPPLY

patient to use opioids and the opioid threshold guidelines for patients. The release of the prescribing guidelines coincided with the release of the new Pennsylvania Drug Monitoring Program (PDMP). The PDMP is a database that prescribers, dispensers, and other specified groups utilize to review a patient's prescription history, to assist in the screening for SUD/OUD, and to report suspicious activity to the Drug Enforcement Administration Diversion Control Division.

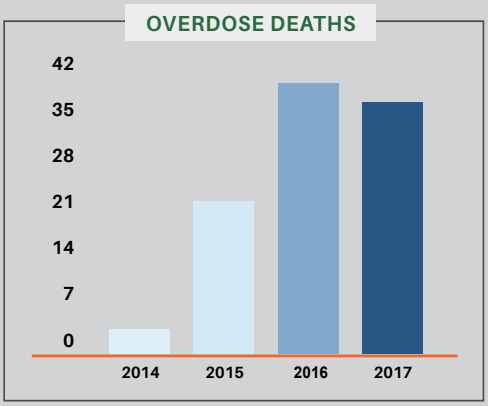
In addition to prescribing guidelines and the PDMP, the ongoing education of medical professionals regarding opioid use and addiction has been required by state and federal organizations. Traditionally, medical professionals have received little training on addiction; however, with the influx of persons using opioids, the state and federal medical governing agencies have instilled policies to expand and improve on prescriber education. Prescriber education topics include, but are not limited to, the PDMP, the science of addiction, opioid prescribing best practices, screening protocols (e.g., screening, brief intervention, referral to treatment [SBIRT]), and talking to a patient with a SUD/OUD.

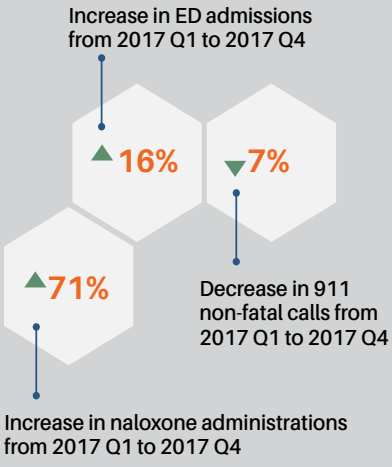
The DEA Philadelphia Field Division's Diversion Program, under the umbrella of the 360 Strategy (discussed in the *Efforts to Address Demand* section of this report) embarked upon a campaign to educate physicians, mid-level practitioners, and pharmacists throughout Pennsylvania about the opioid epidemic. One of the venues for these discussions occurs through Practitioner Diversion Awareness Conferences (PDAC) held regionally several times per year.

FRANKLIN COUNTY CASE STUDY

Coalition

The Franklin County Overdose Task Force formed in 2015 to address the opioid epidemic in the community. The task force, which has over 70 at-large members, works to facilitate connections with agencies and communities, and to create initiatives to address the crisis. The task force meets monthly and has subcommittees that focus on prevention, treatment, recovery, law enforcement, communications, and data collection.





Major Accomplishments

A variety of new programs, interventions, and strategies have been undertaken since the inception of the Overdose Task Force, including, but not limited to: 1) Increased access to Naloxone; 2) Good Wolf Treatment Court to address the overcrowded jail population and those struggling with addiction; 3) Grand Jury that investigates drug delivery resulting in death cases after fatal overdoses; 4) Mobile-Vivitrol Services partnership with Positive Recovery Solutions; 5) Operation-Save-A-Life training to aid in preventing, recognizing, and responding to opioid overdoses; 6) Get Back Up diversion program to link those struggling with addiction to appropriate care if they ask the District Attorney or police for help; and 7) Warm Handoff Services in the hospitals to better connect individuals with treatment and resources.

QUOTE FROM THE COUNTY

"The Franklin County Overdose Task Force (FCOTF) is a collaborative team effort within the community, fostering a determined spirit to reverse the trends of the current opioid epidemic."

EFFORTS TO ADDRESS SUPPLY

Diversion Actions and Prosecutions

A recent report from the American Addiction Centers' Sober Media Group, based on analysis of DEA's Cases Against Doctors report,[84] identified Pennsylvania as ranking second among states with the highest average number of physician arrests tied to opioid cases, including physicians who both over-prescribe and illegally prescribe opioids. This report indicated that for every 10,000 physicians employed in Pennsylvania, roughly five were arrested for opioid-related cases.[85] These statistics indicate that the vast majority of practitioners operate within the scope of their duties and responsibilities; however, a rogue physician supplying the illicit drug market with prescription opioids causes grave damage by facilitating abuse and subsequent overdoses. Investigating these registrants for controlled substance violations is a priority of the DEA. A recently adjudicated investigation exemplifies this effort:

In 2014, DEA initiated an investigation into the prescribing practices of a doctor based on numerous complaints received from pharmacies. At that time, this doctor ranked second in the Commonwealth of Pennsylvania and fifth nationwide in prescribing Schedule II controlled substances among doctors practicing in the field of neurology. During the investigation, agents revealed that eleven of this doctor's patients died of prescription drug overdoses. The doctor was indicted in the Middle District of Pennsylvania in July 2016. In June 2018, the doctor was convicted of 21 counts of Unlawful Distribution and Dispensing of a Controlled Substance, 1 count of Unlawful Distribution and Dispensing of a Controlled Substance (Resulting in Death), 1 count of Unlawful Distribution and Dispensing of a Controlled Substance to a Pregnant Individual, 2 counts of Maintaining Drug Involved Premises, 2 counts of Engaging in Monetary Transactions in Property Derived from Specified Unlawful Activity, and 3 counts of Tax Evasion. The jury also ordered that the doctor forfeit more than $2 million and real property. The doctor will be sentenced in September 2018 and faces a possible sentence of life in prison.[86]

In addition, over a 3-year period (2015-2017), the DEA Philadelphia Field Division processed over 300 administrative actions against DEA Registrants (typically practitioner cases) in the Commonwealth of Pennsylvania. These actions included 153 voluntary surrenders of DEA registrations (self-surrender resulting in the legal termination of registrant's registration without any further administrative action by the DEA); 122 Letters of Admonition (written warnings issued to DEA registrants for non-compliance related issues following an on-site inspection); and 23 Memorandums of Agreements (agreement for a specific period of time that requires the registrant to take certain measures to establish corrective actions).[87]

Additionally, diversion investigations by the PFD, in conjunction with the United States Attorney's Offices in the Eastern, Middle and Western Districts of Pennsylvania, led to over $1.5 million in civil fines against five DEA registrants. These registrants included three individual practitioners, a narcotic treatment program and a hospital system. Several of these registrants also had concurrent criminal court cases for diversion and insurance fraud charges either related or unrelated to the civil actions.[88]

Demand

Assessing demand is an essential element in fully comprehending the threat opioids pose to the Commonwealth. Supply and demand, although intrinsic to drug trafficking and consumption, are not always in sync. In an effort to assess current demand for opioids, PFD personnel interviewed/queried multiple sources of information and analyzed available data from across disciplines, to include pharmacists, drug users, emergency department providers, and drug treatment professionals.

Pharmacy Reporting

DEA interviewed and received information from more than 110 Pennsylvania pharmacists regarding their observations on demand for opioid CPDs. Over 70 percent of respondents reported a decrease in opioid prescribing in the last 12 months, and approximately 60 percent reported an increase in the prescribing of non-opioid CPDs in the place of opioid CPDs in the past year. This is not necessarily indicative of a decrease in demand for CPDs, but is likely due to increased awareness among physicians of the opioid abuse epidemic.[89]

Pharmacist respondents reported seeing behavior among customers that is indicative of their increased awareness of the addictive properties of opioid CPDs. Approximately 34 percent of pharmacists interviewed reported an increased demand for non-opioid alternatives for pain treatment among customers, and the majority reported that customers had expressed health concerns over their opioid prescriptions.[90]

However, there were also reports of concerning behavior. Nearly half (48 percent) of pharmacists interviewed said they commonly observed customers attempting to refill opioid prescriptions before they were due. One pharmacist expressed frustration with this, saying that, because insurance companies often give a week's grace period for early refills, if the pharmacist refuses to fill a prescription early, the patient will simply go to another pharmacy. Another pharmacist noted that when insurance carriers reject the refill, customers usually pay cash for the medication.[91]

A review of pharmacist responses reveal that improvements made in Pennsylvania's PDMP are positively impacting prescribing and prescription filling practices. More than 75 percent of pharmacist respondents indicated their belief that the PDMP is responsible for reducing prescribing of, and customer access to, opioid CPDs. More than 92 percent of respondents indicated that they declined to fill an opioid prescription based on information learned through the PDMP. Unfortunately, decreasing demand remains elusive, as more than half of respondents did not see a corresponding decrease in demand for opioid CPDs.

Counterfeit Pharmaceuticals

The increasing presence of counterfeit opioid CPDs in Pennsylvania is an indicator of strong demand for opioid CPDs in the illicit market. Traffickers use substances such as heroin, fentanyl, and tramadol to create tablets that look like the opioid CPDs most commonly purchased on the street (e.g., oxycodone 30 milligram tablets). The tablets are often exact replicas with the shape, coloring, and markings consistent with authentic prescription medications.

Demand and Use

Assessing the current and evolving demand for opioids by individual users is best accomplished through interviews. As such, the following is a synopsis of preliminary findings from a drug user health survey of 400 opioid users[o] conducted by the Philadelphia Department of Public Health between December 2017 and March 2018, as well as input provided to DEA by service provider organizations in several parts of the Commonwealth.[p]

[o] The findings reported are for 400 individuals who reported having used opioids in the last three months. Surveys were administered at a syringe exchange program and homeless encampments in Philadelphia's Kensington neighborhood. Most common respondent demographics: White (55 percent); Male (65 percent); 35-44 (35 percent); public insurance (approximately 84 percent); previously incarcerated (85 percent); predominantly housed in street/shelter in past 6 months (approximately 48 percent); previous mental health diagnosis (66 percent). Results may not be representative of overall Philadelphia area user population.

[p] Instruments used to survey users in Philadelphia and Allegheny counties varied by organization. Findings possibly skewed by the population served by the various organizations and therefore not necessarily representative of the greater drug user population. Allegheny County drug use data based on 707 people who provided information on drug use while

DEMAND

When questioned regarding their drug of choice, respondents indicated that heroin was the most common drug of choice. Reported percentages ranged from 49 percent[q] to 71 percent of respondents.

Specific to Philadelphia[r]:

- The majority (57.1 percent) of respondents (n=382) indicated having used pills before heroin.
- Heroin being "cheaper" was the most common reason[s] cited for first using heroin (28 percent of respondents, n=382). "Curiosity/experimentation" was the second most common reason given for first using heroin (23.6 percent). Other reasons included "other drugs less effective" (12.8 percent); "friends/family using" (11.8 percent); "easy to find/buy" (10 percent); "pressure from friends, relatives, sex partner" (9.7 percent); grief/depression[t] (6.3 percent); "pain"[u](5.2 percent); and "doctor stopped prescribing pills"[v](3.1 percent).

Fentanyl was not reported as a primary drug of choice, with most surveyed users indicating that they did not want it. However, a consensus of responses indicated that fentanyl is often what is readily available and that users were adapting to the available supply.

- Of note, a cohort of "newer, younger" Philadelphia users indicated that they choose fentanyl because it was available to them and they have become accustomed to it.
- One Philadelphia service provider referenced users examining the color of the substance as an attempt to determine whether it contained fentanyl (interpreted yellow or pink product as containing fentanyl).

According to the Philadelphia Department of Public Health survey, opioid CPDs were the preferred drug of choice among 3.5 percent of respondents (n=400). However, 37 percent of respondents reported having used an opioid CPD in the past 3 months.

When questioned regarding method of ingestion, respondents reported the following, specific to Philadelphia[w]:

- Approximately 81 percent of respondents (n=400) indicated injecting opioids. Respondents (n=323) that the most common "age at first injection" category was "25-34" years old (approximately 36 percent), followed by "18-24" (approximately 28 percent); "less than 18" (approximately 20 percent); 35-44 (approximately 12 percent); and 45 and over (approximately 2 percent).
- Thirty-eight percent of respondents stated that they use an average of "5-9" injections per day; this was followed by "1-4" average injections per day (approximately 36 percent); and more than 10 injections per day (approximately 23 percent). Nearly 70 percent of respondents indicated that they would use a supervised injection facility if available.

When questioned regarding drug treatment (n=400):

- The majority of respondents (73 percent) indicated being "very interested" in stopping drug use.
- Nearly 54 percent of respondents indicated that they had received treatment during the past 12 months.
- Roughly 27 percent of respondents indicated that they were currently in treatment; of this group, buprenorphine was the most commonly identified treatment type.
- "Housing" and "employment" were the most common "incentives for treatment" with approximately 70 percent and 57 percent of respondents, respectively.

Respondents (n=159) indicated that the top three reasons cited for not seeking treatment during the past 12 months were: "no available beds" (14.5 percent), "no ID or problems with ID" (approximately 11 percent), and "no insurance" (10 percent). Other responses included

receiving training on naloxone administration in 2017. This group also included subjects who reported no opiate/opioid use, including friends, and family of opioid users.

[q] The 49 percent value represented the highest value in the corresponding cohort.

[r] Based on previously referenced Philadelphia Department of Public Health survey.

[s] Categories not mutually exclusive.

[t] Category represents an "other" category fill-in.

[u] Category represents an "other" category fill-in.

[v] Category represents an "other" category fill-in.

[w] Based on previously referenced Philadelphia Department of Public Health survey.

"stigma" (3 percent), "no available transport" (3 percent), "no available appointments" (1.9 percent), and "cost of treatment" (1.3 percent).

Emergency Department and Drug Treatment Professionals

Inquiries and interviews of hospital emergency department (ED) personnel, as well as drug treatment professionals, provide insight from providers who are well positioned to observe and collect information regarding trends in opioid demand.

When questioned regarding current demand for opioids, ED personnel indicated that ED patients infrequently inquire as to health concerns related to opioid use and rarely request a non-opioid alternative. Nevertheless, respondents indicated that the likelihood of an opioid CPD being prescribed to a new patient is decreasing, with a co-occurring rise in prescriptions of non-opioids for pain management. They also reported that it is common for opioid-treated patients to request specific drugs, increased dosage, and increased potency. Seeking opioids without a medical need persists, as ED personnel routinely see repeat drug-seeking patients. ED personnel feel that PDMP and new opioid prescribing requirements have reduced opioid prescribing but not necessarily opioid demand.

Information collected from drug treatment providers indicates that patients receiving drug treatment most often report heroin/fentanyl as their primary drug of choice, with a majority indicating they transitioned from prescription opioid use. Treatment professionals indicate rising opioid use, demonstrated by past-year increases in treatment for opioids (illicit opioids, opioid CPDs, and co-occurring prescription and illicit opioid use). Drug treatment specialists indicate that while some of their patients seek fentanyl, many users will accept whatever product is available (some fentanyl-seeking may be attributed to the belief that fentanyl is not detected on certain drug testing). Specific to fentanyl, treatment professionals expressed concern with the increase in frequency of use necessary to avoid withdrawal. It was also suggested that ultimately users will require higher doses of buprenorphine and/or methadone to treat fentanyl dependence.

Naloxone availability is increasing, and users frequently report both experiencing and witnessing overdoses. Treatment professionals indicate that medication-assisted treatment (MAT) is increasing, but with frequently reported medication misuse and access difficulty. Like ED personnel, treatment professionals attribute PDMP and opioid prescribing requirements to decreasing opioid prescribing, but with similar reservations on affecting demand reduction.

Demand Trends

Specific to opioid CPDs, queried pharmacy, ED, and treatment professionals all report a decrease in supply, most likely caused by the implementation of the revamped PDMP; however, a concurrent decrease in demand was less certain. Practitioners may be offering non-opioid alternatives to pain management to their patients, but this is most likely due to increased scrutiny of prescribing habits, as well as legislated changes, not due to requests from patients seeking non-opioid products.

Analysis of the trends in response to the aforementioned inquiries reveals that reporting of fentanyl seeking by users and treatment providers differs somewhat; however, both report that fentanyl is widely available and users will adapt to supply when necessary. The implications of this are grave, as it is an indicator that supply, without specific corresponding demand, is driving the illicit drug market.

Efforts to Address Demand

360 Initiative

The DEA 360 Initiative was implemented in November 2016 as an innovative three-pronged approach to combating heroin/opioid use through: 1) coordinating law enforcement actions against drug cartels and heroin traffickers in specific communities; 2) Diversion Control enforcement actions against DEA registrants operating outside the law and long-term engagement with pharmaceutical drug manufacturers, wholesalers, pharmacies, and practitioners; and 3) Community Outreach through local partnerships that empower communities to take back affected neighborhoods after enforcement actions and prevent the same problems from reoccurring.[92] Pittsburgh was the pilot city for the 360 Strategy, and during the inaugural year, more than 200 presentations, meetings, briefings, and community engagements occurred. The 360 Strategy in Pittsburgh resulted in the establishment of relationships with community partners, treatment providers, educators, policy makers, and registrants that continues to foster information sharing, resource discussion, and integrated strategies to address the opioid crisis in the region. In May 2018, the 360 Strategy was initiated in Philadelphia with similar efforts and results anticipated.

Bridging Public Health and Public Safety

The Pennsylvania Overdose Reduction Technical Assistance Center (TAC) was funded in 2016 (and started working with counties in July 2016) by the Pennsylvania Commission on Crime and Delinquency (PCCD) and is led by the University of Pittsburgh's School of Pharmacy Program Evaluation Research Unit (PERU). The goal of the TAC is to support Pennsylvania counties in achieving their vision of eliminating overdose and ensuring the health, safety, and well-being of individuals with SUD and those surrounding them.[93]

It is suggested that the best method of addressing overdose reduction is to apply strategic solutions at the community level. Since the TAC was funded, there are now 29 new county coalitions and support being provided to 19 existing coalitions aimed at reducing overdoses across Pennsylvania. From these coalitions, 35 data-driven strategic plans have been developed, over 1,000 leadership or coalitions meetings have been held, and more than 220 new initiatives have been implemented. These county coalitions are now the nexus from which state level policy changes can be implemented and tested, assessment of county level overdose risk can be accomplished, and systematic reduction in overdose deaths can be achieved. The implementation of the coalitions and their work is derived from a systems transformation framework, exclusively used by PERU.

Medication Assisted Treatment and Engagement

As early identification and intervention to prevent the development of SUDs continues to be emphasized, many thousands of people in Pennsylvania are currently diagnosed with a SUD. Warm Handoff Programs have been developed in ED throughout the Commonwealth in recognition and response to the need for improved SUD treatment access. To achieve sustained recovery, one form of treatment may is MAT.[94] Early initiation of MAT increases the likelihood that patients will engage and continue in treatment. ED programs initiating buprenorphine therapy have demonstrated significant improvements in opioid withdrawal relief, treatment engagement and reductions in drug use.[95] Patients treated for their addiction while admitted to medical hospitals for either related or unrelated illness, including initiation of buprenorphine, reduces subsequent drug use and is 6 times more likely to result in ongoing SUD treatment.[96] Buprenorphine prescribing requires a physician to complete specific training and ap-ply for a supplemental DEA license, a so-called X-waiver. However, physicians in the ED are permitted to administer single doses of either buprenorphine or methadone to treat acute withdrawal while arranging for SUD treatment

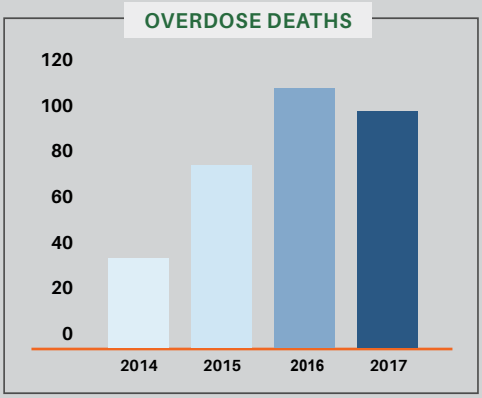
follow-up. This treatment may occur for up to 3 days under the "Three Day Rule."[97] Patients being treated in the hospital for medical or surgical illness may be treated throughout their hospitalization, without specific facility addiction treatment licensure, for a co-occurring addiction disorder complicating medical management including the use of buprenorphine or methadone.[98]

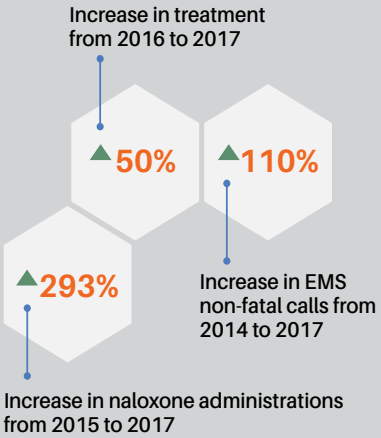
Based upon published evidence, University of Pittsburgh Medical Center (UPMC) hospitals have developed programs to initiate treatment in the ED and for hospitalized patients. Several UPMC EDs have developed pathways to initiate treatment with buprenorphine for patients in active withdrawal. Medication administration is performed in conjunction with established warm handoff procedures to community SUD treatment providers and has been associated with a significant increase in treatment engagement. Inpatient treatment of withdrawal and addiction has been provided by the medical toxicology service at several UPMC hospitals. In addition to relieving immediate symptoms of withdrawal, engagement with psychiatrists, peer recovery specialists, social work, case management, and outpatient providers has allowed smoother transition from inpatient to outpatient management of SUD as well as co-occurring medical illness. Expansion of these programs in conjunction with internists trained in addiction medicine and

WASHINGTON COUNTY CASE STUDY

Coalition

The Washington County Opioid Overdose Coalition formed in 2016 as a response to the increasing number of drug overdoses in the community. The coalition meets monthly, at which time their subcommittees (Coordination, Naloxone, Anti-Stigma, Treatment, and Education) identify goals for program and activity implementation. The coalition focuses on data-driven, coordinated efforts and increased collaboration of various community entities.





Major Accomplishments

The coalition has developed and participated in the following programs throughout Washington County: 1) Community and First Responder naloxone trainings and recognition events; 2) a Medication-Assisted Treatment (MAT) program in the correctional facility which demonstrated decreased fatality and recidivism rates of participants; 3) Public Quarterly Meetings to share resources and information with the community; 4) Collection and analysis of more than 1,500 surveys to better target initiatives for stigma reduction; 5) Material development including MAT informational pamphlets, leave-behind postcards for first responders, and pharmacy naloxone availability; 6) a collaborative hospital warm handoff with local Center of Excellence and Single County Authority; and 7) Drug Summits for local schools.

QUOTE FROM THE COUNTY

"The Washington County Opioid Overdose Coalition exists to eliminate opioid overdoses, stigma associated with Opioid Use Disorder, and to ensure every patient with an Opioid Use Disorder has access to and support throughout treatment and recovery."

psychiatry is ongoing.[99]

Pennsylvania Department of Human Services Centers of Excellence

Pennsylvania's Centers of Excellence (COE) have established a network of 45 facilities across the Commonwealth that work to ensure that persons with an OUD have access to integrated, coordinated care, including MAT, and facilitating care for individuals with OUD who receive coverage through Medicaid. Emphasizing a team-based approach to long-term recovery, COEs cultivate a supportive network for patients that include their physical and behavioral healthcare providers, family members, and others that they engage with throughout their daily life for sustained recovery.

Pennsylvania Poison Centers

Pennsylvania's Poison Centers in Philadelphia and Pittsburgh offer an additional resource to the public, public health personnel, healthcare providers, and law enforcement. Poison Centers are available to any caller, 24/7, at 1(800) 222-1222. Healthcare providers including nurses, pharmacists, and physicians specially trained in drug use, toxicity, and withdrawal are available to answer every call. Real-time medical evaluation and treatment recommendations are provided to assist in the treatment of any individual. There is no cost to public callers. Additionally, questions regarding different classes of drugs and their effects on the human body can be answered. Poison Centers assist public health and law enforcement in identifying changes in drug use trends and provide expert consultation. Pennsylvania's poison centers have provided education to students, community organizations, healthcare professionals, first responders, law enforcement, and public health personnel regarding opioids and other drugs of misuse, including recognition and response to toxicity as well as demonstration of naloxone administration. Finally, poison centers assist in the evaluation, treatment, and referral of individuals seeking help with substance use disorders.[100]

Governor Wolf's Statewide Disaster Emergency Declaration

Governor Wolf issued a Statewide Disaster Emergency with regard to the heroin and opioid epidemic in January 2018.[101] This state of emergency provides for the ability to waive regulatory laws that state agencies are charged with carrying out under normal circumstances in 90-day increments to remove certain barriers to addressing the needs posed by the disaster, in this case opioid abuse and overdose, more quickly and efficiently. The governor may choose to extend the declaration at the end of the 90 days (which has occurred), or the legislature may act to make certain provisions permanent by creating laws to do so. The Governor's declaration addresses 13 specific initiatives that span across all state agencies across three main areas: (1) Enhancing Coordination and Data Collection to Bolster State and Local Response; (2) Improving Tools for Families, First Responders, and Others to Save Lives; and (3) Speeding Up and Expanding Access to Treatment.

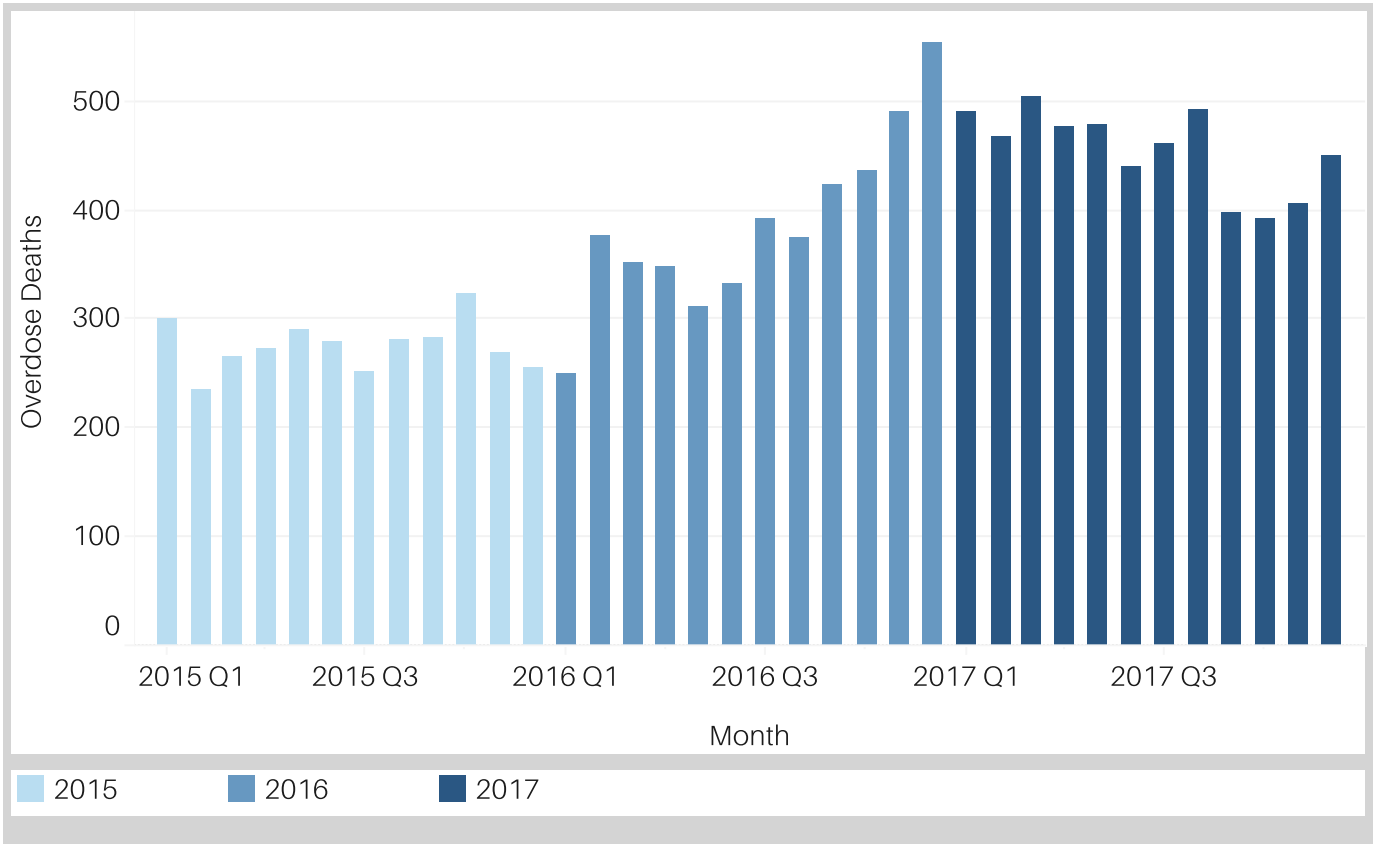
Impact

Fully assessing the impact of the aforementioned trends in opioid supply and demand is a complex task that includes analysis of public health data, economic and workforce indicators, and the gravest consequence, drug-related overdose deaths. As such, the PFD, in conjunction with the PERU TAC, analyzed these data sources in an effort to elucidate the impact of opioid misuse in Pennsylvania.

Drug-Related Overdose Deaths, 2015-2017

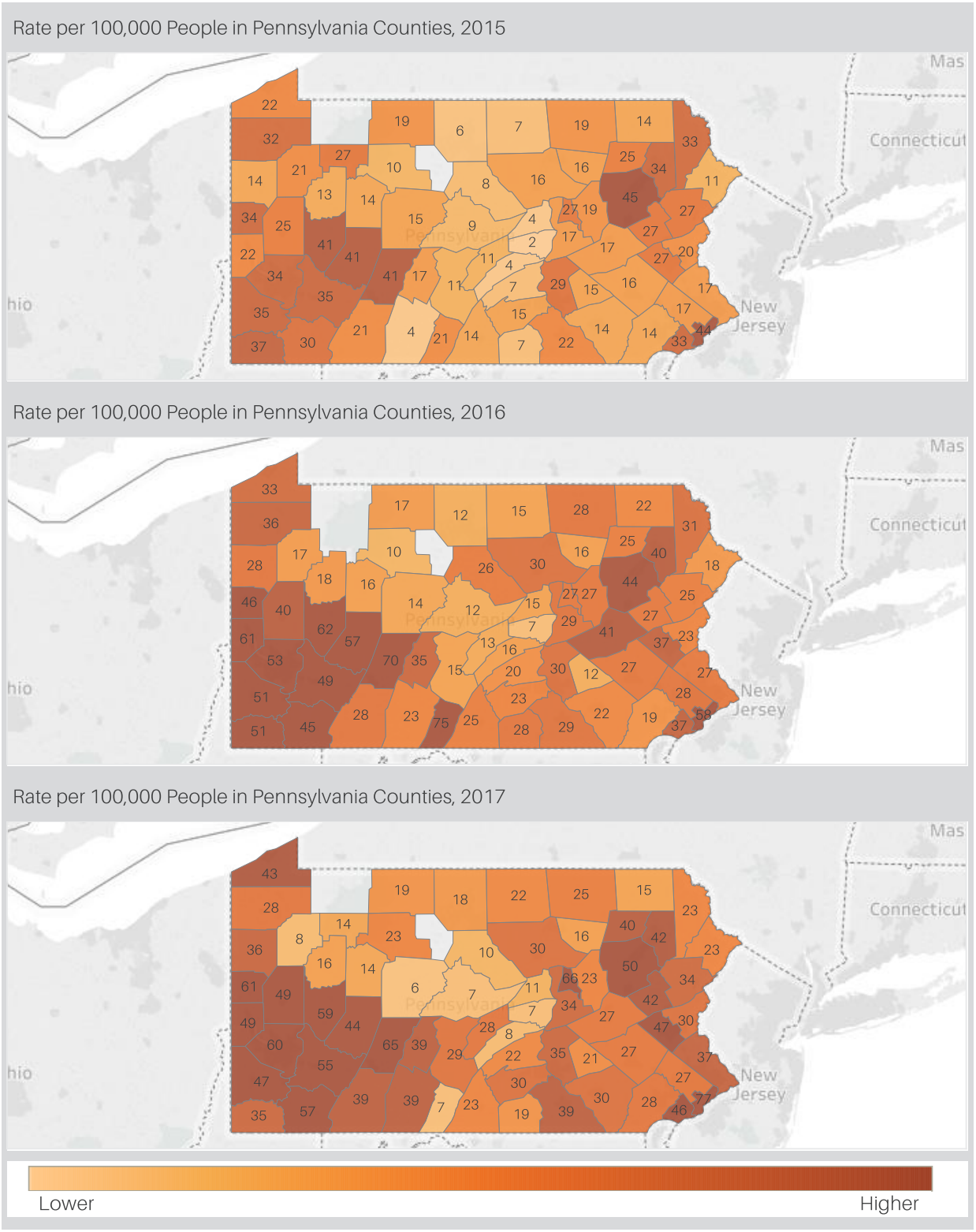
As in 2015 and 2016, the PFD requested information on drug-related overdose deaths from Pennsylvania's coroners and medical examiners for deaths that occurred in 2017. The PFD subsequently received data on 5,456 accidental or undetermined drug-related overdose deaths from 67 counties in Pennsylvania, 65 of which reported overdose deaths. The information in this section summarizes data from 2015 through 2017 (see Figure 19). For an explanation of the full methodology used in collecting and standardizing the collected data, please see Appendix B.

(U) Figure 19. Drug-Related Overdose Deaths, Pennsylvania, 2015-2017



Source: Pennsylvania Coroner/Medical Examiner Data

(U) Figure 20. Rate of Drug-Related Overdose Deaths per 100,000 people, Pennsylvania 2015-2017



Source: Pennsylvania Coroner/Medical Examiner Data

IMPACT

Toxicology test results were reviewed, and drugs of interest (Appendix B, Figure B1) were selected for analysis, and combined into categories, based on law enforcement intelligence regarding frequency of abuse and diversion, as well as those identified as the most common drugs present in drug-related overdose deaths by national public safety and public health sources. A detailed analysis of 2017 data can be found in Appendix C.

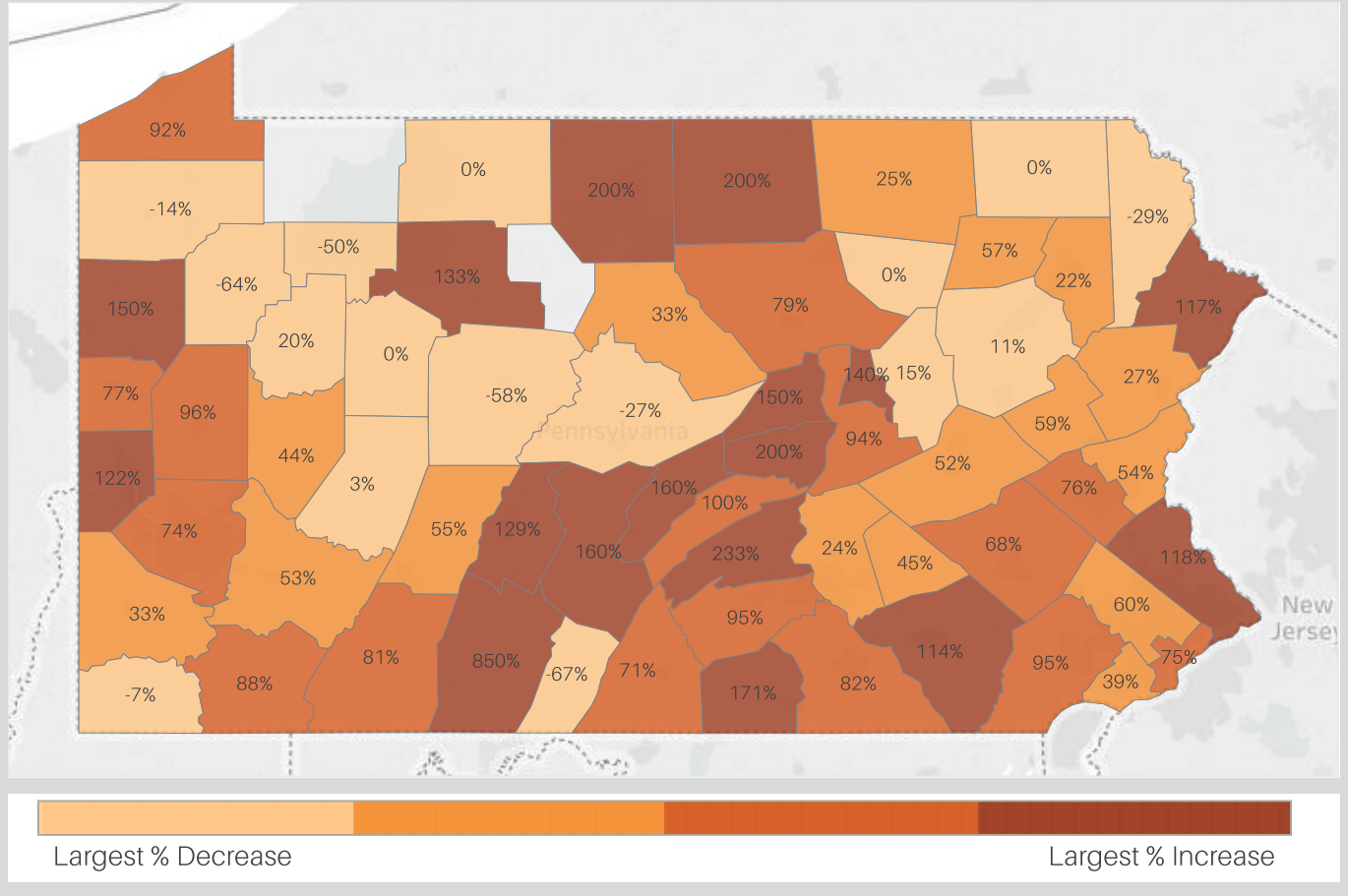
Overview

The rate of drug-related overdose deaths in Pennsylvania increased from 26 per 100,000 in 2015 to 43 per 100,000 in 2017. This far exceeds the national average (22 per 100,000 in 2017).[102] Among individual counties, rates ranged from 0 to 77 per 100,000 people. Figure 20 depicts the trend in overdose deaths rates per 100,000 people for each county from 2015 to 2017.

Between 2015 and 2017, there was a 65 percent increase in the number of drug-related overdose deaths in Pennsylvania. The change in deaths (percent) from 2015 to 2017 varied across the counties and ranged from a 67 percent decrease to an 850 percent increase. Figure 21 depicts the change in rates of drug-related overdose deaths in Pennsylvania counties from 2015 to 2017.

There was a slightly larger percent increase in the number of drug-related overdose deaths in urban counties (67 percent) than rural counties (53 percent) from 2015 to 2017. A full listing of county rankings can be found in Appendix A. Within the top 10 counties, the distribution

(U) Figure 21. Percent Change in Drug-Related Overdose Deaths in Pennsylvania Counties, 2015-2017



Source: Pennsylvania Coroner/Medical Examiner Data

(U) Figure 22. Percent Change in Drug-Related Overdose Decedents by Pennsylvania Department of Health Region, Pennsylvania, 2015-2017

Region	Percent Change from 2015 - 2016	Percent Change from 2016 - 2017	Percent Change from 2015 - 2017
North Central	65%	-5%	**57%**
Northeast	12%	21%	**35%**
Northwest	30%	15%	**49%**
South Central	48%	20%	**79%**
Southeast	39%	26%	**74%**
Southwest	55%	7%	**65%**

Source: Pennsylvania Coroner/Medical Examiner Data

(U) Figure 23. Frequency of Drug Categories and Percent Change in Drug-Related Overdose Decedents, Pennsylvania, 2015-2017

Drug Category	Percent Reported Among 2015 Decedents	Percent Reported Among 2016 Decedents	Percent Reported Among 2017 Decedents	Percent Change from 2015 - 2017
FRSs & NPSOs	4%	5%	18%	**394%**
Fentanyl	27%	47%	67%	**150%**
Other Illicit Drugs	7%	7%	11%	**54%**
Cocaine	24%	28%	32%	**36%**
Ethanol	20%	21%	19%	**-5%**
Benzodiazepines	39%	35%	31%	**-21%**
Prescription Opioids	27%	25%	20%	**-27%**
Heroin	53%	43%	38%	**-28%**

Source: Pennsylvania Coroner/Medical Examiner Data

of rural and urban counties was similar to 2015; five rural counties were ranked in the top 10 in both 2015 and 2017. Of note, 71 percent of counties that reported an overdose death in 2017 had rates per 100,000 people that exceeded the national average. By the PA-DOH Regions grouping (Figure 22), the southern regions of Pennsylvania demonstrated the largest percent increase in overdose deaths from 2015 through 2017.

Toxicology Trends in Drug-Related Overdose Deaths, 2015-2017

Between 2015 and 2017, the percent change of drug-related overdose deaths increased in 4 out of 8 identified drug categories (see Figure 23), with fentanyl and FRSs/NPSOs demonstrating the largest increases. Fentanyl, the most frequently reported drug in 2017, increased 150 percent from 2015 to 2017. FRSs/NPSOs increased 394 percent from 2015 to 2017. Prescription opioids and heroin decreased in consecutive years, which may be reflective of the information reported above in the *Supply* section.

Toxicology Overview

Within toxicology reports of the 2015 to 2017 drug-related overdose deaths, a total of 282 different drugs were identified. Of the 13,408 drug-related overdose deaths, 83 percent contained two or more drugs, 40 percent contained four or more drugs, and 14 percent contained six or more drugs in the associated toxicology reports. Figure 24 demonstrates the presence of each analyzed substance in the data set between 2015 and 2017.

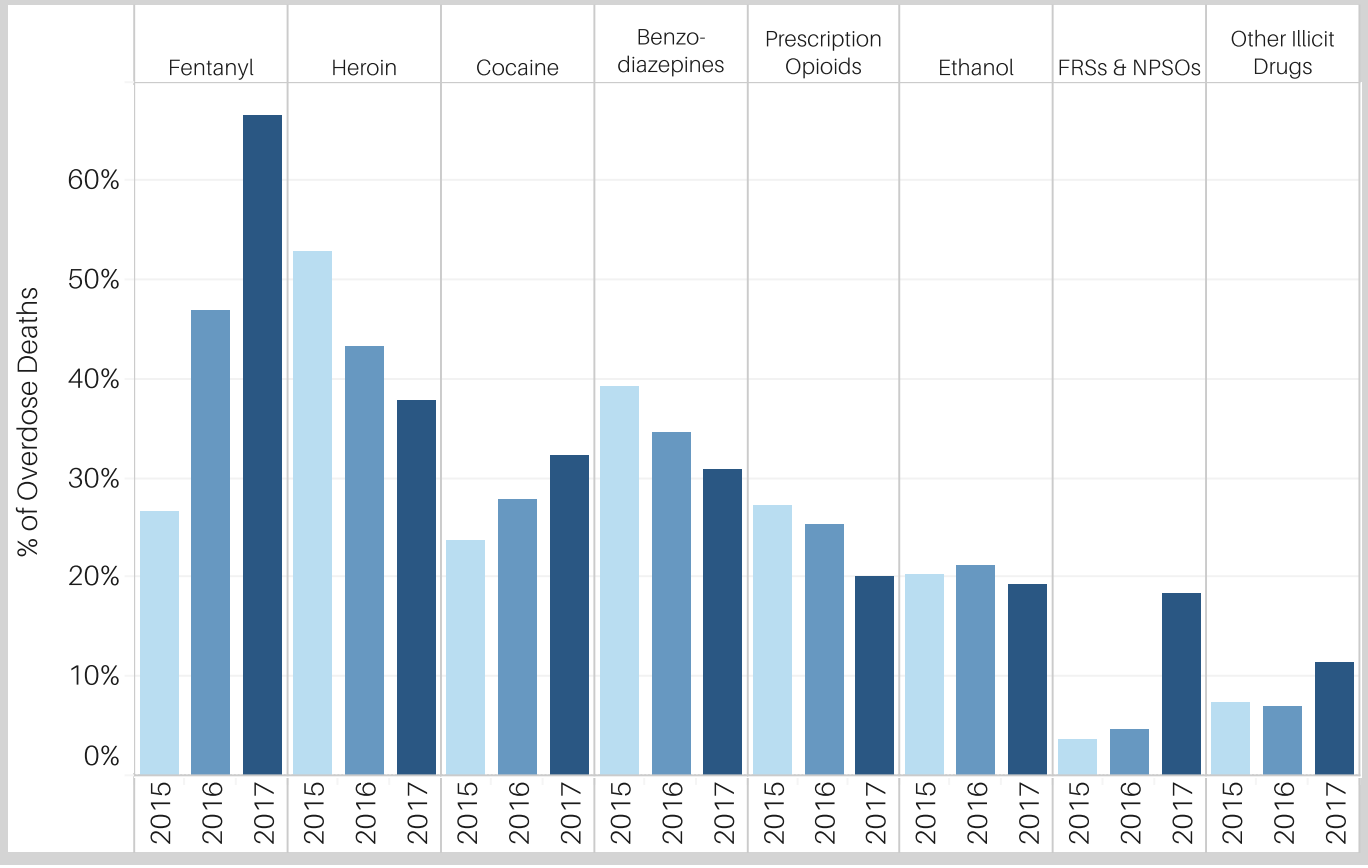
Toxicology Trends by County

In 2017, the most commonly identified drug category, fentanyl, was present in 61 counties across Pennsylvania. Among toxicology reports, fentanyl was the most frequent substance in 92 percent of these counties. Between 2015 and 2017, the most commonly identified drug category in toxicology reports by county changed across the commonwealth from heroin to fentanyl (see Figure 25). Some counties demonstrated a tie between two or more prevalent drug categories. In these instances, the drug category displayed was ranked in order of fentanyl, heroin, prescription opioids, and other illicit drugs.

Toxicology Trends by Time

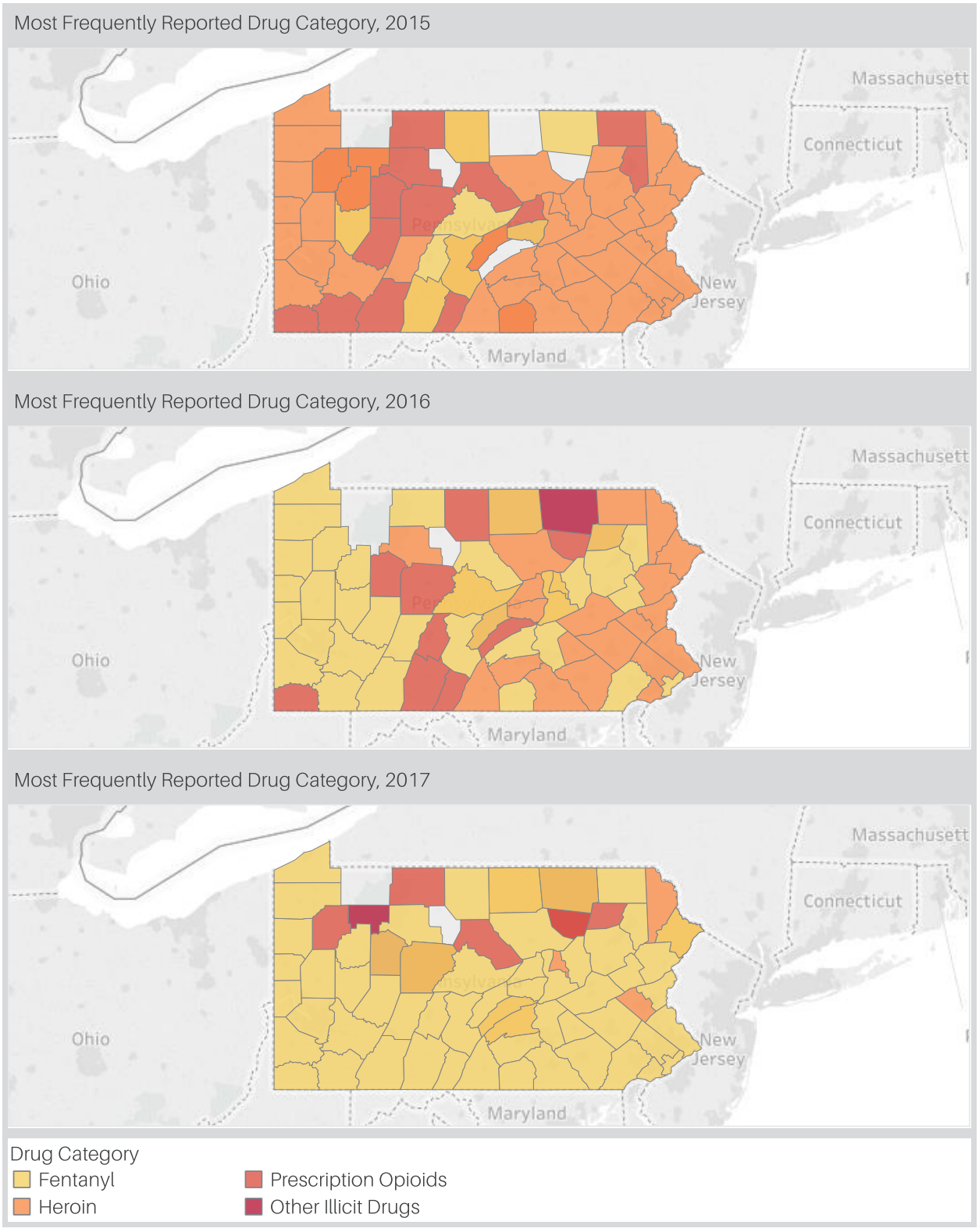
The percentage of drug-related overdose deaths was calculated each quarter by drug category from 2015 to 2017 (see Figure 26). The presence of fentanyl in overdose deaths was low at the beginning of 2015 (18 percent presence in first quarter overdose deaths). The percentage increased significantly until it was present in 67 percent of all fourth quarter of 2017 overdose deaths.

(U) Figure 24. Percent of Drug-Related Overdose Deaths per Year by Drug Presence, Pennsylvania, 2015-2017



Source: Pennsylvania Coroner/Medical Examiner Data

(U) Figure 25. Most Frequently Reported Drug Category in Drug-Related Overdose Decedents, Pennsylvania, 2015-2017



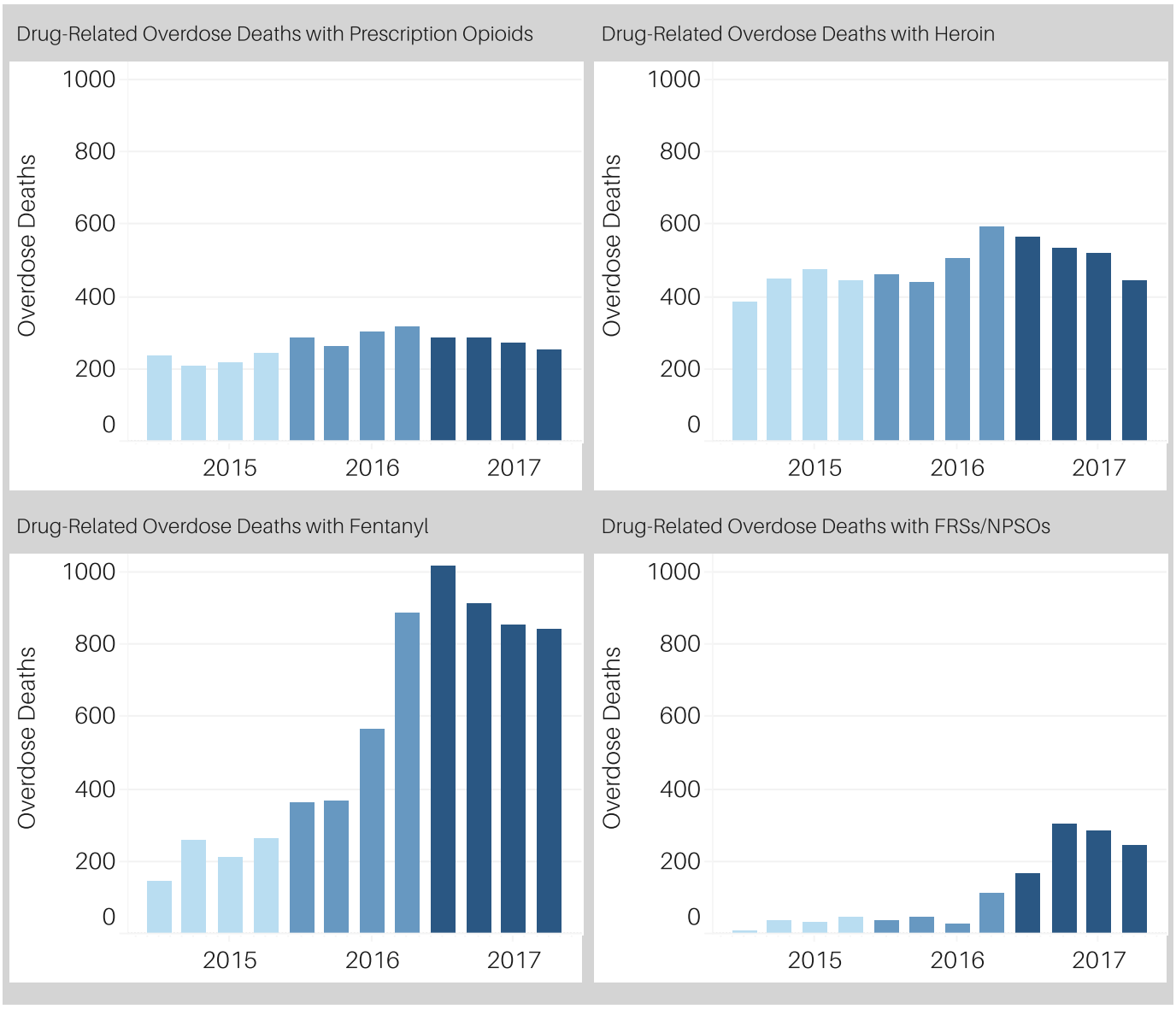
Source: Pennsylvania Coroner/Medical Examiner Data

Likewise, FRSs/NPSOs increased significantly from the first quarter of 2015 (1 percent) to the fourth quarter of 2017 (20 percent). As discussed in the *Supply* section, fentanyl/FRSs/NPSOs availability and use in Pennsylvania increased throughout 2016 to 2017, both in the amount and variety of substances available.

Toxicology Trends by Drug

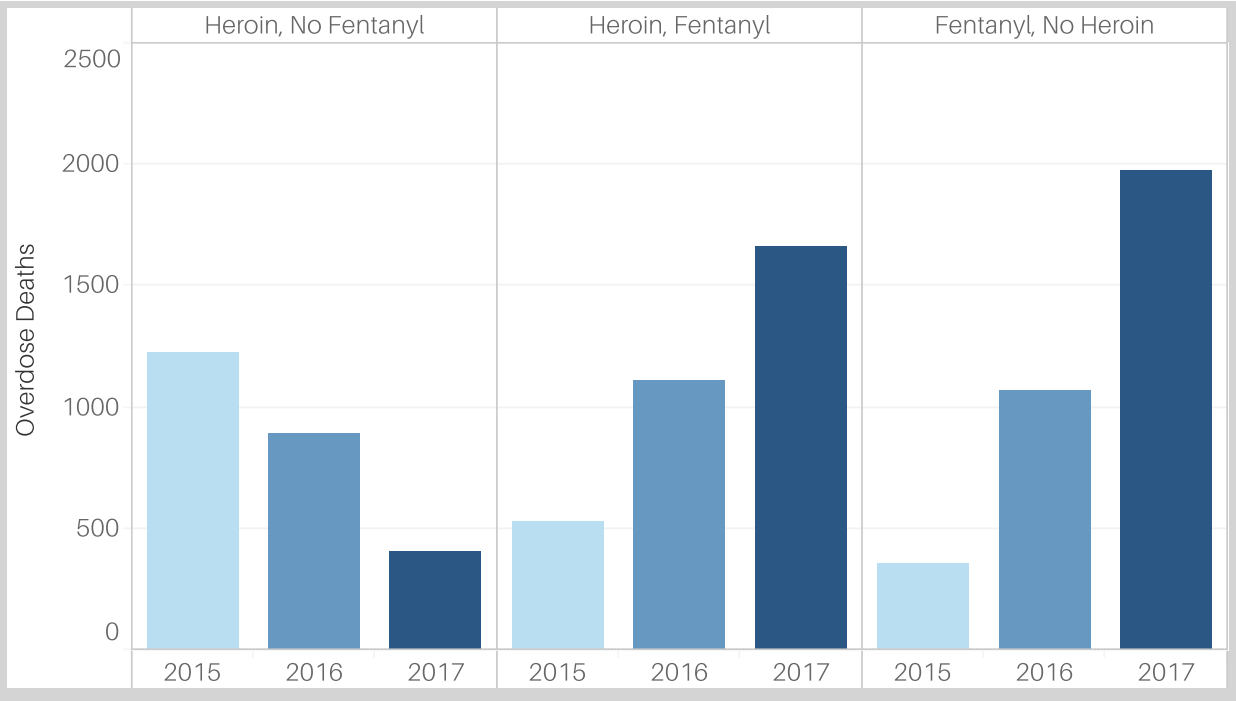
Fentanyl emerged as the most frequent drug category reported in overdose deaths in both 2016 and 2017. Fentanyl was found in 61 of the 65 counties that reported an overdose in 2017, which increased from 53 counties in 2015. Fentanyl was found in combination with heroin more frequently each year from 2015 to 2017, appearing in 16 percent of overdose deaths in 2015 and 30 percent in 2017.

(U) Figure 26. Drug-Related Overdose Deaths by Drug Category of Interest, Pennsylvania, 2015-2017



Source: Pennsylvania Coroner/Medical Examiner Data

(U) Figure 27. Drug-Related Overdose Deaths with the Presence of Heroin and Fentanyl, Pennsylvania, 2015-2017



Source: Pennsylvania Coroner/Medical Examiner Data

When identifying drug-related overdose deaths in which both heroin and fentanyl were present in toxicology, decedents with toxicology reports containing both drugs increased from 526 in 2015 to 1,659 in 2017, while the number of heroin deaths without the presence of fentanyl decreased from 1,223 in 2015 to 406 in 2017 (see Figure 27). This data demonstrates a shift over time from heroin-only deaths to deaths resulting from heroin being combined primarily with fentanyl.

At the PFD's request, the TAC used logistic regression modeling to measure the effect of age, race, and gender on fentanyl deaths. The logistic regression models can be utilized as predictive measures, in that they predict the odds of a fentanyl death based on three dependent variables: gender, age, and race. Five age groups (0-24, 25-34, 35-44, 45-54, 55+) and two genders (male and female), were used for the analysis to determine statistical significance. Additionally, analysis of variance was used to determine statistical significance between demographic groups. Among overdose deaths from 2015 to 2017, age group 25-34 was more likely to have the presence of fentanyl than any other age group. Specifically, the odds of age group 25-34 having fentanyl were approximately 1.25 times the odds of age group 35-44; 1.78 times the odds of age group 45-54; and 2.46 times the odds of age group 55+. Males demonstrated a significantly greater number of overdose deaths than females ($p<0.05$). Specifically, the odds of males having fentanyl were approximately 1.43 times the odds of females having fentanyl present in toxicology.

Toxicology Trends of FRSs/NPSOs

FRSs/NPSOs demonstrated the largest increase from 2015 to 2017. FRSs/NPSOs were found in 48 of the 67 counties in 2017, which was an increase from 27 of the 67 counties in 2015. Sixteen of the 18 FRSs/NPSOs found in toxicology reports from 2017 overdose deaths were not reported in 2015. The number of toxicology reports that mentioned FRSs/NPSOs increased from 123 in 2015

to 1001 in 2017, an increase of 714 percent. In addition to the increase in FRSs, the presence of NPSOs, such as U-47700, U-48800, and MT-45, were identified for the first time in 2016, and showed an increase of 156 percent in 2017. With the rapid expansion in the production and distribution of FRSs/NPSOs, many tests have not been developed or added to toxicology panels; thus, the numbers herein are likely not complete across counties (see *Data Challenges* section for more information). In 2017, 18 FRSs/NPSOs were identified in toxicology reports of drug-related overdose decedents. Figure 28 displays FRSs/NPSOs found in toxicology reports from 2015 to 2017.

Forty-eight counties reported the presence of FRSs/NPSOs in drug-related overdose deaths in 2017. While the greatest presence was concentrated in counties near major urban centers, where traditionally the largest number of opioid users are associated/supplied, FRSs/NPSOs were reported throughout the state, to include many rural counties. In 2017, the percentage of rural counties with FRSs/NPSOs present (63 percent) was higher than the 2015 percentage of rural counties with FRSs/NPSOs present (27 percent). This is an indication of the widespread availability of FRSs/NPSOs in Pennsylvania due to the ease of obtaining FRSs/NPSOs from online sources, as discussed in the *Supply* section.

Among toxicology reports from 2015 to 2017, acetyl fentanyl, furanyl fentanyl, and para-fluorobutyryl fentanyl/FBF were identified as the top three FRSs/NPSOs. Acetyl fentanyl and para-fluorobutyryl fentanyl were found in combination with fentanyl most frequently (91 percent, 76 percent, respectively), followed by heroin (53 percent, 60 percent, respectively). Furanyl fentanyl was found in combination with heroin most frequently (51 percent), followed closely by fentanyl (49 percent) (see Figure 29). It is important to note that acetyl fentanyl can also be a byproduct of fentanyl production, which may account for the relatively high numbers of overdoses with acetyl fentanyl.[103]

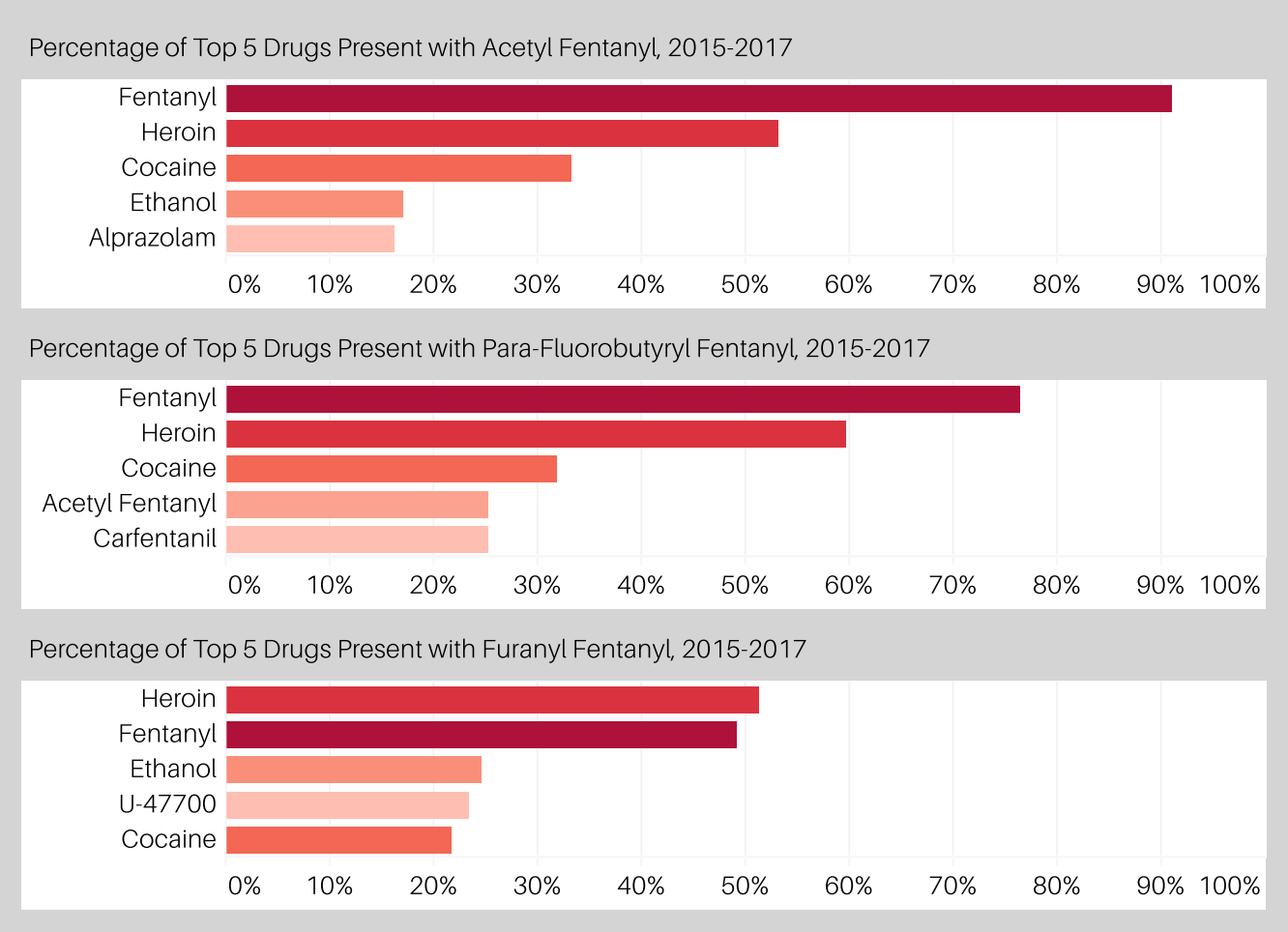
(U) Figure 28. FRSs/NPSOs Found in Toxicology Reports of Drug-Related Overdose Decedents, Pennsylvania, 2015-2017

Year	FRSs/NPSOs	
2015	Acetyl Fentanyl	Butyryl Fentanyl/Isobutyryl Fentanyl
2016	3-Methylfentanyl*	Fluorobutyrylfentanyl/Fluorofentanyl*
	4-Methoxy-Butyryl Fentanyl*	Furanyl Fentanyl*
	Acetyl Fentanyl	Para-Fluoro-Isobutyryl-Fentanyl/FIBF*
	Acryl Fentanyl*	Sufentanil*
	Carfentanil*	U-47700*
2017	3-Methylfentanyl	Furanyl Fentanyl
	A-Methylbutrylfentanyl*	Methoxyacetyl Fentanyl*
	Acetyl Fentanyl	MT-45*
	Acryl Fentanyl	O-Fluorofentanyl*
	Benzylfentanyl*	Para-Fluoro-Isobutyryl-Fentanyl/FIBF
	Butyryl Fentanyl/Isobutyryl Fentanyl	Para-Fluorobutyryl-Fentanyl/FBF*
	Carfentanil	Para-Fluorofentanyl*
	Cyclopropyl Fentanyl*	U-47700
	Fluorobutyrylfentanyl/Fluorofentanyl	U-48800*

(*) denotes a new compound not previously reported

Source: Pennsylvania Coroner/Medical Examiner Data

(U) Figure 29. Percentage of Top 5 Drugs Present with Top 3 FRSs in Drug-Related Overdose Decedents, Pennsylvania, 2015-2017



Source: Pennsylvania Coroner/Medical Examiner Data

Demographic Trends by Age

The three most affected age groups—25-34, 35-44, and 45-54—accounted for 75 percent of Pennsylvania's overdose deaths between 2015 and 2017. However, these groups only accounted for approximately 40 percent of the population over this period. The age distribution chart in Figure 30 displays consistent growth for age groups 25-34 and 35-44. Conversely, deaths attributed to age group 45-54 declined from 24 percent to 20 percent of Pennsylvania overdose deaths from 2015 to 2017.

Demographic Trends by Gender

On average, 70 percent of drug-related overdose deaths were males, compared to 30 percent of females, between 2015 and 2017. Males disproportionately experienced overdose deaths compared to females, as males comprise 49 percent of the Pennsylvania population over this period. The proportion of overdose deaths between males and females remained consistent each year from 2015 to 2017.

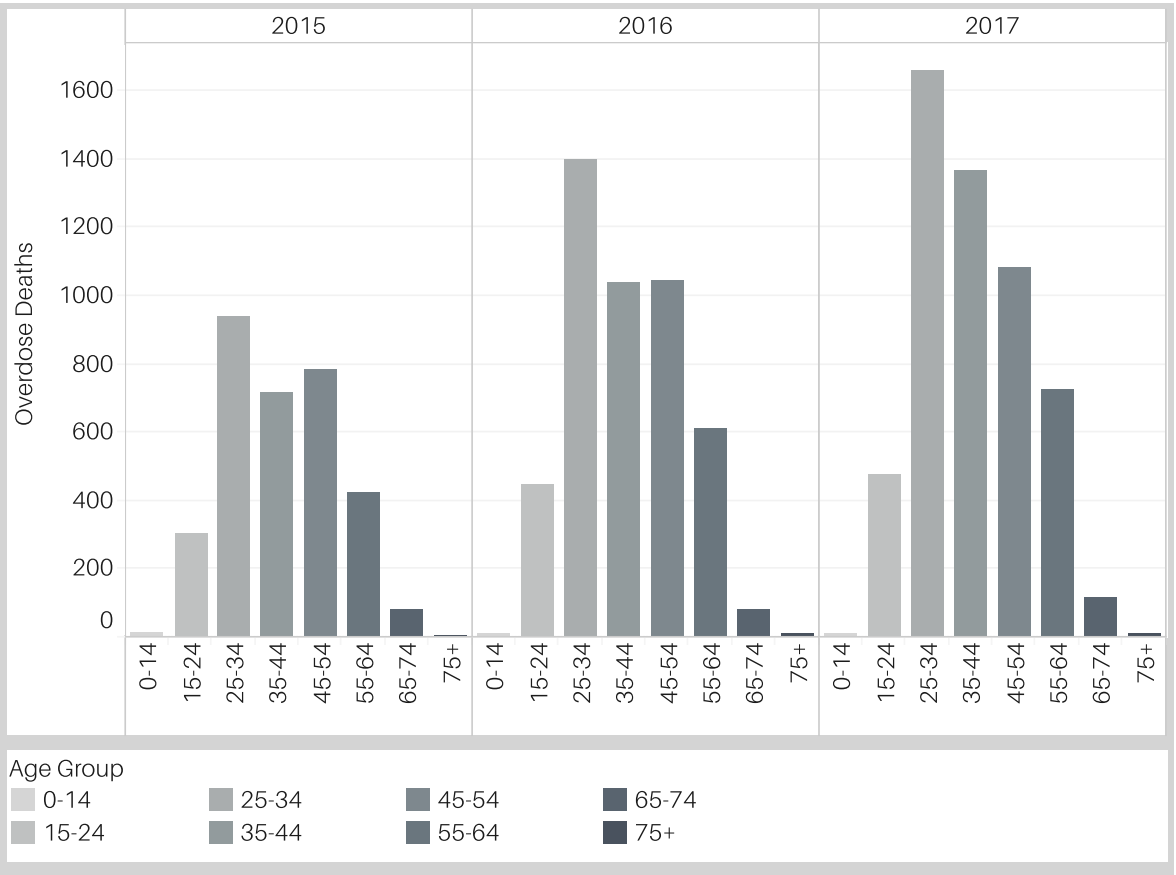
Demographic Trends by Race

On average, 77 percent of drug-related overdose deaths were White, 12 percent were Black, 4 percent were Hispanic, 4 percent were "other race," and 4 percent were "unknown," between 2015 and 2017. The distribution of overdose deaths among race was relatively consistent between 2015 and 2017. The racial breakdown for overdose deaths also coincides with the racial demographics in Pennsylvania, as Whites comprise approximately 78 percent, Blacks comprise approximately 12 percent, and Hispanics comprise approximately 7 percent of Pennsylvania's population.

Data Challenges

- The existence of valid prescriptions for opioids and benzodiazepines were not analyzed in this report; therefore, this report does not assess if these substances were obtained fraudulently or were diverted from legitimate sources, nor does it identify the method of administration.
- Analysis for this assessment focused on deaths classified as drug-related overdoses; the cause of death was determined by the county coroner or medical examiner. However, determining causation related to overdoses is subjective and can vary widely depending on the investigative efforts/abilities of the coroner and the evidence available for review, which results in inherent difficulties in making causation decisions, especially with regard to heroin overdoses. Therefore,

(U) Figure 30. Age Distribution of Drug-Related Overdose Decedents, Pennsylvania, 2015-2017



Source: Pennsylvania Coroner/Medical Examiner Data

it is possible that the data analyzed in this assessment underrepresents the true number and nature of drug-related overdose deaths in Pennsylvania.

- Each county in Pennsylvania is responsible for procuring or conducting toxicology testing, which is most commonly accomplished through the services at private laboratories. The scope of the toxicology tests is at the discretion of the requestor. Therefore, this data set is not standardized, and the lack of reporting of an individual drug in a county cannot be construed to mean that it was not present; rather, it may not have been part of the requested toxicology test panel.
- The data request for this assessment included residence and death zip code; however, the majority of data provided did not include any zip code information. Therefore, it was not possible to examine or conclude that the county in which the person died was their county of residence. Furthermore, the data does not identify the location from which illicit drugs or diverted pharmaceuticals were purchased or obtained.

County Analysis

To allow counties with fewer raw overdose death numbers to identify meaningful trends, additional analyses were conducted based on the six Community Health Districts used by the PA-DOH (Figures D1-D6). Individual county analysis was conducted and is represented in Appendix D Figures D7-D64. Each county's analysis contains data from 2015-2017, including overdose count; average rate of overdose deaths per 100,000 people; average rank by rate; percent change over time; age, gender, and race distribution; and drug-related overdose deaths by drug category and demographic group.

Individual analyses of Cameron, Elk, Forest, Juniata, Potter, Snyder, Sullivan, Union, and Warren Counties were not prepared due to their reporting of less than a total of 15 overdose deaths from 2015 to 2017.

Neonatal Abstinence Syndrome

Neonatal Abstinence Syndrome (NAS) is a "complex condition that occurs when a mother uses drugs, such as opioids, during pregnancy. The drugs pass through the placenta to the baby's circulatory system resulting in drug dependence at birth. When infants are born with drug dependence, they are at high risk for feeding and developmental issues as well as problems with learning when they reach school age."[104]

Because of the increase in opioid use in the past two decades, the incidences of NAS in the United States have increased dramatically between 1999 and 2013. In Pennsylvania, the rate of NAS in newborns increased more than 1000 percent between Fiscal Years (FYs) 2000-2001 and FYs 2016-2017, from 1.2 to 15.0 per 1,000 newborn stays.[105]

Workforce Impact

In 2016, the United States Census cited the Pennsylvania workforce as including 5,354,964 persons, roughly 41 percent of the total population. As of 2017, the highest rates of overdose occurred in the 25 to 54-year-old age range, a group that has approximately 71 to 78 percent of its population employed. To address growing concerns about the impact of the epidemic on Pennsylvania's workforce, the Pennsylvania Chamber commissioned a survey of 428 employers regarding their experiences with and expectations of the workforce. Fifty-two percent of respondents said that it was very difficult or extremely difficult to recruit qualified candidates to fill the needs of their company, with most (61 percent) believing that it has gotten more difficult in the last 5 years to recruit qualified candidates. Only 2 percent of the employers believed that it would get easier to recruit qualified candidates in the future.[106]

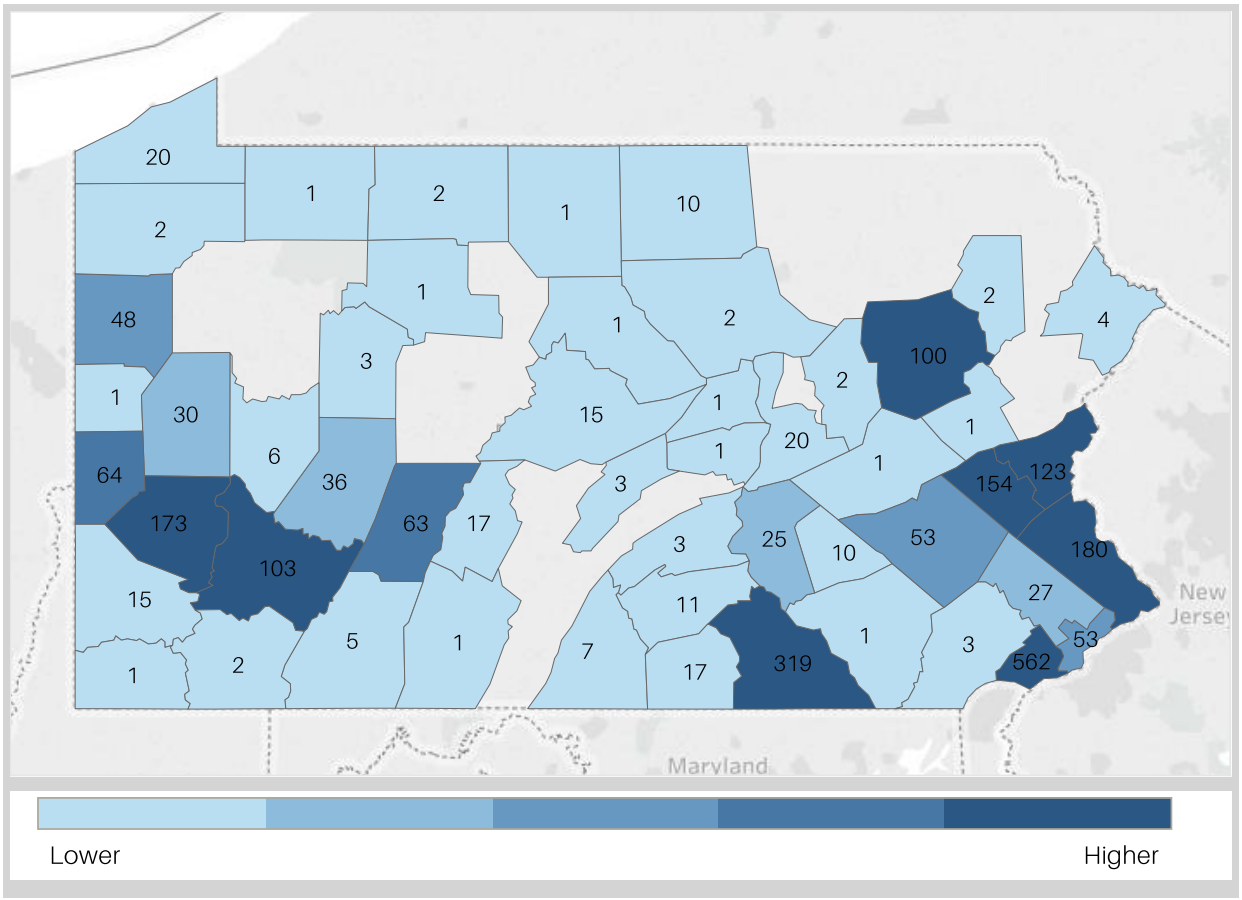
Economic Impact

According to a report published by United States Senator Robert Casey's Office for the Senate Committee on Health, Education, Labor, and Pensions in 2018, the economic cost of OUDs was $53.77 billion in 2016 in Pennsylvania.[107] This total amount included opioid-related costs, health care spending, addiction treatment, costs to the criminal justice system, and the cost related to lost productivity related to persons with an OUD. In Pennsylvania, an estimated $1.5 billion was spent on healthcare specifically for persons with an OUD in 2016. Persons with an OUD spend more money on healthcare per year on average than those without an OUD, including presentations at emergency department and the utilization of emergency medical services in the field. In addition, this population spent more than $162 million on addiction treatment and more than $440 million on services related to the criminal justice system. The largest cost in Pennsylvania regarding the opioid crisis was the total cost associated with opioid-related fatalities, almost an estimated $50.5 billion. An additional cost attributed to OUD in 2016 was the lost productivity of persons with an OUD, totaling more than $1.1 billion. This factor addressed the lost potential earnings for a person with an OUD within the year.

Naloxone

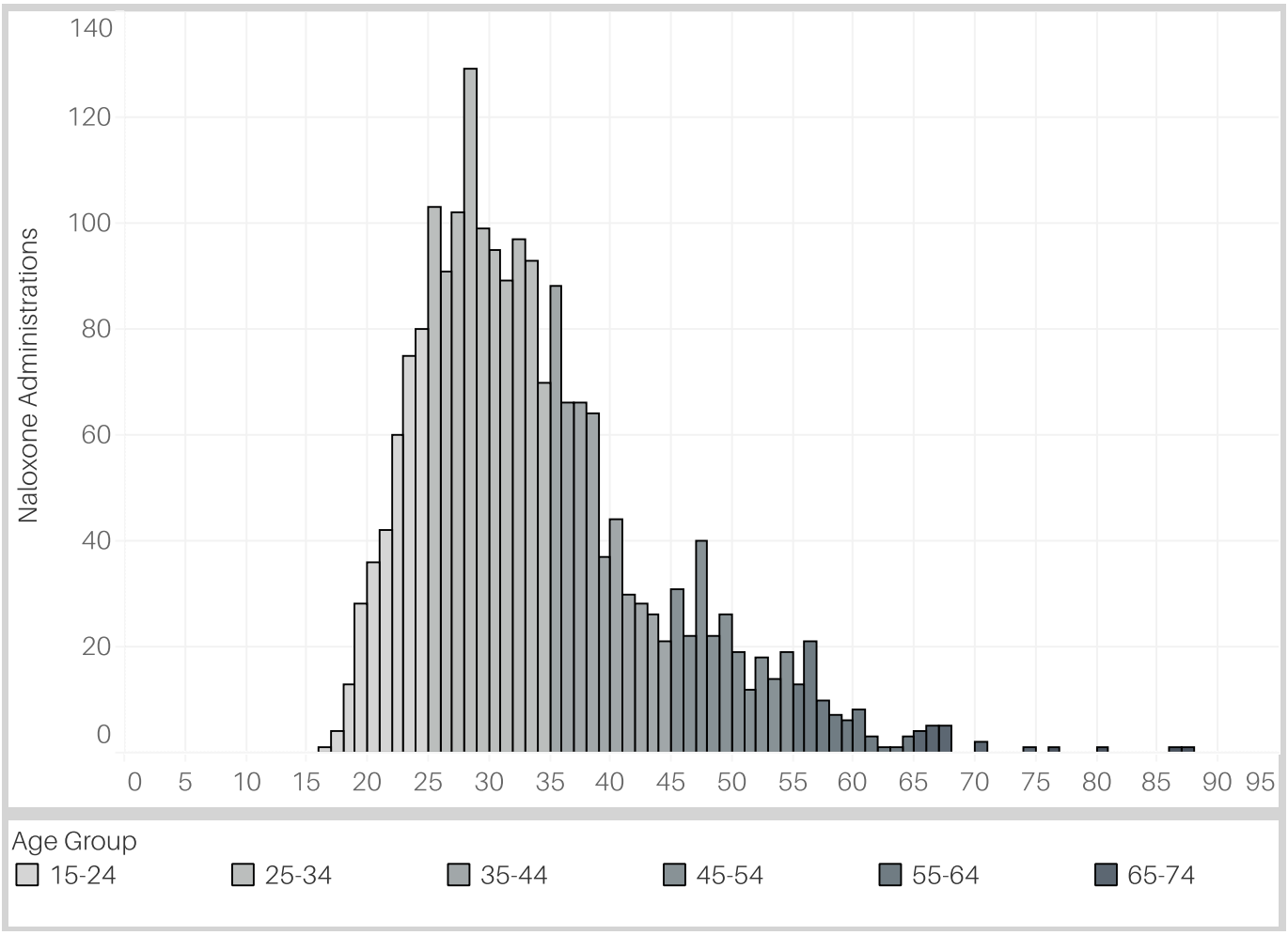
Policies allowing for increased access to naloxone has resulted in widespread deployment of naloxone

(U) Figure 31. Number of Naloxone Administrations Reported to HIDTA, Pennsylvania, 2017



Source: Liberty Mid-Atlantic HIDTA

(U) Figure 32. Age Distribution of Naloxone Administrations Reported to HIDTA, Pennsylvania, 2017



Source: Liberty Mid-Atlantic HIDTA

throughout the Commonwealth.[108] Although centralized statewide reporting of naloxone administrations is limited, several partial datasets exist for review.

The City of Philadelphia, through emergency medical services (EMS) reporting, captures naloxone administration data and shares with stakeholders. Review of naloxone administration data reported through the Philadelphia Department of Public Health (PDPH) Information Portal revealed that the number of people administered naloxone by EMS in Philadelphia increased by more than 153 percent from 2014 to 2017, with a marked upward trajectory beginning in 2016.[109] This timing mirrors the explosion in fentanyl availability in the region that was discussed in the Supply section of this report.

In addition, the Liberty Mid-Atlantic HIDTA has collected law enforcement naloxone administration data since 2015. This data was collected on a voluntary basis from law enforcement agencies in the Commonwealth, and is not inclusive of all law enforcement naloxone administrations by county or within counties. In 2018, with the introduction of ODIN (discussed in the Efforts to Address Supply section), the HIDTA data collection transitioned to the ODIN platform.

In 2017, there were 2,306 naloxone administrations reported to the Liberty Mid-Atlantic HIDTA by law enforcement agencies in Pennsylvania. Among individual counties,

the number of naloxone administrations reported ranged from 1 to 562 (Figure 31). The five counties with the most reported naloxone administrations by law enforcement were Delaware (562), York (319), Bucks (180), Allegheny (173), and Lehigh (154).

