**Comprehensive Drug Death Report**

**2003-2018**

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**District Twelve Medical Examiner**

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**Chief Medical Examiner**

**Introduction**

This Comprehensive Drug Death Report is initially created in 2019 to examine and present in detail the findings associated with drug related deaths here in Florida’s Twelfth District from 2003 onward. This report is meant to be a living document, with all of the five chapters updated each year to reflect new data from the most recent complete calendar year. This December 2019 version of the report reflects data through the end of 2018. The data is presented in five chapters. Detailed findings by year for the three county district comprise the first chapter. The next three chapters present the separate data for each of the three counties, respectively, again parsed by year. The fifth and final chapter presents selected longitudinal data for overall drug deaths and individual drugs of interest, including selected drug combinations and groups.

This report is based on data submitted annually to the state Medical Examiner Commission for the purpose of creating the annual Drugs in Deceased Persons Report. Accordingly, the District Twelve Report is thorough but by its nature limited to illicit drugs and potential drugs of abuse and is not purported to be an exhaustive analysis but rather as a tool to assist with understanding the drugs of abuse that have caused death in our jurisdiction, how those drugs have changed over time, and some features of the individuals succumbing to these drugs. One of the more limiting factors has been our ability (or lack thereof) to test for certain drugs. Thus, some drugs, such as carfentanil and some of the other fentanyl analogs, for example, were not identified prior to 2016 at least in part because we simply could not test for them. Accordingly, as our ability to identify and test drugs has improved, the report is able to track those drugs concurrent with that ability. Also, not every drug identified every year is included here; drug data to present is selected based on prevalence, longitudinal trends, and my own interpretation of significance.

One critical consideration in reviewing the data is that, each time a drug is determined to cause or contribute to death, that occurrence is documented separately. However, in many cases, more than one drug is implicated in causing death, thus there are significantly more recorded occurrences of drugs than there are deaths caused by drugs. Accordingly, tempting though it might be, one cannot sum up the occurrences of different drugs to arrive at any total number of deaths unless the report explicitly so states. This and other important information is included in the NOTES Section, prior to Chapter One.

Finally and perhaps most importantly, I want to offer my sincere thanks to Danielle Lombardo, who, while interning here at the Medical Examiner’s Office in 2018 and 2019, and prior to starting medical school in the fall of 2019, did all of the data analysis through 2017, including producing many of the graphs and creating much of the actual document that made this initial 2019 report, and thus all that may follow, possible. Without her creativity, tenacity, and hard work, this report would probably never have been created, and I am thus in her debt.

  

 Russell S. Vega, MD Date

 Chief Medical Examiner

Table of Contents

[Notes 5](#_Toc29286550)

[Chapter One : District Twelve Data 8](#_Toc29286551)

[2003, District 12 8](#_Toc29286552)

[2004, District 12 9](#_Toc29286553)

[2005, District 12 10](#_Toc29286554)

[2006, District 12 11](#_Toc29286555)

[2007, District 12 12](#_Toc29286556)

[2008, District 12 13](#_Toc29286557)

[2009, District 12 14](#_Toc29286558)

[2010, District 12 15](#_Toc29286559)

[2011, District 12 16](#_Toc29286560)

[2012, District 12 17](#_Toc29286561)

[2013, District 12 18](#_Toc29286562)

[2014, District 12 19](#_Toc29286563)

[2015, District 12 20](#_Toc29286564)

[2016, District 12 21](#_Toc29286565)

[2017, District 12 22](#_Toc29286566)

[2018, District 12 23](#_Toc29286567)

[Chapter Two: Sarasota County Data 24](#_Toc29286568)

[(Charts only, 2003-2018) 24](#_Toc29286569)

[Chapter Three, Manatee County Data 40](#_Toc29286570)

[(Charts Only, 2003-2018) 40](#_Toc29286571)

[Chapter Four, DeSoto County Data 56](#_Toc29286572)

[DeSoto County, 2003-2018 56](#_Toc29286573)

[DeSoto County, Longitudinal Summary, 2003-2018 58](#_Toc29286574)

[Chapter Five, Longitudinal Data 59](#_Toc29286575)

[Overall Drug-Caused Deaths 59](#_Toc29286576)

[Age Distribution 60](#_Toc29286577)

[Specific Drugs 63](#_Toc29286578)

[Drug Combinations 71](#_Toc29286579)

[Drug-Caused Deaths by Manner 73](#_Toc29286580)

# Notes

The interpretation of toxicology data in any context is challenging and fraught with pitfalls; the data from which this report was generated is no exception. Attention to the following important points will help in understanding and appropriately utilizing the information in this report.

1. **Terminology:** In reading through this report, it becomes clear that one term is conspicuously absent – the word “overdose.” It is absent for a reason – the word overdose suggests that there is also a *correct* dose, however many of the drugs causing death are illicit drugs that have no healthy or therapeutic dose at all. So, even though some of the drugs we see *do* have therapeutic doses (and thus could result in an *over*dose), to keep it simple, all deaths in this report will be referred to as drug-caused deaths.
2. **Cause vs. Present**: Just because a drug is identified in a toxicology specimen such as blood or urine does not mean it should or will be listed as causing death. It is the responsibility of the case medical examiner to review all of the associated information, including autopsy findings, circumstances, etc., not just the toxicology results, to make that determination. The Florida Department of Law Enforcement (FDLE), at the request of the governor, tracks certain drugs of concern, largely but not exclusively drugs of abuse. For each of these tracked drugs, each medical examiner district is charged with providing data to FDLE. This data includes: basic demographic information; which, if any, of a tracked drug or drugs is identified; the manner of the death (homicide, suicide, accident, or natural) and, for each identified drug, whether the drug caused the death or was simply present in the body and death was caused by an entirely different process. Even though this report is created using similar data to that submitted to FDLE, this report ***does not*** include data on drugs that were simply present. All data and statistics in this report involve drugs that were determined to be a cause of death.
3. **Co-Occurrence of Drugs:** In most drug-caused deaths, more than one drug is identified in the body, and in most of those cases, of the multiple drugs identified, more than one is determined to be a cause of death. In other words, most drug-caused deaths are caused by multiple drugs acting together rather than only a single drug. Not uncommonly, *several* drugs can be implicated in a single death. This makes statistical analysis complicated, especially when we want to call out each of those drugs responsible. Throughout this report, death statistics are reported for individual drugs and some categories of drugs (for example, opioids). However, since most deaths involve multiple drugs, some of the deaths that are counted and then reported for one drug are counted again and reported separately for another different drug. Accordingly, *one cannot simply add the number of deaths from drug A and the numbers of deaths from drug B together to get the total number that died from either A or B*. As an extension of this, ***one cannot add up all the deaths across the various drugs to end up with the total number of drug caused deaths***. Accordingly, it is important to read the data and to view the charts and graphs with caution. When the number of deaths reported refers to a total other than for a single drug, it should be explicitly stated.
4. **Drug Metabolism**: Many drugs are broken down in the body (or ***metabolized)*** into other drugs or chemicals (these breakdown products are called ***metabolites***). In some instances, the metabolite itself may be the only indication that a drug was taken– the original (or ***parent***) drug may have been entirely metabolized and no longer present. Additionally, some drugs are metabolized into other active drugs, and, in some of these cases, we are tracking and reporting on both the parent drug and its metabolite because both are potentially harmful and both are drugs of abuse. These special cases require some care:
	1. *Benzodiazepines* – This class of sedative drugs is notorious for metabolic confusion. Since so many of these drugs are metabolized into other active benzodiazepines, only the most commonly prescribed benzodiazepines, alprazolam and diazepam, are included here. Alprazolam is relatively straightforward and shares no active metabolites with other benzodiazepines, but diazepam itself can be broken down into several different drugs, all of which are separately tracked as well. Accordingly, it is incumbent on the case medical examiner to weed out the extraneous metabolites, if possible, and determine what drugs were actually taken. The diazepam reported here represents the end point of that process. While other benzodiazepines are occasionally found as a cause of death, these are not reported separately but are included in the counts of total benzodiazepine deaths.
	2. *Heroin* – In the body, heroin is rapidly metabolized into morphine and is almost never detected in the body in its parent state. The presence of intermediate metabolites, like 6-momacetylmorphine (6-MAM), can alert the medical examiner that the presence of morphine is actually due to heroin abuse. These cases are straightforward and are generally certified as heroin intoxication deaths; heroin would then be reported as a drug causing death. However, if no 6-MAM is identified, it may be unclear if morphine is due to heroin abuse or the ingestion of pharmaceutical morphine. Circumstantial and other information may allow the medical examiner to make a determination that the death was caused by heroin; in the absence of such information, the death will be certified as caused by morphine. Accordingly, when heroin is reasonably prevalent in the community, statistics undoubtedly overstate the actual number of morphine deaths and understate the number of heroin deaths.
	3. *Cocaine* – In the body, cocaine is rapidly broken down into its principal metabolites, especially benzoylecgonine (BE). Some cases in which the cause of death is determined to be cocaine may only have BE present, without any parent cocaine.
	4. *Methamphetamine* – Methamphetamine is metabolized in the body to produce amphetamine. Amphetamine is also a pharmaceutical drug which can be abused. Finding amphetamine in the body may represent amphetamine use or abuse, or it may represent illicit methamphetamine use. Fortunately, some parent methamphetamine is usually present, making interpretation of identified amphetamine straightforward. However, occasionally this becomes problematic, and it is likely that a small number of reported amphetamine-caused deaths actually represent methamphetamine abuse.
5. **Illicit vs pharmaceutical drugs:**  Some drugs, especially fentanyl, are both 1) produced pharmaceutically and then either accidentally overdosed or diverted to be abused; but are also 2) produced illicitly and sold on the street. Once in the body, the origin of the drug cannot be ascertained through analysis, thus we are only able to tell if fentanyl was illicitly manufactured or not based on circumstances or other investigative information. Accordingly, the two are not distinguished throughout this report. Similarly, this report does not distinguish between drugs legitimately prescribed to an individual and those obtained from other sources. Notably, the sharp rise of fentanyl-caused deaths in 2013-2014 is clearly due to a massive influx of illicitly manufactured fentanyl. However, these statistics undoubtedly include a small baseline of deaths caused by pharmaceutical fentanyl that we cannot distinguish.
6. **Non-tracked Drugs**: This report captures data on the vast majority of District 12 drug-caused deaths. However, a small number of deaths are caused by drugs that are not tracked by FDLE and thus are not a focus of this report. The Medical Examiner Commission Annual Workload Report includes the total number of *accidental* drug intoxication (drug-caused) deaths, which includes the non-tracked drugs but does not include suicides, thus that data cannot be directly compared with the data in this report.
7. **Alcohol:** Ethyl alcohol (ethanol, common grain alcohol) is fairly prevalent in the cases we examine, and is commonly found in cases of drug-caused deaths. In some of those cases, alcohol is determined to have contributed, along with the other drug(s), in causing the death. The focus of this report is on illicit and pharmaceutical drugs, thus the alcohol-caused deaths are reported in the annual statistics for each county for reference, but are not tracked longitudinally. Deaths caused by alcohol alone are very uncommon; some are described in the DeSoto County data, below (page 55).
8. **Targeted Testing**: Forensic toxicologists are remarkably knowledgeable and skilled, with various complex instruments and analytical techniques at their disposal. Yet there is not one single process, analysis, or technique that works for all drugs/poisons/intoxicants in all situations. Accordingly, toxicologists must choose which analysis to perform on a given sample based on what substances are suspected or need to be excluded. The testing that is preformed is thus targeted to meet the needs of the case. Not surprisingly, then, if certain drugs are present but not suspected, especially if the drugs are unusual or are emerging drugs (see below), they could be missed in testing. It is thus very likely that our investigations miss certain unusual and unsuspected drugs and undercount (hopefully to a very small degree) the total number of drug-caused deaths.
9. **Emerging Drugs:** Perhaps the most challenging and frustrating part of investigating drug-caused deaths is the regular emergence of new drugs. Many of these fall into the category of “designer drugs,” which are synthetic chemical variations of already known drugs. The problems evaluating these emerging drug deaths are largely threefold:
	1. The understanding of the effects of these drugs on the body, especially those that can be potentially lethal, may be limited.
	2. Data involving potentially lethal doses and blood concentrations of these drugs may be limited or initially even non-existent.
	3. Testing to identify and then quantify these substances in biological samples may initially be inconsistent, unreliable, un-validated, experimental and/or expensive. Or no testing may yet exist.

The investigation of deaths involving cathinones, synthetic cannabinoids, and fentanyl analogs are all investigations that, to some degree or other, suffer from these issues. As a result, it is possible that drugs from these categories could be present more frequently than we identified them. Similarly, the number of deaths attributed to them in this report could be an undercount. This is especially true for cases occurring in the early phases of the emergence of a new drug, for example carfentanil during the early months of 2016.

# Chapter One : District Twelve Data

## 2003, District 12

In 2003, there were 113 total drug-intoxication deaths within the three counties of the 12th District. Of these, 34 were female (30%) and 79 were male; 111 were white (98%), and 2 were black; 13 (11.50%) were suicides. The average age of these cases at the time of death was 39 years, with an age distribution as follows:

The specific drugs involved in causing death are listed below, along with age distribution for each. The most common individual drug identified as causing death was cocaine with 37 deaths; the most commonly identified opioids were methadone and oxycodone with 19 deaths each. Fentanyl deaths were low (5); heroin caused 18 deaths. Overall, opioids caused 77 deaths. Of the opioid caused deaths, 24 also had cocaine contributing.

## 2004, District 12

In 2004, drugs deaths rose with comparison to 2003, with 131 total drug-intoxication deaths within the three counties of the 12th District. Of these, 49 were female (37%) and 82 were male; 127 were white (97%), 3 were black, and 1 was Hispanic; and 11 (8.40%) were suicides. The average age of these cases at the time of death was 40 years, with an age distribution as follows:

The specific drugs involved in causing death are listed below, along with age distribution for each. Opioids continued to be the most frequent overall cause of drug-caused deaths (99), and the most commonly implicated opioid was methadone with 39 deaths. Cocaine continued to be the most frequently implicated individual drug, with 41 deaths. Fentanyl caused 9 deaths, heroin caused 14. Of the opioid caused deaths, 22 also had cocaine contributing to the death.

## 2005, District 12

In 2005, drug deaths continued to slowly increase with 141 total drug-intoxication deaths within the three counties of the 12th District. Of these, 45 were female (32%) and 96 were male; 133 were white (94%), 6 were black, and 2 were Hispanic; 13 (9.22%) were suicides. The average age of these cases at the time of death was 40 years, with an age distribution as follows:

The specific drugs involved in causing death are listed below, along with age distribution for each. In 2005, cocaine continued to be the most commonly identified individual drug with 48 deaths; the most commonly identified opioid was methadone with 42 deaths. Amphetamine and MDMA appeared with 1 death each; both deaths occurred in the 19 to 24 age range. Fentanyl caused 8 deaths, as did heroin. Overall, opioids caused 103 deaths; of those, cocaine also contributed to 28 of them.

## 2006, District 12

In 2006, drug deaths continued to climb, with152 total drug-intoxication deaths within the three counties of the 12th District. Of these, 45 were female (30%) and 107 were male; 140 were white (92%), 9 were black, and 3 were Hispanic; and 16 (10.53%) were suicides. The average age of these cases at the time of death was 40 years, with an age distribution as follows:

The specific drugs involved in causing death are listed below, along with age distribution for each. In 2006 cocaine remained the most commonly implicated individual drug with 58 deaths, and the most commonly identified opioid remained methadone with 53 deaths. Fentanyl caused 9 deaths, heroin 14. Overall, opioids caused 109 deaths, and of these, 37 also had cocaine contributing.

## 2007, District 12

In 2007, drug deaths eased downward somewhat, with 139 total drug-intoxication deaths within the three counties of the 12th District. Of these, 51 were female (37%) and 88 were male; 129 were white (93%), 8 were black, and 2 were Hispanic; and 12 (8.63%) were suicides. The average age of these cases at the time of death was 41 years, with an age distribution as follows:

The specific drugs involved in causing death are listed below, along with age distribution for each. Consistent with previous years, in 2007 the most commonly implicated individual drug was cocaine with 52 deaths, and the most commonly identified opioid was methadone with 49 deaths. The number of heroin deaths dropped from 14 in 2006 to only 3 in 2007. Fentanyl deaths remained relatively low (7), as did heroin deaths (2). Of the total deaths caused by opioids (101), 28 (28%) also had cocaine as a cause of death.

## 2008, District 12

In 2008, there were 147 total drug-intoxication deaths within the three counties of the 12th District, creeping back up again. Of these, 42 were female (29%) and 105 were male; 139 were white (95%) , 3 were black, 4 were Hispanic, and 1 was Asian; and 12 (8.16%) were suicides. The average age of these cases at the time of death was 41 years, with an age distribution as follows:

The specific drugs involved in causing death are listed below, along with age distribution for each. In 2008 the most common individual drug shifted from cocaine (36 deaths) to methadone (46 deaths). Methamphetamine caused a single death. The number of heroin deaths spiked to 18, up from only three in 2007. Fentanyl deaths remained low (3), however, heroin deaths were up from previous years (18). Overall opioid deaths reversed their brief downward trajectory from 2007, inching up to 120; of those, 26 also had cocaine contributing.

## 2009, District 12

In 2009, there were 156 total drug-intoxication deaths within the three counties of the 12th District, continuing an upward trend from the previous year. Of these, 51 were female (33%) and 105 were male; 148 were white (95%), 6 were black, and 2 were Hispanic; and 22 (14.10%) were suicides. The average age of these cases at the time of death was 42 years, with an age distribution as follows:

The specific drugs involved in causing death are listed below, along with age distribution for each. In 2009 oxycodone vaulted past methadone to become the most commonly implicated opioid with 68 deaths; oxycodone caused more deaths than any other single drug. The last time oxycodone was the most common opioid was in 2003 (19 deaths, tied with methadone). The number of heroin deaths declined again in 2009 to 3, similar to its decrease in 2007. Fentanyl deaths increased into the double digits (12 deaths) for the first time (presumably all of it was pharmaceutical fentanyl, NOT illicitly produced). Overall opioid deaths continued their upward trend, increasing to 132; of those, 17 also had cocaine contributing. Cocaine caused 31 deaths in total.

## 2010, District 12

In 2010, the upward trend in number of drug caused deaths continued, with 173 total drug-intoxication deaths within the three counties of the 12th District. Of these, 63 (36%) were female and 110 were male; 160 were white (92%), 4 were black, and 9 were Hispanic; and 31 (17.92%) were suicides. The average age of these cases at the time of death was 42 years, with an age distribution as follows:

The specific drugs involved in causing death are listed below, along with age distribution for each. In 2010 the opioid trend continued with 142 overall deaths, and with oxycodone causing the most deaths of any single drug (86). Methadone was the second most common opioid with 47 deaths. Cocaine continued to be prevalent, causing 31 deaths. Methamphetamine caused a single death, as did zolpidem (tracking of zolpidem started this year). Heroin deaths remained low (2), as did fentanyl deaths (7). Overall, opioids caused 142 deaths. Of the opioid deaths, 18 also had cocaine contributing to the death. 2010 marked a peak in opioid related deaths and was associated with the crest of the “Pill-mill” epidemic.

## 2011, District 12

In 2011, drug deaths continued to increase with 160 total drug-intoxication deaths within the three counties of the 12th District. Of these, 54 were female (34%), 106 were male; 147 were white (92%), 9 were black, and 4 were Hispanic. Twenty-two (13.75%) were suicides. The average age of these cases at the time of death was 42 years, with an age distribution as follows:

The specific drugs involved in causing death are listed below, along with age distribution for each. In 2011 total number of opioid deaths started to subside somewhat, with 130 overall opioid deaths. The most commonly identified individual drug causing death was oxycodone, with 63 deaths (methadone caused 44 deaths). Cocaine deaths remained lower compared to 2010, with 34 deaths. Methamphetamine had no deaths for 2011, and the number of heroin deaths (3) and fentanyl deaths (6) remained low. Of the opioid deaths, 17 also had cocaine contributing.

## 2012, District 12

In 2012, the number of drug deaths within the three counties of the 12th District dropped significantly to 125 total deaths. Of these, 48 (38%) were female and 77 were male; 115 were white (92%), 6 were black, and 4 were Hispanic; and 22 (17.60%) were suicides. The average age of these cases at the time of death was 45 years, with an age distribution as follows:

The specific drugs involved in causing death are listed below, along with age distribution for each. In 2012 overall opioid deaths continued to drop, at an even more rapid pace, with 105 overall opioid deaths (19 also had cocaine contributing). Oxycodone continued to be the most commonly identified drug, with 38 deaths (methadone caused 36 deaths). Cocaine caused 26 deaths and methamphetamine caused a single death. Though many drugs decreased in number of deaths for 2012, heroin began to climb in deaths again, with 9 for the year. Fentanyl deaths remained relatively low (9).

## 2013, District 12

In 2013, there were 131 total drug-intoxication deaths within the three counties of the 12th District. Of these, 64 (49%) were female and 67 were male; 122 (93%) were white, 4 were black, 4 were Hispanic, and 1 was Asian; and 35 (26.72%) were suicides. The average age of these cases at the time of death was 46 years, with an age distribution as follows:

The specific drugs involved in causing death are listed below, along with age distribution for each. In 2013 the most commonly identified individual drug (and opioid) shifted to include morphine along with oxycodone with 32 deaths each. Heroin deaths were still rising, with 19 deaths, though fentanyl remained low (8 deaths). Cathinones (2), synthetic cannabinoids (1), and the fentanyl analog acetyl fentanyl (1) were all first reported as causing death in 2013 (routine testing for and tracking of these drugs started in this year). Overall opioid deaths were down to 101, with 21 also including cocaine and 1 including methamphetamine; there were two methamphetamine deaths overall.

## 2014, District 12

In 2014, drug intoxication deaths shot back up again, with 157 total drug-intoxication deaths within the three counties of the 12th District. Of these, 65 (41%) were female and 92 were male; 144 (92%) were white, 8 were black, 4 were Hispanic, and 1 was Asian; 26 (16.56%) were suicides. The average age of these cases at the time of death was 43 years, with an age distribution as follows:

The specific drugs involved in causing death are listed below, along with age distribution for each. In 2014 the most striking finding was a dramatic increase in the number of fentanyl deaths – fentanyl deaths increased from 8 in 2013 to 51 in 2014! This made fentanyl tied with cocaine for most drug caused deaths for the year. Heroin deaths also continued a longer but equally significant trend, with 48 caused deaths. Fentanyl deaths were caused almost entirely from illicitly manufactured fentanyl (usually injected) rather than diverted pharmaceutical fentanyl. Accordingly, overall opioid deaths increased to 131, with 37 also having cocaine contributing. Oxycodone (23) and methadone (19) continued their retreat. Fentanyl analogs deaths, specifically from acetyl fentanyl, remained low (2). Cocaine caused 53 total deaths; methamphetamine caused 6. Heroin increased to 48 deaths.

## 2015, District 12

In 2015, drug caused deaths skyrocketed to 257 total drug-intoxication deaths within the three counties of the 12th District. Of these, 97 (38%) were female and 160 were male; 238 (93%) were white, 10 were black, 6 were Hispanic, 2 were Asian, and 1 Native American; and 24 (9.34%) were suicides. The average age of these cases at the time of death was 42 years, with an age distribution as follows:

The specific drugs involved in causing death are listed below, along with age distribution for each. Fentanyl deaths continued their remarkable climb with 111 deaths, easily making fentanyl the most common drug causing death. New fentanyl analogs were also identified, with acetyl fentanyl (15), betahydroxythiofentanyl (12) causing a significant number of deaths (17 total deaths). Heroin caused 61 deaths. Overall opioids caused 215 deaths; 65 had cocaine contributing and 10 had methamphetamine contributing. Opioids were mostly injected. Methamphetamine deaths picked up significantly from 2014 (13 deaths); cocaine caused deaths also increased to 89. The increase in stimulant deaths (cocaine and methamphetamine) was largely in parallel to the increased opioid deaths.

## 2016, District 12

In 2016, drug-caused deaths peaked, with 278 total drug-intoxication deaths within the three counties of the 12th District. Of these, 87 were female (31%) and 191 were male; 249 were white (90%), 18 were black, 10 Hispanic, and 1 Asian. Twenty (7.19%) were suicides. The average age of these cases at the time of death was 43 years, with an age distribution as follows:

The specific drugs involved in causing death are listed below, along with age distribution for each. 2016 is notable for the explosion of the fentanyl analogs, with particular emphasis on carfentanil, the most commonly identified individual drug with 114 deaths – the most ever by a single specific drug (though many times other drugs contributed along with carfentanil). In total fentanyl analogs caused 122 deaths. Heroin and fentanyl both decreased with the increase of the other injectable opioids (the fentanyl analogs), causing “only” 21 deaths and 43 deaths, respectively. Overall, opioid-caused deaths peaked in 2016 with 232 total deaths. Cocaine continued to rise in conjunction with the opioids, causing 96 deaths. Sixty-six deaths were caused by both opioids and cocaine, 13 by both methamphetamine and cocaine. There were 18 total methamphetamine deaths.

## 2017, District 12

In 2017, there was a slight decrease in drug-intoxication deaths within the three counties of the 12th District, with 263 total deaths. Of these, 90 (34%) were female and 172 were male; 230 were white (87%), 20 were black, 10 were Hispanic, and 2 were classified as other. Nineteen (7.25%) were suicides. The average age of these cases at the time of death was 42 years, with an age distribution as follows:

The specific drugs involved in causing death are listed below, along with age distribution for each. In 2017 the most commonly identified individual drug remained carfentanil with 110 deaths. Other opioids continued to be diminished in numbers compared to carfentanil and the fentanyl analogs; fentanyl caused 46 deaths and heroin 15 deaths. A new fentanyl analog, furanylfentanyl, caused 33 deaths. Overall opioid deaths started a slow decline with 206 total deaths. Among the opioid deaths, contribution by cocaine remained very common; there were 67 such deaths, and 26 with opioids and methamphetamine. In total, cocaine caused 96 deaths and methamphetamine continued a brisk upward trend with 35 deaths.

## 2018, District 12

In 2018, there was a marked decrease in the number of drug-intoxication deaths within the three counties of the 12th District, with 187 total deaths. Of these, 80 (43%) were female and 107 were male; 173 were white (93%), 9 were black, and 5 were Hispanic. Thirty-four (18%) were suicides. The average age of these cases at the time of death was 48 years, with an age distribution as follows:

The specific drugs involved in causing death are listed below, along with age distribution for each. Opioid-caused deaths decreased sharply, with “only” 125 total deaths. Of these, the most dramatic change from 2017 is the complete lack of ANY deaths from carfentanil (down from 110); additionally, fentanyl analogs as a category declined to 17 total deaths distributed among several different drugs (furanylfentanyl, acetylfentanyl, cyclopropylfentanyl, para-fluoroisobutyrylfentanyl, methoxyacetylfentanyl, and 4-ANPP). Fentanyl caused 64 deaths and was the most commonly implicated drug; heroin caused 14 deaths. Of the prescription opioids, oxycodone caused the most deaths – 27. Deaths caused by opioids and stimulants combined also remained relatively high, with 30 involving cocaine and 21 involving methamphetamine. Overall methamphetamine deaths remained high, with 32 deaths. The decline in opioid deaths was paralleled by an overall decline in cocaine deaths, of which there were 56.

# Chapter Two: Sarasota County Data

## (Charts only, 2003-2018)

# Chapter Three, Manatee County Data

## (Charts Only, 2003-2018)

# Chapter Four, DeSoto County Data

DeSoto County, due to its relatively low population, has only a small number of deaths each year that fall under medical examiner jurisdiction, and even fewer among those that are determined to be drug-caused deaths. Accordingly, the annual statistical analysis and graphical representation of data that is presented above for Sarasota and Manatee Counties is neither helpful nor appropriate for understanding these deaths in DeSoto County. Alternatively, the annual drug-caused deaths in DeSoto are described in narrative format with a summary of the data covering the entire 16 year span.

## DeSoto County, 2003-2018

***2003***

A single drug-caused death was identified, an accidental death in a 55 year old white man caused by methadone and diazepam.

***2004***

Five drug-caused deaths occurred, all of them accidental in nature. Two were caused solely by alcohol intoxication (a rarity in the larger counties), one was caused by fentanyl, one by morphine, and one by methadone. Among these cases, the average age was 46, four were women and one was a man, and all were white.

***2005***

2005 saw two drug-caused deaths, averaging only 18 years of age, with a suicide by propoxyphene (a 19 year old white woman) and an accidental intoxication with alprazolam, diazepam, methadone and oxycodone (a 17 year old white man).

***2006***

Five drug-caused deaths were identified, with average age of 42, including four white and one black as well as three women and two men. One was a suicide, an acute alcohol intoxication. Of the four accidental deaths, the drugs causing death were alprazolam and oxycodone; heroin; fentanyl; and oxycodone.

***2007***

A single drug-caused death was identified, an accidental death in a 36 year old white man caused by alcohol and cocaine.

***2008***

Three drug-caused deaths were found, including one woman and two men, with an average age of 40. All were white. One was a suicide. Implicated drugs were cocaine; alprazolam and morphine; and alprazolam and methadone.

***2009***

Four drug-caused deaths were determined, with average age of 43, including three white and one Hispanic. All were accidental. Implicated drugs were alcohol (a Hispanic man); morphine with unspecified benzodiazepines (a white man); methadone (a white woman); and oxycodone (a white man).

***2010***

2010 saw a single accidental drug-caused death, an acute alcohol intoxication in a 40 year old Hispanic man.

***2011***

Only one drug-caused death was determined in 2011, an accidental death, that of a 49 year old white woman with methadone.

***2012***

Two drug-caused deaths were identified. One was related to acute alcohol intoxication in a 27 year old Hispanic man; the other was a 45 year old white man hydromorphone and methamphetamine. Both were accidental.

***2013***

2013 saw two drug-caused deaths, one a suicide of a 58 year old white woman caused by multiple prescription drugs that included alprazolam. The other was the accidental death of a 24 year old Hispanic man related to acute alcohol intoxication.

***2014***

Even though the number was low compared to the larger counties, 2014 had the highest number of drug-caused deaths ever for DeSoto County, with eight deaths, including three suicides. These included: a 45 year old black man with cocaine; a 46year old Hispanic woman with multiple drugs including tramadol and fentanyl; a 47 year old white man with morphine (a suicide); a 49 year old white woman with lorazepam and oxycodone; a 52 year old black man with cocaine; a 58 year old white woman with methamphetamine; a 60 year old white man with morphine (a suicide); and a 66 year old man with multiple drugs including tramadol and alprazolam (a suicide).

***2015***

Drug-caused deaths subsided back to “usual” levels, with two deaths. These were both accidental, and included a 33 year old Asian man and a 37 year old white woman, both with methamphetamine.

***2016***

Five drug-caused deaths were identified, all accidental. These included a 52 year old white man with fentanyl and alprazolam; a 50 year old white man with amphetamine and hydromorphone; a 43 year old white woman with oxymorphone; a 64 year old black man with cocaine; and a 53 year old white woman with cocaine.

***2017***

There were three drug-caused deaths in 2017, all accidental, including: a 33 year old white woman with cocaine, a 33 year old white man with morphine, alprazolam and methamphetamine; and a 59 year old white man with methamphetamine.

***2018***

2018 saw two drug-caused deaths, both of them accidental, including: a 63 year old white woman with alprazolam and methadone; and a 25 year old black man with synthetic cannabinoids.

## DeSoto County, Longitudinal Summary, 2003-2018

Over the sixteen year period from 2003-2018, there were 47 total drug-caused deaths in DeSoto County. Of these, seven (15%) were suicides; this percentage is somewhat higher, overall, than observed in Sarasota and Manatee Counties. Twenty (43%) were women, slightly higher than the larger counties. Five were Hispanic (11%), and five were black (11%); these percentages are ***significantly*** higher than those seen in the larger counties. The average age was 43, similar to the larger counties. The relatively small number of cases makes evaluating trends in types of drugs identified challenging, however, one clear contrast with the larger counties was the specific subset of deaths caused by acute alcohol intoxication - of the 47 total deaths, seven (15%) were due to acute alcohol intoxication without other drugs contributing. While this was not specifically tracked for the larger counties, a cursory review of the data from 2013-2018 found 2 such cases combined in Manatee and Sarasota Counties, representing only 0.2% of the drug-caused deaths. And of those seven deaths in DeSoto County, four were in Hispanic men, making up 80% of the total Hispanic drug-caused deaths in the County. No similar finding among Hispanics is present in the larger counties.

# Chapter Five, Longitudinal Data

## Overall Drug-Caused Deaths

## Age Distribution

## Specific Drugs

***Benzodiazepines***

*Note: Almost all alprazolam deaths are in combination with other drugs, especially opioids.*

***Prescription Opioids***

*Note: Since heroin is rapidly metabolized to morphine in the body, many morphine occurrences here are likely a result of heroin use rather than pharmaceutical morphine, especially from 2013 onward.*

***Illicit Drugs***

*Note: While not all fentanyl is illicitly manufactured, statistical separation of illicit from pharmaceutical fentanyl is not possible, and the vast majority of fentanyl deaths from 2013 onward are due to illicitly manufactured fentanyl.*

During the period of intense carfentanil deaths, carfentanil was the principal opioid causing death in District 12, in sharp contrast to the rest of the state of Florida. The lull for three months from November 2016 – January 2017 is notable.

[These are similar to graphs included in manuscript accepted for publication, *A Carfentanil Outbreak in Florida, January 2016 to December 2017*, Delcher at al, CDC Morbidity and Mortality Weekly Report, tentative publication date, February 7, 2020.]

*NOTE: Fentanyl analogs (especially carfentanil) were not tested for prior to 2015, thus no instances are recorded from 2003-2014. Many morphine occurrences here are likely a result of heroin use since heroin is rapidly metabolized to morphine in the body.*

## