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The national opiate epidemic has escalated in Florida and across the nation. The driving force for growing numbers of overdoses and deaths has been the rapid spread of illicitly manufactured non-pharmaceutical poisonous opiates mostly from foreign clandestine labs. Such poisonous opioids include carfentanil and up to ten (10) other fentanyl analogs. These drugs are used as adulterants in street heroin or sold as heroin or counterfeit pills. The increasing availability of poisonous fentanyl analogs and their distribution have been critical issues related to the escalation of deaths from the opiate epidemic. Heroin-related deaths increased 11%, rising from 779 in 2015 to a projected 868 in 2016. Many of those deaths involved polydrug use.

The use and misuse of tobacco, alcohol, illicit drugs, and prescription drugs remain major and costly public health problems in our nation. Addiction is a chronic disease with costs as substantial as other chronic health conditions. The costs are related to crime, lost work productivity, and rising health care costs. The loss of life due to substance use is tragic for families, communities, and the nation, and costs the country an estimated two hundred and twelve (212) billion dollars a year (NIDA, 2015).

Epidemiology is the scientific study of the causes and transmission of disease within a population and is vital to addressing public health concerns. The practice of epidemiology related to drug abuse and addiction enables researchers to assess the causes and distribution of drug problems; to identify and track drug problems; to determine questions, issues, and research hypotheses; to plan appropriate intervention strategies; to launch public information campaigns; and to alert communities to concerns to be addressed (NIDA, 2015).

This update on drug use trends in Florida was prepared by James N. Hall. Mr. Hall is a drug use epidemiologist with the Center for Applied Research on Substance Use and Health Disparities at Nova Southeastern University. Mr. Hall provides a drug-by-drug review of trends, progress, and challenges related to drug use. The information and analysis provided by him will assist Florida’s substance abuse and mental health treatment providers by delivering key information essential to the development of effective strategies for treatment and prevention initiatives in Florida communities.
The drug-by-drug review of trends, progress, and challenges addresses: underage drinking; nicotine and E-cigarettes; vaping; marijuana; novel psychoactive substances such as synthetic cannabinoids, synthetic cathinones, tryptamines, and piperazines; cocaine; methamphetamine; heroin; non-medical misuse and abuse of medications such as prescription opioids, benzodiazepines, stimulants, and over the counter (OTC) medications. The report describes how the ban of alpha-PVP (flakka) and 115 other substances by China appears to have resulted in the decline of crime lab reports and consequences from use of synthetic cathinones. The report says that rising numbers of cocaine-related deaths have been attributed to its increased availability from Columbia and its use with opioids especially non-pharmaceutical fentanyl analogs. The report states that in 2016, non-pharmaceutical fentanyl from foreign clandestine labs was the major factor contributing to the dramatic escalation in opiate deaths related to adulterated heroin and counterfeit medications across Florida and the nation. The report also states that indicators of methamphetamine abuse have continued to increase since 2011, especially affecting Central Florida and counties in the Panhandle and Gulf Coast. According to the report, Benzodiazepines were involved in more than 4,600 drug-related deaths during 2016, demonstrating its role as the “universal mixer” in polysubstance abuse. The report states that in 2016, most heroin deaths in Florida involved at least one or more other drugs.
PATTERNS AND TRENDS OF SUBSTANCE ABUSE In Florida

June 2017

This report is funded by the Department of Children and Families, Office of Substance Abuse and Mental Health.
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Patterns and Trends of Substance Abuse in Florida

Update Report

June 2017

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The Center for Applied Research on Substance Use and Health Disparities
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SECTION I. INTRODUCTION

This document is an Update to the Annual Substance Abuse Patterns and Trends in Florida Report prepared in December 2016 and available from the Florida Alcohol and Drug Abuse Association website at:


The Update reviews more recent data released in 2017 on:

- Drug-related deaths from the Florida Medical Examiners Commission,
- Hospital overdose poisoning cases from the Florida Agency for Health Care Administration,
- Primary addiction treatment admissions from the Florida Department of Children and Families,
- Drug poison exposure calls from the Florida Poison Information Centers,
- Alcohol-related arrests from the Florida Department of Law Enforcement, and
- Crime lab cases from the US Drug Enforcement Administration’s National Forensic Laboratory Information System (NFLIS).

Substance abuse categories addressed include underage drinking and adult problematic alcohol use, tobacco smoking and vaping, marijuana, novel psychoactive substances, the opiate epidemic of addiction and death, cocaine, methamphetamine, and nonmedical misuse of benzodiazepines.
Highlights

- While prevalence of current alcohol use and binge drinking among Florida students steadily declined from 2006 to 2016, rates of juvenile DUI and Liquor Law Violations modestly increased between 2015 and 2016 after significantly decreasing since 2012.

- Alcohol was detected in nearly half of all Florida drug-related deaths during the first half of 2016.

- While cigarette smoking has dramatically declined over the past decade among Florida youth, their use of electronic cigarettes and/or vaping devices has more than doubled between 2012 and 2016.

- Marijuana was detected as present in 20% of all drug-related deaths in Florida during the first half of 2016 and was considered to have been a cause of death in 3 of the 1,071 cases.

- The number of Synthetic Cannabinoid crime lab cases in Florida as well as Poison Information Center exposure calls stabilized between 2015 and 2016. From 2012 through 2016, synthetic Cannabinoid use by high school students continued to steadily decline.

- The decline of crime lab reports and consequences from use of Synthetic Cathinones in 2016 appear to have been influenced by the ban of alpha-PVP (“flakka”) and 115 other substances by China in October 2015.

- In 2016, non-pharmaceutical fentanyl from foreign clandestine labs was the major factor contributing to the dramatic escalation in opiate deaths related to adulterated heroin and counterfeit medications across Florida and the nation.

- In 2016, most heroin deaths in Florida involved at least one or more other drugs detected in the decedents. That demonstrated the polysubstance abuse patterns of the opioid epidemic.

- Rising numbers of cocaine-related deaths have been attributed to its increased production and availability from Colombia. Another factor has been cocaine’s use either knowingly or unknowingly with an opioid, especially non-pharmaceutical fentanyl analogs.

- Indicators of methamphetamine abuse have been steadily increasing since 2011 in Florida. The central part of the State and counties of the Northwestern Panhandle and along the Gulf Coast especially have been affected.
• Benzodiazepines were involved in more than 4,600 drug-related deaths and more than 4,100 non-fatal hospital overdose cases during 2016, demonstrating its role as the “universal mixer” in polysubstance abuse.

Data Sources


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

Florida Department of Children and Families: Florida Youth Substance Abuse Surveys (FYSAS) 2006 – 2016

Florida Agency for Health Care Administration: Opioid, Heroin and Benzodiazepine Poisoning Overdose Hospitalization Cases January to June, 2016, unpublished report

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


SECTION II. PATTERNS AND TRENDS of DRUG USE

Underage Alcohol Use

The most recent update on trends of alcohol use by Florida youth is from the 2016 Florida Youth Substance Abuse Survey (FYSAS). It reported a 16.4 percentage point decline in current (past 30-day) use of alcohol among Florida high school students between 2006 (41.8%) and 2016 (25.4%). It also reported a 12.1 percentage point decrease in binge drinking (having five or more drinks in a row). That decreased from 23% in 2006 to 10.9% in 2016.
The FYSAS also reported a 10.7 percentage point decline in current (past 30-day) use of alcohol among Florida middle school students between 2006 (19%) and 2016 (8.3%). It reported a 5.2 percentage point decrease in binge drinking (having five or more drinks in a row). That declined from 8.4% in 2006 to 3.2% in 2016.

In calendar year 2016, 494 adolescents aged 17 and under said alcohol was their primary drug of abuse when they entered a Florida addiction treatment program. That total represented 5% of all admissions for that age group and less than 2% of the total number of primary alcohol treatment admissions (n=28,069). There were 2,199 young adults aged 18-25 who reported alcohol as their primary substance abuse problem. That was 8% of all alcohol admissions and represented 16% of all treatment admissions aged 18-25.
There were 48 juvenile arrests age 17 and under in Florida for Driving Under the Influence (DUI) during the first six months of 2016. That represented a 9% annualized increase compared to 88 such arrests in all of 2015. It was a 51% decrease from the 197 juvenile DUI arrests in 2012. The substances involved in the DUI arrest were not specified, but most were for alcohol intoxication. Males accounted for 77% of the juvenile DUI cases in the first half of 2016. There were 356 juvenile arrests in Florida for Liquor Law Violations during the first six months of 2016. Those represented a 21% annualized increase compared to 589 such arrests in all of 2015. However, those 2016 arrests were but a 41% decrease from the 1,202 juvenile liquor arrests in 2012.

Adult Problematic Alcohol

Florida medical examiners identified alcohol in 2,466 deceased persons during the first six months of 2016. That was 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, 27,575 persons aged 18 and older cited alcohol was their primary drug of abuse when they entered a Florida addiction treatment program. That accounted for 34% of all adult clients for any substance. Two-thirds 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 22%. Those age 35 and older comprised 70%.

There were 17,291 adult arrests in Florida for Driving Under the Influence (DUI) during the first six months of 2016. That was a 9% annualized increase compared to 31,695 such arrests in all of 2015 but a 23% decrease from the 44,697 adult DUI arrests in 2012. The substances involved in the DUI arrest were not specified but most were for alcohol intoxication. Males accounted for 72% of the adult DUI cases in the first half of 2016. There were 7,473 adult arrests in Florida for Liquor Law Violations during the first half of 2016. That represented an 11%-annualized decline compared to 16,842 such arrests in all of 2015. It was a 42% decrease from the 25,752 adult liquor arrests in 2012.

Tobacco, Smoking, and Vaping

The 2016 Florida Youth Tobacco Survey (FYTS) reported that 5.2% of high school students and 1.7% of middle schoolers were current (past 30-day) cigarette smokers. The 2016 FYTS reported that cigarette use among Florida youth has decreased significantly over the past decade. It declined 67% among high school students and 75% for middle schoolers between 2006 and 2016.

The decline in cigarettes smoking among Florida students was also confirmed by the Florida Youth Substance Abuse Survey (FYSAS) over the same ten-year period. In
2006, 14.1% of high school students reported past 30-day or current cigarette use as did 6.0% of middle school students or 10.6% of all secondary students. By 2016, the rate among high schoolers had declined 66% to 4.8%. It had dropped 77% among middle school students to 1.4%. Those were the most significant declines of any substance use ever recorded by the 16-year-old FYSAS. The declines indicate the de-normalization of cigarette smoking among Florida youth. The rates of current cigarette smoking from the 2015 YRBSS were 10% for high school and 3.7% for middle school students.

As regular cigarette use has declined, the use of electronic smoking and vaping devices has escalated among Florida youth. The 2015 Youth Risk Behavior Surveillance Survey (YRBSS) reported that 17% of Florida middle school students have used e-cigarettes. An estimated 44% of high school students have used them. Those percentages were only moderately less than the percentages of students reporting any lifetime use of alcohol. The percentages of students using electronic smoking and vaping devices are 10% higher than the percentages of students acknowledging ever having used marijuana.

More than twice as many Florida high school and middle school students were current users of e-cigarettes than were students using regular cigarettes. The 2016 Florida Youth Tobacco Survey (FYTS) revealed that 10.7% of high school students and 3.8% of middle school students had used e-cigarettes in the past 30 days. That compared to 5.2% of high schoolers and just 1.7% of the middle school students who had smoked regular cigarettes. The 2015 YRBSS expanded the question of e-cigarette use to include e-hookahs, vaping pipes, and pens. Consequently, it found even higher rates of current vaping use. It found that 22% of high school students and 9.9% of middle school students admitted using a vaping device in the past month. Ten percent of high
schoolers and 3.7% of middle school students admitted using cigarettes during the same period.

Existing studies on electronic smoking devices’ vapor emissions and cartridge contents have found numerous dangerous substances including carcinogens. Those chemicals included: formaldehyde, acetaldehyde, lead, nickel, chromium, PM$_{2.5}$, acrolein, tin, toluene, and aluminum. Those toxins are associated with a range of negative health effects. Skin, eye, and respiratory irritation, neurological effects, damage to reproductive systems, and even premature death from heart attacks and stroke are among those ill effects. More than one study 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 sold. For this reason, consumers have no way of knowing whether electronic smoking devices are safe.

Use of electronic smoking devices has increased significantly in recent years. The 2016 FYTS reported that while cigarette use among Florida youth decreased over the past four years, use of e-cigarette and other vaping devices increased 137% among middle schoolers and 224% among high school students.
A critical concern is that young non-smokers of regular cigarettes who use e-cigarettes will quickly become addicted to nicotine and eventually turn to smoking tobacco products. Vaping is also a common route of administration for many drugs ranging from marijuana products such as “budder” or “wax” to numerous novel synthetic substances. This makes first-time use easier than smoking or injecting. A study by Adam M. Leventhal et al. published in the August 18, 2015, issue of *JAMA* reported that among a sample of high school students, those who had ever used e-cigarettes at baseline compared with nonusers were more likely to report initiation of combustible tobacco use over the next year. It found that 30.7% of e-cigarette users started smoking combustible tobacco products (cigarettes, cigars, and hookah) within 6 months as compared to 8.1% of non-e-cigarette users who started smoking.

**Marijuana**

The FYSAS revealed that marijuana use among Florida students remained relatively stable from 2006 to 2008 prior to increasing and peaking in 2010. This is shown in the Exhibit that follows. Marijuana use then stabilized among both middle and high school students between 2012 and 2014. A modest decline occurred in 2016.
The percent of Florida youth reporting to the 2016 FYSAS that the regular use of marijuana presents a “great risk of harm” was 25.1% of high school students and 51.7% of middle school students. However, 30% of high school students surveyed said that marijuana presented “no risk at all.” Fifteen percent of middle schoolers responded that way. Among high school students, 62.3% responded that it was “wrong” or “very wrong” for someone their age to smoke marijuana once or twice a week. For middle schoolers, the percentage saying that was 89.7%.

The Florida Medical Examiners Commission reported 1,071 occurrences of natural cannabinoids (not synthetics) among the 5,392 drug-related deaths in Florida during the first half of 2016. 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. Of the 2016 natural cannabinoid medical examiner interim report cases, three were considered to be caused by marijuana.

Primary addiction treatment admissions for marijuana totaled 17,240 patients across Florida in 2016 accounting for 19% of all admissions. Males accounted for 68% of the 2016 clients. Youths younger than 18 years of age totaled 7,661 or 44% of the marijuana admissions. Twenty-five percent were 18-25. Eighteen percent were 26-34. Twelve percent were age 35 or older.

The 7,567 cannabis crime lab cases in Florida during 2016 accounted for 14% of all drug reports and ranked second among all other substances.
**Novel Psychoactive Substances**

A critical issue impacting substance abuse in Florida and the Nation over the past six years has been the emergence of new synthetic drugs of abuse. They often first were detected in Australia or New Zealand. Then, they were detected in Eastern Europe. Around 2006, they were detected in Western Europe. The drugs arrived in North America in approximately 2010. By 2016, these drugs were 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. 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 including various Fentanyl Analogs
- Benzodiazepine Analogs

Phenethylamines include methamphetamine and the drug most often called “ecstasy” (3, 4-methylenedioxy-methamphetamine (MDMA) or ) both of 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 while being 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 was 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. They 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 were 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 analogs 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. In 2016, these analogs have been distributed as counterfeit medications including fake Xanax, hydrocodone, and oxycodone pills. Beginning in 2014, the opiate NPS have been linked to the escalating number of heroin-related deaths in Florida and across the nation. They are the major factor in the dramatic escalation of deaths related to the nation’s opioid epidemic.

**Synthetic Cannabinoids**

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

There were 193 exposure calls statewide to Florida Poison Information Centers in 2016 for various unspecified synthetic cannabinoids representing a 30% decline from the 276 calls in 2015. There were 175 calls in 2014 which was fewer than the 194 calls in 2013, 537 calls in 2012, and 517 in 2011. During the first four months of 2017, there were 45 poison exposure calls for synthetic cannabinoids in Florida.

There were ten Synthetic Cannabinoid related-deaths during the first half of 2016 in Florida with seven of the occurrences being considered a cause of death. By comparison, there were 23 total occurrences in the full calendar year 2015 of which 11 were considered to be “a cause of death.”

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. Those peaked in 2013 with 2,087 cases. That number was an increase from: 1,209 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. That year was the first time that drug had appeared. 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.

The FYSAS has tracked use of synthetic cannabinoids among Florida high school students since 2011. Both lifetime and past-30-day use declined significantly between 2012 and 2016. The respective declines were from 13.0% to 4.9% and from 4.3% to 1.0%. The most common usual source of synthetic cannabinoid cited by 40% of high school students who have used it was “a convenience store or gas station.” Thirty-three percent reported, “Someone gave it to me.”

![Synthetic Cannabinoids Crime Lab Cases in Florida: 2010-2016](image)

<table>
<thead>
<tr>
<th></th>
<th>Number of Crime Lab Reports</th>
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<tbody>
<tr>
<td>FU8-AMB</td>
<td>230</td>
</tr>
<tr>
<td>5-Fluro-ABD</td>
<td>1,177</td>
</tr>
<tr>
<td>AM-2201</td>
<td></td>
</tr>
<tr>
<td>XLR-11</td>
<td></td>
</tr>
<tr>
<td>AB-FUBINACA</td>
<td></td>
</tr>
<tr>
<td>PB-22</td>
<td></td>
</tr>
<tr>
<td>UR-144</td>
<td></td>
</tr>
<tr>
<td>AB-PINACA</td>
<td></td>
</tr>
<tr>
<td>Various JWH</td>
<td></td>
</tr>
<tr>
<td>AB-CHMINACA</td>
<td></td>
</tr>
<tr>
<td>All Other Cannabinoids</td>
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*Source: US DEA - National Forensic Laboratory System Data Queried May 22, 2017*
Synthetic Cathinones

There were 132 synthetic cathinone deaths in all of Florida during 2013, 134 in 2014, and 223 in 2015. There were an additional 41 synthetic cathinone medical examiner occurrences statewide in the first half of 2016. Twenty were named as a cause of death.

An epidemic of the synthetic cathinone, alpha-PVP, the drug sold as “flakka” erupted in Broward County in September of 2014. Consequences of its abuse rapidly escalated in 2015 fueling the increase of cathinone deaths that year with the drug also linked to thousands of hospital emergency cases. Many of those deaths occurred from the excited delirium syndrome. Broward County had more crime lab cases of alpha-PVP than any other county in the nation.
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. By early 2016, it had practically disappeared from street drug
sales.

Sold in quantities as small as 1/10th of a gram for as little as $3.00 to $5.00, it was
highly profitable for the dealers whose actual cost was very low. Alpha-PVP was sold
over the internet from China for about $1,500 per kilogram. It was shipped by world-
wide express services to local mid-level dealers in packages containing from 1 to 5
kilograms. A single kilogram provided up to 10,000 doses. At a 1/10th of a gram, the
doses sold for $5.00 each, yielding up to $50,000 in sales or a profit of $48,500.

There were 63 alpha-PVP deaths in Broward County from September 27, 2014 to
December 11, 2015. No such deaths have occurred there since that date. There were
also 17 alpha-PVP deaths in Palm Beach County between May 5 and October 15,
2015.

There were 70 Poison Information Center exposure calls for synthetic cathinones in
Florida during 2016. That compares to 145 in 2015 and only five in 2014. During the
first four months of 2017 there were 11 exposure calls for cathinones Statewide.
Exposure calls are cases usually from a hospital emergency department where a
patient is experiencing adverse consequences after smoking or ingesting a substance.

There were 1,087 crime lab reports for synthetic cathinones during 2016 in Florida (not
including MDMA as shown in the following chart). That was a 72% decrease from 3,875
in 2015. The previous years’ totals were 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 and
332 for alpha-PVP. There were 186 for ethylone and 115 for N-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 following graph 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 Methylone which was sold as Mollies and falsely promoted as “pure MDMA.”
In mid-2014, China banned Methylone 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 Methylone 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
DiButylone and N-Ethylpentylone arrived as the new Mollies. 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.
Across all of Florida there were 172 Poison Information Center exposure calls for hallucinogenic amphetamines during 2016. That compares to 199 in 2015 and 321 in 2014. Hallucinogenic amphetamines include drugs sold as “ecstasy.” During the first four months of 2017, there were 67 exposure calls for hallucinogenic amphetamines in Florida.

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

Non-Pharmaceutical Opioid Analogs

The increasing availability of poisonous fentanyl analogs 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 nine deaths in Pinellas County, Florida attributed to counterfeit medications laced with fentanyl during early 2016. Other opiate analogs include U-47700, which also has been reported in Florida.
The key measure of fentanyl’s 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 analogs. Those analogs came from clandestine labs mostly in China, Mexico, and Canada. Beginning in early 2016, some Florida medical examiner officers have been able to identify specific fentanyl analogs 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 analogs into the illicit drug market. Between 2007 and 2013, fentanyl deaths rose 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 analogs. 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. That includes 183 reports of substances specifically identified as fentanyl analogs. However, several Florida medical examiners warn that the most dramatic rise of opioid deaths, particularly those from poisonous fentanyl analogs, will be seen in the second half of 2016. This will be due partly to the arrival of carfentanil, the most toxic of opioids. Carfentanil is considered to be 10,000 times more potent than morphine.

Nonmedical Use of Prescription Opioids

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 and to 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 were 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 have constituted an opiate epidemic.

In 2010, there were 6,608 opioids detected in deceased persons in Florida. That toll steadily declined 23% to 5,085 by 2013. The toll 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 persons in 2016 is 8,162 based on the first six months of the year. The projected total includes 1,756 occurrences for morphine and 1,976 fentanyl occurrences. Many of the morphine occurrences are believed to have been actually heroin ones. Most of the fentanyl occurrences are considered to have been non-pharmaceutical fentanyl from foreign clandestine labs used to adulterate street heroin or sold as counterfeit medications. Seventy-five percent of the 2016 opioid deaths (not including heroin) were related to five of the 11 opioids tracked by the Florida Medical Examiners Commission. Those five are morphine, oxycodone, hydrocodone, methadone, and fentanyl. Those totaled 3,063 medical examiner occurrences in the first six months of 2016 across Florida. Most of the fentanyl medical examiner reports from 2014 to 2016 are believed to have been non-pharmaceutical fentanyl analogs from foreign clandestine labs.

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

<table>
<thead>
<tr>
<th>Year</th>
<th>Oxycodone</th>
<th>Methadone</th>
<th>Hydrocodone</th>
<th>Fentanyl</th>
<th>Morphine</th>
<th>House Bill 7095 Takes effect</th>
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*Source: FDLE – Drugs Identified In Deceased Persons by Florida Medical Examiners Jan 2008 - Jun 2016 Reports*
also merely detected as “present at the time of death.” Both graphs illustrate the sharp rise in fentanyl-related deaths during the first half of 2016 that were considered to be mostly non-pharmaceutical fentanyl analogs.

Trends of all prescription opioid occurrences are shown in the graph below as well as the table on the next page. Oxycodone (e.g., Percocet®, OxyContin®) continued as the leading prescription opioid identified in deceased persons in Florida. It was followed by hydrocodone (e.g., Lortab®, Vicodin®).
The graph below tracks (1) the number of drug occurrences from the 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.

<table>
<thead>
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<th>Opioid</th>
<th>1st H 2015</th>
<th>2nd H 2015</th>
<th>1st H 2016</th>
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<tr>
<td>Morphine</td>
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<td>813</td>
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<tr>
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<td>556</td>
<td>632</td>
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<tr>
<td>Heroin</td>
<td>343</td>
<td>436</td>
<td>434</td>
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<tr>
<td>Hydrocodone</td>
<td>353</td>
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<td>325</td>
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<tr>
<td>Hydromorphone</td>
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<td>Methadone</td>
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<td>Oxymorphone</td>
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<td>Codeine</td>
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<td>Tramadol</td>
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<td>Buprenorphine</td>
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<tr>
<td>Meperidine</td>
<td>5</td>
<td>3</td>
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</table>

*Source: FDLE - Florida Medical Examiners Commission*
The most currently available data on hospital overdose cases are from the first six months of calendar year 2016. Then, there were 3,388 hospital prescription opioid (not including heroin) overdose poisonings in Florida. In the first half of 2016, 39% of the overdoses occurred among emergency department patients. Sixty-one percent were admitted as inpatients.

![Overdose Poisoning Cases for Opioids (not including Heroin) in Florida Hospitals: Jan-Jun 2016](image)

**Source:** Florida Agency for Health Care Administration

There were 15,592 admissions for opiates other than heroin reported as primary treatment admissions in Florida during 2016. Those accounted for 18% of all treatment admissions. Females accounted for 53% of the opioid clients. Less than 1% were younger than age 18. Sixteen percent were between 18 and 25 years old. Fifty percent, were aged 26-34, and 34% 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. Intranasal snorting was reported by 12% of clients, and 1.7% reported smoking prescription opioids.

There were 5,506 prescription opioid crime laboratory reports. Those were 10% of the 53,777 total primary, secondary, and tertiary 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.

**Heroin**

Heroin-related deaths increased 11% rising from 779 in 2015 to a projected 868 in 2016 based on the first half of 2016. Heroin was considered the cause of death in 94% of the cases in Florida during that year. Many of the deaths involved polydrug use. Ninety-eight percent of the 2016 cases had one or more other substances present at the time of death. There was no heroin-related decedent under age 18. Eighteen percent were
18-25. Twenty-nine percent were 26-34. Thirty-five percent were aged 35-50, and 18% 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. Twenty percent were admitted as inpatients.

Overdose Poisoning Cases for Heroin in Florida Hospitals: Jan-Jun 2016

Source: Florida Agency for Health Care Administration
Primary addiction treatment admissions for heroin totaled 12,397 patients in Florida during 2015. Those accounted for 13.7% of all admissions. That was up from 10.4% in 2015. Males accounted for 58% of these clients. Twenty-seven of the admissions (or 0.2%) were for clients under 18 years of age. Sixteen percent were 18-25. Fifty-one percent were 26-34 and 32% were age 35 or older. Injecting heroin was reported by 71% of clients. Intranasal snorting was reported by 10% of clients and 1.8% reported smoking heroin.

In Florida in 2016, there were 4,633 heroin crime laboratory reports. Those were 8.6% of the 53,777 total primary, secondary, and tertiary NFLIS reports for Florida. Heroin ranked fourth among all substances analyzed.

**Cocaine/Crack**

Cocaine-related deaths increased 21% between 2015 and 2016 in Florida. The projected number for 2016 is 2,228. 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 with an opiate. Polysubstance use may have occurred without the cocaine user’s knowledge. There were seven cocaine-related decedents under age 18. Twelve percent were aged 18-25. Twenty-four percent were 26-34. Thirty-seven percent were aged 35-50 and 26% were over 50 years of age.

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**Number of Cocaine Deaths in Florida: 2000-2016**

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

*Source: Florida Medical Examiners Commission 2016 Interim Report*
Primary addiction treatment admissions for cocaine totaled 6,640 patients in Florida during 2016. Those accounted for 7% of all admissions. Males accounted for 52% of these clients with crack cocaine specified by 59% of all the cocaine patients. Fifty-two or 1% of the admissions were for someone under 18 years of age. Thirteen percent were 18-25, 30% were 26-34. Fifty-seven percent were age 35 or older. Smoking cocaine was the route of administration reported by 52% of the cocaine clients. Intranasal sniffing was cited by 34%. Four percent reported injecting cocaine. The remaining 10% reported oral or other or unknown routes of administration.

There were 17,960 cocaine crime laboratory reports in Florida. Those were 33% of the 53,777 total primary, secondary, and tertiary NFLIS reports for Florida in 2016. Cocaine ranked first among all substances analyzed.

**Methamphetamine**

Indicators of methamphetamine have been steadily increasing since 2011 with deaths related to the drug escalating 312% over that five-year period. They are projected to increase 55% between 2015 and 2016.

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. Manufacturers use 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.

Methamphetamine was detected among 237 deceased persons during the first half of 2016 in Florida. There were 130 such deaths 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. That compares 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.
There were 3,902 primary treatment admissions (4% of all admissions) for methamphetamine in Florida during 2016. Females accounted for 53% of the methamphetamine clients. Two percent were below age 18 and 60% of all clients were between 18 and 34 years of age. Thirty-eight percent were age 35 and above. Smoking Intranasal sniffing was cited by 11% and 27% reported injecting methamphetamine. The remaining 9% reported oral or other or unknown routes of administration. Private treatment counselors continued to report serious methamphetamine abuse problems among men who have sex with men. Many such men are 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. Females accounted for 53% of the amphetamine clients. Seventy-four percent of all clients were between 12 and 34 years of age. Twenty-six percent were age 35 and above. Injective drug use was cited by 10% of the amphetamine clients while 34% reported smoking as their primary route of administration.

There were 6,296 methamphetamine crime laboratory reports. Those accounted for 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.
Benzodiazepines

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. It 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. It was followed by nordiazepam (14%), diazepam (13%), clonazepam (10%), and temazepam (9%).

Florida benzodiazepine hospital overdose poisonings totaled 4,130 in the first six months of 2016. Thirty-seven percent of those overdoses occurred among emergency department patients. Sixty-three percent were admitted as inpatients.
There were 3,958 benzodiazepine NFLIS crime lab reports in Florida during 2016. Those represented 7% of all substances analyzed. Alprazolam accounted for 84% of the benzodiazepine crime lab cases followed by clonazepam (11%), and diazepam (4%).