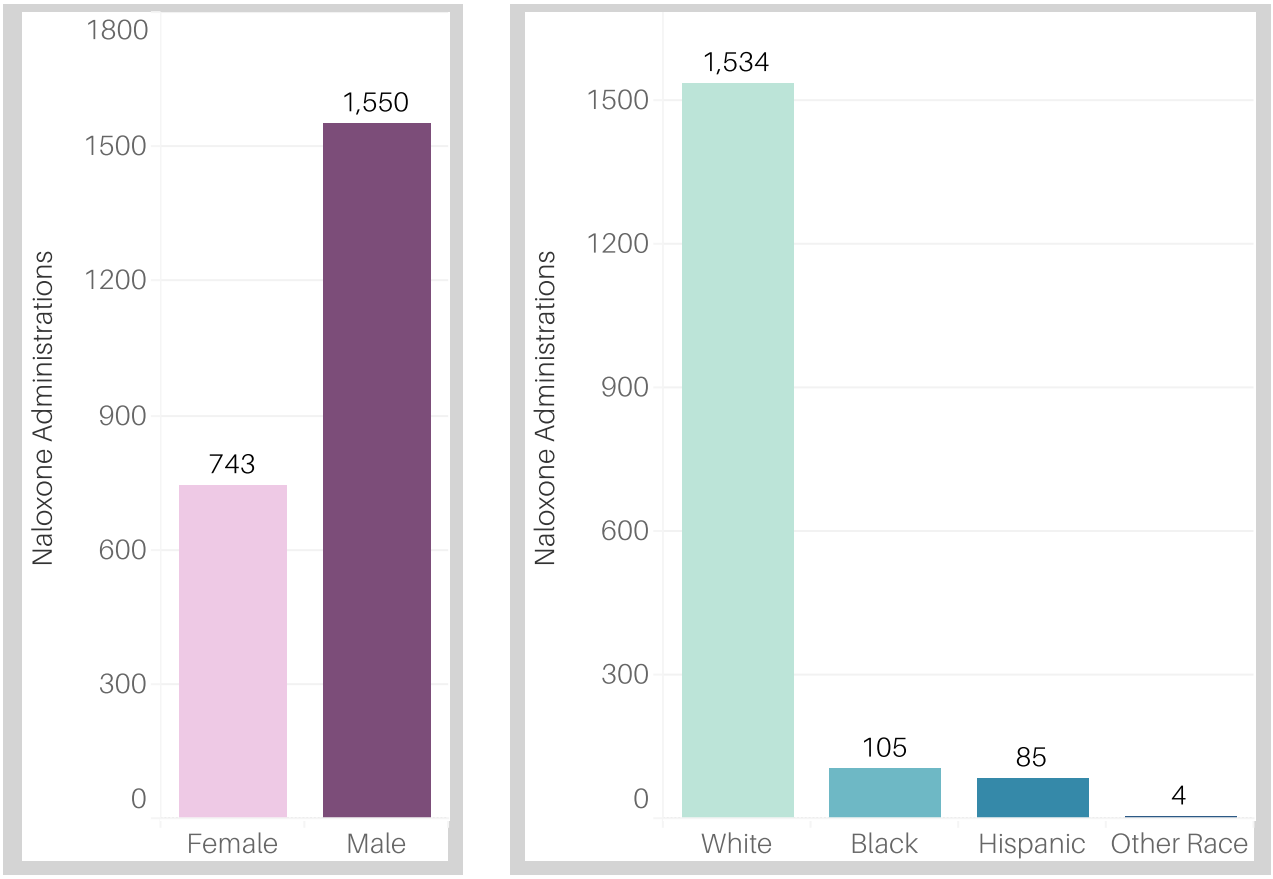
Age

Figure 32 shows the age distribution of naloxone administrations reported by law enforcement in 2017. The most common age group, 25 to 34 years old, represented 46 percent of naloxone administrations. This age group was disproportionately administered naloxone in 2017, since according to 2010 Decennial Census data, this age group comprised only 15 percent of Pennsylvania's population. The three most affected age groups—15-24, 25-35, and 35-44—account for 40 percent of Pennsylvania's population but represented 85 percent of reported naloxone administrations in 2017. Age group 15-24 accounted for 16 percent of administrations and comprised 14 percent of Pennsylvania's population.

Gender and Race

In 2017, naloxone was administered to 1,550 males (67 percent), compared to 743 females (32 percent) (see Figure 33). Thirteen naloxone administrations did not indicate gender. Males disproportionately received naloxone compared to females, as males comprise 49 percent of the Pennsylvania population yet accounted for 67 percent of naloxone administrations in 2017. Conversely, females comprise 51 percent of the population and accounted for 32 percent of the naloxone administrations reported to HIDTA in 2017.

(U) Figure 33. Gender and Race Distribution of Naloxone Administrations Reported to HIDTA, Pennsylvania, 2017



Source: Liberty Mid-Atlantic HIDTA

In 2017, 1,534 patients administered naloxone were identified as White (67 percent), 105 were identified as Black 4 percent), 85 were identified as Hispanic (4 percent), 4 were identified as "other" (0 percent), and 578 were identified as "unknown" (25 percent) (see Figure 34). After excluding "unknown" from the category, 89 percent were White, 6 percent were Black, 5 percent were Hispanic, and 0 percent were "other." The racial breakdown for naloxone administrations does not coincide with the racial demographics in Pennsylvania, as Whites comprise approximately 78 percent, Blacks comprise approximately 12 percent, and Hispanics comprise approximately 7 percent of Pennsylvania's population.

Outlook

The purpose of this assessment was to provide a timely and actionable depiction of the opioid crisis in Pennsylvania. Analysis of the myriad data sources referenced herein inevitably leads to the conclusion that the opioid crisis is driven by supply and demand factors that require a cross-disciplinary approach to combat. Law enforcement must continue to work to stem the supply of illicit and misused prescription opioids, while public health entities, educators, and policy makers must provide effective resources to reduce drug demand and misuse. Evidence suggests that enacting these strategies jointly reduces opioid supply and misuse, with success measured incrementally through decrease in supply, improvement in economic and health indicators, and reduction in overdoses and overdose deaths. The DEA Philadelphia Field Division will continue to work collaboratively with the aforementioned partners to meet these identified goals.

GLOSSARY OF ACRONYMS

- **CBP:** Customs and Border Protection
- **CDC:** Centers for Disease Control
- **CLRT:** Clandestine Laboratory Response Team
- **COE:** Centers of Excellence
- **CPDs:** Controlled Prescription Drugs
- **CSA:** Controlled Substances Act
- **DEA:** Drug Enforcement Administration
- **DIOs:** Drug Intelligence Officers
- **DTOs:** Drug Trafficking Organizations
- **ED:** Emergency Department
- **EMS:** Emergency Medical Services
- **FRSs:** Fentanyl Related Substances
- **FSPP:** Fentanyl Signature Profiling Program
- **HDMP:** Heroin Domestic Monitoring Program
- **HIDTA:** High Intensity Drug Trafficking Area
- **HRS:** Heroin Response Strategy
- **HSP:** Heroin Signature Program
- **MAT:** Medication Assisted Treatment
- **NAS:** Neonatal Abstinence Syndrome
- **NFLIS:** National Forensic Laboratory Information System
- **NPSOs:** Non-Prescription Synthetic Opioids
- **ODIN:** Overdose Information Network
- **OUD:** Opioid Use Disorders
- **PaCIC:** Pennsylvania State Police Criminal Intelligence Center
- **PA-DOH:** Pennsylvania Department of Health
- **PCCD:** Pennsylvania Commission on Crime and Delinquency
- **PDAC:** Practitioner Diversion Awareness Conferences
- **PDMP:** Prescription Drug Monitoring Program
- **PERU:** Program Evaluation Research Unit
- **PFD:** Philadelphia Field Division
- **PSP:** Pennsylvania State Police
- **SUD:** Substance Use Disorders
- **TAC:** Technical Assistance Center
- **TCOs:** Transnational Criminal Organizations
- **UPMC:** University of Pittsburgh Medical Center

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APPENDIX A

Overdose Death Rates and Rankings of Pennsylvania Counties

(U) Figure A1: Overdose Death Rates and Rankings of Pennsylvania Counties, 2015-2017

County	2017 Rate	2016 Rate	2015 Rate	2017 Rank	2016 Rank	2015 Rank	County	2017 Rate	2016 Rate	2015 Rate	2017 Rank	2016 Rank	2015 Rank
Adams	19	28	7	51	30	59	**Lackawanna**	42	40	34	18	15	10
Allegheny	60	53	34	5	7	9	**Lancaster**	30	22	14	30	45	47
Armstrong	59	62	41	6	3	5	**Lawrence**	61	46	34	4	11	11
Beaver	49	61	22	10	4	24	**Lebanon**	21	12	15	49	62	44
Bedford	39	23	4	20	43	64	**Lehigh**	47	37	27	12	17	17
Berks	27	27	16	40	36	41	**Luzerne**	50	44	45	9	13	1
Blair	39	35	17	22	20	38	**Lycoming**	30	30	16	32	24	39
Bradford	25	28	19	41	29	31	**McKean**	19	17	19	50	51	33
Bucks	37	27	17	24	34	37	**Mercer**	36	28	14	25	31	48
Butler	49	40	25	11	16	22	**Mifflin**	28	13	11	35	59	54
Cambria	65	70	41	3	2	4	**Monroe**	34	25	27	28	40	20
Cameron	0	0	0	66	65	66	**Montgomery**	27	28	17	38	27	35
Carbon	42	27	27	17	35	21	**Montour**	66	27	27	2	32	18
Centre	7	12	9	64	60	56	**Northampton**	30	23	20	31	42	30
Chester	28	19	14	37	47	46	**Northumberland**	34	29	17	29	25	36
Clarion	16	18	13	54	48	51	**Perry**	22	20	7	48	46	60
Clearfield	6	14	15	65	58	43	**Philadelphia**	77	58	44	1	5	2
Clinton	10	26	8	59	37	57	**Pike**	23	18	11	43	49	53
Columbia	23	27	19	46	33	32	**Potter**	18	12	6	52	61	61
Crawford	28	36	32	36	19	14	**Schuylkill**	27	41	17	39	14	34
Cumberland	30	23	15	33	41	42	**Snyder**	7	7	2	62	64	65
Dauphin	35	30	29	27	23	16	**Somerset**	39	28	21	21	28	27
Delaware	46	37	33	14	18	13	**Sullivan**	16	16	16	53	52	40
Elk	23	10	10	45	63	55	**Susquehanna**	15	22	14	55	44	45
Erie	43	33	22	16	21	25	**Tioga**	22	15	7	47	57	58
Fayette	57	45	30	7	12	15	**Union**	11	15	4	58	55	62
Forest	14	0	27	56	65	19	**Venango**	8	17	21	61	50	28
Franklin	23	25	14	44	39	49	**Warren**	0	0	0	66	65	66
Fulton	7	75	21	63	1	29	**Washington**	47	51	35	13	9	8
Greene	35	51	37	26	8	6	**Wayne**	23	31	33	42	22	12
Huntington	29	15	11	34	56	52	**Westmoreland**	55	49	35	8	10	7
Indiana	44	57	41	15	6	3	**Wyoming**	40	25	25	19	38	23
Jefferson	14	16	14	57	54	50	**York**	39	29	22	23	26	26
Juniata	8	16	4	60	53	63							

Source: Pennsylvania Coroner/Medical Examiner Data

APPENDIX B

Methodology and Drugs Included

For this report, only drug-related overdose deaths ruled accidental or undetermined (if provided and toxicology was present) were analyzed. Suicides were excluded due to previous studies demonstrating that the toxicology, demographic information, genetic predisposition, and other factors of suicide decedents are dissimilar to those of accidental overdose decedents.[110]

While collecting 2017 overdose death reports, data from 2015 and 2016 was simultaneously verified with coroner and medical examiner offices. The total number of drug-related overdose deaths in 2016 was adjusted to 4,643 (previously reported as 4,642), and the total number was in 2015 was adjusted to 3,309 (previously reported as 3,376).

The data collection process varied by county and included submissions directly to the PFD, as well as to TAC via *OverdoseFreePA*. Data submitted directly to TAC was shared with the PFD upon request and with agreement from the submitting coroner or medical examiner. Counties that do not participate on *OverdoseFreePA* shared information with the PFD directly.

With the assistance of the TAC, death data was standardized in accordance with the *OverdoseFreePA* protocol[111] to determine drug and metabolite relationships.

In addition, ethanol was analyzed as a separate category in the demographic analysis of drug- related overdose deaths due to its propensity to exacerbate the effects of other drugs when used in combination.[112] Methadone and buprenorphine were analyzed and reported independently from other drug categories in the statewide toxicology analysis due to differences in supply, availability, and use patterns when compared to other drug categories, as discussed in the Supply section of this report.

For the drug categorization, please see Figure B1. Due to lack of available data (see Data Challenges section for more information), synthetic cathinones, synthetic cannabinoids, and marijuana were not included in this analysis.

Rates were calculated to allow the number of overdose deaths to be compared in relation to the population size of each county. Across all analyses, rates were calculated using intercensal population estimates from U.S. Census Bureau.[113] The following formula was used to calculate county-specific and state-level rates throughout the analysis:

Rate = ((Number of drug related deaths) / (Population within county)) x 100,000 people

APPENDIX B

(U) Figure B1. Substances of Interest by Drug Category, 2015-2017

Drug Category	Substances Included in Analysis	
Benzodiazepines	Alprazolam Chlordiazepoxide Citalopram/Escitalopram Clobozam Clonazepam Delorazepam Demoxepam Diazepam Diclazepam	Estazolam Etizolam Flubromazolam Flurazepam Lorazepam Midazolam Nordiazepam Oxazepam Temazepam
Cocaine		
Ethanol		
Fentanyl		
Fentanyl Related Substances (FRSs) / Non-Prescription Synthetic Opioids (NPSOs)	3-Methyl Fentanyl 4-Methoxy-Butyryl Fentanyl A-Methylbutrylfentanyl Acetyl Fentanyl Acryl Fentanyl Benzylfentanyl Butyryl Fentanyl/Isobutyryl Fentanyl Carfentanil Cyclopropyl Fentanyl Fluorobutyrylfentanyl/Fluorofentanyl	Furanyl Fentanyl Methoxyacetyl Fentanyl MT-45 O-Fluorofentanyl Para-Fluoro-Isobutyryl-Fentanyl/FIBF Para-Fluorobutyryl Fentanyl/FBF Para-Fluorofentanyl Sufentanil U-47700 U-48800
Heroin		
Other Illicit Drugs	3,4-Methylenedioxymethamphetamine (MDMA) Amphetamine Gamma-Hydroxybutyric Acid (GHB) Ketamine Lysergic Acid Diethylamide (LSD)	Methylenedioxymethamphetamine (MDA) Methamphetamine Phencyclidine (PCP) Psilocybin
Prescription Opioids	Codeine Dextropropoxyphene Dihydrocodeine Hydrocodone Hydromorphone Meperidine	Morphine Oxycodone Oxymorphone Tapentadol Tramadol

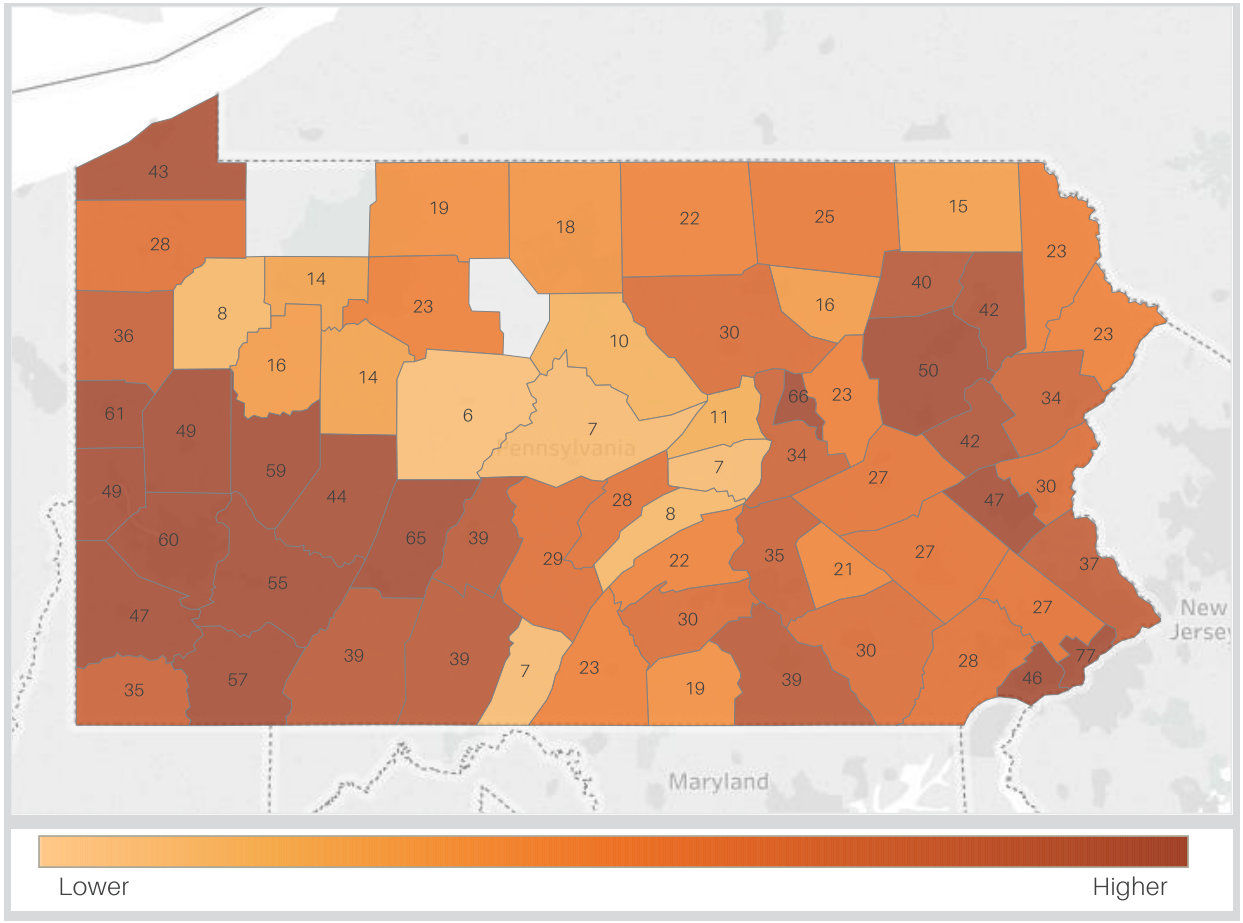
Source: Pennsylvania Coroner/Medical Examiner Data

APPENDIX C

2017 Pennsylvania Drug-Related Overdose Death Data

In 2017, Pennsylvania coroners and medical examiners reported 5,456 drug-related overdose deaths. Among individual counties, rates ranged from 0 to 77 per 100,000 people. Figure C1 depicts the rates of drug-related overdose deaths in Pennsylvania counties in 2017. A full listing of county rankings from highest overdose rate to lowest can be found in Figure C2.

(U) Figure C1. Rate of Drug-Related Overdose Deaths per 100,000 people, Pennsylvania, 2017



Source: Pennsylvania Coroner/Medical Examiner Data

Philadelphia County rose in rank from fifth to first in rate of overdose deaths, with a 34 percent increase in the raw number of overdose deaths. Within the top 10 counties, the distribution of rural and urban counties was similar to 2016; five rural counties ranked in the top 10 in 2017, compared to six in 2016. Of note, 71 percent of counties that reported an overdose death in 2017 had rates per 100,000 people that exceeded the national average in 2017.

APPENDIX C

(U) Figure C2. Ranking of the Rate of Drug-Related Overdose Deaths per 100,000 People, Pennsylvania, 2016-2017

County	2017 Rate	2017 Rank	2016 Rank	2016 Rank
Adams	19	51	30	59
Allegheny	60	5	7	9
Armstrong	59	6	3	5
Beaver	49	10	4	24
Bedford	39	20	43	64
Berks	27	40	36	41
Blair	39	22	20	38
Bradford	25	41	29	31
Bucks	37	24	34	37
Butler	49	11	16	22
Cambria	65	3	2	4
Cameron	0	66	65	66
Carbon	42	17	35	21
Centre	7	64	60	56
Chester	28	37	47	46
Clarion	16	54	48	51
Clearfield	6	65	58	43
Clinton	10	59	37	57
Columbia	28	36	19	14
Crawford	28	36	19	14
Cumberland	30	33	41	42
Dauphin	35	27	23	16
Delaware	46	14	18	13
Elk	23	45	63	55
Erie	43	16	21	25
Fayette	57	7	12	15
Forest	14	56	65	19
Franklin	23	44	39	49
Fulton	7	63	1	29
Greene	35	26	8	6
Huntington	29	34	56	52
Indiana	44	15	6	3
Jefferson	14	57	54	50
Juniata	8	60	53	63

County	2017 Rate	2017 Rank	2016 Rank	2016 Rank
Lackawanna	42	18	15	10
Lancaster	30	30	45	47
Lawrence	61	4	11	11
Lebanon	21	49	62	44
Lehigh	47	12	17	17
Luzerne	50	9	13	1
Lycoming	30	32	24	39
McKean	19	50	51	33
Mercer	36	25	31	48
Mifflin	28	35	59	54
Monroe	34	28	40	20
Montgomery	27	38	27	35
Montour	66	2	32	18
Northampton	30	31	42	30
Northumberland	34	29	25	36
Perry	22	48	46	60
Philadelphia	77	1	5	2
Pike	23	43	49	53
Potter	18	52	61	61
Schuylkill	27	39	14	34
Snyder	7	62	64	65
Somerset	39	21	28	27
Sullivan	16	53	52	40
Susquehanna	15	55	44	45
Tioga	22	47	57	58
Union	11	58	55	62
Venango	8	61	50	28
Warren	0	66	65	66
Washington	47	13	9	8
Wayne	23	42	22	12
Westmoreland	55	8	10	7
Wyoming	40	19	38	23
York	39	23	26	26

Source: Pennsylvania Coroner/Medical Examiner Data

APPENDIX C

(U) Figure C3. Frequency of Drug Categories in Drug-Related Overdose Decedents, Pennsylvania, 2017

Drug Category	Percent Reported Among 2017 Decedents
Fentanyl	67%
Heroin	38%
Cocaine	32%
Benzodiazepines	31%
Prescription Opioids	20%
Ethanol	19%
FRSs & NPSOs	18%
Other Illicit Drugs	11%

Source: Pennsylvania Coroner/Medical Examiner Data

Toxicology

Toxicology Overview

Within toxicology reports of the 2017 drug-related overdose deaths, 221 different drugs were identified. Of the 5,456 drug-related overdose deaths, 86 percent contained two or more drugs, 44 percent contained four or more drugs, and 16 percent contained six or more drugs in the associated toxicology reports.

Within the identified categories, fentanyl was observed in 67 percent of decedents, while heroin was second most prevalent (38 percent). Prescription opioids, which included 11 individual substances, were observed in 20 percent of decedents, followed by FRSs/NPSOs in 18 percent. Figure C4 demonstrates the presence of each analyzed substance in the data set.

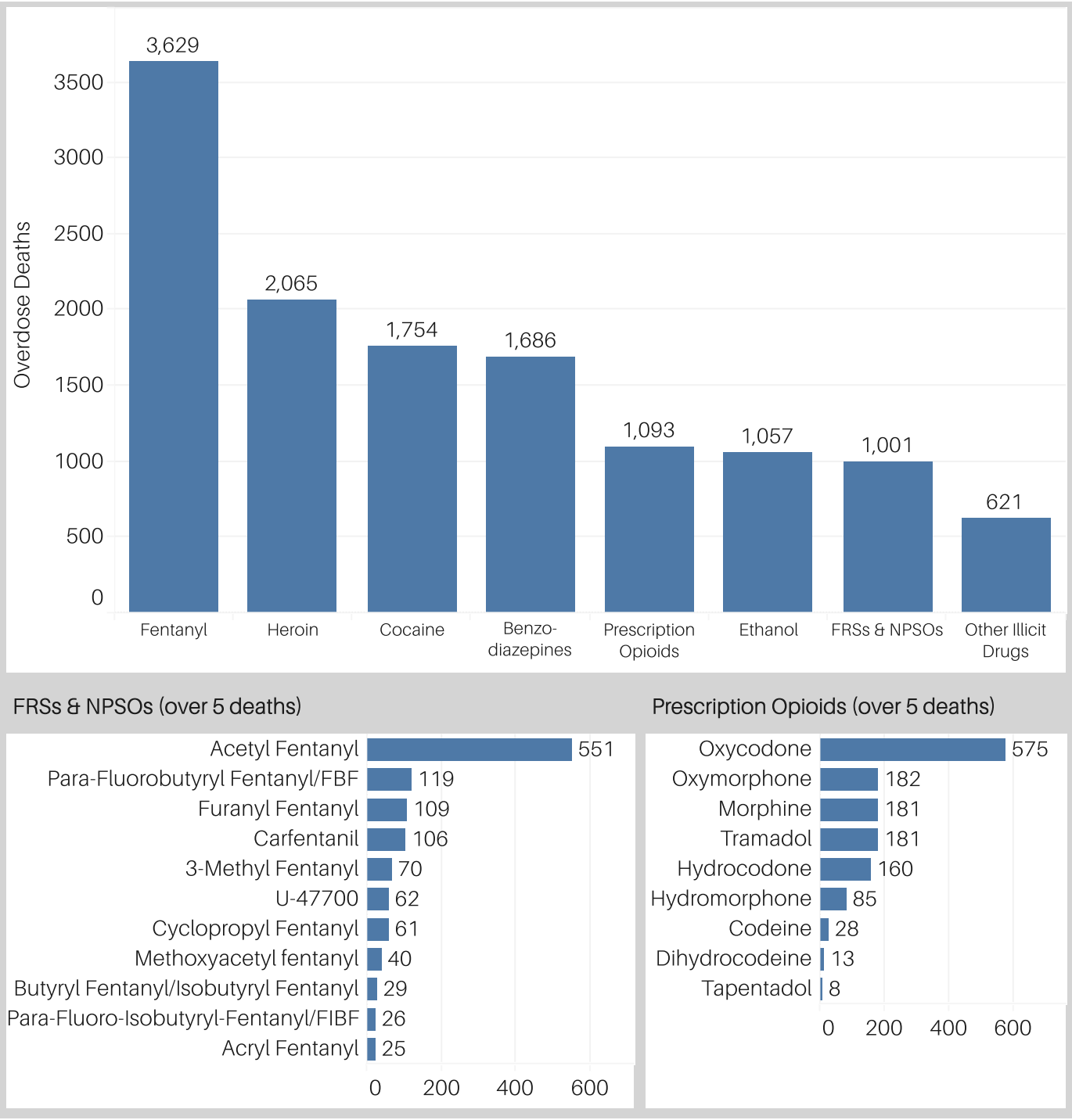
Toxicology Trends by County

In 2017, the most commonly identified drug category in toxicology reports varied for counties across Pennsylvania (see Figure C5). Fentanyl and heroin were the first and second most common drug categories, respectively, in both urban and rural counties.

Fentanyl, the most commonly ientified drug category in 2017, was present in 61 counties across Pennsylvania. Geographic analysis revealed that the majority of Pennsylvania counties had fentanyl as the leading cause of overdose death. However, a few northern Pennsylvania counties demonstrated a tie between two or more prevalent drug categories. In these instances, the drug category displayed was ranked in order of fentanyl, heroin, prescription opioids, and other illicit drugs.

APPENDIX C

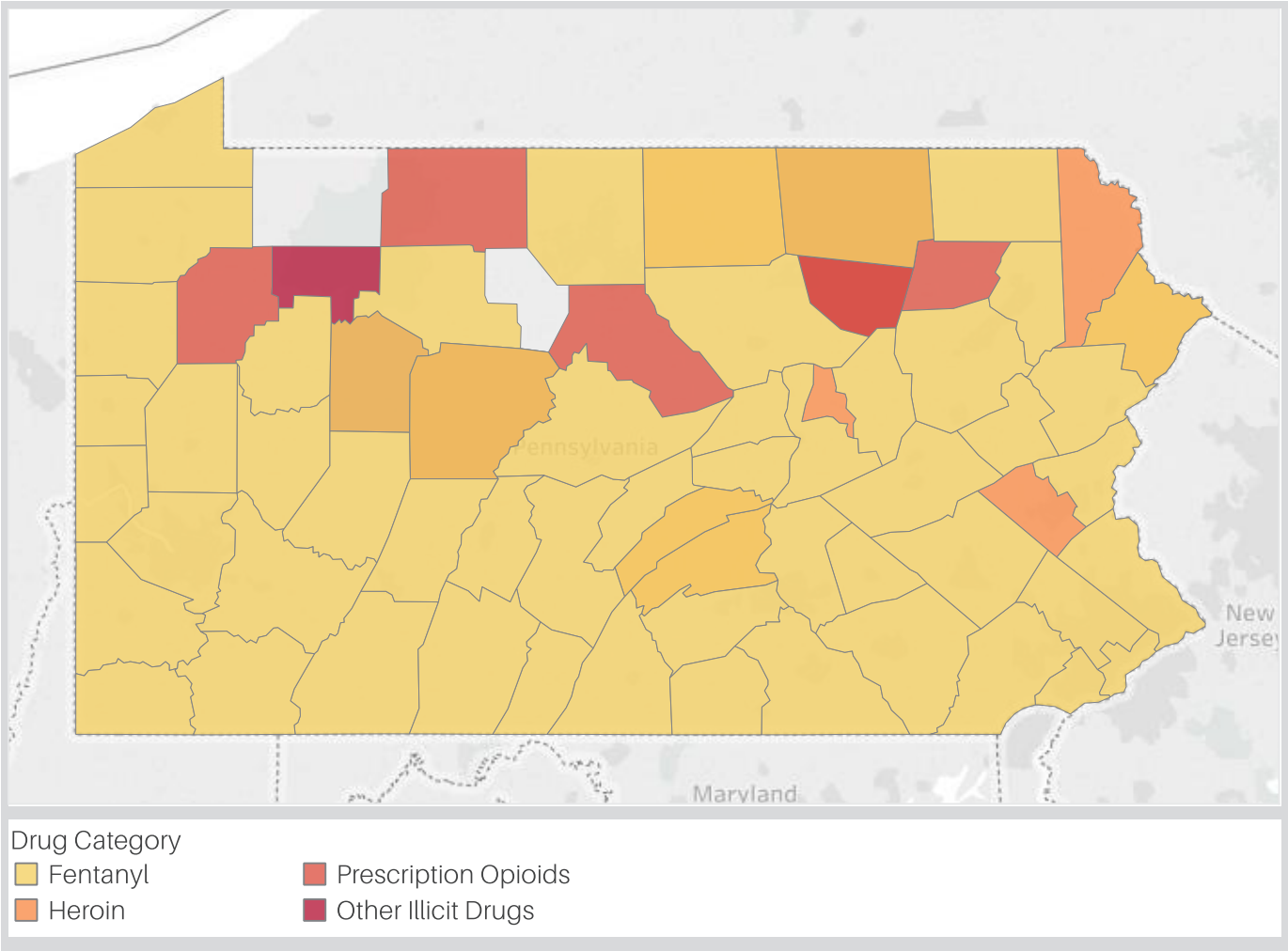
(U) Figure C4. Number of Drug-Related Overdose Deaths by Drug Presence, Pennsylvania, 2017



Source: Pennsylvania Coroner/Medical Examiner Data

APPENDIX C

(U) Figure C5. Most Frequently Reported Drug Category in Drug-Related Overdose Decedents, Pennsylvania, 2017



Source: Pennsylvania Coroner/Medical Examiner Data

Toxicology Trends by Drug Category

Prescription Opioids

Prescription opioids were present in 20 percent of toxicology reports, and 90 percent of reporting counties in 2017. Oxycodone was reported most frequently within the prescription opioid category. Other drugs present in the toxicology reports of the decedents in addition to prescription opioids included fentanyl (45 percent), alprazolam (27 percent), heroin (27 percent), and cocaine (25 percent).

Heroin

Heroin was the second most frequently reported drug in toxicology tests of drug-related overdose decedents in 2017. Heroin was present in 85 percent of counties that reported an overdose death in 2017. Heroin was found most often in combination with fentanyl (80 percent), cocaine (33 percent), ethanol (18 percent), and alprazolam (16 percent).

APPENDIX C

Fentanyl

Fentanyl remained the most frequently reported drug category in overdose deaths in 2017. When analyzed separately, fentanyl was found in 61 of the 65 counties that reported an overdose in 2017. Fentanyl was found in combination with heroin (46 percent), cocaine (34 percent), and FRSs/NPSOs (22 percent) most frequently.

FRSs and NPSOs

Nine out of 18 FRSs/NPSOs found in toxicology reports from 2017 overdose deaths were not reported in 2016. The number of toxicology reports that mentioned FRSs and/or NPSOs increased from 219 in 2016 to 1001 in 2017, an increase of 357 percent.

With the rapid expansion in the production and distribution of FRSs/NPSOs, as described in the Supply section, many tests have not been developed or added to toxicology panels; thus, the numbers herein are likely not complete across counties (see Data Challenges section for more information). However, 18 FRSs/NPSOs were identified in toxicology reports of drug-related overdose decedents, with an asterisk (*) denoting a new compound not previously reported:

- 3-Methylfentanyl
- A-Methylbutrylfentanyl*
- Acetyl Fentanyl
- Acryl Fentanyl
- Benzylfentanyl*
- Butyryl Fentanyl/Isobutyryl Fentanyl
- Carfentanil
- Cyclopropyl Fentanyl*
- Fluorobutyrylfentanyl/Fluorofentanyl
- Furanyl Fentanyl
- Methoxyacetyl Fentanyl*
- MT-45*
- O-Fluorofentanyl*
- Para-Fluoro-Isobutyryl-Fentanyl/FIBF
- Para-Fluorobutyryl-Fentanyl/FBF*
- Para-Fluorofentanyl*
- U-47700
- U-48800*

FRSs/NPSOs were found in 48 counties that reported an overdose in 2017. FRSs/NPSOs were found in combination with fentanyl (81 percent), heroin (47 percent), cocaine (34 percent), and ethanol (18 percent) most frequently.

While the greatest presence was concentrated in counties near major urban centers, traditionally associated with the highest number of opioid users, FRSs/NPSOs were reported throughout the state. A significant percent increase was found in toxicology reports with a FRSs/NPSOs present in both urban and rural counties from 2016 to 2017 (424 percent increase in urban counties, 163 percent increase in rural counties). This is an indication of the widespread availability of FRSs/NPSOs in Pennsylvania due to the ease of obtaining FRSs/NPSOs from online sources, as discussed in the *Supply* section of this report.

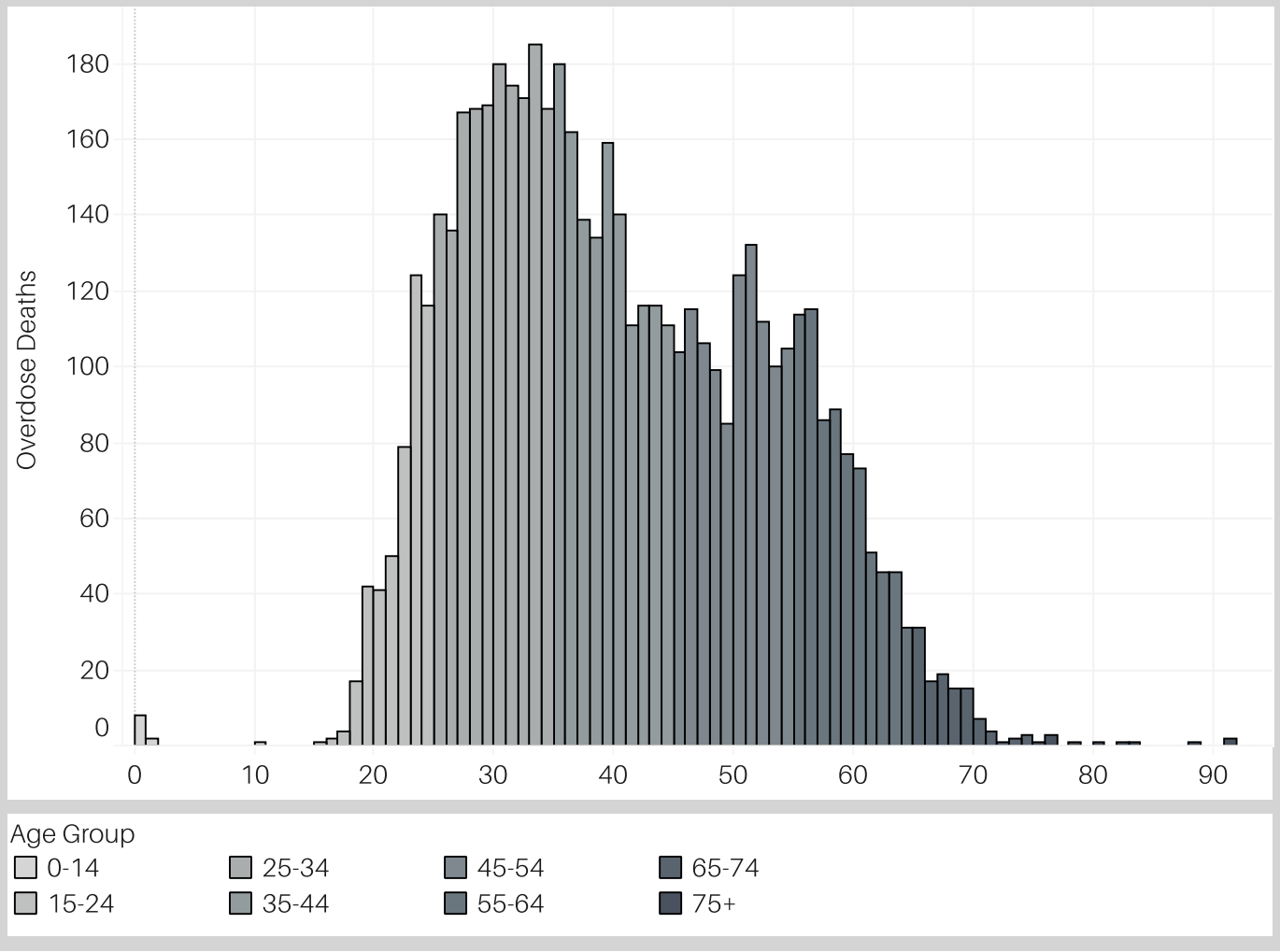
APPENDIX C

Demographics

Age

Figure C6 shows the age distribution of those affected by drug-related overdose deaths in 2017. The most common age group, 25 to 34 years old, represented 30 percent of drug-related overdose deaths. This age group was disproportionately affected by overdose deaths in 2017, since according to 2010 Decennial Census data, this age group comprised only 15 percent of Pennsylvania's population. The three most affected age groups, 25-34, 35-44, and 45-54, account for 40 percent of Pennsylvania's population, but accounted for 75 percent of overdose deaths in 2017. Overdose deaths occurring in the 15-24 year age group accounted for 9 percent of all overdose deaths and comprised 14 percent of Pennsylvania's population.

(U) Figure C6. Age Distribution of Drug-Related Overdose Decedents, Pennsylvania, 2017



Source: Pennsylvania Coroner/Medical Examiner Data

APPENDIX C

Age with Toxicology

As detailed in Figure C7, fentanyl was the top drug category for all age groups except for 75+ years old. Aside from fentanyl, heroin and FRSs/NPSOs were more common in younger and middle age groups. Cocaine, benzodiazepines, ethanol, and prescription opioids were more common in middle and older age groups (see Appendix B for group descriptions). The presence of illicit drugs declined with age, with the peak occurring within age group 25-34.

A younger population demographic was correlated with fentanyl usage. Over 75 percent of drug-related overdose decedents within the 15-24 and 25-34 age groups had fentanyl present in their toxicology reports. Additionally, between 61 and 70 percent of drug-related overdose decedents within the 35-44 and 45-54 age groups died with fentanyl present.

Decedents with toxicology reports containing FRSs/NPSOs significantly increased from 5 percent in 2016 to 18 percent in 2017 ($p<0.05$).

(U) Figure C7. Drug Presence by Age Group in Drug-Related Overdose Decedents, Pennsylvania, 2017

Drug Category	0-14	15-24	25-34	35-44	45-54	55-64	65-74	75+
Fentanyl	36%	76%	75%	70%	61%	48%	40%	27%
Heroin	27%	44%	41%	42%	33%	27%	28%	36%
Cocaine		25%	30%	34%	36%	34%	35%	9%
Benzodiazepines	18%	27%	28%	32%	34%	33%	29%	36%
Prescription Opioids	18%	12%	14%	19%	26%	30%	32%	27%
Ethanol	9%	13%	16%	19%	24%	25%	26%	
FRSs & NPSOs	9%	21%	21%	20%	18%	12%	10%	
Other Illicit Drugs	9%	12%	15%	12%	9%	8%	4%	

Source: Pennsylvania Coroner/Medical Examiner Data

Gender

In 2017, 3,870 males died of drug-related overdoses (71 percent), compared to 1,584 females (29 percent). Two deaths did not indicate gender. Males disproportionately experienced overdose deaths compared to females, as males comprise 49 percent of the Pennsylvania population, yet accounted for 71 percent of the overdose deaths in 2017. Conversely, females comprise 51 percent of the population and accounted for 29 percent of the overdose deaths reported in 2017. The distribution of overdose deaths among males and females was consistent with 2016 reporting.

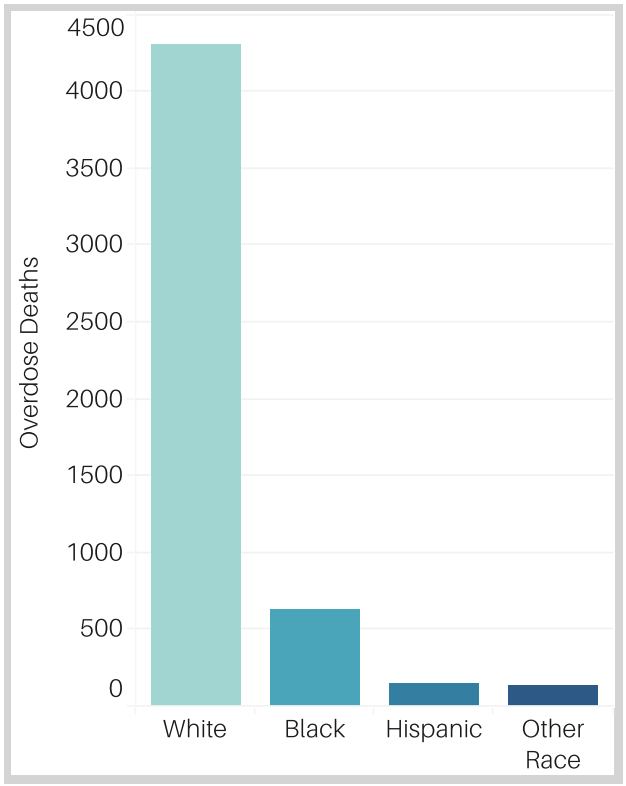
APPENDIX C

The three most prevalent drug categories in toxicology reports for males were fentanyl, heroin, and cocaine; the three most prevalent drug categories for females were fentanyl, benzodiazepines, and heroin. Fentanyl was reported in 69 percent of male overdose deaths and 59 percent of female overdose deaths. Heroin was reported in 40 percent of male overdose deaths, followed by cocaine in 33 percent. Conversely, benzodiazepines were reported in 40 percent of female overdose deaths, followed by heroin in 34 percent. FRSs/NPSOs were reported in 19 percent of male overdose deaths and 17 percent of female overdose deaths.

Race

In 2017, 4,301 decedents were identified as White (79 percent), 632 were identified as Black (12 percent), 144 were identified as Hispanic (3 percent), 136 were identified as Other Race (2 percent), and 243 were identified as "Unknown" (4 percent) (see Figure C8). The distribution of overdose deaths among race was consistent with that reported in 2016. The racial breakdown for overdose deaths is similar to the racial demographics in Pennsylvania, as Whites comprise approximately 78 percent, Blacks comprise approximately 12 percent, and Hispanics comprise approximately 7 percent of Pennsylvania's population.

(U) Figure C8. Race of Drug-Related Overdose Decedents, Pennsylvania, 2017



Source: Pennsylvania Coroner/Medical Examiner Data

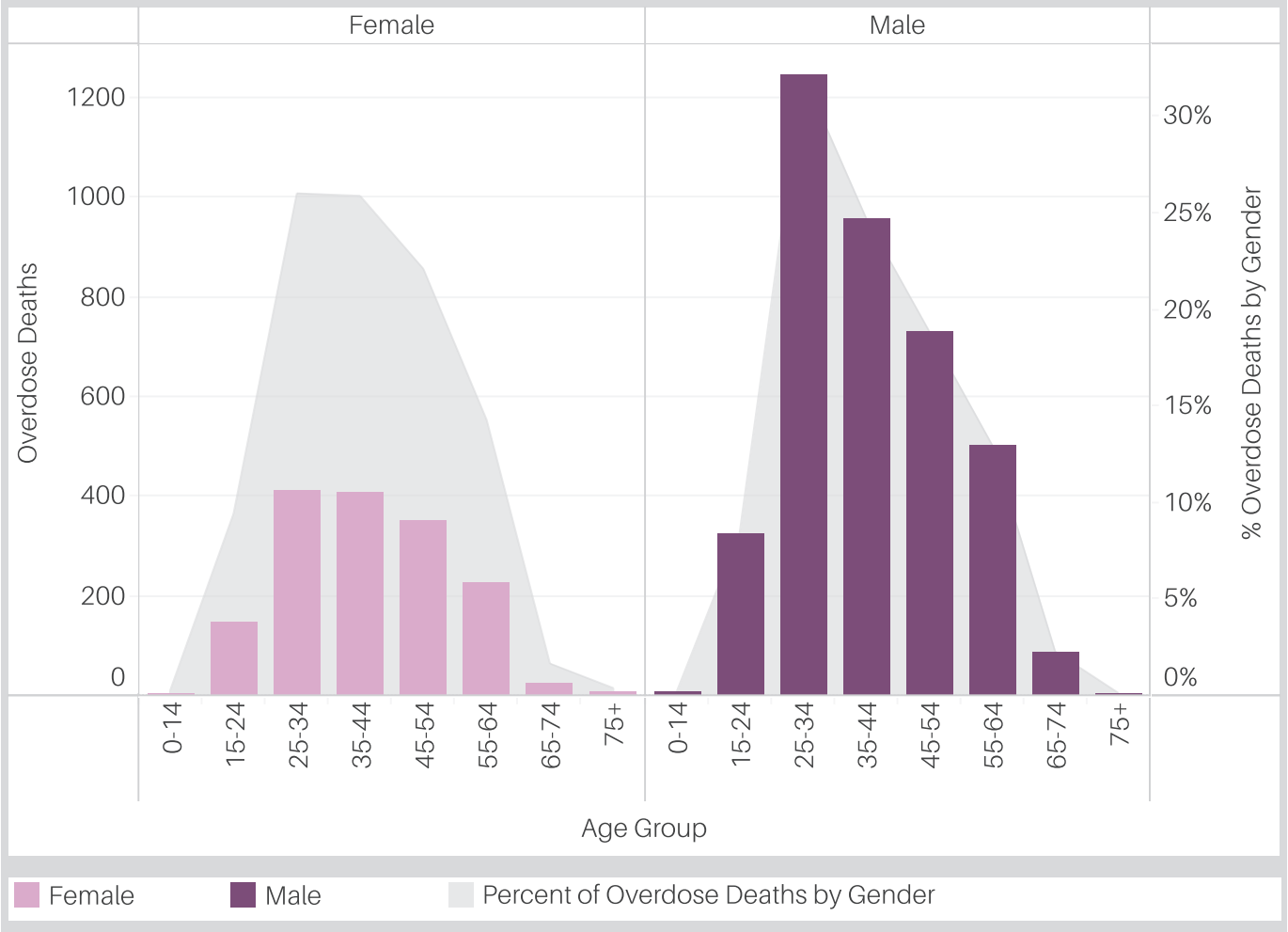
APPENDIX C

Gender and Age

Figure C9 depicts the total number of overdose deaths by gender and designated age groups. In 2017, the majority of overdose deaths occurred in males aged 25-34. The 25-34 age group accounted for the largest percentage of deaths within each gender, including 32 percent of males and 26 percent of females.

The second and third highest percentage of deaths within each gender were the 35-44 and 45-54 age groups (25 percent and 19 percent of total male overdose deaths, 26 percent and 22 percent of total female overdose deaths, respectively).

(U) Figure C9. Gender and Age of Drug-Related Overdose Decedents, Pennsylvania, 2017



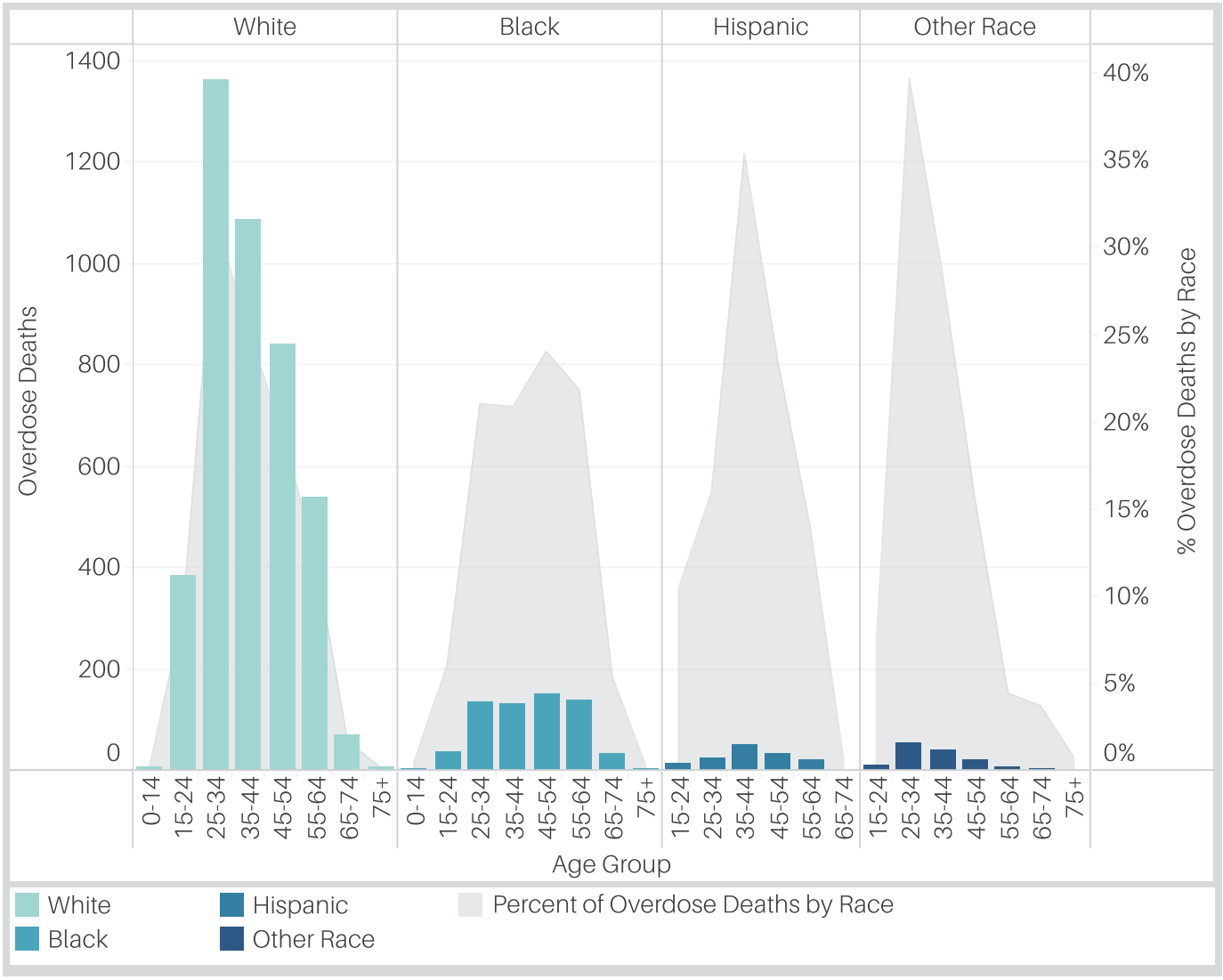
Source: Pennsylvania Coroner/Medical Examiner Data

Race and Age

Figure C10 depicts the total number of overdose deaths by race and designated age groups. In 2017, the majority of overdose deaths occurred in White individuals aged 25-34. The 25-34 age group accounted for the largest percentage of deaths for individuals identified as White (32 percent) and Other Race (40 percent). The 35-44 age group accounted for the largest percentage of deaths for individuals identified as Hispanic (35 percent). The 45-54 age group accounted

for the largest percentage of deaths for individuals identified as Black (24 percent). One noticeable difference that was apparent in the analysis of age and race is that Black decedents, on average, were older than decedents of other races.

(U) Figure C10. Race and Age of Drug-Related Overdose Decedents, Pennsylvania, 2017



Source: Pennsylvania Coroner/Medical Examiner Data

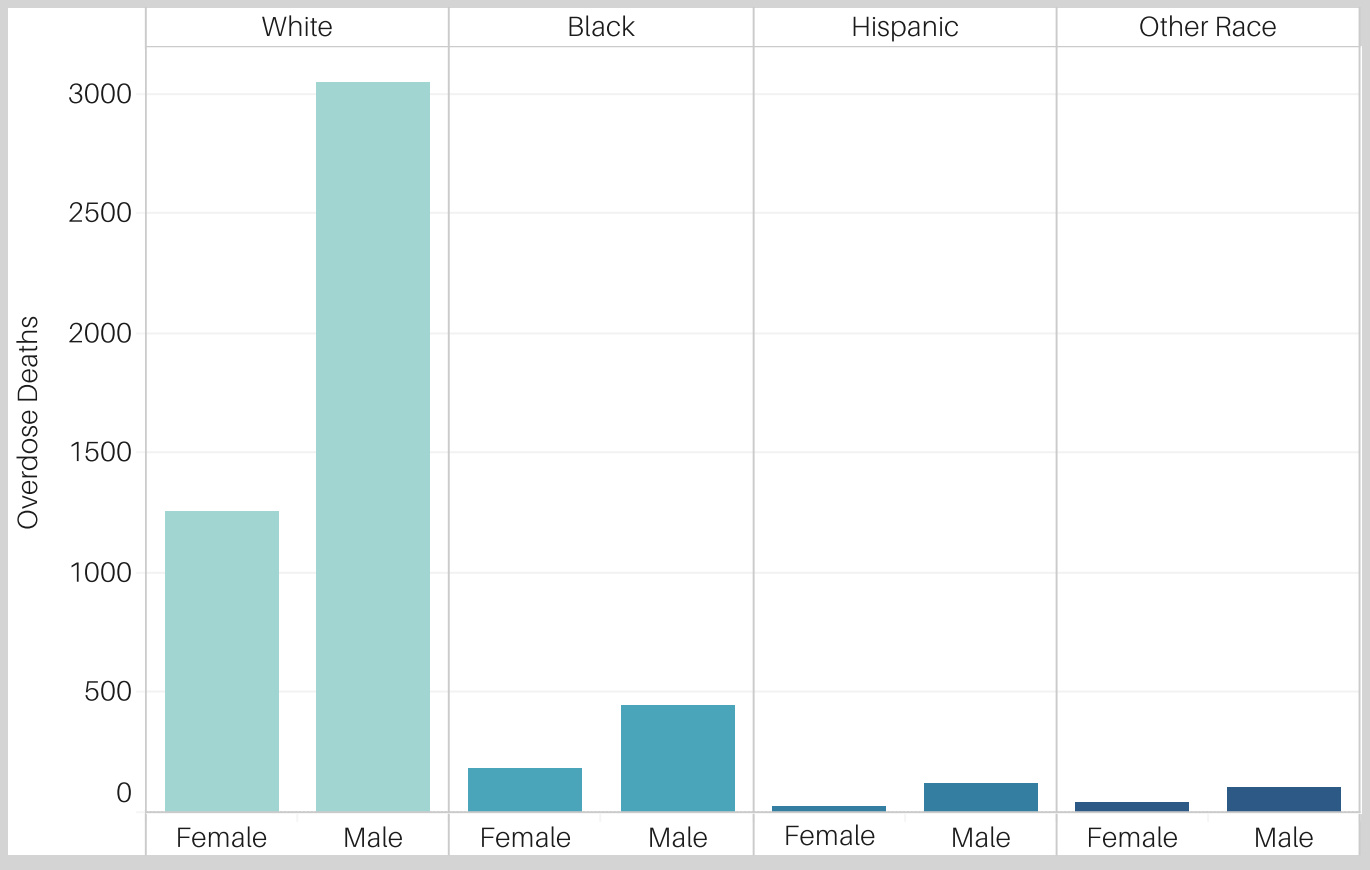
Race and Gender

Figure C11 details the number of overdose deaths within each racial group by gender. As noted earlier, 71 percent of all overdose deaths in Pennsylvania were male and 29 percent were female. Distribution of overdose deaths among males and females in each racial group were similar: White (71 percent, 29 percent, respectively), Black (71 percent, 29 percent, respectively), and Other Race (74 percent, 26 percent, respectively).

Conversely, a greater percentage of Hispanic males were adversely affected by overdose than Hispanic females in 2017 (82 percent male, 18 percent female).

APPENDIX C

(U) Figure C11. Race and Gender of Drug-Related Overdose Decedents, Pennsylvania, 2017



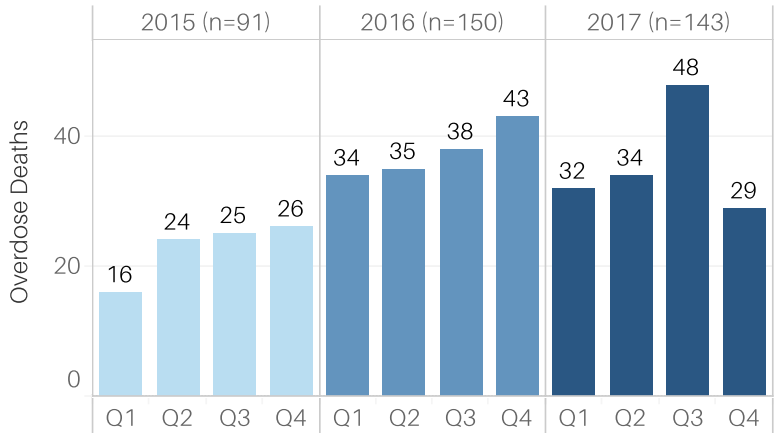
Source: Pennsylvania Coroner/Medical Examiner Data

APPENDIX D

Pennsylvania Overdose Death Data by District and County

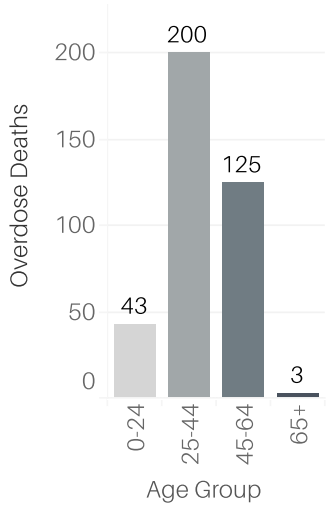
(U) Figure D1: Analysis of 2015 - 2017 Overdose Death Data within District: North Central

1. Quarterly Trend



	Total Deaths	Average Rate (per 100,000)
Bradford	44	24
Centre	46	9
Clinton	17	14
Columbia	46	23
Lycoming	87	25
Montour	22	40
Northumberland	74	27
Potter	6	12
Snyder	7	6
Sullivan	3	16
Tioga	18	15
Union	14	10

2. Age Distribution



The information in this section summarizes drug-related overdose death data (accidental or undetermined) from 2015-2017.

The first page consists of the quarterly trend and demographic information:

1: Total Number of Overdose Deaths per Quarter per Year*

2-4: Total Number of Overdose Deaths per Age/Gender/Race

The second page consists of the yearly trend for the most commonly identified drug categories and the drug category breakdown for each demographic group:

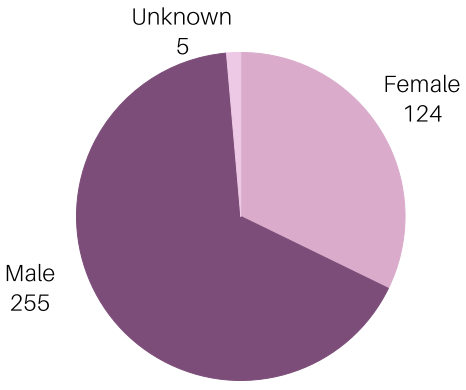
5: Percent of Overdose Deaths per Drug Category per Year

6-8: Percent of Overdose Deaths per Drug Category per Age/Gender/Race, per Year if Applicable

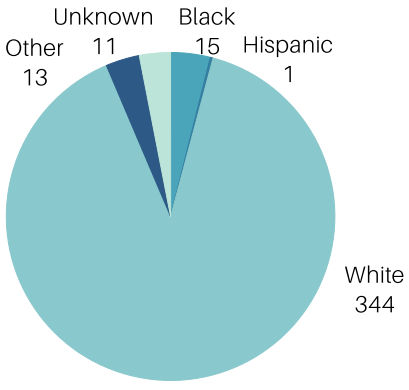
*Percent = (Number of deaths per drug category per demographic group, per year if applicable) / (Number of deaths per demographic group, per year if applicable) * 100%*

*Breakdown by quarter is suppressed when there are less than three data points for each quarter.

3. Gender Distribution



4. Race Distribution

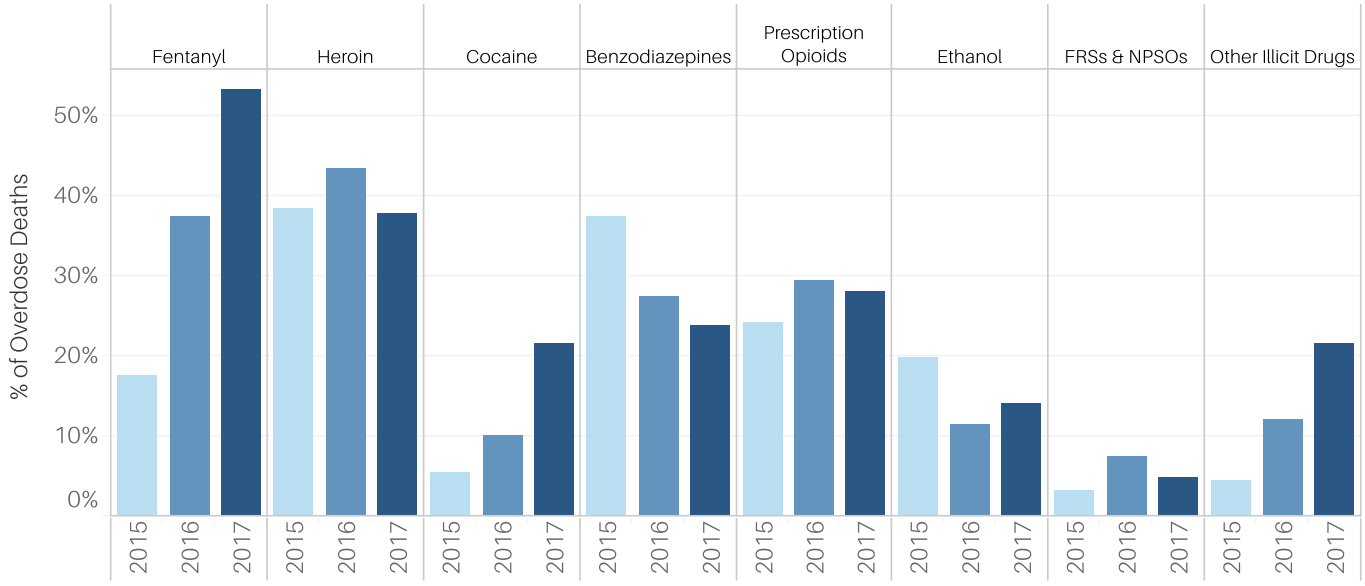


Source: Pennsylvania Coroner/Medical Examiner Data

APPENDIX D

(U) Figure D1: Analysis of 2015 - 2017 Overdose Death Data within District: North Central

5. Percent of Overdose Deaths per Drug Category per Year



6. Percent of Overdose Deaths per Drug Category per Age Group per Year

Drug Category	2015				2016				2017			
	0-24	25-44	45-64	65+	0-24	25-44	45-64	65+	0-24	25-44	45-64	65+
Fentanyl	30%	19%	16%		45%	36%	36%	50%	55%	57%	40%	
Heroin	50%	45%	31%		59%	47%	32%		36%	48%	19%	
Cocaine		7%	6%		5%	13%	8%		18%	26%	16%	
Benzodiazepines	30%	36%	47%		32%	20%	38%		18%	22%	30%	
Prescription Opioids	20%	24%	28%		14%	21%	46%	100%	9%	22%	42%	
Ethanol	20%	19%	25%		23%	7%	14%		27%	12%	14%	
FRSs & NPSOs		7%			18%	3%	10%		9%	6%	2%	
Other Illicit Drugs		10%			23%	11%	10%		9%	27%	12%	100%

7. Per Drug Category per Gender per Year

Drug Category	2015		2016		2017	
	Female	Male	Female	Male	Female	Male
Fentanyl	13%	21%	31%	41%	45%	57%
Heroin	30%	46%	26%	53%	38%	37%
Cocaine	10%	4%	11%	9%	25%	20%
Benzodiazepines	37%	40%	28%	27%	25%	24%
Prescription Opioids	27%	25%	30%	29%	30%	27%
Ethanol	20%	21%	13%	10%	18%	13%
FRSs & NPSOs		5%	6%	8%	8%	4%
Other Illicit Drugs		7%	11%	13%	13%	25%

8. Per Drug Category per Race, 2015-2017

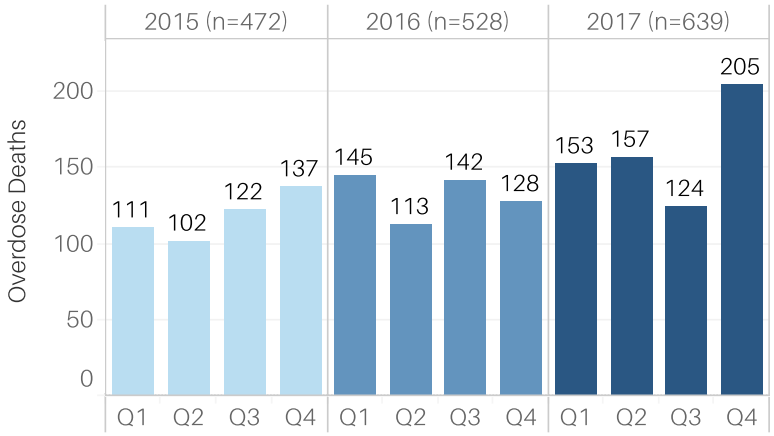
Drug Category	White	Black	Hispanic	Other
Fentanyl	38%	67%	100%	31%
Heroin	40%	53%		46%
Cocaine	13%	53%		
Benzodiazepines	30%	20%	100%	8%
Prescription Opioids	29%	20%		8%
Ethanol	15%	13%		8%
FRSs & NPSOs	6%	7%		
Other Illicit Drugs	14%	7%		23%

Source: Pennsylvania Coroner/Medical Examiner Data

APPENDIX D

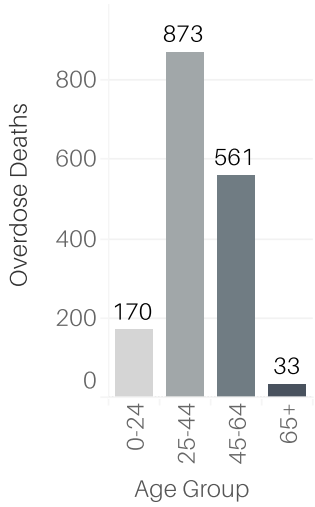
(U) Figure D2: Analysis of 2015 - 2017 Overdose Death Data within District: Northeast

1. Quarterly Trend



	Total Deaths	Average Rate (per 100,000)
Carbon	61	32
Lackawanna	244	39
Lehigh	407	37
Luzerne	444	47
Monroe	143	29
Northampton	220	24
Pike	29	17
Susquehanna	21	17
Wayne	45	29
Wyoming	25	30

2. Age Distribution



The information in this section summarizes drug-related overdose death data (accidental or undetermined) from 2015-2017.

The first page consists of the quarterly trend and demographic information:

1: Total Number of Overdose Deaths per Quarter per Year*

2-4: Total Number of Overdose Deaths per Age/Gender/Race

The second page consists of the yearly trend for the most commonly identified drug categories and the drug category breakdown for each demographic group:

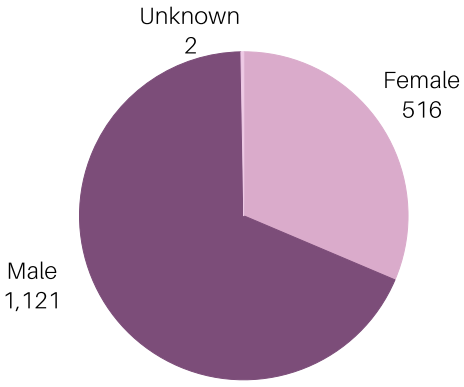
5: Percent of Overdose Deaths per Drug Category per Year

6-8: Percent of Overdose Deaths per Drug Category per Age/Gender/Race, per Year if Applicable

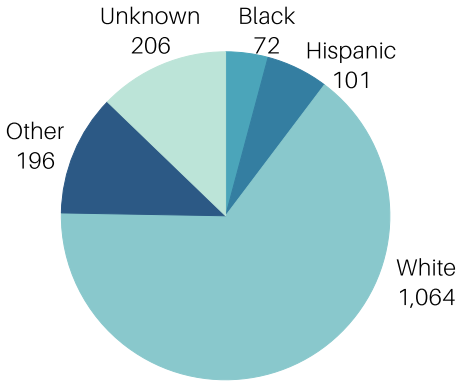
*Percent = (Number of deaths per drug category per demographic group, per year if applicable) / (Number of deaths per demographic group, per year if applicable) * 100%*

*Breakdown by quarter is suppressed when there are less than three data points for each quarter.

3. Gender Distribution



4. Race Distribution

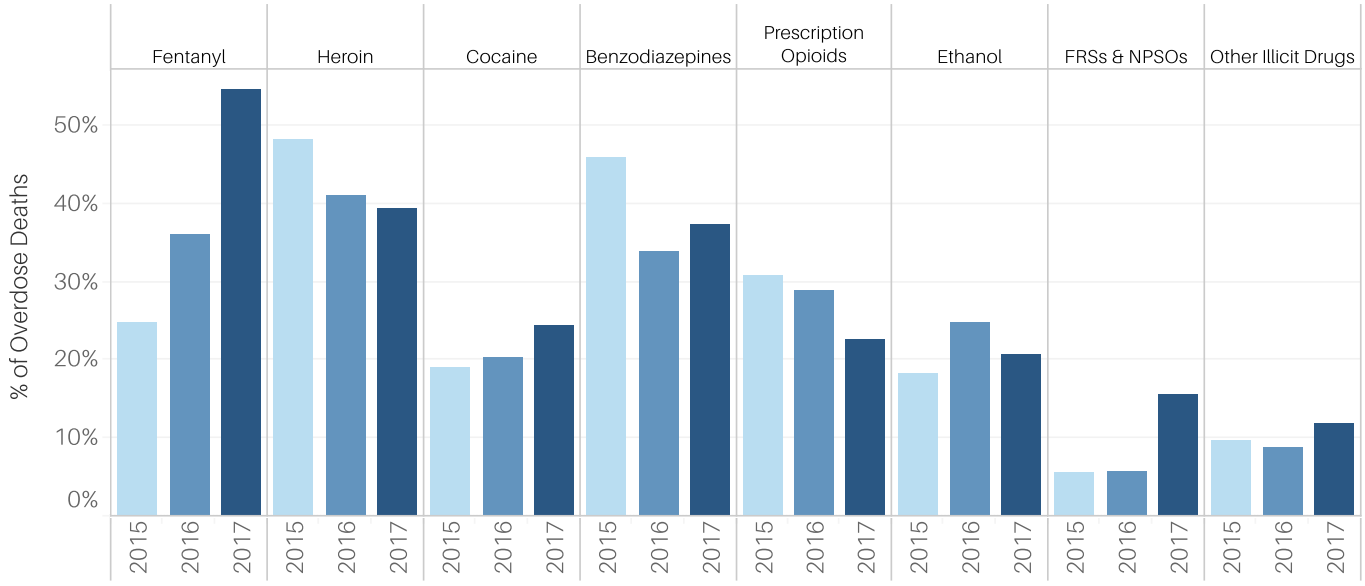


Source: Pennsylvania Coroner/Medical Examiner Data

APPENDIX D

(U) Figure D2: Analysis of 2015-2017 Overdose Death Data within District: Northeast

5. Percent of Overdose Deaths per Drug Category per Year



6. Percent of Overdose Deaths per Drug Category per Age Group per Year

Drug Category	2015				2016				2017			
	0-24	25-44	45-64	65+	0-24	25-44	45-64	65+	0-24	25-44	45-64	65+
Fentanyl	33%	28%	18%	40%	35%	44%	23%	40%	69%	63%	41%	11%
Heroin	52%	57%	35%	40%	44%	45%	34%	40%	34%	48%	29%	11%
Cocaine	10%	17%	24%	60%	25%	18%	22%	30%	18%	24%	26%	33%
Benzodiazepines	44%	47%	46%	40%	21%	33%	38%	50%	30%	34%	44%	39%
Prescription Opioids	13%	30%	36%	80%	12%	27%	37%	40%	13%	17%	31%	56%
Ethanol	15%	12%	28%	20%	14%	22%	34%	20%	13%	22%	21%	17%
FRSs & NPSOs	10%	8%	1%		7%	6%	5%	10%	18%	19%	11%	
Other Illicit Drugs	17%	9%	9%		4%	11%	6%		10%	12%	13%	6%

7. Per Drug Category per Gender per Year

Drug Category	2015		2016		2017	
	Female	Male	Female	Male	Female	Male
Fentanyl	22%	26%	29%	39%	44%	60%
Heroin	33%	54%	37%	43%	36%	41%
Cocaine	17%	20%	21%	20%	24%	24%
Benzodiazepines	49%	45%	44%	29%	50%	31%
Prescription Opioids	40%	27%	36%	26%	24%	22%
Ethanol	18%	19%	20%	27%	18%	22%
FRSs & NPSOs	5%	6%	5%	6%	15%	16%
Other Illicit Drugs	13%	8%	8%	9%	12%	12%

8. Per Drug Category per Race, 2015-2017

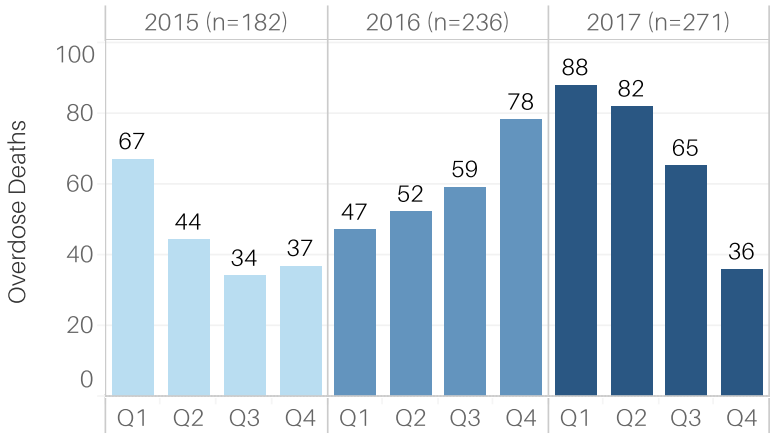
Drug Category	White	Black	Hispanic	Other
Fentanyl	38%	32%	37%	48%
Heroin	45%	32%	54%	38%
Cocaine	19%	43%	28%	27%
Benzodiazepines	41%	24%	38%	39%
Prescription Opioids	29%	31%	21%	22%
Ethanol	21%	22%	25%	22%
FRSs & NPSOs	9%	7%	5%	10%
Other Illicit Drugs	11%	8%	3%	10%

Source: Pennsylvania Coroner/Medical Examiner Data

APPENDIX D

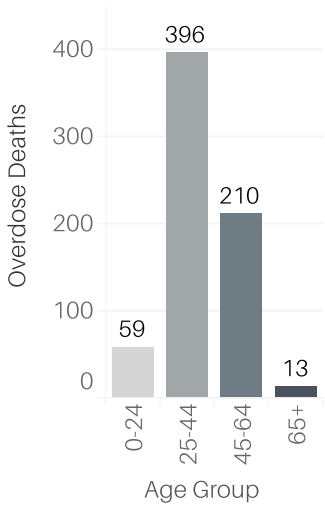
(U) Figure D3: Analysis of 2015 - 2017 Overdose Death Data within District: Northwest

1. Quarterly Trend



	Total Deaths	Average Rate (per 100,000)
Clarion	18	16
Clearfield	28	12
Crawford	83	32
Elk	13	14
Erie	268	32
Forest	3	14
Jefferson	19	14
Lawrence	123	47
McKean	23	18
Mercer	87	26
Venango	24	15

2. Age Distribution



The information in this section summarizes drug-related overdose death data (accidental or undetermined) from 2015-2017.

The first page consists of the quarterly trend and demographic information:

1: Total Number of Overdose Deaths per Quarter per Year*

2-4: Total Number of Overdose Deaths per Age/Gender/Race

The second page consists of the yearly trend for the most commonly identified drug categories and the drug category breakdown for each demographic group:

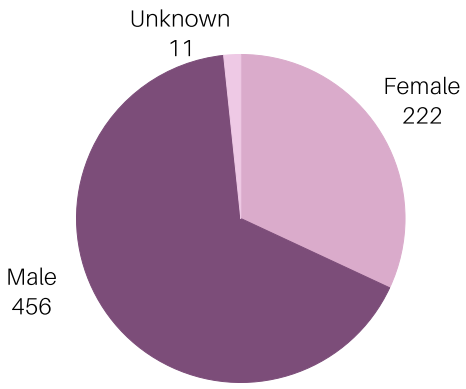
5: Percent of Overdose Deaths per Drug Category per Year

6-8: Percent of Overdose Deaths per Drug Category per Age/Gender/Race, per Year if Applicable

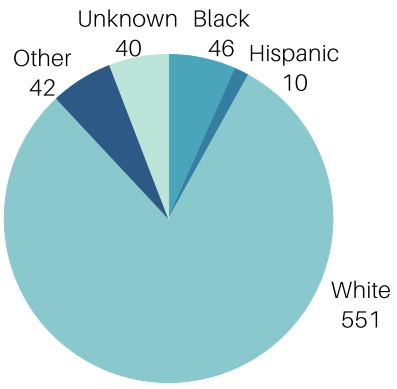
*Percent = (Number of deaths per drug category per demographic group, per year if applicable) / (Number of deaths per demographic group, per year if applicable) * 100%*

*Breakdown by quarter is suppressed when there are less than three data points for each quarter.

3. Gender Distribution



4. Race Distribution

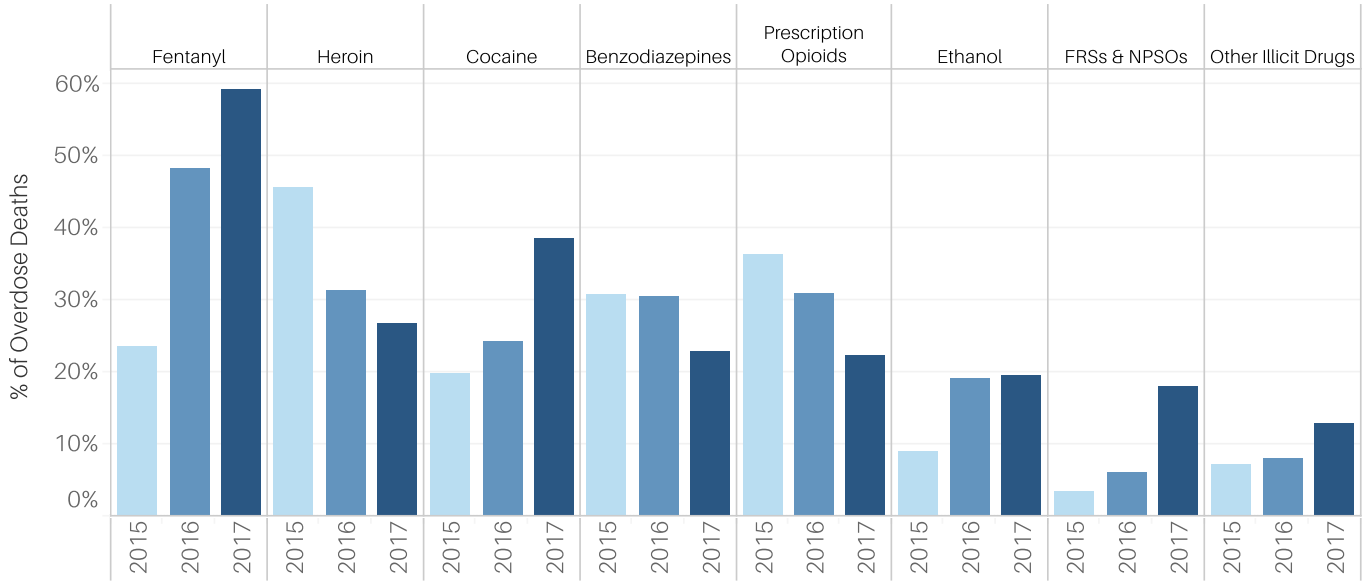


Source: Pennsylvania Coroner/Medical Examiner Data

APPENDIX D

(U) Figure D3: Analysis of 2015 - 2017 Overdose Death Data within District: Northwest

5. Percent of Overdose Deaths per Drug Category per Year



6. Percent of Overdose Deaths per Drug Category per Age Group per Year

Drug Category	2015				2016				2017			
	0-24	25-44	45-64	65+	0-24	25-44	45-64	65+	0-24	25-44	45-64	65+
Fentanyl	36%	26%	19%		56%	59%	27%	25%	67%	62%	53%	14%
Heroin	79%	58%	22%		28%	38%	20%	25%	37%	29%	17%	29%
Cocaine	14%	20%	20%		6%	24%	28%	25%	30%	38%	41%	43%
Benzodiazepines	29%	33%	25%		28%	31%	32%		37%	23%	16%	29%
Prescription Opioids	14%	32%	47%		28%	22%	48%	75%	15%	21%	24%	57%
Ethanol		11%	9%		22%	17%	23%	25%	15%	18%	24%	29%
FRSs & NPSOs	14%	2%	3%			8%	4%		11%	20%	17%	14%
Other Illicit Drugs	7%	7%	8%	50%	17%	9%	4%		15%	15%	8%	

7. Per Drug Category per Gender per Year

Drug Category	2015		2016		2017	
	Female	Male	Female	Male	Female	Male
Fentanyl	19%	27%	44%	50%	51%	62%
Heroin	30%	55%	23%	36%	24%	28%
Cocaine	16%	21%	25%	24%	44%	36%
Benzodiazepines	37%	25%	38%	27%	36%	17%
Prescription Opioids	40%	33%	39%	27%	30%	19%
Ethanol	8%	10%	11%	23%	18%	20%
FRSs & NPSOs	3%	4%	6%	6%	16%	19%
Other Illicit Drugs	6%	8%	11%	6%	15%	12%

8. Per Drug Category per Race, 2015-2017

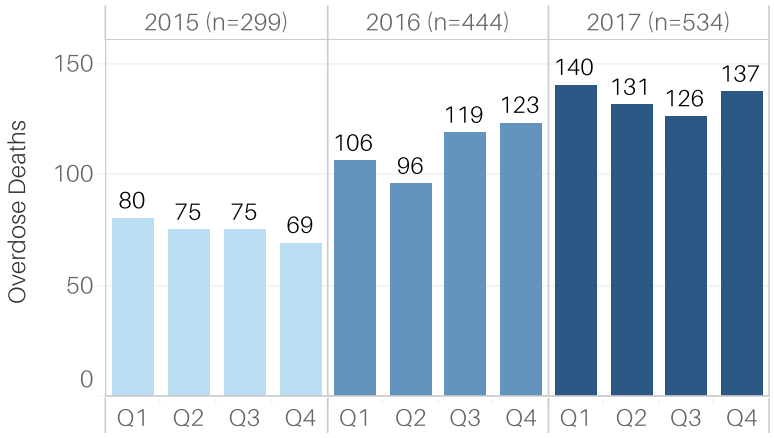
Drug Category	White	Black	Hispanic	Other
Fentanyl	47%	52%	20%	48%
Heroin	34%	39%	50%	14%
Cocaine	28%	57%	10%	21%
Benzodiazepines	29%	22%	20%	24%
Prescription Opioids	29%	26%	10%	38%
Ethanol	17%	28%	10%	12%
FRSs & NPSOs	11%	13%	10%	2%
Other Illicit Drugs	10%	7%	20%	10%

Source: Pennsylvania Coroner/Medical Examiner Data

APPENDIX D

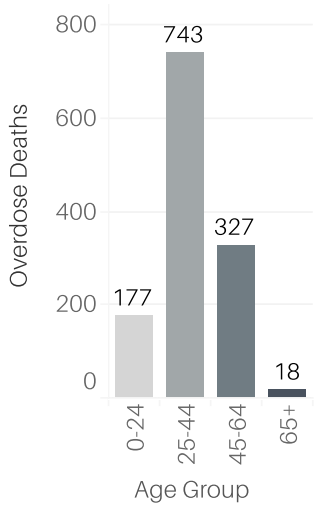
(U) Figure D4: Analysis of 2015 - 2017 Overdose Death Data within District: South Central

1. Quarterly Trend



	Total Deaths	Average Rate (per 100,000)
Adams	54	18
Bedford	32	22
Blair	112	30
Cumberland	170	23
Dauphin	258	31
Franklin	96	21
Fulton	15	34
Huntingdon	25	18
Juniata	7	10
Lebanon	65	16
Mifflin	24	17
Perry	22	16
York	397	30

2. Age Distribution



The information in this section summarizes drug-related overdose death data (accidental or undetermined) from 2015-2017.

The first page consists of the quarterly trend and demographic information:

1: Total Number of Overdose Deaths per Quarter per Year*

2-4: Total Number of Overdose Deaths per Age/Gender/Race

The second page consists of the yearly trend for the most commonly identified drug categories and the drug category breakdown for each demographic group:

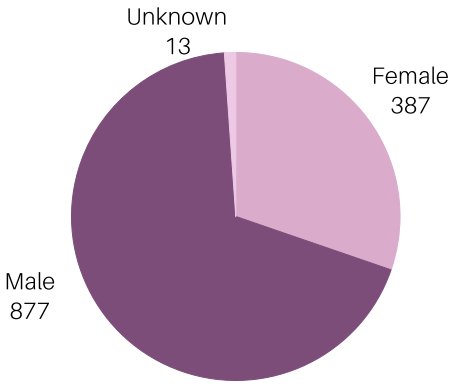
5: Percent of Overdose Deaths per Drug Category per Year

6-8: Percent of Overdose Deaths per Drug Category per Age/Gender/Race, per Year if Applicable

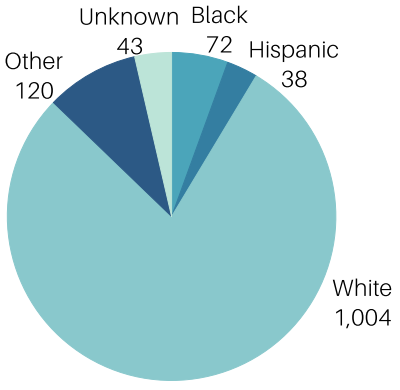
*Percent = (Number of deaths per drug category per demographic group, per year if applicable) / (Number of deaths per demographic group, per year if applicable) * 100%*

*Breakdown by quarter is suppressed when there are less than three data points for each quarter.

3. Gender Distribution



4. Race Distribution

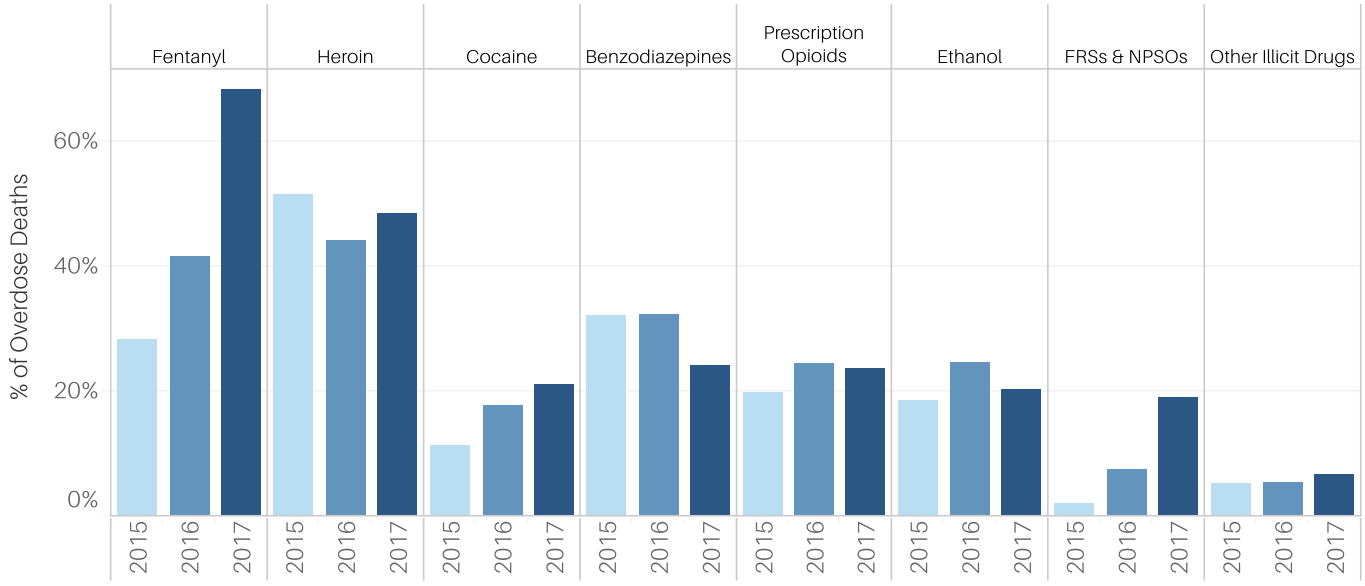


Source: Pennsylvania Coroner/Medical Examiner Data

APPENDIX D

(U) Figure D4: Analysis of 2015 - 2017 Overdose Death Data within District: South Central

5. Percent of Overdose Deaths per Drug Category per Year



6. Percent of Overdose Deaths per Drug Category per Age Group per Year

Drug Category	2015				2016				2017			
	0-24	25-44	45-64	65+	0-24	25-44	45-64	65+	0-24	25-44	45-64	65+
Fentanyl	43%	30%	22%	14%	54%	44%	30%	20%	80%	70%	59%	33%
Heroin	73%	56%	41%	29%	40%	50%	36%		57%	50%	41%	17%
Cocaine	5%	12%	15%	14%	11%	19%	18%	40%	19%	18%	30%	
Benzodiazepines	15%	29%	51%	43%	30%	31%	38%	20%	18%	26%	23%	17%
Prescription Opioids	10%	18%	31%	14%	14%	22%	34%	60%	12%	23%	33%	17%
Ethanol	10%	20%	22%	14%	8%	26%	30%	20%	15%	20%	25%	17%
FRSs & NPSOs	5%	2%		14%	6%	9%	6%		16%	21%	17%	
Other Illicit Drugs	5%	6%	4%		2%	6%	7%		5%	8%	4%	

7. Per Drug Category per Gender per Year

Drug Category	2015		2016		2017	
	Female	Male	Female	Male	Female	Male
Fentanyl	25%	31%	34%	44%	62%	71%
Heroin	39%	61%	37%	48%	38%	52%
Cocaine	6%	15%	13%	20%	20%	21%
Benzodiazepines	38%	31%	36%	31%	32%	21%
Prescription Opioids	32%	14%	31%	21%	25%	23%
Ethanol	11%	24%	17%	28%	17%	21%
FRSs & NPSOs	1%	3%	4%	9%	14%	21%
Other Illicit Drugs	3%	6%	8%	4%	7%	7%

8. Per Drug Category per Race, 2015-2017

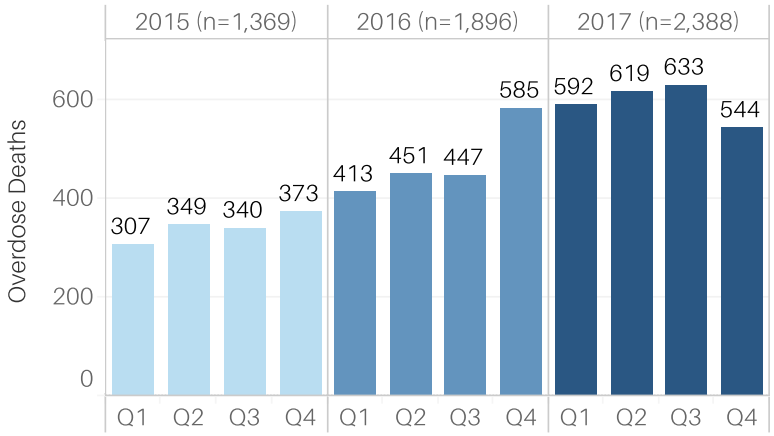
Drug Category	White	Black	Hispanic	Other
Fentanyl	52%	44%	79%	29%
Heroin	50%	39%	61%	29%
Cocaine	18%	35%	16%	6%
Benzodiazepines	30%	24%	13%	34%
Prescription Opioids	24%	18%	18%	27%
Ethanol	22%	31%	18%	13%
FRSs & NPSOs	12%	8%	16%	3%
Other Illicit Drugs	6%	7%		5%

Source: Pennsylvania Coroner/Medical Examiner Data

APPENDIX D

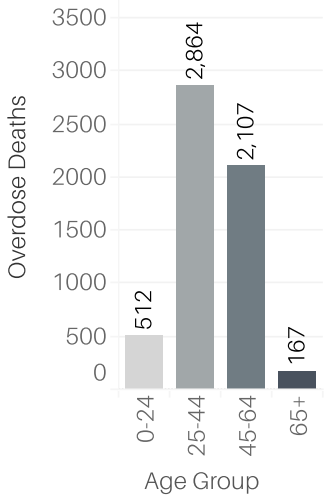
(U) Figure D5: Analysis of 2015 - 2017 Overdose Death Data within District: Southeast

1. Quarterly Trend



	Total Deaths	Average Rate (per 100,000)
Berks	288	23
Bucks	505	27
Chester	316	20
Delaware	648	38
Lancaster	358	22
Montgomery	597	24
Philadelphia	2,819	60
Schuylkill	122	28

2. Age Distribution



The information in this section summarizes drug-related overdose death data (accidental or undetermined) from 2015-2017.

<u>The first page consists of the quarterly trend and demographic information:</u>

1: Total Number of Overdose Deaths per Quarter per Year*

2-4: Total Number of Overdose Deaths per Age/Gender/Race

<u>The second page consists of the yearly trend for the most commonly identified drug categories and the drug category breakdown for each demographic group:</u>

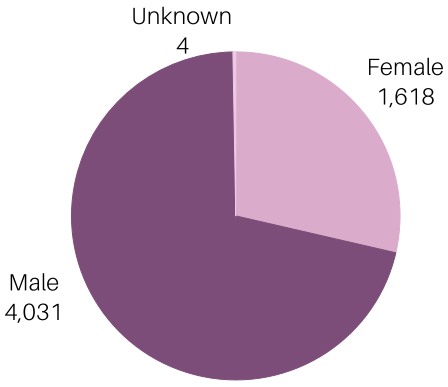
5: Percent of Overdose Deaths per Drug Category per Year

6-8: Percent of Overdose Deaths per Drug Category per Age/Gender/Race, per Year if Applicable

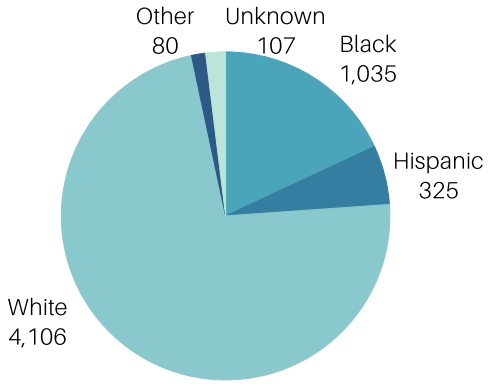
*Percent = (Number of deaths per drug category per demographic group, per year if applicable) / (Number of deaths per demographic group, per year if applicable) * 100%*

*Breakdown by quarter is suppressed when there are less than three data points for each quarter.

3. Gender Distribution



4. Race Distribution

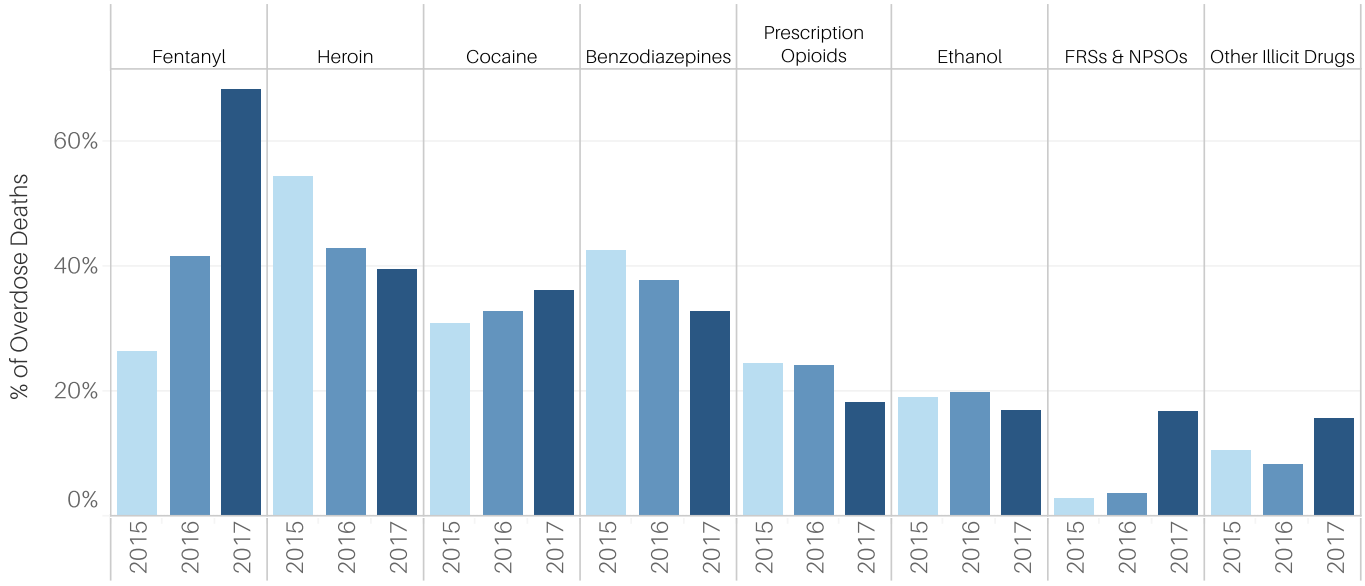


Source: Pennsylvania Coroner/Medical Examiner Data

APPENDIX D

(U) Figure D5: Analysis of 2015 - 2017 Overdose Death Data within District: Southeast

5. Percent of Overdose Deaths per Drug Category per Year



6. Percent of Overdose Deaths per Drug Category per Age Group per Year

Drug Category	2015				2016				2017			
	0-24	25-44	45-64	65+	0-24	25-44	45-64	65+	0-24	25-44	45-64	65+
Fentanyl	31%	29%	22%	19%	48%	46%	35%	36%	78%	75%	57%	46%
Heroin	74%	63%	42%	26%	51%	48%	36%	29%	45%	44%	31%	38%
Cocaine	18%	31%	34%	32%	22%	32%	37%	36%	27%	35%	40%	38%
Benzodiazepines	35%	41%	47%	33%	35%	39%	38%	33%	29%	32%	37%	25%
Prescription Opioids	17%	22%	29%	25%	20%	22%	27%	27%	12%	15%	24%	26%
Ethanol	10%	16%	25%	19%	14%	19%	22%	11%	10%	14%	23%	20%
FRSs & NPSOs	3%	3%	3%	2%	7%	5%	2%		26%	19%	12%	9%
Other Illicit Drugs	11%	14%	7%	2%	13%	9%	6%	2%	16%	19%	12%	3%

7. Per Drug Category per Gender per Year

Drug Category	2015		2016		2017	
	Female	Male	Female	Male	Female	Male
Fentanyl	21%	29%	39%	43%	62%	70%
Heroin	46%	58%	36%	46%	35%	41%
Cocaine	25%	33%	32%	33%	33%	37%
Benzodiazepines	52%	38%	47%	34%	43%	29%
Prescription Opioids	31%	22%	30%	22%	22%	17%
Ethanol	16%	20%	15%	21%	11%	19%
FRSs & NPSOs	1%	3%	3%	4%	15%	17%
Other Illicit Drugs	10%	10%	8%	8%	17%	15%

8. Per Drug Category per Race, 2015-2017

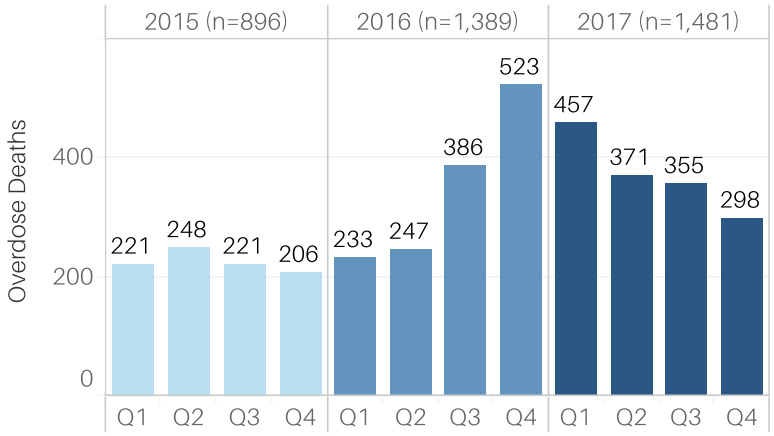
Drug Category	White	Black	Hispanic	Other
Fentanyl	52%	38%	51%	53%
Heroin	47%	28%	52%	45%
Cocaine	29%	54%	39%	28%
Benzodiazepines	39%	30%	30%	26%
Prescription Opioids	22%	23%	14%	21%
Ethanol	18%	21%	21%	14%
FRSs & NPSOs	10%	7%	6%	10%
Other Illicit Drugs	12%	11%	9%	9%

Source: Pennsylvania Coroner/Medical Examiner Data

APPENDIX D

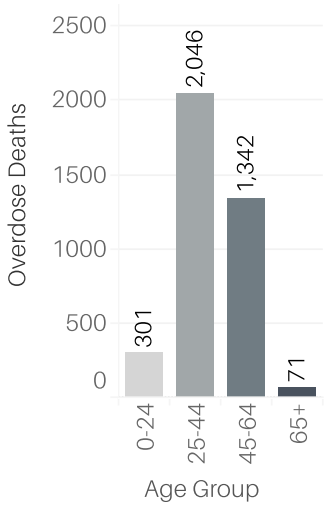
(U) Figure D6: Analysis of 2015 - 2017 Overdose Death Data within District: Southwest

1. Quarterly Trend



	Total Deaths	Average Rate (per 100,000)
Allegheny	1,811	49
Armstrong	107	54
Beaver	221	44
Butler	213	38
Cambria	237	59
Fayette	175	44
Greene	46	41
Indiana	122	47
Somerset	66	29
Washington	276	44
Westmoreland	492	46

2. Age Distribution



The information in this section summarizes drug-related overdose death data (accidental or undetermined) from 2015-2017.

The first page consists of the quarterly trend and demographic information:

1: Total Number of Overdose Deaths per Quarter per Year*

2-4: Total Number of Overdose Deaths per Age/Gender/Race

The second page consists of the yearly trend for the most commonly identified drug categories and the drug category breakdown for each demographic group:

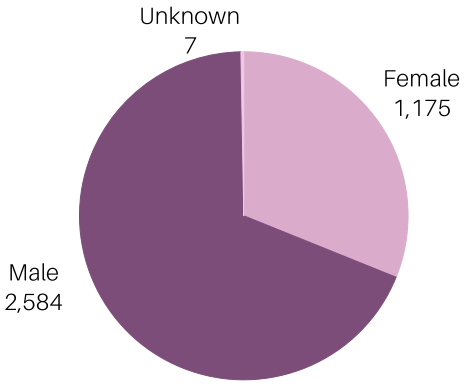
5: Percent of Overdose Deaths per Drug Category per Year

6-8: Percent of Overdose Deaths per Drug Category per Age/Gender/Race, per Year if Applicable

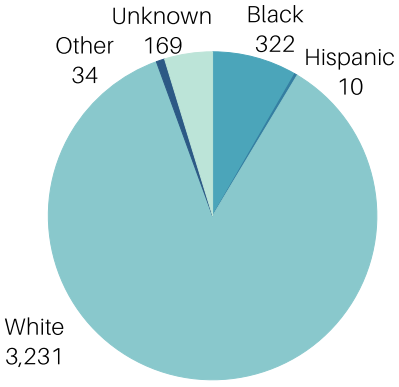
*Percent = (Number of deaths per drug category per demographic group, per year if applicable) / (Number of deaths per demographic group, per year if applicable) * 100%*

*Breakdown by quarter is suppressed when there are less than three data points for each quarter.

3. Gender Distribution



4. Race Distribution

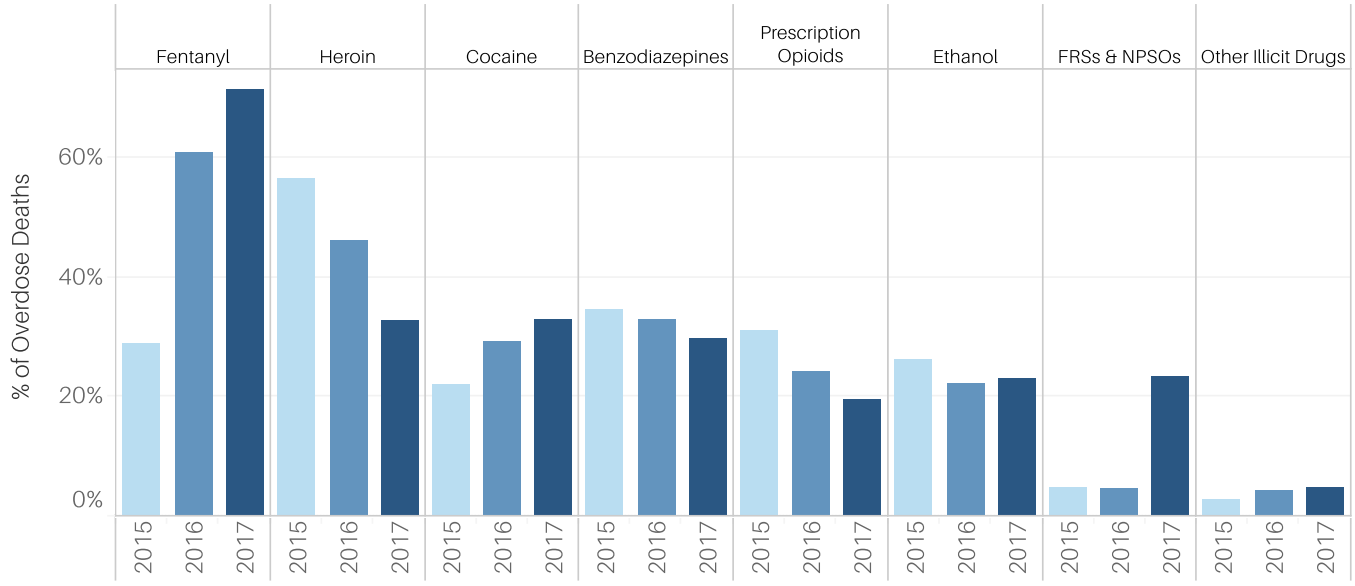


Source: Pennsylvania Coroner/Medical Examiner Data

APPENDIX D

(U) Figure D6: Analysis of 2015 - 2017 Overdose Death Data within District: Southwest

5. Percent of Overdose Deaths per Drug Category per Year



6. Percent of Overdose Deaths per Drug Category per Age Group per Year

Drug Category	2015				2016				2017			
	0-24	25-44	45-64	65+	0-24	25-44	45-64	65+	0-24	25-44	45-64	65+
Fentanyl	36%	34%	20%	38%	61%	65%	55%	44%	76%	77%	62%	50%
Heroin	66%	66%	42%	38%	47%	52%	37%	26%	39%	34%	29%	21%
Cocaine	12%	20%	27%	25%	23%	25%	36%	33%	25%	34%	34%	25%
Benzodiazepines	30%	31%	40%	44%	25%	34%	33%	19%	27%	30%	30%	39%
Prescription Opioids	17%	24%	43%	56%	14%	21%	31%	33%	11%	13%	30%	29%
Ethanol	17%	24%	33%	19%	17%	19%	27%	37%	14%	19%	31%	39%
FRSs & NPSOs	12%	5%	3%		6%	5%	3%	4%	17%	25%	22%	14%
Other Illicit Drugs	3%	4%	2%		6%	5%	2%		7%	6%	3%	

7. Per Drug Category per Gender per Year

Drug Category	2015		2016		2017	
	Female	Male	Female	Male	Female	Male
Fentanyl	24%	32%	55%	63%	65%	74%
Heroin	47%	62%	38%	49%	31%	33%
Cocaine	22%	22%	28%	30%	33%	33%
Benzodiazepines	41%	31%	39%	30%	35%	27%
Prescription Opioids	40%	27%	28%	22%	21%	19%
Ethanol	20%	30%	17%	24%	18%	25%
FRSs & NPSOs	3%	6%	4%	5%	23%	23%
Other Illicit Drugs	3%	3%	4%	4%	3%	5%

8. Per Drug Category per Race, 2015-2017

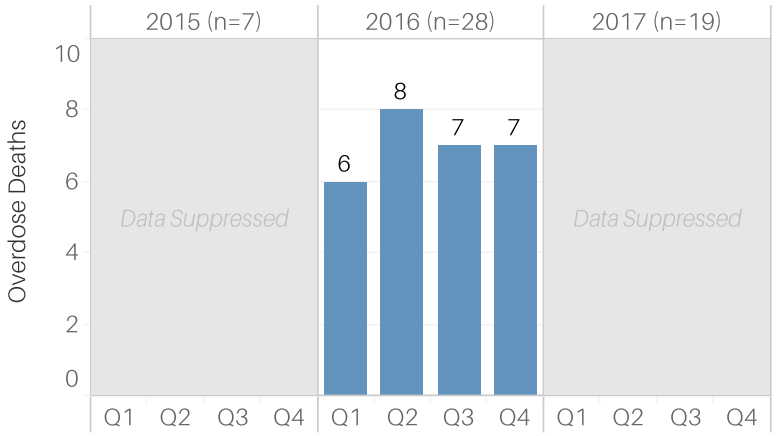
Drug Category	White	Black	Hispanic	Other
Fentanyl	58%	56%	50%	47%
Heroin	44%	38%	60%	35%
Cocaine	26%	58%	30%	24%
Benzodiazepines	34%	20%	10%	24%
Prescription Opioids	24%	19%	20%	41%
Ethanol	23%	37%	20%	18%
FRSs & NPSOs	13%	10%	20%	
Other Illicit Drugs	4%	2%		3%

Source: Pennsylvania Coroner/Medical Examiner Data

APPENDIX D

(U) Figure D7: Analysis of 2015 - 2017 Overdose Death Data within County: Adams

1. Quarterly Trend



Total Number of Overdose Deaths: **54**

Average Rate of Overdose Deaths (per 100,000): **18**

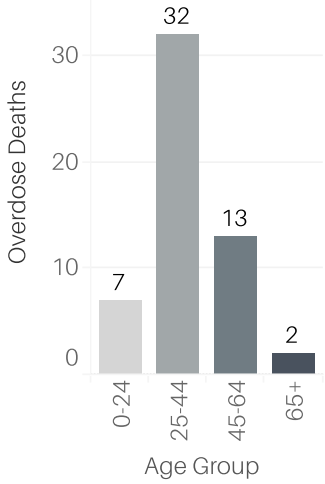
County Rank by Average Rate: **46**

Percent Change from 2015-2016: **300% Increase**

Percent Change from 2016-2017: **32% Decrease**

Percent Change from 2015-2017: **171% Increase**

2. Age Distribution



The information in this section summarizes drug-related overdose death data (accidental or undetermined) from 2015-2017.

<u>The first page consists of the quarterly trend and demographic information:</u>

1: Total Number of Overdose Deaths per Quarter per Year*

2-4: Total Number of Overdose Deaths per Age/Gender/Race

<u>The second page consists of the yearly trend for the most commonly identified drug categories and the drug category breakdown for each demographic group:</u>

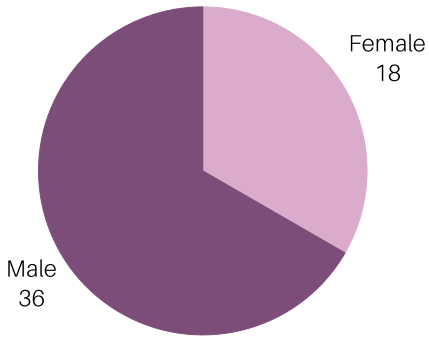
5: Percent of Overdose Deaths per Drug Category per Year

6-8: Percent of Overdose Deaths per Drug Category per Age/Gender/Race, per Year if Applicable

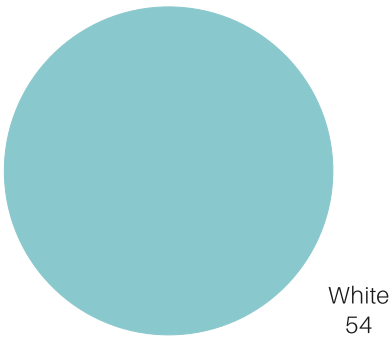
*Percent = (Number of deaths per drug category per demographic group, per year if applicable) / (Number of deaths per demographic group, per year if applicable) * 100%*

*Breakdown by quarter is suppressed when there are less than three data points for each quarter.

3. Gender Distribution



4. Race Distribution

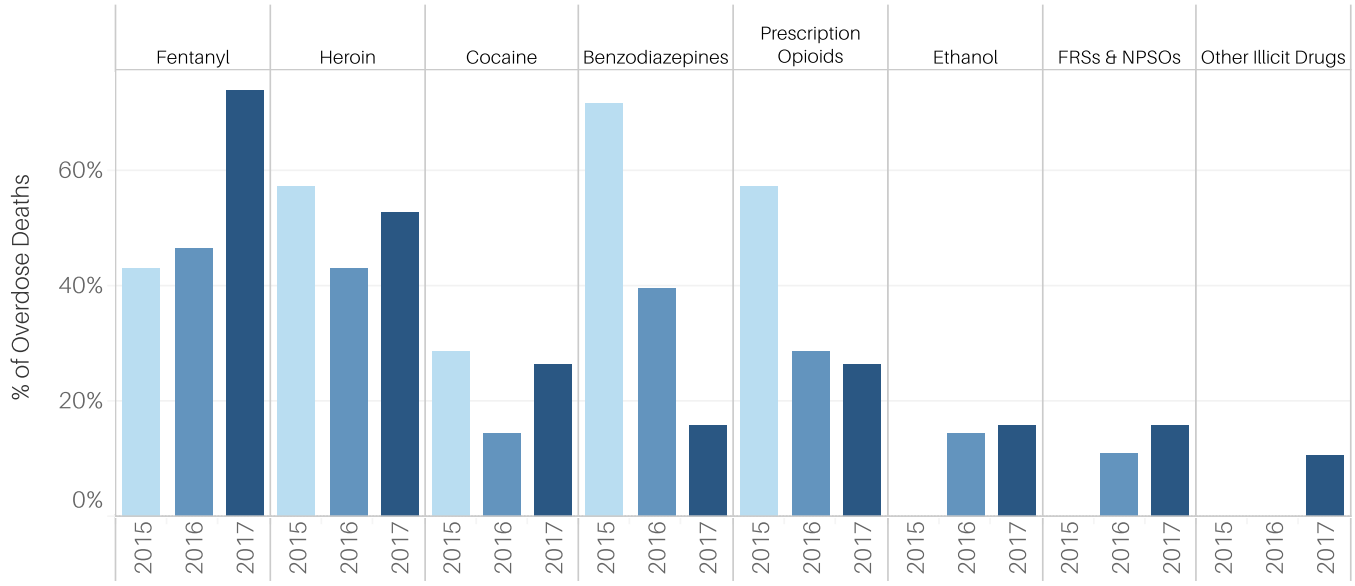


Source: Pennsylvania Coroner/Medical Examiner Data

APPENDIX D

(U) Figure D7: Analysis of 2015 - 2017 Overdose Death Data within County: Adams

5. Percent of Overdose Deaths per Drug Category per Year



6. Percent of Overdose Deaths per Drug Category per Age Group per Year

Drug Category	2015 0-24	2015 25-44	2015 45-64	2015 65+	2016 0-24	2016 25-44	2016 45-64	2016 65+	2017 0-24	2017 25-44	2017 45-64	2017 65+
Fentanyl		40%	100%		33%	71%	14%		100%	69%	80%	
Heroin		60%	100%		50%	50%	29%		100%	46%	60%	
Cocaine		20%	100%			21%	14%		100%	23%	20%	
Benzodiazepines		60%	100%	100%	50%	29%	57%			15%	20%	
Prescription Opioids		60%		100%		21%	57%	100%		23%	40%	
Ethanol						21%	14%		100%	8%	20%	
FRSs & NPSOs						14%	14%			23%		
Other Illicit Drugs										15%		

7. Per Drug Category per Gender per Year

Drug Category	2015 Female	2015 Male	2016 Female	2016 Male	2017 Female	2017 Male
Fentanyl		60%	27%	59%	80%	71%
Heroin		80%	36%	47%	40%	57%
Cocaine		40%	9%	18%	20%	29%
Benzodiazepines	100%	60%	64%	24%	40%	7%
Prescription Opioids	100%	40%	45%	18%	20%	29%
Ethanol			9%	18%		21%
FRSs & NPSOs			9%	12%	20%	14%
Other Illicit Drugs						14%

8. Per Drug Category per Race, 2015-2017

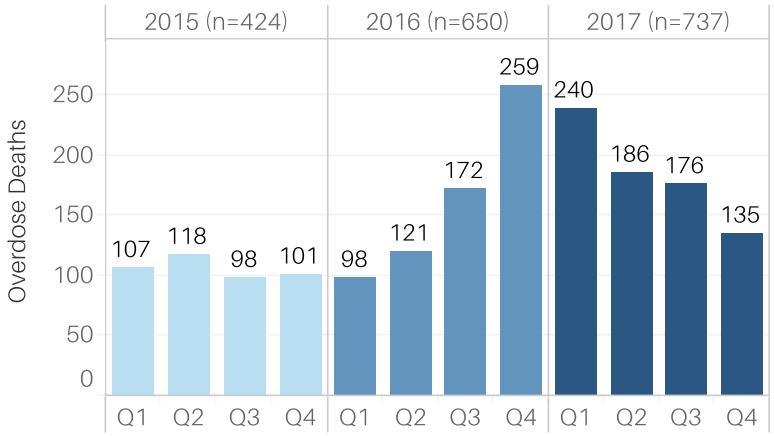
Drug Category	White	Black	Hispanic	Other
Fentanyl	56%			
Heroin	48%			
Cocaine	20%			
Benzodiazepines	35%			
Prescription Opioids	31%			
Ethanol	13%			
FRSs & NPSOs	11%			
Other Illicit Drugs	4%			

Source: Pennsylvania Coroner/Medical Examiner Data

APPENDIX D

(U) Figure D8: Analysis of 2015 - 2017 Overdose Death Data within County: Allegheny

1. Quarterly Trend



Total Number of Overdose Deaths: **1,811**

Average Rate of Overdose Deaths (per 100,000): **49**

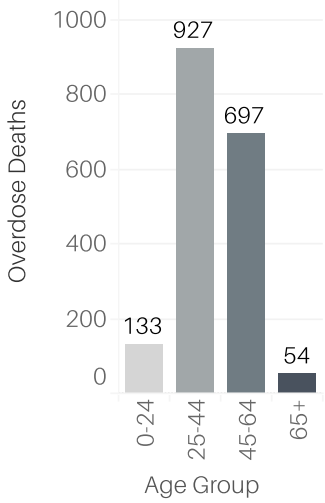
County Rank by Average Rate: **4**

Percent Change from 2015-2016: **53% Increase**

Percent Change from 2016-2017: **13% Increase**

Percent Change from 2015-2017: **74% Increase**

2. Age Distribution



The information in this section summarizes drug-related overdose death data (accidental or undetermined) from 2015-2017.

<u>The first page consists of the quarterly trend and demographic information:</u>

1: Total Number of Overdose Deaths per Quarter per Year*

2-4: Total Number of Overdose Deaths per Age/Gender/Race

<u>The second page consists of the yearly trend for the most commonly identified drug categories and the drug category breakdown for each demographic group:</u>

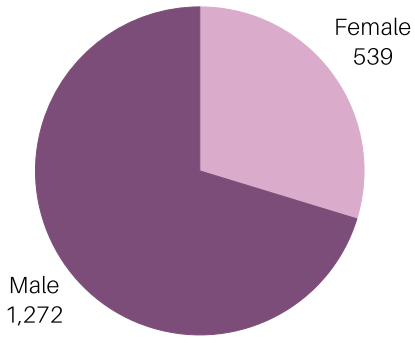
5: Percent of Overdose Deaths per Drug Category per Year

6-8: Percent of Overdose Deaths per Drug Category per Age/Gender/Race, per Year if Applicable

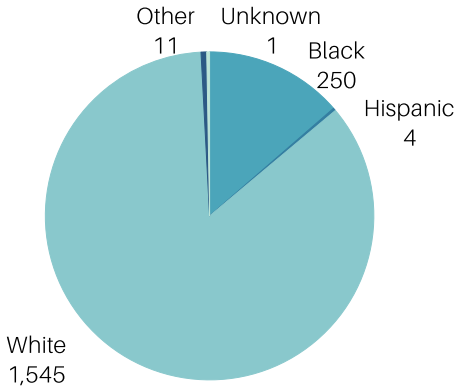
*Percent = (Number of deaths per drug category per demographic group, per year if applicable) / (Number of deaths per demographic group, per year if applicable) * 100%*

*Breakdown by quarter is suppressed when there are less than three data points for each quarter.

3. Gender Distribution



4. Race Distribution

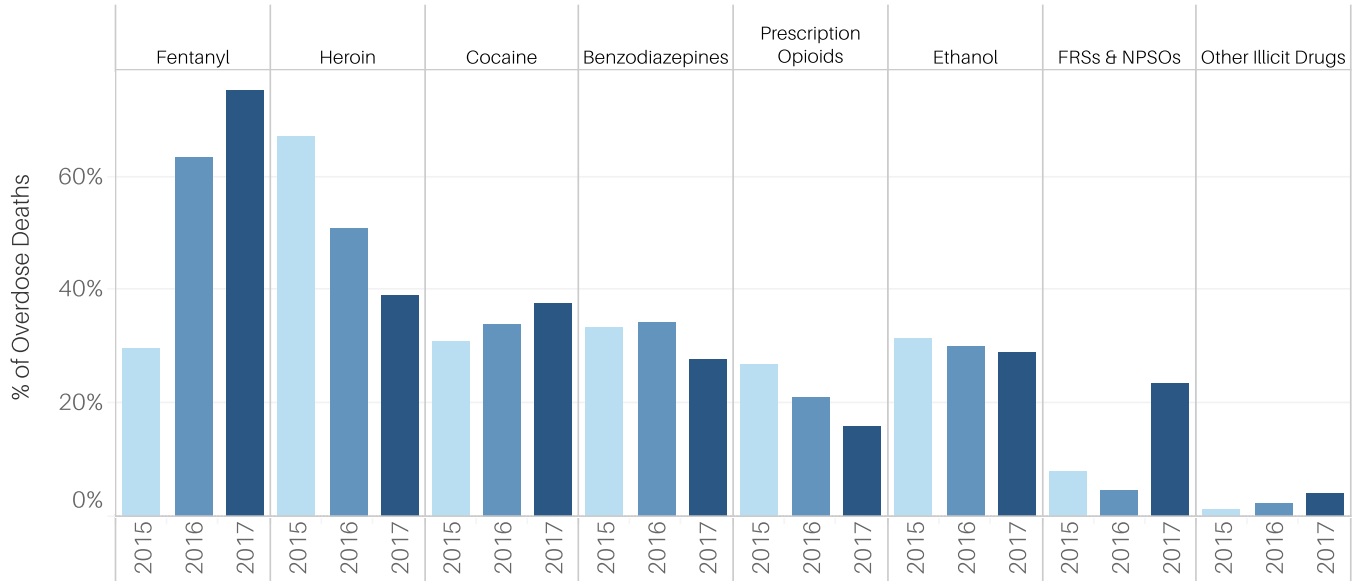


Source: Pennsylvania Coroner/Medical Examiner Data

APPENDIX D

(U) Figure D8: Analysis of 2015 - 2017 Overdose Death Data within County: Allegheny

5. Percent of Overdose Deaths per Drug Category per Year



6. Percent of Overdose Deaths per Drug Category per Age Group per Year

Drug Category	2015				2016				2017			
	0-24	25-44	45-64	65+	0-24	25-44	45-64	65+	0-24	25-44	45-64	65+
Fentanyl	35%	33%	23%	38%	59%	67%	62%	32%	76%	79%	71%	55%
Heroin	78%	74%	57%	46%	46%	59%	43%	21%	36%	41%	38%	27%
Cocaine	19%	25%	41%	31%	22%	27%	46%	32%	18%	36%	44%	27%
Benzodiazepines	35%	29%	37%	38%	34%	40%	27%	16%	29%	28%	26%	41%
Prescription Opioids	16%	18%	39%	54%	15%	19%	23%	37%	11%	11%	22%	27%
Ethanol	16%	30%	37%	23%	27%	25%	36%	42%	18%	23%	38%	45%
FRSs & NPSOs	19%	9%	4%		5%	5%	3%	5%	11%	27%	21%	18%
Other Illicit Drugs		2%				4%	1%		7%	5%	2%	

7. Per Drug Category per Gender per Year

Drug Category	2015		2016		2017	
	Female	Male	Female	Male	Female	Male
Fentanyl	25%	32%	56%	67%	68%	78%
Heroin	61%	69%	42%	55%	33%	42%
Cocaine	31%	31%	34%	34%	36%	38%
Benzodiazepines	40%	30%	42%	31%	35%	25%
Prescription Opioids	34%	24%	23%	20%	14%	17%
Ethanol	21%	36%	23%	33%	27%	30%
FRSs & NPSOs	5%	9%	2%	6%	20%	25%
Other Illicit Drugs		2%	3%	2%	3%	4%

8. Per Drug Category per Race, 2015-2017

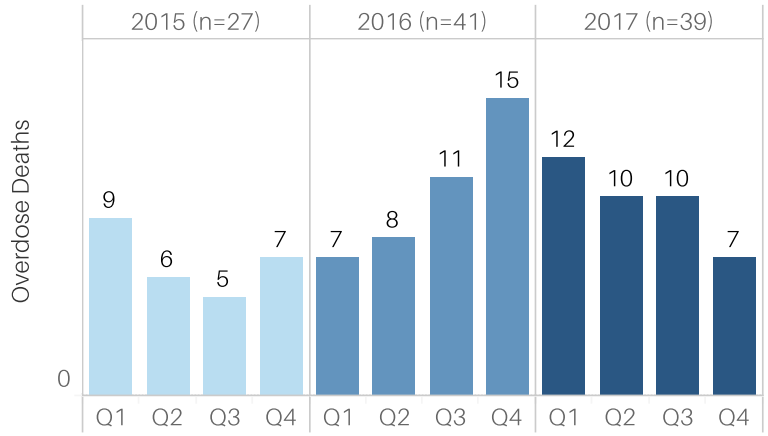
Drug Category	White	Black	Hispanic	Other
Fentanyl	61%	54%	50%	64%
Heroin	52%	39%	100%	36%
Cocaine	31%	60%	50%	27%
Benzodiazepines	34%	16%	25%	9%
Prescription Opioids	21%	17%		27%
Ethanol	28%	41%		18%
FRSs & NPSOs	13%	11%	50%	
Other Illicit Drugs	3%	2%		

Source: Pennsylvania Coroner/Medical Examiner Data

APPENDIX D

(U) Figure D9: Analysis of 2015 - 2017 Overdose Death Data within County: Armstrong

1. Quarterly Trend



Total Number of Overdose Deaths: **107**

Average Rate of Overdose Deaths (per 100,000): **54**

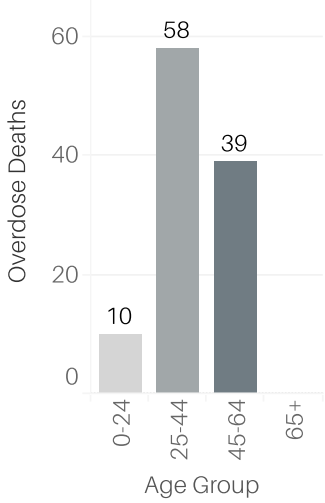
County Rank by Average Rate: **3**

Percent Change from 2015-2016: **52% Increase**

Percent Change from 2016-2017: **5% Decrease**

Percent Change from 2015-2017: **44% Increase**

2. Age Distribution



The information in this section summarizes drug-related overdose death data (accidental or undetermined) from 2015-2017.

The first page consists of the quarterly trend and demographic information:

1: Total Number of Overdose Deaths per Quarter per Year*

2-4: Total Number of Overdose Deaths per Age/Gender/Race

The second page consists of the yearly trend for the most commonly identified drug categories and the drug category breakdown for each demographic group:

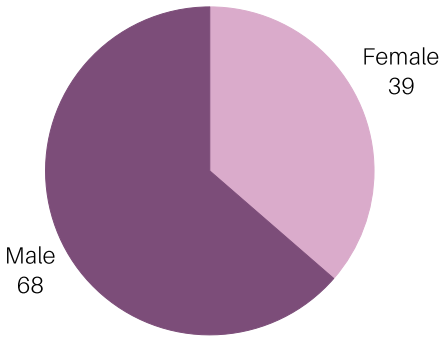
5: Percent of Overdose Deaths per Drug Category per Year

6-8: Percent of Overdose Deaths per Drug Category per Age/Gender/Race, per Year if Applicable

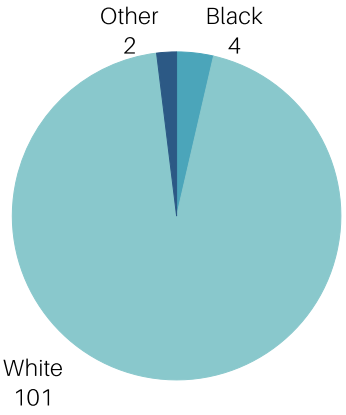
*Percent = (Number of deaths per drug category per demographic group, per year if applicable) / (Number of deaths per demographic group, per year if applicable) * 100%*

*Breakdown by quarter is suppressed when there are less than three data points for each quarter.

3. Gender Distribution



4. Race Distribution

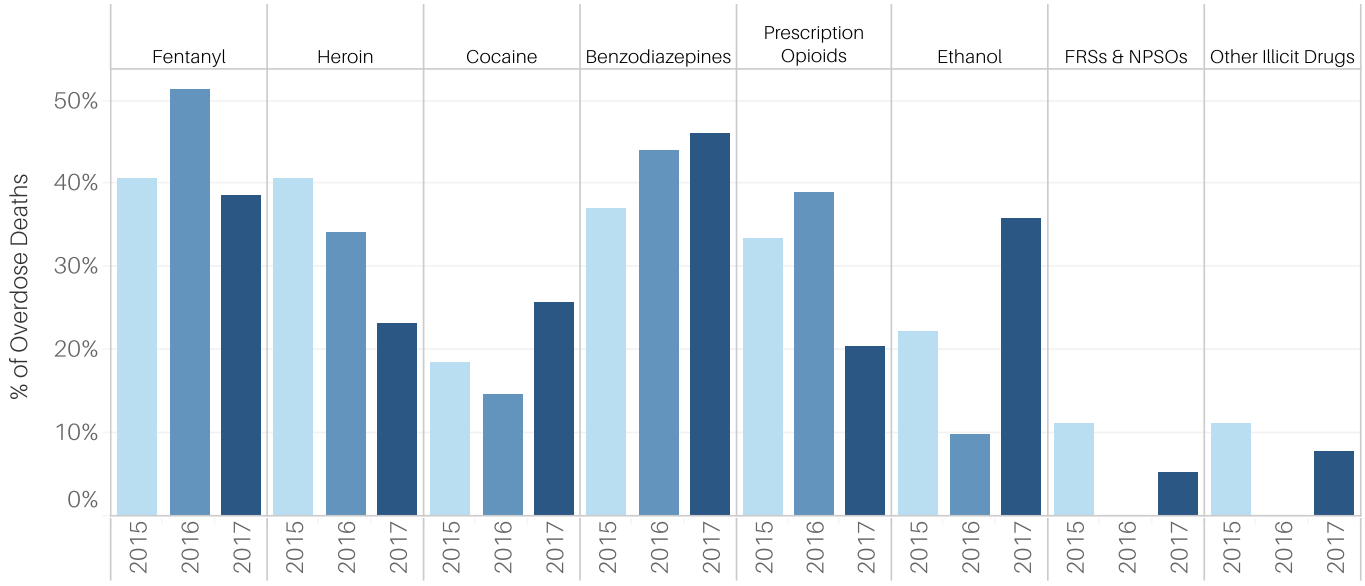


Source: Pennsylvania Coroner/Medical Examiner Data

APPENDIX D

(U) Figure D9: Analysis of 2015 - 2017 Overdose Death Data within County: Armstrong

5. Percent of Overdose Deaths per Drug Category per Year



6. Percent of Overdose Deaths per Drug Category per Age Group per Year

Drug Category	2015 0-24	2015 25-44	2015 45-64	2015 65+	2016 0-24	2016 25-44	2016 45-64	2016 65+	2017 0-24	2017 25-44	2017 45-64	2017 65+
Fentanyl	33%	41%	43%		80%	58%	35%		50%	41%	33%	
Heroin	33%	47%	29%		20%	53%	18%		100%	27%	7%	
Cocaine		24%	14%			26%	6%			32%	20%	
Benzodiazepines	33%	35%	43%		20%	37%	59%		100%	55%	27%	
Prescription Opioids		47%	14%			37%	53%			9%	40%	
Ethanol	33%	24%	14%		20%	5%	12%			36%	40%	
FRSs & NPSOs	33%		29%						50%	5%		
Other Illicit Drugs	33%	6%	14%						50%		13%	

7. Per Drug Category per Gender per Year

Drug Category	2015 Female	2015 Male	2016 Female	2016 Male	2017 Female	2017 Male
Fentanyl	50%	37%	33%	65%	38%	38%
Heroin	50%	37%	22%	43%	23%	23%
Cocaine	25%	16%	6%	22%	31%	23%
Benzodiazepines	38%	37%	50%	39%	54%	42%
Prescription Opioids	25%	37%	39%	39%	23%	19%
Ethanol	25%	21%	11%	9%	31%	38%
FRSs & NPSOs	25%	5%				8%
Other Illicit Drugs	25%	5%			15%	4%

8. Per Drug Category per Race, 2015-2017

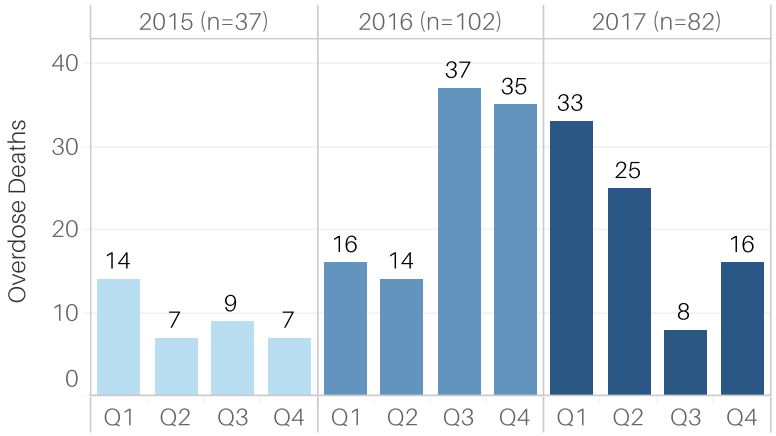
Drug Category	White	Black	Hispanic	Other
Fentanyl	46%			50%
Heroin	33%	25%		
Cocaine	18%	50%		50%
Benzodiazepines	44%			100%
Prescription Opioids	32%			50%
Ethanol	22%	50%		
FRSs & NPSOs	5%			
Other Illicit Drugs	6%			

Source: Pennsylvania Coroner/Medical Examiner Data

APPENDIX D

(U) Figure D10: Analysis of 2015 - 2017 Overdose Death Data within County: Beaver

1. Quarterly Trend



Total Number of Overdose Deaths: **221**

Average Rate of Overdose Deaths (per 100,000): **44**

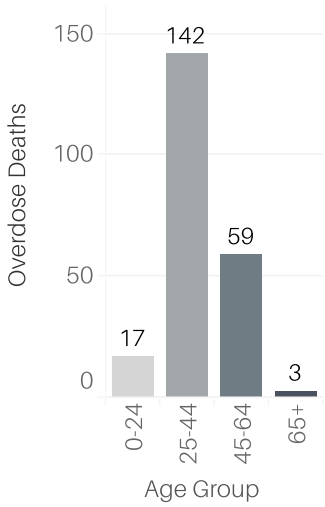
County Rank by Average Rate: **11**

Percent Change from 2015-2016: **176% Increase**

Percent Change from 2016-2017: **20% Decrease**

Percent Change from 2015-2017: **122% Increase**

2. Age Distribution



The information in this section summarizes drug-related overdose death data (accidental or undetermined) from 2015-2017.

<u>The first page consists of the quarterly trend and demographic information:</u>

1: Total Number of Overdose Deaths per Quarter per Year*

2-4: Total Number of Overdose Deaths per Age/Gender/Race

<u>The second page consists of the yearly trend for the most commonly identified drug categories and the drug category breakdown for each demographic group:</u>

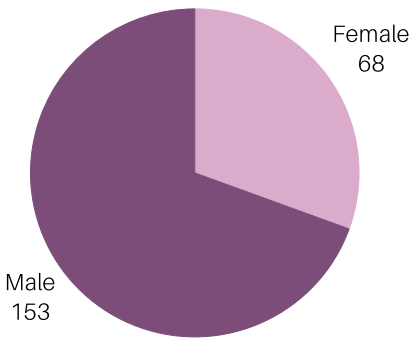
5: Percent of Overdose Deaths per Drug Category per Year

6-8: Percent of Overdose Deaths per Drug Category per Age/Gender/Race, per Year if Applicable

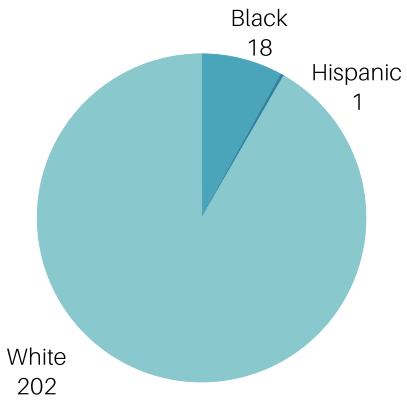
*Percent = (Number of deaths per drug category per demographic group, per year if applicable) / (Number of deaths per demographic group, per year if applicable) * 100%*

*Breakdown by quarter is suppressed when there are less than three data points for each quarter.

3. Gender Distribution



4. Race Distribution

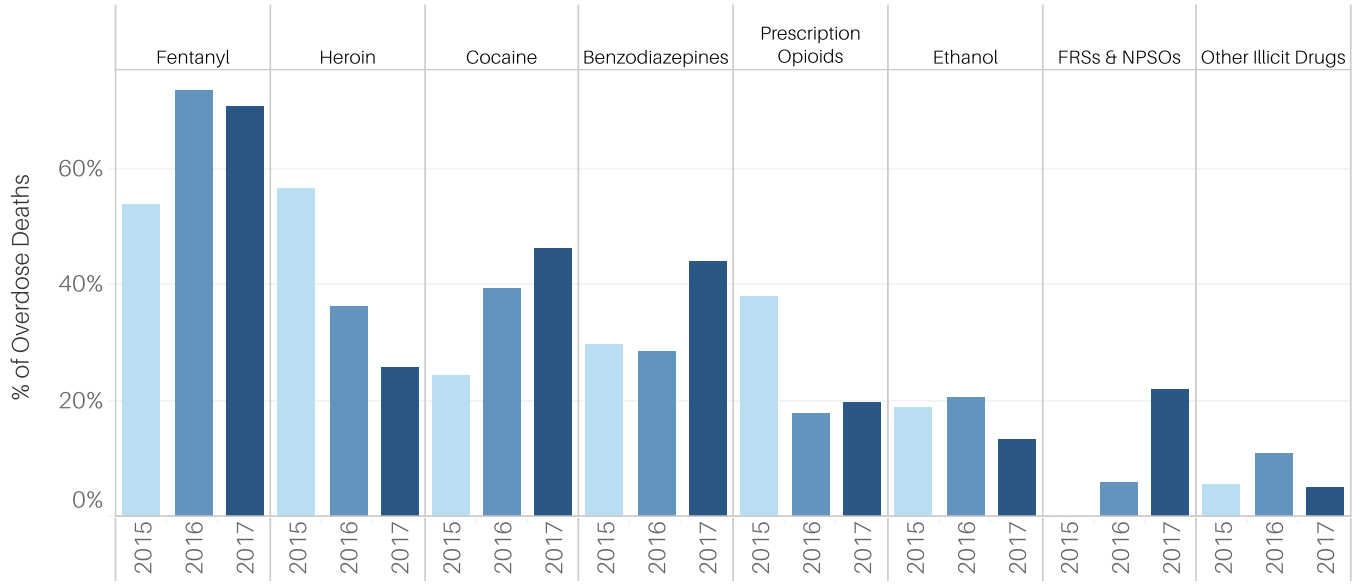


Source: Pennsylvania Coroner/Medical Examiner Data

APPENDIX D

(U) Figure D10: Analysis of 2015 - 2017 Overdose Death Data within County: Beaver

5. Percent of Overdose Deaths per Drug Category per Year



6. Percent of Overdose Deaths per Drug Category per Age Group per Year

Drug Category	2015				2016				2017			
	0-24	25-44	45-64	65+	0-24	25-44	45-64	65+	0-24	25-44	45-64	65+
Fentanyl	67%	63%	30%		63%	80%	61%	100%	67%	79%	52%	50%
Heroin	33%	71%	30%			43%	32%		17%	26%	29%	
Cocaine		25%	30%		63%	37%	36%	100%	50%	47%	43%	50%
Benzodiazepines		25%	50%		13%	22%	50%		33%	45%	48%	
Prescription Opioids		29%	70%			12%	32%	100%	17%	13%	38%	
Ethanol		17%	30%		13%	18%	29%			13%	19%	
FRSs & NPSOs					38%	3%	4%		17%	23%	24%	
Other Illicit Drugs		8%			13%	9%	14%			8%		

7. Per Drug Category per Gender per Year

Drug Category	2015		2016		2017	
	Female	Male	Female	Male	Female	Male
Fentanyl	40%	64%	73%	74%	65%	73%
Heroin	40%	68%	33%	38%	35%	22%
Cocaine	7%	36%	37%	40%	48%	46%
Benzodiazepines	47%	18%	37%	25%	43%	44%
Prescription Opioids	53%	27%	30%	13%	35%	14%
Ethanol	7%	27%	3%	28%	4%	17%
FRSs & NPSOs			10%	4%	35%	17%
Other Illicit Drugs	7%	5%	7%	13%	9%	3%

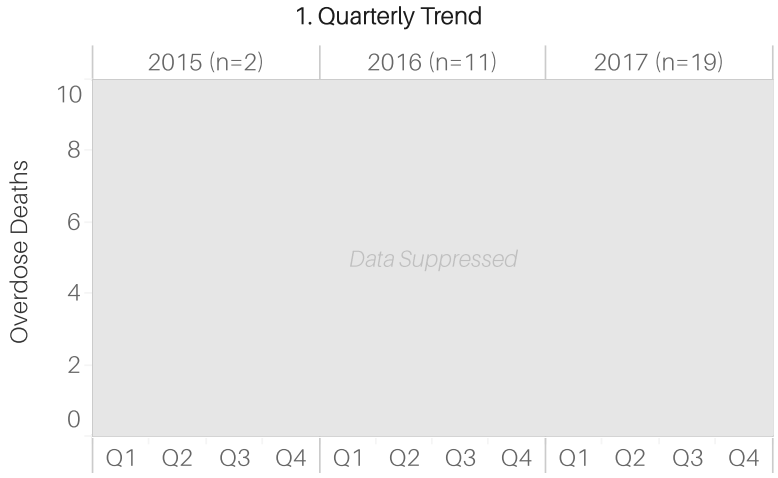
8. Per Drug Category per Race, 2015-2017

Drug Category	White	Black	Hispanic	Other
Fentanyl	70%	61%		
Heroin	37%	28%		
Cocaine	37%	67%		
Benzodiazepines	35%	33%		
Prescription Opioids	21%	28%		
Ethanol	17%	17%	100%	
FRSs & NPSOs	11%	6%		
Other Illicit Drugs	8%	6%		

Source: Pennsylvania Coroner/Medical Examiner Data

APPENDIX D

(U) Figure D11: Analysis of 2015 - 2017 Overdose Death Data within County: Bedford



Total Number of Overdose Deaths: **32**

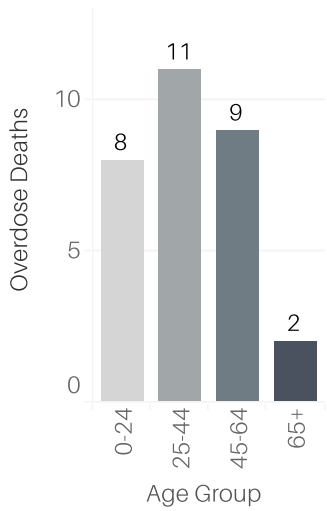
Average Rate of Overdose Deaths (per 100,000): **22**

County Rank by Average Rate: **41**

Percent Change from 2015-2016: **450% Increase**

Percent Change from 2016-2017: **73% Increase**

Percent Change from 2015-2017: **850% Increase**



The information in this section summarizes drug-related overdose death data (accidental or undetermined) from 2015-2017.

<u>The first page consists of the quarterly trend and demographic information:</u>

1: Total Number of Overdose Deaths per Quarter per Year*

2-4: Total Number of Overdose Deaths per Age/Gender/Race

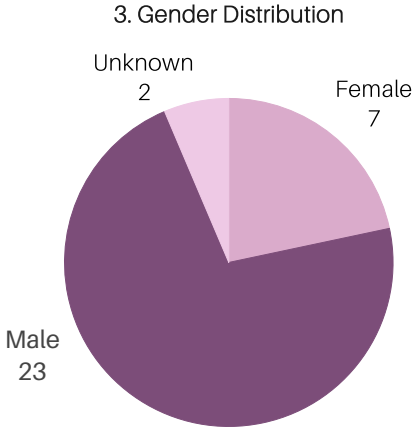
<u>The second page consists of the yearly trend for the most commonly identified drug categories and the drug category breakdown for each demographic group:</u>

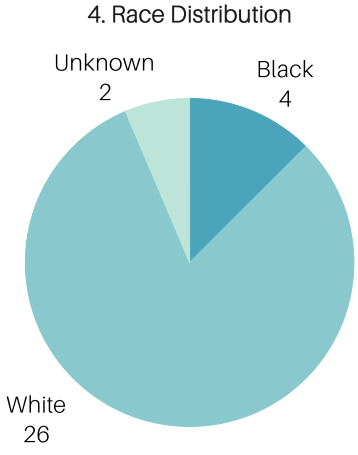
5: Percent of Overdose Deaths per Drug Category per Year

6-8: Percent of Overdose Deaths per Drug Category per Age/Gender/Race, per Year if Applicable

*Percent = (Number of deaths per drug category per demographic group, per year if applicable) / (Number of deaths per demographic group, per year if applicable) * 100%*

*Breakdown by quarter is suppressed when there are less than three data points for each quarter.



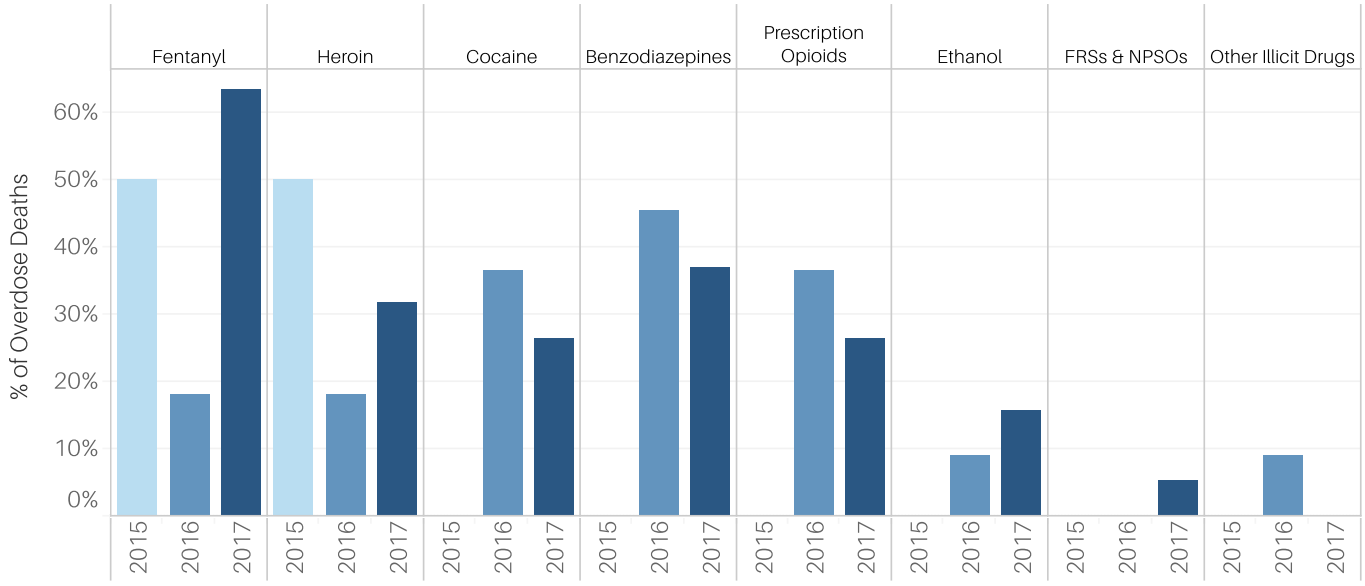


Source: Pennsylvania Coroner/Medical Examiner Data

APPENDIX D

(U) Figure D11: Analysis of 2015 - 2017 Overdose Death Data within County: Bedford

5. Percent of Overdose Deaths per Drug Category per Year



6. Percent of Overdose Deaths per Drug Category per Age Group per Year

Drug Category	2015 0-24	2015 25-44	2015 45-64	2015 65+	2016 0-24	2016 25-44	2016 45-64	2016 65+	2017 0-24	2017 25-44	2017 45-64	2017 65+
Fentanyl					50%	25%			83%	71%	25%	50%
Heroin						25%	20%		67%	14%	25%	
Cocaine					50%	50%	20%		17%	14%	75%	
Benzodiazepines						25%	80%		50%	29%	50%	
Prescription Opioids						25%	60%		33%	14%	25%	50%
Ethanol						25%				14%	25%	50%
FRSs & NPSOs											25%	
Other Illicit Drugs							20%					

7. Per Drug Category per Gender per Year

Drug Category	2015 Female	2015 Male	2016 Female	2016 Male	2017 Female	2017 Male
Fentanyl			50%		67%	63%
Heroin				29%	33%	31%
Cocaine			25%	43%		31%
Benzodiazepines			25%	57%	33%	38%
Prescription Opioids			25%	43%	67%	19%
Ethanol				14%	33%	13%
FRSs & NPSOs						6%
Other Illicit Drugs				14%		

8. Per Drug Category per Race, 2015-2017

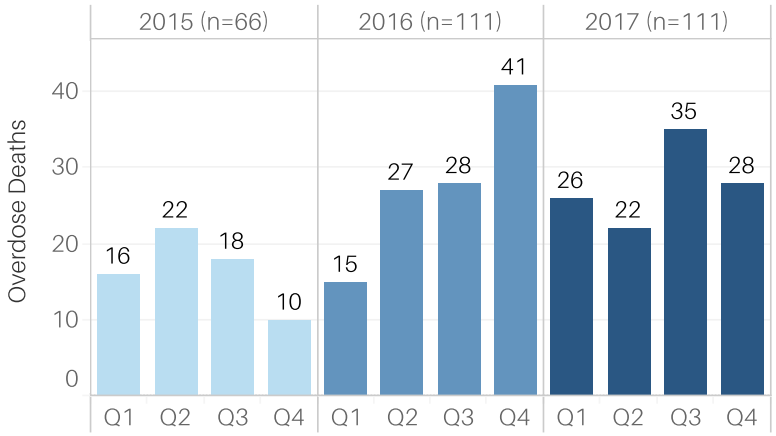
Drug Category	White	Black	Hispanic	Other
Fentanyl	42%	75%		
Heroin	23%	50%		
Cocaine	31%	25%		
Benzodiazepines	35%	75%		
Prescription Opioids	27%	50%		
Ethanol	15%			
FRSs & NPSOs	4%			
Other Illicit Drugs	4%			

Source: Pennsylvania Coroner/Medical Examiner Data

APPENDIX D

(U) Figure D12: Analysis of 2015 - 2017 Overdose Death Data within County: Berks

1. Quarterly Trend



Total Number of Overdose Deaths: **288**

Average Rate of Overdose Deaths (per 100,000): **23**

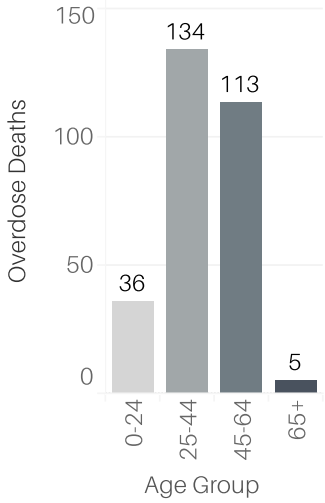
County Rank by Average Rate: **38**

Percent Change from 2015-2016: **68% Increase**

Percent Change from 2016-2017: **No Change**

Percent Change from 2015-2017: **68% Increase**

2. Age Distribution



The information in this section summarizes drug-related overdose death data (accidental or undetermined) from 2015-2017.

<u>The first page consists of the quarterly trend and demographic information:</u>

1: Total Number of Overdose Deaths per Quarter per Year*

2-4: Total Number of Overdose Deaths per Age/Gender/Race

<u>The second page consists of the yearly trend for the most commonly identified drug categories and the drug category breakdown for each demographic group:</u>

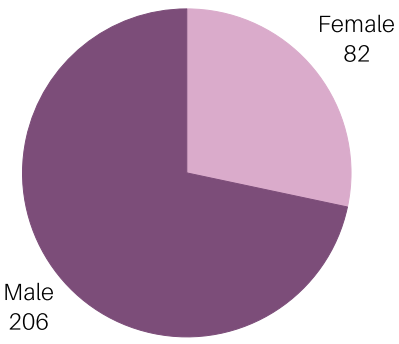
5: Percent of Overdose Deaths per Drug Category per Year

6-8: Percent of Overdose Deaths per Drug Category per Age/Gender/Race, per Year if Applicable

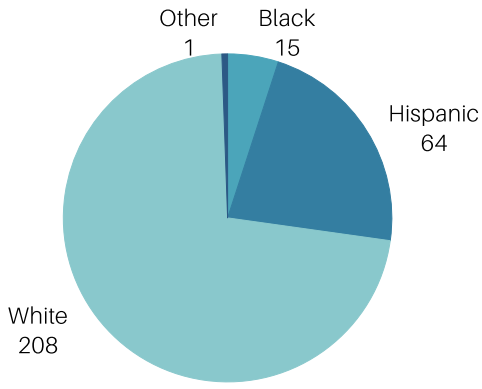
*Percent = (Number of deaths per drug category per demographic group, per year if applicable) / (Number of deaths per demographic group, per year if applicable) * 100%*

*Breakdown by quarter is suppressed when there are less than three data points for each quarter.

3. Gender Distribution



4. Race Distribution

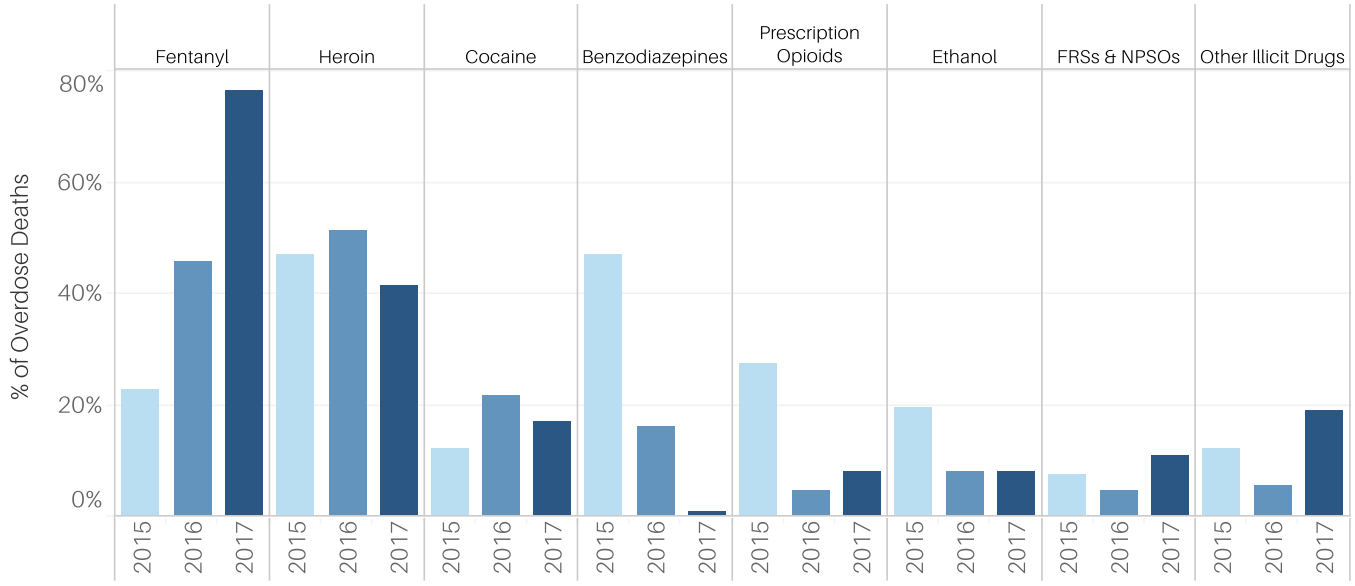


Source: Pennsylvania Coroner/Medical Examiner Data

APPENDIX D

(U) Figure D12: Analysis of 2015 - 2017 Overdose Death Data within County: Berks

5. Percent of Overdose Deaths per Drug Category per Year



6. Percent of Overdose Deaths per Drug Category per Age Group per Year

	2015				2016				2017			
Drug Category	0-24	25-44	45-64	65+	0-24	25-44	45-64	65+	0-24	25-44	45-64	65+
Fentanyl	25%	28%	14%	50%	53%	53%	36%		100%	81%	63%	
Heroin	100%	48%	38%		47%	53%	50%	100%	46%	45%	35%	
Cocaine			28%		7%	27%	20%		8%	19%	18%	
Benzodiazepines	75%	28%	55%	50%		20%	18%				3%	
Prescription Opioids	13%	24%	28%	75%		6%	5%			7%	13%	
Ethanol		12%	28%	50%		8%	11%			5%	15%	
FRSs & NPSOs		8%	10%		7%	6%	2%		8%	10%	13%	
Other Illicit Drugs	25%	20%	3%		13%	2%	5%	100%	15%	26%	10%	

7. Per Drug Category per Gender per Year

	2015		2016		2017	
Drug Category	Female	Male	Female	Male	Female	Male
Fentanyl	11%	31%	45%	46%	74%	78%
Heroin	37%	54%	35%	55%	43%	41%
Cocaine	19%	8%	25%	21%	11%	20%
Benzodiazepines	56%	41%	25%	14%		1%
Prescription Opioids	37%	21%	10%	3%	3%	11%
Ethanol	11%	26%		10%	3%	11%
FRSs & NPSOs		13%	5%	4%	6%	13%
Other Illicit Drugs	15%	10%		7%	23%	17%

8. Per Drug Category per Race, 2015-2017

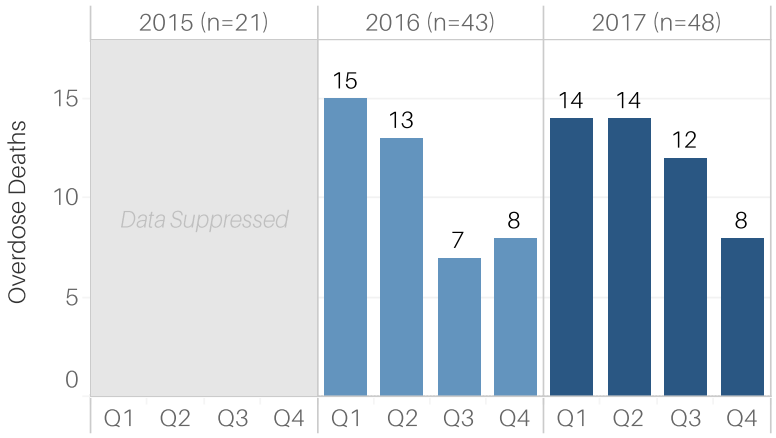
Drug Category	White	Black	Hispanic	Other
Fentanyl	50%	40%	63%	100%
Heroin	46%	13%	56%	100%
Cocaine	15%	33%	23%	
Benzodiazepines	19%	20%	13%	
Prescription Opioids	13%	7%	8%	
Ethanol	11%		13%	
FRSs & NPSOs	7%	7%	11%	
Other Illicit Drugs	14%	20%	5%	

Source: Pennsylvania Coroner/Medical Examiner Data

APPENDIX D

(U) Figure D13: Analysis of 2015 - 2017 Overdose Death Data within County: Blair

1. Quarterly Trend



Total Number of Overdose Deaths: **112**

Average Rate of Overdose Deaths (per 100,000): **30**

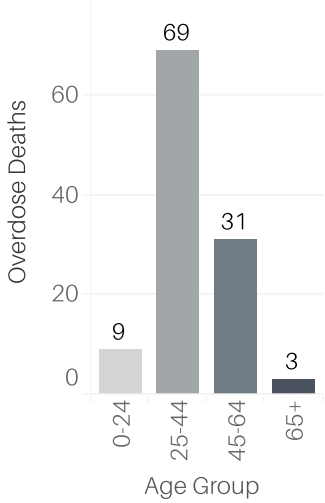
County Rank by Average Rate: **24**

Percent Change from 2015-2016: **105% Increase**

Percent Change from 2016-2017: **12% Increase**

Percent Change from 2015-2017: **129% Increase**

2. Age Distribution



The information in this section summarizes drug-related overdose death data (accidental or undetermined) from 2015-2017.

<u>The first page consists of the quarterly trend and demographic information:</u>

1: Total Number of Overdose Deaths per Quarter per Year*

2-4: Total Number of Overdose Deaths per Age/Gender/Race

<u>The second page consists of the yearly trend for the most commonly identified drug categories and the drug category breakdown for each demographic group:</u>

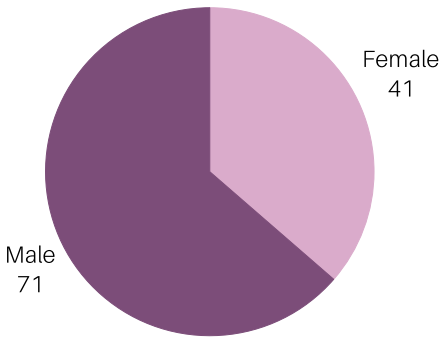
5: Percent of Overdose Deaths per Drug Category per Year

6-8: Percent of Overdose Deaths per Drug Category per Age/Gender/Race, per Year if Applicable

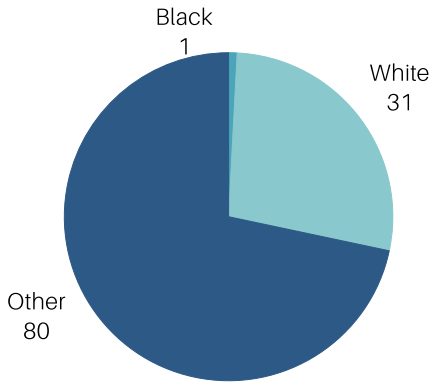
*Percent = (Number of deaths per drug category per demographic group, per year if applicable) / (Number of deaths per demographic group, per year if applicable) * 100%*

*Breakdown by quarter is suppressed when there are less than three data points for each quarter.

3. Gender Distribution



4. Race Distribution

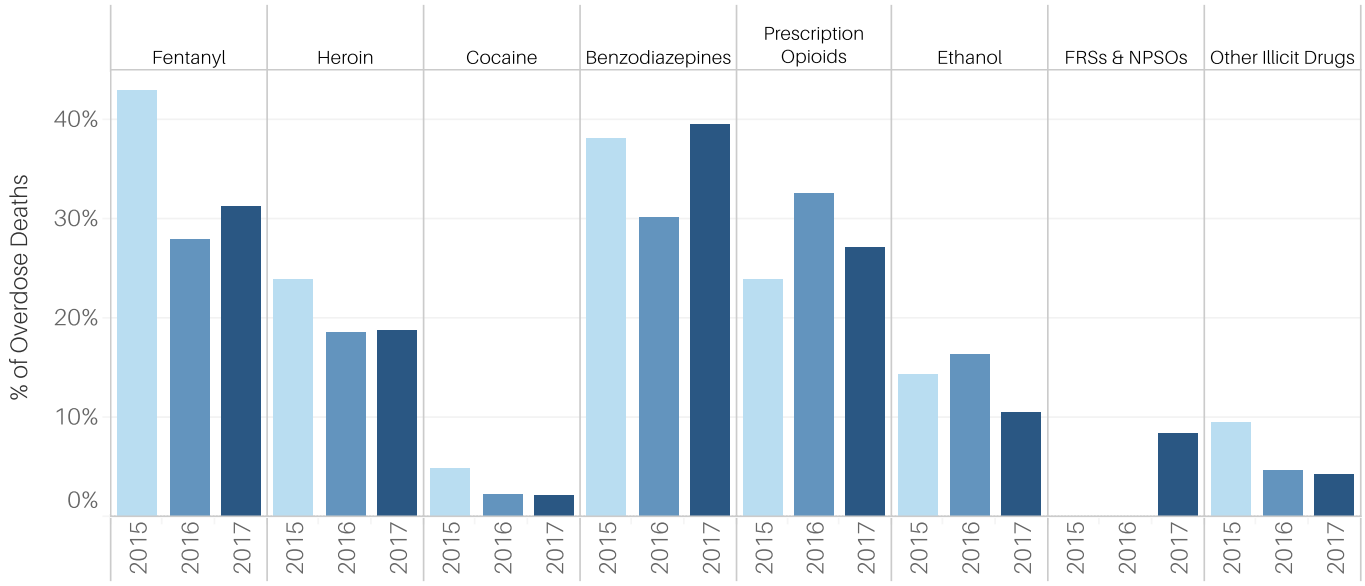


Source: Pennsylvania Coroner/Medical Examiner Data

APPENDIX D

(U) Figure D13: Analysis of 2015 - 2017 Overdose Death Data within County: Blair

5. Percent of Overdose Deaths per Drug Category per Year



6. Percent of Overdose Deaths per Drug Category per Age Group per Year

Drug Category	2015				2016				2017			
	0-24	25-44	45-64	65+	0-24	25-44	45-64	65+	0-24	25-44	45-64	65+
Fentanyl	100%	67%	18%		29%	36%	9%		100%	31%	33%	
Heroin		11%	36%		14%	24%	9%			20%	22%	
Cocaine		11%				4%				3%		
Benzodiazepines		22%	55%		43%	28%	27%		100%	40%	33%	33%
Prescription Opioids	100%	22%	18%		29%	36%	27%			31%	22%	
Ethanol			27%			16%	27%			11%	11%	
FRSs & NPSOs										9%	11%	
Other Illicit Drugs		22%				4%	9%		100%	3%		

7. Per Drug Category per Gender per Year

Drug Category	2015		2016		2017	
	Female	Male	Female	Male	Female	Male
Fentanyl	50%	38%	18%	35%	25%	34%
Heroin		38%	12%	23%	6%	25%
Cocaine		8%		4%		3%
Benzodiazepines	63%	23%	24%	35%	50%	34%
Prescription Opioids	38%	15%	47%	23%	31%	25%
Ethanol	13%	15%	24%	12%	13%	9%
FRSs & NPSOs					13%	6%
Other Illicit Drugs		15%		8%	6%	3%

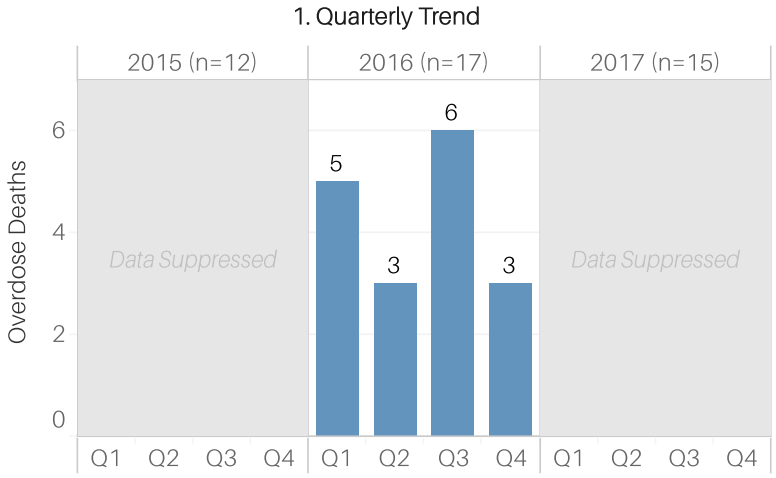
8. Per Drug Category per Race, 2015-2017

Drug Category	White	Black	Hispanic	Other
Fentanyl	42%	100%		28%
Heroin	19%			20%
Cocaine	3%			3%
Benzodiazepines	29%			39%
Prescription Opioids	39%	100%		24%
Ethanol	13%			14%
FRSs & NPSOs				5%
Other Illicit Drugs	10%			4%

Source: Pennsylvania Coroner/Medical Examiner Data

APPENDIX D

(U) Figure D14: Analysis of 2015 - 2017 Overdose Death Data within County: Bradford



Total Number of Overdose Deaths: **44**

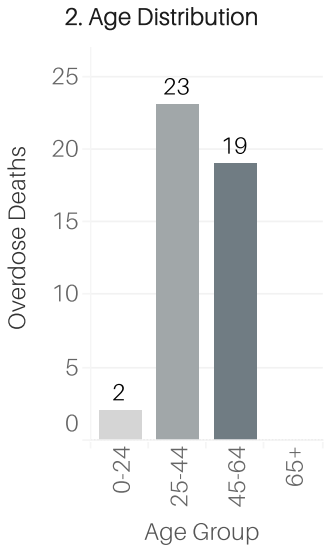
Average Rate of Overdose Deaths (per 100,000): **24**

County Rank by Average Rate: **36**

Percent Change from 2015-2016: **42% Increase**

Percent Change from 2016-2017: **12% Decrease**

Percent Change from 2015-2017: **25% Increase**



The information in this section summarizes drug-related overdose death data (accidental or undetermined) from 2015-2017.

<u>The first page consists of the quarterly trend and demographic information:</u>

1: Total Number of Overdose Deaths per Quarter per Year*

2-4: Total Number of Overdose Deaths per Age/Gender/Race

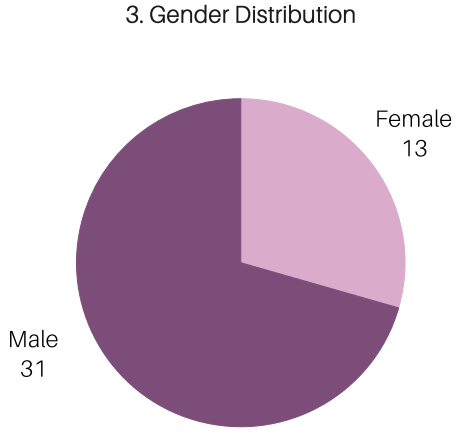
<u>The second page consists of the yearly trend for the most commonly identified drug categories and the drug category breakdown for each demographic group:</u>

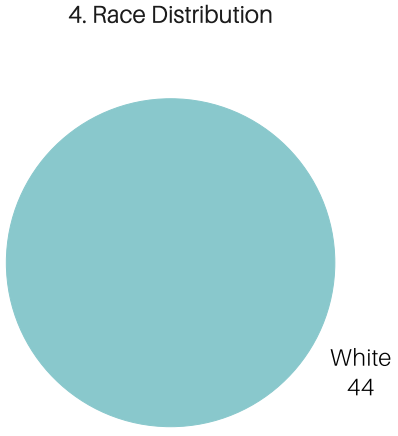
5: Percent of Overdose Deaths per Drug Category per Year

6-8: Percent of Overdose Deaths per Drug Category per Age/Gender/Race, per Year if Applicable

*Percent = (Number of deaths per drug category per demographic group, per year if applicable) / (Number of deaths per demographic group, per year if applicable) * 100%*

*Breakdown by quarter is suppressed when there are less than three data points for each quarter.



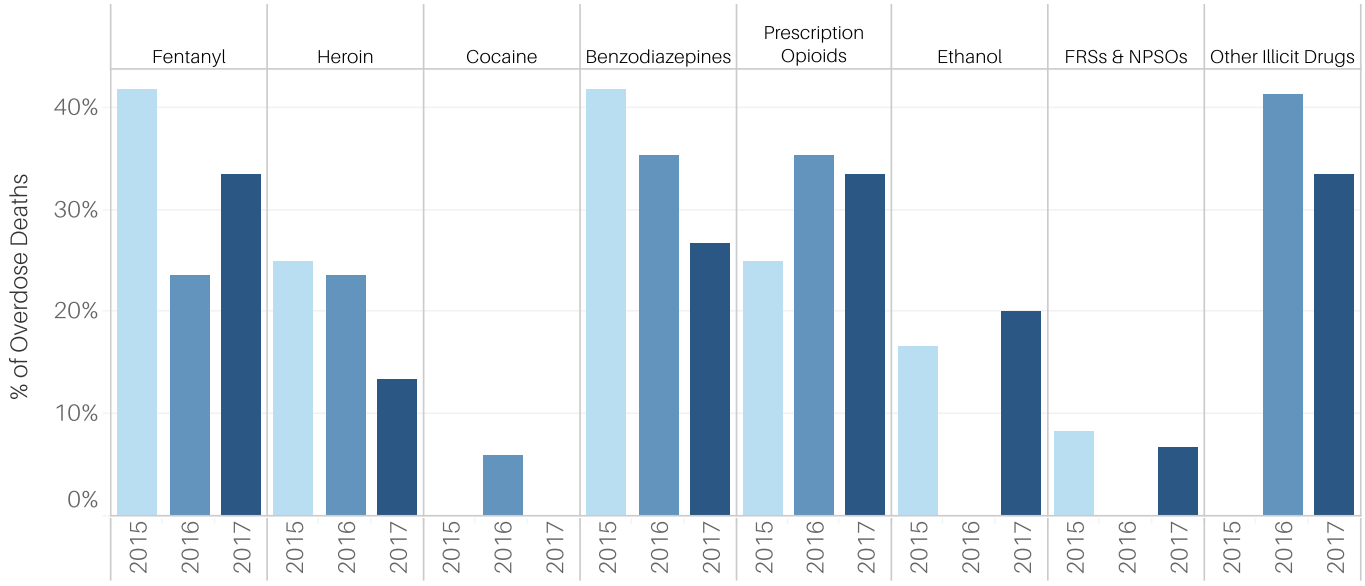


Source: Pennsylvania Coroner/Medical Examiner Data

APPENDIX D

(U) Figure D14: Analysis of 2015 - 2017 Overdose Death Data within County: Bradford

5. Percent of Overdose Deaths per Drug Category per Year



6. Percent of Overdose Deaths per Drug Category per Age Group per Year

Drug Category	2015 0-24	2015 25-44	2015 45-64	2015 65+	2016 0-24	2016 25-44	2016 45-64	2016 65+	2017 0-24	2017 25-44	2017 45-64	2017 65+
Fentanyl		60%	29%			22%	33%			44%	17%	
Heroin		40%	14%		50%	11%	33%			22%		
Cocaine						11%						
Benzodiazepines		20%	57%		50%	33%	33%			22%	33%	
Prescription Opioids		20%	29%		50%	22%	50%			33%	33%	
Ethanol		20%	14%							11%	33%	
FRSs & NPSOs		20%									17%	
Other Illicit Drugs					50%	44%	33%			44%	17%	

7. Per Drug Category per Gender per Year

Drug Category	2015 Female	2015 Male	2016 Female	2016 Male	2017 Female	2017 Male
Fentanyl	20%	57%		36%	50%	31%
Heroin		43%		36%	50%	8%
Cocaine			17%			
Benzodiazepines	40%	43%	17%	45%	50%	23%
Prescription Opioids	40%	14%	33%	36%	100%	23%
Ethanol	20%	14%			50%	15%
FRSs & NPSOs		14%				8%
Other Illicit Drugs			50%	36%		38%

8. Per Drug Category per Race, 2015-2017

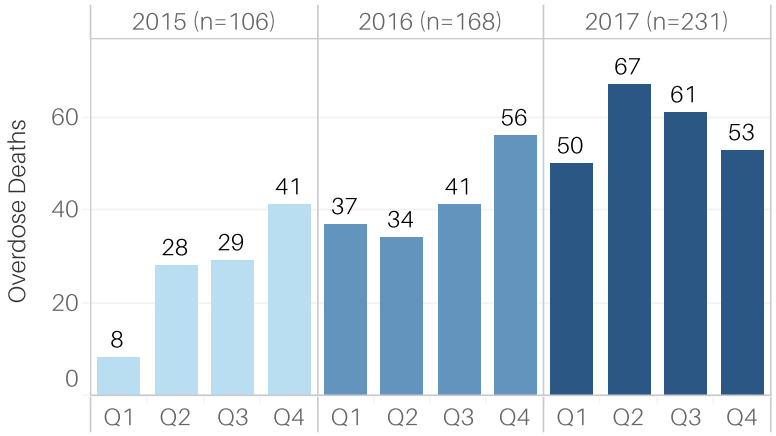
Drug Category	White	Black	Hispanic	Other
Fentanyl	32%			
Heroin	20%			
Cocaine	2%			
Benzodiazepines	34%			
Prescription Opioids	32%			
Ethanol	11%			
FRSs & NPSOs	5%			
Other Illicit Drugs	27%			

Source: Pennsylvania Coroner/Medical Examiner Data

APPENDIX D

(U) Figure D15: Analysis of 2015 - 2017 Overdose Death Data within County: Bucks

1. Quarterly Trend



Total Number of Overdose Deaths: **505**

Average Rate of Overdose Deaths (per 100,000): **27**

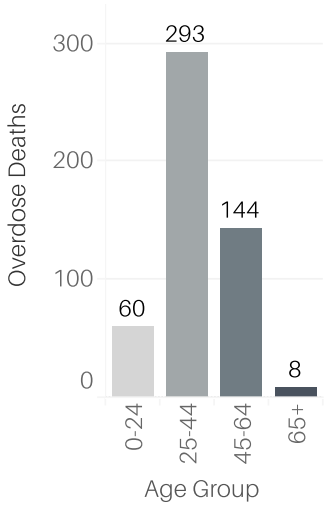
County Rank by Average Rate: **30**

Percent Change from 2015-2016: **58% Increase**

Percent Change from 2016-2017: **38% Increase**

Percent Change from 2015-2017: **118% Increase**

2. Age Distribution



The information in this section summarizes drug-related overdose death data (accidental or undetermined) from 2015-2017.

<u>The first page consists of the quarterly trend and demographic information:</u>

1: Total Number of Overdose Deaths per Quarter per Year*

2-4: Total Number of Overdose Deaths per Age/Gender/Race

<u>The second page consists of the yearly trend for the most commonly identified drug categories and the drug category breakdown for each demographic group:</u>

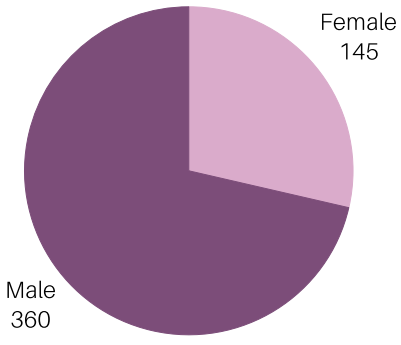
5: Percent of Overdose Deaths per Drug Category per Year

6-8: Percent of Overdose Deaths per Drug Category per Age/Gender/Race, per Year if Applicable

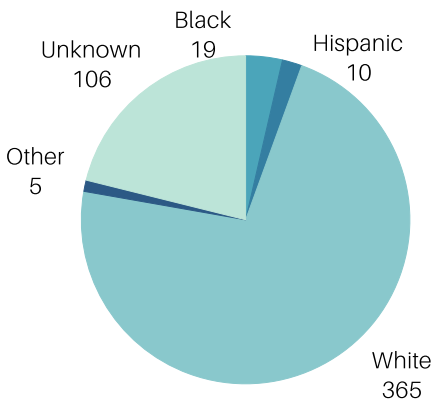
*Percent = (Number of deaths per drug category per demographic group, per year if applicable) / (Number of deaths per demographic group, per year if applicable) * 100%*

*Breakdown by quarter is suppressed when there are less than three data points for each quarter.

3. Gender Distribution



4. Race Distribution

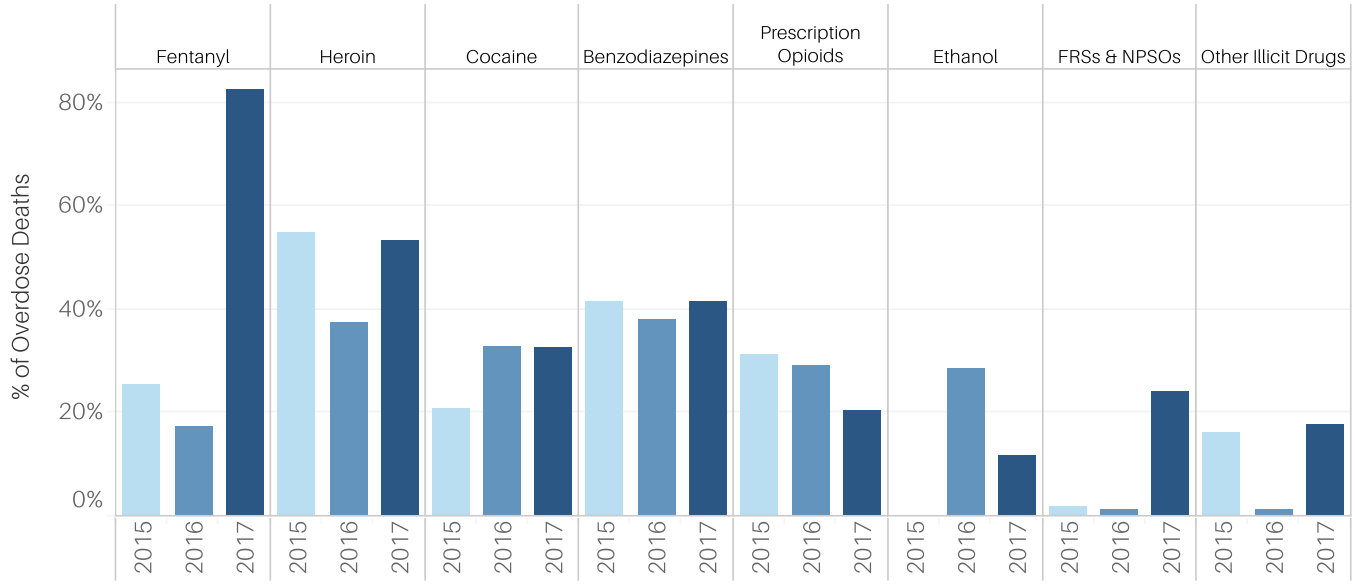


Source: Pennsylvania Coroner/Medical Examiner Data

APPENDIX D

(U) Figure D15: Analysis of 2015 - 2017 Overdose Death Data within County: Bucks

5. Percent of Overdose Deaths per Drug Category per Year



6. Percent of Overdose Deaths per Drug Category per Age Group per Year

Drug Category	2015				2016				2017			
	0-24	25-44	45-64	65+	0-24	25-44	45-64	65+	0-24	25-44	45-64	65+
Fentanyl	36%	31%	10%	25%	26%	16%	16%		93%	87%	67%	100%
Heroin	73%	74%	13%	25%	47%	33%	44%		60%	52%	52%	100%
Cocaine	9%	28%	13%		21%	37%	28%	50%	23%	37%	27%	50%
Benzodiazepines	36%	33%	63%	25%	42%	38%	36%	50%	37%	39%	50%	
Prescription Opioids	9%	21%	50%	100%	37%	30%	24%	50%	13%	15%	34%	50%
Ethanol					37%	30%	24%		7%	7%	23%	
FRSs & NPSOs		3%			5%		2%		17%	28%	20%	
Other Illicit Drugs	9%	16%	20%		5%	1%			20%	16%	20%	

7. Per Drug Category per Gender per Year

Drug Category	2015		2016		2017	
	Female	Male	Female	Male	Female	Male
Fentanyl	19%	29%	16%	18%	77%	84%
Heroin	54%	55%	37%	38%	53%	53%
Cocaine	19%	22%	35%	32%	30%	33%
Benzodiazepines	46%	39%	41%	37%	44%	41%
Prescription Opioids	43%	25%	29%	29%	28%	18%
Ethanol			39%	24%	5%	14%
FRSs & NPSOs	3%	1%		2%	21%	25%
Other Illicit Drugs	19%	14%		2%	21%	17%

8. Per Drug Category per Race, 2015-2017

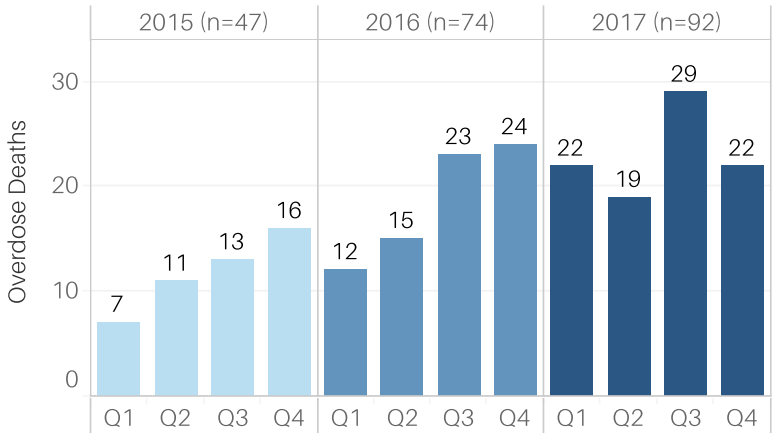
Drug Category	White	Black	Hispanic	Other
Fentanyl	56%	37%	40%	60%
Heroin	47%	37%	60%	60%
Cocaine	32%	53%	30%	40%
Benzodiazepines	41%	37%	20%	
Prescription Opioids	24%	32%	10%	20%
Ethanol	20%	11%	10%	
FRSs & NPSOs	15%	11%	20%	
Other Illicit Drugs	10%	11%	20%	20%

Source: Pennsylvania Coroner/Medical Examiner Data

APPENDIX D

(U) Figure D16: Analysis of 2015 - 2017 Overdose Death Data within County: Butler

1. Quarterly Trend



Total Number of Overdose Deaths: **213**

Average Rate of Overdose Deaths (per 100,000): **38**

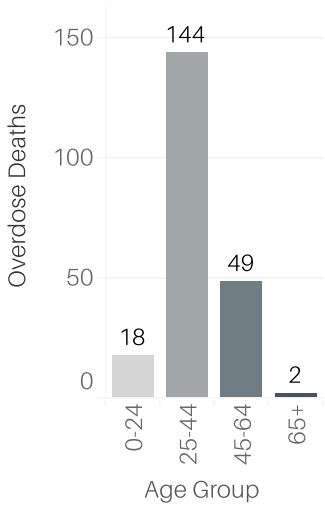
County Rank by Average Rate: **16**

Percent Change from 2015-2016: **57% Increase**

Percent Change from 2016-2017: **24% Increase**

Percent Change from 2015-2017: **96% Increase**

2. Age Distribution



The information in this section summarizes drug-related overdose death data (accidental or undetermined) from 2015-2017.

<u>The first page consists of the quarterly trend and demographic information:</u>

1: Total Number of Overdose Deaths per Quarter per Year*

2-4: Total Number of Overdose Deaths per Age/Gender/Race

<u>The second page consists of the yearly trend for the most commonly identified drug categories and the drug category breakdown for each demographic group:</u>

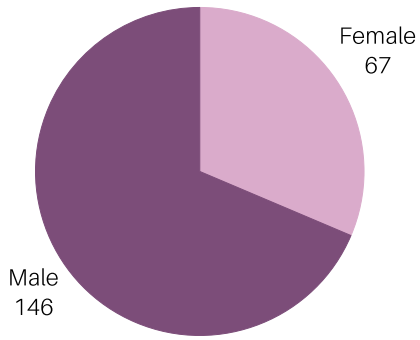
5: Percent of Overdose Deaths per Drug Category per Year

6-8: Percent of Overdose Deaths per Drug Category per Age/Gender/Race, per Year if Applicable

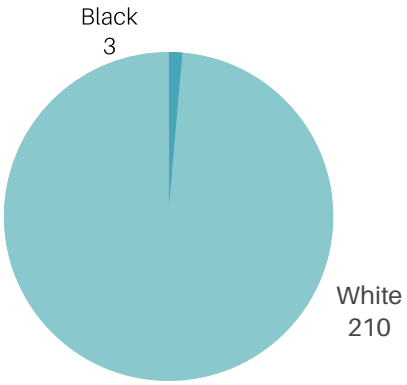
*Percent = (Number of deaths per drug category per demographic group, per year if applicable) / (Number of deaths per demographic group, per year if applicable) * 100%*

*Breakdown by quarter is suppressed when there are less than three data points for each quarter.

3. Gender Distribution



4. Race Distribution

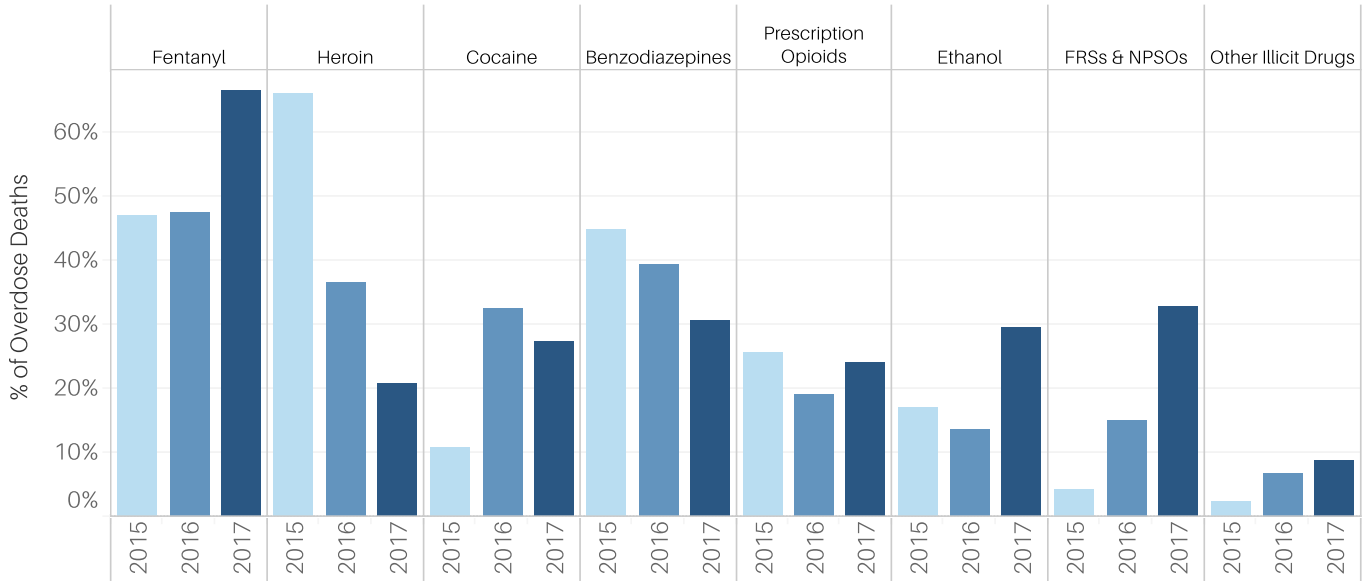


Source: Pennsylvania Coroner/Medical Examiner Data

APPENDIX D

(U) Figure D16: Analysis of 2015 - 2017 Overdose Death Data within County: Butler

5. Percent of Overdose Deaths per Drug Category per Year



6. Percent of Overdose Deaths per Drug Category per Age Group per Year

Drug Category	2015				2016				2017			
	0-24	25-44	45-64	65+	0-24	25-44	45-64	65+	0-24	25-44	45-64	65+
Fentanyl		55%	40%		50%	47%	36%	100%	63%	77%	46%	
Heroin	75%	67%	60%		50%	38%	9%	100%	50%	21%	11%	
Cocaine		12%	10%		50%	29%	36%	50%	25%	30%	21%	
Benzodiazepines		42%	70%		17%	44%	36%		25%	29%	36%	
Prescription Opioids		21%	50%		17%	15%	45%		38%	13%	43%	
Ethanol	25%	6%	50%		17%	13%	18%		13%	29%	36%	
FRSs & NPSOs		3%	10%		17%	18%			50%	32%	29%	
Other Illicit Drugs		3%				9%			13%	11%	4%	

7. Per Drug Category per Gender per Year

Drug Category	2015		2016		2017	
	Female	Male	Female	Male	Female	Male
Fentanyl	40%	50%	42%	50%	62%	68%
Heroin	67%	66%	35%	38%	31%	17%
Cocaine	13%	9%	31%	33%	38%	23%
Benzodiazepines	53%	41%	54%	31%	35%	29%
Prescription Opioids	47%	16%	19%	19%	27%	23%
Ethanol	27%	13%	12%	15%	12%	36%
FRSs & NPSOs	7%	3%	15%	15%	46%	27%
Other Illicit Drugs	7%		12%	4%	4%	11%

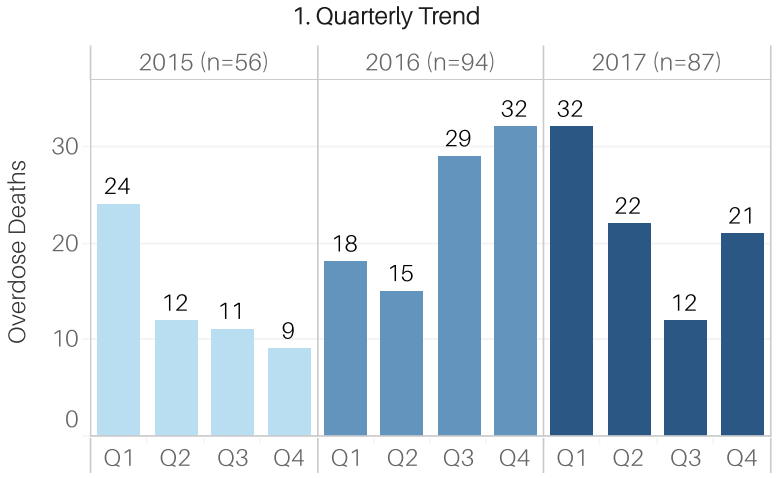
8. Per Drug Category per Race, 2015-2017

Drug Category	White	Black	Hispanic	Other
Fentanyl	55%	67%		
Heroin	37%			
Cocaine	25%	33%		
Benzodiazepines	37%	33%		
Prescription Opioids	21%	100%		
Ethanol	21%			
FRSs & NPSOs	20%	33%		
Other Illicit Drugs	7%			

Source: Pennsylvania Coroner/Medical Examiner Data

APPENDIX D

(U) Figure D17: Analysis of 2015 - 2017 Overdose Death Data within County: Cambria



Total Number of Overdose Deaths: **237**

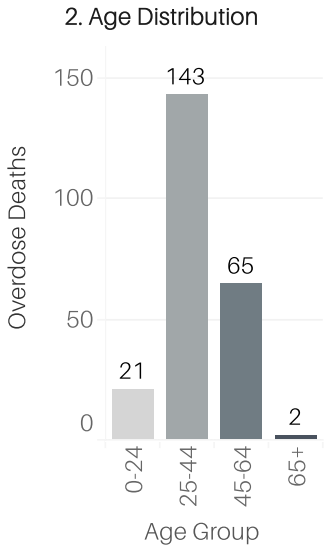
Average Rate of Overdose Deaths (per 100,000): **59**

County Rank by Average Rate: **2**

Percent Change from 2015-2016: **68% Increase**

Percent Change from 2016-2017: **7% Decrease**

Percent Change from 2015-2017: **55% Increase**



The information in this section summarizes drug-related overdose death data (accidental or undetermined) from 2015-2017.

<u>The first page consists of the quarterly trend and demographic information:</u>

1: Total Number of Overdose Deaths per Quarter per Year*

2-4: Total Number of Overdose Deaths per Age/Gender/Race

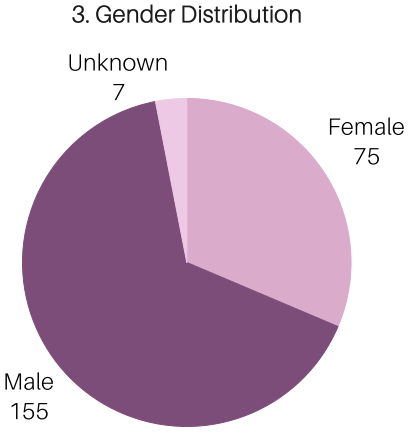
<u>The second page consists of the yearly trend for the most commonly identified drug categories and the drug category breakdown for each demographic group:</u>

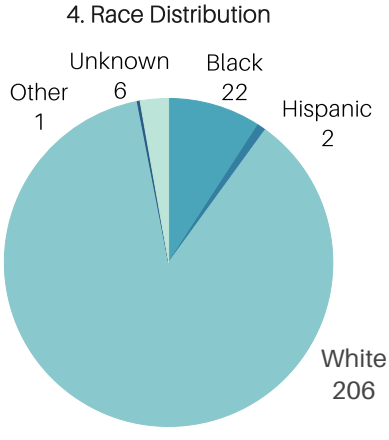
5: Percent of Overdose Deaths per Drug Category per Year

6-8: Percent of Overdose Deaths per Drug Category per Age/Gender/Race, per Year if Applicable

*Percent = (Number of deaths per drug category per demographic group, per year if applicable) / (Number of deaths per demographic group, per year if applicable) * 100%*

*Breakdown by quarter is suppressed when there are less than three data points for each quarter.



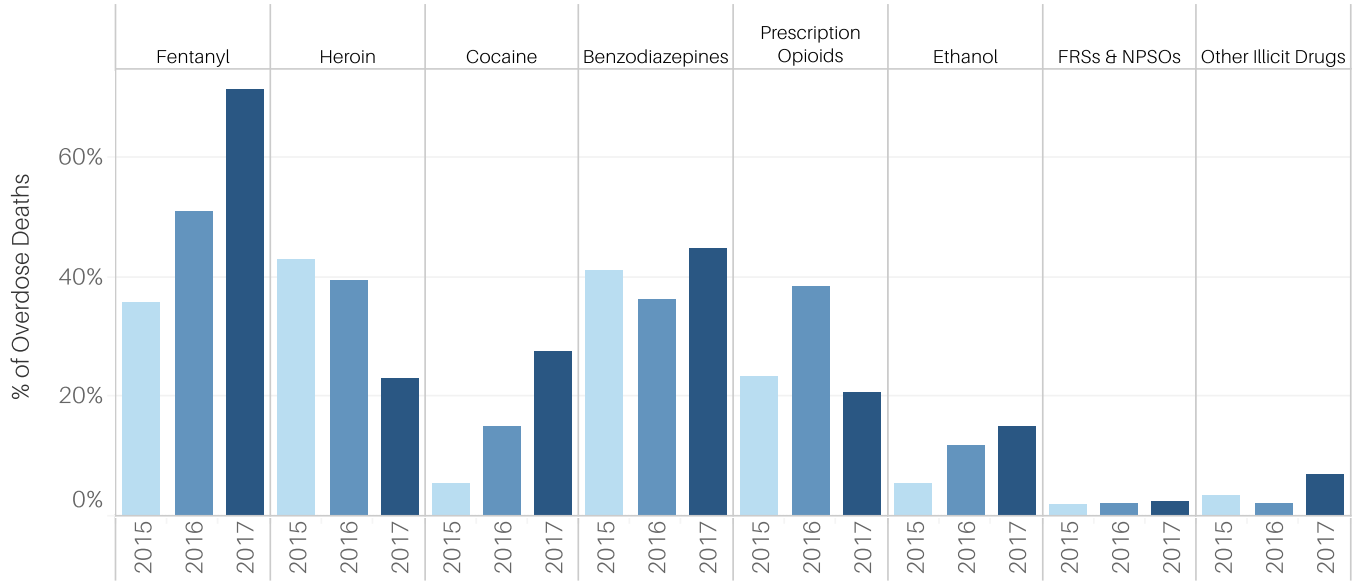


Source: Pennsylvania Coroner/Medical Examiner Data

APPENDIX D

(U) Figure D17: Analysis of 2015 - 2017 Overdose Death Data within County: Cambria

5. Percent of Overdose Deaths per Drug Category per Year



6. Percent of Overdose Deaths per Drug Category per Age Group per Year

Drug Category	2015				2016				2017			
	0-24	25-44	45-64	65+	0-24	25-44	45-64	65+	0-24	25-44	45-64	65+
Fentanyl	75%	44%	26%		73%	49%	46%		100%	79%	39%	50%
Heroin	75%	67%	16%		55%	38%	36%		33%	28%	6%	
Cocaine		11%				15%	21%			38%	6%	
Benzodiazepines	25%	41%	58%		9%	36%	46%		50%	41%	56%	50%
Prescription Opioids		22%	37%		18%	38%	46%			15%	50%	
Ethanol		4%	11%		18%	9%	14%			16%	11%	50%
FRSs & NPSOs		4%				2%	4%			2%	6%	
Other Illicit Drugs		7%				4%			17%	8%		

7. Per Drug Category per Gender per Year

Drug Category	2015		2016		2017	
	Female	Male	Female	Male	Female	Male
Fentanyl	32%	48%	50%	51%	73%	70%
Heroin	48%	48%	29%	43%	27%	22%
Cocaine	8%	4%	13%	16%	19%	30%
Benzodiazepines	60%	32%	42%	34%	62%	37%
Prescription Opioids	36%	16%	46%	36%	19%	22%
Ethanol	8%	4%	13%	11%	8%	18%
FRSs & NPSOs		4%		3%		2%
Other Illicit Drugs	4%	4%		3%	8%	7%

8. Per Drug Category per Race, 2015-2017

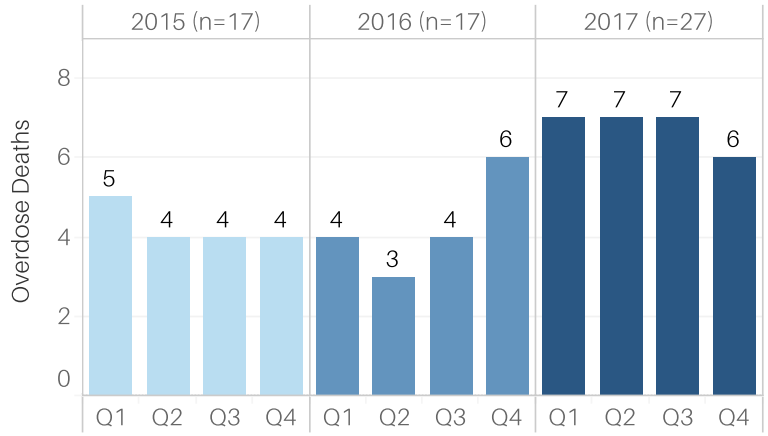
Drug Category	White	Black	Hispanic	Other
Fentanyl	54%	82%	50%	
Heroin	35%	32%	50%	
Cocaine	15%	45%		
Benzodiazepines	42%	45%		
Prescription Opioids	32%	5%	50%	
Ethanol	10%	32%		
FRSs & NPSOs	2%	5%		
Other Illicit Drugs	5%			

Source: Pennsylvania Coroner/Medical Examiner Data

APPENDIX D

(U) Figure D18: Analysis of 2015 - 2017 Overdose Death Data within County: Carbon

1. Quarterly Trend



Total Number of Overdose Deaths: **61**

Average Rate of Overdose Deaths (per 100,000): **32**

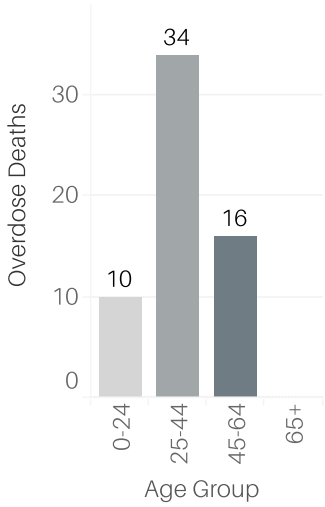
County Rank by Average Rate: **21**

Percent Change from 2015-2016: **No Change**

Percent Change from 2016-2017: **59% Increase**

Percent Change from 2015-2017: **59% Increase**

2. Age Distribution



The information in this section summarizes drug-related overdose death data (accidental or undetermined) from 2015-2017.

The first page consists of the quarterly trend and demographic information:

1: Total Number of Overdose Deaths per Quarter per Year*

2-4: Total Number of Overdose Deaths per Age/Gender/Race

The second page consists of the yearly trend for the most commonly identified drug categories and the drug category breakdown for each demographic group:

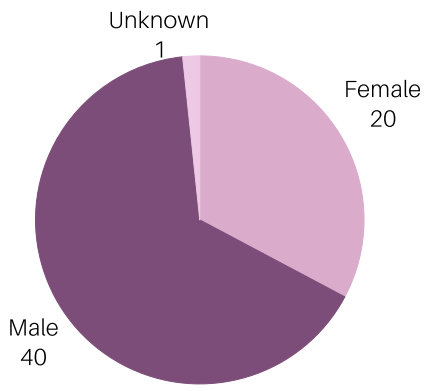
5: Percent of Overdose Deaths per Drug Category per Year

6-8: Percent of Overdose Deaths per Drug Category per Age/Gender/Race, per Year if Applicable

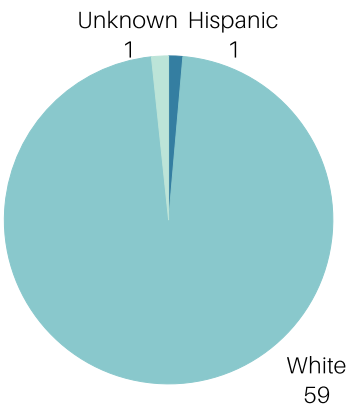
*Percent = (Number of deaths per drug category per demographic group, per year if applicable) / (Number of deaths per demographic group, per year if applicable) * 100%*

*Breakdown by quarter is suppressed when there are less than three data points for each quarter.

3. Gender Distribution



4. Race Distribution

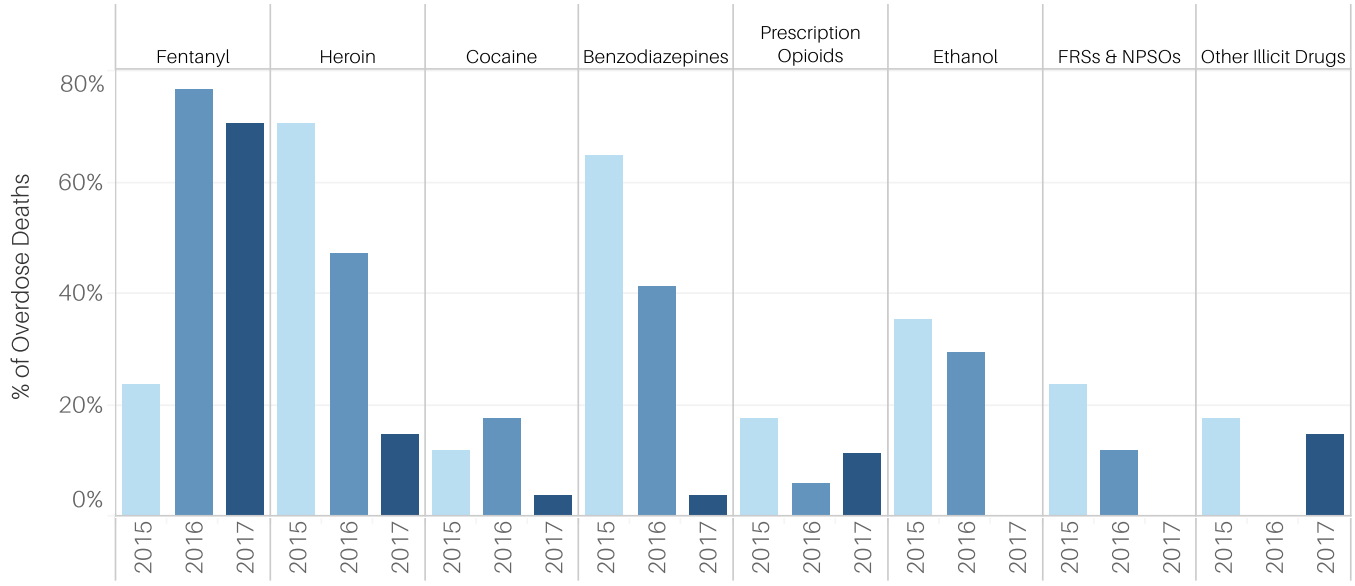


Source: Pennsylvania Coroner/Medical Examiner Data

APPENDIX D

(U) Figure D18: Analysis of 2015 - 2017 Overdose Death Data within County: Carbon

5. Percent of Overdose Deaths per Drug Category per Year



6. Percent of Overdose Deaths per Drug Category per Age Group per Year

Drug Category	2015 0-24	2015 25-44	2015 45-64	2015 65+	2016 0-24	2016 25-44	2016 45-64	2016 65+	2017 0-24	2017 25-44	2017 45-64	2017 65+
Fentanyl	50%	22%			100%	75%	75%		80%	85%	44%	
Heroin	75%	78%	67%			50%	50%		20%	8%	22%	
Cocaine	25%	11%				17%	25%			8%		
Benzodiazepines	25%	78%	100%		100%	42%	25%			8%		
Prescription Opioids		22%	33%			8%				8%	22%	
Ethanol	50%	22%	67%		100%	17%	50%					
FRSs & NPSOs	25%	33%					50%					
Other Illicit Drugs	25%	22%							40%	8%	11%	

7. Per Drug Category per Gender per Year

Drug Category	2015 Female	2015 Male	2016 Female	2016 Male	2017 Female	2017 Male
Fentanyl	20%	27%	60%	83%	60%	76%
Heroin	60%	82%	60%	42%	30%	6%
Cocaine		18%	20%	17%		6%
Benzodiazepines	100%	55%	60%	33%		6%
Prescription Opioids	40%	9%		8%	20%	6%
Ethanol	60%	27%	40%	25%		
FRSs & NPSOs	40%	18%	20%	8%		
Other Illicit Drugs	20%	18%			10%	18%

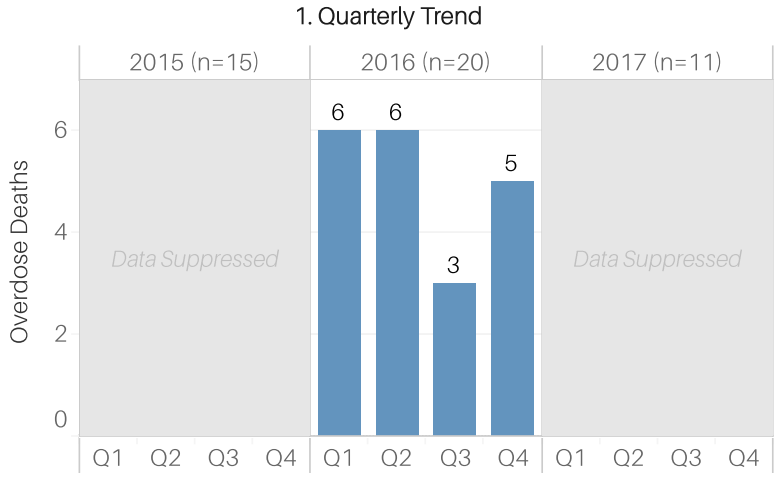
8. Per Drug Category per Race, 2015-2017

Drug Category	White	Black	Hispanic	Other
Fentanyl	59%		100%	
Heroin	41%			
Cocaine	10%			
Benzodiazepines	31%		100%	
Prescription Opioids	12%			
Ethanol	17%		100%	
FRSs & NPSOs	10%			
Other Illicit Drugs	12%			

Source: Pennsylvania Coroner/Medical Examiner Data

APPENDIX D

(U) Figure D19: Analysis of 2015 - 2017 Overdose Death Data within County: Centre



Total Number of Overdose Deaths: **46**

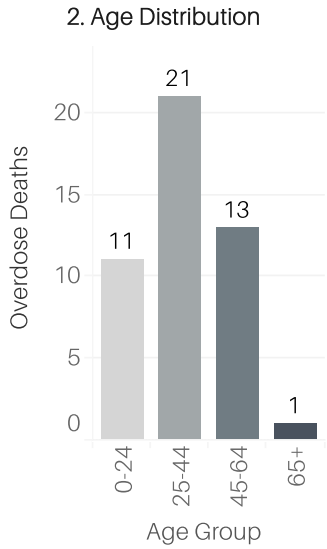
Average Rate of Overdose Deaths (per 100,000): **9**

County Rank by Average Rate: **64**

Percent Change from 2015-2016: **33% Increase**

Percent Change from 2016-2017: **45% Decrease**

Percent Change from 2015-2017: **27% Decrease**



The information in this section summarizes drug-related overdose death data (accidental or undetermined) from 2015-2017.

The first page consists of the quarterly trend and demographic information:

1: Total Number of Overdose Deaths per Quarter per Year*

2-4: Total Number of Overdose Deaths per Age/Gender/Race

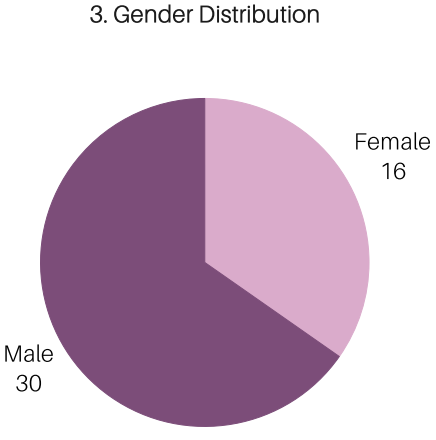
The second page consists of the yearly trend for the most commonly identified drug categories and the drug category breakdown for each demographic group:

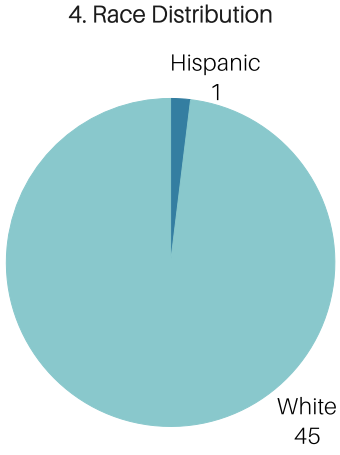
5: Percent of Overdose Deaths per Drug Category per Year

6-8: Percent of Overdose Deaths per Drug Category per Age/Gender/Race, per Year if Applicable

*Percent = (Number of deaths per drug category per demographic group, per year if applicable) / (Number of deaths per demographic group, per year if applicable) * 100%*

*Breakdown by quarter is suppressed when there are less than three data points for each quarter.



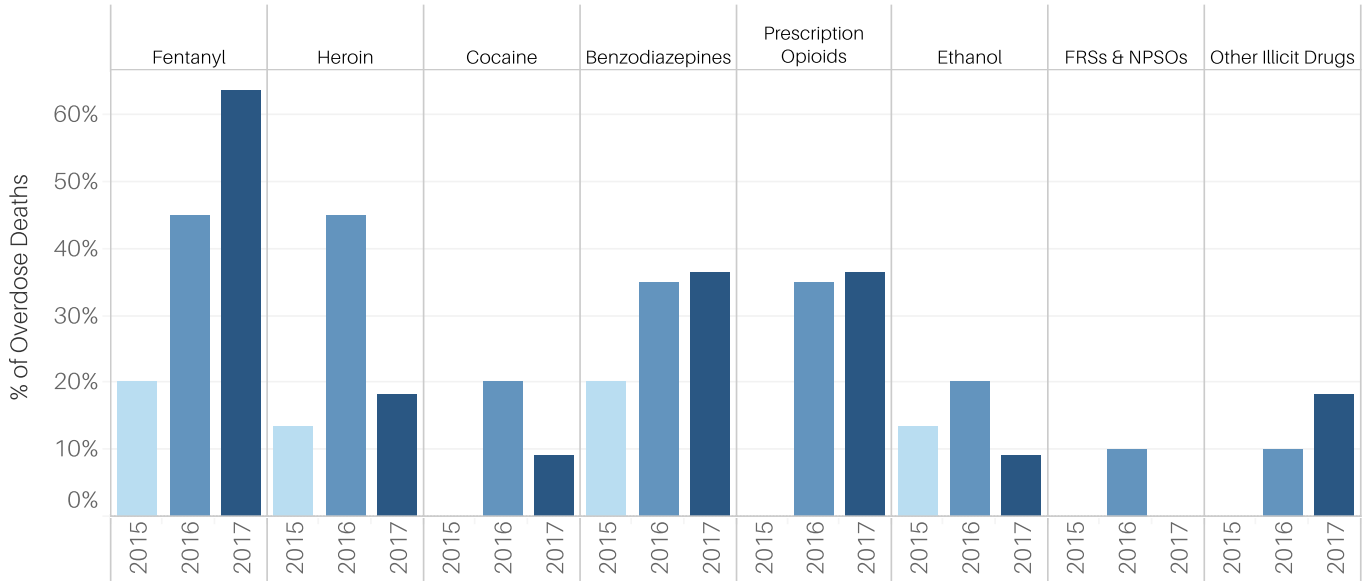


Source: Pennsylvania Coroner/Medical Examiner Data

APPENDIX D

(U) Figure D19: Analysis of 2015 - 2017 Overdose Death Data within County: Centre

5. Percent of Overdose Deaths per Drug Category per Year



6. Percent of Overdose Deaths per Drug Category per Age Group per Year

Drug Category	2015				2016				2017			
	0-24	25-44	45-64	65+	0-24	25-44	45-64	65+	0-24	25-44	45-64	65+
Fentanyl	20%	17%	25%		20%	44%	60%	100%	100%	67%	50%	
Heroin	20%	17%			40%	56%	40%			33%		
Cocaine					20%	33%				17%		
Benzodiazepines		33%	25%		60%	22%	40%		100%	17%	50%	
Prescription Opioids					20%	33%	40%	100%			100%	
Ethanol		17%	25%		60%	11%				17%		
FRSs & NPSOs					20%		20%					
Other Illicit Drugs					20%	11%				33%		

7. Per Drug Category per Gender per Year

Drug Category	2015		2016		2017	
	Female	Male	Female	Male	Female	Male
Fentanyl	17%	22%	50%	42%	50%	67%
Heroin		22%	38%	50%	50%	11%
Cocaine			13%	25%	50%	
Benzodiazepines	33%	11%	25%	42%	50%	33%
Prescription Opioids			25%	42%	50%	33%
Ethanol	33%		25%	17%		11%
FRSs & NPSOs			13%	8%		
Other Illicit Drugs			13%	8%		22%

8. Per Drug Category per Race, 2015-2017

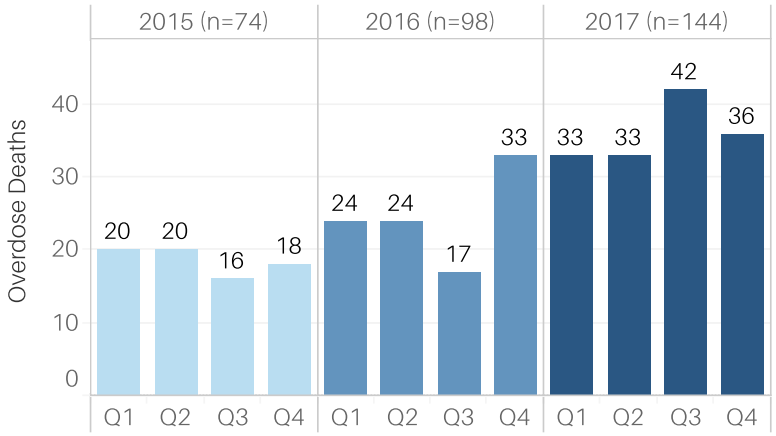
Drug Category	White	Black	Hispanic	Other
Fentanyl	40%		100%	
Heroin	29%			
Cocaine	11%			
Benzodiazepines	29%		100%	
Prescription Opioids	24%			
Ethanol	16%			
FRSs & NPSOs	4%			
Other Illicit Drugs	9%			

Source: Pennsylvania Coroner/Medical Examiner Data

APPENDIX D

(U) Figure D20: Analysis of 2015 - 2017 Overdose Death Data within County: Chester

1. Quarterly Trend



Total Number of Overdose Deaths: **316**

Average Rate of Overdose Deaths (per 100,000): **20**

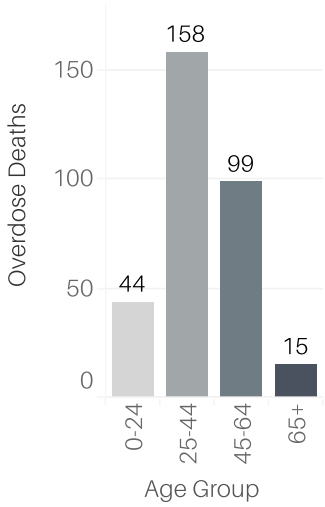
County Rank by Average Rate: **43**

Percent Change from 2015-2016: **32% Increase**

Percent Change from 2016-2017: **47% Increase**

Percent Change from 2015-2017: **95% Increase**

2. Age Distribution



The information in this section summarizes drug-related overdose death data (accidental or undetermined) from 2015-2017.

<u>The first page consists of the quarterly trend and demographic information:</u>

1: Total Number of Overdose Deaths per Quarter per Year*

2-4: Total Number of Overdose Deaths per Age/Gender/Race

<u>The second page consists of the yearly trend for the most commonly identified drug categories and the drug category breakdown for each demographic group:</u>

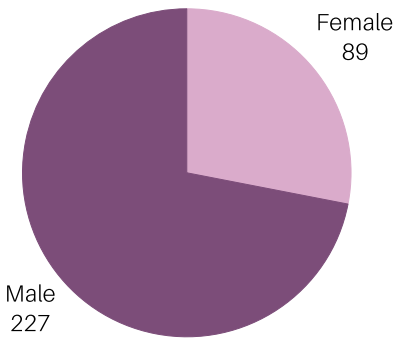
5: Percent of Overdose Deaths per Drug Category per Year

6-8: Percent of Overdose Deaths per Drug Category per Age/Gender/Race, per Year if Applicable

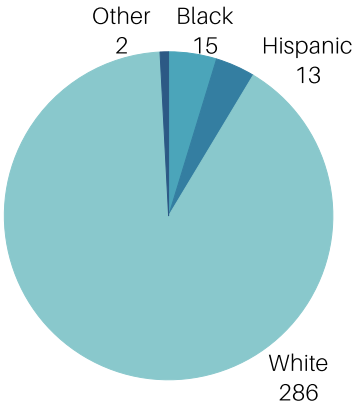
*Percent = (Number of deaths per drug category per demographic group, per year if applicable) / (Number of deaths per demographic group, per year if applicable) * 100%*

*Breakdown by quarter is suppressed when there are less than three data points for each quarter.

3. Gender Distribution



4. Race Distribution

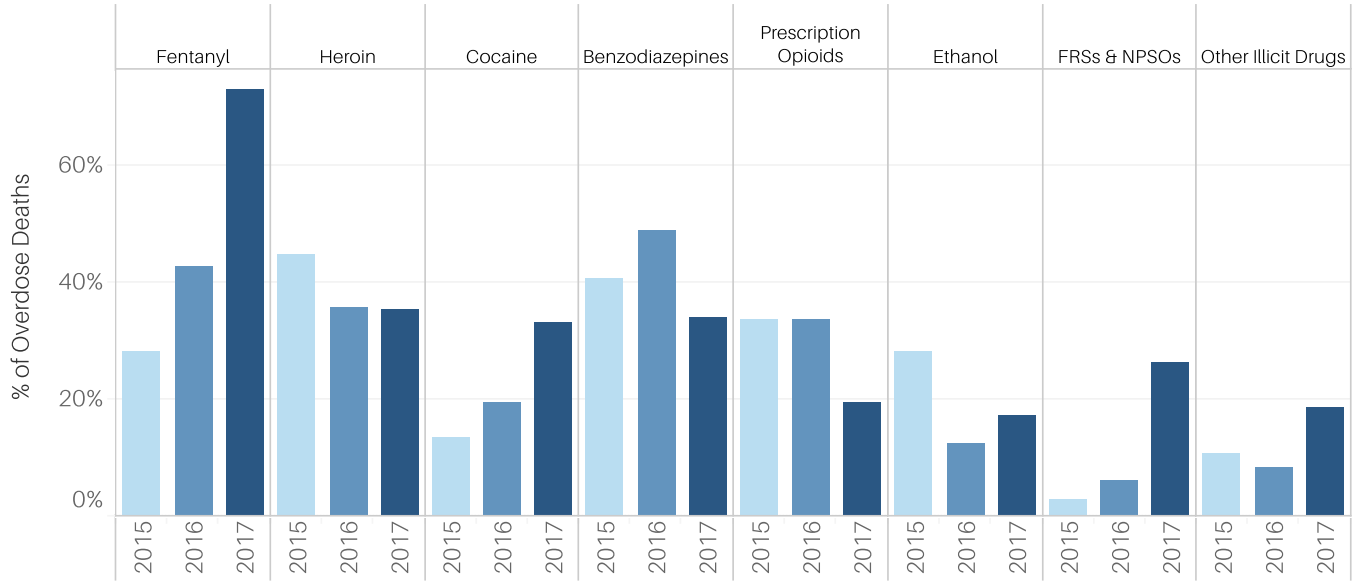


Source: Pennsylvania Coroner/Medical Examiner Data

APPENDIX D

(U) Figure D20: Analysis of 2015 - 2017 Overdose Death Data within County: Chester

5. Percent of Overdose Deaths per Drug Category per Year



6. Percent of Overdose Deaths per Drug Category per Age Group per Year

Drug Category	2015				2016				2017			
	0-24	25-44	45-64	65+	0-24	25-44	45-64	65+	0-24	25-44	45-64	65+
Fentanyl	43%	29%	24%		36%	54%	32%	20%	79%	82%	53%	57%
Heroin	86%	50%	24%		55%	33%	38%		53%	37%	25%	29%
Cocaine		21%	14%		45%	17%	18%		42%	33%	33%	14%
Benzodiazepines	21%	36%	55%	33%	64%	42%	50%	80%	26%	32%	42%	43%
Prescription Opioids		36%	48%	33%	18%	27%	44%	60%	11%	11%	44%	14%
Ethanol		32%	38%	33%	9%	13%	15%		5%	18%	22%	14%
FRSs & NPSOs	7%		3%		9%	10%			58%	26%	17%	
Other Illicit Drugs	7%	7%	17%		18%	8%	6%		11%	24%	14%	

7. Per Drug Category per Gender per Year

Drug Category	2015		2016		2017	
	Female	Male	Female	Male	Female	Male
Fentanyl	29%	28%	32%	47%	60%	78%
Heroin	24%	53%	18%	43%	25%	39%
Cocaine	5%	17%	18%	20%	20%	38%
Benzodiazepines	67%	30%	68%	41%	53%	27%
Prescription Opioids	62%	23%	36%	33%	33%	14%
Ethanol	24%	30%	11%	13%	15%	18%
FRSs & NPSOs		4%	4%	7%	25%	27%
Other Illicit Drugs	14%	9%	4%	10%	10%	22%

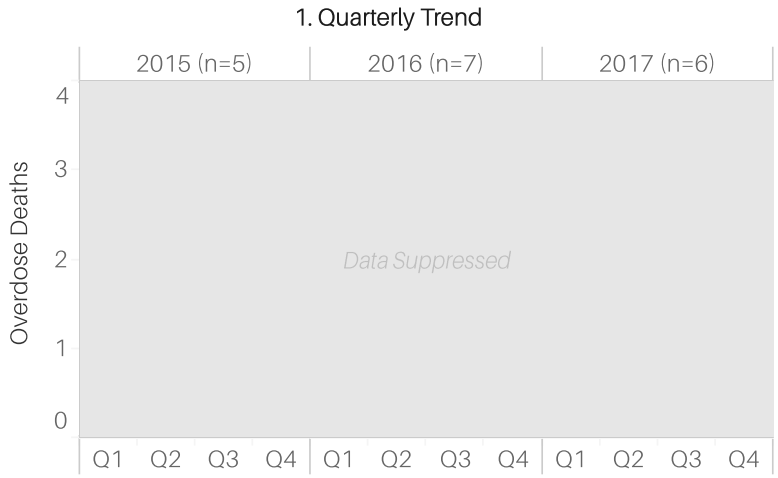
8. Per Drug Category per Race, 2015-2017

Drug Category	White	Black	Hispanic	Other
Fentanyl	53%	40%	62%	100%
Heroin	36%	60%	54%	
Cocaine	22%	47%	54%	
Benzodiazepines	42%	33%	15%	50%
Prescription Opioids	27%	27%	15%	100%
Ethanol	17%	20%	38%	
FRSs & NPSOs	14%	20%	15%	
Other Illicit Drugs	15%		8%	

Source: Pennsylvania Coroner/Medical Examiner Data

APPENDIX D

(U) Figure D21: Analysis of 2015 - 2017 Overdose Death Data within County: Clarion



Total Number of Overdose Deaths: **18**

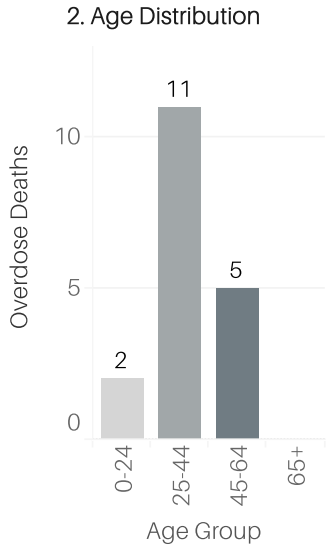
Average Rate of Overdose Deaths (per 100,000): **16**

County Rank by Average Rate: **53**

Percent Change from 2015-2016: **40% Increase**

Percent Change from 2016-2017: **14% Decrease**

Percent Change from 2015-2017: **20% Increase**



The information in this section summarizes drug-related overdose death data (accidental or undetermined) from 2015-2017.

<u>The first page consists of the quarterly trend and demographic information:</u>

1: Total Number of Overdose Deaths per Quarter per Year*

2-4: Total Number of Overdose Deaths per Age/Gender/Race

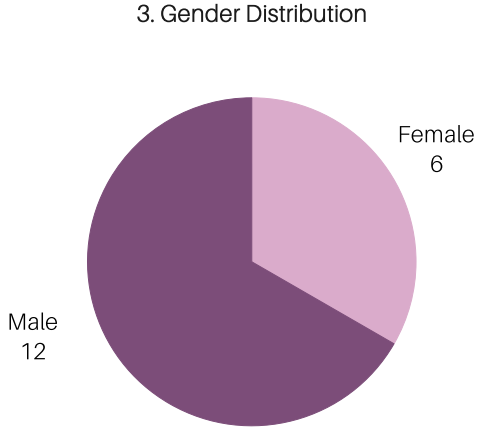
<u>The second page consists of the yearly trend for the most commonly identified drug categories and the drug category breakdown for each demographic group:</u>

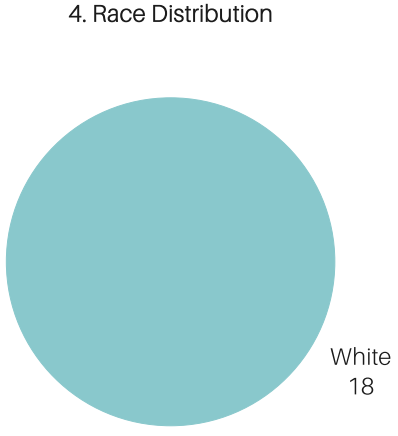
5: Percent of Overdose Deaths per Drug Category per Year

6-8: Percent of Overdose Deaths per Drug Category per Age/Gender/Race, per Year if Applicable

*Percent = (Number of deaths per drug category per demographic group, per year if applicable) / (Number of deaths per demographic group, per year if applicable) * 100%*

*Breakdown by quarter is suppressed when there are less than three data points for each quarter.



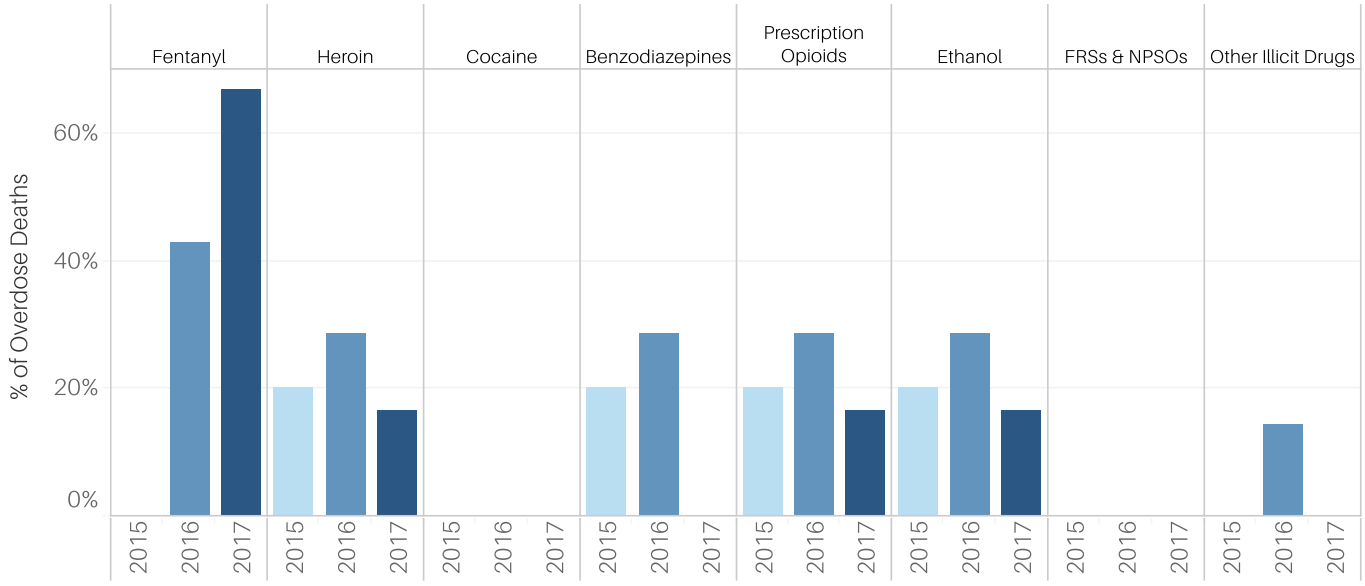


Source: Pennsylvania Coroner/Medical Examiner Data

APPENDIX D

(U) Figure D21: Analysis of 2015 - 2017 Overdose Death Data within County: Clarion

5. Percent of Overdose Deaths per Drug Category per Year



6. Percent of Overdose Deaths per Drug Category per Age Group per Year

Drug Category	2015 0-24	2015 25-44	2015 45-64	2015 65+	2016 0-24	2016 25-44	2016 45-64	2016 65+	2017 0-24	2017 25-44	2017 45-64	2017 65+
Fentanyl						40%	50%		100%	33%	100%	
Heroin		33%				20%	50%			33%		
Cocaine												
Benzodiazepines			50%			20%	50%					
Prescription Opioids		33%				20%	50%			33%		
Ethanol		33%				40%			50%			
FRSs & NPSOs												
Other Illicit Drugs						20%						

7. Per Drug Category per Gender per Year

Drug Category	2015 Female	2015 Male	2016 Female	2016 Male	2017 Female	2017 Male
Fentanyl				50%	67%	67%
Heroin		33%		33%		33%
Cocaine						
Benzodiazepines	50%		100%	17%		
Prescription Opioids		33%	100%	17%		33%
Ethanol		33%		33%	33%	
FRSs & NPSOs						
Other Illicit Drugs			100%			

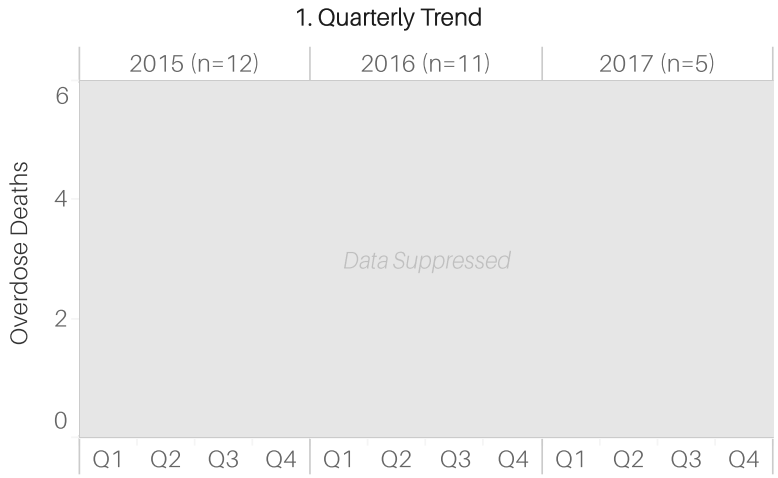
8. Per Drug Category per Race, 2015-2017

Drug Category	White	Black	Hispanic	Other
Fentanyl	39%			
Heroin	22%			
Cocaine				
Benzodiazepines	17%			
Prescription Opioids	22%			
Ethanol	22%			
FRSs & NPSOs				
Other Illicit Drugs	6%			

Source: Pennsylvania Coroner/Medical Examiner Data

APPENDIX D

(U) Figure D22: Analysis of 2015 - 2017 Overdose Death Data within County: Clearfield



Total Number of Overdose Deaths: **28**

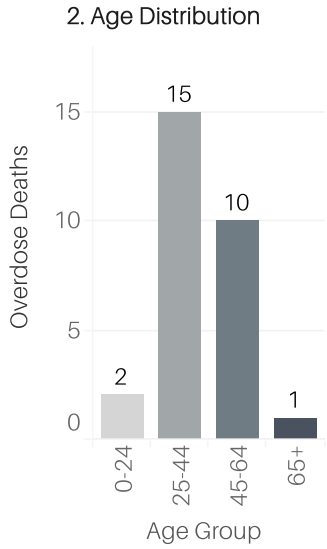
Average Rate of Overdose Deaths (per 100,000): **12**

County Rank by Average Rate: **61**

Percent Change from 2015-2016: **8% Decrease**

Percent Change from 2016-2017: **55% Decrease**

Percent Change from 2015-2017: **58% Decrease**



The information in this section summarizes drug-related overdose death data (accidental or undetermined) from 2015-2017.

The first page consists of the quarterly trend and demographic information:

1: Total Number of Overdose Deaths per Quarter per Year*

2-4: Total Number of Overdose Deaths per Age/Gender/Race

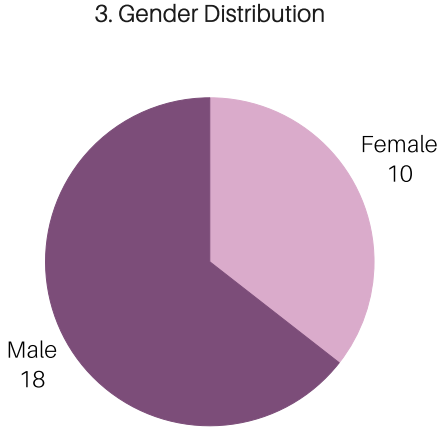
The second page consists of the yearly trend for the most commonly identified drug categories and the drug category breakdown for each demographic group:

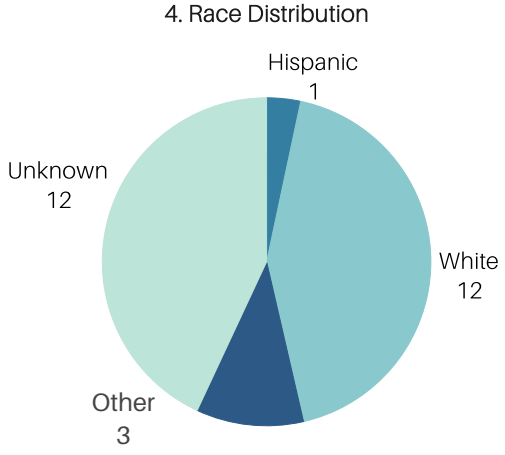
5: Percent of Overdose Deaths per Drug Category per Year

6-8: Percent of Overdose Deaths per Drug Category per Age/Gender/Race, per Year if Applicable

*Percent = (Number of deaths per drug category per demographic group, per year if applicable) / (Number of deaths per demographic group, per year if applicable) * 100%*

*Breakdown by quarter is suppressed when there are less than three data points for each quarter.



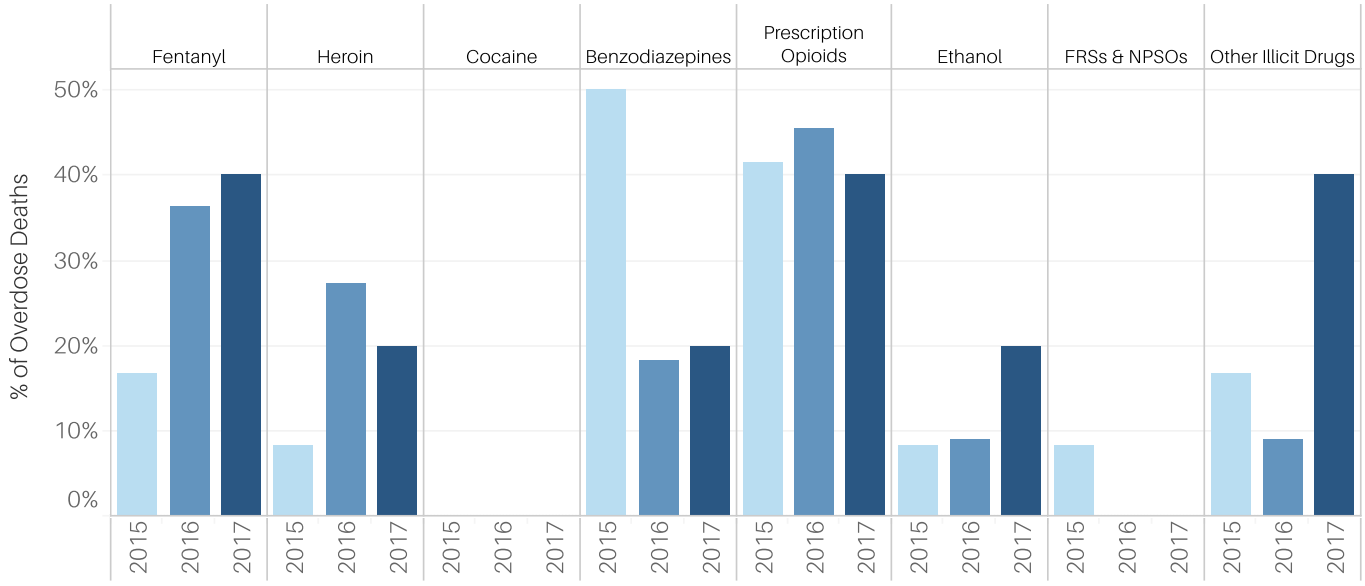


Source: Pennsylvania Coroner/Medical Examiner Data

APPENDIX D

(U) Figure D22: Analysis of 2015 - 2017 Overdose Death Data within County: Clearfield

5. Percent of Overdose Deaths per Drug Category per Year



6. Percent of Overdose Deaths per Drug Category per Age Group per Year

Drug Category	2015 0-24	2015 25-44	2015 45-64	2015 65+	2016 0-24	2016 25-44	2016 45-64	2016 65+	2017 0-24	2017 25-44	2017 45-64	2017 65+
Fentanyl	100%	17%				29%	50%			100%		
Heroin		17%				43%				50%		
Cocaine												
Benzodiazepines		50%	75%				50%				50%	
Prescription Opioids		33%	75%			14%	100%				100%	
Ethanol			25%			14%					50%	
FRSs & NPSOs		17%										
Other Illicit Drugs		17%		100%		14%				50%	50%	

7. Per Drug Category per Gender per Year

Drug Category	2015 Female	2015 Male	2016 Female	2016 Male	2017 Female	2017 Male
Fentanyl		29%	25%	43%	100%	25%
Heroin		14%		43%	100%	
Cocaine						
Benzodiazepines	80%	29%	25%	14%		25%
Prescription Opioids	60%	29%	50%	43%		50%
Ethanol		14%		14%		25%
FRSs & NPSOs		14%				
Other Illicit Drugs	20%	14%		14%	100%	25%

8. Per Drug Category per Race, 2015-2017

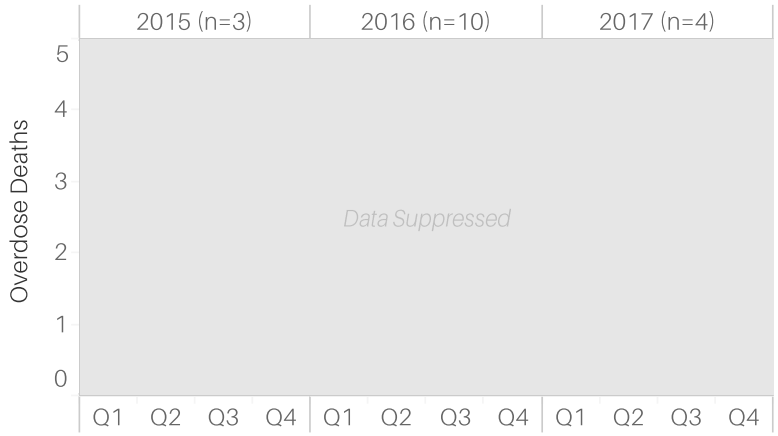
Drug Category	White	Black	Hispanic	Other
Fentanyl	33%			67%
Heroin	25%		100%	
Cocaine				
Benzodiazepines	17%			33%
Prescription Opioids	42%			67%
Ethanol	17%			
FRSs & NPSOs				
Other Illicit Drugs	25%			

Source: Pennsylvania Coroner/Medical Examiner Data

APPENDIX D

(U) Figure D23: Analysis of 2015 - 2017 Overdose Death Data within County: Clinton

1. Quarterly Trend



Total Number of Overdose Deaths: **17**

Average Rate of Overdose Deaths (per 100,000): **14**

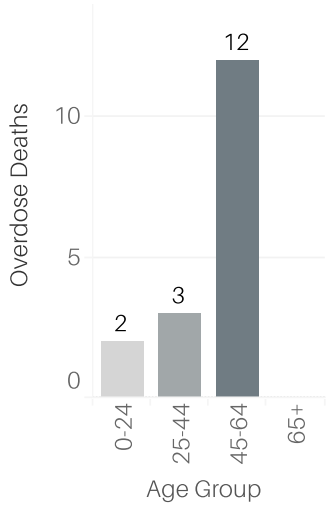
County Rank by Average Rate: **56**

Percent Change from 2015-2016: **233% Increase**

Percent Change from 2016-2017: **60% Decrease**

Percent Change from 2015-2017: **33% Increase**

2. Age Distribution



The information in this section summarizes drug-related overdose death data (accidental or undetermined) from 2015-2017.

<u>The first page consists of the quarterly trend and demographic information:</u>

1: Total Number of Overdose Deaths per Quarter per Year*

2-4: Total Number of Overdose Deaths per Age/Gender/Race

<u>The second page consists of the yearly trend for the most commonly identified drug categories and the drug category breakdown for each demographic group:</u>

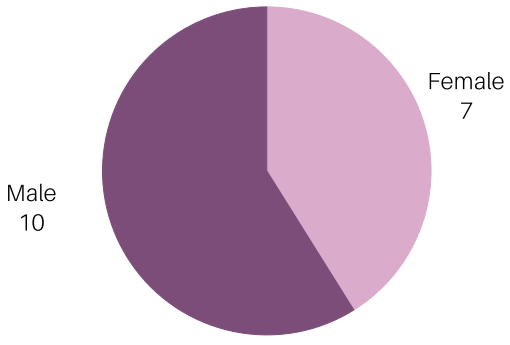
5: Percent of Overdose Deaths per Drug Category per Year

6-8: Percent of Overdose Deaths per Drug Category per Age/Gender/Race, per Year if Applicable

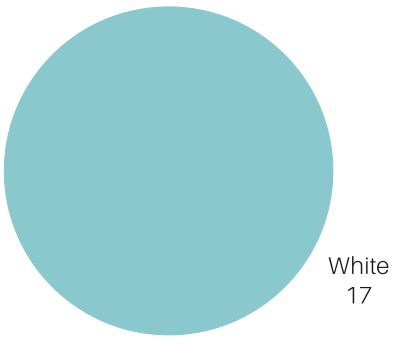
*Percent = (Number of deaths per drug category per demographic group, per year if applicable) / (Number of deaths per demographic group, per year if applicable) * 100%*

*Breakdown by quarter is suppressed when there are less than three data points for each quarter.

3. Gender Distribution



4. Race Distribution

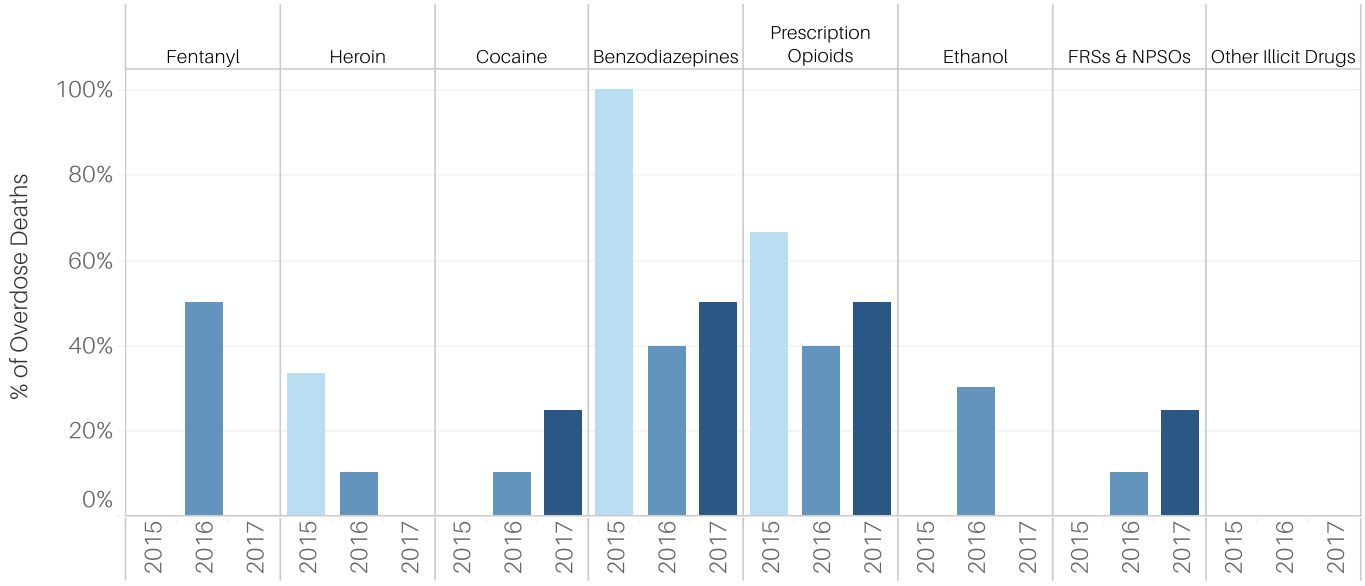


Source: Pennsylvania Coroner/Medical Examiner Data

APPENDIX D

(U) Figure D23: Analysis of 2015 - 2017 Overdose Death Data within County: Clinton

5. Percent of Overdose Deaths per Drug Category per Year



6. Percent of Overdose Deaths per Drug Category per Age Group per Year

Drug Category	2015 0-24	2015 25-44	2015 45-64	2015 65+	2016 0-24	2016 25-44	2016 45-64	2016 65+	2017 0-24	2017 25-44	2017 45-64	2017 65+
Fentanyl					100%	100%	29%					
Heroin			50%		50%							
Cocaine						100%				100%		
Benzodiazepines		100%	100%				57%				67%	
Prescription Opioids		100%	50%				57%				67%	
Ethanol					50%		29%					
FRSs & NPSOs							14%			100%		
Other Illicit Drugs												

7. Per Drug Category per Gender per Year

Drug Category	2015 Female	2015 Male	2016 Female	2016 Male	2017 Female	2017 Male
Fentanyl			40%	60%		
Heroin		33%		20%		
Cocaine				20%		50%
Benzodiazepines		100%	80%		50%	50%
Prescription Opioids		67%	60%	20%	50%	50%
Ethanol			40%	20%		
FRSs & NPSOs				20%		50%
Other Illicit Drugs						

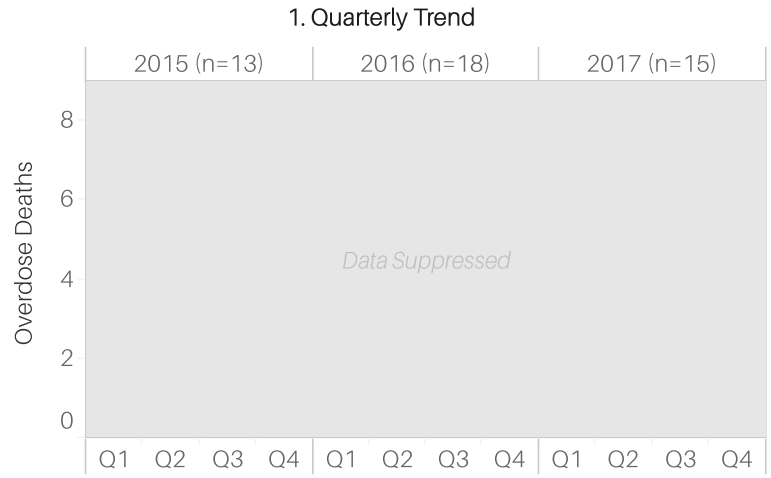
8. Per Drug Category per Race, 2015-2017

Drug Category	White	Black	Hispanic	Other
Fentanyl	29%			
Heroin	12%			
Cocaine	12%			
Benzodiazepines	53%			
Prescription Opioids	47%			
Ethanol	18%			
FRSs & NPSOs	12%			
Other Illicit Drugs				

Source: Pennsylvania Coroner/Medical Examiner Data

APPENDIX D

(U) Figure D24: Analysis of 2015 - 2017 Overdose Death Data within County: Columbia



Total Number of Overdose Deaths: **46**

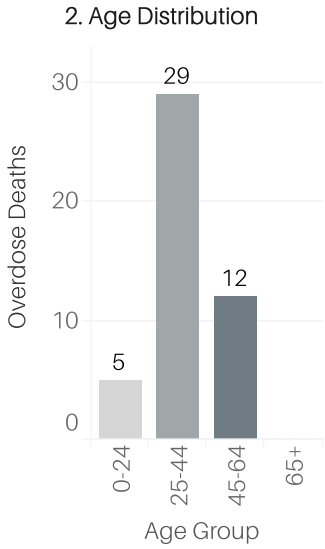
Average Rate of Overdose Deaths (per 100,000): **23**

County Rank by Average Rate: **37**

Percent Change from 2015-2016: **38% Increase**

Percent Change from 2016-2017: **17% Decrease**

Percent Change from 2015-2017: **15% Increase**



The information in this section summarizes drug-related overdose death data (accidental or undetermined) from 2015-2017.

<u>The first page consists of the quarterly trend and demographic information:</u>

1: Total Number of Overdose Deaths per Quarter per Year*

2-4: Total Number of Overdose Deaths per Age/Gender/Race

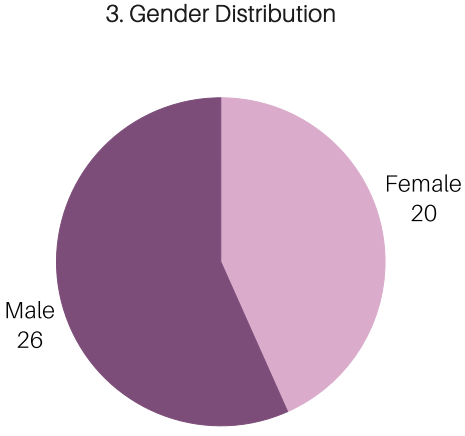
<u>The second page consists of the yearly trend for the most commonly identified drug categories and the drug category breakdown for each demographic group:</u>

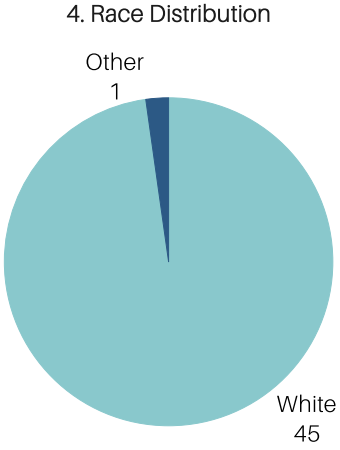
5: Percent of Overdose Deaths per Drug Category per Year

6-8: Percent of Overdose Deaths per Drug Category per Age/Gender/Race, per Year if Applicable

*Percent = (Number of deaths per drug category per demographic group, per year if applicable) / (Number of deaths per demographic group, per year if applicable) * 100%*

*Breakdown by quarter is suppressed when there are less than three data points for each quarter.



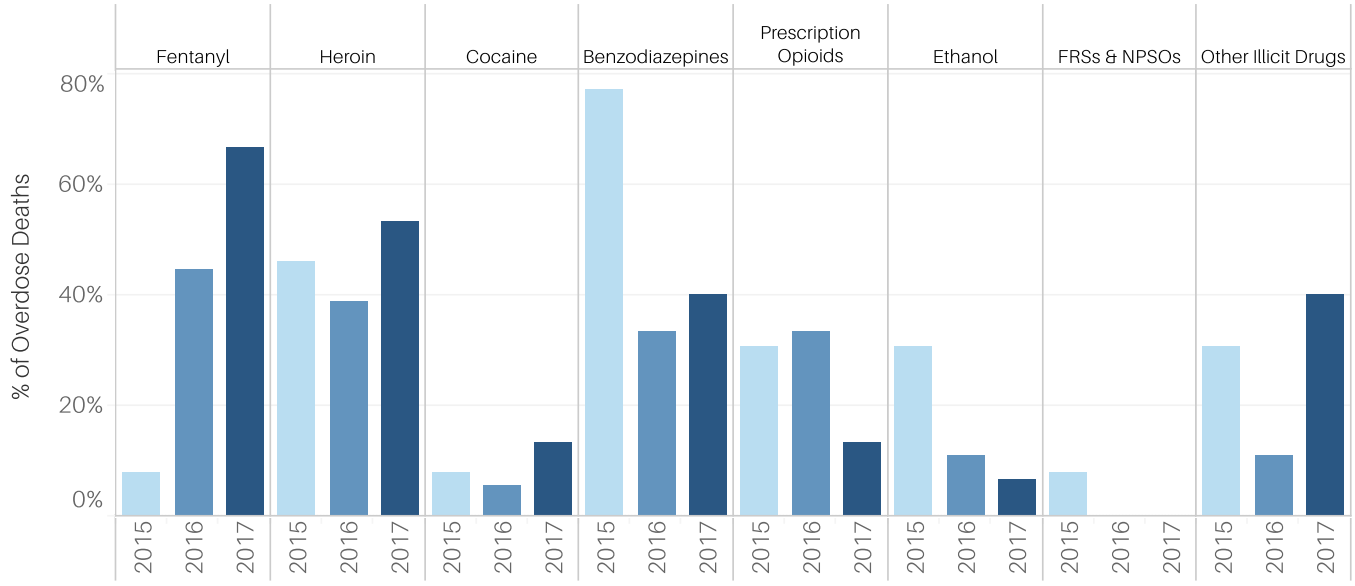


Source: Pennsylvania Coroner/Medical Examiner Data

APPENDIX D

(U) Figure D24: Analysis of 2015 - 2017 Overdose Death Data within County: Columbia

5. Percent of Overdose Deaths per Drug Category per Year



6. Percent of Overdose Deaths per Drug Category per Age Group per Year

Drug Category	2015 0-24	2015 25-44	2015 45-64	2015 65+	2016 0-24	2016 25-44	2016 45-64	2016 65+	2017 0-24	2017 25-44	2017 45-64	2017 65+
Fentanyl	50%				100%	30%	50%		100%	58%	100%	
Heroin	50%	57%	25%		50%	50%	17%		100%	50%	50%	
Cocaine		14%				10%				17%		
Benzodiazepines	100%	71%	75%		50%	30%	33%		100%	42%		
Prescription Opioids	50%	29%	25%			30%	50%			17%		
Ethanol	100%	14%	25%			10%	17%			8%		
FRSs & NPSOs		14%										
Other Illicit Drugs		57%				10%	17%			42%	50%	

7. Per Drug Category per Gender per Year

Drug Category	2015 Female	2015 Male	2016 Female	2016 Male	2017 Female	2017 Male
Fentanyl		11%	36%	57%	60%	70%
Heroin	25%	56%	36%	43%	20%	70%
Cocaine		11%		14%		20%
Benzodiazepines	100%	67%	36%	29%	40%	40%
Prescription Opioids	50%	22%	36%	29%		20%
Ethanol	25%	33%	9%	14%	20%	
FRSs & NPSOs		11%				
Other Illicit Drugs		44%	9%	14%	40%	40%

8. Per Drug Category per Race, 2015-2017

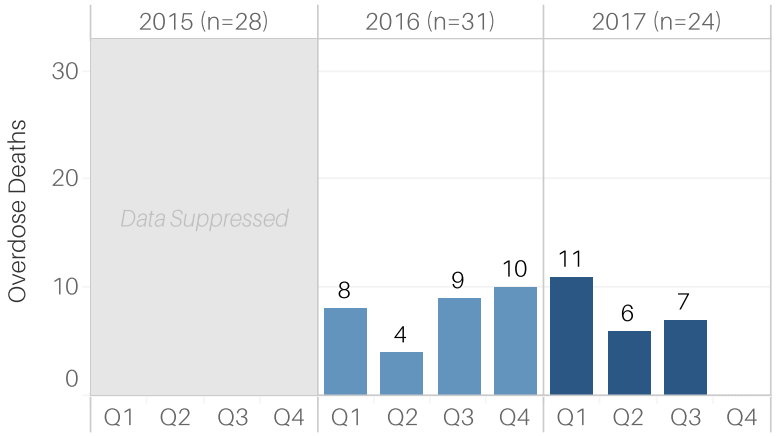
Drug Category	White	Black	Hispanic	Other
Fentanyl	40%			100%
Heroin	44%			100%
Cocaine	9%			
Benzodiazepines	49%			
Prescription Opioids	27%			
Ethanol	16%			
FRSs & NPSOs	2%			
Other Illicit Drugs	27%			

Source: Pennsylvania Coroner/Medical Examiner Data

APPENDIX D

(U) Figure D25: Analysis of 2015 - 2017 Overdose Death Data within County: Crawford

1. Quarterly Trend



Total Number of Overdose Deaths: **83**

Average Rate of Overdose Deaths (per 100,000): **32**

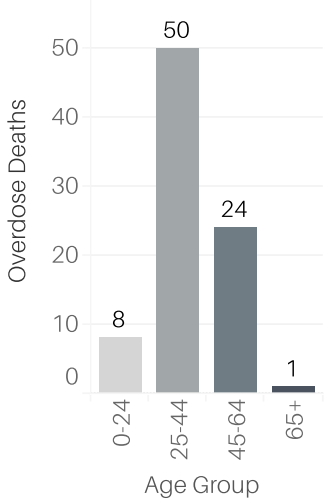
County Rank by Average Rate: **20**

Percent Change from 2015-2016: **11% Increase**

Percent Change from 2016-2017: **23% Decrease**

Percent Change from 2015-2017: **14% Decrease**

2. Age Distribution



The information in this section summarizes drug-related overdose death data (accidental or undetermined) from 2015-2017.

The first page consists of the quarterly trend and demographic information:

1: Total Number of Overdose Deaths per Quarter per Year*

2-4: Total Number of Overdose Deaths per Age/Gender/Race

The second page consists of the yearly trend for the most commonly identified drug categories and the drug category breakdown for each demographic group:

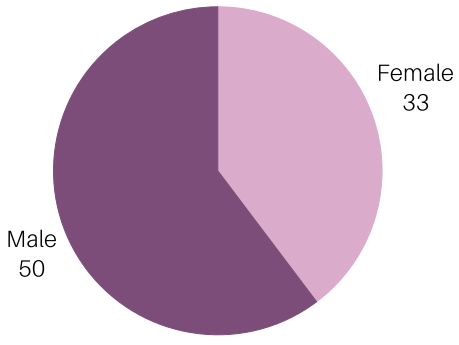
5: Percent of Overdose Deaths per Drug Category per Year

6-8: Percent of Overdose Deaths per Drug Category per Age/Gender/Race, per Year if Applicable

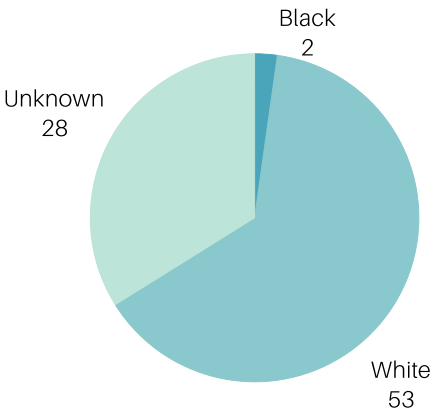
*Percent = (Number of deaths per drug category per demographic group, per year if applicable) / (Number of deaths per demographic group, per year if applicable) * 100%*

*Breakdown by quarter is suppressed when there are less than three data points for each quarter.

3. Gender Distribution



4. Race Distribution

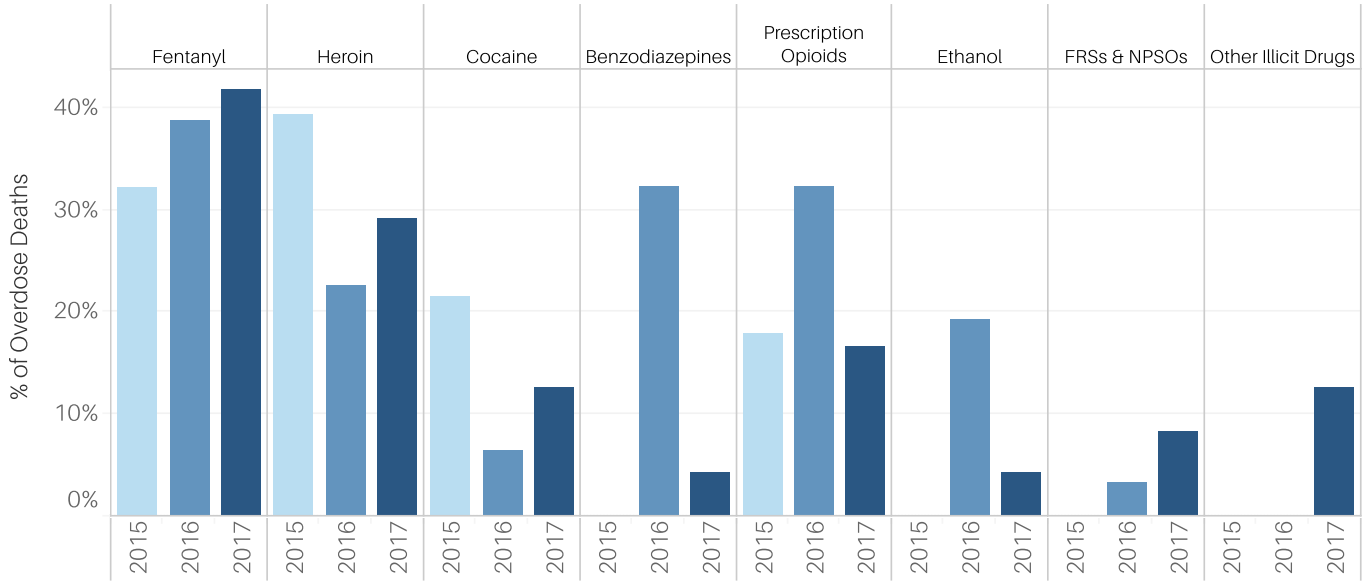


Source: Pennsylvania Coroner/Medical Examiner Data

APPENDIX D

(U) Figure D25: Analysis of 2015 - 2017 Overdose Death Data within County: Crawford

5. Percent of Overdose Deaths per Drug Category per Year



6. Percent of Overdose Deaths per Drug Category per Age Group per Year

Drug Category	2015				2016				2017			
	0-24	25-44	45-64	65+	0-24	25-44	45-64	65+	0-24	25-44	45-64	65+
Fentanyl	100%	33%	22%		40%	53%	11%		50%	47%	33%	
Heroin	100%	44%	22%		20%	35%			50%	27%	17%	100%
Cocaine		28%	11%			12%				20%		
Benzodiazepines					20%	24%	56%			7%		
Prescription Opioids		22%	11%		40%	18%	56%			7%	50%	
Ethanol					20%	18%	22%				17%	
FRSs & NPSOs						6%				13%		
Other Illicit Drugs										20%		

7. Per Drug Category per Gender per Year

Drug Category	2015		2016		2017	
	Female	Male	Female	Male	Female	Male
Fentanyl	40%	28%	36%	41%	22%	53%
Heroin	20%	50%	14%	29%	11%	40%
Cocaine	30%	17%		12%	11%	13%
Benzodiazepines			43%	24%	11%	
Prescription Opioids	10%	22%	43%	24%	44%	
Ethanol				35%		7%
FRSs & NPSOs			7%			13%
Other Illicit Drugs					11%	13%

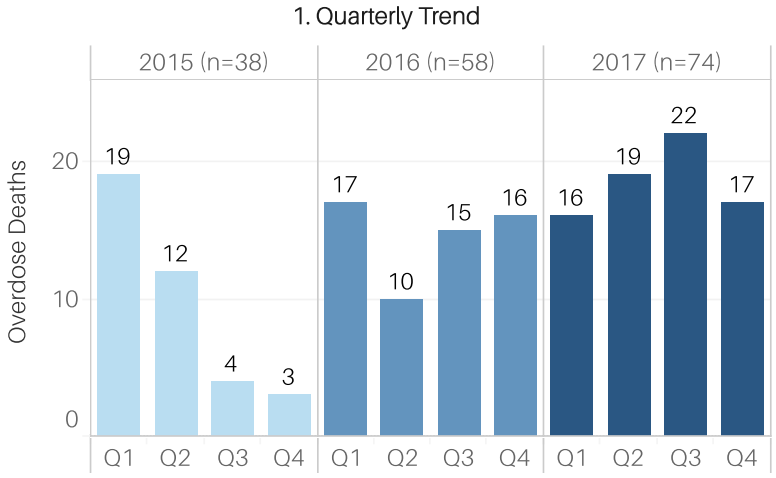
8. Per Drug Category per Race, 2015-2017

Drug Category	White	Black	Hispanic	Other
Fentanyl	40%	50%		
Heroin	23%	100%		
Cocaine	8%	50%		
Benzodiazepines	19%	50%		
Prescription Opioids	25%	50%		
Ethanol	13%			
FRSs & NPSOs	6%			
Other Illicit Drugs	6%			

Source: Pennsylvania Coroner/Medical Examiner Data

APPENDIX D

(U) Figure D26: Analysis of 2015 - 2017 Overdose Death Data within County: Cumberland



Total Number of Overdose Deaths: **170**

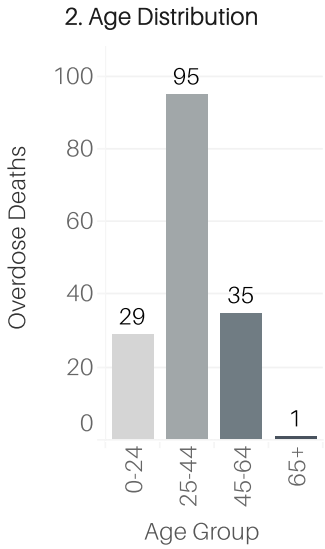
Average Rate of Overdose Deaths (per 100,000): **23**

County Rank by Average Rate: **39**

Percent Change from 2015-2016: **53% Increase**

Percent Change from 2016-2017: **28% Increase**

Percent Change from 2015-2017: **95% Increase**



The information in this section summarizes drug-related overdose death data (accidental or undetermined) from 2015-2017.

<u>The first page consists of the quarterly trend and demographic information:</u>

1: Total Number of Overdose Deaths per Quarter per Year*

2-4: Total Number of Overdose Deaths per Age/Gender/Race

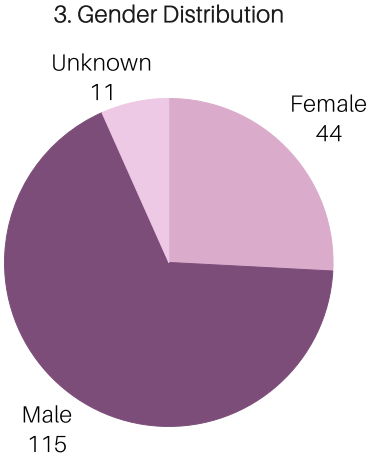
<u>The second page consists of the yearly trend for the most commonly identified drug categories and the drug category breakdown for each demographic group:</u>

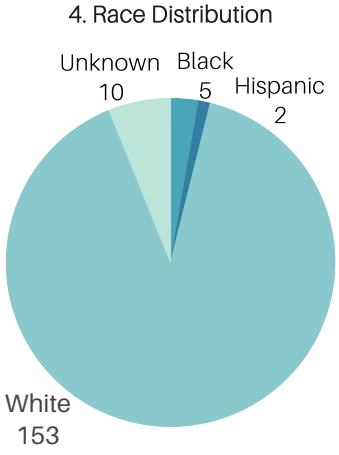
5: Percent of Overdose Deaths per Drug Category per Year

6-8: Percent of Overdose Deaths per Drug Category per Age/Gender/Race, per Year if Applicable

*Percent = (Number of deaths per drug category per demographic group, per year if applicable) / (Number of deaths per demographic group, per year if applicable) * 100%*

*Breakdown by quarter is suppressed when there are less than three data points for each quarter.



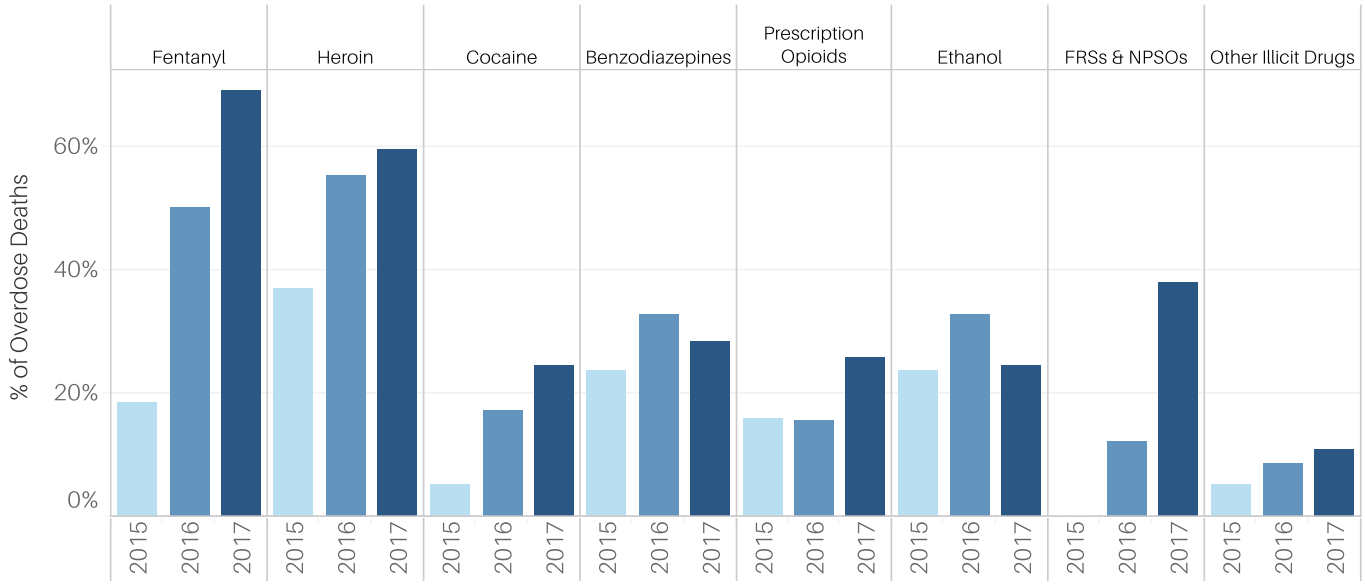


Source: Pennsylvania Coroner/Medical Examiner Data

APPENDIX D

(U) Figure D26: Analysis of 2015 - 2017 Overdose Death Data within County: Cumberland

5. Percent of Overdose Deaths per Drug Category per Year



6. Percent of Overdose Deaths per Drug Category per Age Group per Year

Drug Category	2015 0-24	2015 25-44	2015 45-64	2015 65+	2016 0-24	2016 25-44	2016 45-64	2016 65+	2017 0-24	2017 25-44	2017 45-64	2017 65+
Fentanyl	67%	7%	29%		80%	47%	36%		100%	66%	53%	
Heroin	83%	53%	14%		40%	58%	64%		54%	66%	47%	
Cocaine			29%		10%	19%	18%		31%	18%	35%	
Benzodiazepines		33%	57%		40%	33%	27%			32%	41%	
Prescription Opioids		13%	57%		10%	11%	27%	100%	8%	32%	24%	
Ethanol		53%	14%		20%	36%	36%		8%	30%	24%	
FRSs & NPSOs					10%	14%	9%		54%	36%	29%	
Other Illicit Drugs			29%			8%	18%		8%	16%		

7. Per Drug Category per Gender per Year

Drug Category	2015 Female	2015 Male	2016 Female	2016 Male	2017 Female	2017 Male
Fentanyl	13%	30%	55%	48%	64%	71%
Heroin	38%	55%	64%	54%	48%	65%
Cocaine		10%	18%	17%	32%	20%
Benzodiazepines	13%	40%	36%	33%	32%	27%
Prescription Opioids	25%	20%	9%	17%	28%	24%
Ethanol	25%	35%	27%	35%	32%	20%
FRSs & NPSOs			9%	13%	36%	39%
Other Illicit Drugs	25%		9%	9%	8%	12%

8. Per Drug Category per Race, 2015-2017

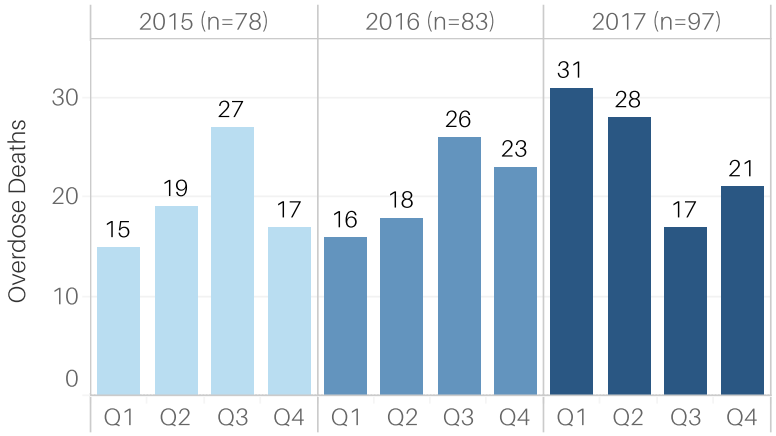
Drug Category	White	Black	Hispanic	Other
Fentanyl	54%	60%	50%	
Heroin	57%	40%	50%	
Cocaine	18%	60%		
Benzodiazepines	31%	20%		
Prescription Opioids	22%	20%		
Ethanol	28%	40%	50%	
FRSs & NPSOs	22%	40%		
Other Illicit Drugs	9%	20%		

Source: Pennsylvania Coroner/Medical Examiner Data

APPENDIX D

(U) Figure D27: Analysis of 2015 - 2017 Overdose Death Data within County: Dauphin

1. Quarterly Trend



Total Number of Overdose Deaths: **258**

Average Rate of Overdose Deaths (per 100,000): **31**

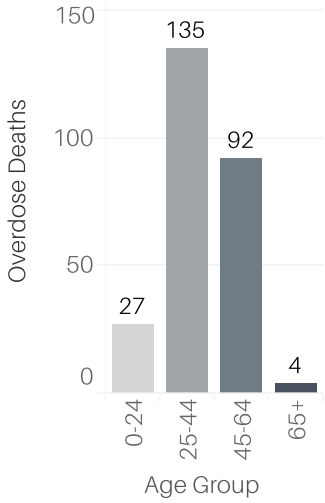
County Rank by Average Rate: **22**

Percent Change from 2015-2016: **6% Increase**

Percent Change from 2016-2017: **17% Increase**

Percent Change from 2015-2017: **24% Increase**

2. Age Distribution



The information in this section summarizes drug-related overdose death data (accidental or undetermined) from 2015-2017.

<u>The first page consists of the quarterly trend and demographic information:</u>

1: Total Number of Overdose Deaths per Quarter per Year*

2-4: Total Number of Overdose Deaths per Age/Gender/Race

<u>The second page consists of the yearly trend for the most commonly identified drug categories and the drug category breakdown for each demographic group:</u>

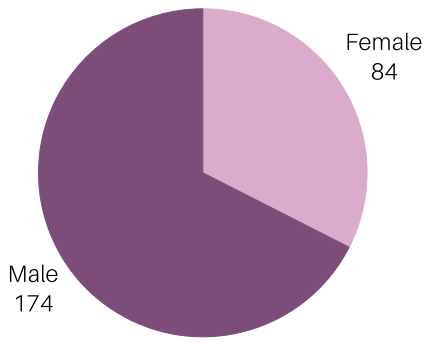
5: Percent of Overdose Deaths per Drug Category per Year

6-8: Percent of Overdose Deaths per Drug Category per Age/Gender/Race, per Year if Applicable

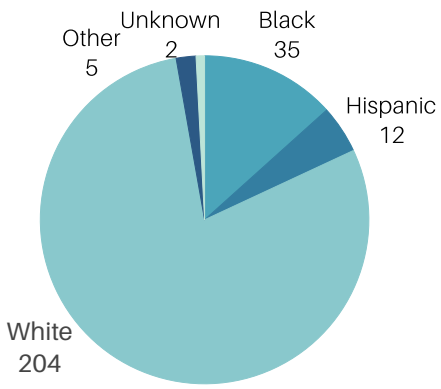
*Percent = (Number of deaths per drug category per demographic group, per year if applicable) / (Number of deaths per demographic group, per year if applicable) * 100%*

*Breakdown by quarter is suppressed when there are less than three data points for each quarter.

3. Gender Distribution



4. Race Distribution

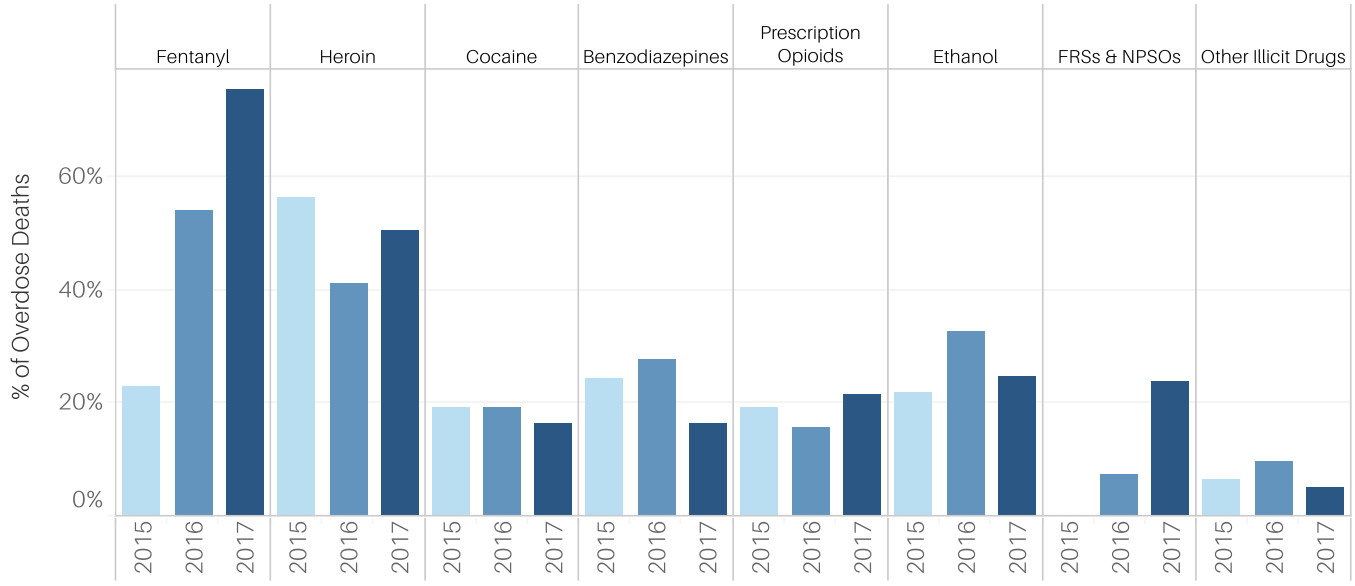


Source: Pennsylvania Coroner/Medical Examiner Data

APPENDIX D

(U) Figure D27: Analysis of 2015 - 2017 Overdose Death Data within County: Dauphin

5. Percent of Overdose Deaths per Drug Category per Year



6. Percent of Overdose Deaths per Drug Category per Age Group per Year

Drug Category	2015				2016				2017			
	0-24	25-44	45-64	65+	0-24	25-44	45-64	65+	0-24	25-44	45-64	65+
Fentanyl	29%	31%	14%		63%	58%	49%		83%	75%	71%	100%
Heroin	86%	59%	45%	67%	50%	45%	34%		50%	54%	43%	100%
Cocaine	29%	15%	21%	33%		18%	26%		25%	18%	11%	
Benzodiazepines		21%	38%		25%	30%	26%		8%	20%	14%	
Prescription Opioids	14%	15%	28%		13%	13%	20%			18%	39%	
Ethanol	14%	18%	31%		13%	35%	34%		17%	25%	29%	
FRSs & NPSOs					13%	8%	6%		8%	29%	21%	
Other Illicit Drugs		10%	3%			15%	6%			7%	4%	

7. Per Drug Category per Gender per Year

Drug Category	2015		2016		2017	
	Female	Male	Female	Male	Female	Male
Fentanyl	15%	27%	45%	60%	74%	76%
Heroin	35%	67%	42%	40%	37%	56%
Cocaine	12%	23%	19%	19%	7%	20%
Benzodiazepines	35%	19%	32%	25%	19%	16%
Prescription Opioids	35%	12%	10%	19%	11%	26%
Ethanol	15%	25%	23%	38%	22%	26%
FRSs & NPSOs			6%	8%	11%	29%
Other Illicit Drugs		10%	16%	6%	4%	6%

8. Per Drug Category per Race, 2015-2017

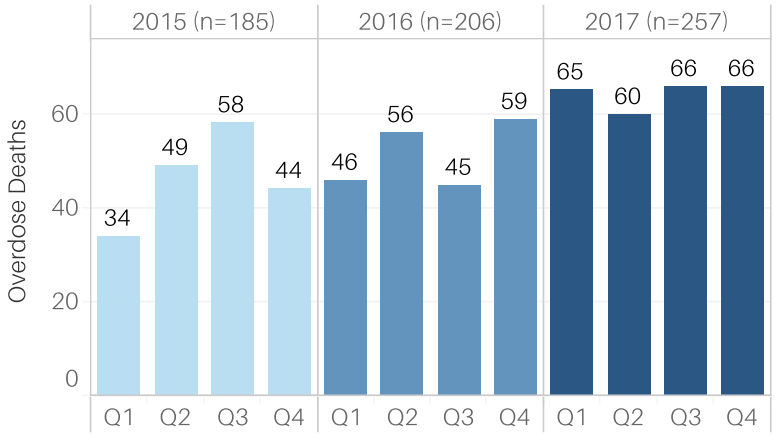
Drug Category	White	Black	Hispanic	Other
Fentanyl	53%	43%	92%	40%
Heroin	50%	37%	75%	60%
Cocaine	16%	34%	17%	20%
Benzodiazepines	22%	20%	25%	60%
Prescription Opioids	22%	11%	8%	
Ethanol	25%	37%	25%	
FRSs & NPSOs	11%	6%	33%	
Other Illicit Drugs	6%	11%		20%

Source: Pennsylvania Coroner/Medical Examiner Data

APPENDIX D

(U) Figure D28: Analysis of 2015 - 2017 Overdose Death Data within County: Delaware

1. Quarterly Trend



Total Number of Overdose Deaths: **648**

Average Rate of Overdose Deaths (per 100,000): **38**

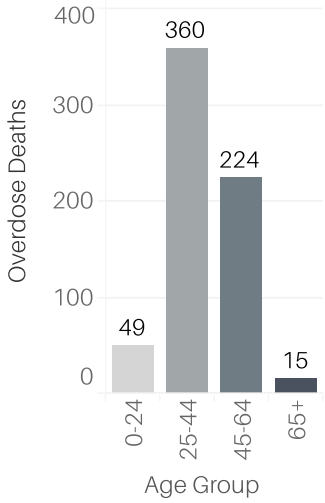
County Rank by Average Rate: **15**

Percent Change from 2015-2016: **11% Increase**

Percent Change from 2016-2017: **25% Increase**

Percent Change from 2015-2017: **39% Increase**

2. Age Distribution



The information in this section summarizes drug-related overdose death data (accidental or undetermined) from 2015-2017.

<u>The first page consists of the quarterly trend and demographic information:</u>

1: Total Number of Overdose Deaths per Quarter per Year*

2-4: Total Number of Overdose Deaths per Age/Gender/Race

<u>The second page consists of the yearly trend for the most commonly identified drug categories and the drug category breakdown for each demographic group:</u>

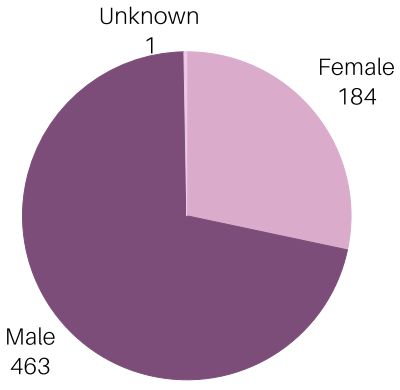
5: Percent of Overdose Deaths per Drug Category per Year

6-8: Percent of Overdose Deaths per Drug Category per Age/Gender/Race, per Year if Applicable

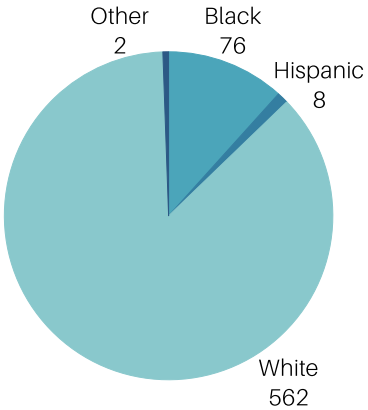
*Percent = (Number of deaths per drug category per demographic group, per year if applicable) / (Number of deaths per demographic group, per year if applicable) * 100%*

*Breakdown by quarter is suppressed when there are less than three data points for each quarter.

3. Gender Distribution



4. Race Distribution

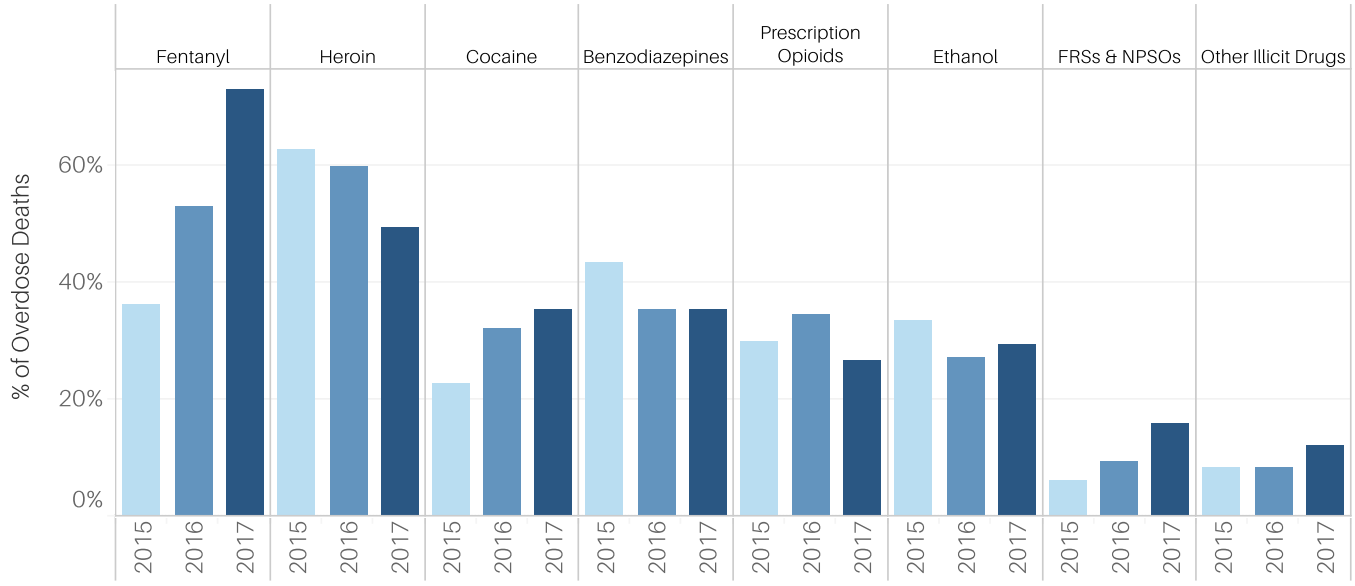


Source: Pennsylvania Coroner/Medical Examiner Data

APPENDIX D

(U) Figure D28: Analysis of 2015 - 2017 Overdose Death Data within County: Delaware

5. Percent of Overdose Deaths per Drug Category per Year



6. Percent of Overdose Deaths per Drug Category per Age Group per Year

Drug Category	2015				2016				2017			
	0-24	25-44	45-64	65+	0-24	25-44	45-64	65+	0-24	25-44	45-64	65+
Fentanyl	31%	44%	29%	17%	71%	57%	45%	50%	86%	82%	53%	
Heroin	77%	71%	54%		79%	67%	46%	75%	59%	56%	35%	20%
Cocaine	15%	21%	27%	17%	14%	34%	33%	25%	32%	35%	38%	40%
Benzodiazepines	23%	36%	54%	67%	29%	35%	37%	50%	27%	34%	43%	20%
Prescription Opioids	15%	25%	39%	33%	21%	31%	41%	25%	14%	23%	36%	60%
Ethanol	15%	34%	37%	17%	7%	29%	29%		18%	26%	40%	20%
FRSs & NPSOs		7%	6%		14%	13%	4%		27%	20%	4%	
Other Illicit Drugs	8%	11%	4%		7%	8%	9%		5%	15%	10%	

7. Per Drug Category per Gender per Year

Drug Category	2015		2016		2017	
	Female	Male	Female	Male	Female	Male
Fentanyl	15%	43%	48%	55%	65%	76%
Heroin	61%	63%	58%	61%	35%	55%
Cocaine	11%	27%	19%	38%	34%	36%
Benzodiazepines	52%	40%	44%	31%	47%	31%
Prescription Opioids	33%	29%	41%	32%	34%	23%
Ethanol	30%	35%	23%	28%	26%	31%
FRSs & NPSOs		8%	6%	11%	14%	17%
Other Illicit Drugs	9%	8%	6%	9%	14%	11%

8. Per Drug Category per Race, 2015-2017

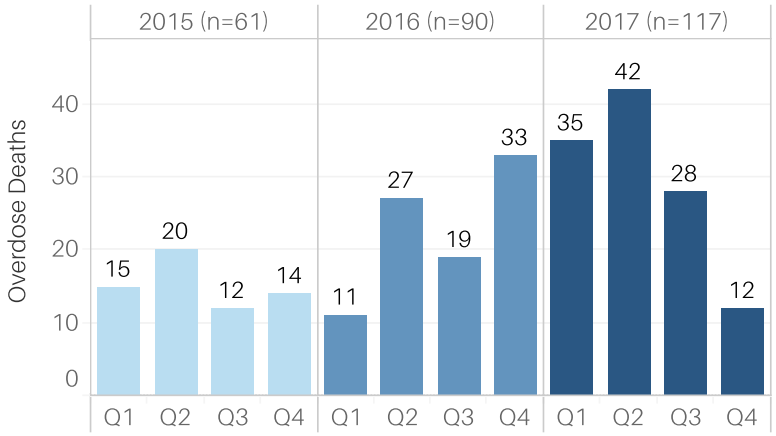
Drug Category	White	Black	Hispanic	Other
Fentanyl	56%	55%	88%	50%
Heroin	59%	37%	50%	50%
Cocaine	29%	45%	50%	
Benzodiazepines	40%	26%	25%	
Prescription Opioids	30%	33%		100%
Ethanol	28%	41%	13%	50%
FRSs & NPSOs	11%	9%	38%	
Other Illicit Drugs	10%	5%		50%

Source: Pennsylvania Coroner/Medical Examiner Data

APPENDIX D

(U) Figure D29: Analysis of 2015 - 2017 Overdose Death Data within County: Erie

1. Quarterly Trend



Total Number of Overdose Deaths: **268**

Average Rate of Overdose Deaths (per 100,000): **32**

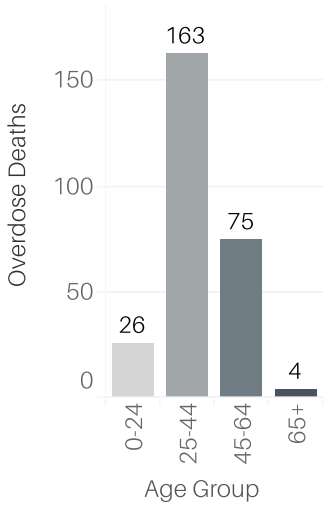
County Rank by Average Rate: **19**

Percent Change from 2015-2016: **48% Increase**

Percent Change from 2016-2017: **30% Increase**

Percent Change from 2015-2017: **92% Increase**

2. Age Distribution



The information in this section summarizes drug-related overdose death data (accidental or undetermined) from 2015-2017.

<u>The first page consists of the quarterly trend and demographic information:</u>

1: Total Number of Overdose Deaths per Quarter per Year*

2-4: Total Number of Overdose Deaths per Age/Gender/Race

<u>The second page consists of the yearly trend for the most commonly identified drug categories and the drug category breakdown for each demographic group:</u>

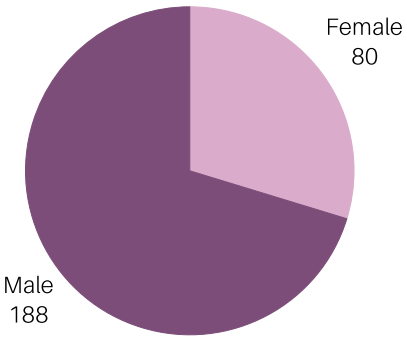
5: Percent of Overdose Deaths per Drug Category per Year

6-8: Percent of Overdose Deaths per Drug Category per Age/Gender/Race, per Year if Applicable

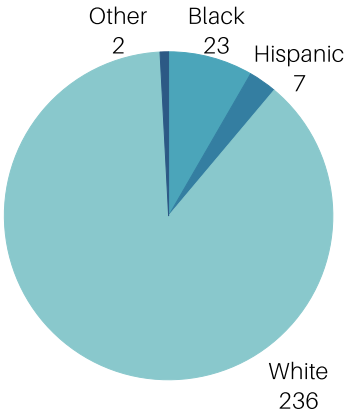
*Percent = (Number of deaths per drug category per demographic group, per year if applicable) / (Number of deaths per demographic group, per year if applicable) * 100%*

*Breakdown by quarter is suppressed when there are less than three data points for each quarter.

3. Gender Distribution



4. Race Distribution

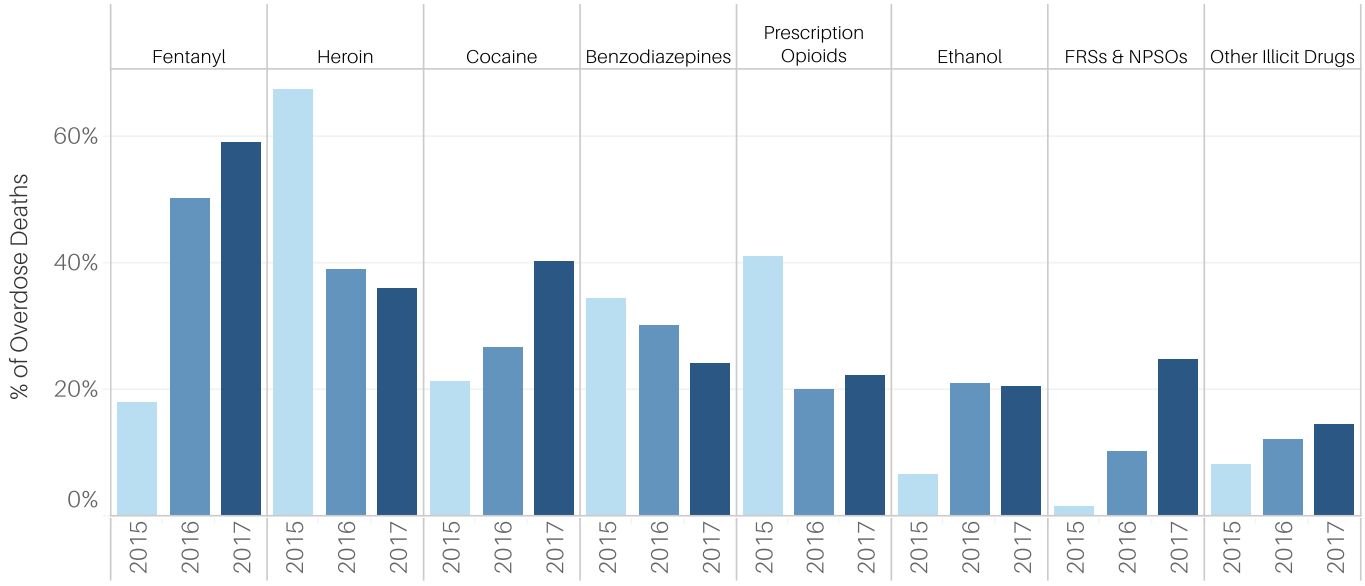


Source: Pennsylvania Coroner/Medical Examiner Data

APPENDIX D

(U) Figure D29: Analysis of 2015 - 2017 Overdose Death Data within County: Erie

5. Percent of Overdose Deaths per Drug Category per Year



6. Percent of Overdose Deaths per Drug Category per Age Group per Year

Drug Category	2015				2016				2017			
	0-24	25-44	45-64	65+	0-24	25-44	45-64	65+	0-24	25-44	45-64	65+
Fentanyl		24%	14%		50%	57%	35%	50%	57%	61%	54%	100%
Heroin	83%	82%	43%		33%	45%	31%		36%	36%	32%	100%
Cocaine	33%	18%	24%			27%	35%		43%	39%	43%	
Benzodiazepines	33%	39%	29%		33%	34%	23%		50%	22%	18%	
Prescription Opioids	33%	36%	52%		17%	13%	35%	50%	21%	22%	21%	100%
Ethanol		6%	10%		33%	13%	38%		7%	26%	14%	
FRSs & NPSOs	17%					13%	8%		21%	23%	29%	100%
Other Illicit Drugs	17%	9%	5%		17%	14%	8%		14%	18%	7%	

7. Per Drug Category per Gender per Year

Drug Category	2015		2016		2017	
	Female	Male	Female	Male	Female	Male
Fentanyl	16%	19%	52%	49%	57%	60%
Heroin	53%	74%	29%	44%	37%	36%
Cocaine	21%	21%	32%	24%	50%	37%
Benzodiazepines	42%	31%	32%	29%	47%	16%
Prescription Opioids	37%	43%	23%	19%	27%	21%
Ethanol		10%	13%	25%	20%	21%
FRSs & NPSOs	5%		13%	8%	27%	24%
Other Illicit Drugs	5%	10%	23%	7%	17%	14%

8. Per Drug Category per Race, 2015-2017

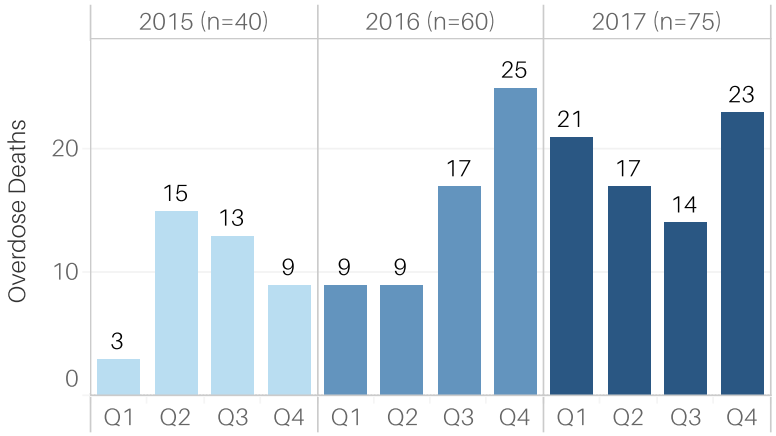
Drug Category	White	Black	Hispanic	Other
Fentanyl	47%	52%	29%	
Heroin	45%	30%	57%	50%
Cocaine	30%	52%	14%	50%
Benzodiazepines	29%	22%	29%	
Prescription Opioids	27%	17%	14%	50%
Ethanol	16%	35%	14%	
FRSs & NPSOs	14%	22%	14%	
Other Illicit Drugs	13%	9%	14%	

Source: Pennsylvania Coroner/Medical Examiner Data

APPENDIX D

(U) Figure D30: Analysis of 2015 - 2017 Overdose Death Data within County: Fayette

1. Quarterly Trend



Total Number of Overdose Deaths: **175**

Average Rate of Overdose Deaths (per 100,000): **44**

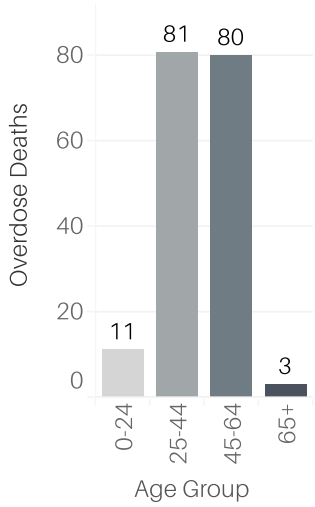
County Rank by Average Rate: **10**

Percent Change from 2015-2016: **50% Increase**

Percent Change from 2016-2017: **25% Increase**

Percent Change from 2015-2017: **88% Increase**

2. Age Distribution



The information in this section summarizes drug-related overdose death data (accidental or undetermined) from 2015-2017.

<u>The first page consists of the quarterly trend and demographic information:</u>

1: Total Number of Overdose Deaths per Quarter per Year*

2-4: Total Number of Overdose Deaths per Age/Gender/Race

<u>The second page consists of the yearly trend for the most commonly identified drug categories and the drug category breakdown for each demographic group:</u>

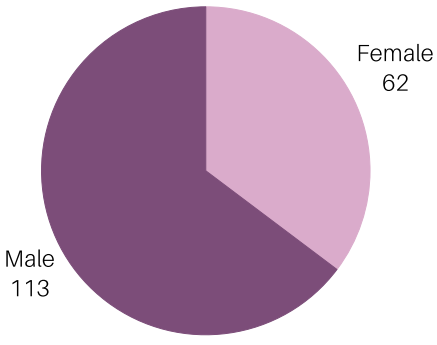
5: Percent of Overdose Deaths per Drug Category per Year

6-8: Percent of Overdose Deaths per Drug Category per Age/Gender/Race, per Year if Applicable

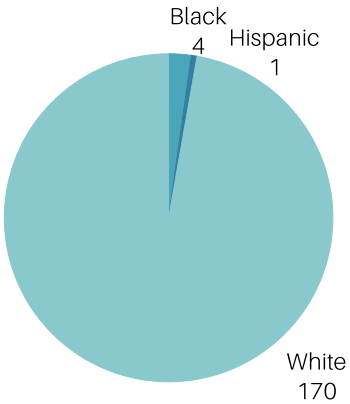
*Percent = (Number of deaths per drug category per demographic group, per year if applicable) / (Number of deaths per demographic group, per year if applicable) * 100%*

*Breakdown by quarter is suppressed when there are less than three data points for each quarter.

3. Gender Distribution



4. Race Distribution

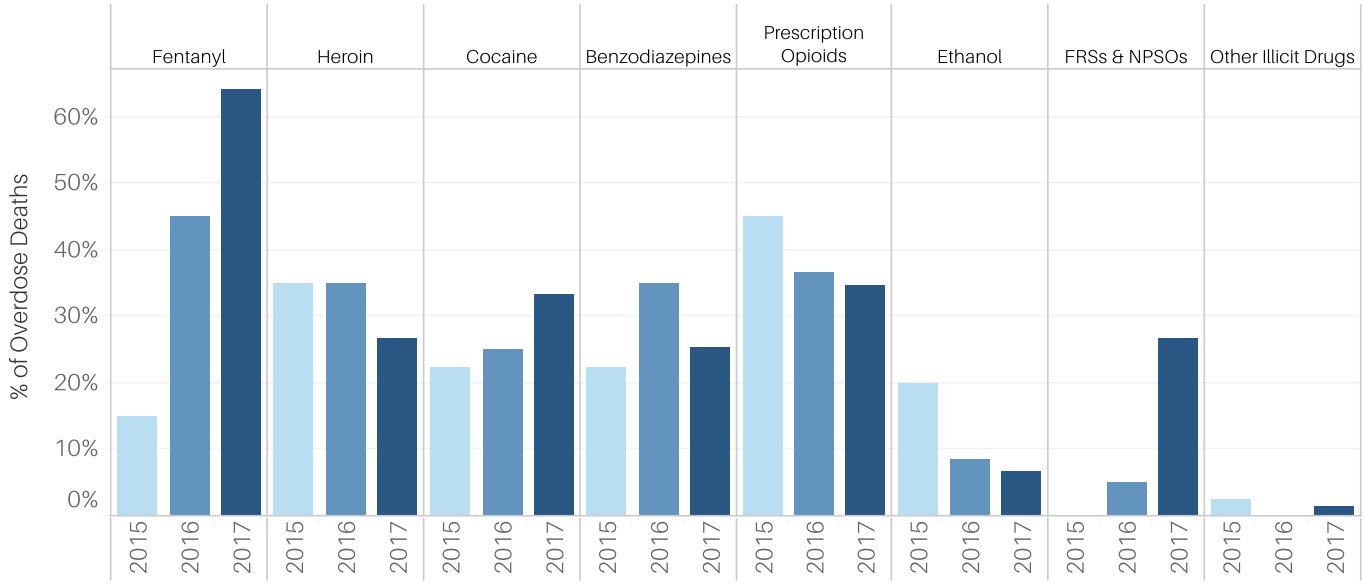


Source: Pennsylvania Coroner/Medical Examiner Data

APPENDIX D

(U) Figure D30: Analysis of 2015 - 2017 Overdose Death Data within County: Fayette

5. Percent of Overdose Deaths per Drug Category per Year



6. Percent of Overdose Deaths per Drug Category per Age Group per Year

Drug Category	2015 0-24	2015 25-44	2015 45-64	2015 65+	2016 0-24	2016 25-44	2016 45-64	2016 65+	2017 0-24	2017 25-44	2017 45-64	2017 65+
Fentanyl		29%	5%		80%	52%	32%		100%	59%	67%	
Heroin		59%	21%		80%	48%	14%		25%	32%	21%	
Cocaine		24%	26%		40%	15%	32%			30%	42%	
Benzodiazepines		24%	16%	100%	20%	30%	43%			32%	18%	100%
Prescription Opioids	50%	35%	47%	100%		37%	43%			24%	48%	100%
Ethanol	50%	24%	16%		20%	11%	4%			5%	9%	
FRSs & NPSOs						4%	7%		25%	30%	24%	
Other Illicit Drugs			5%							3%		

7. Per Drug Category per Gender per Year

Drug Category	2015 Female	2015 Male	2016 Female	2016 Male	2017 Female	2017 Male
Fentanyl	7%	19%	33%	51%	48%	73%
Heroin	21%	42%	38%	33%	30%	25%
Cocaine	29%	19%	24%	26%	37%	31%
Benzodiazepines	21%	23%	29%	38%	41%	17%
Prescription Opioids	50%	42%	38%	36%	44%	29%
Ethanol	21%	19%	5%	10%		10%
FRSs & NPSOs			10%	3%	33%	23%
Other Illicit Drugs		4%				2%

8. Per Drug Category per Race, 2015-2017

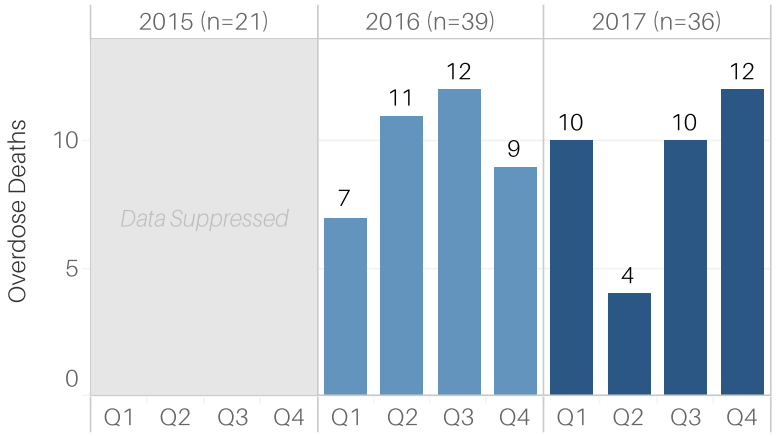
Drug Category	White	Black	Hispanic	Other
Fentanyl	46%	50%	100%	
Heroin	30%	75%	100%	
Cocaine	27%	50%	100%	
Benzodiazepines	28%	50%		
Prescription Opioids	38%	25%		
Ethanol	11%			
FRSs & NPSOs	13%	25%		
Other Illicit Drugs	1%			

Source: Pennsylvania Coroner/Medical Examiner Data

APPENDIX D

(U) Figure D31: Analysis of 2015 - 2017 Overdose Death Data within County: Franklin

1. Quarterly Trend



Total Number of Overdose Deaths: **96**

Average Rate of Overdose Deaths (per 100,000): **21**

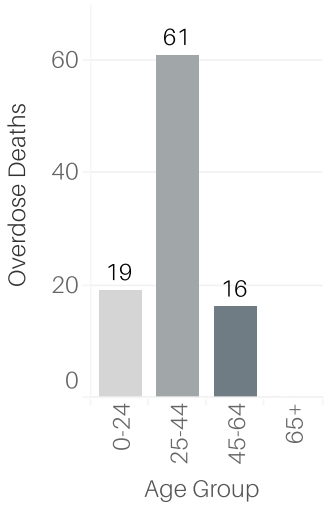
County Rank by Average Rate: **42**

Percent Change from 2015-2016: **86% Increase**

Percent Change from 2016-2017: **8% Decrease**

Percent Change from 2015-2017: **71% Increase**

2. Age Distribution



The information in this section summarizes drug-related overdose death data (accidental or undetermined) from 2015-2017.

The first page consists of the quarterly trend and demographic information:

1: Total Number of Overdose Deaths per Quarter per Year*

2-4: Total Number of Overdose Deaths per Age/Gender/Race

The second page consists of the yearly trend for the most commonly identified drug categories and the drug category breakdown for each demographic group:

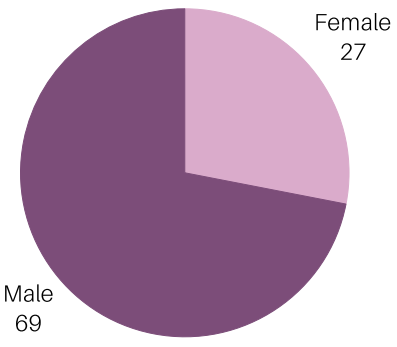
5: Percent of Overdose Deaths per Drug Category per Year

6-8: Percent of Overdose Deaths per Drug Category per Age/Gender/Race, per Year if Applicable

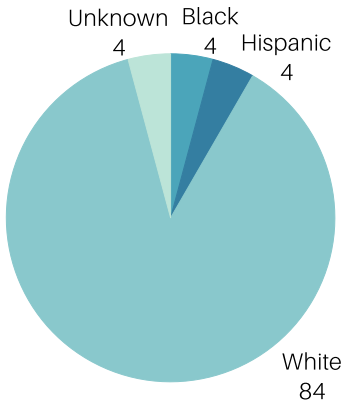
*Percent = (Number of deaths per drug category per demographic group, per year if applicable) / (Number of deaths per demographic group, per year if applicable) * 100%*

*Breakdown by quarter is suppressed when there are less than three data points for each quarter.

3. Gender Distribution



4. Race Distribution

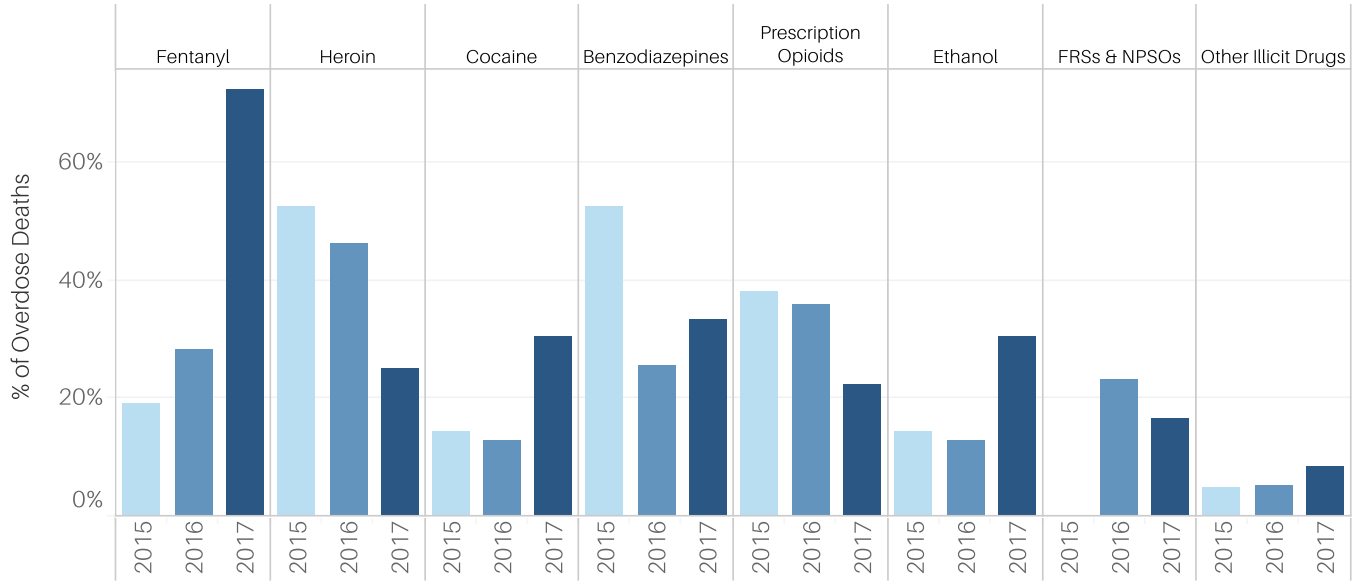


Source: Pennsylvania Coroner/Medical Examiner Data

APPENDIX D

(U) Figure D31: Analysis of 2015 - 2017 Overdose Death Data within County: Franklin

5. Percent of Overdose Deaths per Drug Category per Year



6. Percent of Overdose Deaths per Drug Category per Age Group per Year

Drug Category	2015 0-24	2015 25-44	2015 45-64	2015 65+	2016 0-24	2016 25-44	2016 45-64	2016 65+	2017 0-24	2017 25-44	2017 45-64	2017 65+
Fentanyl		15%	40%		43%	26%	22%		67%	72%	100%	
Heroin	67%	62%	20%		57%	43%	44%		22%	28%		
Cocaine		15%	20%			17%	11%		11%	36%	50%	
Benzodiazepines	33%	38%	100%		14%	22%	44%		11%	40%	50%	
Prescription Opioids	33%	38%	40%		14%	35%	56%		22%	20%	50%	
Ethanol	33%	15%			14%	17%			67%	20%		
FRSs & NPSOs					14%	26%	22%			20%	50%	
Other Illicit Drugs		8%				4%	11%			12%		

7. Per Drug Category per Gender per Year

Drug Category	2015 Female	2015 Male	2016 Female	2016 Male	2017 Female	2017 Male
Fentanyl	18%	20%	25%	29%	88%	68%
Heroin	27%	80%	63%	42%	25%	25%
Cocaine	9%	20%		16%	38%	29%
Benzodiazepines	45%	60%	38%	23%	38%	32%
Prescription Opioids	45%	30%	25%	39%	25%	21%
Ethanol		30%		16%	13%	36%
FRSs & NPSOs			25%	23%		21%
Other Illicit Drugs		10%	25%		13%	7%

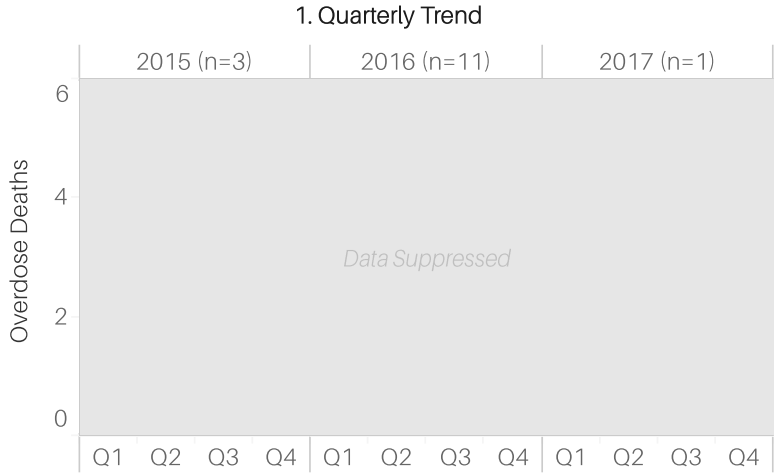
8. Per Drug Category per Race, 2015-2017

Drug Category	White	Black	Hispanic	Other
Fentanyl	44%		75%	
Heroin	38%	25%	50%	
Cocaine	19%	75%		
Benzodiazepines	37%	25%		
Prescription Opioids	32%		25%	
Ethanol	19%	25%	50%	
FRSs & NPSOs	17%		25%	
Other Illicit Drugs	7%			

Source: Pennsylvania Coroner/Medical Examiner Data

APPENDIX D

(U) Figure D32: Analysis of 2015 - 2017 Overdose Death Data within County: Fulton



Total Number of Overdose Deaths: **15**

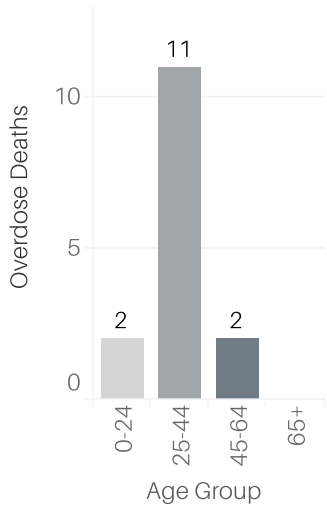
Average Rate of Overdose Deaths (per 100,000): **34**

County Rank by Average Rate: **18**

Percent Change from 2015-2016: **267% Increase**

Percent Change from 2016-2017: **91% Decrease**

Percent Change from 2015-2017: **67% Decrease**



The information in this section summarizes drug-related overdose death data (accidental or undetermined) from 2015-2017.

The first page consists of the quarterly trend and demographic information:

1: Total Number of Overdose Deaths per Quarter per Year*

2-4: Total Number of Overdose Deaths per Age/Gender/Race

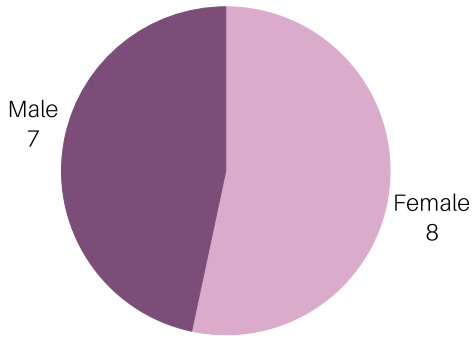
The second page consists of the yearly trend for the most commonly identified drug categories and the drug category breakdown for each demographic group:

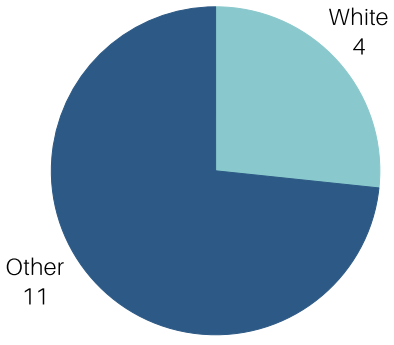
5: Percent of Overdose Deaths per Drug Category per Year

6-8: Percent of Overdose Deaths per Drug Category per Age/Gender/Race, per Year if Applicable

*Percent = (Number of deaths per drug category per demographic group, per year if applicable) / (Number of deaths per demographic group, per year if applicable) * 100%*

*Breakdown by quarter is suppressed when there are less than three data points for each quarter.



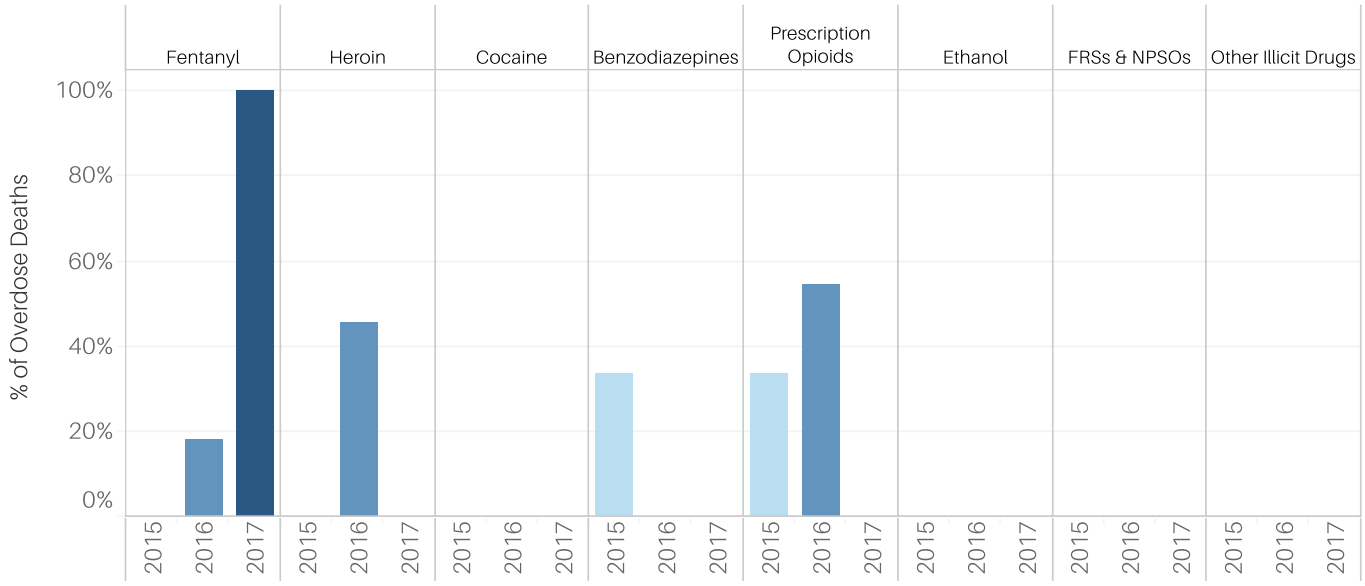


Source: Pennsylvania Coroner/Medical Examiner Data

APPENDIX D

(U) Figure D32: Analysis of 2015 - 2017 Overdose Death Data within County: Fulton

5. Percent of Overdose Deaths per Drug Category per Year



6. Percent of Overdose Deaths per Drug Category per Age Group per Year

Drug Category	2015 0-24	2015 25-44	2015 45-64	2015 65+	2016 0-24	2016 25-44	2016 45-64	2016 65+	2017 0-24	2017 25-44	2017 45-64	2017 65+
Fentanyl					50%	13%				100%		
Heroin					50%	50%						
Cocaine												
Benzodiazepines			100%									
Prescription Opioids			100%		50%	50%	100%					
Ethanol												
FRSs & NPSOs												
Other Illicit Drugs												

7. Per Drug Category per Gender per Year

Drug Category	2015 Female	2015 Male	2016 Female	2016 Male	2017 Female	2017 Male
Fentanyl			17%	20%		100%
Heroin			33%	60%		
Cocaine						
Benzodiazepines	50%					
Prescription Opioids	50%		67%	40%		
Ethanol						
FRSs & NPSOs						
Other Illicit Drugs						

8. Per Drug Category per Race, 2015-2017

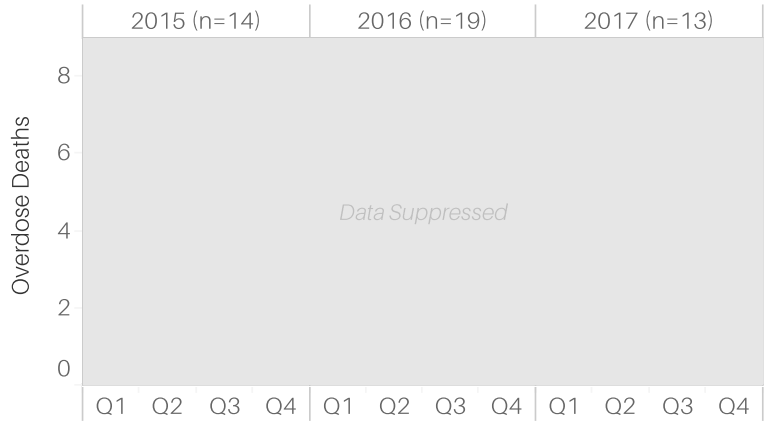
Drug Category	White	Black	Hispanic	Other
Fentanyl	25%			18%
Heroin				45%
Cocaine				
Benzodiazepines	25%			
Prescription Opioids	25%			55%
Ethanol				
FRSs & NPSOs				
Other Illicit Drugs				

Source: Pennsylvania Coroner/Medical Examiner Data

APPENDIX D

(U) Figure D33: Analysis of 2015 - 2017 Overdose Death Data within County: Greene

1. Quarterly Trend



Total Number of Overdose Deaths: **46**

Average Rate of Overdose Deaths (per 100,000): **41**

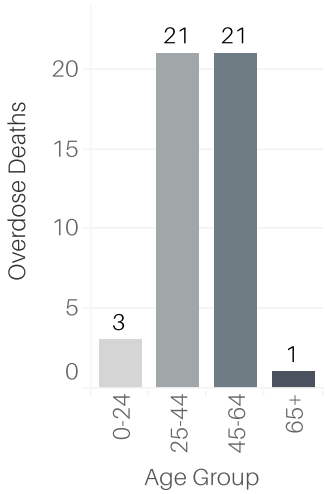
County Rank by Average Rate: **12**

Percent Change from 2015-2016: **36% Increase**

Percent Change from 2016-2017: **32% Decrease**

Percent Change from 2015-2017: **7% Decrease**

2. Age Distribution



The information in this section summarizes drug-related overdose death data (accidental or undetermined) from 2015-2017.

<u>The first page consists of the quarterly trend and demographic information:</u>

1: Total Number of Overdose Deaths per Quarter per Year*

2-4: Total Number of Overdose Deaths per Age/Gender/Race

<u>The second page consists of the yearly trend for the most commonly identified drug categories and the drug category breakdown for each demographic group:</u>

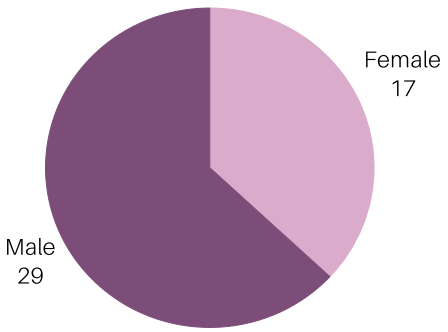
5: Percent of Overdose Deaths per Drug Category per Year

6-8: Percent of Overdose Deaths per Drug Category per Age/Gender/Race, per Year if Applicable

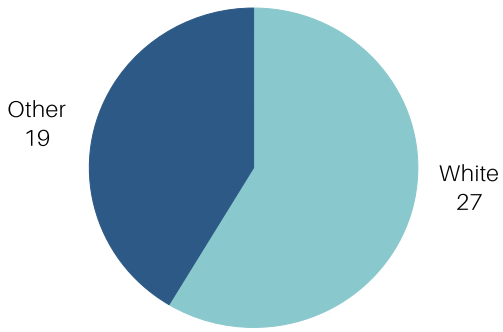
*Percent = (Number of deaths per drug category per demographic group, per year if applicable) / (Number of deaths per demographic group, per year if applicable) * 100%*

*Breakdown by quarter is suppressed when there are less than three data points for each quarter.

3. Gender Distribution



4. Race Distribution

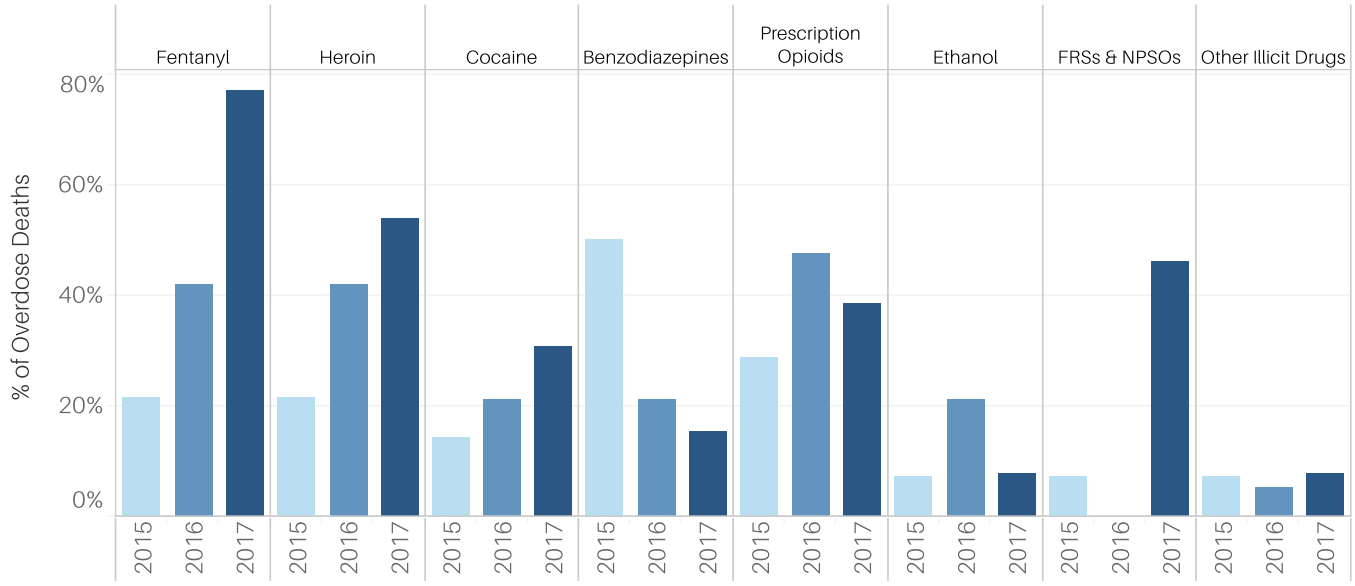


Source: Pennsylvania Coroner/Medical Examiner Data

APPENDIX D

(U) Figure D33: Analysis of 2015 - 2017 Overdose Death Data within County: Greene

5. Percent of Overdose Deaths per Drug Category per Year



6. Percent of Overdose Deaths per Drug Category per Age Group per Year

Drug Category	2015 0-24	2015 25-44	2015 45-64	2015 65+	2016 0-24	2016 25-44	2016 45-64	2016 65+	2017 0-24	2017 25-44	2017 45-64	2017 65+
Fentanyl		29%		100%	100%	29%	45%		100%	86%	50%	
Heroin		43%			100%	43%	36%		50%	57%	50%	
Cocaine		14%	17%			14%	27%		50%	14%	50%	
Benzodiazepines		43%	67%			29%	18%				50%	
Prescription Opioids		43%	17%			43%	55%			29%	75%	
Ethanol		14%					36%				25%	
FRSs & NPSOs		14%							50%	57%	25%	
Other Illicit Drugs			17%			14%				14%		

7. Per Drug Category per Gender per Year

Drug Category	2015 Female	2015 Male	2016 Female	2016 Male	2017 Female	2017 Male
Fentanyl	17%	25%	22%	60%	50%	82%
Heroin		38%	33%	50%	50%	55%
Cocaine	17%	13%	22%	20%	50%	27%
Benzodiazepines	67%	38%	22%	20%	50%	9%
Prescription Opioids	33%	25%	67%	30%	50%	36%
Ethanol		13%	22%	20%		9%
FRSs & NPSOs		13%				55%
Other Illicit Drugs		13%		10%		9%

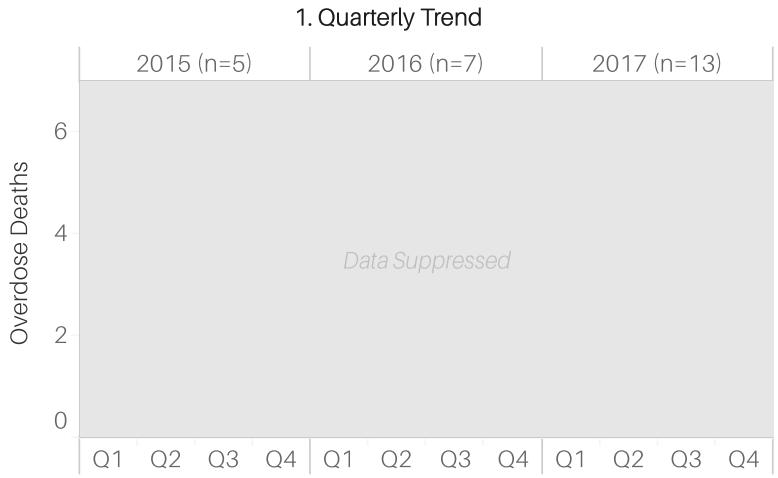
8. Per Drug Category per Race, 2015-2017

Drug Category	White	Black	Hispanic	Other
Fentanyl	48%			42%
Heroin	37%			42%
Cocaine	22%			21%
Benzodiazepines	33%			21%
Prescription Opioids	33%			47%
Ethanol	7%			21%
FRSs & NPSOs	26%			
Other Illicit Drugs	7%			5%

Source: Pennsylvania Coroner/Medical Examiner Data

APPENDIX D

(U) Figure D34: Analysis of 2015 - 2017 Overdose Death Data within County: Huntingdon



Total Number of Overdose Deaths: **25**

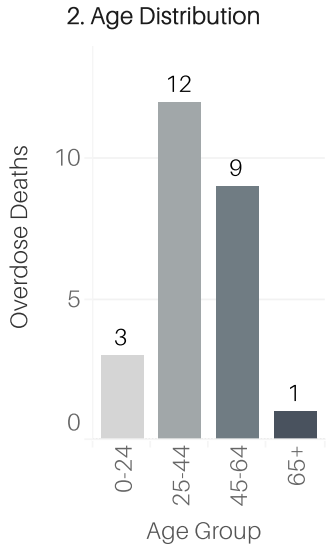
Average Rate of Overdose Deaths (per 100,000): **18**

County Rank by Average Rate: **45**

Percent Change from 2015-2016: **40% Increase**

Percent Change from 2016-2017: **86% Increase**

Percent Change from 2015-2017: **160% Increase**



The information in this section summarizes drug-related overdose death data (accidental or undetermined) from 2015-2017.

<u>The first page consists of the quarterly trend and demographic information:</u>

1: Total Number of Overdose Deaths per Quarter per Year*

2-4: Total Number of Overdose Deaths per Age/Gender/Race

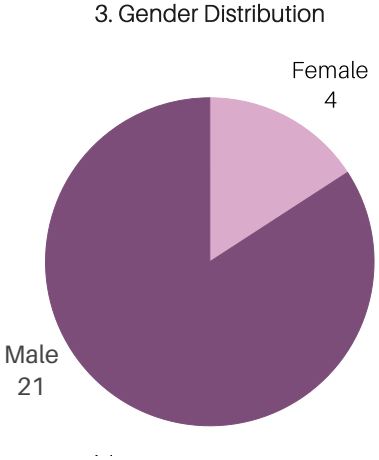
<u>The second page consists of the yearly trend for the most commonly identified drug categories and the drug category breakdown for each demographic group:</u>

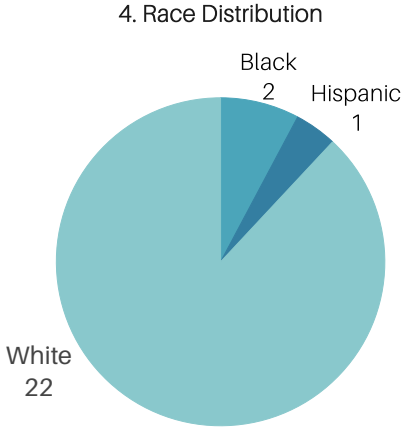
5: Percent of Overdose Deaths per Drug Category per Year

6-8: Percent of Overdose Deaths per Drug Category per Age/Gender/Race, per Year if Applicable

*Percent = (Number of deaths per drug category per demographic group, per year if applicable) / (Number of deaths per demographic group, per year if applicable) * 100%*

*Breakdown by quarter is suppressed when there are less than three data points for each quarter.



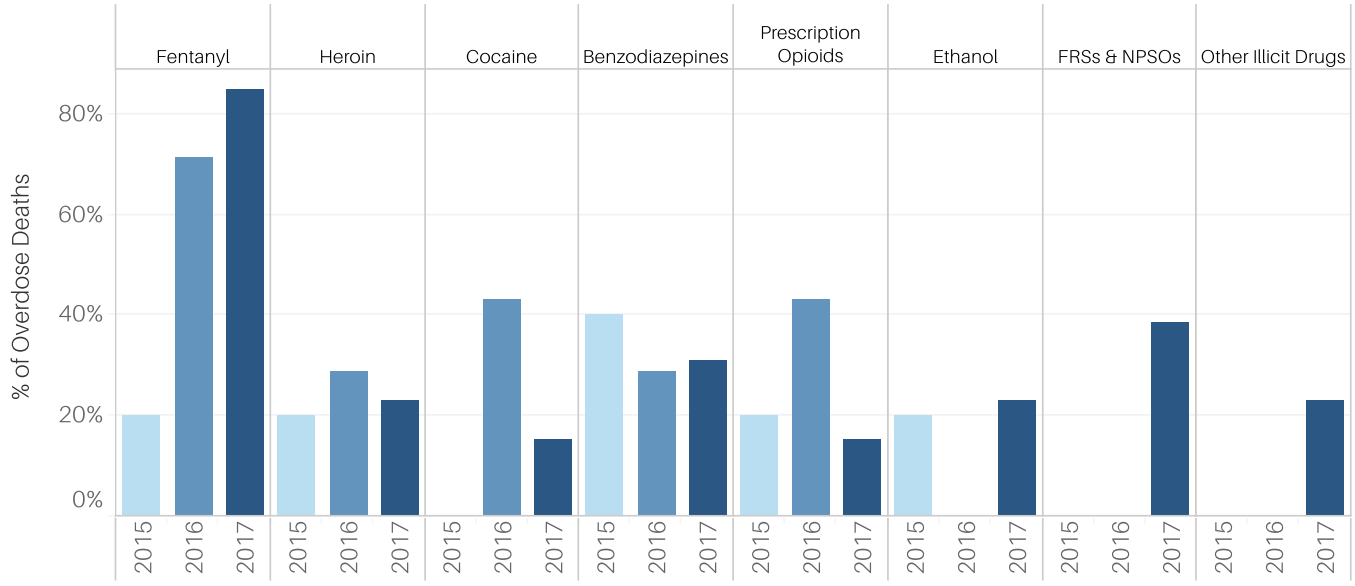


Source: Pennsylvania Coroner/Medical Examiner Data

APPENDIX D

(U) Figure D34: Analysis of 2015 - 2017 Overdose Death Data within County: Huntingdon

5. Percent of Overdose Deaths per Drug Category per Year



6. Percent of Overdose Deaths per Drug Category per Age Group per Year

Drug Category	2015 0-24	2015 25-44	2015 45-64	2015 65+	2016 0-24	2016 25-44	2016 45-64	2016 65+	2017 0-24	2017 25-44	2017 45-64	2017 65+
Fentanyl			33%		100%	100%		100%	100%	88%	75%	
Heroin	100%					33%	50%			25%	25%	
Cocaine					100%	33%		100%			50%	
Benzodiazepines			67%				50%	100%		38%	25%	
Prescription Opioids			33%			67%	50%				50%	
Ethanol	100%								100%	13%	25%	
FRSs & NPSOs										50%	25%	
Other Illicit Drugs										25%	25%	

7. Per Drug Category per Gender per Year

Drug Category	2015 Female	2015 Male	2016 Female	2016 Male	2017 Female	2017 Male
Fentanyl		25%		83%	50%	91%
Heroin		25%		33%		27%
Cocaine				50%		18%
Benzodiazepines	100%	25%	100%	17%	50%	27%
Prescription Opioids		25%	100%	33%		18%
Ethanol		25%				27%
FRSs & NPSOs						45%
Other Illicit Drugs						27%

8. Per Drug Category per Race, 2015-2017

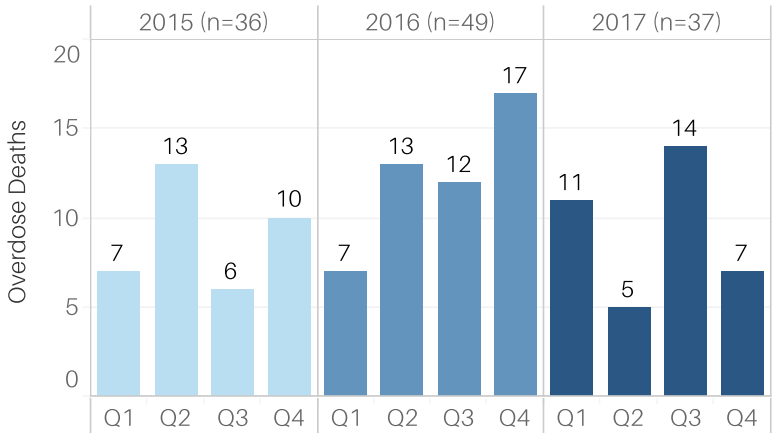
Drug Category	White	Black	Hispanic	Other
Fentanyl	73%	50%		
Heroin	23%	50%		
Cocaine	18%	50%		
Benzodiazepines	36%			
Prescription Opioids	23%	50%		
Ethanol	14%	50%		
FRSs & NPSOs	23%			
Other Illicit Drugs	14%			

Source: Pennsylvania Coroner/Medical Examiner Data

APPENDIX D

(U) Figure D35: Analysis of 2015 - 2017 Overdose Death Data within County: Indiana

1. Quarterly Trend



Total Number of Overdose Deaths: **122**

Average Rate of Overdose Deaths (per 100,000): **47**

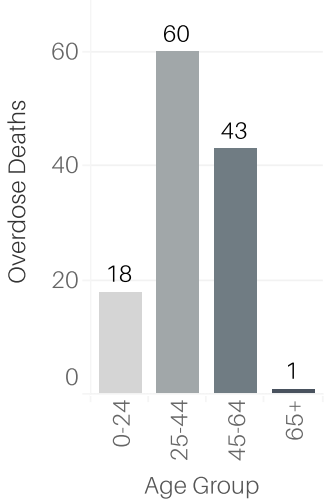
County Rank by Average Rate: **5**

Percent Change from 2015-2016: **36% Increase**

Percent Change from 2016-2017: **24% Decrease**

Percent Change from 2015-2017: **3% Increase**

2. Age Distribution



The information in this section summarizes drug-related overdose death data (accidental or undetermined) from 2015-2017.

<u>The first page consists of the quarterly trend and demographic information:</u>

1: Total Number of Overdose Deaths per Quarter per Year*

2-4: Total Number of Overdose Deaths per Age/Gender/Race

<u>The second page consists of the yearly trend for the most commonly identified drug categories and the drug category breakdown for each demographic group:</u>

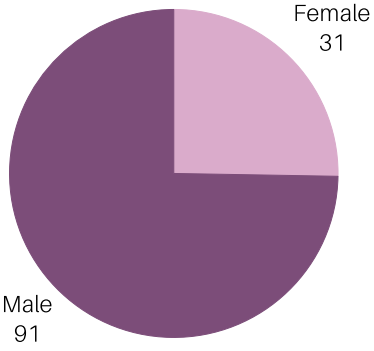
5: Percent of Overdose Deaths per Drug Category per Year

6-8: Percent of Overdose Deaths per Drug Category per Age/Gender/Race, per Year if Applicable

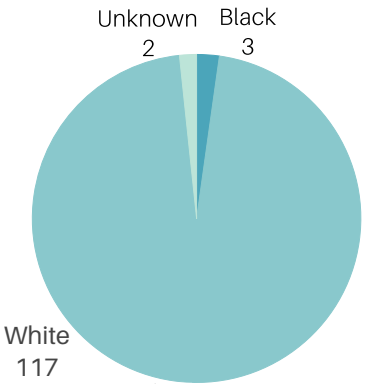
*Percent = (Number of deaths per drug category per demographic group, per year if applicable) / (Number of deaths per demographic group, per year if applicable) * 100%*

*Breakdown by quarter is suppressed when there are less than three data points for each quarter.

3. Gender Distribution



4. Race Distribution

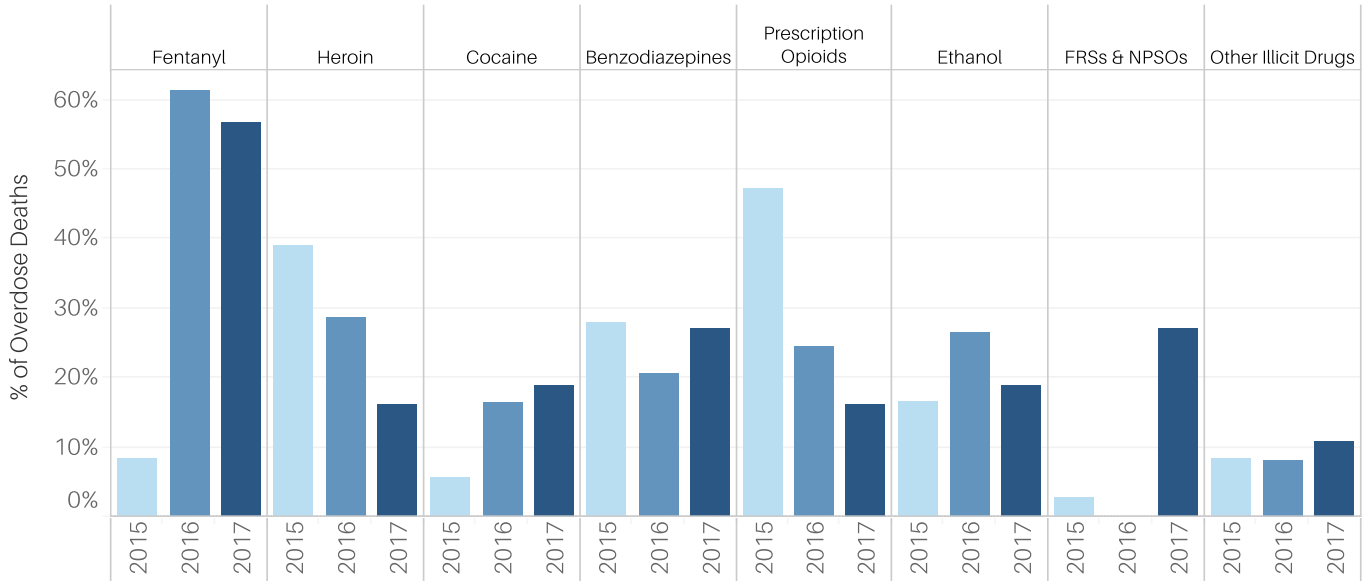


Source: Pennsylvania Coroner/Medical Examiner Data

APPENDIX D

(U) Figure D35: Analysis of 2015 - 2017 Overdose Death Data within County: Indiana

5. Percent of Overdose Deaths per Drug Category per Year



6. Percent of Overdose Deaths per Drug Category per Age Group per Year

Drug Category	2015				2016				2017			
	0-24	25-44	45-64	65+	0-24	25-44	45-64	65+	0-24	25-44	45-64	65+
Fentanyl	20%	6%	8%		44%	73%	59%		50%	60%	54%	
Heroin	40%	61%	8%		67%	23%	18%		50%	15%	8%	
Cocaine		11%			11%	18%	18%		25%	20%	15%	
Benzodiazepines	20%	28%	31%		22%	18%	24%			30%	31%	
Prescription Opioids	20%	39%	69%		22%	23%	29%		25%	10%	23%	
Ethanol	40%	17%	8%		22%	32%	18%	100%	25%	10%	31%	
FRSs & NPSOs		6%								25%	38%	
Other Illicit Drugs	20%	6%	8%		11%	9%	6%			10%	15%	

7. Per Drug Category per Gender per Year

Drug Category	2015		2016		2017	
	Female	Male	Female	Male	Female	Male
Fentanyl	7%	9%	58%	62%	40%	59%
Heroin	29%	45%	25%	30%	20%	16%
Cocaine		9%	25%	14%	40%	16%
Benzodiazepines	21%	32%	25%	19%	60%	22%
Prescription Opioids	50%	45%	42%	19%		19%
Ethanol	7%	23%	17%	30%		22%
FRSs & NPSOs		5%				31%
Other Illicit Drugs	7%	9%	17%	5%	20%	9%

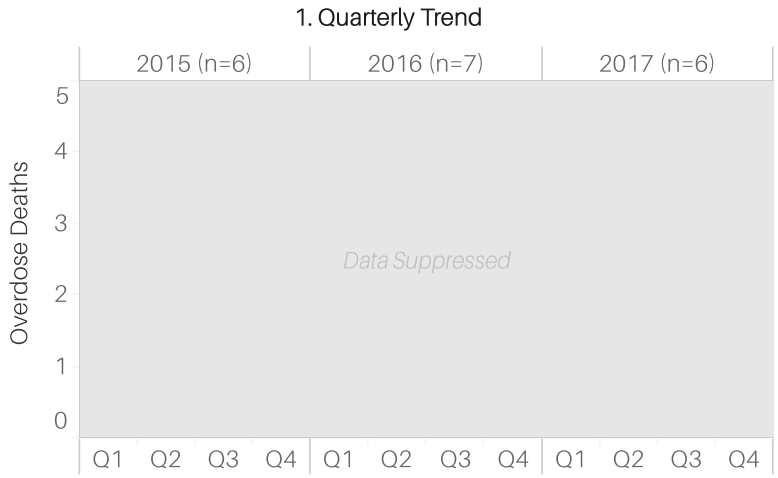
8. Per Drug Category per Race, 2015-2017

Drug Category	White	Black	Hispanic	Other
Fentanyl	44%	67%		
Heroin	27%	33%		
Cocaine	13%	33%		
Benzodiazepines	25%	33%		
Prescription Opioids	30%			
Ethanol	22%			
FRSs & NPSOs	9%			
Other Illicit Drugs	9%	33%		

Source: Pennsylvania Coroner/Medical Examiner Data

APPENDIX D

(U) Figure D36: Analysis of 2015 - 2017 Overdose Death Data within County: Jefferson



Total Number of Overdose Deaths: **19**

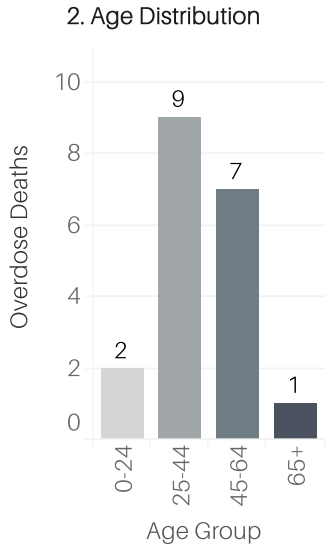
Average Rate of Overdose Deaths (per 100,000): **14**

County Rank by Average Rate: **57**

Percent Change from 2015-2016: **17% Increase**

Percent Change from 2016-2017: **14% Decrease**

Percent Change from 2015-2017: **No Change**



The information in this section summarizes drug-related overdose death data (accidental or undetermined) from 2015-2017.

The first page consists of the quarterly trend and demographic information:

1: Total Number of Overdose Deaths per Quarter per Year*

2-4: Total Number of Overdose Deaths per Age/Gender/Race

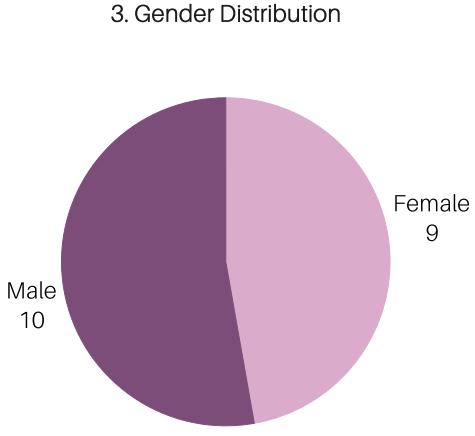
The second page consists of the yearly trend for the most commonly identified drug categories and the drug category breakdown for each demographic group:

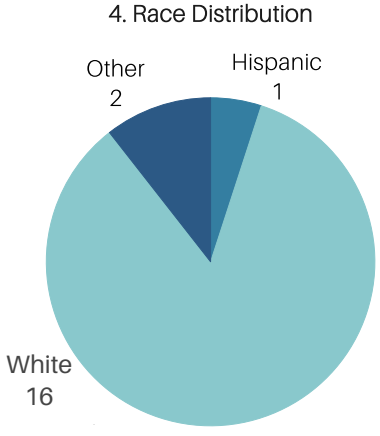
5: Percent of Overdose Deaths per Drug Category per Year

6-8: Percent of Overdose Deaths per Drug Category per Age/Gender/Race, per Year if Applicable

*Percent = (Number of deaths per drug category per demographic group, per year if applicable) / (Number of deaths per demographic group, per year if applicable) * 100%*

*Breakdown by quarter is suppressed when there are less than three data points for each quarter.



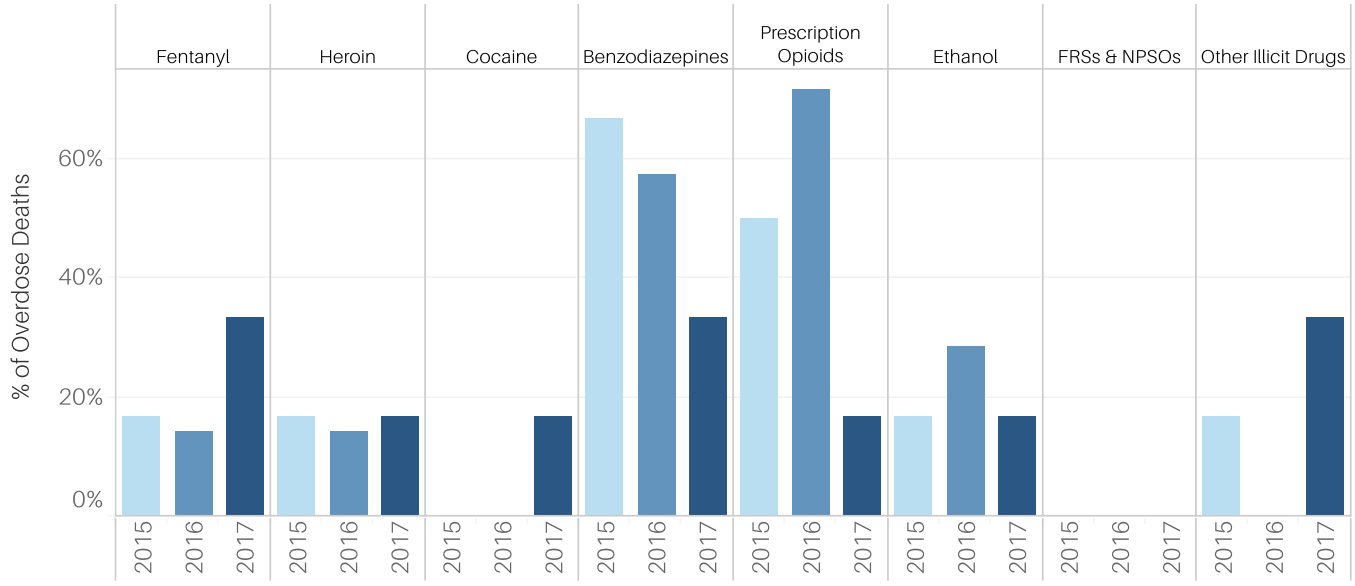


Source: Pennsylvania Coroner/Medical Examiner Data

APPENDIX D

(U) Figure D36: Analysis of 2015 - 2017 Overdose Death Data within County: Jefferson

5. Percent of Overdose Deaths per Drug Category per Year



6. Percent of Overdose Deaths per Drug Category per Age Group per Year

Drug Category	2015 0-24	2015 25-44	2015 45-64	2015 65+	2016 0-24	2016 25-44	2016 45-64	2016 65+	2017 0-24	2017 25-44	2017 45-64	2017 65+
Fentanyl			33%			33%				50%		
Heroin		50%				33%			100%			
Cocaine										25%		
Benzodiazepines	100%	100%	33%		100%	33%			100%		100%	
Prescription Opioids		50%	67%		67%	67%	100%			25%		
Ethanol		50%				33%	100%			25%		
FRSs & NPSOs												
Other Illicit Drugs		50%							100%	25%		

7. Per Drug Category per Gender per Year

Drug Category	2015 Female	2015 Male	2016 Female	2016 Male	2017 Female	2017 Male
Fentanyl	33%		25%			50%
Heroin		33%	25%		50%	
Cocaine						25%
Benzodiazepines	33%	100%	100%		50%	25%
Prescription Opioids	67%	33%	50%	100%		25%
Ethanol		33%	25%	33%		25%
FRSs & NPSOs						
Other Illicit Drugs		33%			100%	

8. Per Drug Category per Race, 2015-2017

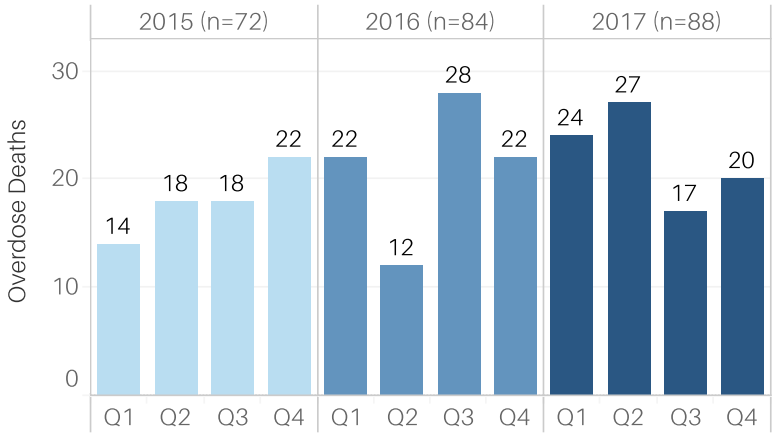
Drug Category	White	Black	Hispanic	Other
Fentanyl	25%			
Heroin	13%			50%
Cocaine	6%			
Benzodiazepines	56%			50%
Prescription Opioids	50%			50%
Ethanol	25%			
FRSs & NPSOs				
Other Illicit Drugs	6%		100%	50%

Source: Pennsylvania Coroner/Medical Examiner Data

APPENDIX D

(U) Figure D37: Analysis of 2015 - 2017 Overdose Death Data within County: Lackawanna

1. Quarterly Trend



Total Number of Overdose Deaths: **244**

Average Rate of Overdose Deaths (per 100,000): **39**

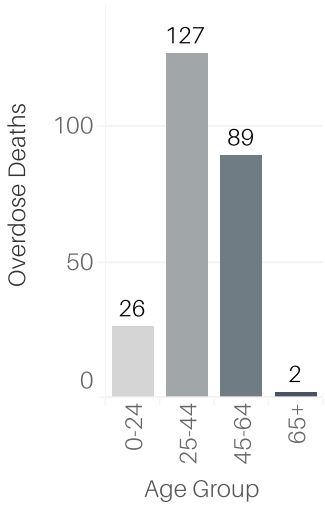
County Rank by Average Rate: **14**

Percent Change from 2015-2016: **17% Increase**

Percent Change from 2016-2017: **5% Increase**

Percent Change from 2015-2017: **22% Increase**

2. Age Distribution



The information in this section summarizes drug-related overdose death data (accidental or undetermined) from 2015-2017.

<u>The first page consists of the quarterly trend and demographic information:</u>

1: Total Number of Overdose Deaths per Quarter per Year*

2-4: Total Number of Overdose Deaths per Age/Gender/Race

<u>The second page consists of the yearly trend for the most commonly identified drug categories and the drug category breakdown for each demographic group:</u>

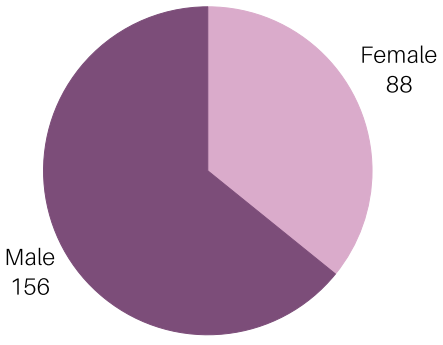
5: Percent of Overdose Deaths per Drug Category per Year

6-8: Percent of Overdose Deaths per Drug Category per Age/Gender/Race, per Year if Applicable

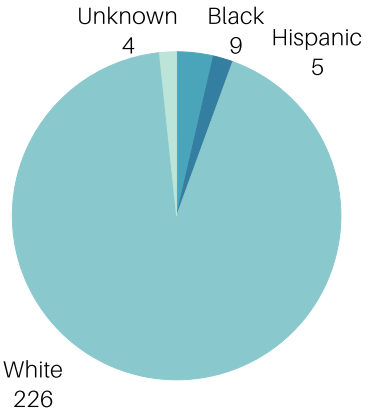
*Percent = (Number of deaths per drug category per demographic group, per year if applicable) / (Number of deaths per demographic group, per year if applicable) * 100%*

*Breakdown by quarter is suppressed when there are less than three data points for each quarter.

3. Gender Distribution



4. Race Distribution

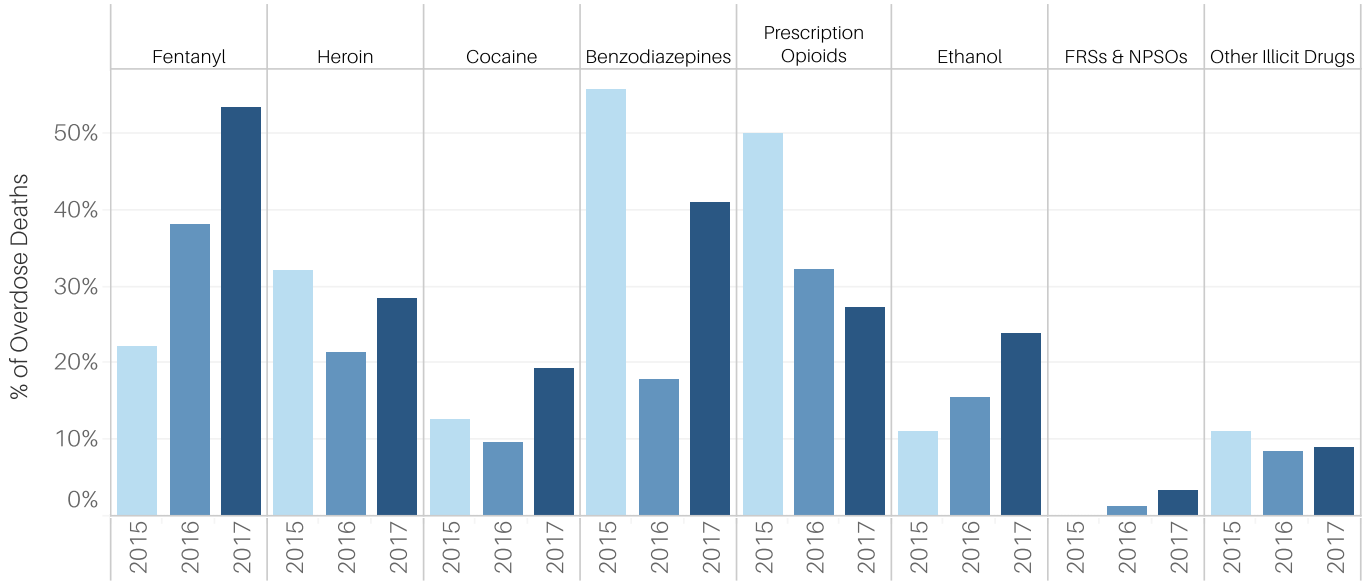


Source: Pennsylvania Coroner/Medical Examiner Data

APPENDIX D

(U) Figure D37: Analysis of 2015 - 2017 Overdose Death Data within County: Lackawanna

5. Percent of Overdose Deaths per Drug Category per Year



6. Percent of Overdose Deaths per Drug Category per Age Group per Year

Drug Category	2015 0-24	2015 25-44	2015 45-64	2015 65+	2016 0-24	2016 25-44	2016 45-64	2016 65+	2017 0-24	2017 25-44	2017 45-64	2017 65+
Fentanyl	33%	24%	18%		75%	38%	23%		75%	64%	37%	
Heroin	67%	39%	14%		25%	22%	19%		38%	34%	20%	
Cocaine		18%	7%		8%	9%	12%		38%	14%	23%	
Benzodiazepines	33%	61%	54%			20%	23%		25%	39%	49%	
Prescription Opioids	33%	45%	61%		17%	31%	38%	100%	38%	14%	40%	100%
Ethanol	17%	8%	14%		8%	13%	23%		13%	25%	26%	
FRSs & NPSOs					8%				13%	2%	3%	
Other Illicit Drugs	17%	16%	4%			13%	4%			14%	6%	

7. Per Drug Category per Gender per Year

Drug Category	2015 Female	2015 Male	2016 Female	2016 Male	2017 Female	2017 Male
Fentanyl	21%	23%	34%	40%	34%	64%
Heroin	4%	46%	22%	21%	13%	38%
Cocaine	17%	10%	6%	12%	13%	23%
Benzodiazepines	54%	56%	19%	17%	53%	34%
Prescription Opioids	63%	44%	34%	31%	34%	23%
Ethanol	13%	10%	19%	13%	22%	25%
FRSs & NPSOs				2%		5%
Other Illicit Drugs	17%	8%	16%	4%	6%	11%

8. Per Drug Category per Race, 2015-2017

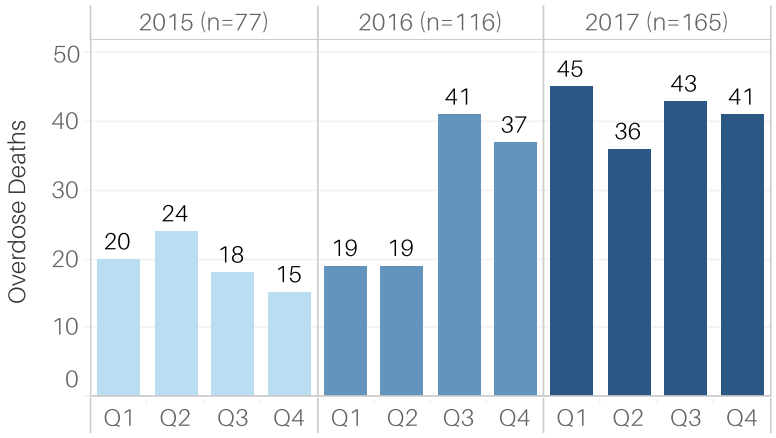
Drug Category	White	Black	Hispanic	Other
Fentanyl	39%	22%	60%	
Heroin	28%	11%	40%	
Cocaine	14%	33%		
Benzodiazepines	38%	22%	40%	
Prescription Opioids	37%	11%	20%	
Ethanol	16%	22%	20%	
FRSs & NPSOs	2%			
Other Illicit Drugs	10%	11%		

Source: Pennsylvania Coroner/Medical Examiner Data

APPENDIX D

(U) Figure D38: Analysis of 2015 - 2017 Overdose Death Data within County: Lancaster

1. Quarterly Trend



Total Number of Overdose Deaths: **358**

Average Rate of Overdose Deaths (per 100,000): **22**

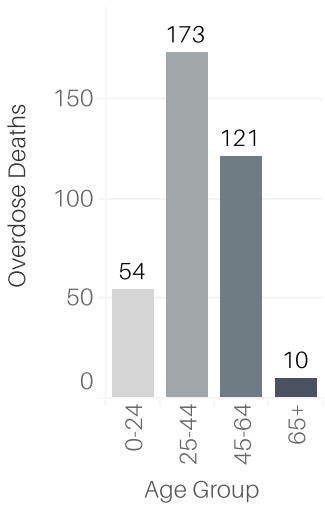
County Rank by Average Rate: **40**

Percent Change from 2015-2016: **51% Increase**

Percent Change from 2016-2017: **42% Increase**

Percent Change from 2015-2017: **114% Increase**

2. Age Distribution



The information in this section summarizes drug-related overdose death data (accidental or undetermined) from 2015-2017.

<u>The first page consists of the quarterly trend and demographic information:</u>

1: Total Number of Overdose Deaths per Quarter per Year*

2-4: Total Number of Overdose Deaths per Age/Gender/Race

<u>The second page consists of the yearly trend for the most commonly identified drug categories and the drug category breakdown for each demographic group:</u>

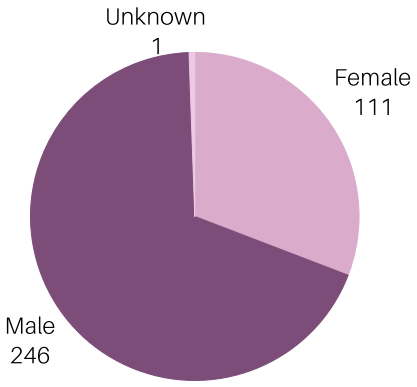
5: Percent of Overdose Deaths per Drug Category per Year

6-8: Percent of Overdose Deaths per Drug Category per Age/Gender/Race, per Year if Applicable

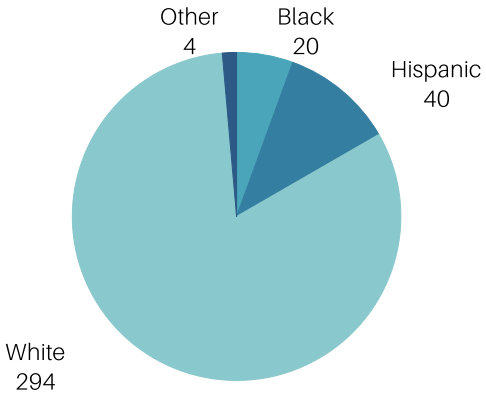
*Percent = (Number of deaths per drug category per demographic group, per year if applicable) / (Number of deaths per demographic group, per year if applicable) * 100%*

*Breakdown by quarter is suppressed when there are less than three data points for each quarter.

3. Gender Distribution



4. Race Distribution

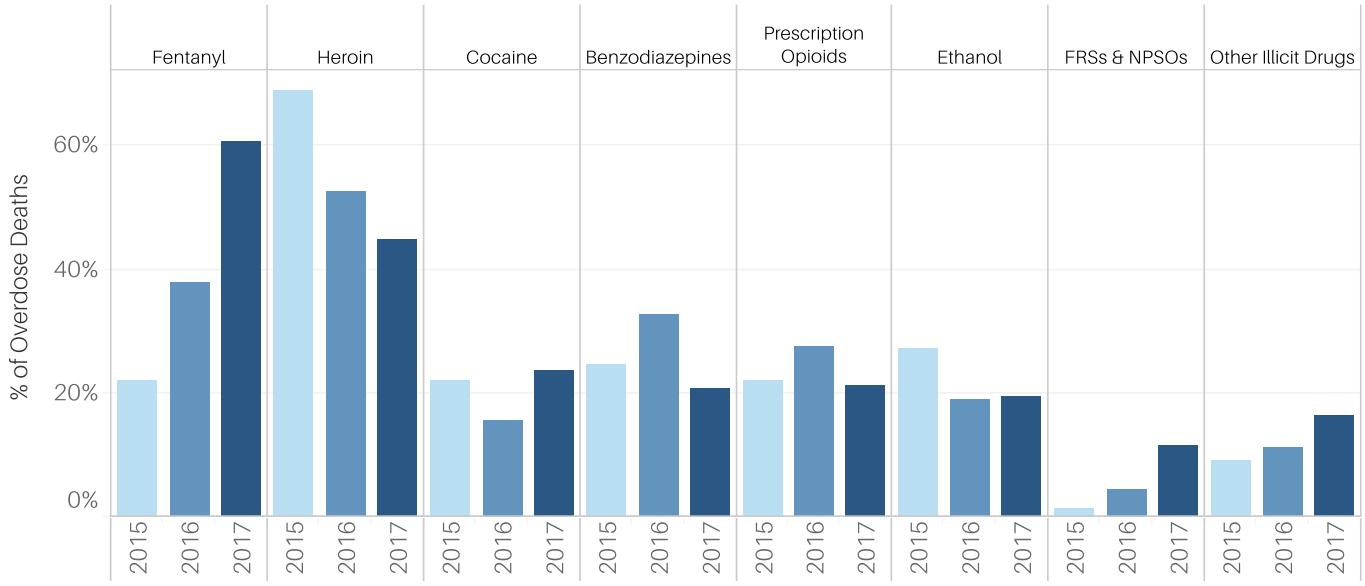


Source: Pennsylvania Coroner/Medical Examiner Data

APPENDIX D

(U) Figure D38: Analysis of 2015 - 2017 Overdose Death Data within County: Lancaster

5. Percent of Overdose Deaths per Drug Category per Year



6. Percent of Overdose Deaths per Drug Category per Age Group per Year

Drug Category	2015				2016				2017			
	0-24	25-44	45-64	65+	0-24	25-44	45-64	65+	0-24	25-44	45-64	65+
Fentanyl	23%	23%	19%	33%	48%	38%	34%		65%	72%	42%	60%
Heroin	77%	83%	55%	33%	62%	59%	37%	50%	55%	53%	29%	40%
Cocaine	15%	30%	16%	33%	5%	12%	29%		30%	25%	22%	
Benzodiazepines	8%	17%	32%	100%	38%	26%	40%	50%	10%	20%	25%	20%
Prescription Opioids	15%	13%	35%		19%	26%	34%	50%	10%	11%	38%	60%
Ethanol	23%	30%	26%	33%	14%	24%	14%		5%	19%	25%	20%
FRSs & NPSOs			3%			7%	3%		20%	13%	7%	
Other Illicit Drugs	15%	13%	3%		19%	10%	9%		20%	19%	13%	

7. Per Drug Category per Gender per Year

Drug Category	2015		2016		2017	
	Female	Male	Female	Male	Female	Male
Fentanyl	25%	21%	41%	37%	52%	64%
Heroin	54%	77%	41%	58%	39%	47%
Cocaine	14%	27%	14%	16%	11%	29%
Benzodiazepines	50%	10%	43%	28%	33%	16%
Prescription Opioids	32%	17%	30%	27%	30%	18%
Ethanol	21%	31%	8%	24%	17%	20%
FRSs & NPSOs		2%	8%	3%	9%	13%
Other Illicit Drugs		13%	11%	11%	26%	13%

8. Per Drug Category per Race, 2015-2017

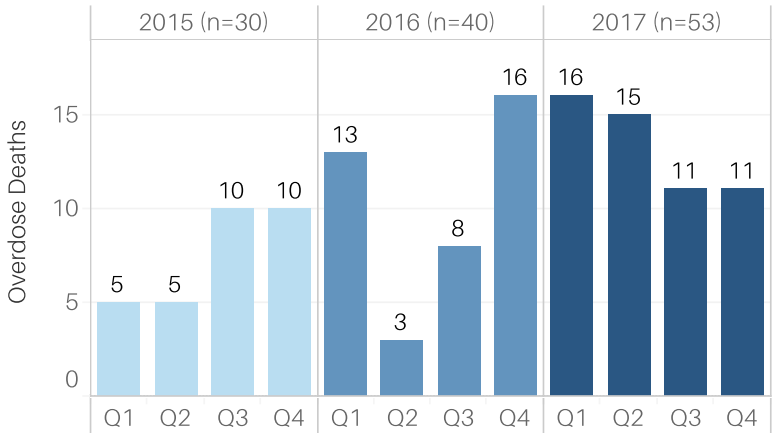
Drug Category	White	Black	Hispanic	Other
Fentanyl	46%	35%	45%	25%
Heroin	53%	45%	60%	
Cocaine	16%	70%	30%	50%
Benzodiazepines	27%	15%	23%	
Prescription Opioids	26%	10%	15%	25%
Ethanol	19%	35%	28%	
FRSs & NPSOs	8%		3%	25%
Other Illicit Drugs	14%	10%	10%	

Source: Pennsylvania Coroner/Medical Examiner Data

APPENDIX D

(U) Figure D39: Analysis of 2015 - 2017 Overdose Death Data within County: Lawrence

1. Quarterly Trend



Total Number of Overdose Deaths: **123**

Average Rate of Overdose Deaths (per 100,000): **47**

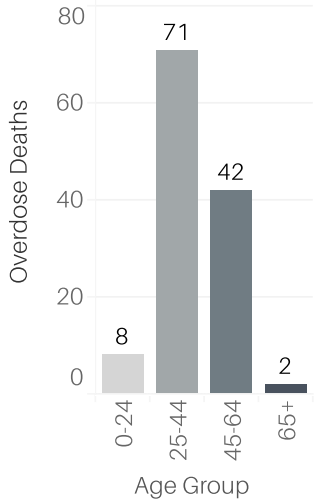
County Rank by Average Rate: **6**

Percent Change from 2015-2016: **33% Increase**

Percent Change from 2016-2017: **33% Increase**

Percent Change from 2015-2017: **77% Increase**

2. Age Distribution



The information in this section summarizes drug-related overdose death data (accidental or undetermined) from 2015-2017.

<u>The first page consists of the quarterly trend and demographic information:</u>

1: Total Number of Overdose Deaths per Quarter per Year*

2-4: Total Number of Overdose Deaths per Age/Gender/Race

<u>The second page consists of the yearly trend for the most commonly identified drug categories and the drug category breakdown for each demographic group:</u>

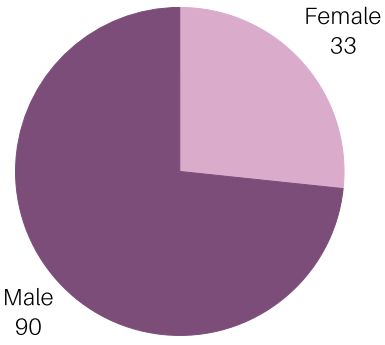
5: Percent of Overdose Deaths per Drug Category per Year

6-8: Percent of Overdose Deaths per Drug Category per Age/Gender/Race, per Year if Applicable

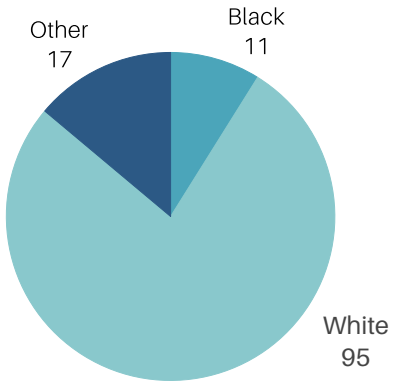
*Percent = (Number of deaths per drug category per demographic group, per year if applicable) / (Number of deaths per demographic group, per year if applicable) * 100%*

*Breakdown by quarter is suppressed when there are less than three data points for each quarter.

3. Gender Distribution



4. Race Distribution

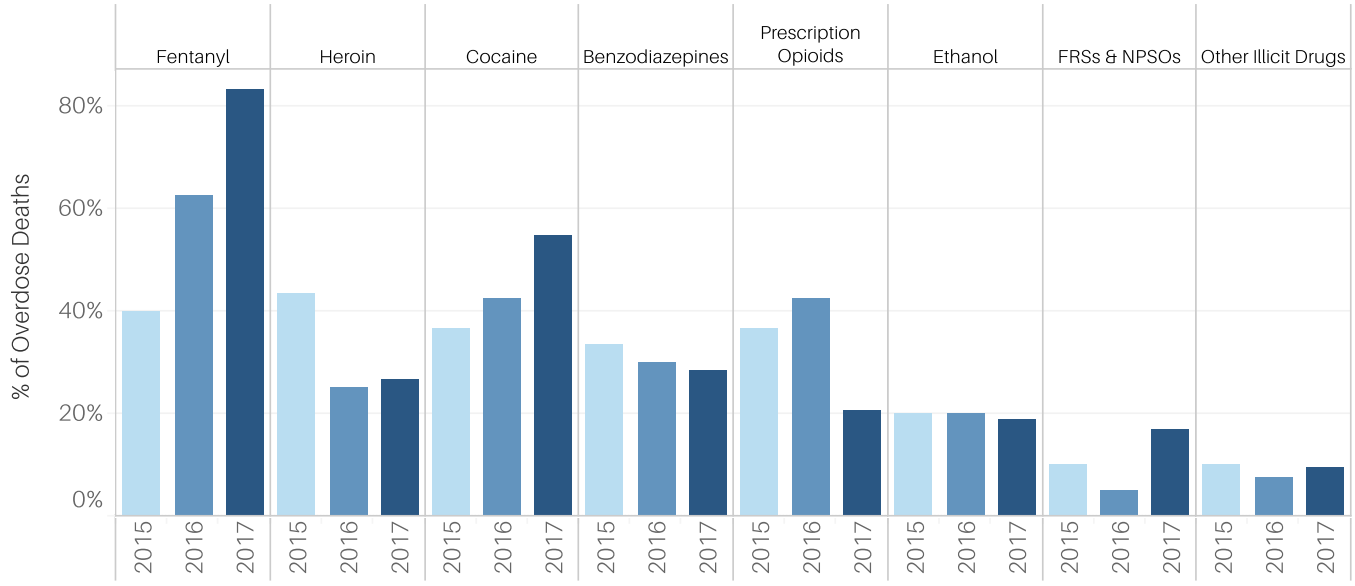


Source: Pennsylvania Coroner/Medical Examiner Data

APPENDIX D

(U) Figure D39: Analysis of 2015 - 2017 Overdose Death Data within County: Lawrence

5. Percent of Overdose Deaths per Drug Category per Year



6. Percent of Overdose Deaths per Drug Category per Age Group per Year

Drug Category	2015 0-24	2015 25-44	2015 45-64	2015 65+	2016 0-24	2016 25-44	2016 45-64	2016 65+	2017 0-24	2017 25-44	2017 45-64	2017 65+
Fentanyl	100%	44%	27%		80%	74%	33%		100%	87%	84%	
Heroin	100%	61%	9%		40%	22%	25%		50%	37%	11%	
Cocaine		33%	45%		20%	39%	58%		50%	50%	63%	50%
Benzodiazepines		39%	27%		40%	30%	25%			40%	11%	50%
Prescription Opioids		28%	55%		40%	39%	50%			23%	11%	100%
Ethanol		17%	27%			22%	25%		50%	7%	32%	50%
FRSs & NPSOs	100%	6%	9%			4%	8%			27%	5%	
Other Illicit Drugs		6%	18%		20%	9%				10%	11%	

7. Per Drug Category per Gender per Year

Drug Category	2015 Female	2015 Male	2016 Female	2016 Male	2017 Female	2017 Male
Fentanyl	25%	45%	55%	66%	86%	82%
Heroin	25%	50%	18%	28%	29%	26%
Cocaine	13%	45%	27%	48%	79%	46%
Benzodiazepines	38%	32%	27%	31%	29%	28%
Prescription Opioids	63%	27%	55%	38%	29%	18%
Ethanol	25%	18%	18%	21%	14%	21%
FRSs & NPSOs	13%	9%		7%	14%	18%
Other Illicit Drugs	13%	9%		10%	14%	8%

8. Per Drug Category per Race, 2015-2017

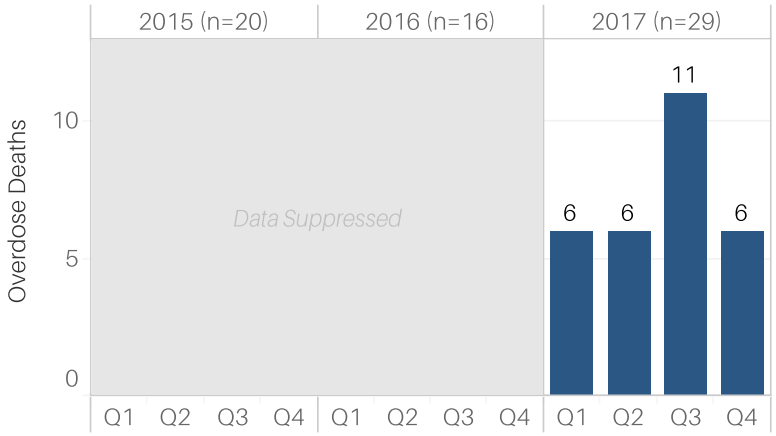
Drug Category	White	Black	Hispanic	Other
Fentanyl	66%	45%		76%
Heroin	32%	36%		18%
Cocaine	49%	55%		24%
Benzodiazepines	34%	18%		18%
Prescription Opioids	31%	36%		35%
Ethanol	21%	18%		12%
FRSs & NPSOs	14%	9%		
Other Illicit Drugs	11%	9%		

Source: Pennsylvania Coroner/Medical Examiner Data

APPENDIX D

(U) Figure D40: Analysis of 2015 - 2017 Overdose Death Data within County: Lebanon

1. Quarterly Trend



Total Number of Overdose Deaths: **65**

Average Rate of Overdose Deaths (per 100,000): **16**

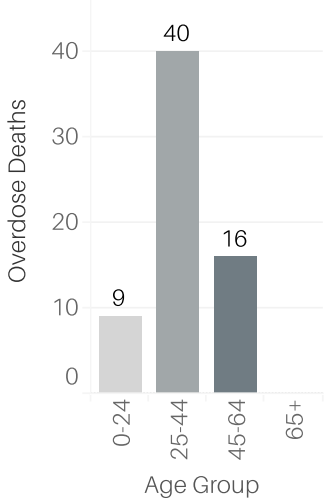
County Rank by Average Rate: **52**

Percent Change from 2015-2016: **20% Decrease**

Percent Change from 2016-2017: **81% Increase**

Percent Change from 2015-2017: **45% Increase**

2. Age Distribution



The information in this section summarizes drug-related overdose death data (accidental or undetermined) from 2015-2017.

<u>The first page consists of the quarterly trend and demographic information:</u>

1: Total Number of Overdose Deaths per Quarter per Year*

2-4: Total Number of Overdose Deaths per Age/Gender/Race

<u>The second page consists of the yearly trend for the most commonly identified drug categories and the drug category breakdown for each demographic group:</u>

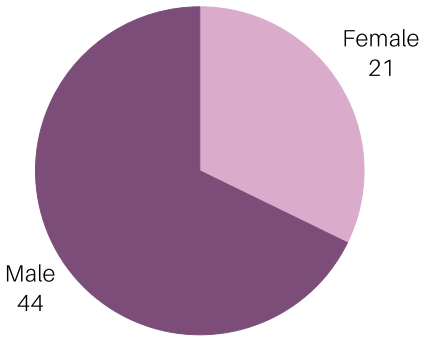
5: Percent of Overdose Deaths per Drug Category per Year

6-8: Percent of Overdose Deaths per Drug Category per Age/Gender/Race, per Year if Applicable

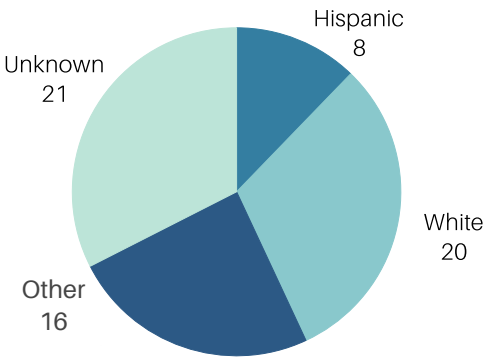
*Percent = (Number of deaths per drug category per demographic group, per year if applicable) / (Number of deaths per demographic group, per year if applicable) * 100%*

*Breakdown by quarter is suppressed when there are less than three data points for each quarter.

3. Gender Distribution



4. Race Distribution

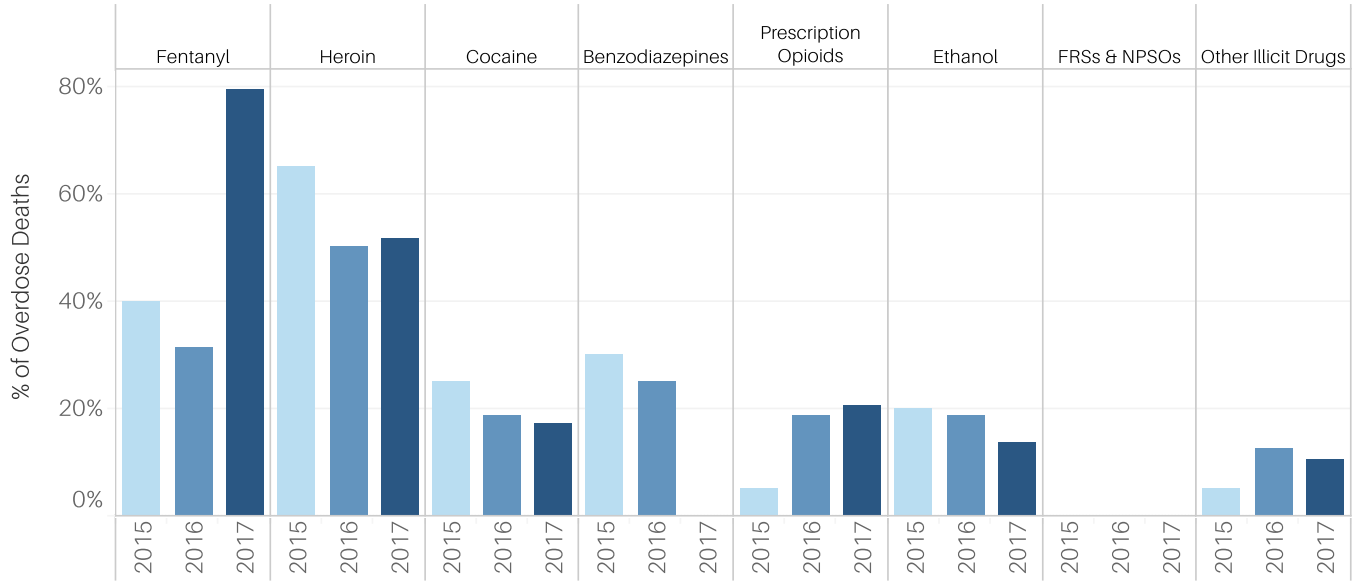


Source: Pennsylvania Coroner/Medical Examiner Data

APPENDIX D

(U) Figure D40: Analysis of 2015 - 2017 Overdose Death Data within County: Lebanon

5. Percent of Overdose Deaths per Drug Category per Year



6. Percent of Overdose Deaths per Drug Category per Age Group per Year

Drug Category	2015 0-24	2015 25-44	2015 45-64	2015 65+	2016 0-24	2016 25-44	2016 45-64	2016 65+	2017 0-24	2017 25-44	2017 45-64	2017 65+
Fentanyl	50%	25%	75%		50%	30%	25%		67%	78%	88%	
Heroin	75%	83%				70%	25%		67%	50%	50%	
Cocaine		42%				20%	25%			17%	25%	
Benzodiazepines		33%	50%			20%	50%					
Prescription Opioids			25%		50%	10%	25%		33%	22%	13%	
Ethanol		25%	25%			10%	50%			6%	38%	
FRSs & NPSOs												
Other Illicit Drugs		8%				20%				11%	13%	

7. Per Drug Category per Gender per Year

Drug Category	2015 Female	2015 Male	2016 Female	2016 Male	2017 Female	2017 Male
Fentanyl	33%	43%		45%	90%	74%
Heroin	50%	71%	40%	55%	70%	42%
Cocaine	17%	29%	20%	18%	30%	11%
Benzodiazepines	50%	21%	20%	27%		
Prescription Opioids	17%		40%	9%	10%	26%
Ethanol		29%	20%	18%		21%
FRSs & NPSOs						
Other Illicit Drugs		7%	20%	9%	10%	11%

8. Per Drug Category per Race, 2015-2017

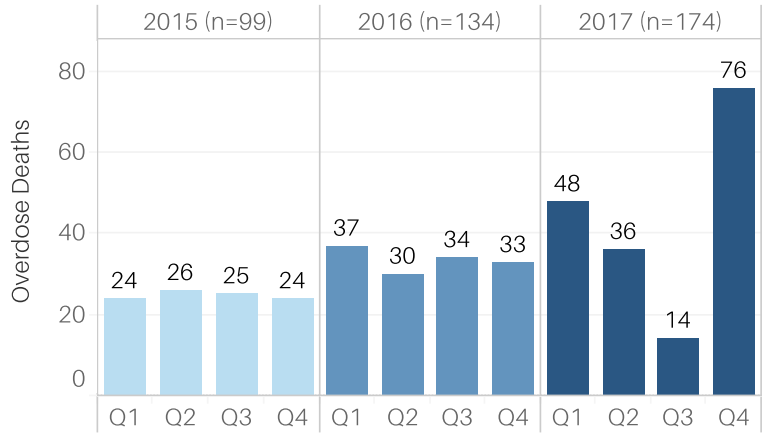
Drug Category	White	Black	Hispanic	Other
Fentanyl	80%		75%	31%
Heroin	55%		38%	50%
Cocaine	15%		25%	19%
Benzodiazepines				25%
Prescription Opioids	20%		25%	19%
Ethanol	15%		13%	19%
FRSs & NPSOs				
Other Illicit Drugs	15%			13%

Source: Pennsylvania Coroner/Medical Examiner Data

APPENDIX D

(U) Figure D41: Analysis of 2015 - 2017 Overdose Death Data within County: Lehigh

1. Quarterly Trend



Total Number of Overdose Deaths: **407**

Average Rate of Overdose Deaths (per 100,000): **37**

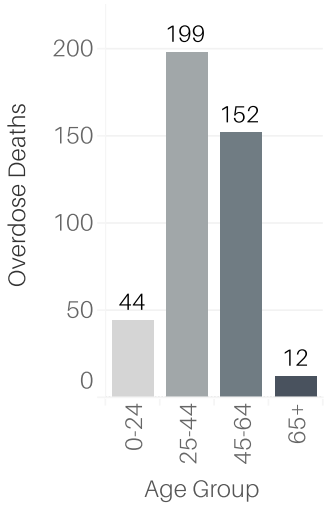
County Rank by Average Rate: **17**

Percent Change from 2015-2016: **35% Increase**

Percent Change from 2016-2017: **30% Increase**

Percent Change from 2015-2017: **76% Increase**

2. Age Distribution



The information in this section summarizes drug-related overdose death data (accidental or undetermined) from 2015-2017.

The first page consists of the quarterly trend and demographic information:

1: Total Number of Overdose Deaths per Quarter per Year*

2-4: Total Number of Overdose Deaths per Age/Gender/Race

The second page consists of the yearly trend for the most commonly identified drug categories and the drug category breakdown for each demographic group:

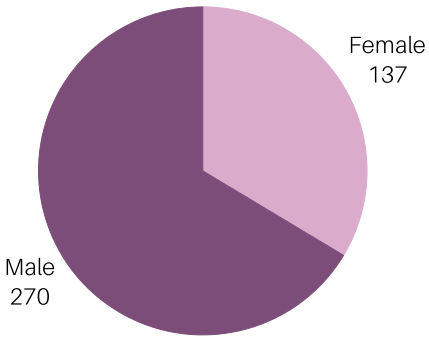
5: Percent of Overdose Deaths per Drug Category per Year

6-8: Percent of Overdose Deaths per Drug Category per Age/Gender/Race, per Year if Applicable

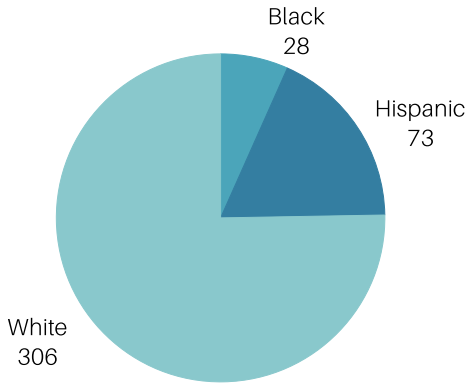
*Percent = (Number of deaths per drug category per demographic group, per year if applicable) / (Number of deaths per demographic group, per year if applicable) * 100%*

*Breakdown by quarter is suppressed when there are less than three data points for each quarter.

3. Gender Distribution



4. Race Distribution

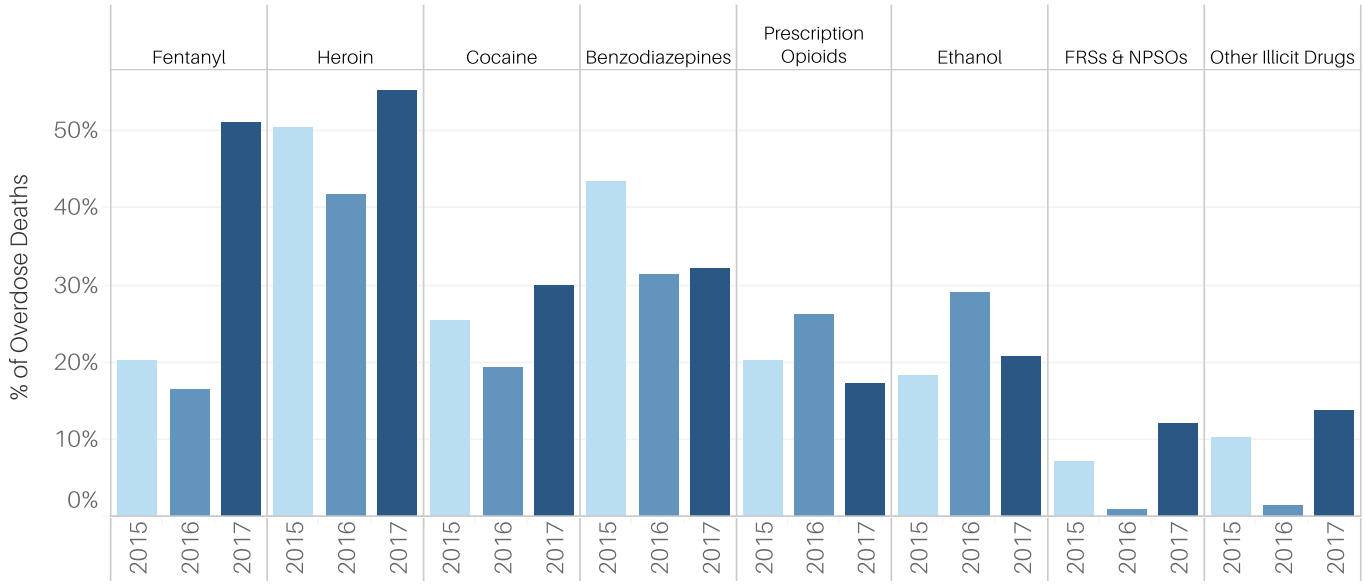


Source: Pennsylvania Coroner/Medical Examiner Data

APPENDIX D

(U) Figure D41: Analysis of 2015 - 2017 Overdose Death Data within County: Lehigh

5. Percent of Overdose Deaths per Drug Category per Year



6. Percent of Overdose Deaths per Drug Category per Age Group per Year

Drug Category	2015				2016				2017			
	0-24	25-44	45-64	65+	0-24	25-44	45-64	65+	0-24	25-44	45-64	65+
Fentanyl	29%	26%	12%		14%	23%	12%		88%	61%	35%	14%
Heroin	50%	63%	38%		50%	44%	38%	20%	63%	64%	45%	14%
Cocaine	21%	19%	33%		27%	12%	22%	40%	13%	29%	32%	43%
Benzodiazepines	57%	42%	40%		18%	30%	38%	40%	25%	29%	35%	57%
Prescription Opioids	21%	21%	19%		9%	32%	26%	40%		17%	15%	57%
Ethanol	14%	5%	33%		23%	28%	34%	20%	13%	22%	20%	14%
FRSs & NPSOs	7%	14%			5%				38%	11%	12%	
Other Illicit Drugs	14%	7%	12%		5%	2%				14%	17%	

7. Per Drug Category per Gender per Year

Drug Category	2015		2016		2017	
	Female	Male	Female	Male	Female	Male
Fentanyl	14%	23%	13%	18%	38%	58%
Heroin	37%	58%	43%	41%	52%	57%
Cocaine	20%	28%	26%	16%	27%	31%
Benzodiazepines	40%	45%	33%	31%	48%	25%
Prescription Opioids	34%	13%	28%	25%	16%	18%
Ethanol	20%	17%	22%	33%	20%	21%
FRSs & NPSOs	11%	5%	2%		14%	11%
Other Illicit Drugs	11%	9%		2%	18%	12%

8. Per Drug Category per Race, 2015-2017

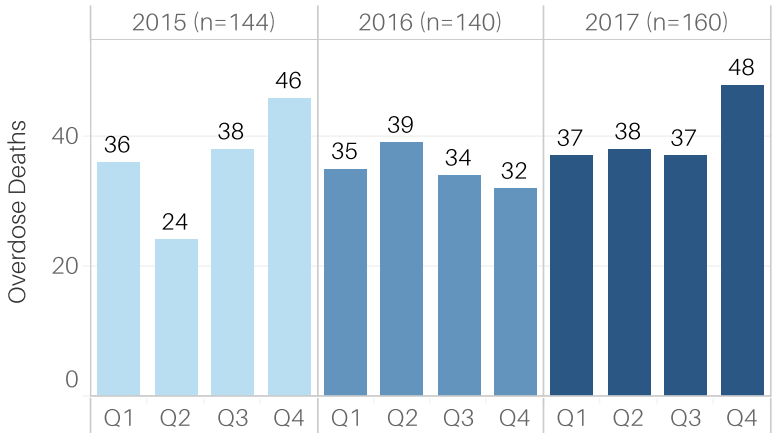
Drug Category	White	Black	Hispanic	Other
Fentanyl	32%	32%	34%	
Heroin	50%	25%	59%	
Cocaine	24%	39%	27%	
Benzodiazepines	36%	29%	33%	
Prescription Opioids	21%	36%	16%	
Ethanol	24%	18%	22%	
FRSs & NPSOs	8%	11%	1%	
Other Illicit Drugs	10%	7%	3%	

Source: Pennsylvania Coroner/Medical Examiner Data

APPENDIX D

(U) Figure D42: Analysis of 2015 - 2017 Overdose Death Data within County: Luzerne

1. Quarterly Trend



Total Number of Overdose Deaths: **444**

Average Rate of Overdose Deaths (per 100,000): **47**

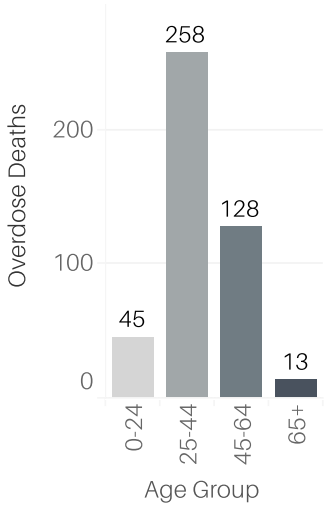
County Rank by Average Rate: **7**

Percent Change from 2015-2016: **3% Decrease**

Percent Change from 2016-2017: **14% Increase**

Percent Change from 2015-2017: **11% Increase**

2. Age Distribution



The information in this section summarizes drug-related overdose death data (accidental or undetermined) from 2015-2017.

The first page consists of the quarterly trend and demographic information:

1: Total Number of Overdose Deaths per Quarter per Year*

2-4: Total Number of Overdose Deaths per Age/Gender/Race

The second page consists of the yearly trend for the most commonly identified drug categories and the drug category breakdown for each demographic group:

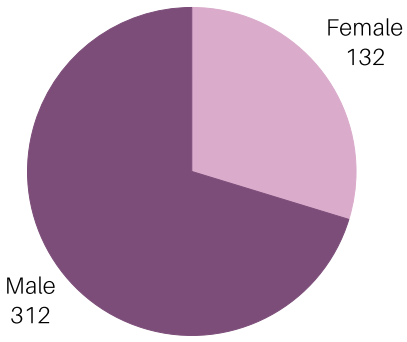
5: Percent of Overdose Deaths per Drug Category per Year

6-8: Percent of Overdose Deaths per Drug Category per Age/Gender/Race, per Year if Applicable

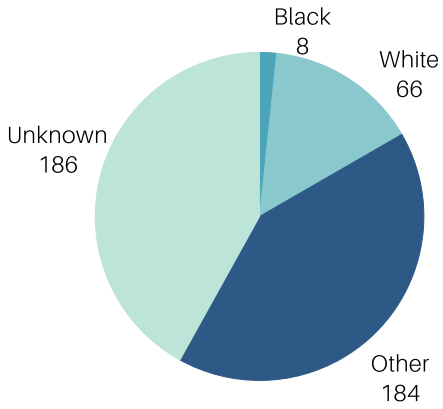
*Percent = (Number of deaths per drug category per demographic group, per year if applicable) / (Number of deaths per demographic group, per year if applicable) * 100%*

*Breakdown by quarter is suppressed when there are less than three data points for each quarter.

3. Gender Distribution



4. Race Distribution

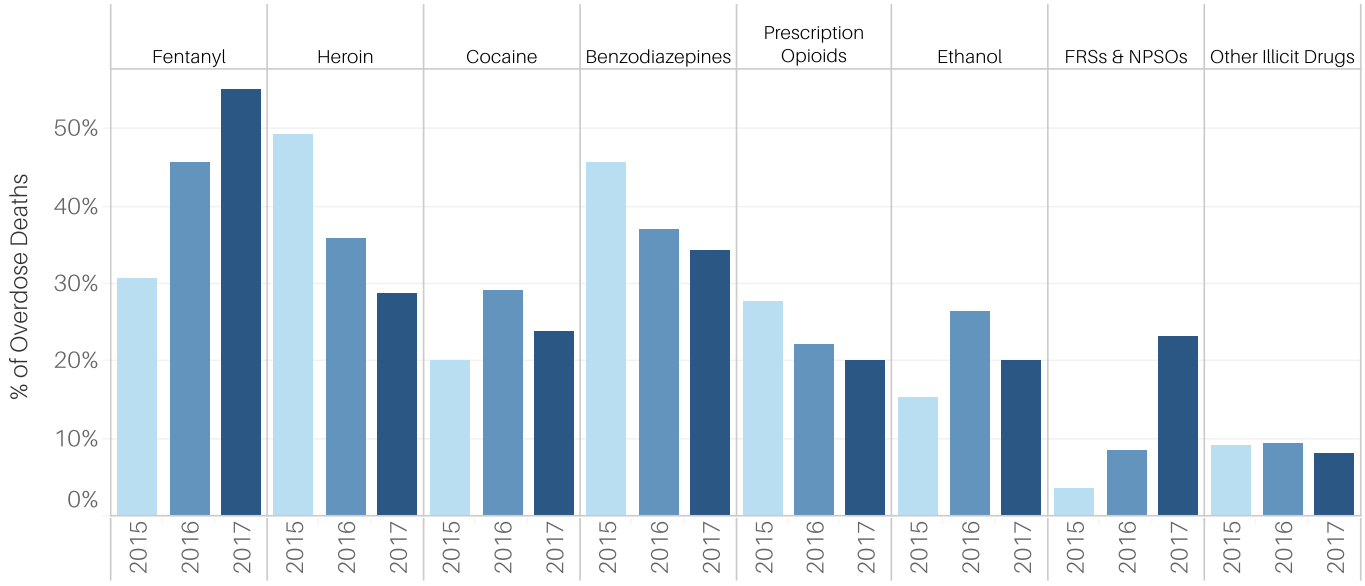


Source: Pennsylvania Coroner/Medical Examiner Data

APPENDIX D

(U) Figure D42: Analysis of 2015 - 2017 Overdose Death Data within County: Luzerne

5. Percent of Overdose Deaths per Drug Category per Year



6. Percent of Overdose Deaths per Drug Category per Age Group per Year

	2015				2016				2017			
Drug Category	0-24	25-44	45-64	65+	0-24	25-44	45-64	65+	0-24	25-44	45-64	65+
Fentanyl	38%	33%	23%	50%	31%	51%	33%	100%	68%	59%	44%	20%
Heroin	46%	57%	38%	50%	38%	39%	23%	75%	11%	38%	20%	
Cocaine	8%	19%	23%	50%	38%	30%	26%	25%	21%	26%	22%	
Benzodiazepines	46%	44%	48%	50%	23%	38%	36%	75%	32%	34%	37%	40%
Prescription Opioids		29%	27%	100%	8%	18%	36%	25%	5%	17%	27%	80%
Ethanol	8%	13%	23%			29%	31%	25%	16%	22%	17%	20%
FRSs & NPSOs	8%	5%			15%	7%	8%	25%	21%	28%	15%	
Other Illicit Drugs	31%	8%	6%			13%	5%		11%	7%	10%	

7. Per Drug Category per Gender per Year

	2015		2016		2017	
Drug Category	Female	Male	Female	Male	Female	Male
Fentanyl	31%	30%	38%	49%	40%	63%
Heroin	38%	53%	33%	37%	25%	31%
Cocaine	18%	21%	23%	32%	30%	21%
Benzodiazepines	38%	49%	55%	30%	45%	29%
Prescription Opioids	26%	29%	28%	20%	17%	21%
Ethanol	13%	16%	18%	30%	15%	22%
FRSs & NPSOs		5%	8%	9%	19%	25%
Other Illicit Drugs	18%	6%	5%	11%	6%	9%

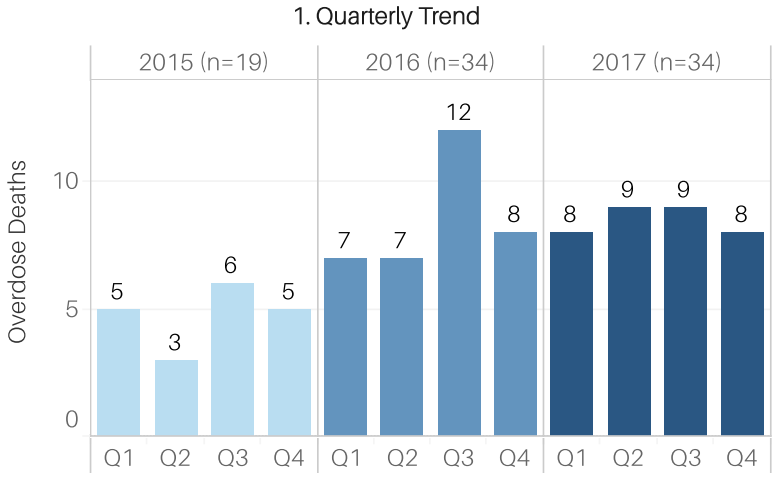
8. Per Drug Category per Race, 2015-2017

Drug Category	White	Black	Hispanic	Other
Fentanyl	29%	25%		47%
Heroin	53%	50%		37%
Cocaine	15%	63%		28%
Benzodiazepines	53%			39%
Prescription Opioids	33%	25%		20%
Ethanol	18%	38%		22%
FRSs & NPSOs	2%			11%
Other Illicit Drugs	3%			10%

Source: Pennsylvania Coroner/Medical Examiner Data

APPENDIX D

(U) Figure D43: Analysis of 2015 - 2017 Overdose Death Data within County: Lycoming



Total Number of Overdose Deaths: **87**

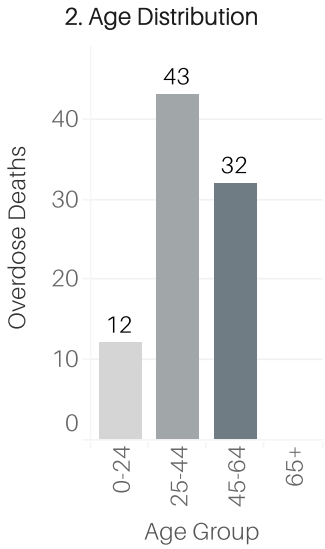
Average Rate of Overdose Deaths (per 100,000): **25**

County Rank by Average Rate: **33**

Percent Change from 2015-2016: **79% Increase**

Percent Change from 2016-2017: **No Change**

Percent Change from 2015-2017: **79% Increase**



The information in this section summarizes drug-related overdose death data (accidental or undetermined) from 2015-2017.

<u>The first page consists of the quarterly trend and demographic information:</u>

1: Total Number of Overdose Deaths per Quarter per Year*

2-4: Total Number of Overdose Deaths per Age/Gender/Race

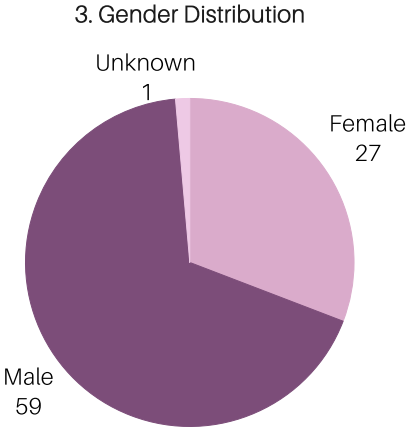
<u>The second page consists of the yearly trend for the most commonly identified drug categories and the drug category breakdown for each demographic group:</u>

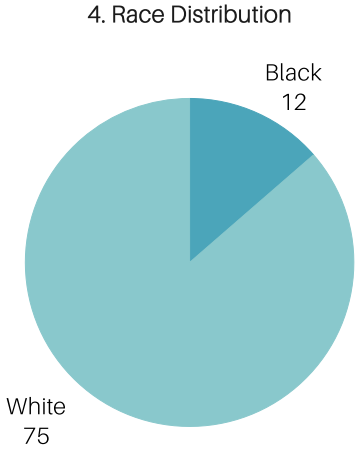
5: Percent of Overdose Deaths per Drug Category per Year

6-8: Percent of Overdose Deaths per Drug Category per Age/Gender/Race, per Year if Applicable

*Percent = (Number of deaths per drug category per demographic group, per year if applicable) / (Number of deaths per demographic group, per year if applicable) * 100%*

*Breakdown by quarter is suppressed when there are less than three data points for each quarter.



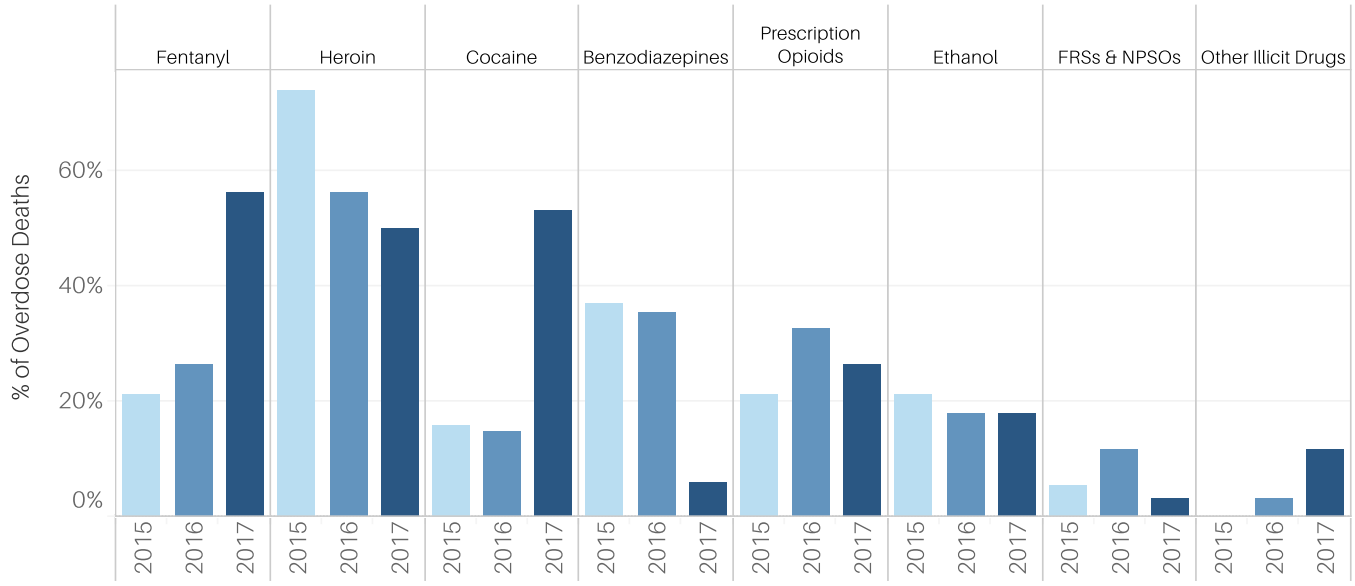


Source: Pennsylvania Coroner/Medical Examiner Data

APPENDIX D

(U) Figure D43: Analysis of 2015 - 2017 Overdose Death Data within County: Lycoming

5. Percent of Overdose Deaths per Drug Category per Year



6. Percent of Overdose Deaths per Drug Category per Age Group per Year

Drug Category	2015				2016				2017			
	0-24	25-44	45-64	65+	0-24	25-44	45-64	65+	0-24	25-44	45-64	65+
Fentanyl	50%	33%			33%	24%	27%		50%	65%	46%	
Heroin	100%	67%	75%		83%	47%	55%		25%	65%	38%	
Cocaine		11%	25%			6%	36%		25%	65%	46%	
Benzodiazepines	50%	33%	38%		17%	29%	55%				15%	
Prescription Opioids	50%	22%	13%			29%	55%			24%	38%	
Ethanol		22%	25%		17%	18%	18%		25%	18%	15%	
FRSs & NPSOs		11%			33%	6%	9%			6%		
Other Illicit Drugs					17%					24%		

7. Per Drug Category per Gender per Year

Drug Category	2015		2016		2017	
	Female	Male	Female	Male	Female	Male
Fentanyl		31%	14%	30%	50%	63%
Heroin	83%	69%	29%	63%	57%	42%
Cocaine	33%	8%	43%	7%	50%	53%
Benzodiazepines	50%	31%	43%	33%	7%	5%
Prescription Opioids	17%	23%	29%	33%	36%	21%
Ethanol	17%	23%	14%	19%	7%	26%
FRSs & NPSOs		8%	14%	11%		5%
Other Illicit Drugs				4%		21%

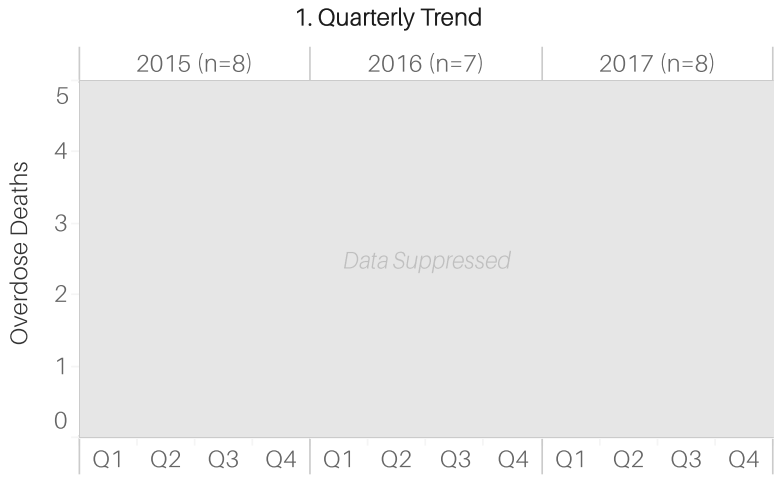
8. Per Drug Category per Race, 2015-2017

Drug Category	White	Black	Hispanic	Other
Fentanyl	33%	58%		
Heroin	59%	50%		
Cocaine	24%	67%		
Benzodiazepines	25%	17%		
Prescription Opioids	28%	25%		
Ethanol	20%	8%		
FRSs & NPSOs	7%	8%		
Other Illicit Drugs	5%	8%		

Source: Pennsylvania Coroner/Medical Examiner Data

APPENDIX D

(U) Figure D44: Analysis of 2015 - 2017 Overdose Death Data within County: McKean



Total Number of Overdose Deaths: **23**

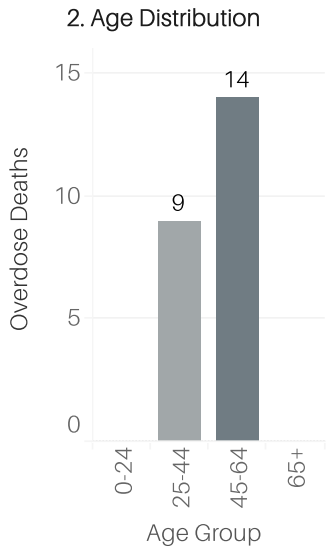
Average Rate of Overdose Deaths (per 100,000): **18**

County Rank by Average Rate: **44**

Percent Change from 2015-2016: **13% Decrease**

Percent Change from 2016-2017: **14% Increase**

Percent Change from 2015-2017: **No Change**



The information in this section summarizes drug-related overdose death data (accidental or undetermined) from 2015-2017.

<u>The first page consists of the quarterly trend and demographic information:</u>

1: Total Number of Overdose Deaths per Quarter per Year*

2-4: Total Number of Overdose Deaths per Age/Gender/Race

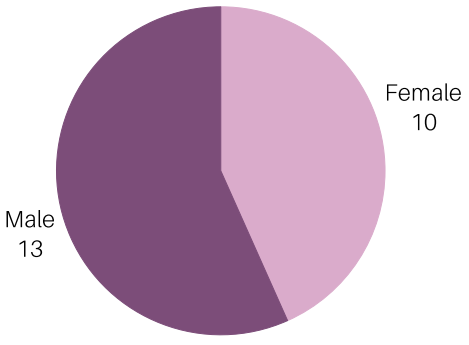
<u>The second page consists of the yearly trend for the most commonly identified drug categories and the drug category breakdown for each demographic group:</u>

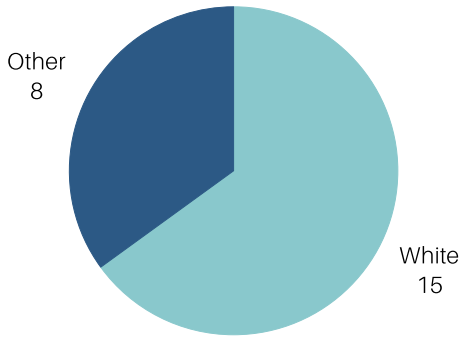
5: Percent of Overdose Deaths per Drug Category per Year

6-8: Percent of Overdose Deaths per Drug Category per Age/Gender/Race, per Year if Applicable

*Percent = (Number of deaths per drug category per demographic group, per year if applicable) / (Number of deaths per demographic group, per year if applicable) * 100%*

*Breakdown by quarter is suppressed when there are less than three data points for each quarter.



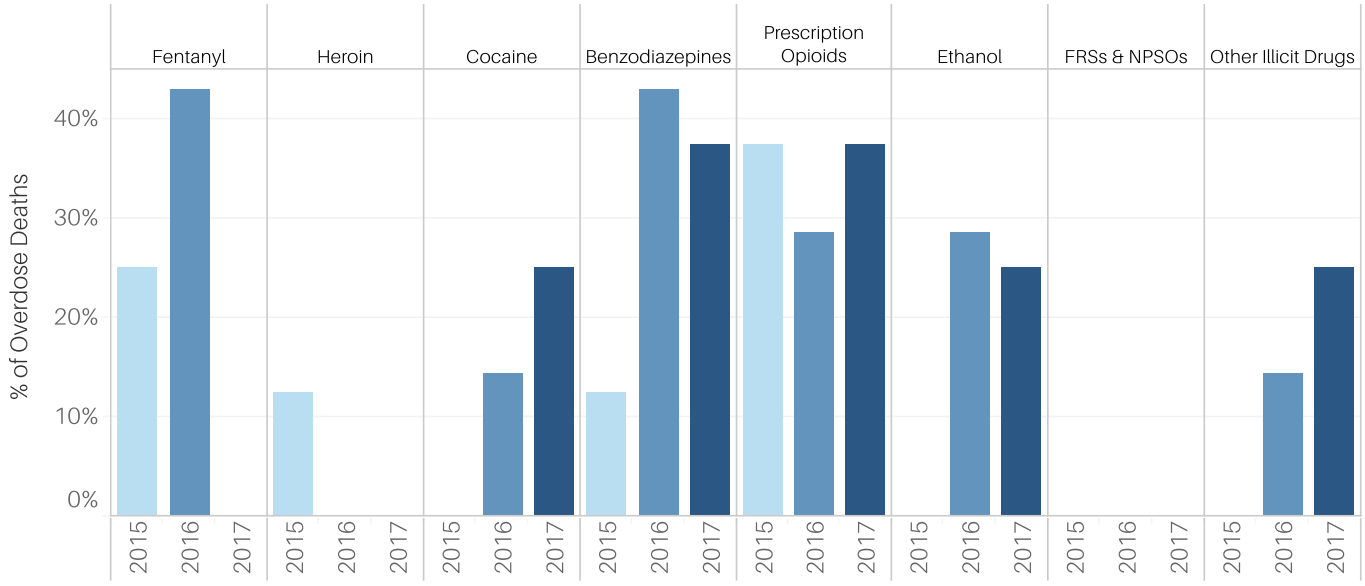


Source: Pennsylvania Coroner/Medical Examiner Data

APPENDIX D

(U) Figure D44: Analysis of 2015 - 2017 Overdose Death Data within County: McKean

5. Percent of Overdose Deaths per Drug Category per Year



6. Percent of Overdose Deaths per Drug Category per Age Group per Year

Drug Category	2015				2016				2017			
	0-24	25-44	45-64	65+	0-24	25-44	45-64	65+	0-24	25-44	45-64	65+
Fentanyl		100%	14%			75%						
Heroin			14%									
Cocaine						25%				25%	25%	
Benzodiazepines			14%			50%	33%			50%	25%	
Prescription Opioids			43%			25%	33%			50%	25%	
Ethanol						50%					50%	
FRSs & NPSOs												
Other Illicit Drugs						25%				50%		

7. Per Drug Category per Gender per Year

Drug Category	2015		2016		2017	
	Female	Male	Female	Male	Female	Male
Fentanyl		50%		75%		
Heroin	25%					
Cocaine				25%	33%	20%
Benzodiazepines		25%	67%	25%	67%	20%
Prescription Opioids	50%	25%	67%		33%	40%
Ethanol				50%	33%	20%
FRSs & NPSOs						
Other Illicit Drugs				25%		40%

8. Per Drug Category per Race, 2015-2017

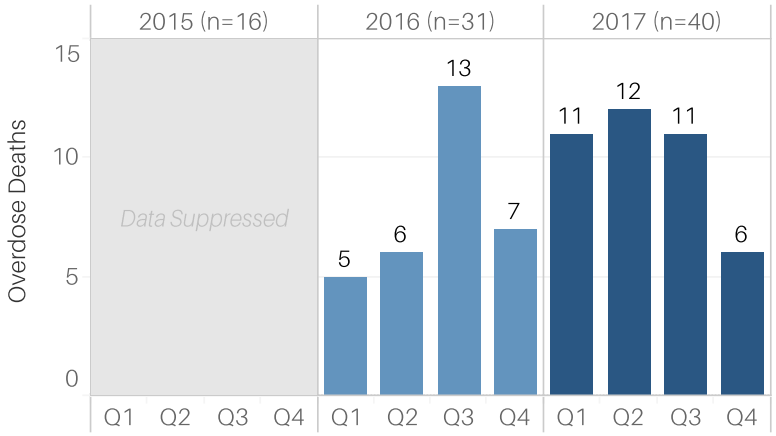
Drug Category	White	Black	Hispanic	Other
Fentanyl	33%			
Heroin	7%			
Cocaine	7%			25%
Benzodiazepines	27%			38%
Prescription Opioids	33%			38%
Ethanol	13%			25%
FRSs & NPSOs				
Other Illicit Drugs	7%			25%

Source: Pennsylvania Coroner/Medical Examiner Data

APPENDIX D

(U) Figure D45: Analysis of 2015 - 2017 Overdose Death Data within County: Mercer

1. Quarterly Trend



Total Number of Overdose Deaths: **87**

Average Rate of Overdose Deaths (per 100,000): **26**

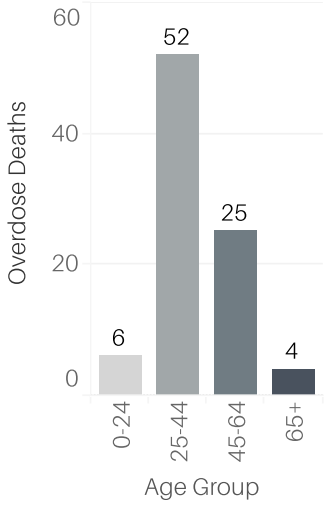
County Rank by Average Rate: **32**

Percent Change from 2015-2016: **94% Increase**

Percent Change from 2016-2017: **29% Increase**

Percent Change from 2015-2017: **150% Increase**

2. Age Distribution



The information in this section summarizes drug-related overdose death data (accidental or undetermined) from 2015-2017.

<u>The first page consists of the quarterly trend and demographic information:</u>

1: Total Number of Overdose Deaths per Quarter per Year*

2-4: Total Number of Overdose Deaths per Age/Gender/Race

<u>The second page consists of the yearly trend for the most commonly identified drug categories and the drug category breakdown for each demographic group:</u>

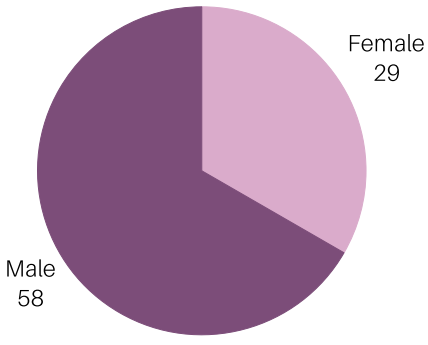
5: Percent of Overdose Deaths per Drug Category per Year

6-8: Percent of Overdose Deaths per Drug Category per Age/Gender/Race, per Year if Applicable

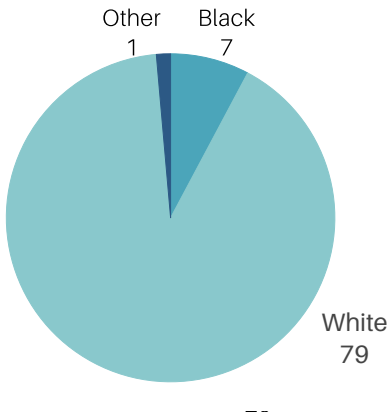
*Percent = (Number of deaths per drug category per demographic group, per year if applicable) / (Number of deaths per demographic group, per year if applicable) * 100%*

*Breakdown by quarter is suppressed when there are less than three data points for each quarter.

3. Gender Distribution



4. Race Distribution

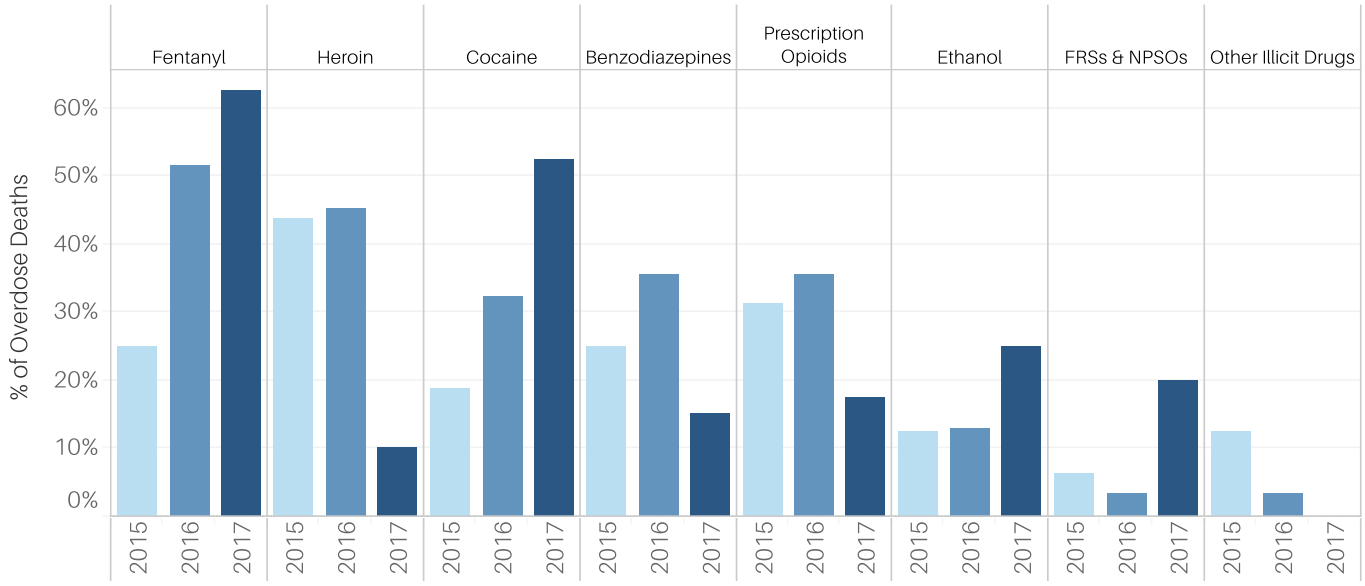


Source: Pennsylvania Coroner/Medical Examiner Data

APPENDIX D

(U) Figure D45: Analysis of 2015 - 2017 Overdose Death Data within County: Mercer

5. Percent of Overdose Deaths per Drug Category per Year



6. Percent of Overdose Deaths per Drug Category per Age Group per Year

Drug Category	2015				2016				2017			
	0-24	25-44	45-64	65+	0-24	25-44	45-64	65+	0-24	25-44	45-64	65+
Fentanyl	67%		33%			68%	13%		100%	70%	55%	
Heroin	100%	43%	17%			55%	13%	100%	33%	9%	9%	
Cocaine		14%	33%			32%	25%	100%	33%	52%	55%	67%
Benzodiazepines	33%	43%				36%	38%		33%	9%	18%	33%
Prescription Opioids		29%	50%			27%	50%	100%	33%	13%	18%	33%
Ethanol		29%				18%			33%	26%	18%	33%
FRSs & NPSOs			17%			5%				17%	36%	
Other Illicit Drugs			33%				13%					

7. Per Drug Category per Gender per Year

Drug Category	2015		2016		2017	
	Female	Male	Female	Male	Female	Male
Fentanyl	22%	29%	57%	50%	38%	74%
Heroin	44%	43%	43%	46%		15%
Cocaine	22%	14%	57%	25%	54%	52%
Benzodiazepines	33%	14%	43%	33%	31%	7%
Prescription Opioids	22%	43%	57%	29%	38%	7%
Ethanol	22%		29%	8%	15%	30%
FRSs & NPSOs		14%		4%	23%	19%
Other Illicit Drugs	11%	14%	14%			

8. Per Drug Category per Race, 2015-2017

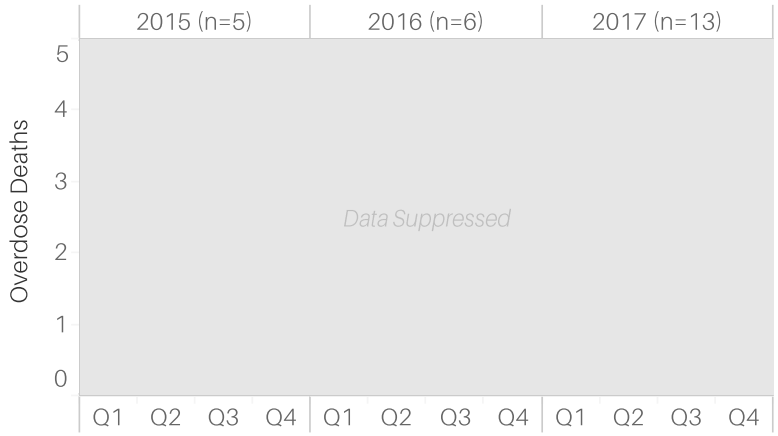
Drug Category	White	Black	Hispanic	Other
Fentanyl	51%	71%		
Heroin	27%	57%		
Cocaine	37%	71%		
Benzodiazepines	23%	29%		100%
Prescription Opioids	27%	29%		
Ethanol	16%	43%		
FRSs & NPSOs	13%			
Other Illicit Drugs	4%			

Source: Pennsylvania Coroner/Medical Examiner Data

APPENDIX D

(U) Figure D46: Analysis of 2015 - 2017 Overdose Death Data within County: Mifflin

1. Quarterly Trend



Total Number of Overdose Deaths: **24**

Average Rate of Overdose Deaths (per 100,000): **17**

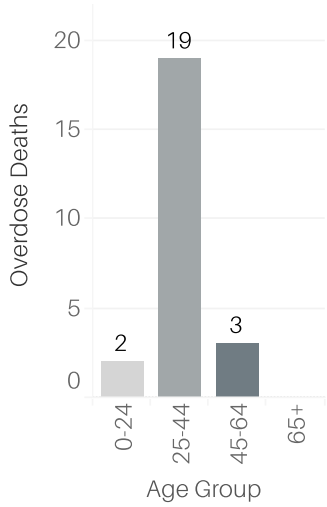
County Rank by Average Rate: **48**

Percent Change from 2015-2016: **20% Increase**

Percent Change from 2016-2017: **117% Increase**

Percent Change from 2015-2017: **160% Increase**

2. Age Distribution



The information in this section summarizes drug-related overdose death data (accidental or undetermined) from 2015-2017.

<u>The first page consists of the quarterly trend and demographic information:</u>

1: Total Number of Overdose Deaths per Quarter per Year*

2-4: Total Number of Overdose Deaths per Age/Gender/Race

<u>The second page consists of the yearly trend for the most commonly identified drug categories and the drug category breakdown for each demographic group:</u>

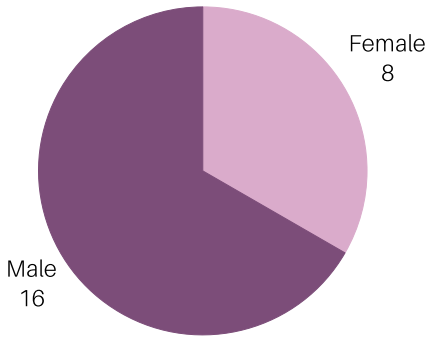
5: Percent of Overdose Deaths per Drug Category per Year

6-8: Percent of Overdose Deaths per Drug Category per Age/Gender/Race, per Year if Applicable

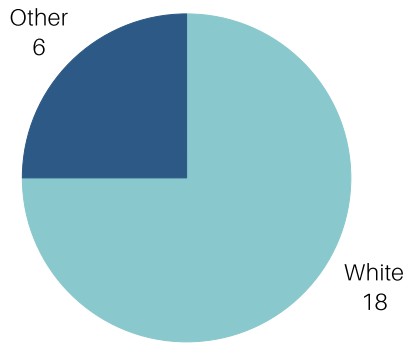
*Percent = (Number of deaths per drug category per demographic group, per year if applicable) / (Number of deaths per demographic group, per year if applicable) * 100%*

*Breakdown by quarter is suppressed when there are less than three data points for each quarter.

3. Gender Distribution



4. Race Distribution

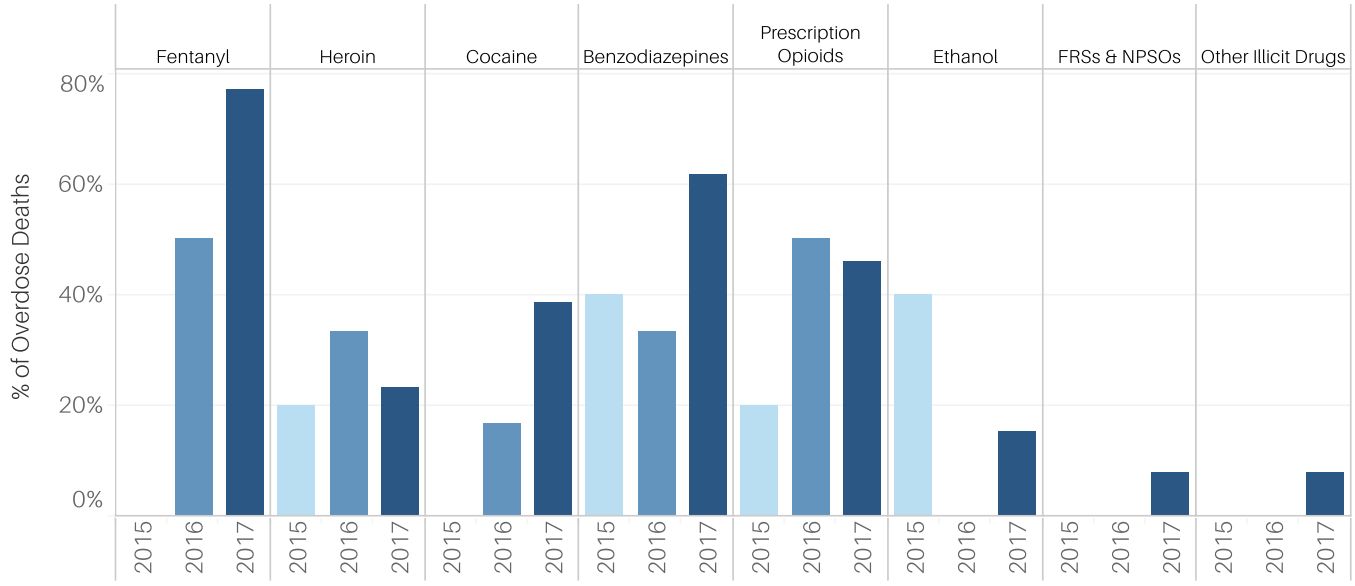


Source: Pennsylvania Coroner/Medical Examiner Data

APPENDIX D

(U) Figure D46: Analysis of 2015 - 2017 Overdose Death Data within County: Mifflin

5. Percent of Overdose Deaths per Drug Category per Year



6. Percent of Overdose Deaths per Drug Category per Age Group per Year

Drug Category	2015 0-24	2015 25-44	2015 45-64	2015 65+	2016 0-24	2016 25-44	2016 45-64	2016 65+	2017 0-24	2017 25-44	2017 45-64	2017 65+
Fentanyl					100%	40%			100%	80%	50%	
Heroin			100%			40%			100%	20%		
Cocaine						20%				30%	100%	
Benzodiazepines		25%	100%			40%				70%	50%	
Prescription Opioids		25%				60%				50%	50%	
Ethanol		25%	100%							20%		
FRSs & NPSOs										10%		
Other Illicit Drugs											50%	

7. Per Drug Category per Gender per Year

Drug Category	2015 Female	2015 Male	2016 Female	2016 Male	2017 Female	2017 Male
Fentanyl				75%	60%	88%
Heroin		25%		50%	20%	25%
Cocaine				25%	40%	38%
Benzodiazepines	100%	25%	50%	25%	60%	63%
Prescription Opioids		25%	100%	25%	40%	50%
Ethanol		50%			20%	13%
FRSs & NPSOs						13%
Other Illicit Drugs						13%

8. Per Drug Category per Race, 2015-2017

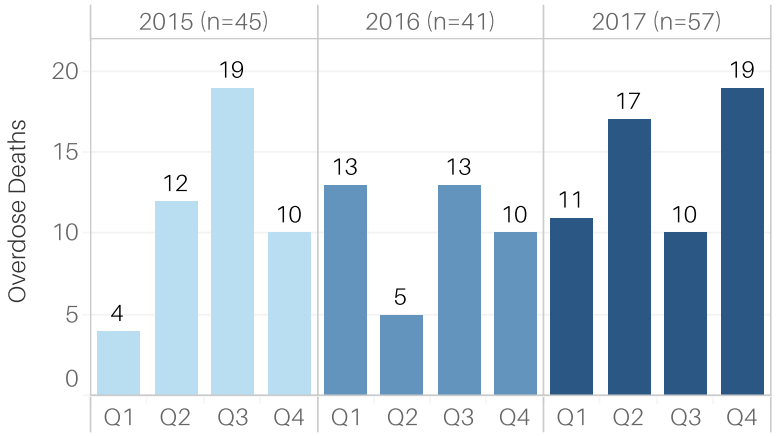
Drug Category	White	Black	Hispanic	Other
Fentanyl	56%			50%
Heroin	22%			33%
Cocaine	28%			17%
Benzodiazepines	56%			33%
Prescription Opioids	39%			50%
Ethanol	22%			
FRSs & NPSOs	6%			
Other Illicit Drugs	6%			

Source: Pennsylvania Coroner/Medical Examiner Data

APPENDIX D

(U) Figure D47: Analysis of 2015 - 2017 Overdose Death Data within County: Monroe

1. Quarterly Trend



Total Number of Overdose Deaths: **143**

Average Rate of Overdose Deaths (per 100,000): **29**

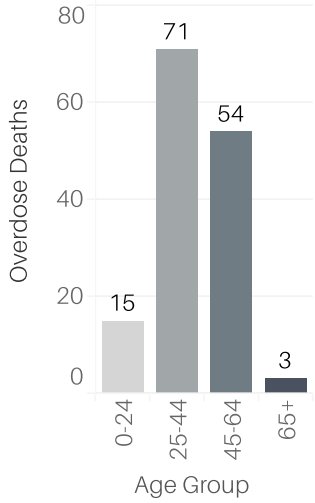
County Rank by Average Rate: **28**

Percent Change from 2015-2016: **9% Decrease**

Percent Change from 2016-2017: **39% Increase**

Percent Change from 2015-2017: **27% Increase**

2. Age Distribution



The information in this section summarizes drug-related overdose death data (accidental or undetermined) from 2015-2017.

<u>The first page consists of the quarterly trend and demographic information:</u>

1: Total Number of Overdose Deaths per Quarter per Year*

2-4: Total Number of Overdose Deaths per Age/Gender/Race

<u>The second page consists of the yearly trend for the most commonly identified drug categories and the drug category breakdown for each demographic group:</u>

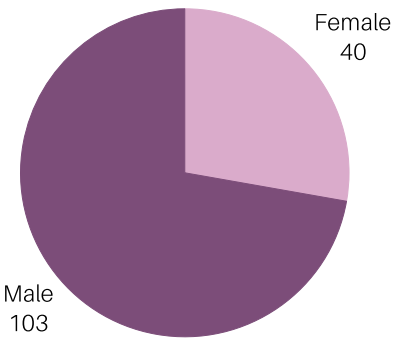
5: Percent of Overdose Deaths per Drug Category per Year

6-8: Percent of Overdose Deaths per Drug Category per Age/Gender/Race, per Year if Applicable

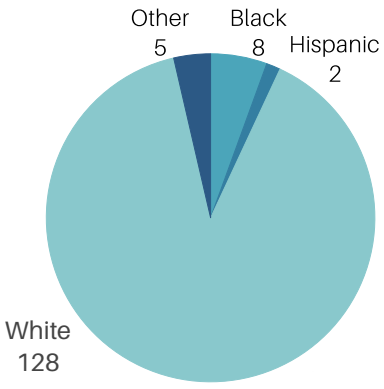
*Percent = (Number of deaths per drug category per demographic group, per year if applicable) / (Number of deaths per demographic group, per year if applicable) * 100%*

*Breakdown by quarter is suppressed when there are less than three data points for each quarter.

3. Gender Distribution



4. Race Distribution

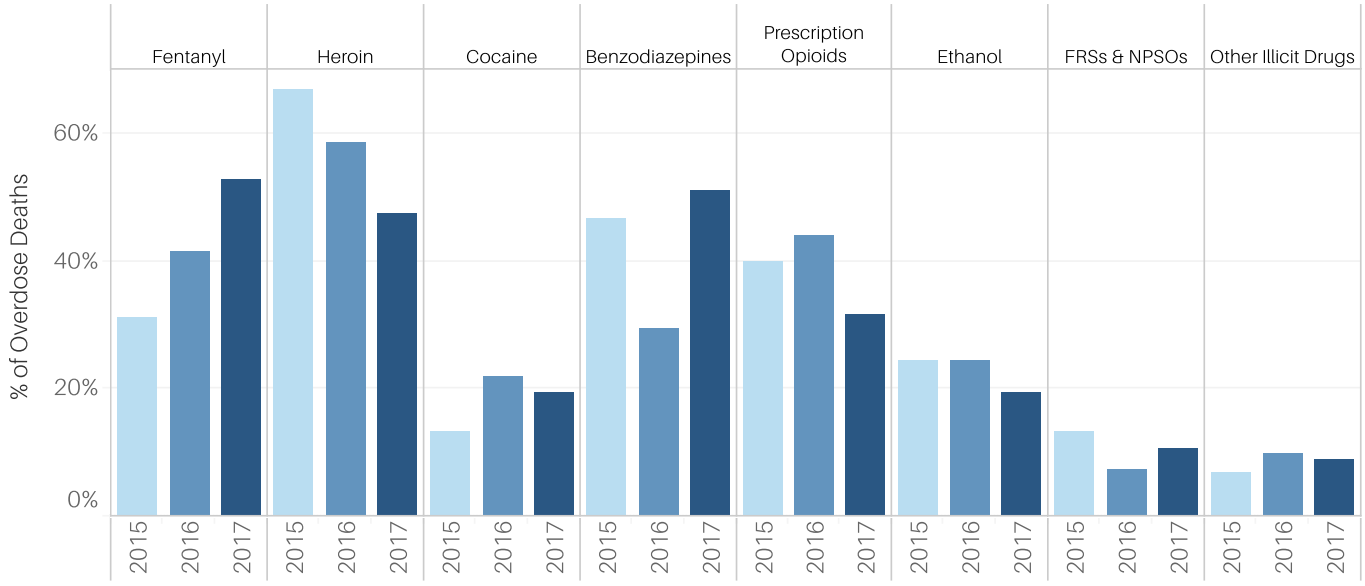


Source: Pennsylvania Coroner/Medical Examiner Data

APPENDIX D

(U) Figure D47: Analysis of 2015 - 2017 Overdose Death Data within County: Monroe

5. Percent of Overdose Deaths per Drug Category per Year



6. Percent of Overdose Deaths per Drug Category per Age Group per Year

Drug Category	2015 0-24	2015 25-44	2015 45-64	2015 65+	2016 0-24	2016 25-44	2016 45-64	2016 65+	2017 0-24	2017 25-44	2017 45-64	2017 65+
Fentanyl		32%	29%		40%	60%	19%		60%	65%	46%	
Heroin		74%	50%		40%	55%	69%		70%	55%	33%	33%
Cocaine		13%	14%		40%	15%	25%		10%	15%	21%	67%
Benzodiazepines		45%	50%		60%	30%	19%		40%	55%	58%	
Prescription Opioids		32%	57%		40%	40%	50%		10%	30%	46%	
Ethanol		23%	29%			20%	38%		10%	20%	25%	
FRSs & NPSOs		13%	14%			10%	6%			15%	13%	
Other Illicit Drugs		3%	14%			15%	6%		10%	10%	4%	33%

7. Per Drug Category per Gender per Year

Drug Category	2015 Female	2015 Male	2016 Female	2016 Male	2017 Female	2017 Male
Fentanyl	33%	31%	30%	45%	57%	50%
Heroin	56%	69%	30%	68%	43%	50%
Cocaine		17%	40%	16%	24%	17%
Benzodiazepines	78%	39%	50%	23%	67%	42%
Prescription Opioids	56%	36%	80%	32%	29%	33%
Ethanol	22%	25%	10%	29%	10%	25%
FRSs & NPSOs	11%	14%		10%	10%	11%
Other Illicit Drugs		8%	10%	10%		14%

8. Per Drug Category per Race, 2015-2017

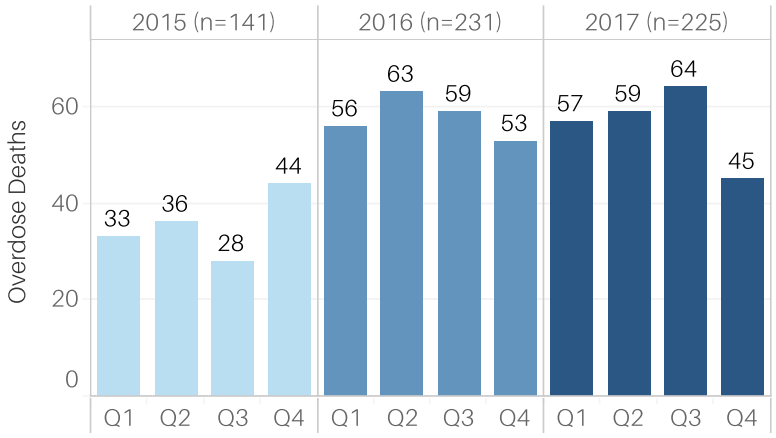
Drug Category	White	Black	Hispanic	Other
Fentanyl	43%	25%		80%
Heroin	55%	75%	100%	60%
Cocaine	17%	38%		20%
Benzodiazepines	46%	25%		20%
Prescription Opioids	39%	25%		40%
Ethanol	23%	13%	50%	20%
FRSs & NPSOs	12%			
Other Illicit Drugs	9%	13%		

Source: Pennsylvania Coroner/Medical Examiner Data

APPENDIX D

(U) Figure D48: Analysis of 2015 - 2017 Overdose Death Data within County: Montgomery

1. Quarterly Trend



Total Number of Overdose Deaths: **597**

Average Rate of Overdose Deaths (per 100,000): **24**

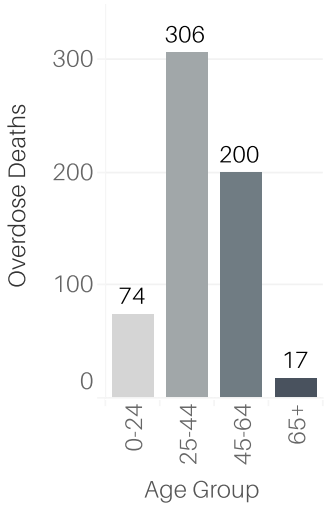
County Rank by Average Rate: **35**

Percent Change from 2015-2016: **64% Increase**

Percent Change from 2016-2017: **3% Decrease**

Percent Change from 2015-2017: **60% Increase**

2. Age Distribution



The information in this section summarizes drug-related overdose death data (accidental or undetermined) from 2015-2017.

The first page consists of the quarterly trend and demographic information:

1: Total Number of Overdose Deaths per Quarter per Year*

2-4: Total Number of Overdose Deaths per Age/Gender/Race

The second page consists of the yearly trend for the most commonly identified drug categories and the drug category breakdown for each demographic group:

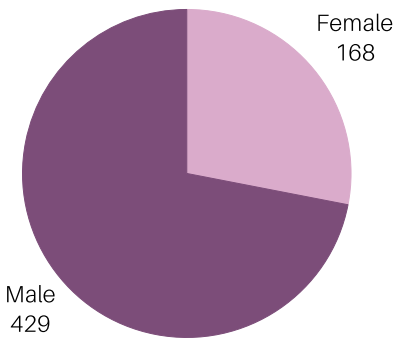
5: Percent of Overdose Deaths per Drug Category per Year

6-8: Percent of Overdose Deaths per Drug Category per Age/Gender/Race, per Year if Applicable

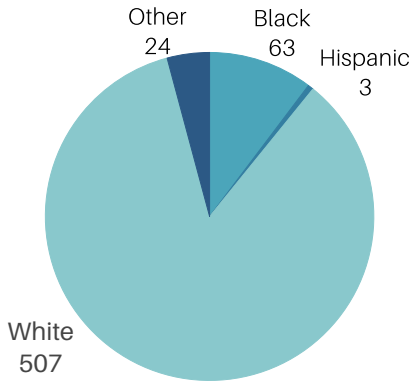
*Percent = (Number of deaths per drug category per demographic group, per year if applicable) / (Number of deaths per demographic group, per year if applicable) * 100%*

*Breakdown by quarter is suppressed when there are less than three data points for each quarter.

3. Gender Distribution



4. Race Distribution

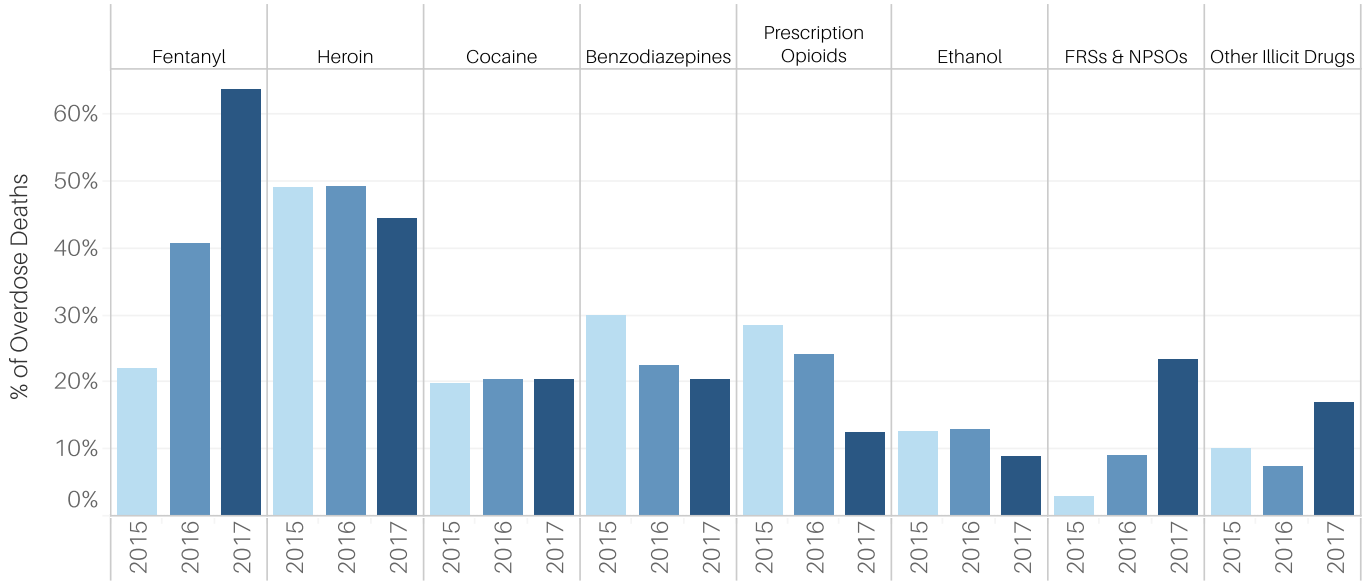


Source: Pennsylvania Coroner/Medical Examiner Data

APPENDIX D

(U) Figure D48: Analysis of 2015 - 2017 Overdose Death Data within County: Montgomery

5. Percent of Overdose Deaths per Drug Category per Year



6. Percent of Overdose Deaths per Drug Category per Age Group per Year

	2015				2016				2017			
Drug Category	0-24	25-44	45-64	65+	0-24	25-44	45-64	65+	0-24	25-44	45-64	65+
Fentanyl	35%	28%	11%		52%	45%	32%	33%	79%	67%	54%	29%
Heroin	71%	60%	29%	14%	59%	59%	36%		29%	56%	31%	43%
Cocaine	6%	24%	18%	29%	10%	21%	23%		11%	23%	21%	14%
Benzodiazepines	12%	31%	40%		24%	23%	21%	33%	18%	24%	18%	
Prescription Opioids	18%	24%	40%	29%	10%	17%	36%	100%		12%	16%	29%
Ethanol		8%	22%	29%	3%	12%	18%			5%	19%	14%
FRSs & NPSOs	12%	3%			17%	12%	3%		29%	24%	19%	43%
Other Illicit Drugs	12%	7%	16%		14%	5%	8%		14%	19%	13%	29%

7. Per Drug Category per Gender per Year

	2015		2016		2017	
Drug Category	Female	Male	Female	Male	Female	Male
Fentanyl	19%	23%	41%	41%	77%	58%
Heroin	45%	51%	39%	53%	40%	46%
Cocaine	13%	23%	14%	23%	23%	20%
Benzodiazepines	32%	29%	29%	20%	27%	18%
Prescription Opioids	38%	23%	27%	23%	10%	13%
Ethanol	13%	13%	10%	14%	6%	10%
FRSs & NPSOs	2%	3%	7%	10%	21%	25%
Other Illicit Drugs	11%	10%	10%	6%	26%	13%

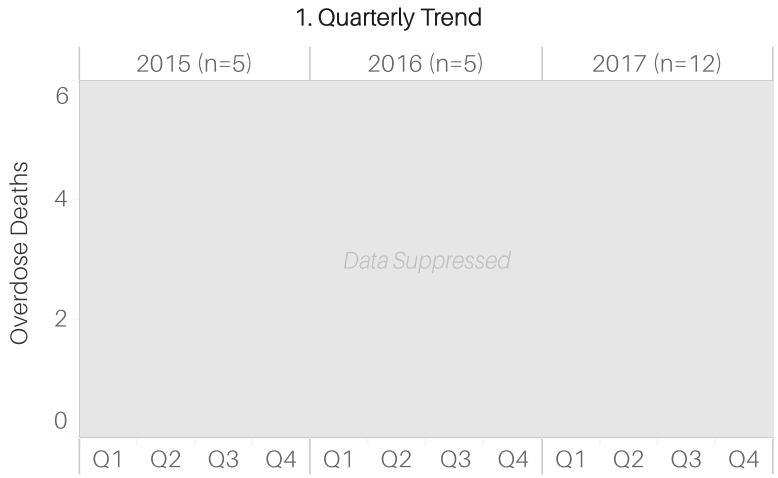
8. Per Drug Category per Race, 2015-2017

Drug Category	White	Black	Hispanic	Other
Fentanyl	45%	41%	33%	54%
Heroin	50%	25%		50%
Cocaine	19%	40%		8%
Benzodiazepines	24%	14%	33%	25%
Prescription Opioids	21%	17%	33%	17%
Ethanol	11%	13%	67%	4%
FRSs & NPSOs	13%	17%		8%
Other Illicit Drugs	12%	10%		8%

Source: Pennsylvania Coroner/Medical Examiner Data

APPENDIX D

(U) Figure D49: Analysis of 2015 - 2017 Overdose Death Data within County: Montour



Total Number of Overdose Deaths: **22**

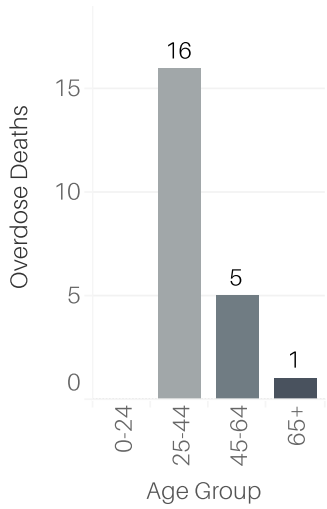
Average Rate of Overdose Deaths (per 100,000): **40**

County Rank by Average Rate: **13**

Percent Change from 2015-2016: **No Change**

Percent Change from 2016-2017: **140% Increase**

Percent Change from 2015-2017: **140% Increase**



The information in this section summarizes drug-related overdose death data (accidental or undetermined) from 2015-2017.

The first page consists of the quarterly trend and demographic information:

1: Total Number of Overdose Deaths per Quarter per Year*

2-4: Total Number of Overdose Deaths per Age/Gender/Race

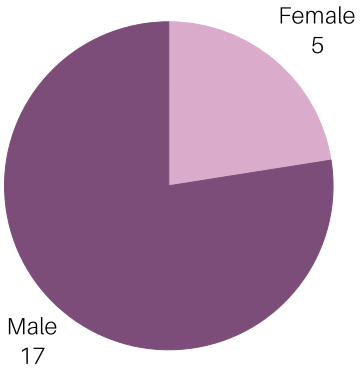
The second page consists of the yearly trend for the most commonly identified drug categories and the drug category breakdown for each demographic group:

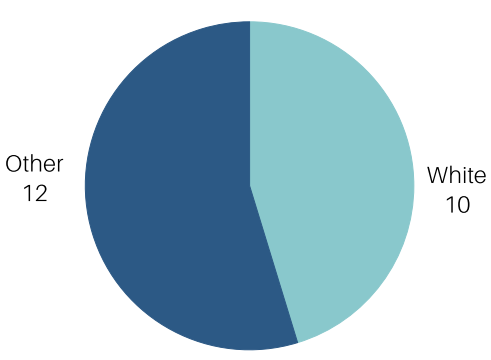
5: Percent of Overdose Deaths per Drug Category per Year

6-8: Percent of Overdose Deaths per Drug Category per Age/Gender/Race, per Year if Applicable

*Percent = (Number of deaths per drug category per demographic group, per year if applicable) / (Number of deaths per demographic group, per year if applicable) * 100%*

*Breakdown by quarter is suppressed when there are less than three data points for each quarter.



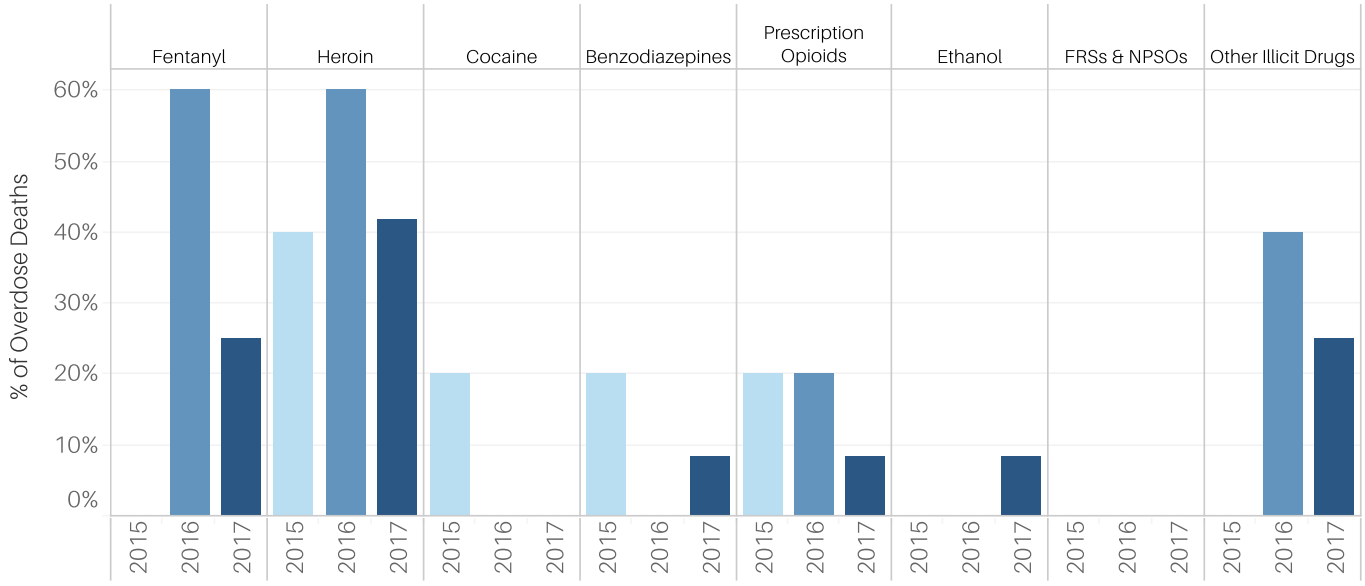


Source: Pennsylvania Coroner/Medical Examiner Data

APPENDIX D

(U) Figure D49: Analysis of 2015 - 2017 Overdose Death Data within County: Montour

5. Percent of Overdose Deaths per Drug Category per Year



6. Percent of Overdose Deaths per Drug Category per Age Group per Year

Drug Category	2015 0-24	2015 25-44	2015 45-64	2015 65+	2016 0-24	2016 25-44	2016 45-64	2016 65+	2017 0-24	2017 25-44	2017 45-64	2017 65+
Fentanyl						67%	50%			25%	33%	
Heroin		40%				100%				63%		
Cocaine		20%										
Benzodiazepines		20%								13%		
Prescription Opioids		20%					50%			13%		
Ethanol										13%		
FRSs & NPSOs												
Other Illicit Drugs						67%				13%	33%	100%

7. Per Drug Category per Gender per Year

Drug Category	2015 Female	2015 Male	2016 Female	2016 Male	2017 Female	2017 Male
Fentanyl				60%		33%
Heroin		67%		60%		56%
Cocaine	50%					
Benzodiazepines		33%				11%
Prescription Opioids	50%			20%	33%	
Ethanol						11%
FRSs & NPSOs						
Other Illicit Drugs				40%	33%	22%

8. Per Drug Category per Race, 2015-2017

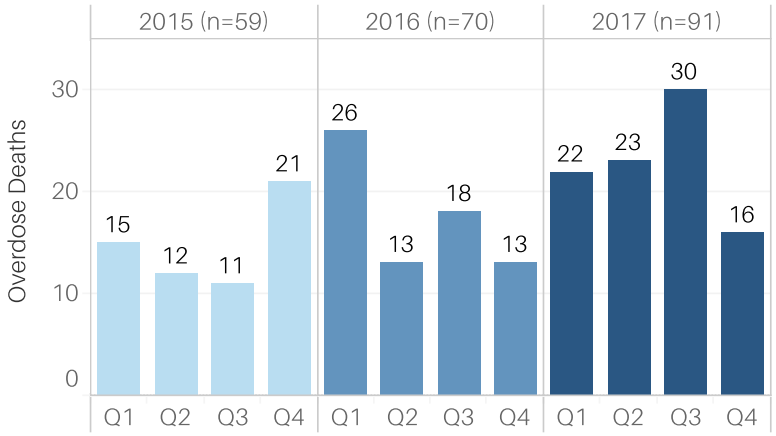
Drug Category	White	Black	Hispanic	Other
Fentanyl	30%			25%
Heroin	50%			42%
Cocaine	10%			
Benzodiazepines	10%			8%
Prescription Opioids	20%			8%
Ethanol				8%
FRSs & NPSOs				
Other Illicit Drugs	20%			25%

Source: Pennsylvania Coroner/Medical Examiner Data

APPENDIX D

(U) Figure D50: Analysis of 2015 - 2017 Overdose Death Data within County: Northampton

1. Quarterly Trend



Total Number of Overdose Deaths: **220**

Average Rate of Overdose Deaths (per 100,000): **24**

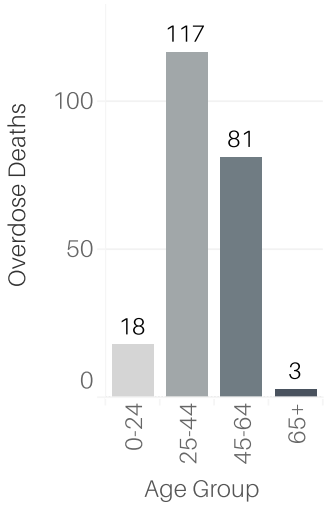
County Rank by Average Rate: **34**

Percent Change from 2015-2016: **19% Increase**

Percent Change from 2016-2017: **30% Increase**

Percent Change from 2015-2017: **54% Increase**

2. Age Distribution



The information in this section summarizes drug-related overdose death data (accidental or undetermined) from 2015-2017.

<u>The first page consists of the quarterly trend and demographic information:</u>

1: Total Number of Overdose Deaths per Quarter per Year*

2-4: Total Number of Overdose Deaths per Age/Gender/Race

<u>The second page consists of the yearly trend for the most commonly identified drug categories and the drug category breakdown for each demographic group:</u>

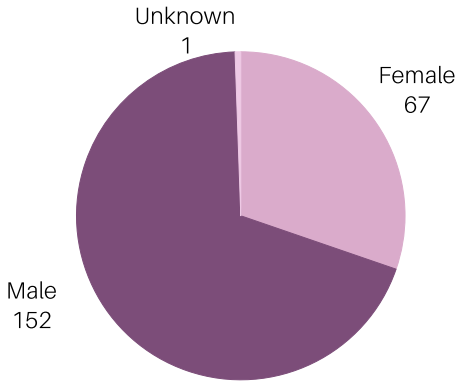
5: Percent of Overdose Deaths per Drug Category per Year

6-8: Percent of Overdose Deaths per Drug Category per Age/Gender/Race, per Year if Applicable

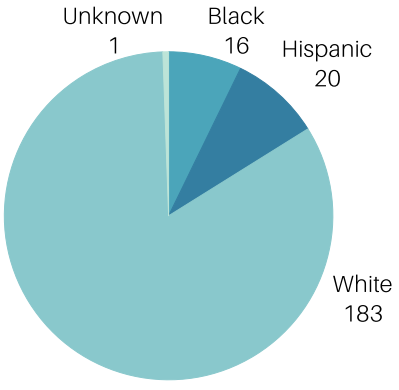
*Percent = (Number of deaths per drug category per demographic group, per year if applicable) / (Number of deaths per demographic group, per year if applicable) * 100%*

*Breakdown by quarter is suppressed when there are less than three data points for each quarter.

3. Gender Distribution



4. Race Distribution

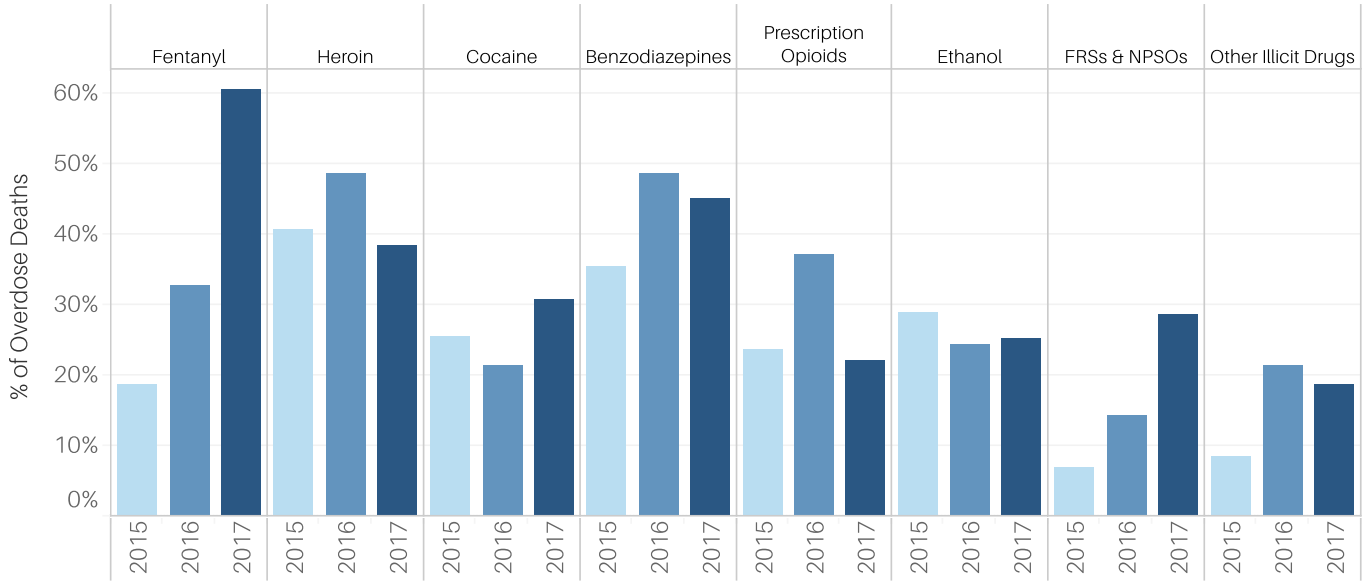


Source: Pennsylvania Coroner/Medical Examiner Data

APPENDIX D

(U) Figure D50: Analysis of 2015 - 2017 Overdose Death Data within County: Northampton

5. Percent of Overdose Deaths per Drug Category per Year



6. Percent of Overdose Deaths per Drug Category per Age Group per Year

	2015				2016				2017			
Drug Category	0-24	25-44	45-64	65+	0-24	25-44	45-64	65+	0-24	25-44	45-64	65+
Fentanyl	22%	21%	15%			42%	19%		50%	70%	54%	
Heroin	44%	46%	35%		100%	60%	27%		38%	48%	29%	
Cocaine		14%	50%	100%		19%	27%		25%	24%	40%	50%
Benzodiazepines	44%	43%	25%			40%	65%		50%	37%	54%	50%
Prescription Opioids		25%	35%			30%	50%		38%	17%	23%	50%
Ethanol	22%	21%	40%	100%	100%	16%	35%		13%	26%	26%	50%
FRSs & NPSOs	22%	7%				19%	8%		38%	35%	20%	
Other Illicit Drugs	11%		20%			21%	23%			20%	23%	

7. Per Drug Category per Gender per Year

	2015		2016		2017	
Drug Category	Female	Male	Female	Male	Female	Male
Fentanyl	14%	20%	35%	32%	57%	62%
Heroin	36%	43%	43%	51%	47%	34%
Cocaine	29%	25%	26%	19%	33%	30%
Benzodiazepines	50%	32%	61%	43%	57%	39%
Prescription Opioids	29%	23%	48%	32%	30%	18%
Ethanol	29%	30%	17%	28%	27%	25%
FRSs & NPSOs		9%	9%	17%	30%	28%
Other Illicit Drugs	7%	9%	17%	23%	23%	16%

8. Per Drug Category per Race, 2015-2017

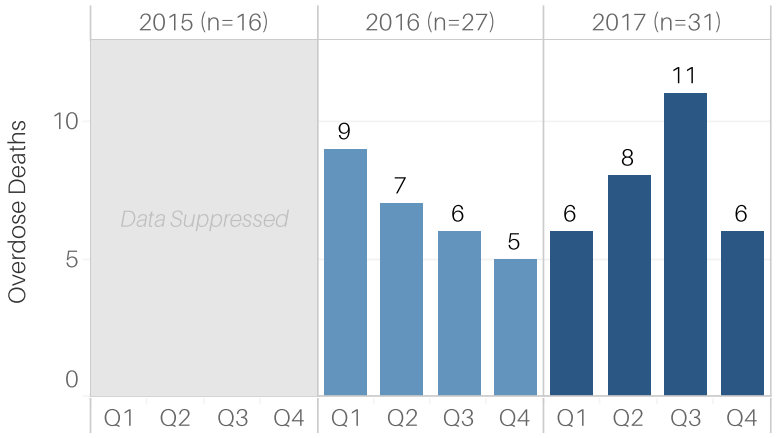
Drug Category	White	Black	Hispanic	Other
Fentanyl	40%	44%	40%	
Heroin	44%	25%	40%	
Cocaine	22%	56%	40%	
Benzodiazepines	44%	25%	55%	
Prescription Opioids	25%	38%	40%	
Ethanol	26%	25%	30%	
FRSs & NPSOs	19%	13%	20%	
Other Illicit Drugs	19%	13%	5%	

Source: Pennsylvania Coroner/Medical Examiner Data

APPENDIX D

(U) Figure D51: Analysis of 2015 - 2017 Overdose Death Data within County: Northumberland

1. Quarterly Trend



Total Number of Overdose Deaths: **74**

Average Rate of Overdose Deaths (per 100,000): **27**

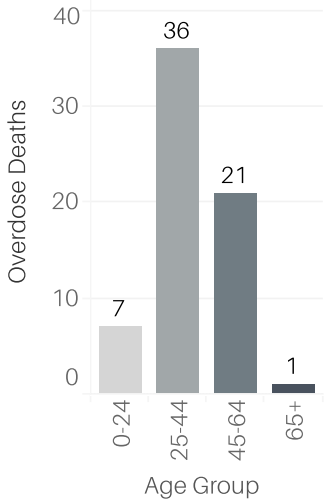
County Rank by Average Rate: **31**

Percent Change from 2015-2016: **69% Increase**

Percent Change from 2016-2017: **15% Increase**

Percent Change from 2015-2017: **94% Increase**

2. Age Distribution



The information in this section summarizes drug-related overdose death data (accidental or undetermined) from 2015-2017.

The first page consists of the quarterly trend and demographic information:

1: Total Number of Overdose Deaths per Quarter per Year*

2-4: Total Number of Overdose Deaths per Age/Gender/Race

The second page consists of the yearly trend for the most commonly identified drug categories and the drug category breakdown for each demographic group:

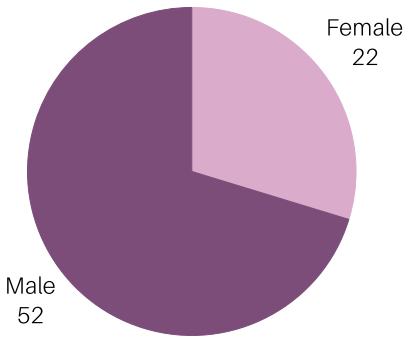
5: Percent of Overdose Deaths per Drug Category per Year

6-8: Percent of Overdose Deaths per Drug Category per Age/Gender/Race, per Year if Applicable

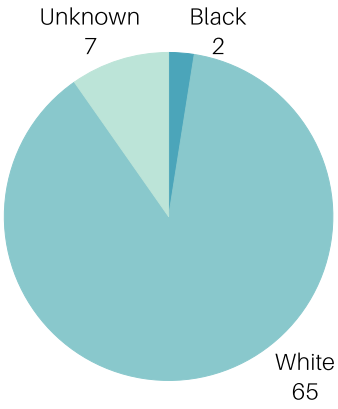
*Percent = (Number of deaths per drug category per demographic group, per year if applicable) / (Number of deaths per demographic group, per year if applicable) * 100%*

*Breakdown by quarter is suppressed when there are less than three data points for each quarter.

3. Gender Distribution



4. Race Distribution

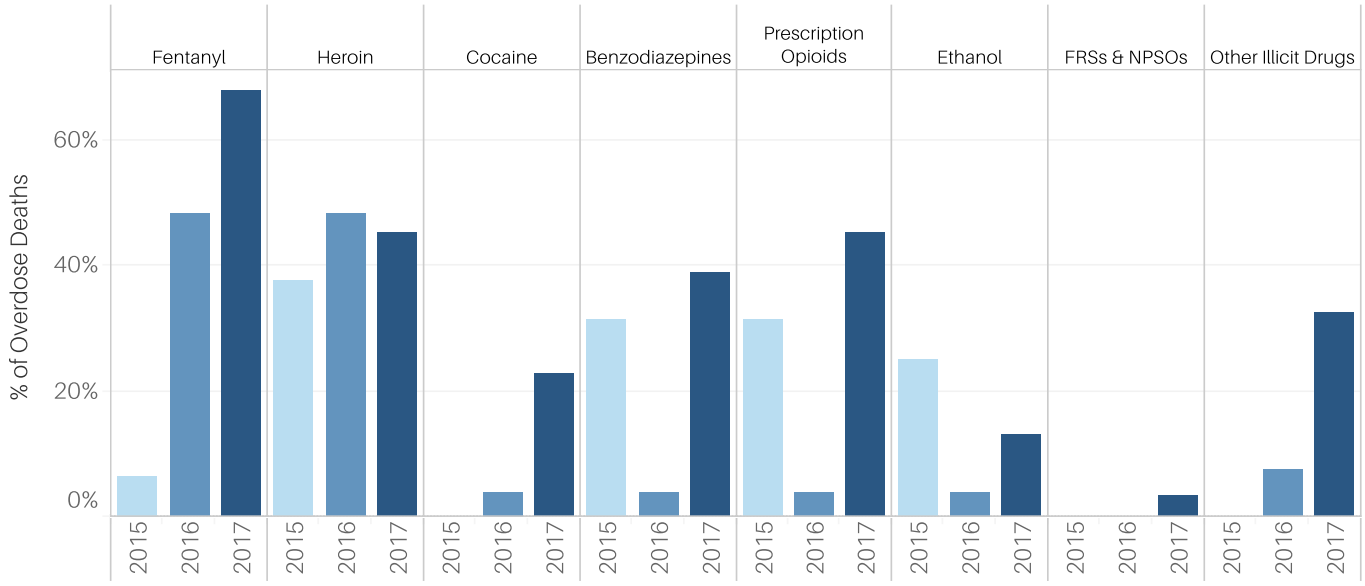


Source: Pennsylvania Coroner/Medical Examiner Data

APPENDIX D

(U) Figure D51: Analysis of 2015 - 2017 Overdose Death Data within County: Northumberland

5. Percent of Overdose Deaths per Drug Category per Year



6. Percent of Overdose Deaths per Drug Category per Age Group per Year

Drug Category	2015 0-24	2015 25-44	2015 45-64	2015 65+	2016 0-24	2016 25-44	2016 45-64	2016 65+	2017 0-24	2017 25-44	2017 45-64	2017 65+
Fentanyl		14%			67%	50%	43%		67%	77%	33%	
Heroin	100%	57%			67%	44%	57%		67%	54%	22%	
Cocaine						6%			33%	31%	11%	
Benzodiazepines		29%	40%			6%				54%	44%	
Prescription Opioids		14%	60%					100%	33%	38%	56%	
Ethanol		14%	60%				14%		33%	15%		
FRSs & NPSOs										8%		
Other Illicit Drugs					33%		14%		33%	38%	22%	

7. Per Drug Category per Gender per Year

Drug Category	2015 Female	2015 Male	2016 Female	2016 Male	2017 Female	2017 Male
Fentanyl	17%		33%	56%	57%	71%
Heroin	50%	30%	11%	67%	57%	42%
Cocaine				6%	29%	21%
Benzodiazepines		50%	11%		29%	42%
Prescription Opioids	17%	40%		6%	29%	50%
Ethanol	17%	30%	11%		29%	8%
FRSs & NPSOs					14%	
Other Illicit Drugs				11%	29%	33%

8. Per Drug Category per Race, 2015-2017

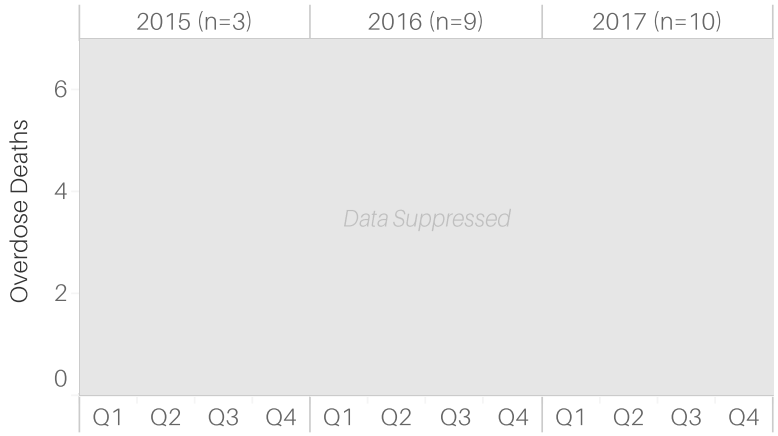
Drug Category	White	Black	Hispanic	Other
Fentanyl	49%	100%		
Heroin	42%	100%		
Cocaine	12%			
Benzodiazepines	25%			
Prescription Opioids	29%			
Ethanol	12%			
FRSs & NPSOs	2%			
Other Illicit Drugs	18%			

Source: Pennsylvania Coroner/Medical Examiner Data

APPENDIX D

(U) Figure D52: Analysis of 2015 - 2017 Overdose Death Data within County: Perry

1. Quarterly Trend



Total Number of Overdose Deaths: **22**

Average Rate of Overdose Deaths (per 100,000): **16**

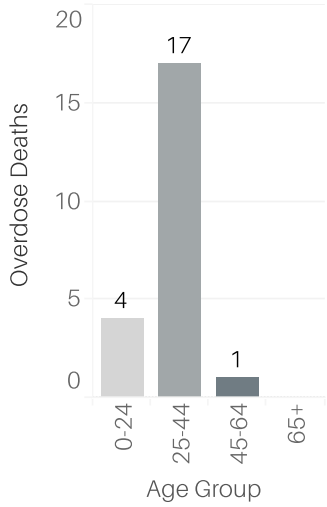
County Rank by Average Rate: **51**

Percent Change from 2015-2016: **200% Increase**

Percent Change from 2016-2017: **11% Increase**

Percent Change from 2015-2017: **233% Increase**

2. Age Distribution



The information in this section summarizes drug-related overdose death data (accidental or undetermined) from 2015-2017.

<u>The first page consists of the quarterly trend and demographic information:</u>

1: Total Number of Overdose Deaths per Quarter per Year*

2-4: Total Number of Overdose Deaths per Age/Gender/Race

<u>The second page consists of the yearly trend for the most commonly identified drug categories and the drug category breakdown for each demographic group:</u>

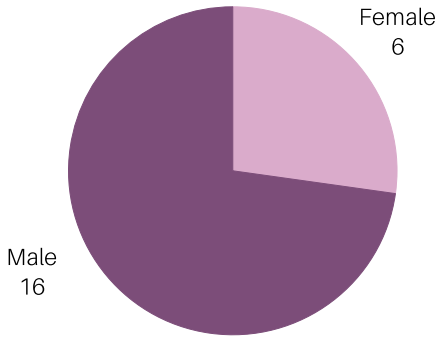
5: Percent of Overdose Deaths per Drug Category per Year

6-8: Percent of Overdose Deaths per Drug Category per Age/Gender/Race, per Year if Applicable

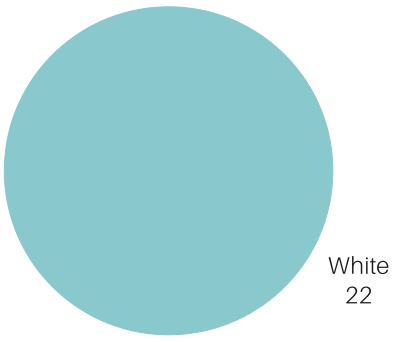
*Percent = (Number of deaths per drug category per demographic group, per year if applicable) / (Number of deaths per demographic group, per year if applicable) * 100%*

*Breakdown by quarter is suppressed when there are less than three data points for each quarter.

3. Gender Distribution



4. Race Distribution

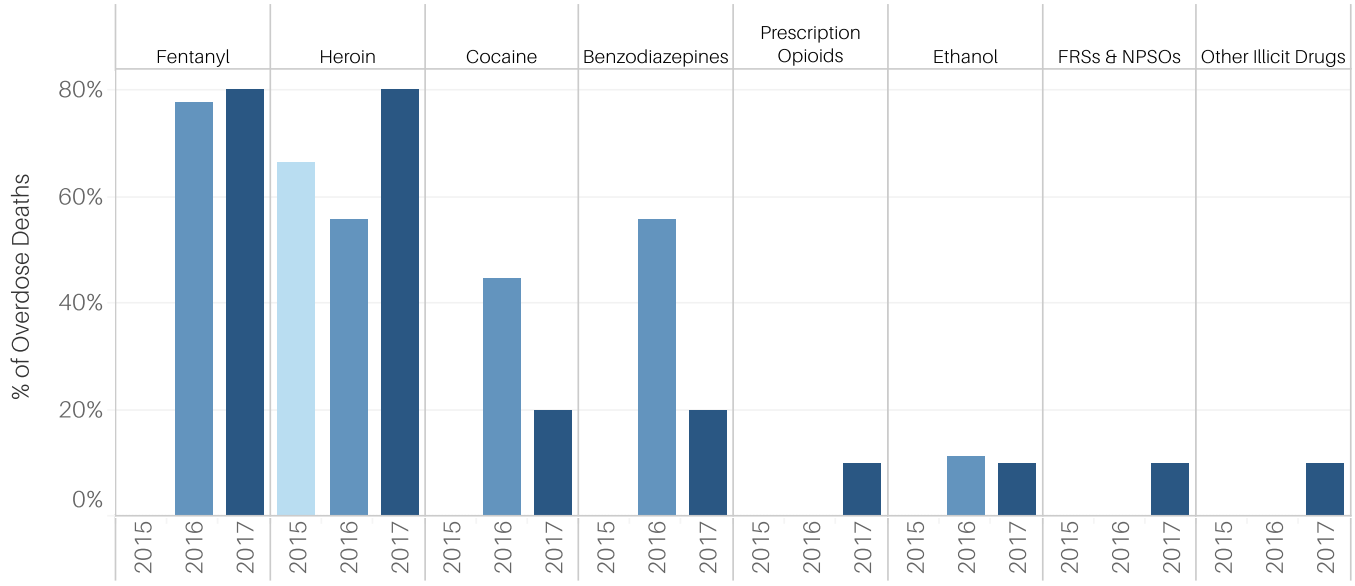


Source: Pennsylvania Coroner/Medical Examiner Data

APPENDIX D

(U) Figure D52: Analysis of 2015 - 2017 Overdose Death Data within County: Perry

5. Percent of Overdose Deaths per Drug Category per Year



6. Percent of Overdose Deaths per Drug Category per Age Group per Year

Drug Category	2015				2016				2017			
	0-24	25-44	45-64	65+	0-24	25-44	45-64	65+	0-24	25-44	45-64	65+
Fentanyl					100%	86%			100%	75%		
Heroin		100%				57%	100%		100%	75%		
Cocaine						57%				25%		
Benzodiazepines					100%	43%	100%			25%		
Prescription Opioids										13%		
Ethanol						14%				13%		
FRSs & NPSOs									50%			
Other Illicit Drugs										13%		

7. Per Drug Category per Gender per Year

Drug Category	2015		2016		2017	
	Female	Male	Female	Male	Female	Male
Fentanyl				78%	80%	80%
Heroin	100%	50%		56%	60%	100%
Cocaine				44%	20%	20%
Benzodiazepines				56%	40%	
Prescription Opioids						20%
Ethanol				11%	20%	
FRSs & NPSOs					20%	
Other Illicit Drugs						20%

8. Per Drug Category per Race, 2015-2017

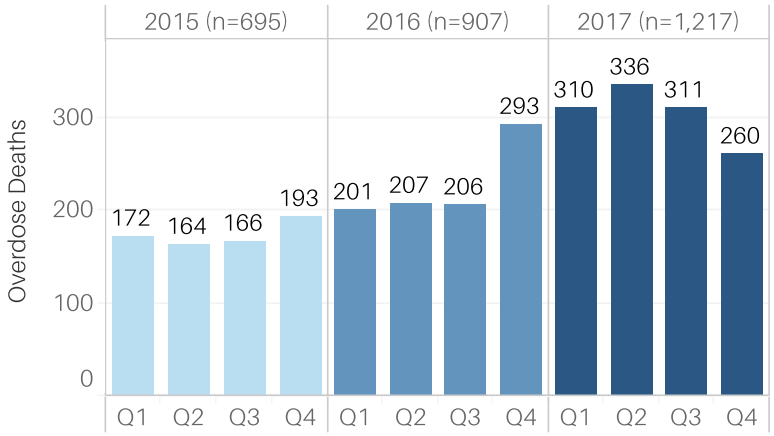
Drug Category	White	Black	Hispanic	Other
Fentanyl	68%			
Heroin	68%			
Cocaine	27%			
Benzodiazepines	32%			
Prescription Opioids	5%			
Ethanol	9%			
FRSs & NPSOs	5%			
Other Illicit Drugs	5%			

Source: Pennsylvania Coroner/Medical Examiner Data

APPENDIX D

(U) Figure D53: Analysis of 2015 - 2017 Overdose Death Data within County: Philadelphia

1. Quarterly Trend



Total Number of Overdose Deaths: **2,819**

Average Rate of Overdose Deaths (per 100,000): **60**

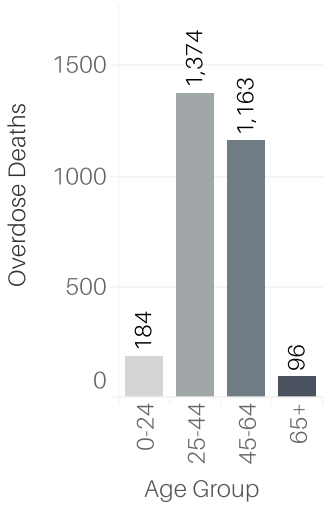
County Rank by Average Rate: **1**

Percent Change from 2015-2016: **31% Increase**

Percent Change from 2016-2017: **34% Increase**

Percent Change from 2015-2017: **75% Increase**

2. Age Distribution



The information in this section summarizes drug-related overdose death data (accidental or undetermined) from 2015-2017.

<u>The first page consists of the quarterly trend and demographic information:</u>

1: Total Number of Overdose Deaths per Quarter per Year*

2-4: Total Number of Overdose Deaths per Age/Gender/Race

<u>The second page consists of the yearly trend for the most commonly identified drug categories and the drug category breakdown for each demographic group:</u>

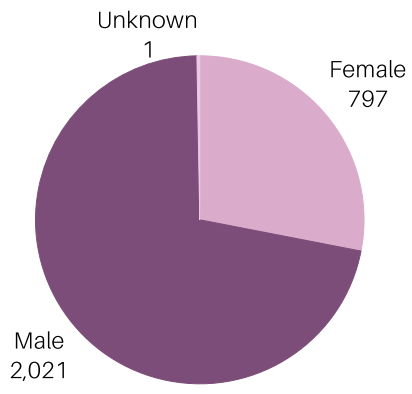
5: Percent of Overdose Deaths per Drug Category per Year

6-8: Percent of Overdose Deaths per Drug Category per Age/Gender/Race, per Year if Applicable

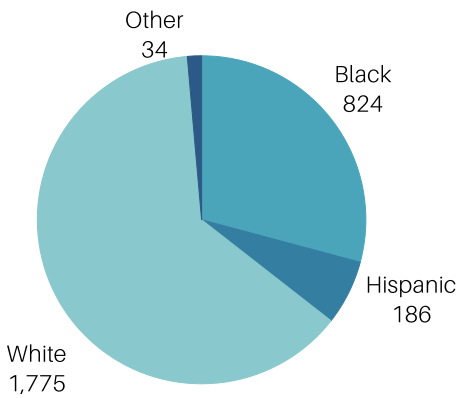
*Percent = (Number of deaths per drug category per demographic group, per year if applicable) / (Number of deaths per demographic group, per year if applicable) * 100%*

*Breakdown by quarter is suppressed when there are less than three data points for each quarter.

3. Gender Distribution



4. Race Distribution

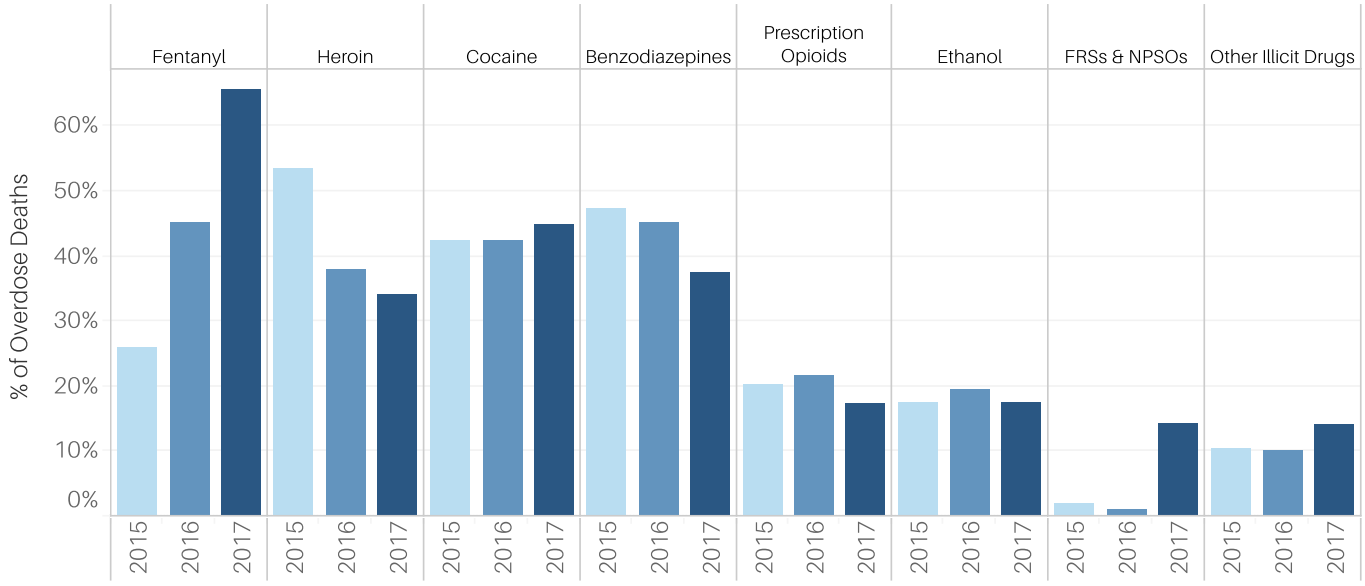


Source: Pennsylvania Coroner/Medical Examiner Data

APPENDIX D

(U) Figure D53: Analysis of 2015 - 2017 Overdose Death Data within County: Philadelphia

5. Percent of Overdose Deaths per Drug Category per Year



6. Percent of Overdose Deaths per Drug Category per Age Group per Year

Drug Category	2015				2016				2017			
	0-24	25-44	45-64	65+	0-24	25-44	45-64	65+	0-24	25-44	45-64	65+
Fentanyl	29%	26%	25%	20%	51%	51%	38%	44%	68%	72%	58%	49%
Heroin	67%	60%	45%	40%	37%	45%	31%	30%	35%	37%	28%	38%
Cocaine	35%	40%	46%	47%	33%	39%	47%	52%	35%	42%	50%	51%
Benzodiazepines	51%	50%	45%	27%	40%	48%	44%	22%	38%	36%	40%	28%
Prescription Opioids	24%	20%	21%	7%	24%	20%	23%	11%	18%	17%	18%	18%
Ethanol	14%	13%	23%	13%	15%	17%	22%	19%	18%	15%	21%	23%
FRSs & NPSOs	2%	1%	3%	3%	3%	1%	1%		26%	16%	11%	8%
Other Illicit Drugs	10%	16%	5%	3%	15%	14%	6%		18%	17%	10%	

7. Per Drug Category per Gender per Year

Drug Category	2015		2016		2017	
	Female	Male	Female	Male	Female	Male
Fentanyl	25%	26%	42%	46%	58%	68%
Heroin	44%	57%	32%	40%	31%	35%
Cocaine	39%	43%	43%	42%	44%	45%
Benzodiazepines	57%	43%	54%	41%	49%	33%
Prescription Opioids	22%	20%	30%	18%	20%	16%
Ethanol	16%	18%	12%	23%	10%	20%
FRSs & NPSOs	2%	2%	1%	1%	13%	15%
Other Illicit Drugs	10%	11%	11%	10%	14%	14%

8. Per Drug Category per Race, 2015-2017

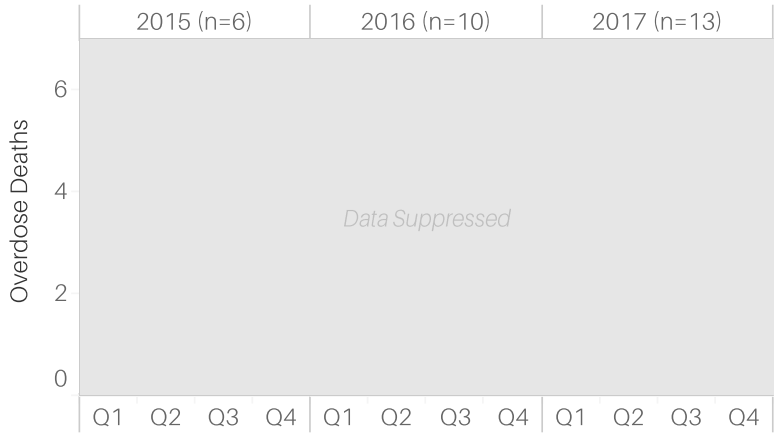
Drug Category	White	Black	Hispanic	Other
Fentanyl	55%	37%	47%	59%
Heroin	45%	26%	49%	47%
Cocaine	37%	57%	47%	44%
Benzodiazepines	47%	32%	39%	41%
Prescription Opioids	18%	23%	16%	15%
Ethanol	16%	21%	22%	21%
FRSs & NPSOs	8%	5%	2%	15%
Other Illicit Drugs	12%	11%	10%	9%

Source: Pennsylvania Coroner/Medical Examiner Data

APPENDIX D

(U) Figure D54: Analysis of 2015 - 2017 Overdose Death Data within County: Pike

1. Quarterly Trend



Total Number of Overdose Deaths: **29**

Average Rate of Overdose Deaths (per 100,000): **17**

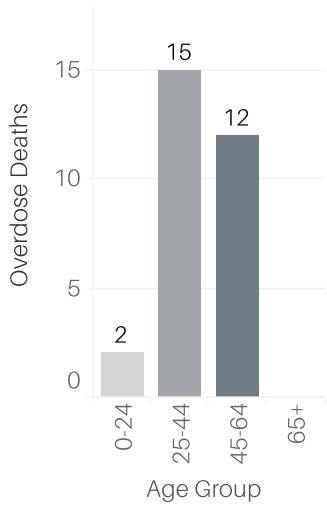
County Rank by Average Rate: **47**

Percent Change from 2015-2016: **67% Increase**

Percent Change from 2016-2017: **30% Increase**

Percent Change from 2015-2017: **117% Increase**

2. Age Distribution



The information in this section summarizes drug-related overdose death data (accidental or undetermined) from 2015-2017.

<u>The first page consists of the quarterly trend and demographic information:</u>

1: Total Number of Overdose Deaths per Quarter per Year*

2-4: Total Number of Overdose Deaths per Age/Gender/Race

<u>The second page consists of the yearly trend for the most commonly identified drug categories and the drug category breakdown for each demographic group:</u>

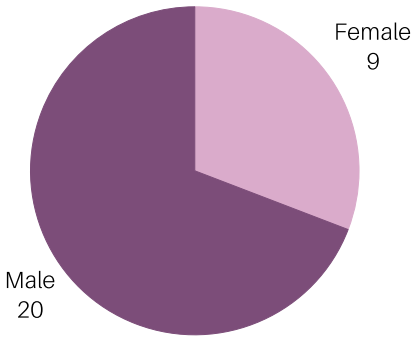
5: Percent of Overdose Deaths per Drug Category per Year

6-8: Percent of Overdose Deaths per Drug Category per Age/Gender/Race, per Year if Applicable

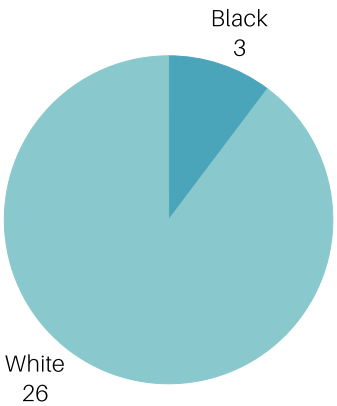
*Percent = (Number of deaths per drug category per demographic group, per year if applicable) / (Number of deaths per demographic group, per year if applicable) * 100%*

*Breakdown by quarter is suppressed when there are less than three data points for each quarter.

3. Gender Distribution



4. Race Distribution

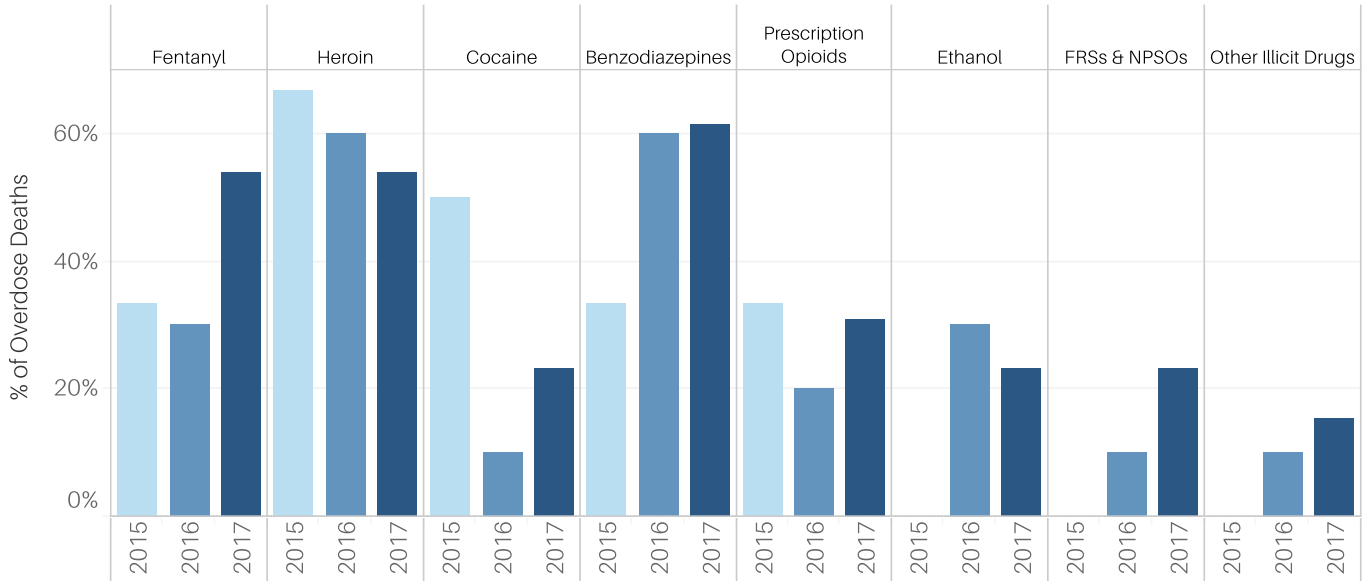


Source: Pennsylvania Coroner/Medical Examiner Data

APPENDIX D

(U) Figure D54: Analysis of 2015 - 2017 Overdose Death Data within County: Pike

5. Percent of Overdose Deaths per Drug Category per Year



6. Percent of Overdose Deaths per Drug Category per Age Group per Year

Drug Category	2015 0-24	2015 25-44	2015 45-64	2015 65+	2016 0-24	2016 25-44	2016 45-64	2016 65+	2017 0-24	2017 25-44	2017 45-64	2017 65+
Fentanyl		50%	33%			33%	25%			71%	40%	
Heroin	100%	100%	33%			67%	50%			86%	20%	
Cocaine		100%	33%				25%			29%	20%	
Benzodiazepines		50%	33%			67%	50%			57%	80%	
Prescription Opioids		50%	33%				50%				80%	
Ethanol							75%		100%	29%		
FRSs & NPSOs						17%				29%	20%	
Other Illicit Drugs						17%					40%	

7. Per Drug Category per Gender per Year

Drug Category	2015 Female	2015 Male	2016 Female	2016 Male	2017 Female	2017 Male
Fentanyl		50%		43%	75%	44%
Heroin	50%	75%	33%	71%	75%	44%
Cocaine	50%	50%		14%	25%	22%
Benzodiazepines	50%	25%	100%	43%	100%	44%
Prescription Opioids	100%		33%	14%	50%	22%
Ethanol			33%	29%		33%
FRSs & NPSOs			33%		75%	
Other Illicit Drugs				14%	25%	11%

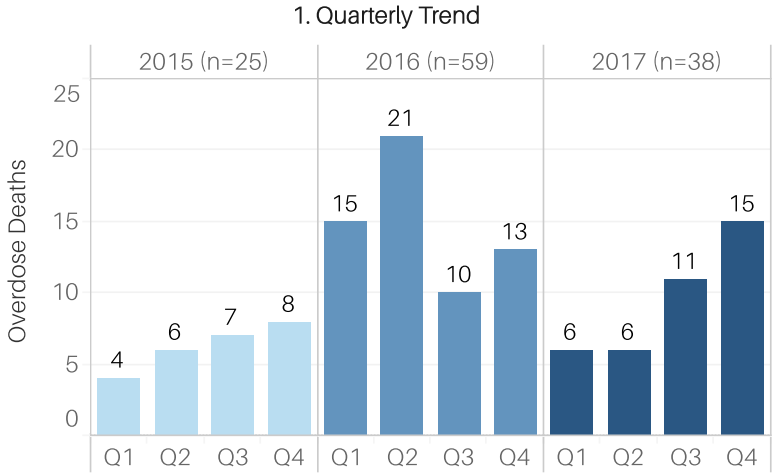
8. Per Drug Category per Race, 2015-2017

Drug Category	White	Black	Hispanic	Other
Fentanyl	42%	33%		
Heroin	62%	33%		
Cocaine	27%			
Benzodiazepines	58%	33%		
Prescription Opioids	27%	33%		
Ethanol	19%	33%		
FRSs & NPSOs	15%			
Other Illicit Drugs	12%			

Source: Pennsylvania Coroner/Medical Examiner Data

APPENDIX D

(U) Figure D55: Analysis of 2015 - 2017 Overdose Death Data within County: Schuylkill



Total Number of Overdose Deaths: **122**

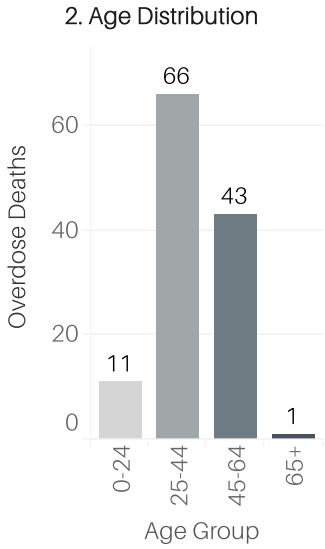
Average Rate of Overdose Deaths (per 100,000): **28**

County Rank by Average Rate: **29**

Percent Change from 2015-2016: **136% Increase**

Percent Change from 2016-2017: **36% Decrease**

Percent Change from 2015-2017: **52% Increase**



The information in this section summarizes drug-related overdose death data (accidental or undetermined) from 2015-2017.

<u>The first page consists of the quarterly trend and demographic information:</u>

1: Total Number of Overdose Deaths per Quarter per Year*

2-4: Total Number of Overdose Deaths per Age/Gender/Race

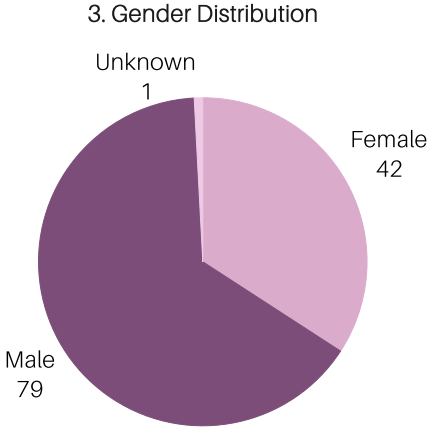
<u>The second page consists of the yearly trend for the most commonly identified drug categories and the drug category breakdown for each demographic group:</u>

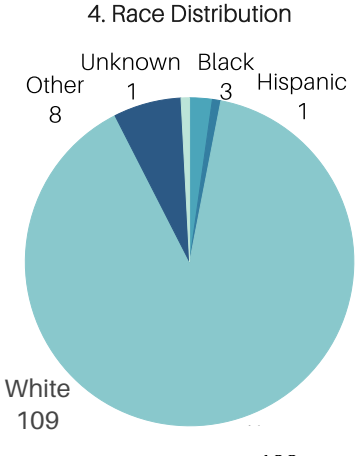
5: Percent of Overdose Deaths per Drug Category per Year

6-8: Percent of Overdose Deaths per Drug Category per Age/Gender/Race, per Year if Applicable

*Percent = (Number of deaths per drug category per demographic group, per year if applicable) / (Number of deaths per demographic group, per year if applicable) * 100%*

*Breakdown by quarter is suppressed when there are less than three data points for each quarter.



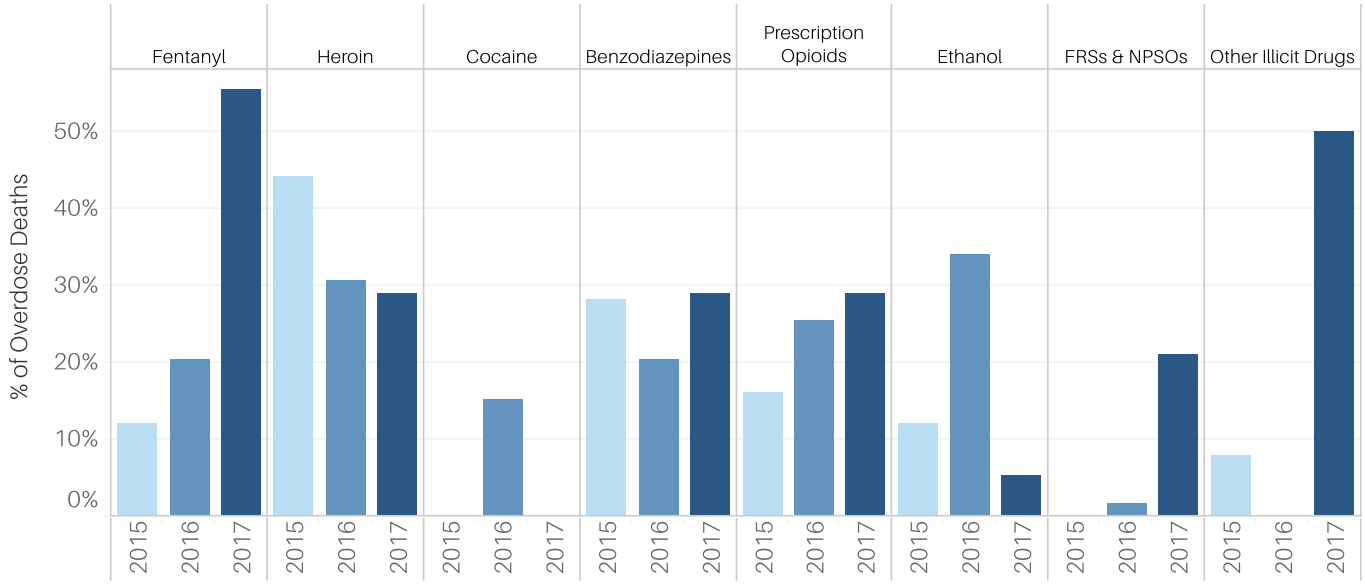


Source: Pennsylvania Coroner/Medical Examiner Data

APPENDIX D

(U) Figure D55: Analysis of 2015 - 2017 Overdose Death Data within County: Schuylkill

5. Percent of Overdose Deaths per Drug Category per Year



6. Percent of Overdose Deaths per Drug Category per Age Group per Year

Drug Category	2015 0-24	2015 25-44	2015 45-64	2015 65+	2016 0-24	2016 25-44	2016 45-64	2016 65+	2017 0-24	2017 25-44	2017 45-64	2017 65+
Fentanyl		13%	11%		17%	30%	12%		60%	63%	33%	
Heroin		60%	22%		67%	22%	32%		40%	29%	22%	
Cocaine					33%	11%	16%					
Benzodiazepines		33%	22%		33%	26%	12%		80%	17%	33%	
Prescription Opioids		20%	11%		17%	26%	28%		20%	13%	78%	
Ethanol		7%	22%		50%	33%	32%			4%	11%	
FRSs & NPSOs						4%			20%	21%	22%	
Other Illicit Drugs		7%	11%						40%	58%	33%	

7. Per Drug Category per Gender per Year

Drug Category	2015 Female	2015 Male	2016 Female	2016 Male	2017 Female	2017 Male
Fentanyl	8%	17%	24%	19%	38%	64%
Heroin	42%	50%	35%	29%	15%	36%
Cocaine			18%	14%		
Benzodiazepines	42%	17%	29%	17%	38%	24%
Prescription Opioids	25%	8%	35%	21%	46%	20%
Ethanol	17%	8%	24%	38%	8%	4%
FRSs & NPSOs			6%		23%	20%
Other Illicit Drugs	8%	8%			38%	56%

8. Per Drug Category per Race, 2015-2017

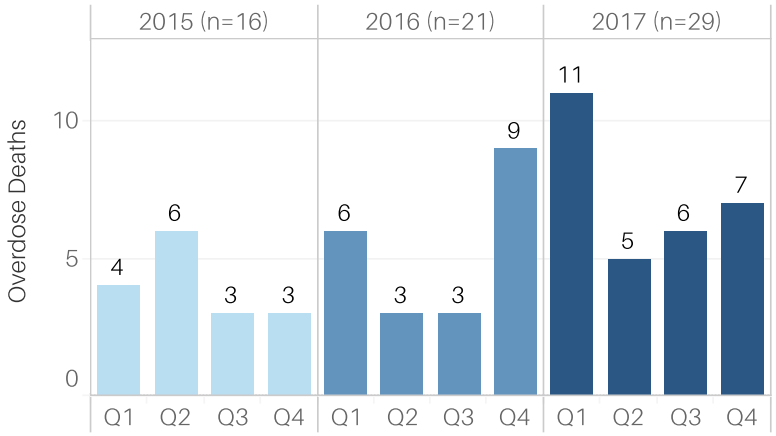
Drug Category	White	Black	Hispanic	Other
Fentanyl	29%	67%	100%	13%
Heroin	33%	33%		38%
Cocaine	7%			13%
Benzodiazepines	28%			
Prescription Opioids	26%			25%
Ethanol	21%			25%
FRSs & NPSOs	8%			
Other Illicit Drugs	19%			

Source: Pennsylvania Coroner/Medical Examiner Data

APPENDIX D

(U) Figure D56: Analysis of 2015 - 2017 Overdose Death Data within County: Somerset

1. Quarterly Trend



Total Number of Overdose Deaths: **66**

Average Rate of Overdose Deaths (per 100,000): **29**

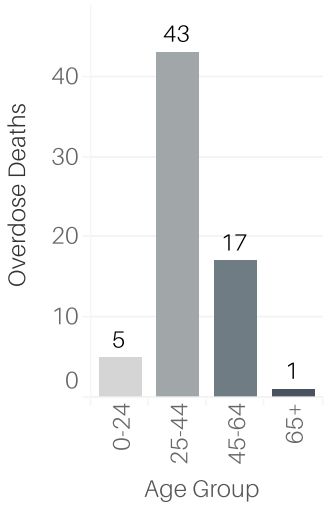
County Rank by Average Rate: **26**

Percent Change from 2015-2016: **31% Increase**

Percent Change from 2016-2017: **38% Increase**

Percent Change from 2015-2017: **81% Increase**

2. Age Distribution



The information in this section summarizes drug-related overdose death data (accidental or undetermined) from 2015-2017.

<u>The first page consists of the quarterly trend and demographic information:</u>

1: Total Number of Overdose Deaths per Quarter per Year*

2-4: Total Number of Overdose Deaths per Age/Gender/Race

<u>The second page consists of the yearly trend for the most commonly identified drug categories and the drug category breakdown for each demographic group:</u>

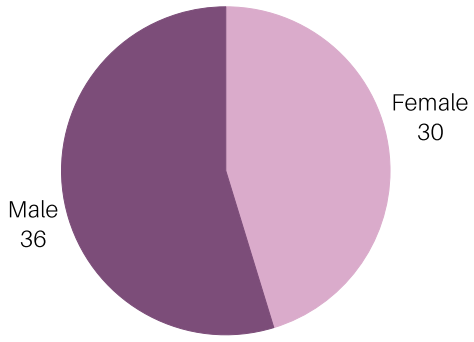
5: Percent of Overdose Deaths per Drug Category per Year

6-8: Percent of Overdose Deaths per Drug Category per Age/Gender/Race, per Year if Applicable

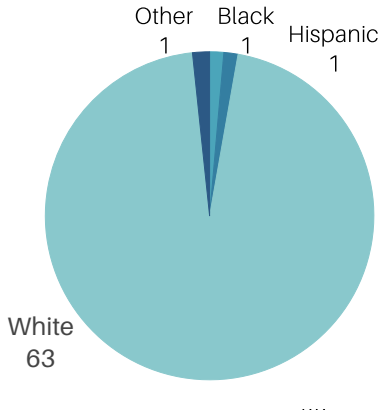
*Percent = (Number of deaths per drug category per demographic group, per year if applicable) / (Number of deaths per demographic group, per year if applicable) * 100%*

*Breakdown by quarter is suppressed when there are less than three data points for each quarter.

3. Gender Distribution



4. Race Distribution

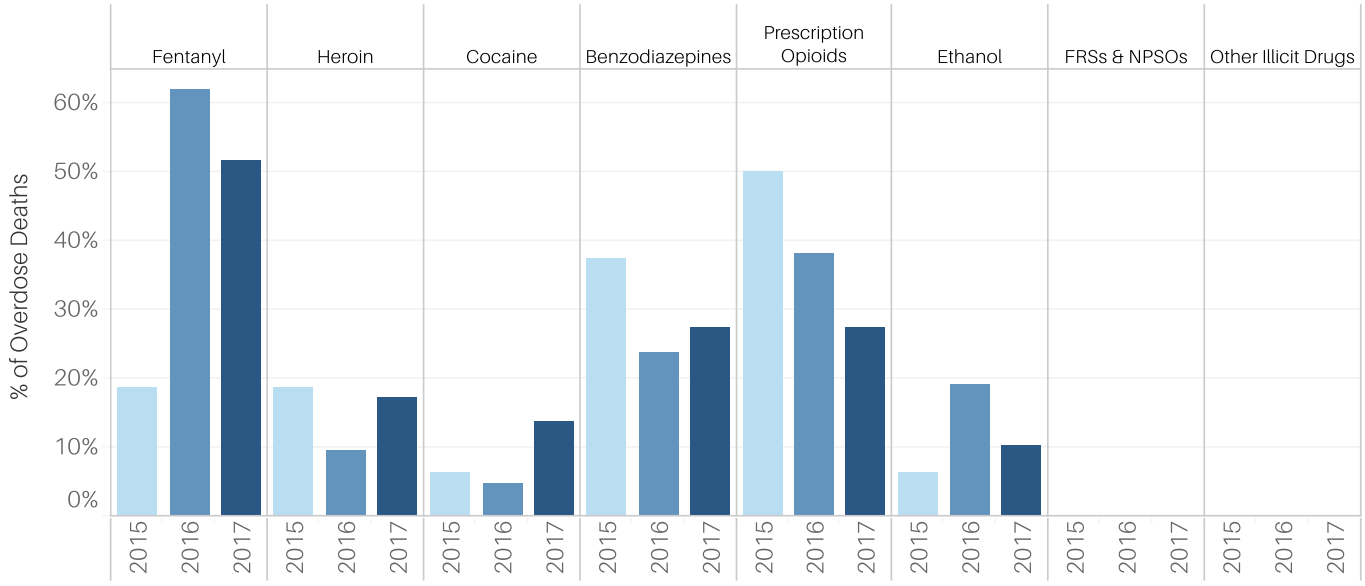


Source: Pennsylvania Coroner/Medical Examiner Data

APPENDIX D

(U) Figure D56: Analysis of 2015 - 2017 Overdose Death Data within County: Somerset

5. Percent of Overdose Deaths per Drug Category per Year



6. Percent of Overdose Deaths per Drug Category per Age Group per Year

Drug Category	2015				2016				2017			
	0-24	25-44	45-64	65+	0-24	25-44	45-64	65+	0-24	25-44	45-64	65+
Fentanyl		22%	14%		75%	60%	50%		100%	53%	50%	
Heroin		33%				13%			100%	16%	13%	
Cocaine			14%		25%					21%		
Benzodiazepines		33%	43%			20%	100%			21%	50%	
Prescription Opioids		44%	57%		25%	40%	50%			26%	25%	100%
Ethanol		11%				20%	50%			16%		
FRSs & NPSOs												
Other Illicit Drugs												

7. Per Drug Category per Gender per Year

Drug Category	2015		2016		2017	
	Female	Male	Female	Male	Female	Male
Fentanyl		30%	67%	58%	53%	50%
Heroin		30%		17%	20%	14%
Cocaine		10%		8%	13%	14%
Benzodiazepines	33%	40%	33%	17%	33%	21%
Prescription Opioids	67%	40%	22%	50%	33%	21%
Ethanol		10%	11%	25%	7%	14%
FRSs & NPSOs						
Other Illicit Drugs						

8. Per Drug Category per Race, 2015-2017

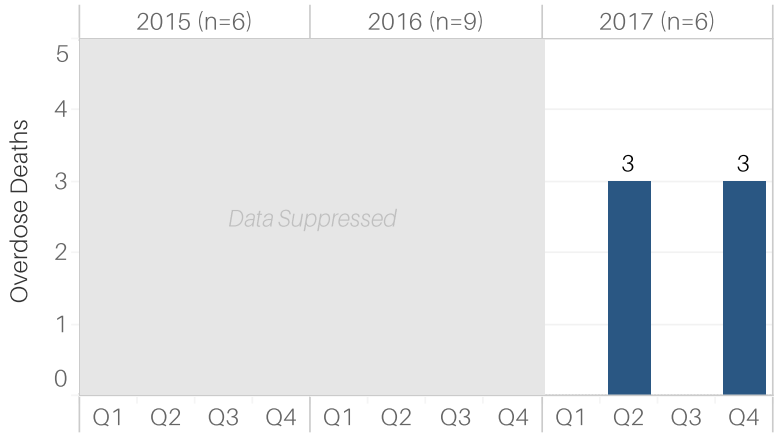
Drug Category	White	Black	Hispanic	Other
Fentanyl	48%	100%		
Heroin	16%			
Cocaine	10%			
Benzodiazepines	29%			100%
Prescription Opioids	35%		100%	100%
Ethanol	11%		100%	
FRSs & NPSOs				
Other Illicit Drugs				

Source: Pennsylvania Coroner/Medical Examiner Data

APPENDIX D

(U) Figure D57: Analysis of 2015 - 2017 Overdose Death Data within County: Susquehanna

1. Quarterly Trend



Total Number of Overdose Deaths: **21**

Average Rate of Overdose Deaths (per 100,000): **17**

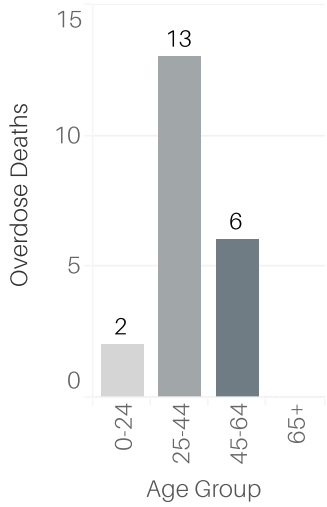
County Rank by Average Rate: **49**

Percent Change from 2015-2016: **50% Increase**

Percent Change from 2016-2017: **33% Decrease**

Percent Change from 2015-2017: **No Change**

2. Age Distribution



The information in this section summarizes drug-related overdose death data (accidental or undetermined) from 2015-2017.

The first page consists of the quarterly trend and demographic information:

1: Total Number of Overdose Deaths per Quarter per Year*

2-4: Total Number of Overdose Deaths per Age/Gender/Race

The second page consists of the yearly trend for the most commonly identified drug categories and the drug category breakdown for each demographic group:

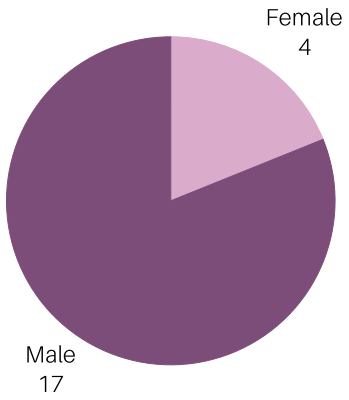
5: Percent of Overdose Deaths per Drug Category per Year

6-8: Percent of Overdose Deaths per Drug Category per Age/Gender/Race, per Year if Applicable

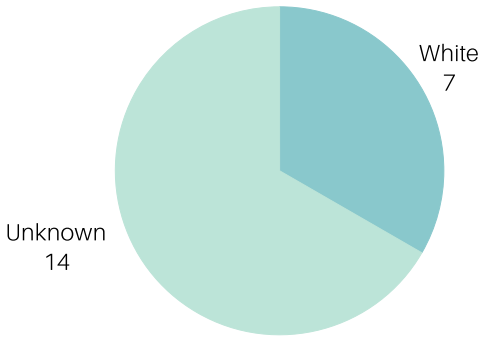
*Percent = (Number of deaths per drug category per demographic group, per year if applicable) / (Number of deaths per demographic group, per year if applicable) * 100%*

*Breakdown by quarter is suppressed when there are less than three data points for each quarter.

3. Gender Distribution



4. Race Distribution

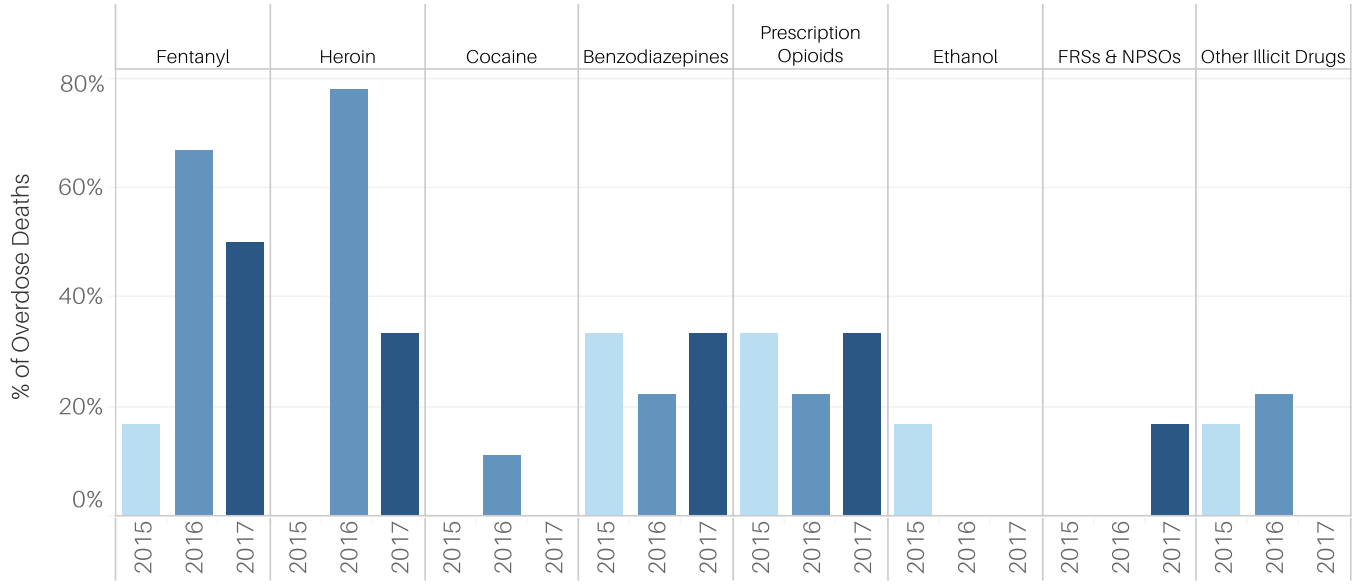


Source: Pennsylvania Coroner/Medical Examiner Data

APPENDIX D

(U) Figure D57: Analysis of 2015 - 2017 Overdose Death Data within County: Susquehanna

5. Percent of Overdose Deaths per Drug Category per Year



6. Percent of Overdose Deaths per Drug Category per Age Group per Year

Drug Category	2015 0-24	2015 25-44	2015 45-64	2015 65+	2016 0-24	2016 25-44	2016 45-64	2016 65+	2017 0-24	2017 25-44	2017 45-64	2017 65+
Fentanyl			50%			71%	50%		100%	67%		
Heroin						71%	100%			67%		
Cocaine							50%					
Benzodiazepines		33%	50%			14%	50%				100%	
Prescription Opioids		33%	50%			29%					100%	
Ethanol			50%									
FRSs & NPSOs										33%		
Other Illicit Drugs		33%				29%						

7. Per Drug Category per Gender per Year

Drug Category	2015 Female	2015 Male	2016 Female	2016 Male	2017 Female	2017 Male
Fentanyl		20%	50%	71%		60%
Heroin			100%	71%		40%
Cocaine			50%			
Benzodiazepines	100%	20%		29%	100%	20%
Prescription Opioids		40%		29%	100%	20%
Ethanol		20%				
FRSs & NPSOs						20%
Other Illicit Drugs		20%		29%		

8. Per Drug Category per Race, 2015-2017

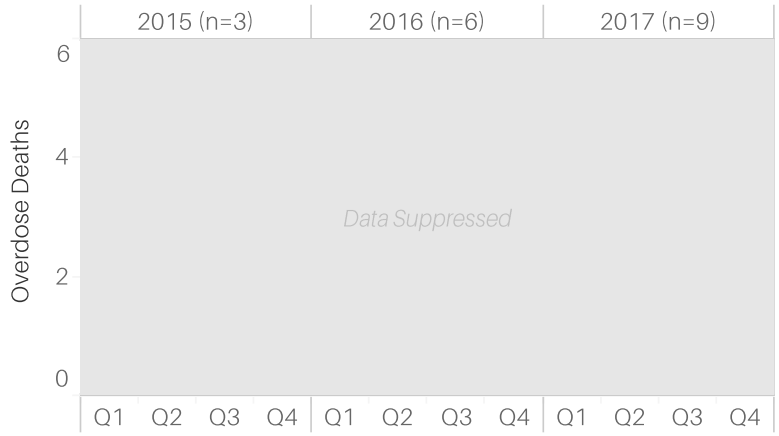
Drug Category	White	Black	Hispanic	Other
Fentanyl	57%			
Heroin	29%			
Cocaine				
Benzodiazepines	29%			
Prescription Opioids	29%			
Ethanol				
FRSs & NPSOs	14%			
Other Illicit Drugs	14%			

Source: Pennsylvania Coroner/Medical Examiner Data

APPENDIX D

(U) Figure D58: Analysis of 2015 - 2017 Overdose Death Data within County: Tioga

1. Quarterly Trend



Total Number of Overdose Deaths: **18**

Average Rate of Overdose Deaths (per 100,000): **15**

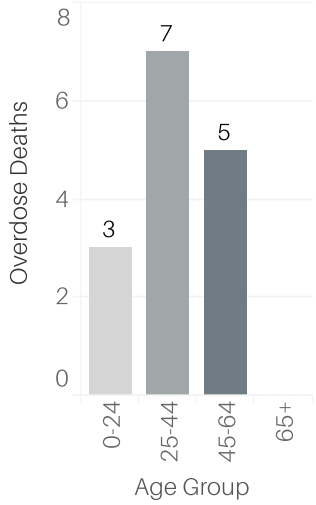
County Rank by Average Rate: **55**

Percent Change from 2015-2016: **100% Increase**

Percent Change from 2016-2017: **50% Increase**

Percent Change from 2015-2017: **200% Increase**

2. Age Distribution



The information in this section summarizes drug-related overdose death data (accidental or undetermined) from 2015-2017.

<u>The first page consists of the quarterly trend and demographic information:</u>

1: Total Number of Overdose Deaths per Quarter per Year*

2-4: Total Number of Overdose Deaths per Age/Gender/Race

<u>The second page consists of the yearly trend for the most commonly identified drug categories and the drug category breakdown for each demographic group:</u>

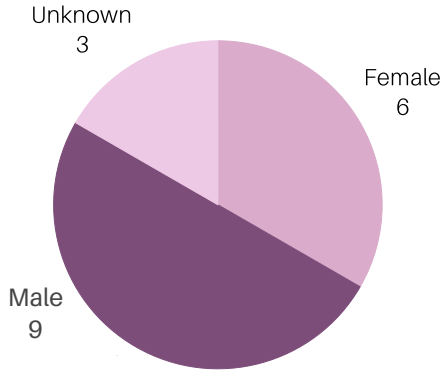
5: Percent of Overdose Deaths per Drug Category per Year

6-8: Percent of Overdose Deaths per Drug Category per Age/Gender/Race, per Year if Applicable

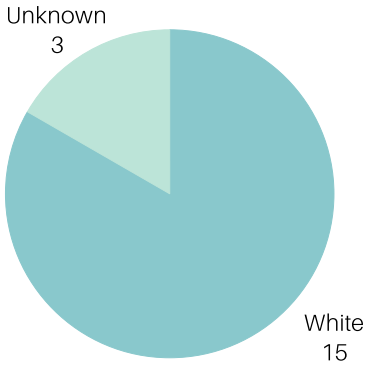
*Percent = (Number of deaths per drug category per demographic group, per year if applicable) / (Number of deaths per demographic group, per year if applicable) * 100%*

*Breakdown by quarter is suppressed when there are less than three data points for each quarter.

3. Gender Distribution



4. Race Distribution

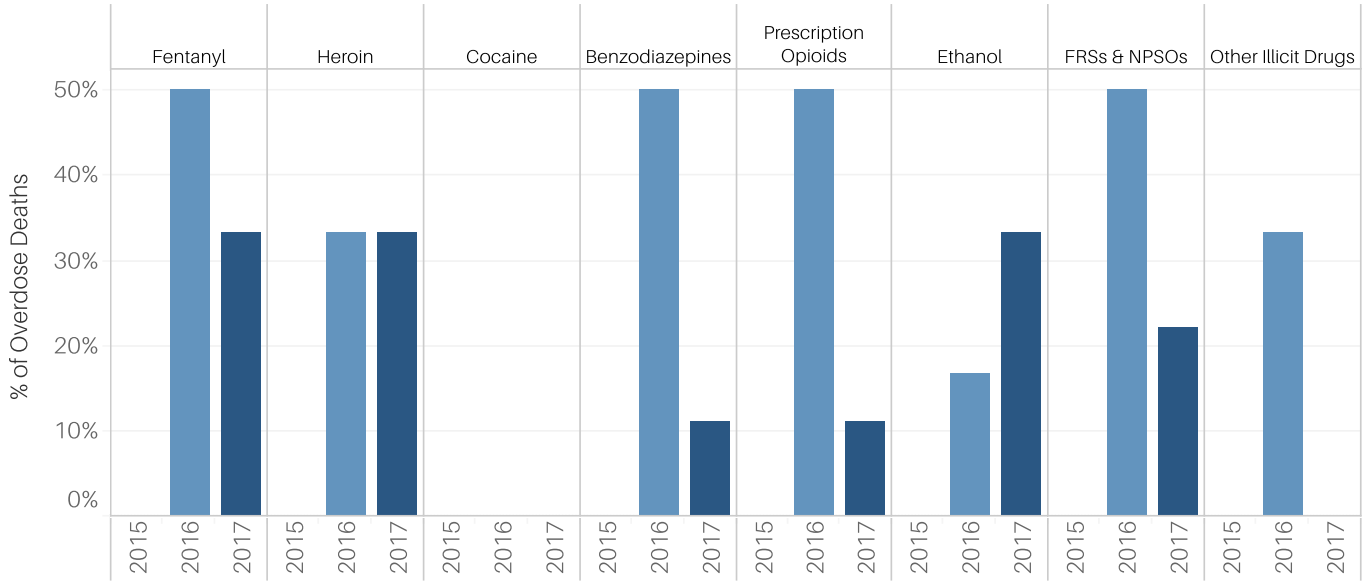


Source: Pennsylvania Coroner/Medical Examiner Data

APPENDIX D

(U) Figure D58: Analysis of 2015 - 2017 Overdose Death Data within County: Tioga

5. Percent of Overdose Deaths per Drug Category per Year



6. Percent of Overdose Deaths per Drug Category per Age Group per Year

Drug Category	2015 0-24	2015 25-44	2015 45-64	2015 65+	2016 0-24	2016 25-44	2016 45-64	2016 65+	2017 0-24	2017 25-44	2017 45-64	2017 65+
Fentanyl					100%	100%	25%			50%		
Heroin					100%		25%			50%		
Cocaine												
Benzodiazepines							75%			17%		
Prescription Opioids						100%	50%			17%		
Ethanol							25%		50%	17%	100%	
FRSs & NPSOs					100%		50%		50%	17%		
Other Illicit Drugs					100%		25%					

7. Per Drug Category per Gender per Year

Drug Category	2015 Female	2015 Male	2016 Female	2016 Male	2017 Female	2017 Male
Fentanyl			67%	33%		50%
Heroin			33%	33%		50%
Cocaine						
Benzodiazepines				100%		17%
Prescription Opioids			33%	67%		17%
Ethanol				33%	33%	33%
FRSs & NPSOs			33%	67%	33%	17%
Other Illicit Drugs			33%	33%		

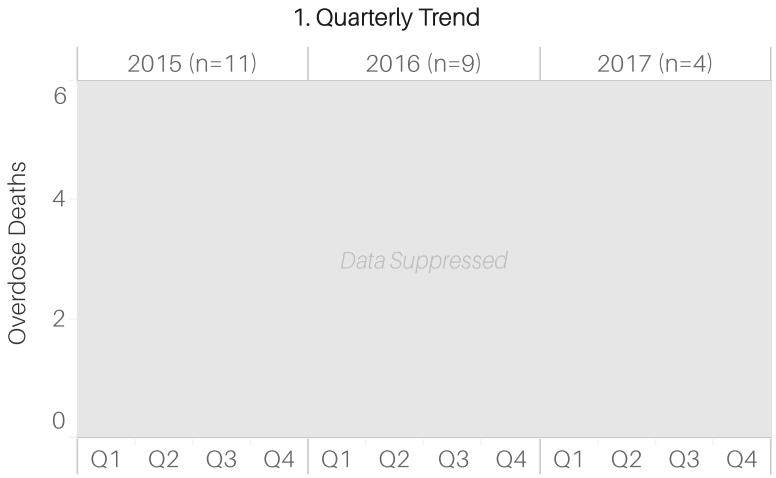
8. Per Drug Category per Race, 2015-2017

Drug Category	White	Black	Hispanic	Other
Fentanyl	40%			
Heroin	33%			
Cocaine				
Benzodiazepines	27%			
Prescription Opioids	27%			
Ethanol	27%			
FRSs & NPSOs	33%			
Other Illicit Drugs	13%			

Source: Pennsylvania Coroner/Medical Examiner Data

APPENDIX D

(U) Figure D59: Analysis of 2015 - 2017 Overdose Death Data within County: Venango



Total Number of Overdose Deaths: **24**

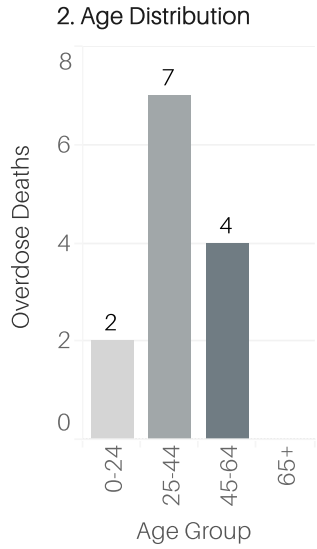
Average Rate of Overdose Deaths (per 100,000): **15**

County Rank by Average Rate: **54**

Percent Change from 2015-2016: **18% Decrease**

Percent Change from 2016-2017: **56% Decrease**

Percent Change from 2015-2017: **64% Decrease**



The information in this section summarizes drug-related overdose death data (accidental or undetermined) from 2015-2017.

<u>The first page consists of the quarterly trend and demographic information:</u>

1: Total Number of Overdose Deaths per Quarter per Year*

2-4: Total Number of Overdose Deaths per Age/Gender/Race

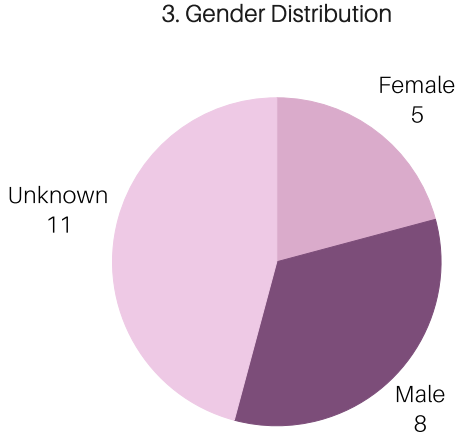
<u>The second page consists of the yearly trend for the most commonly identified drug categories and the drug category breakdown for each demographic group:</u>

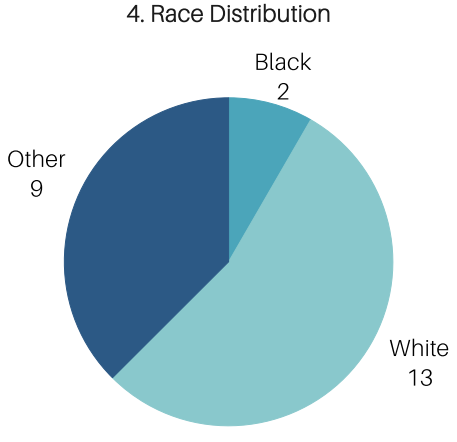
5: Percent of Overdose Deaths per Drug Category per Year

6-8: Percent of Overdose Deaths per Drug Category per Age/Gender/Race, per Year if Applicable

*Percent = (Number of deaths per drug category per demographic group, per year if applicable) / (Number of deaths per demographic group, per year if applicable) * 100%*

*Breakdown by quarter is suppressed when there are less than three data points for each quarter.



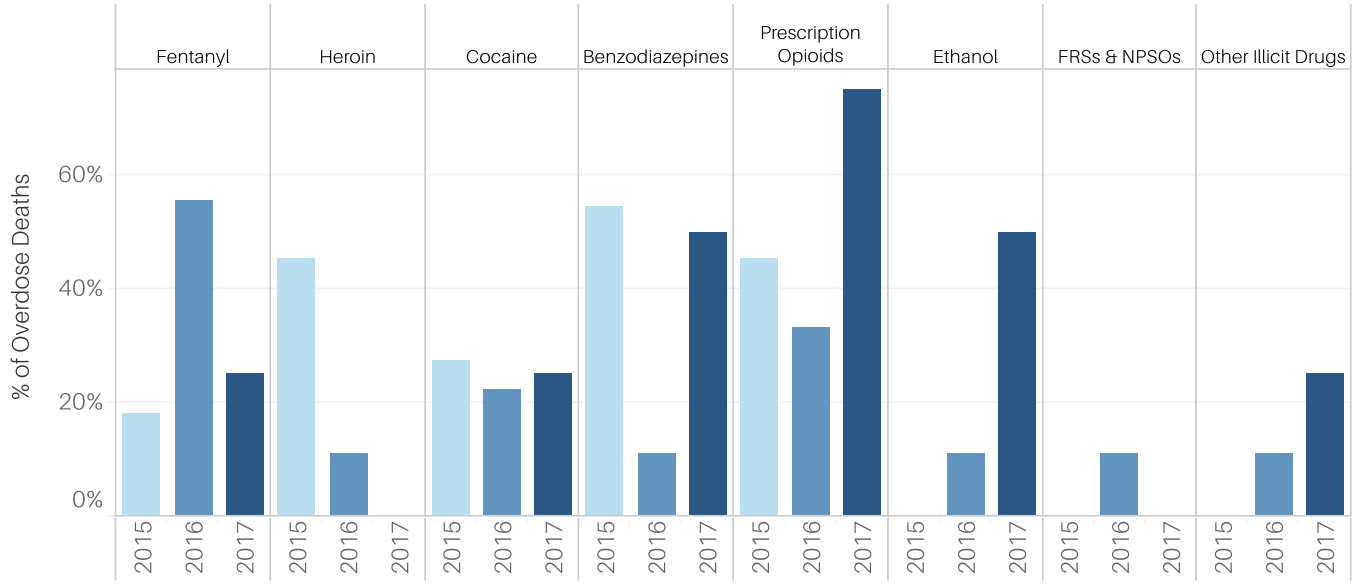


Source: Pennsylvania Coroner/Medical Examiner Data

APPENDIX D

(U) Figure D59: Analysis of 2015 - 2017 Overdose Death Data within County: Venango

5. Percent of Overdose Deaths per Drug Category per Year



6. Percent of Overdose Deaths per Drug Category per Age Group per Year

Drug Category	2015				2016				2017			
	0-24	25-44	45-64	65+	0-24	25-44	45-64	65+	0-24	25-44	45-64	65+
Fentanyl					50%	75%	33%			33%		
Heroin							33%					
Cocaine						25%	33%			33%		
Benzodiazepines							33%			67%		
Prescription Opioids						25%	67%			67%	100%	
Ethanol					50%					33%	100%	
FRSs & NPSOs						25%						
Other Illicit Drugs					50%					33%		

7. Per Drug Category per Gender per Year

Drug Category	2015		2016		2017	
	Female	Male	Female	Male	Female	Male
Fentanyl			67%	50%		50%
Heroin			33%			
Cocaine			67%			50%
Benzodiazepines				17%	50%	50%
Prescription Opioids			33%	33%	100%	50%
Ethanol				17%	100%	
FRSs & NPSOs				17%		
Other Illicit Drugs				17%		50%

8. Per Drug Category per Race, 2015-2017

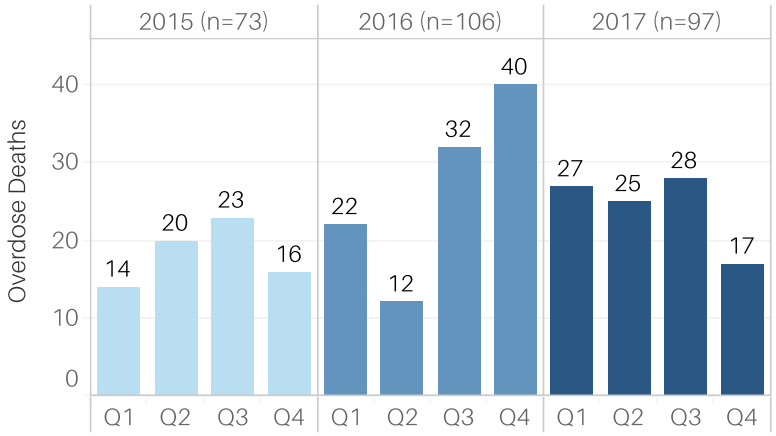
Drug Category	White	Black	Hispanic	Other
Fentanyl	15%	50%		56%
Heroin	31%	50%		11%
Cocaine	23%	50%		22%
Benzodiazepines	62%			11%
Prescription Opioids	54%	50%		33%
Ethanol	15%			11%
FRSs & NPSOs				11%
Other Illicit Drugs	8%			11%

Source: Pennsylvania Coroner/Medical Examiner Data

APPENDIX D

(U) Figure D60: Analysis of 2015 - 2017 Overdose Death Data within County: Washington

1. Quarterly Trend



Total Number of Overdose Deaths: **276**

Average Rate of Overdose Deaths (per 100,000): **44**

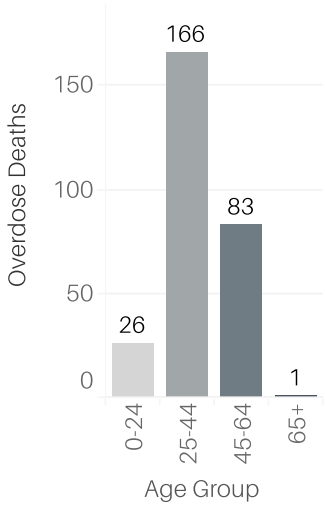
County Rank by Average Rate: **9**

Percent Change from 2015-2016: **45% Increase**

Percent Change from 2016-2017: **8% Decrease**

Percent Change from 2015-2017: **33% Increase**

2. Age Distribution



The information in this section summarizes drug-related overdose death data (accidental or undetermined) from 2015-2017.

<u>The first page consists of the quarterly trend and demographic information:</u>

1: Total Number of Overdose Deaths per Quarter per Year*

2-4: Total Number of Overdose Deaths per Age/Gender/Race

<u>The second page consists of the yearly trend for the most commonly identified drug categories and the drug category breakdown for each demographic group:</u>

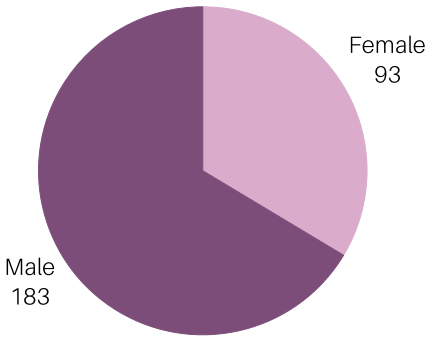
5: Percent of Overdose Deaths per Drug Category per Year

6-8: Percent of Overdose Deaths per Drug Category per Age/Gender/Race, per Year if Applicable

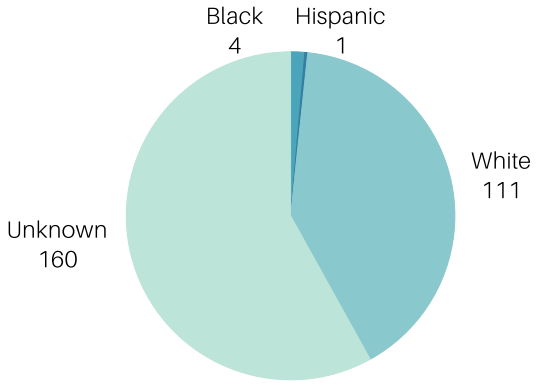
*Percent = (Number of deaths per drug category per demographic group, per year if applicable) / (Number of deaths per demographic group, per year if applicable) * 100%*

*Breakdown by quarter is suppressed when there are less than three data points for each quarter.

3. Gender Distribution



4. Race Distribution

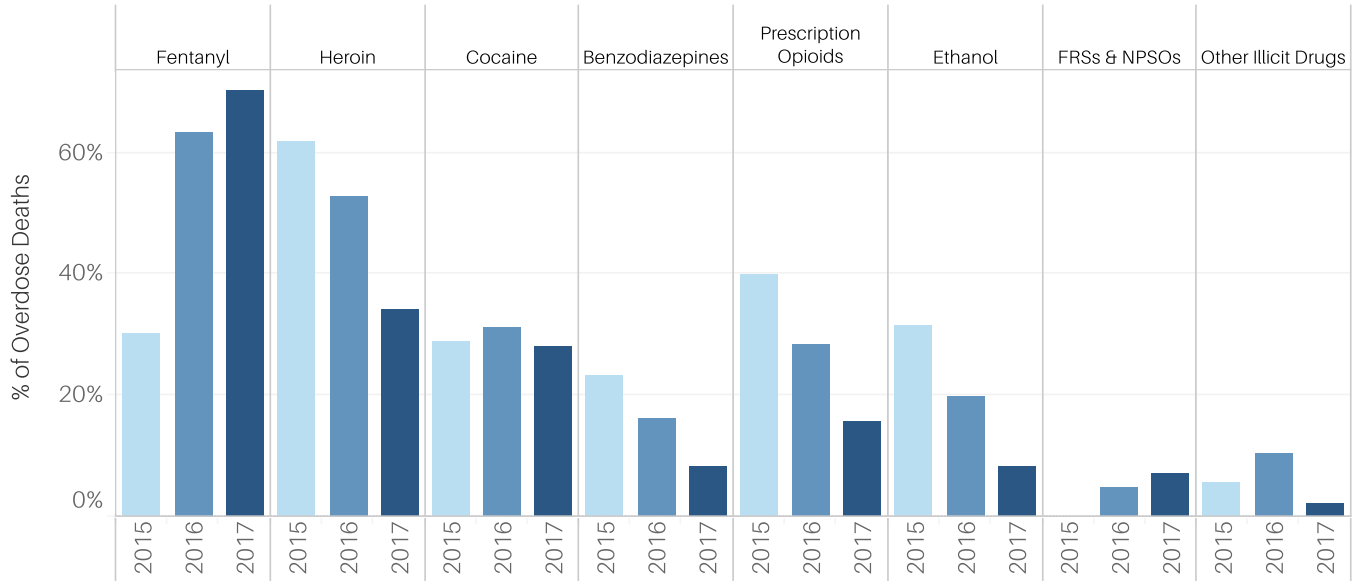


Source: Pennsylvania Coroner/Medical Examiner Data

APPENDIX D

(U) Figure D60: Analysis of 2015 - 2017 Overdose Death Data within County: Washington

5. Percent of Overdose Deaths per Drug Category per Year



6. Percent of Overdose Deaths per Drug Category per Age Group per Year

	2015				2016				2017			
Drug Category	0-24	25-44	45-64	65+	0-24	25-44	45-64	65+	0-24	25-44	45-64	65+
Fentanyl	14%	39%	23%		56%	74%	39%	100%	80%	76%	52%	
Heroin	57%	69%	53%		56%	57%	43%		30%	42%	16%	
Cocaine	14%	31%	30%		22%	31%	36%		40%	34%	8%	
Benzodiazepines	29%	11%	37%		22%	18%	11%			6%	16%	
Prescription Opioids	43%	22%	60%		33%	22%	43%			11%	32%	
Ethanol		33%	37%		11%	18%	29%			10%	8%	
FRSs & NPSOs						6%	4%			10%	4%	
Other Illicit Drugs		8%	3%		22%	12%	4%			3%		

7. Per Drug Category per Gender per Year

	2015		2016		2017	
Drug Category	Female	Male	Female	Male	Female	Male
Fentanyl	28%	31%	71%	60%	57%	78%
Heroin	52%	67%	52%	53%	27%	38%
Cocaine	36%	25%	39%	28%	30%	27%
Benzodiazepines	32%	19%	13%	17%	11%	7%
Prescription Opioids	48%	35%	26%	29%	16%	15%
Ethanol	24%	35%	26%	17%	11%	7%
FRSs & NPSOs			3%	5%	5%	8%
Other Illicit Drugs	8%	4%	6%	12%		3%

8. Per Drug Category per Race, 2015-2017

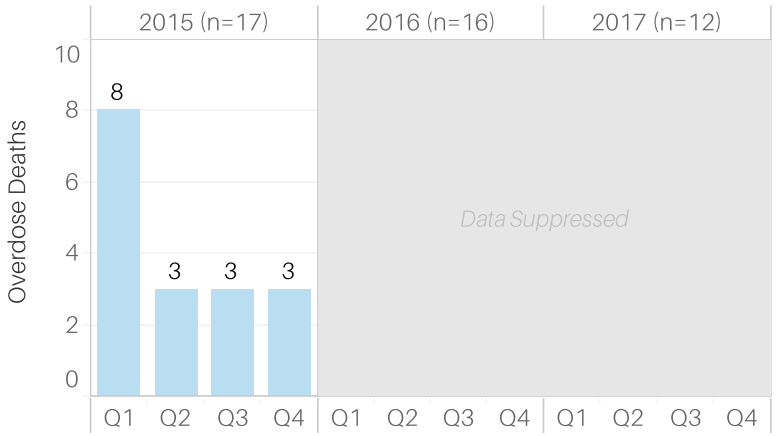
Drug Category	White	Black	Hispanic	Other
Fentanyl	54%	25%	100%	
Heroin	57%	75%		
Cocaine	28%	75%		
Benzodiazepines	20%			
Prescription Opioids	27%	25%		
Ethanol	22%	25%		
FRSs & NPSOs	5%			
Other Illicit Drugs	8%			

Source: Pennsylvania Coroner/Medical Examiner Data

APPENDIX D

(U) Figure D61: Analysis of 2015 - 2017 Overdose Death Data within County: Wayne

1. Quarterly Trend



Total Number of Overdose Deaths: **45**

Average Rate of Overdose Deaths (per 100,000): **29**

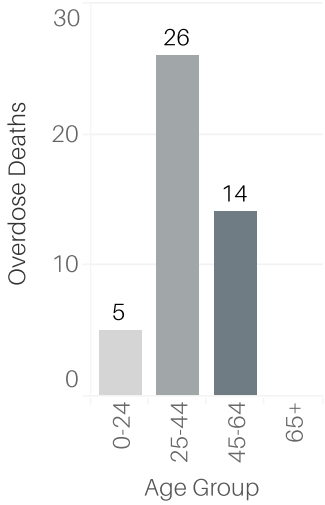
County Rank by Average Rate: **27**

Percent Change from 2015-2016: **6% Decrease**

Percent Change from 2016-2017: **25% Decrease**

Percent Change from 2015-2017: **29% Decrease**

2. Age Distribution



The information in this section summarizes drug-related overdose death data (accidental or undetermined) from 2015-2017.

<u>The first page consists of the quarterly trend and demographic information:</u>

1: Total Number of Overdose Deaths per Quarter per Year*

2-4: Total Number of Overdose Deaths per Age/Gender/Race

<u>The second page consists of the yearly trend for the most commonly identified drug categories and the drug category breakdown for each demographic group:</u>

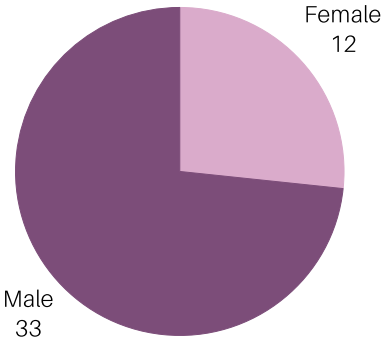
5: Percent of Overdose Deaths per Drug Category per Year

6-8: Percent of Overdose Deaths per Drug Category per Age/Gender/Race, per Year if Applicable

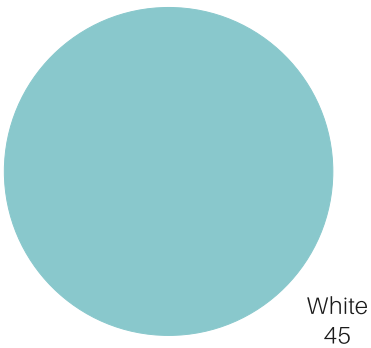
*Percent = (Number of deaths per drug category per demographic group, per year if applicable) / (Number of deaths per demographic group, per year if applicable) * 100%*

*Breakdown by quarter is suppressed when there are less than three data points for each quarter.

3. Gender Distribution



4. Race Distribution

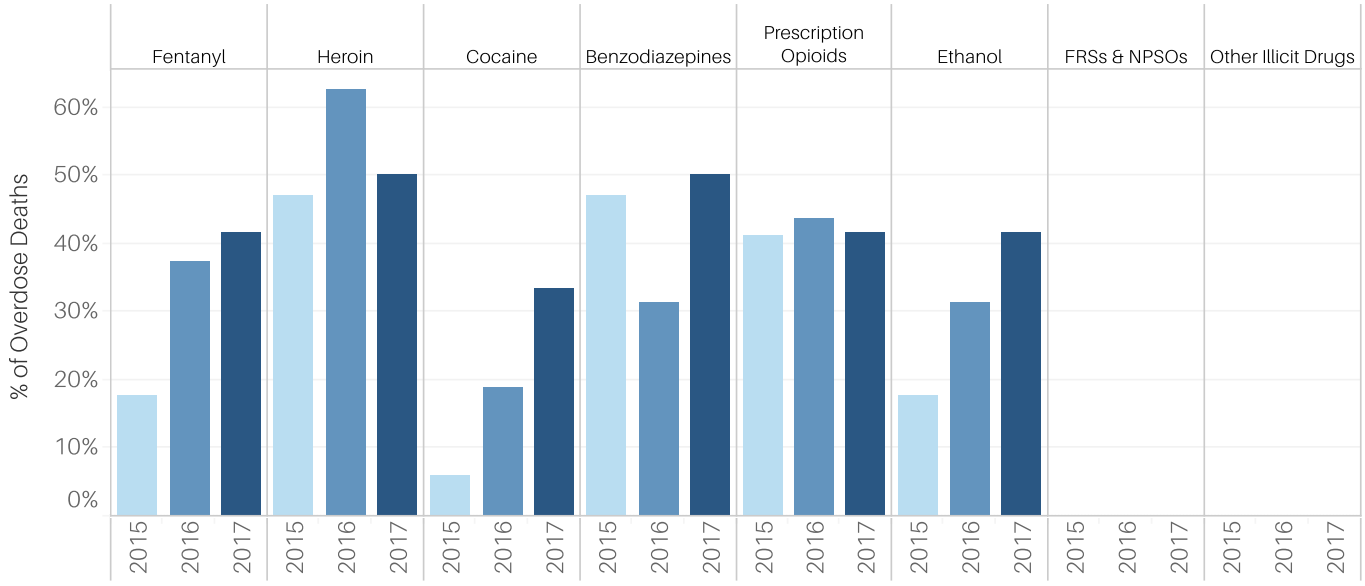


Source: Pennsylvania Coroner/Medical Examiner Data

APPENDIX D

(U) Figure D61: Analysis of 2015 - 2017 Overdose Death Data within County: Wayne

5. Percent of Overdose Deaths per Drug Category per Year



6. Percent of Overdose Deaths per Drug Category per Age Group per Year

Drug Category	2015				2016				2017			
	0-24	25-44	45-64	65+	0-24	25-44	45-64	65+	0-24	25-44	45-64	65+
Fentanyl	67%	13%			50%	45%				43%	40%	
Heroin	33%	63%	33%		100%	73%				71%	20%	
Cocaine		13%				27%				43%	20%	
Benzodiazepines	33%	38%	67%			27%	67%			57%	40%	
Prescription Opioids	33%	50%	33%			45%	67%			29%	60%	
Ethanol			50%			27%	67%			43%	40%	
FRSs & NPSOs												
Other Illicit Drugs												

7. Per Drug Category per Gender per Year

Drug Category	2015		2016		2017	
	Female	Male	Female	Male	Female	Male
Fentanyl	50%	8%	25%	42%	75%	25%
Heroin	25%	54%	50%	67%	50%	50%
Cocaine		8%		25%	25%	38%
Benzodiazepines	50%	46%	75%	17%	50%	50%
Prescription Opioids	50%	38%	75%	33%	50%	38%
Ethanol		23%	50%	25%	75%	25%
FRSs & NPSOs						
Other Illicit Drugs						

8. Per Drug Category per Race, 2015-2017

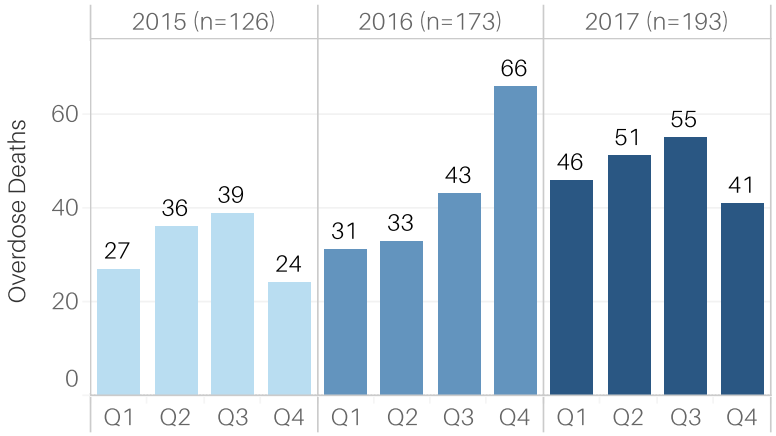
Drug Category	White	Black	Hispanic	Other
Fentanyl	31%			
Heroin	53%			
Cocaine	18%			
Benzodiazepines	42%			
Prescription Opioids	42%			
Ethanol	29%			
FRSs & NPSOs				
Other Illicit Drugs				

Source: Pennsylvania Coroner/Medical Examiner Data

APPENDIX D

(U) Figure D62: Analysis of 2015 - 2017 Overdose Death Data within County: Westmoreland

1. Quarterly Trend



Total Number of Overdose Deaths: **492**

Average Rate of Overdose Deaths (per 100,000): **46**

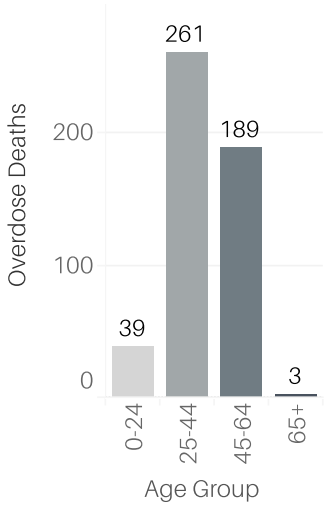
County Rank by Average Rate: **8**

Percent Change from 2015-2016: **37% Increase**

Percent Change from 2016-2017: **12% Increase**

Percent Change from 2015-2017: **53% Increase**

2. Age Distribution



The information in this section summarizes drug-related overdose death data (accidental or undetermined) from 2015-2017.

<u>The first page consists of the quarterly trend and demographic information:</u>

1: Total Number of Overdose Deaths per Quarter per Year*

2-4: Total Number of Overdose Deaths per Age/Gender/Race

<u>The second page consists of the yearly trend for the most commonly identified drug categories and the drug category breakdown for each demographic group:</u>

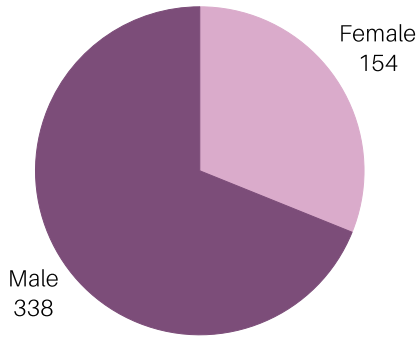
5: Percent of Overdose Deaths per Drug Category per Year

6-8: Percent of Overdose Deaths per Drug Category per Age/Gender/Race, per Year if Applicable

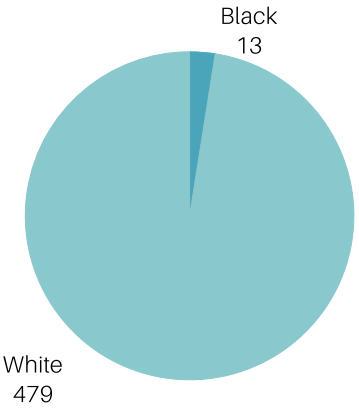
*Percent = (Number of deaths per drug category per demographic group, per year if applicable) / (Number of deaths per demographic group, per year if applicable) * 100%*

*Breakdown by quarter is suppressed when there are less than three data points for each quarter.

3. Gender Distribution



4. Race Distribution

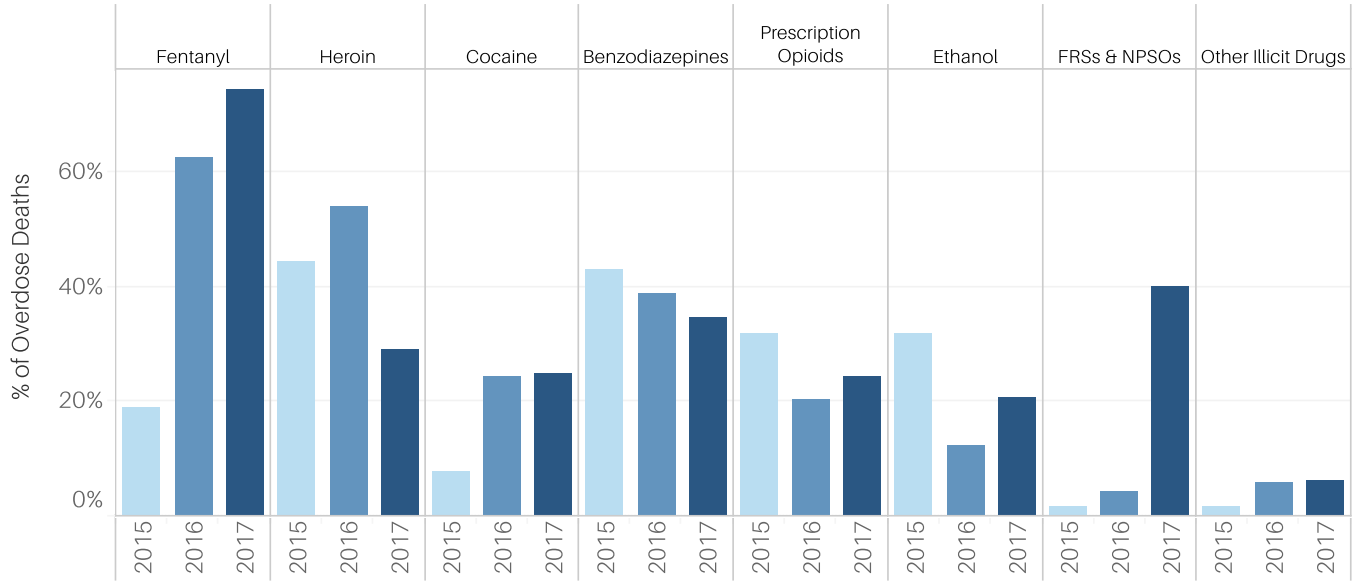


Source: Pennsylvania Coroner/Medical Examiner Data

APPENDIX D

(U) Figure D62: Analysis of 2015 - 2017 Overdose Death Data within County: Westmoreland

5. Percent of Overdose Deaths per Drug Category per Year



6. Percent of Overdose Deaths per Drug Category per Age Group per Year

Drug Category	2015 0-24	2015 25-44	2015 45-64	2015 65+	2016 0-24	2016 25-44	2016 45-64	2016 65+	2017 0-24	2017 25-44	2017 45-64	2017 65+
Fentanyl	55%	21%	9%		59%	70%	54%	67%	73%	87%	56%	
Heroin	64%	54%	26%		59%	62%	43%	33%	45%	30%	25%	
Cocaine	9%	10%	4%		24%	23%	25%	33%	55%	27%	17%	
Benzodiazepines	45%	43%	43%		35%	35%	43%	67%	36%	33%	37%	
Prescription Opioids	18%	29%	38%		6%	13%	33%	33%	9%	17%	37%	
Ethanol	18%	25%	45%			13%	13%	33%	27%	15%	28%	
FRSs & NPSOs	9%	1%			6%	5%	3%		36%	44%	35%	
Other Illicit Drugs		3%			18%	5%	4%		9%	7%	5%	

7. Per Drug Category per Gender per Year

Drug Category	2015 Female	2015 Male	2016 Female	2016 Male	2017 Female	2017 Male
Fentanyl	15%	22%	58%	64%	72%	75%
Heroin	29%	54%	42%	58%	31%	28%
Cocaine	13%	5%	19%	26%	24%	25%
Benzodiazepines	42%	44%	46%	36%	29%	37%
Prescription Opioids	44%	24%	27%	18%	31%	21%
Ethanol	31%	32%	10%	13%	12%	24%
FRSs & NPSOs		3%	2%	5%	52%	35%
Other Illicit Drugs	2%	1%	4%	6%	2%	8%

8. Per Drug Category per Race, 2015-2017

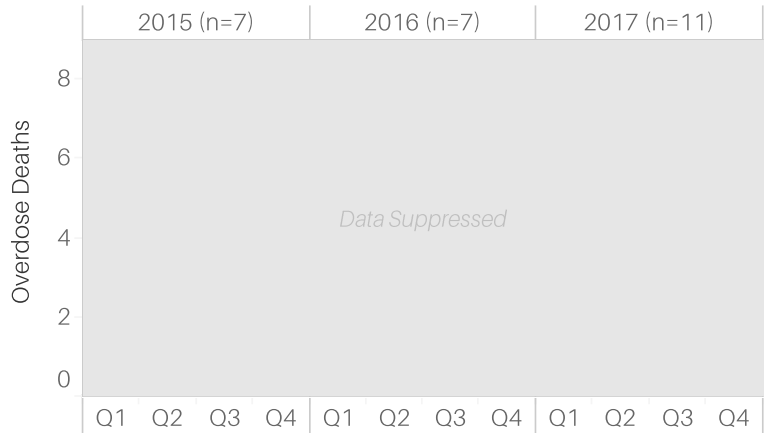
Drug Category	White	Black	Hispanic	Other
Fentanyl	56%	54%		
Heroin	42%	38%		
Cocaine	20%	46%		
Benzodiazepines	38%	31%		
Prescription Opioids	24%	46%		
Ethanol	20%	31%		
FRSs & NPSOs	18%	8%		
Other Illicit Drugs	5%			

Source: Pennsylvania Coroner/Medical Examiner Data

APPENDIX D

(U) Figure D63: Analysis of 2015 - 2017 Overdose Death Data within County: Wyoming

1. Quarterly Trend



Total Number of Overdose Deaths: **25**

Average Rate of Overdose Deaths (per 100,000): **30**

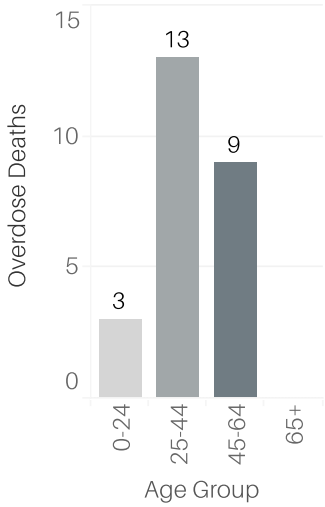
County Rank by Average Rate: **23**

Percent Change from 2015-2016: **No Change**

Percent Change from 2016-2017: **57% Increase**

Percent Change from 2015-2017: **57% Increase**

2. Age Distribution



The information in this section summarizes drug-related overdose death data (accidental or undetermined) from 2015-2017.

<u>The first page consists of the quarterly trend and demographic information:</u>

1: Total Number of Overdose Deaths per Quarter per Year*

2-4: Total Number of Overdose Deaths per Age/Gender/Race

<u>The second page consists of the yearly trend for the most commonly identified drug categories and the drug category breakdown for each demographic group:</u>

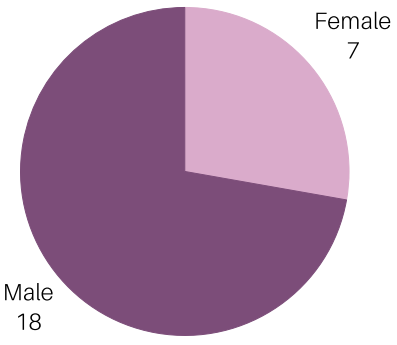
5: Percent of Overdose Deaths per Drug Category per Year

6-8: Percent of Overdose Deaths per Drug Category per Age/Gender/Race, per Year if Applicable

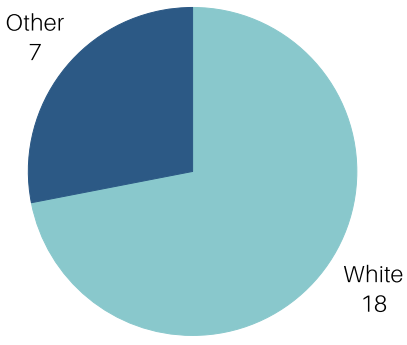
*Percent = (Number of deaths per drug category per demographic group, per year if applicable) / (Number of deaths per demographic group, per year if applicable) * 100%*

*Breakdown by quarter is suppressed when there are less than three data points for each quarter.

3. Gender Distribution



4. Race Distribution

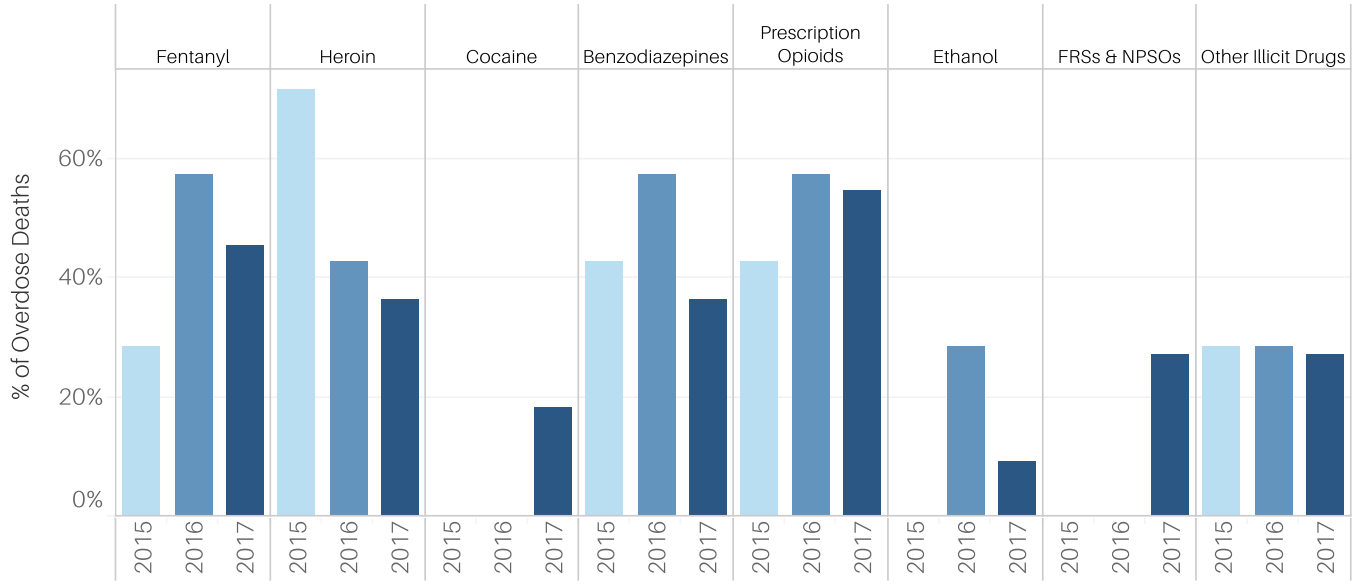


Source: Pennsylvania Coroner/Medical Examiner Data

APPENDIX D

(U) Figure D63: Analysis of 2015 - 2017 Overdose Death Data within County: Wyoming

5. Percent of Overdose Deaths per Drug Category per Year



6. Percent of Overdose Deaths per Drug Category per Age Group per Year

Drug Category	2015 0-24	2015 25-44	2015 45-64	2015 65+	2016 0-24	2016 25-44	2016 45-64	2016 65+	2017 0-24	2017 25-44	2017 45-64	2017 65+
Fentanyl		67%				100%	33%		100%	57%		
Heroin	100%	67%	67%		100%	33%	33%			57%		
Cocaine										29%		
Benzodiazepines	100%		67%		100%	67%	33%			14%	100%	
Prescription Opioids	100%		67%			67%	67%			43%	100%	
Ethanol							67%			14%		
FRSs & NPSOs										43%		
Other Illicit Drugs		67%			100%		33%		100%	29%		

7. Per Drug Category per Gender per Year

Drug Category	2015 Female	2015 Male	2016 Female	2016 Male	2017 Female	2017 Male
Fentanyl		40%	33%	75%		56%
Heroin	50%	80%	33%	50%		44%
Cocaine						22%
Benzodiazepines	50%	40%	100%	25%		44%
Prescription Opioids	100%	20%	67%	50%	50%	56%
Ethanol				50%		11%
FRSs & NPSOs					50%	22%
Other Illicit Drugs		40%	33%	25%	50%	22%

8. Per Drug Category per Race, 2015-2017

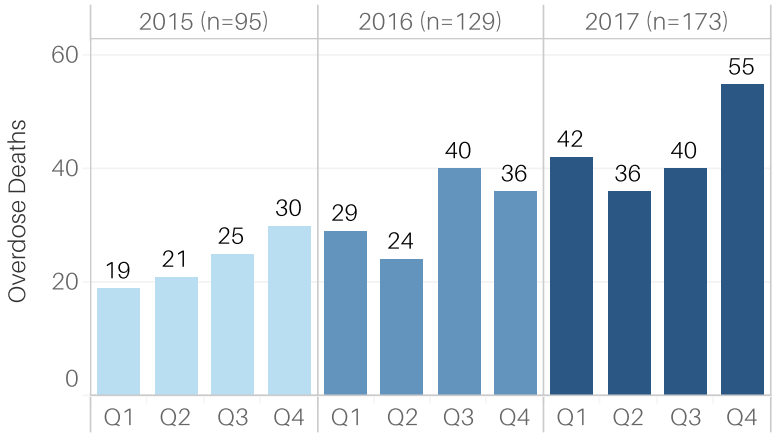
Drug Category	White	Black	Hispanic	Other
Fentanyl	39%			57%
Heroin	50%			43%
Cocaine	11%			
Benzodiazepines	39%			57%
Prescription Opioids	50%			57%
Ethanol	6%			29%
FRSs & NPSOs	17%			
Other Illicit Drugs	28%			29%

Source: Pennsylvania Coroner/Medical Examiner Data

APPENDIX D

(U) Figure D64: Analysis of 2015 - 2017 Overdose Death Data within County: York

1. Quarterly Trend



Total Number of Overdose Deaths: **397**

Average Rate of Overdose Deaths (per 100,000): **30**

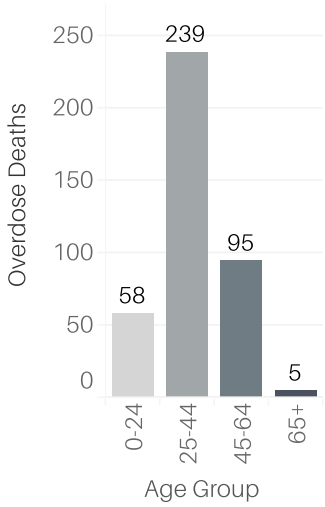
County Rank by Average Rate: **25**

Percent Change from 2015-2016: **36% Increase**

Percent Change from 2016-2017: **34% Increase**

Percent Change from 2015-2017: **82% Increase**

2. Age Distribution



The information in this section summarizes drug-related overdose death data (accidental or undetermined) from 2015-2017.

<u>The first page consists of the quarterly trend and demographic information:</u>

1: Total Number of Overdose Deaths per Quarter per Year*

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<u>The second page consists of the yearly trend for the most commonly identified drug categories and the drug category breakdown for each demographic group:</u>

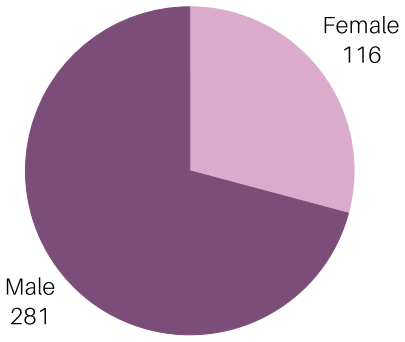
5: Percent of Overdose Deaths per Drug Category per Year

6-8: Percent of Overdose Deaths per Drug Category per Age/Gender/Race, per Year if Applicable

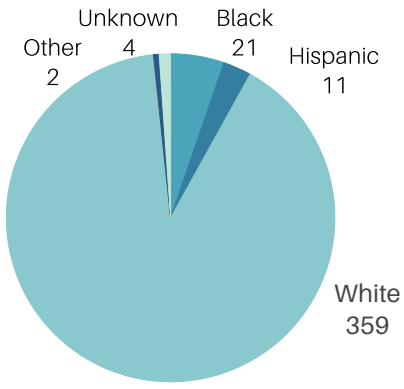
*Percent = (Number of deaths per drug category per demographic group, per year if applicable) / (Number of deaths per demographic group, per year if applicable) * 100%*

*Breakdown by quarter is suppressed when there are less than three data points for each quarter.

3. Gender Distribution



4. Race Distribution

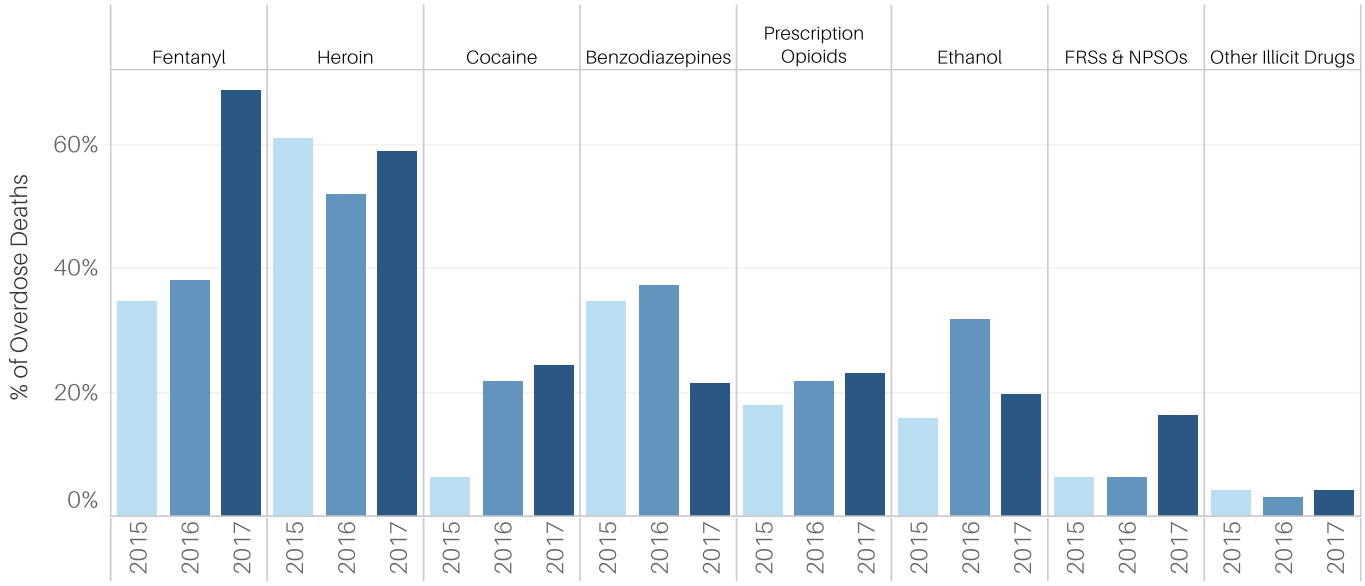


Source: Pennsylvania Coroner/Medical Examiner Data

APPENDIX D

(U) Figure D64: Analysis of 2015 - 2017 Overdose Death Data within County: York

5. Percent of Overdose Deaths per Drug Category per Year



6. Percent of Overdose Deaths per Drug Category per Age Group per Year

Drug Category	2015				2016				2017			
	0-24	25-44	45-64	65+	0-24	25-44	45-64	65+	0-24	25-44	45-64	65+
Fentanyl	47%	37%	17%	33%	50%	40%	29%		68%	77%	53%	
Heroin	71%	60%	67%		50%	58%	39%		68%	64%	45%	
Cocaine		7%	11%		25%	20%	21%	50%	16%	19%	39%	
Benzodiazepines	29%	32%	44%	67%	31%	37%	43%		28%	20%	20%	
Prescription Opioids	6%	18%	33%		13%	19%	32%	50%	12%	20%	35%	
Ethanol	6%	19%	11%	33%	6%	33%	43%	50%		21%	27%	
FRSs & NPSOs	12%	5%		33%	6%	7%	4%		12%	18%	14%	
Other Illicit Drugs	12%	4%			6%	2%	4%		8%	4%	2%	

7. Per Drug Category per Gender per Year

Drug Category	2015		2016		2017	
	Female	Male	Female	Male	Female	Male
Fentanyl	33%	36%	39%	38%	52%	74%
Heroin	58%	63%	36%	58%	43%	64%
Cocaine	3%	8%	19%	23%	23%	25%
Benzodiazepines	31%	37%	42%	35%	36%	16%
Prescription Opioids	28%	12%	31%	18%	32%	20%
Ethanol	11%	19%	19%	37%	14%	22%
FRSs & NPSOs	3%	8%		9%	11%	18%
Other Illicit Drugs	3%	5%	6%	2%	9%	2%

8. Per Drug Category per Race, 2015-2017

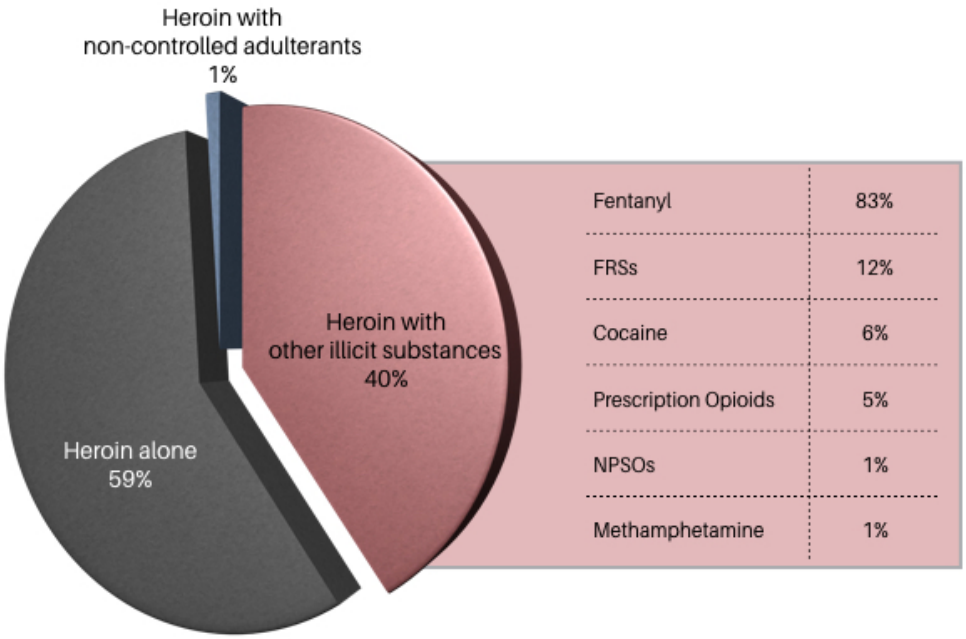
Drug Category	White	Black	Hispanic	Other
Fentanyl	50%	43%	82%	50%
Heroin	57%	43%	73%	50%
Cocaine	19%	24%	18%	
Benzodiazepines	30%	24%	18%	50%
Prescription Opioids	21%	19%	27%	50%
Ethanol	23%	24%		50%
FRSs & NPSOs	11%	10%	9%	
Other Illicit Drugs	4%			

Source: Pennsylvania Coroner/Medical Examiner Data

APPENDIX E

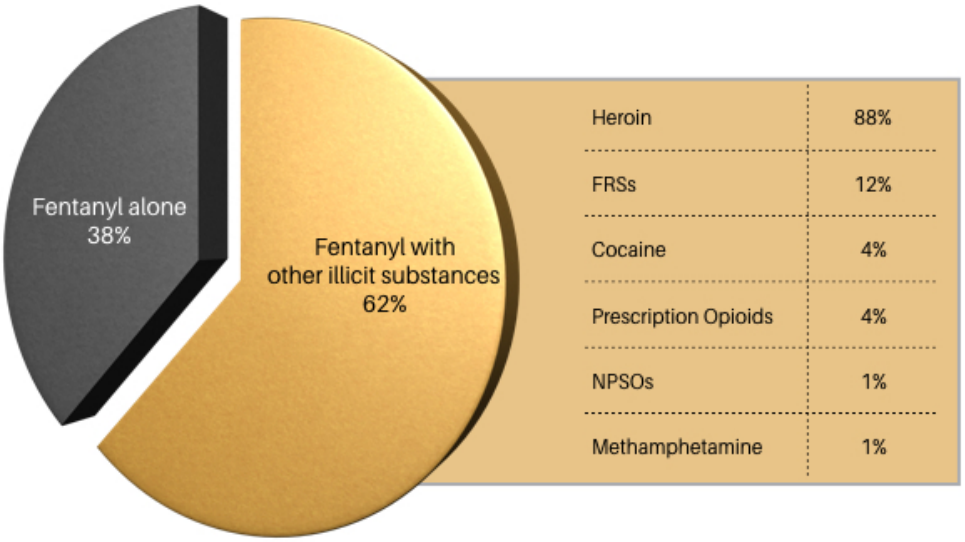
Drug Combinations in Analyzed Drug Exhibits

(U) Figure E1. Drugs Found in Combination with Heroin in Analyzed Drug Exhibits, Pennsylvania, 2017



Source: NFLIS

(U) Figure E2. Drugs Found in Combination with Fentanyl in Analyzed Drug Exhibits, Pennsylvania, 2017



Source: NFLIS