



Palm Beach County Substance Awareness Coalition

**Drug Abuse Trends
In Palm Beach County, Florida
Annual Report: July 2017**



TABLE OF CONTENTS

SECTION I. INTRODUCTION

SECTION I A. REPORT HIGHLIGHTS.....	2
SECTION I B. DATA SOURCES	3

SECTION II. PATTERNS AND TRENDS of DRUG USE

UNDERAGE ALCOHOL USE	4
ADULT PROBLEMATIC ALCOHOL.....	6
TOBACCO, SMOKING AND VAPING.....	6
MARIJUANA.....	8
Novel Psychoactive Substances.....	9
Synthetic Cannabinoids.....	10
Synthetic Cathinones.....	12
The Opiates–Non-pharmaceutical opioid analogues.....	15
THE OPIATES –NONMEDICAL USE OF PRESCRIPTION OPIOIDS.....	16
THE OPIATES – HEROIN.....	21
COCAINE.....	23
METHAMPHETAMINE.....	25
NONMEDICAL USE OF PRESCRIPTION BENZODIAZEPINES.....	27

Patterns and Trends of Substance Abuse in Palm Beach County Florida July 2017

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SECTION I. HIGHLIGHTS

- The prevalence of **current alcohol use and binge drinking** among Palm Beach County students has steadily declined over the past decade paralleling declines Statewide.
- **Alcohol** was detected as being present in nearly one-half of all drug-related deaths in Florida during 2016 and was the primary drug cited by more than a third of all patients admitted to addiction treatment in Palm Beach County during 2016 with two-thirds of those adult patients being over the age of 34.
- While **cigarette smoking** by youth has dramatically declined over the past decade, more than three times as many Palm Beach County high school students and five times as many middle school students are current users of e-cigarettes as compared to regular cigarette users.
- **Marijuana** was the primary drug of use reported by 79% of adolescents younger than 18 years of age entering addiction treatment programs in Palm Beach County during 2016 as prevalence rates of current marijuana use have significantly declined since 2014.
- More than three-fourths of **Synthetic Cannabinoids** analyzed in Florida crime labs in 2016 were from 2 different substances not seen in previous years while use by Palm Beach County high school students has continued to decline since 2012.
- The ban by China in October 2015 of 116 Novel Psychoactive Substances including *alpha*-PVP (“Flakka”) and other **Synthetic Cathinones** appears to have dramatically reduced the availability of those substance in Palm Beach County and across all of Florida in 2016.
- **Non-pharmaceutical fentanyl** and its analogues from foreign clandestine labs are the major factor for the dramatic increase in opioid deaths related to adulterated heroin and counterfeit medications in Palm Beach County and all of Florida.
- Deaths related to the non-medical misuse of **prescription opioids** and particularly oxycodone have increased since their decline from 2011 to 2013 following Florida’s crackdown on prescription drug diversion.
- Palm Beach County had more **heroin** deaths during the first half of 2016 than any other county in the State.
- **Cocaine** deaths have been steadily increasing since 2013 attributed in part to polysubstance use with heroin and other opioids.
- Indicators of **methamphetamine** remain relatively low in Palm Beach County compared to other parts of Florida.
- **Benzodiazepine** deaths increased in 2015 and 2016 following sharp declines from 2011 to 2013 paralleling trends of prescription opioid fatalities.

Data Sources

Florida Department of Law Enforcement: Florida Medical Examiners Commission 2016 Interim Report on Drugs Detected in Deceased Persons in Florida: January – June 2016 Released May 2017

Florida Department of Children and Families: Primary Drug Treatment Admissions in Florida and Palm Beach County for Calendar Year 2016

Florida Department of Children and Families: *Florida Youth Substance Abuse Surveys (FYSAS)* Palm Beach County Reports 2000 – 2016

US Centers for Disease Control and Prevention and the Florida Department of Health: *Youth Risk Behavior Surveillance System (YRBSS)* for High School and Middle School Students – Palm Beach County, 2015 Released June 10, 2016

Florida Agency for Health Care Administration: Opioid, Heroin and Benzodiazepine Poisoning Overdose Hospitalization Cases January – June 2016 Data Queried June 2017

Florida Poison Information Centers exposure calls for calendar year 2016 and January through April 2017

Florida Department of Law Enforcement: Arrests Reports by Florida Counties 2015 and 2016

US Drug Enforcement Administration: National Forensic Laboratory Information System (NFLIS): Florida and Palm Beach County crime lab cases for calendar year 2016 (Data Queried: May 22, 2017)

U.S. Substance Abuse and Mental Health Services Administration: Substate Estimates from the 2012-2014 National Survey on Drug Use and Health (NSDUH)

University of Florida College of Medicine: Florida drug-Related Outcome Surveillance and Tracking (FROST) System at www.frost.med.ufl.edu

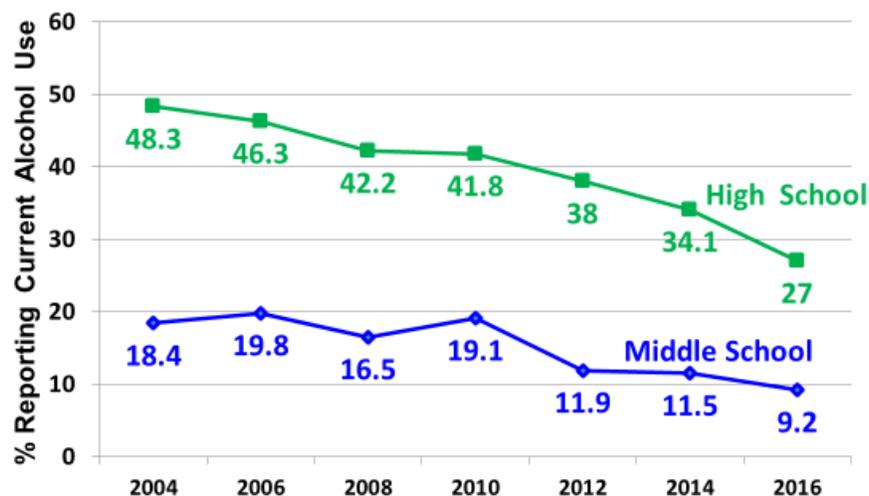
SECTION II. PATTERNS AND TRENDS of DRUG USE

Underage Alcohol Use

- The prevalence of **current alcohol use and binge drinking** among Palm Beach County students has steadily declined over the past decade paralleling declines Statewide.

The most recent trend of alcohol use by Palm Beach County youth is from the 2016 Florida Youth Substance Abuse Survey (FYSAS). It reported a 19.3 percentage point decline (or 42-% decrease) in current (past 30-day) use of alcohol among Palm Beach County high school students between 2006 (46.3%) and 2016 (27%) The FYSAS also reported a 10.6 percentage point decline (or 54-% decrease) in current use of alcohol among Palm Beach County middle school students between 2006 (19.8%) and 2016 (9.2%). The 2016 rates of current alcohol use among Palm Beach County students are slightly above the percentages for all Florida high school students at 25.4% and middle schoolers at 8.3%.

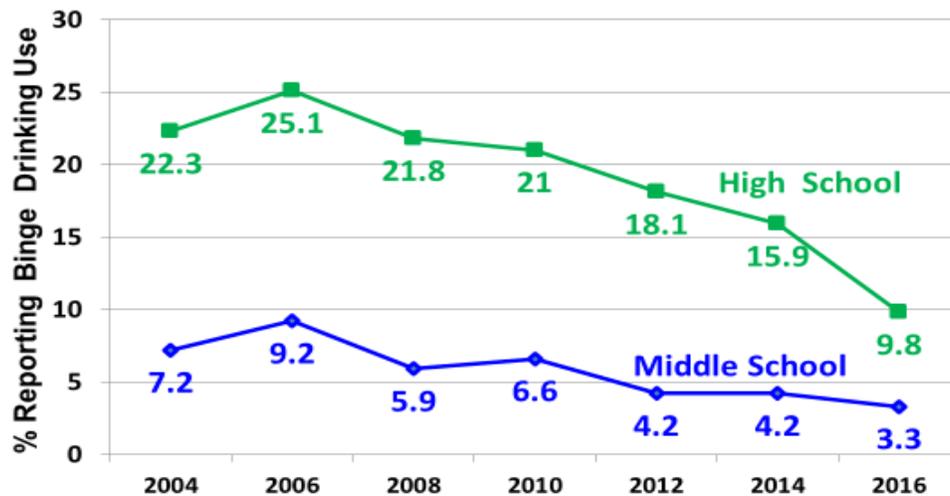
**Current (past 30-Day)Alcohol Use among Palm Beach County
Middle and High School Students: 2004-2016**



Source: Florida Youth Substance Abuse Surveys 2000-2016

The FYSAS also reports a 15.3 percentage point decrease (or 61-% decline) in binge drinking of having five or more drinks in a row during the past two weeks among Palm Beach County high school students from 25.1% in 2006 to 9.8% in 2016. Palm Beach County middle school students also reported a 64-% decline in binge drinking (or 5.9 percentage points) between the same ten-year period from 9.2% in 2006 to 3.3% in 2016. Binge drinking percentages among Palm Beach County students in 2016 were also similar to those for high school students Statewide at 10.9% and 3.2% among middle schoolers.

Percent of Palm Beach County Middle and High School Students Reporting Binge Drinking in Past 2 Weeks: 2004-2016



Source: Florida Youth Substance Abuse Surveys 2000-2016

The percent of Palm Beach County high school students reporting they had their first drink of alcohol other than a few sips before the age of 13 as tracked by the FYSAS has declined 47-% from 36.3% in 2006 to 19.1% in 2016. Statewide 19.4% of high school students in 2016 reported alcohol use prior to the age of 13.

The National Survey on Drug Use and Health (NSDUH) Substate Data provides prevalence rates of alcohol use for Palm Beach County underage drinking for those 12 to 20 years of age citing 22.96% of that population were current (past 30-day) users of alcohol and 12.50% reported binge drinking in the past month. These rates were the same as for all of Florida where the statewide rates were 22.7% for current alcohol use and 12.5% for binge drinking among those 12-20 years of age.

In calendar year 2016, 234 adolescents aged 17 and under cited alcohol was their primary drug of abuse when they entered a Palm Beach County treatment program. That total represented 16% of all admissions for that age group and 5% of the total number of primary alcohol treatment admissions (n= 4,258). There were 335 young adults aged 18-25 who reported alcohol as their primary substance abuse problem or 8% of all alcohol admissions representing 20% of all treatment admissions aged 18-25.

There were only 2 juvenile arrests age 17 and under in Palm Beach County for Driving Under the Influence (DUI) during 2016 and 22 juvenile arrests for Liquor Law Violations.

Adult Problematic Alcohol

- **Alcohol** was detected as being present in nearly one-half of all drug-related deaths in Florida during 2016 and was the primary drug cited by more than a third of all patients admitted to addiction treatment in Palm Beach County during 2016 with two-thirds of those adult patients being over the age of 34.

Alcohol was identified in 2,466 deceased persons Statewide in the first six months of 2016 by Florida medical examiners representing a 7-% increase from the 2,308 alcohol occurrences in the first half of 2015. Among the 2016 cases, alcohol was considered a “cause of death” in 405 or 16% of the cases and was detected in 46% of the 5,392 decedents in whom any drug was found present at the time of death.

In calendar year 2016, 4,024 persons aged 18 and older cited alcohol was their primary drug of abuse when they entered a Palm Beach County addiction treatment program accounting for 38% of all adult clients. Sixty-one percent of all alcohol primary admissions clients were males. Young adults aged 18-25 accounted for 8% of the adult alcohol admissions while those aged 26-34 years represented 26% and those age 35 and older comprised 66%.

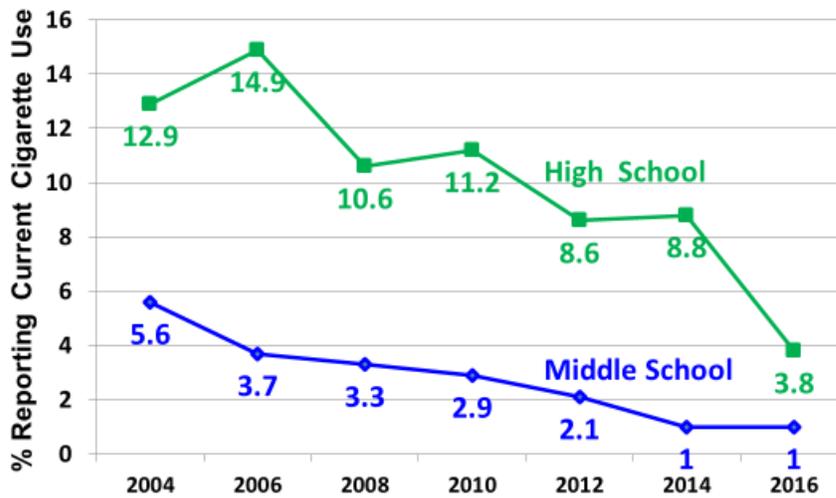
There were 1,948 adults arrested in Palm Beach County for Driving Under the Influence (DUI) during 2016 representing a modest 2-% decline compared to 1,987 such arrests in 2015 and a 41-% decrease from the 2,740 adult DUI arrests in 2012. The substances involved in the DUI arrest are not specified but most are for alcohol intoxication. There were 1,087 adult arrests in Palm Beach County for Liquor Law Violations during 2016 representing a 14-% decrease compared to 1,240 such arrests in 2015 and a 59-% decrease from the 1,726 liquor arrests in 2012.

Tobacco, Smoking and Vaping

- While **cigarette smoking** by youth has dramatically declined over the past decade, more than three times as many Palm Beach County high school students and five times as many middle school students are current users of e-cigarettes as compared to regular cigarette users.

Significant declines in cigarettes smoking among Palm Beach County students are reported by both the Florida Youth Tobacco Survey and the Florida Youth Substance Abuse Survey over the past decade. In 2006, 14.9% of high school students reported past 30-day or current cigarette use as did 3.7% of middle school students. By 2016, the rate among high schoolers had declined 74-% to 3.8% and dropped 73-% among middle school students to 1%. These are the most significant declines of any substance use ever recorded during the 16 years of the FYSAS and are noted as the de-normalization of cigarette smoking among youth.

Percent of Palm Beach County Middle and High School Students Reporting Cigarette Use in Past 30 Days : 2004-2016



Source: Florida Youth Substance Abuse Surveys 2000-2016

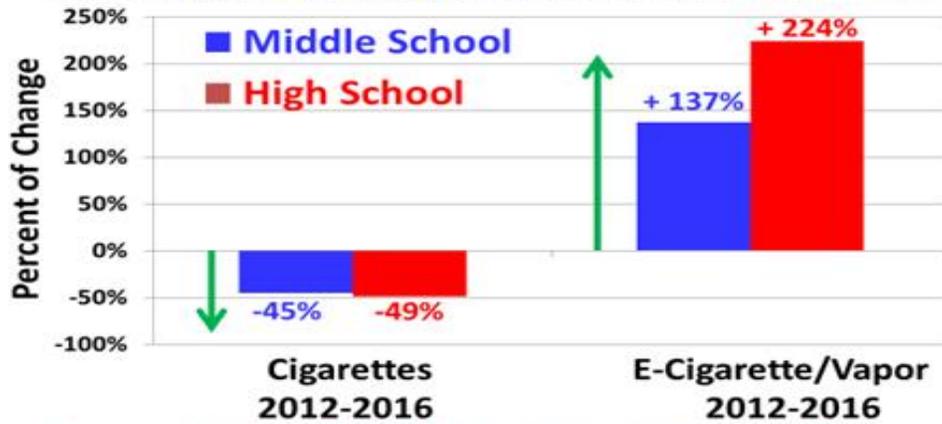
Nearly three-and-a-half times as many Palm Beach County high school students and five times as many middle school students are current users of e-cigarettes than regular cigarettes according to the 2016 FYAS which reveals that 13.2% of Palm Beach County high school students had used e-cigarettes in the past 30 days as compared to 3.8% who had smoke regular cigarettes. The rates for middle schoolers were 1% for current use of regular cigarettes while 5% reported current use of e-cigarettes or vaporizers

The 2015 Youth Risk Behavior Surveillance Survey (YRBSS) expanded the question of e-cigarette use to include “e-hookahs, vaping pipes or pens.” Thus, its results report even higher rates of current vaping use with 49.9% of Palm Beach County high school students having used a vaping device in the past month as compared to regular cigarette use by 7.6% of high schoolers.

Existing studies on electronic smoking devices’ vapor emissions and cartridge contents have found numerous dangerous substances including chemicals known to cause cancer such as: formaldehyde, acetaldehyde, lead, nickel, chromium, PM_{2.5}, acrolein, tin, toluene, and aluminum. These toxins are associated with a range of negative health effects such as skin, eye, and respiratory irritation, neurological effects, damage to reproductive systems, and even premature death from heart attacks and stroke. More than one study has concluded that exposure to vapor from electronic smoking devices may cause passive or secondhand vaping. Clinical studies about the safety and efficacy of these products have **not** been submitted to the FDA for the over 400 brands of electronic smoking devices that are on the market and for this reason, consumers currently have no way of knowing whether electronic smoking devices are safe or what potentially harmful chemicals the products contain.

Use of electronic smoking devices has increased significantly in recent years. The 2016 FYTS reports while cigarette use among Florida youth has decreased over the past four years, use of e-cigarette and other vaping devices has increased 137-% among middle schoolers and 224-% among high school students between 2012 and 2016.

Percent of Change in Current (Past 30-Day) Use of Cigarette and E-Cigarette/Vapor Devices Among Florida Middle and High School Students: 2012- 2016



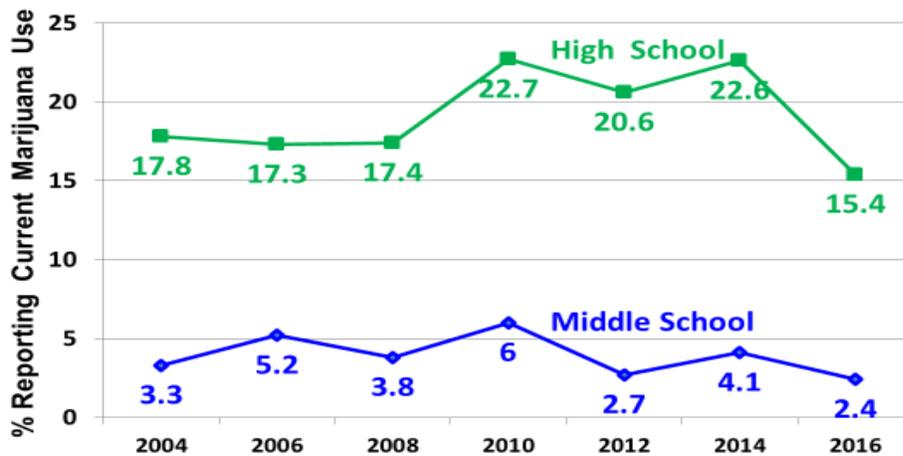
Source: 2012 and 2016 Florida Youth Tobacco Surveys

Marijuana

- Marijuana was the primary drug of use reported by 79% of adolescents younger than 18 years of age entering addiction treatment programs in Palm Beach County during 2016 as prevalence rates of current marijuana use have significantly declined since 2014.

The Florida Youth Substance Abuse Surveys revealed the rate of Palm Beach County high school students reporting past 30-day use of marijuana increased from 17.3% in 2006 to 22.6% in 2014 and then declined to 15.4% in 2016. The rate for middle school students increased from 5.2% in 2006 to 6% in 2010 and then declined to 2.4% in 2016.

Current Marijuana Use among Palm Beach County Middle and High School Students: 2004-2016



Source: Florida Youth Substance Abuse Surveys 2000-2016

There has been a weakening of marijuana prevention protective factors over the past 10 years. The percent of Palm Beach County secondary students reporting to the FYSAS that the regular use of marijuana once or twice a week presents a “great risk of harm” declined from 57.3% in 2006 to 35.8% in 2016. A similar trend in the perceived risk of harm in trying marijuana for the first time declined from 30.3% in 2006 to 24% in 2016. About 80% of Palm Beach County students consistently disapproved of youthful marijuana use between 2002 and 2008 by responding that it was “wrong” or “very wrong” for someone their age to smoke it; that measure declined to 73.7% by 2016.

The NSDUH Sub-State data estimates that 6% of the Palm Beach population age 12 and above were current past 30-day users of marijuana from its most current projections based on data available from 2012-2014.

The Florida Medical Examiners Commission reported there were 1,071 occurrences of natural cannabinoids (not synthetics) detected among the 5,392 drug-related deaths in Florida during the first half of 2016 in which a drug was determined through postmortem toxicology tests to be present at the time of death. Thus, marijuana was detected as being present in 20% of all drug-related deaths in Florida. The number of marijuana occurrences in the first six months of 2016 represented a 33-% increase over the 804 such occurrences in the first half of 2015. Among the 2016 natural cannabinoid medical examiner interim report cases, three deaths were considered to be caused by marijuana. County-level medical examiner data are not available for marijuana-related deaths.

Primary addiction treatment admissions for marijuana totaled 1,953 patients in Palm Beach County during 2016 or 16% of all admissions. Males accounted for 65% of the 2016 clients. Youth younger than 18 years of age totaled 1,128 or 58% of the marijuana admissions, 21% were 18-25, 13% were 26-34 and 7% were age 35 or older. Marijuana was the primary drug cited by 79% of 1,430 clients younger than 18 years of age for any substance.

The 696 cannabis crime lab cases in Palm Beach County during 2016 accounted for 19.7% of all drug reports and ranked third behind cocaine and heroin among all other substances.

Novel Psychoactive Substances

A critical issue impacting substance abuse in Florida and the Nation during the current decade has been the emergence of new synthetic drugs of abuse. They were often first detected in Australia or New Zealand followed by Eastern then Western Europe around 2006 before arriving in North America about 2010. By 2017 these drugs are reported globally and found on every continent.

The United Nations and major national government agencies have adopted the term, “Novel Psychoactive Substances” or NPS, to describe these drugs. Not all of these substances are new, but some may have been around for 20-30 or more years but not used as drugs until recently. The term “emerging” is not always appropriate to describe the problem as these substances often arrive in various locations in different years. Thus, what may be an emerging drug problem in Florida may have already come and gone in Great Britain. While most NPS are synthetic chemicals, so are many other drugs that have been around for decades.

The classes of Novel Psychoactive Substances include:

- **Phenethylamines**
- **Synthetic Cannabinoids**
- **Tryptamines**
- **Piperazines**
- **Opiates**
- **Benzodiazepine Analogs**

Phenethylamines include methamphetamine and 3, 4-methylenedioxy-methamphetamine (MDMA) or the drug most often called “ecstasy” both which have been around for decades. Phenethylamines also include substitute cathinones which are potent stimulants with varying degrees of hallucinogenic properties. Cathinones are chemically designed to mimic but be more potent than the stimulant in the Khat plant found in East Africa and the Middle East. The first substitute cathinones to appear were often referred to as “bath salts” and have been banned nationally and in Florida as well as many other nations. The most prevalent substitute cathinones in Florida have been methylone, ethylone, and diButylone all of which have been falsely sold as “pure MDMA” or “Mollys” for several years. The most dramatic problems associate with synthetic cathinones have been with *alpha*-PVP or “flakka” particularly in Broward County from late 2014 and throughout 2015.

Synthetic cannabinoids mimic the effects of marijuana and were first legally sold as commercial products with names like “K-2” or “spice” before the original group of synthetic cannabinoids were banned and have been constantly replaced with an ever-changing list of these chemicals.

Tryptamines are typically serotonin-affecting psychedelics/hallucinogens such as LSD, DMT and Psilocybin (the active ingredient of psychedelic mushrooms), or 5-MeO-DiPT (“foxy methoxy”).

Piperazines are stimulants such as BZP or TFMPP that were frequently sold as “ecstasy” up until 2013 and just prior to the appearance of cathinones sold as “Mollys.”

The unregulated benzodiazepine, etizolam, not from a pharmaceutical manufacturer but from clandestine laboratory production first appeared as a drug sold on the internet beginning in 2015.

The deadliest of NPS currently available are non-pharmaceutical analogues of fentanyl and other opiates in various formulations from clandestine laboratories in China, Mexico and Canada. The NPS fentanyl analogs have been used as a booster narcotic adulterant to street heroin or are merely sold as heroin. Since 2016, these analogues have been distributed as counterfeit medications including fake “Xanax,” hydrocodone, and oxycodone. The opiate NPS are a key factor in the escalating number of by heroin-related deaths in Florida and across the nation beginning in 2014.

Synthetic Cannabinoids

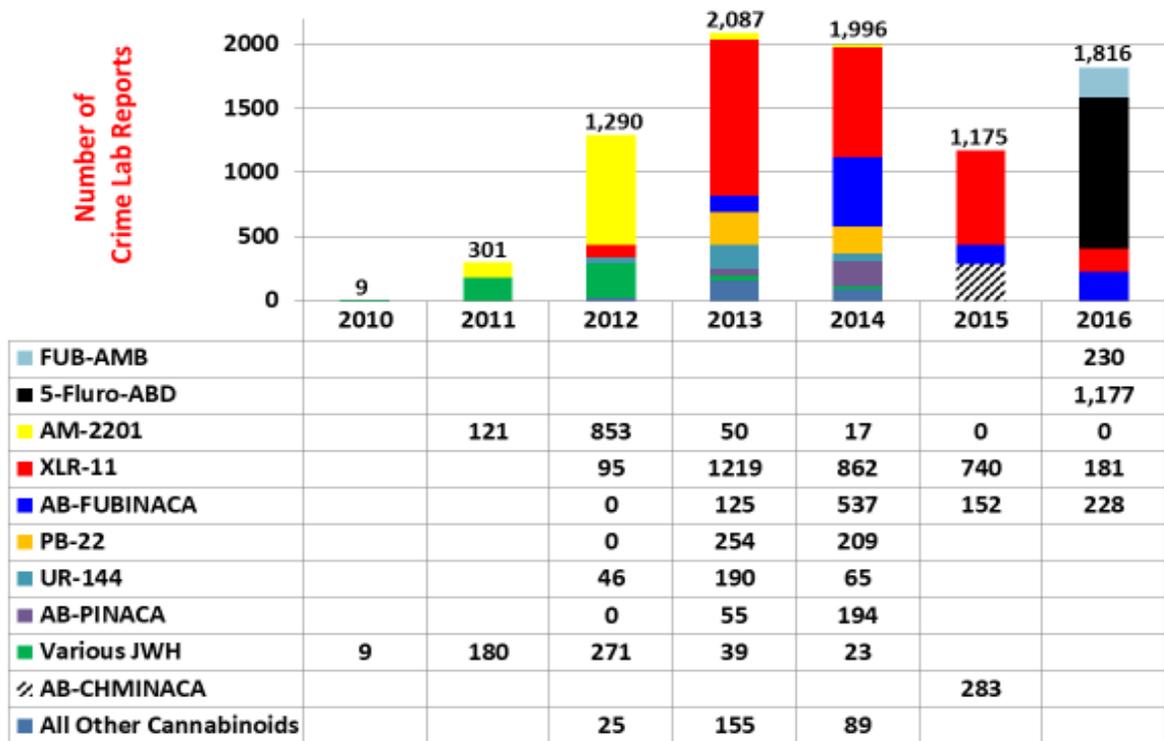
- More than three-fourths of **Synthetic Cannabinoids** analyzed in Florida crime labs in 2016 were from 2 different substances not seen in previous years while use by Palm Beach County high school students has continued to decline since 2012.

The availability of unregulated synthetic cannabinoids increased via retail sales throughout 2010 and the first half of 2011. Their use was mostly among those who were subject to frequent drug testing that did not identify these products. Nevertheless, drug tests are now available for their detection for some, but not all, of these ever-changing substances and many of the synthetic cannabinoids are now illegal.

There were 193 exposure calls statewide to Florida Poison Information Centers in 2016 for various unspecified synthetic cannabinoids, representing a 30-percent decrease from the 276 calls in 2015. In 2014 there were 175 calls and 194 calls in 2013 reflecting a decrease from the 537 calls in 2012 and 517 calls in 2011. During the first quarter of 2017, there were 45 poison exposure calls for synthetic cannabinoids in all of Florida. There no synthetic cannabinoid poison information center exposure calls from Palm Beach County in all of 2016 nor any in the first quarter of 2017.

There were 10 Synthetic Cannabinoid related-deaths during the first half of 2016 in Florida with 7 of the occurrences being considered a cause of death compared to 23 total occurrences in the full calendar year 2015 of which 11 were considered to be “a cause of death.” County-level medical examiner data are not available for synthetic cannabinoid-related deaths.

Synthetic Cannabinoids Crime Lab Cases in Florida: 2010-2016



Source: US DEA - National Forensic Laboratory System Data Queried May 22, 2017

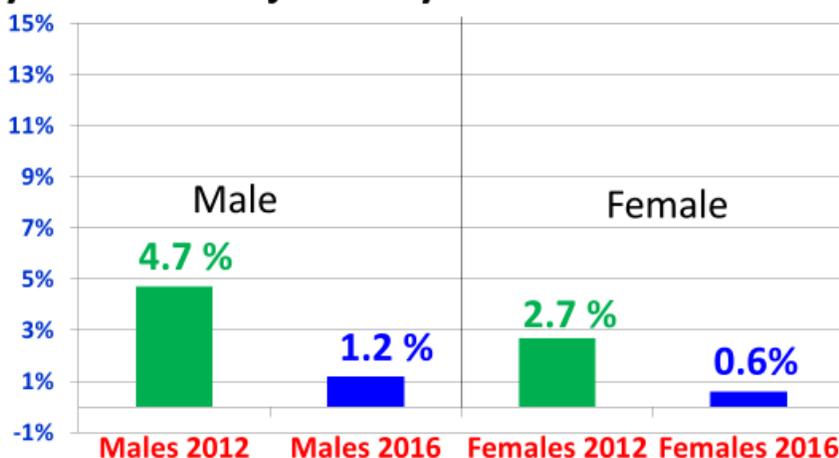
There were 1,816 crime lab reports for synthetic cannabinoids during 2016 in Florida which is a 54-% increase from the 1,175 reports in 2015. Synthetic cannabinoids crime lab reports totaled 1,996 in 2014 after peaking in 2013 with 2,087 cases, up from 1,290 in 2012, 301 in 2011, and just 9 in 2010. Among

the 1,816 synthetic cannabinoid reports in 2016, 1,177 or 65% were for 5-fluro-ABD which appeared for the first time that year. There were also 230 crime lab reports for FUB-AMB in 2016, 228 for AB-Fubinaca, and 181 for XLR-11 representing a 75-% decline for that substance from the 740 reports in 2015.

There were no crime lab cases for synthetic cannabinoids reported in Palm Beach County during 2016 among the top 25 substances representing 97% of all items analyzed.

The FYSAS has tracked use of synthetic cannabinoids among Palm Beach County high school students since 2012. Past-30-day use declined between 2012 and 2016 from 3.6% to 0.9%. As shown in the graph below rates among males were higher than those for females. Any lifetime use of synthetic cannabinoids by Palm Beach County high school students declined between 2012 and 2016 from 11.5% to 3.7%.

Percent of Palm Beach County High School Students Reporting Past 30-Day Use of Synthetic Marijuana by Gender: 2012 vs.2016



Source: Florida Youth Substance Abuse Survey 2012 and 2016

Synthetic Cathinones

- The ban by China in October 2015 of 116 Novel Psychoactive Substances including *alpha*-PVP (“Flakka”) and other **Synthetic Cathinones** appears to have dramatically reduced the availability of those substance in Palm Beach County and across all of Florida in 2016.

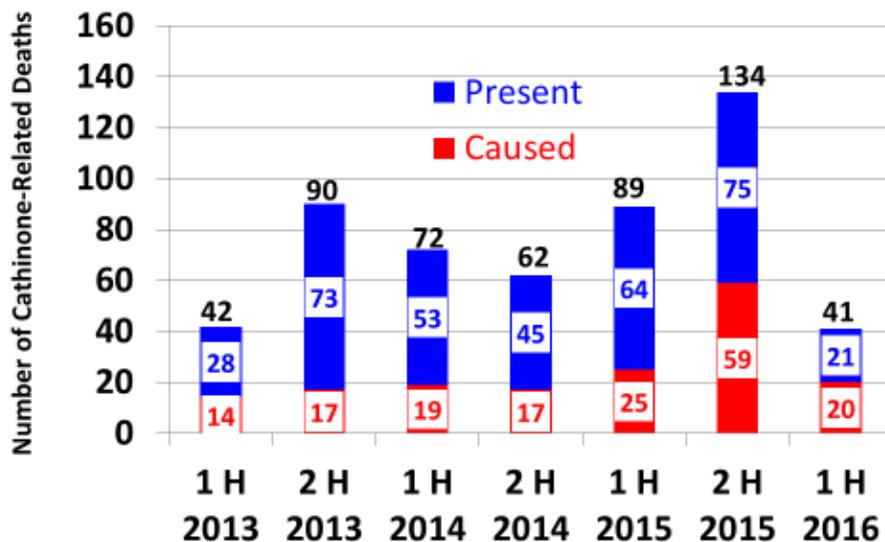
An epidemic of the synthetic cathinone, *alpha*-PVP, the drug sold as “flakka” erupted in neighboring Broward County in September of 2014. Consequences of its abuse rapidly escalated in 2015 with the drug linked to thousands of hospital emergency cases many from the excited delirium syndrome. Broward County had more crime lab cases of *alpha*-PVP than any other county in the nation in 2015.

In part because of worldwide negative media coverage about flakka as well as diplomatic efforts, the government of China banned *alpha*-PVP and 115 other novel psychoactive substances on October 1, 2015. By the end of 2015 hospital emergency department cases, arrests, and treatment admissions related to *alpha*-PVP abuse dramatically declined in Southeastern Florida. By early 2016 it had disappeared from street drug sales.

There were 41 synthetic cathinone deaths in all of Florida during the first half of 2016 compared to 223 in calendar year 2015 and 134 in 2014. Among the 2016 deaths half of the synthetic cathinone cases were attributed as being a cause of death.

There were 63 *alpha*-PVP deaths in Broward County from September 27, 2014 to December 11, 2015 and none since that date.

Synthetic Cathinone Deaths in Florida: Jan 2013 – Jun 2016



Source: Florida Medical Examiners Commission 2016 Interim Report

There were 70 Poison Information Center exposure calls for synthetic cathinones in Florida during 2016 including 6 from Palm Beach County. Exposure calls involve cases usually from a hospital emergency department where a patient is experiencing adverse consequences after smoking or ingesting a substance. During the first quarter of 2017 there were 11 exposure calls for synthetic cathinones Statewide and none from Palm Beach County.

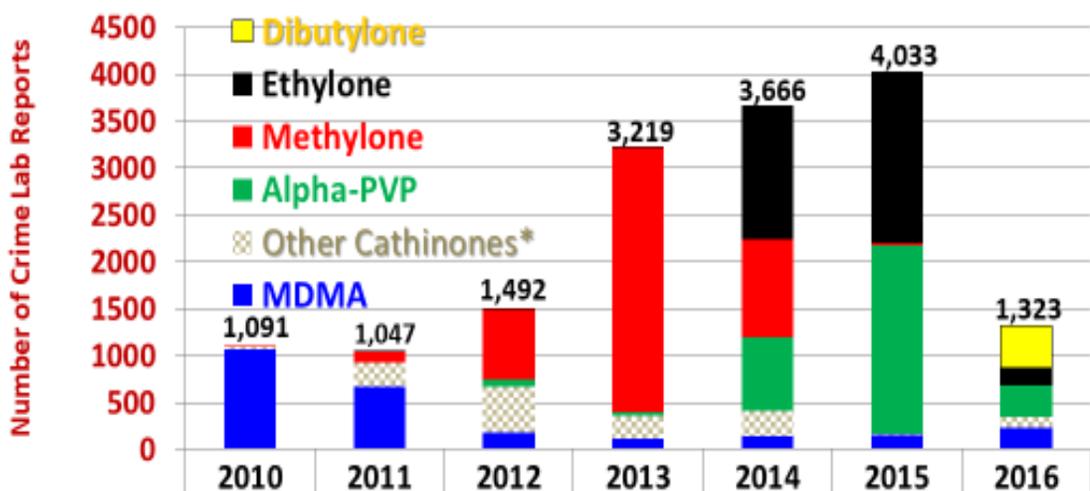
There were 1,087 crime lab reports for synthetic cathinones during 2016 in Florida (not including MDMA as shown in the chart below), a 72-% decrease from 3,875 in 2015 compared to previous year totals of 3,530 in 2014, 3,104 in 2013, 1,310 in 2012, and 373 in 2011. Among the 2016 crime lab reports there were 454 for DiButylone as well as 332 for *alpha*-PVP, 186 for ethylone and 115 for N-

Palm Beach County Substance Awareness Coalition
Annual Drug Trends Report July 2017

Ethylpentylone. DiButylone, Ethylone, and N-Ethylpentylone were usually sold as “Molly” capsules or powder. There were also 236 crime lab cases for MDMA in 2016.

The graph below charts the ever changing synthetic cathinones detected in Florida crime labs from 2010 to 2016. MDMA was the major club drug sold as Ecstasy in 2010 with 1,071 Florida crime lab cases that year. By 2013 real MDMA had been largely replaced by Methylyone which was sold as Mollys and falsely promoted as “pure MDMA.” In mid-2014 China banned Methylyone which then practically disappeared in Florida crime lab cases the following year as illustrated by the red portions of the bar graph below. In 2014 and 2015 Ethylone had replaced Methylyone as the major Molly drug and alpha-PVP or Flakka escalated to be the major cathinone in Florida. Following their ban by China in October 2015 both Flakka and Ethylone dramatically declined in 2016 as both DiButylone and N-Ethylpentylone arrived as the new Mollys. Neither of those two new drugs had been included in the Chinese ban. These data offer some of the first evidence that demonstrates the success of China’s action.

The Changing Face of Ecstasy, Molly, Flakka, et al in Florida Crime Lab Reports 2010-2016



	2010	2011	2012	2013	2014	2015	2016
■ Dibutylone							454
■ Ethylone	0	1	5	4	1,426	1,827	186
■ Methylyone	1	123	739	2,813	1,042	29	0
■ Alpha-PVP	0	1	82	46	781	2,012	332
⊠ Other Cathinones*	19	248	484	241	281	7	115
■ MDMA	1071	674	182	115	136	158	236

*Note: The 115 Other Cathinones in 2016 were all N-Ethylpentylone

Source: US DEA - National Forensic Laboratory System Data Queried May 22, 2017

In calendar year 2016 there were 15 crime lab cases for *alpha*-PVP in Palm Beach County accounting for 0.4% of all crime lab exhibits and there were also 9 reports for Ethylone.

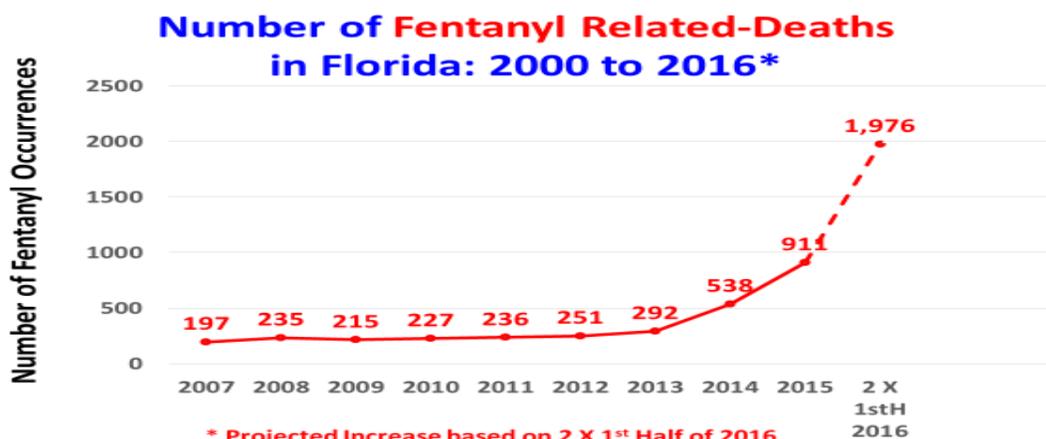
Opiates (including non-pharmaceutical analogues and pharmaceutical opioids and heroin)

Non-Pharmaceutical Opioid Analogues

- **Non-pharmaceutical fentanyl** and its analogues from foreign clandestine labs are the major factor for the dramatic increase in opioid deaths related to adulterated heroin and counterfeit medications in Palm Beach County and all of Florida.

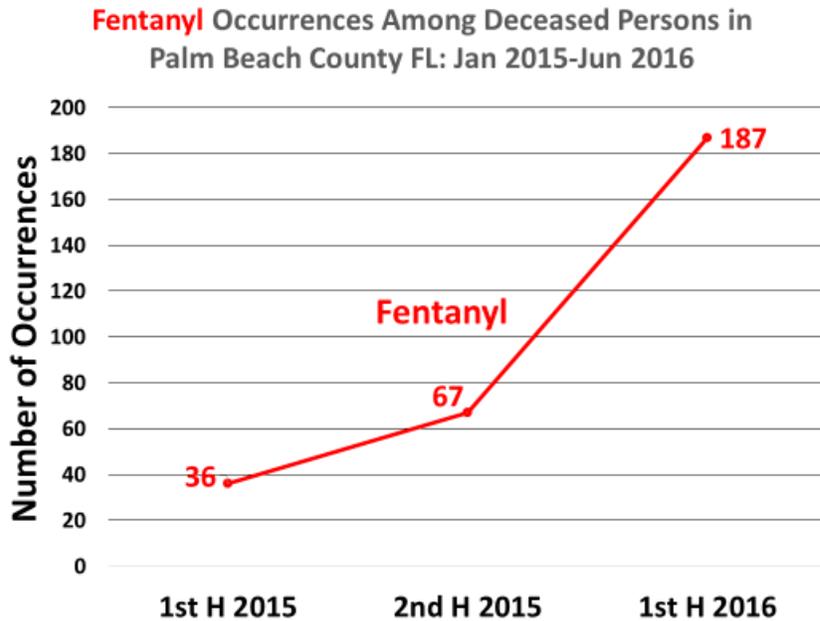
The increasing availability of poisonous fentanyl analogues and their distribution are critical issues related to the escalation of deaths from the opiate epidemic. These novel psychoactive opiates are found not only as adulterated street heroin and cocaine but also as counterfeit medications including fake “Xanax®” pills and as oxycodone and hydrocodone tablets. There were at least 9 deaths in Pinellas County, Florida attributed to counterfeit medications laced with fentanyl during early 2016. Other opiate analogues include U-47700 which also has been reported in Florida.

The key measure of fentanyl consequences is the number of deaths attributed to it. In previous years medical examiner reports in Florida included both pharmaceutical fentanyl as well as its non-pharmaceutical analogues from clandestine labs mostly produced in China, Mexico, and Canada. Beginning in early 2016 some Florida medical examiner officers have been able to identify specific fentanyl analogues in their toxicology reports. The graph below illustrates the escalation of fentanyl-related deaths in Florida beginning in 2014 with the introduction of the drug’s analogues into the illicit drug market. Between 2007 and 2013 fentanyl deaths total from 200 to nearly 300 per year. Most of those deaths are believed to have been related to non-medical use of pharmaceutical fentanyl. Yet the sharp rise in fentanyl occurrences detected in deceased persons in Florida from 2014 to 2016 is due to non-pharmaceutical fentanyl analogues. The projected 1,976 fentanyl deaths for all of 2016 is based on doubling the 988 occurrences in the first six months of that year which includes 183 reports of substances specifically identified as fentanyl analogues. However, several Florida medical examiners warn that the most dramatic rise of opioid deaths and particularly those from poisonous fentanyl analogues will be seen in the second half of 2016 due in part to the arrival of carfentanil, the most toxic of opioids considered to be 10,000 more potent than morphine.



Source: Florida Medical Examiners Commission Reports

There were 187 fentanyl deaths including mostly non-pharmaceutical fentanyl analogs in Palm Beach County during the first half of 2016, a 419-% increase over the first half of 2015 and a 179-% rise from the second half of 2015. The number of fentanyl-related deaths are expected to increase even more in the second half of 2016.



Source: FDLE - Florida Medical Examiners Commission

Nonmedical Use of Prescription Opioids

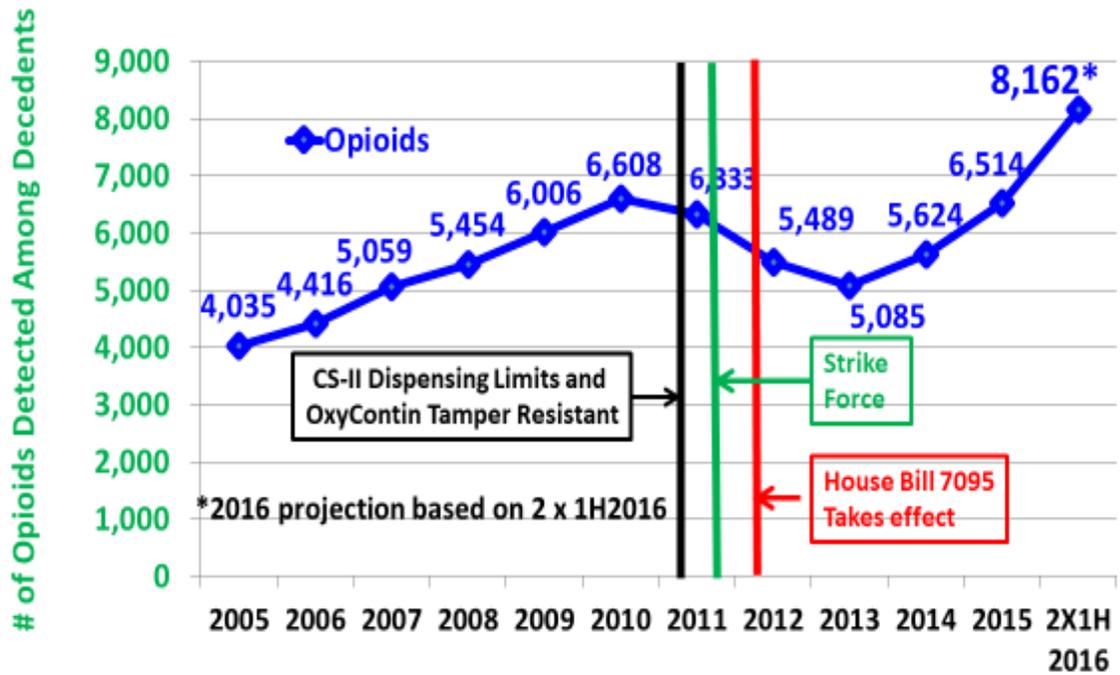
- Deaths related to the non-medical misuse of **prescription opioids** and particularly oxycodone have increased since their decline from 2011 to 2013 following Florida’s crackdown on prescription drug diversion.

In the first decade of the 21st Century there was a dramatic increase in the availability of diverted pharmaceutical opioids and deaths linked to their non-medical misuse as well as primary addiction treatment admissions for prescription opioids. Numerous new laws and regulations took effect beginning in 2010 along with the abuse-deterrent reformulation of high dose extended release opioids. The collective impacts of these supply-reduction strategies are reflected in declining opioid deaths beginning in 2011. At the same time heroin deaths increased sharply from 2012 to 2016 across all of Florida, rising 1,423-% from 57 in 2011 to a projected 868 in 2016 based on doubling the number from the first half of that year. The sharp escalations of heroin use, treatment admission, and deaths in Florida along with stable and high levels of prescription opioid indicators constitute an opiate epidemic.

In 2010 there were 6,608 opioids detected in deceased person in Florida. That toll steadily declined 23-% to 5,085 by 2013 and then increased to 5,624 opioid occurrences in 2014 and then to 7,293 in 2015. The projected number of opioid occurrences (not including heroin) among deceased person in 2016 is 8,162 based on the first six months of the year. The projected total includes 1,756 occurrences for

morphine, many of which are believed to actually be heroin, and 1,976 fentanyl occurrences including most that are considered to be non-pharmaceutical fentanyl from foreign clandestine labs used to adulterate street heroin or sold as counterfeit medications.

Number of Nonmedical Rx Opioids Occurrences Detected among Decedents in Florida 2005 – 2016*

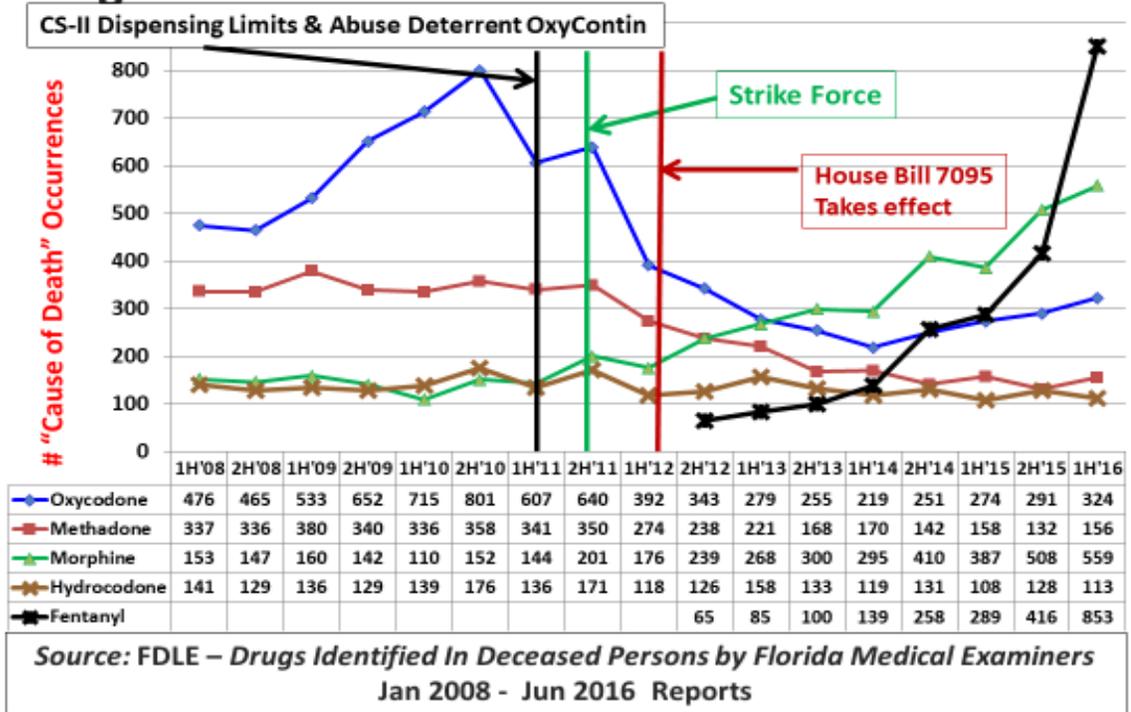


*Source: FDLE – Drugs Identified In Deceased Persons by Florida Medical Examiners
Jan 2005 - June 2016 Reports*

Seventy-five percent of the 2016 opioid deaths (not including heroin) are related to 5 of the 11 opioids tracked by the Florida Medical Examiners Commission. Those 5 are morphine, oxycodone, hydrocodone, methadone, and fentanyl totaling 3,063 medical examiner occurrences in the first six months of 2016 across Florida. Many if not most of the fentanyl medical examiner reports from 2014 to 2016 are believed to be non-pharmaceutical fentanyl analogues from foreign clandestine labs.

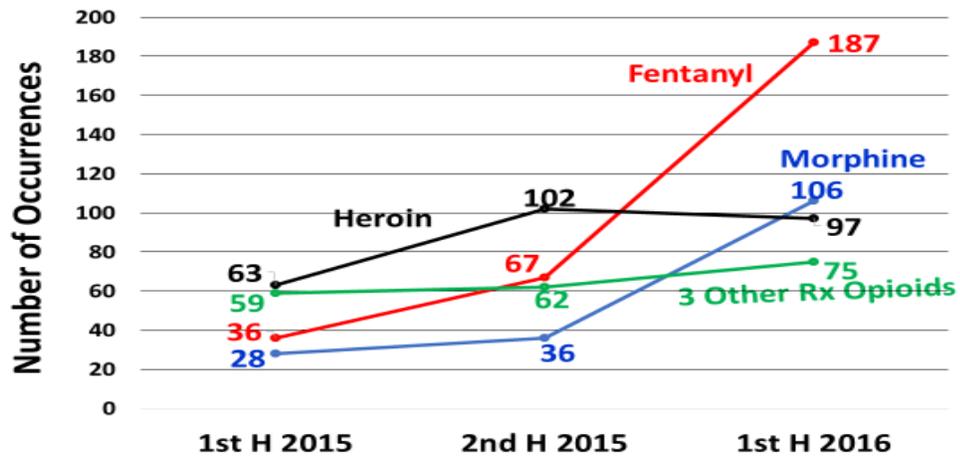
The graph on the next page tracks the number of lethal opioid occurrences in Florida where the drug was considered to be “a cause of death” for the 5 most prevalent prescription opioids by semi-annual reporting periods.

Number of Selected **Lethal** Opioid Occurrences Among Deceased Persons in Florida 2008 to 2016



In Palm Beach County opioid occurrences (not including heroin) detected in deceased persons during the first half of 2016 totaled 368 including 54 for oxycodone, 12 for hydrocodone, 9 for methadone, 106 for morphine, and 187 for fentanyl including non-pharmaceutical fentanyl analogues. Eighty-three percent of these occurrences were considered to be a cause of death.

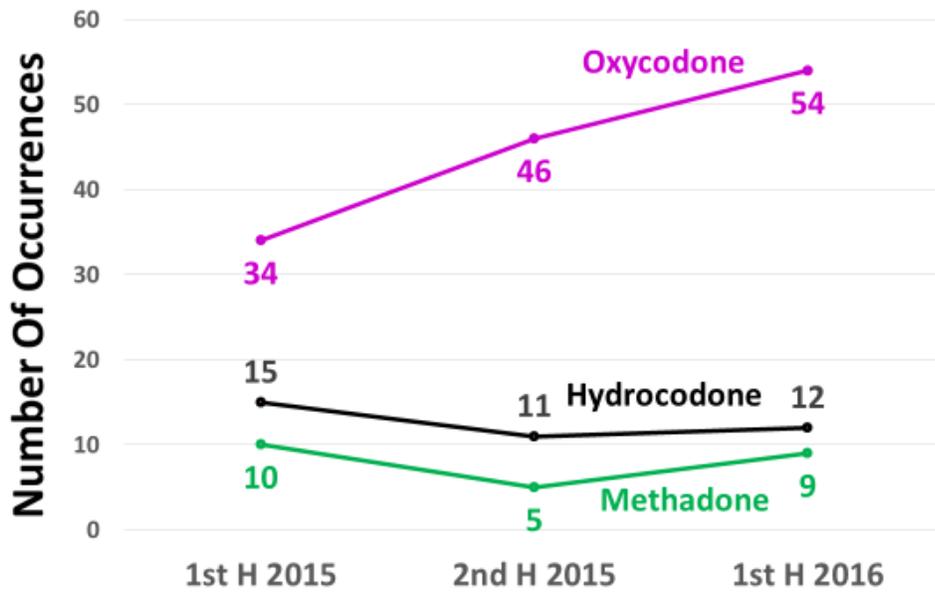
Heroin, Morphine, Fentanyl, and 3 Other Rx Opioid Occurrences Among Deceased Persons in Palm Beach County FL: Jan 2015-Jun 2016



Source: FDLE - Florida Medical Examiners Commission

Palm Beach County Substance Awareness Coalition
Annual Drug Trends Report July 2017

Occurrences of 3 Selected Rx Opioids among Deceased Persons in Palm Beach County: Jan 2015 -June 2016



Source: FDLE - Florida Medical Examiners Commission

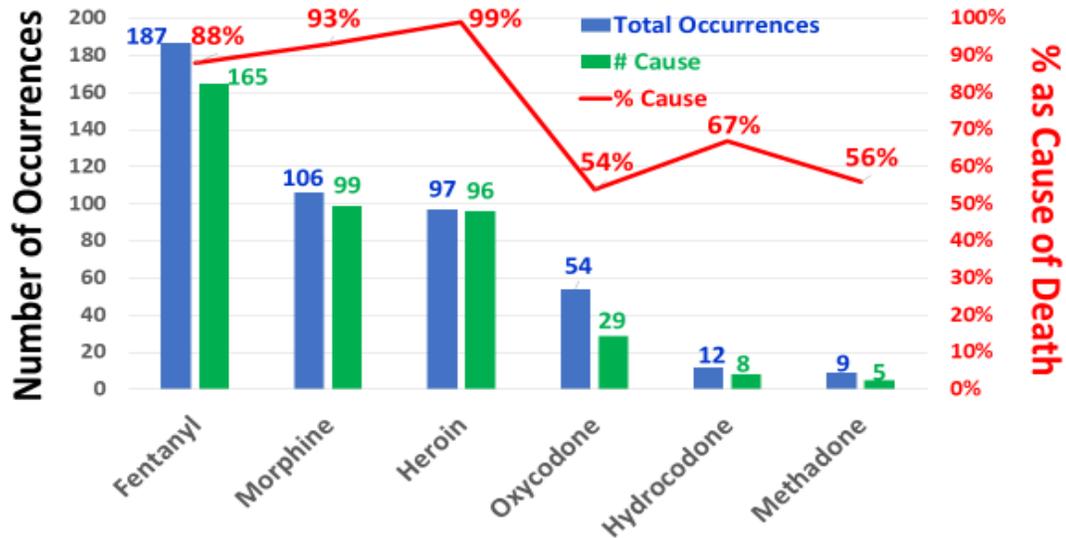
Number of Selected Opioid Occurrences among Deceased Persons in Palm Beach County: Jan 2015 – June 2016

Opioid	1st H 2015	2nd H 2015	1st H 2016
Fentanyl	36	67	187
Morphine	28	36	106
Heroin	63	102	97
Oxycodone	34	46	54
Hydrocodone	15	11	12
Methadone	10	5	9

Source: FDLE - Florida Medical Examiners Commission

The graph below tracks (1) the number of drug occurrences during the first half of 2016 from the Palm Beach County table above for the various opioids shown in the blue bars, (2) the number of those cases considered to be “a cause of death” in the green bars, and (3) the percent of each opioid’s occurrences which are “a cause of death” on the red line graph.

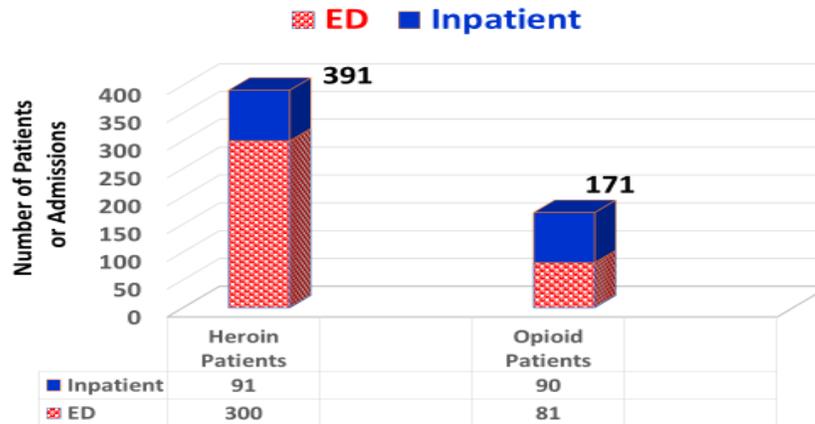
Opioid Occurrences and Number and Percent as Cause of Death
Among Deceased Persons in Palm Beach County FL : Jan 2016-Jun 2016



Source: 2016 FL Medical Examiners Commission Interim Report

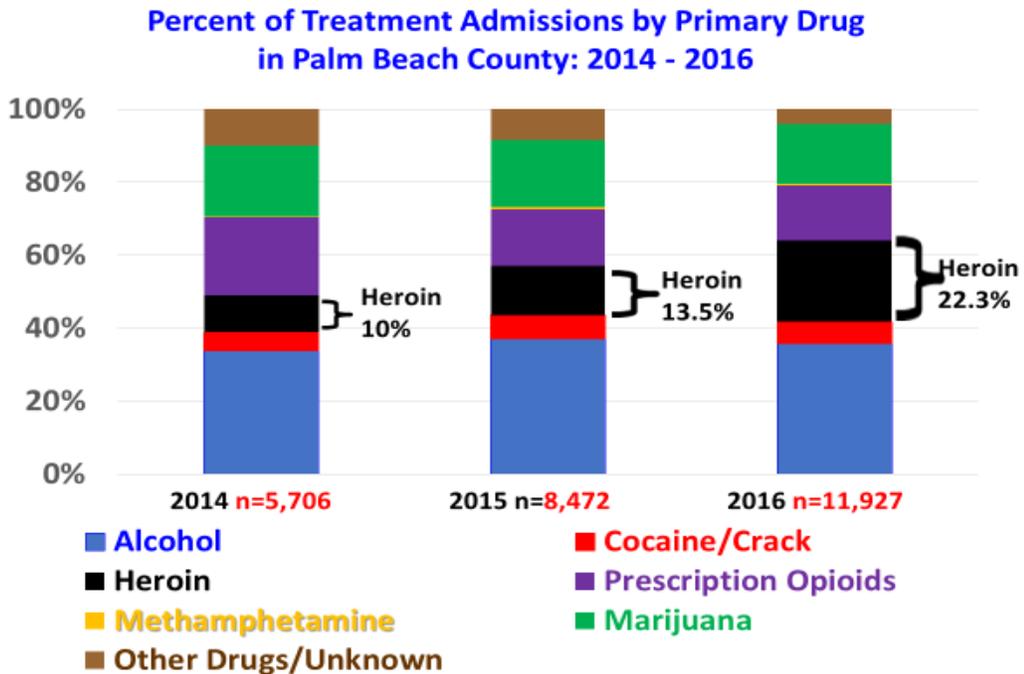
The most currently available data on hospital overdose cases are from the first half of 2016 when there were 171 hospital prescription opioid overdose poisonings in Palm Beach County including 81 emergency room discharges and 90 admitted as inpatients.

Overdose Poisoning Cases for Heroin and Opioids, in Palm Beach County Hospitals: Jan-Jun 2016



Source: Florida Agency for Health Care Administration

There were 1,800 admissions for opiates other than heroin reported as primary treatment admissions in Palm Beach County during 2016 accounting for 15% of all treatment admissions (including alcohol). Females accounted for 57% of the opioid clients and only two of the patients were younger than 18 years of age, 16% were between 18 and 25 years of age, 52% were aged 26-34, and 32% were aged 35 or older. Injecting drug use was reported by 43% of the treatment clients whose primary substance of abuse was an opiate other than heroin. Heroin accounted for an additional 22% of the 2016 primary admissions for a combined rate of 37% for all opiates (heroin and opioids) up from 29% in 2015.



Source: Florida Department of Children and Families

There were 5,506 prescription opioid crime laboratory reports, or 10% of the 53,777-total primary, secondary, and tertiary National Forensic Laboratory Information System (NFLIS) reports for all substances in Florida during 2016. The total opioid reports included 1,645 for oxycodone, 1,196 for hydromorphone, 1,008 for fentanyl, 757 for hydrocodone, 470 for morphine, and 430 for buprenorphine.

In Palm Beach County, there were 511 prescription and clandestine opioid crime laboratory reports, or 14.4% of the 3,537 NFLIS reports in 2016 including 262 for fentanyl, 135 for oxycodone, 42 for buprenorphine, 41 for hydromorphone, 17 for morphine, and 14 for hydrocodone.

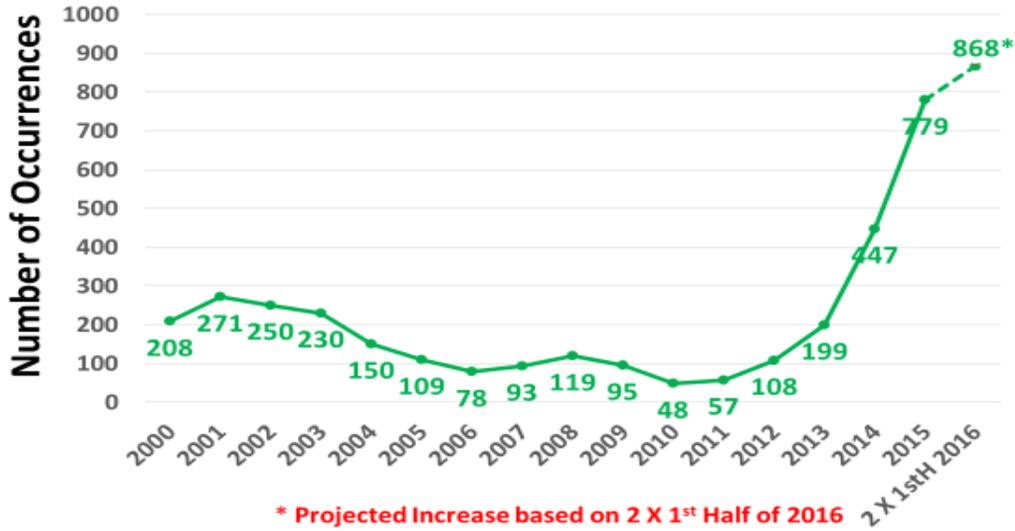
Heroin

- Palm Beach County had more heroin deaths during the first half of 2016 than any other county in the State.

Heroin-related deaths in the State of Florida increased 11-% rising from 779 in 2015 to a projected 868 in 2016 based on the first half of the year. Heroin was considered the cause of death in 94% of the

cases in Florida during 2016. Many of the deaths involved polydrug use with 98% of the 2016 cases having one or more other substances present at the time of death. There was no heroin-related decedent under age 18, 18% were 18-25, 29% were 26-34 while 35% were aged 35-50 and 18% were over 50 years of age.

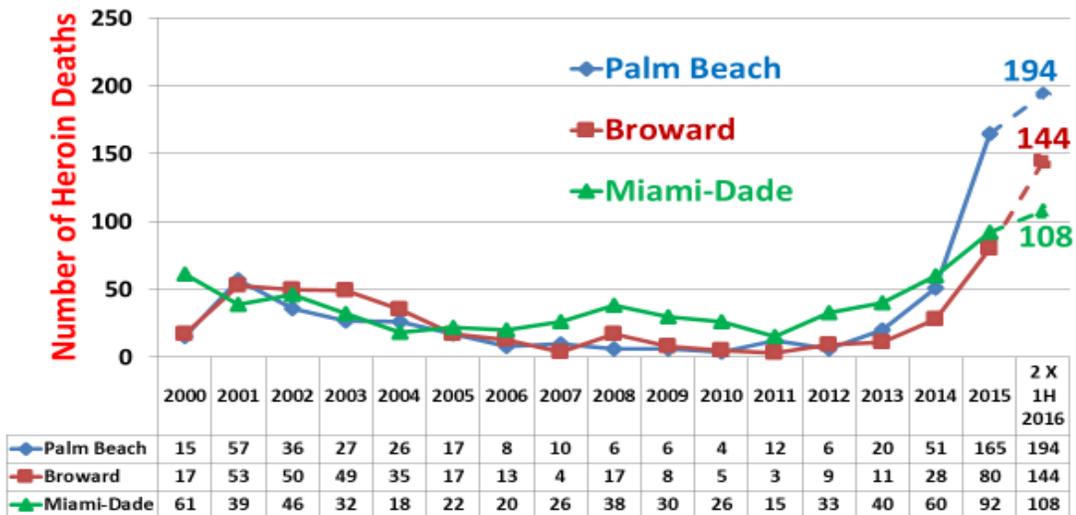
Number of Heroin Related-Deaths in Florida: 2000 to 2016*



Source: Florida Medical Examiners Commission Reports

Palm Beach County experienced more heroin deaths during the first half of 2016 than any other county or medical examiner district in the State. Broward and Miami-Dade Counties ranked second and third statewide in the number of heroin fatalities as shown in the graph below.

Number of Heroin Deaths in 3 Southeast Florida Counties: 2000–2016



SOURCE: Florida Medical Examiners Commission Reports 2000-2016

Heroin deaths in Palm Beach County increased 18-% from 165 in 2015 to a projected 194 in 2016 based on the first half of the year, but the rate of increase was 280-% from 2014 to 2016. Heroin was ruled “a cause of death” and was found in combination with at least one other drug in all but one of the 2016 deaths in which it was detected. Among the Palm Beach County heroin decedents in the first half of 2016, none was under age 18, 33% were 18-25, and another 22% were 26-34, 29% were aged 35-50 and 16% were over 50 years of age.

Florida heroin hospital overdose poisonings totaled 2,001 in the first six months of 2016. In the first half of 2016, 80% of the heroin overdoses occurred among emergency department patients and 20% were admitted as inpatients. In Palm Beach County, there were 391 hospital cases for heroin overdose poisonings in the first six months of 2016; 77% were treated in and discharged from an emergency department and 23% were admitted as inpatients.

Primary addiction treatment admissions for heroin totaled 12,397 patients in all of Florida during 2016 accounting for 13.7% of all admissions up from 10.4% in 2015. In Palm Beach County, primary heroin admissions totaled 2,664 or 22.3% of all admissions in 2016 up from 13.5% in 2015. Males accounted for 60% of the 2016 clients. Two of the clients were under 18 years of age, 18% were 18-25, 52% were 26-34 and 30% were age 35 or older. Injecting heroin was reported by 66% of the 789 clients who provided information on their primary route of administration. Intranasal snorting was reported by 9% of clients while 3% reported smoking heroin, and 22% said they used it orally.

There were 4,633 heroin crime laboratory reports or 8.6% of the 53,777 primary, secondary, and tertiary NFLIS reports for Florida in 2016. Heroin ranked fourth among all substances analyzed. In Palm Beach County, there were 707 heroin crime lab cases in 2016 or 20% of all drugs ranking second among all substances behind only cocaine with 30%.

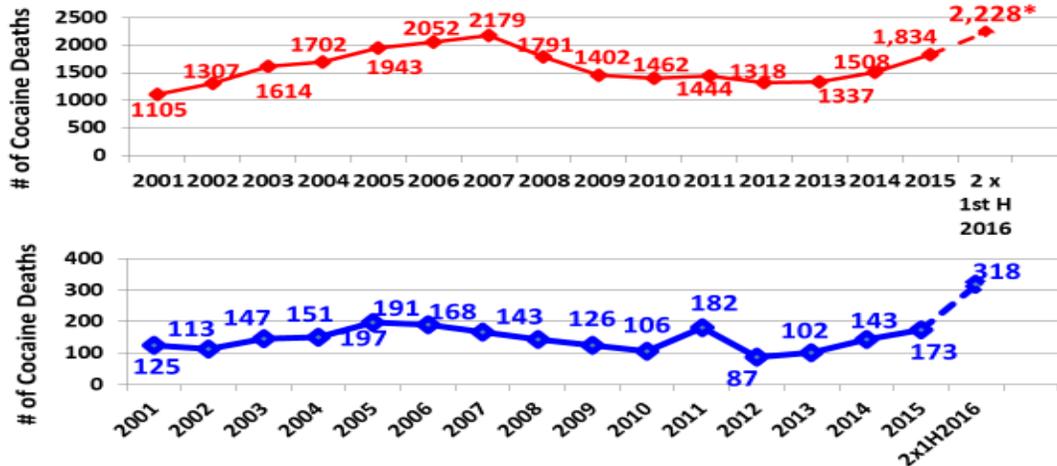
Cocaine/Crack

- **Cocaine** deaths have been steadily increasing since 2013 attributed in part to polysubstance use with heroin and other opioids.

Cocaine-related deaths increased 21-% between 2015 and 2016 across all of Florida with a projected 2,228 medical examiner occurrences for the year based on the first six months of 2016. The drug was considered the cause of death for 56% of the 2016 cases. Polydrug use was detected in 88% of the 2016 cases having one or more other substances present at the time of death. Many of the 2016 polysubstance cocaine deaths are considered to be in combination either knowingly or unknowingly with an opiate. There were 7 cocaine-related decedents under age 18; 12% were 18-25, 24% were 26-34 while 37% were aged 35-50 and 26% were over 50 years of age.

In Palm Beach County cocaine-related deaths increased 84-% between 173 in 2015 and 318 in 2016 based on twice the number of deaths during the first half of 2016. The drug was considered the cause of death for 67% of the 2016 cases, and polydrug use was detected in 89% the cocaine-related deaths. There was no cocaine-related decedent under age 18; 21% were 18-25, 27% were 26-34 while 31% were aged 35-50 and 20% were over 50 years of age.

Number of Cocaine Deaths in Florida and Palm Beach County 2000-2016*

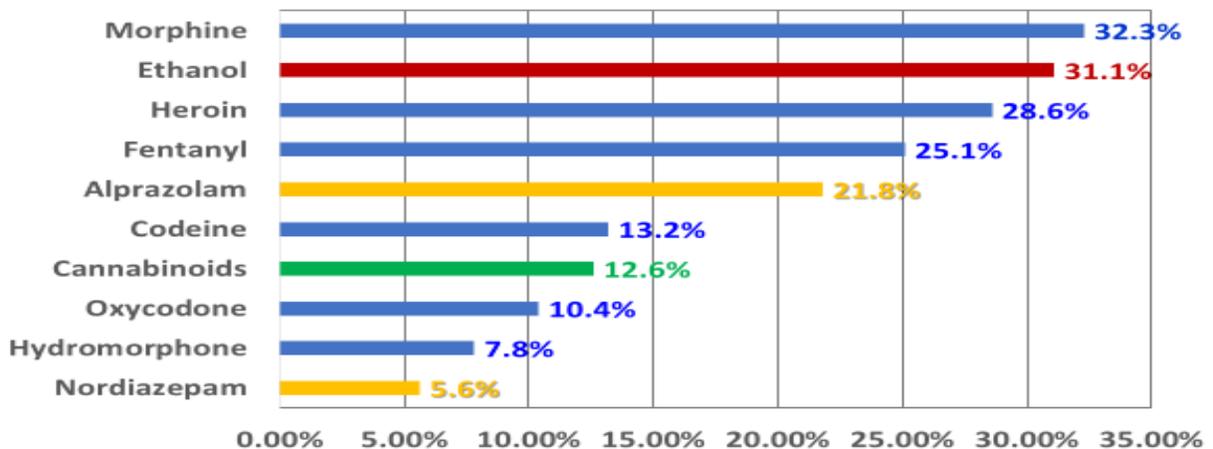


* Projected Increase based on 2 X 1st Half of 2016

Source: Florida Medical Examiners Commission 2016 Interim Report

Polysubstance abuse of opioids with cocaine either knowingly or unintentionally with non-pharmaceutical fentanyl-adulterated cocaine are considered a key factor in the rise of cocaine-related deaths nationally and in Florida. A review of deaths caused by cocaine in Florida during 2015 revealed 32% were also found with morphine which most likely was heroin along with another 29% where heroin itself was identified. Fentanyl was found in 25% of the 2015 Florida cocaine-induced deaths. Other opioids detected included codeine in 13% of the cases, oxycodone in 10% and hydromorphone in 8%. Non-opioid drugs found present in the 2015 cocaine-caused deaths included ethanol in 31% of the cases, alprazolam in 22%, cannabinoids in 13%, and nordiazepam in 6%.

Top 10 Co-Occurring Substances Among Florida Cocaine-Caused Deaths in 2015



Sources: Florida Medical Examiners Commission 2015 Report and Florida drug-Related Outcomes Surveillance and Tracking (FROST) System

Primary addiction treatment admissions for cocaine totaled 6,640 patients in all of Florida during 2016 accounting for 7% of all admissions. In Palm Beach County, there were 722 cocaine primary treatment admission in 2016 or 6% of all clients. Females accounted for 52% of these clients with crack cocaine specified by 57% of all the cocaine patients. Four of the admissions were for persons under 18 years of age, 13% were 18-25, 29% were 26-34 and 57% were age 35 or older. Smoking cocaine was the route of administration reported by 37% of the cocaine clients with intranasal sniffing cited by 22% and 14% reported injecting cocaine. Oral use was reported by 7% of the clients and the remaining 20% reported other or unknown routes of administration.

There were 17,960 cocaine crime laboratory reports or 33% of the 53,777-total primary, secondary, and tertiary NFLIS reports for Florida in 2016. Cocaine ranked first among all substances analyzed. The 1,049 cocaine crime lab cases in Palm Beach County during 2016 accounted for 30% of all cases ranking number one among all substances.

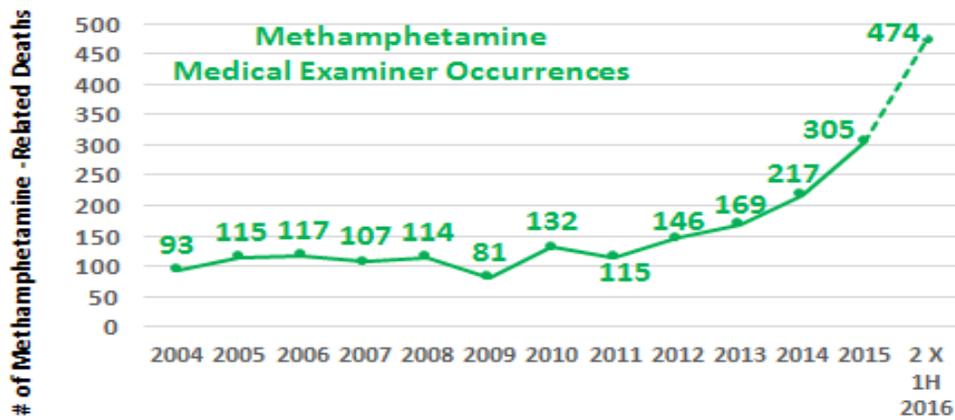
Methamphetamine

- Indicators of **methamphetamine** remain relatively low in Palm Beach County compared to other parts of Florida.

The highest rates of methamphetamine treatment admissions and crime lab cases in Florida are in the Tampa Bay, Western Panhandle, and Orlando areas. Most methamphetamine being used in Florida is produced in Mexico. Domestic clandestine laboratory production in Florida appears primarily still to be in the north and central parts of the State using the 2-liter soda bottles “shake and bake” method that yields a relatively small amount of methamphetamine for personal use by the “cook” and for sharing with those who may have helped supply the precursor, pseudoephedrine.

Indicators of methamphetamine have been steadily increasing in Florida since 2011 with deaths related to the drug escalating 312-% over that five-year period and are projected to increase 55-% between 2015 and 2016. Methamphetamine was detected among 237 deceased persons during the first half of 2016 in Florida, compared with 130 in the first half of 2015 and 305 for the full year of 2015. Methamphetamine was considered a cause of death in 114 (or 48%) of the cases during the first half of 2016. There were also 266 reports of amphetamine detected among decedents across Florida in the first 6 months of 2016, compared to 179 such occurrences in the first half of 2015. Amphetamine was considered the cause of death in 73 (or 27%) of the cases in the first half of 2016. County-level medical examiner data are not available for methamphetamine or amphetamine-related deaths.

Number of Methamphetamine-Related Deaths in Florida: 2000-2016*



* Projected Increase based on 2 X 1st Half of 2016

Source: Florida Medical Examiners Commission Jan 2004-Jun 2016 Reports

There were 14 Sympathomimetic Amines deaths in the first half of 2016 across Florida with 2 of the occurrences being considered a cause of death compared to 15 such occurrences in calendar year 2015 of which 6 were considered to be a cause of death. Sympathomimetic Amines are a group of stimulants including the appetite suppressant, phentermine, and other sympathomimetic amines not tracked elsewhere in this report.

There were 3,902 primary treatment admissions (4% of all admissions) for methamphetamine in Florida during 2016 and 53 (0.4% of all admissions) in Palm Beach County. Females accounted for 66% of the Palm Beach County methamphetamine clients. Three of the clients or 6% were below the age of 18 years; 68% of clients were between 18 and 34 years of age while 26% were age 35 and above. Smoking methamphetamine was the route of administration reported by 34% of these clients with intranasal sniffing cited by 11% and 19% reported injecting methamphetamine. The remaining routes of administration included oral use by 13% and other or unknown methods by 23%. Private treatment counselors continued to report serious methamphetamine abuse problems among men who have sex with men and who are often not included in the number of clients from treatment programs receiving public funding. These clients are at high risk of infectious disease transmission related to both unprotected sexual activity and injecting drug use.

There were 339 primary treatment admissions for amphetamine in Florida during 2016 and 15 in Palm Beach County. Females accounted for 87% of the Palm Beach County amphetamine clients and 87% of these clients were between 18 and 34 years of age while two or 13% were age 35 and above. Oral ingestion was the preferred route of administration cited by 60% of the amphetamine clients.

There were 6,296 methamphetamine crime laboratory reports or 12% of the 53,777-total primary, secondary, and tertiary NFLIS reports for Florida in 2016. Methamphetamine ranked third among all substances analyzed. The highest numbers of cases were from the Tampa Bay, Orlando, and Panama City areas. There were also 575 amphetamine crime laboratory reports, or 1% of the 2016 total ranking 11th among all

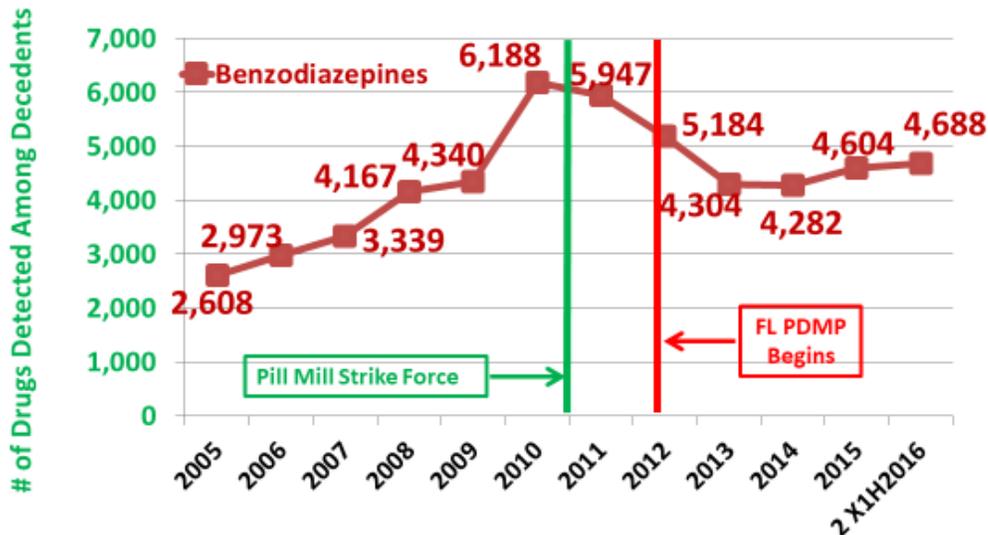
substances. In Palm Beach County, there were 40 methamphetamine crime lab cases or 1 % of all items analyzed ranking ninth among all drugs. Palm Beach County also reported 32 amphetamine crime lab exhibits or 0.9% of all cases ranking eleventh.

Benzodiazepines

- Benzodiazepine deaths increased in 2015 and 2016 following sharp declines from 2011 to 2013 paralleling trends of prescription opioid fatalities.

The number of benzodiazepines detected in deceased persons in Florida peaked at 6,188 occurrences in 2010 prior to various efforts to reduce prescription drug diversion. That number then declined steadily to 4,304 in 2013 and modestly increased to 4,604 occurrences in 2015 and is projected to increase to 4,688 in 2016 based on the total from the first 6 months of that year. Alprazolam was the number one benzodiazepine detected representing 36% of the 2016 reports followed by nordiazepam (14%), diazepam (13%), clonazepam (10%), and temazepam (9%). County-level medical examiner data are not available for benzodiazepine-related deaths, however there were 71 alprazolam deaths in Palm Beach County in the first half of 2016 of which 61% were considered “a cause of death” and 97% of the cases were detected with at least one other drug found present. The number of Palm Beach County alprazolam-related deaths in the first half of 2016 represents an 87-% increase over the number in the first six months of 2015

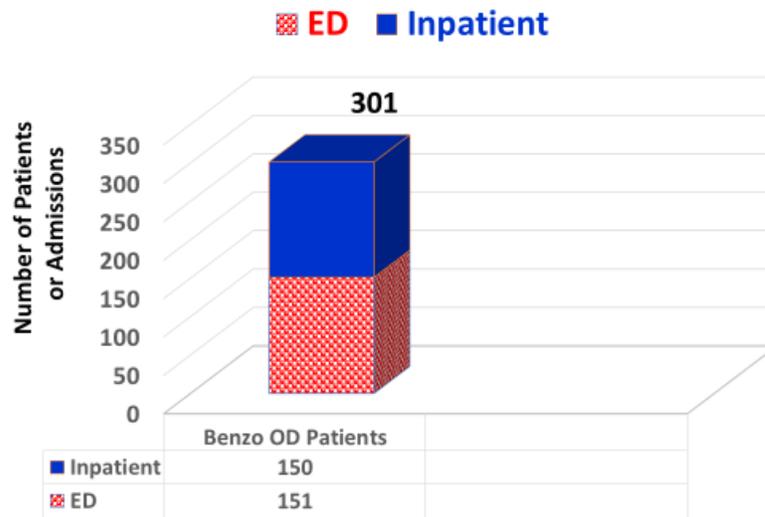
Number of Nonmedical Rx Benzodiazepine Reports Detected among Deceased Persons in Florida 2005 – 2016*



Source: FDLE – Drugs Identified In Deceased Persons by Florida Medical Examiners Jan 2005 - Jun 2016 Reports

Across all of Florida benzodiazepine hospital overdose poisonings totaled 4,130 in the first six months of 2016 with 37% of those overdoses having occurred among emergency department patients and 63% being admitted as inpatients. Palm Beach County reported 301 of those cases with half of the patients having been discharged from an emergency department and the other half having been admitted as inpatients.

Overdose Poisoning Cases for Benzodiazepines in Palm Beach County Hospitals: Jan-Jun 2016



Source: Florida Agency for Health Care Administration

There were 3,958 benzodiazepine NFLIS crime lab reports in Florida during 2016 representing 7% of all substances analyzed. Alprazolam accounted for 84% of the benzodiazepine crime lab cases followed by clonazepam (11%), and diazepam (4%). In Palm Beach County, there were 270 benzodiazepine crime lab cases or 7.6% of all drugs detected. Alprazolam accounted for 89% of the Palm Beach County benzodiazepine crime lab cases followed by clonazepam (7%), and diazepam (4%).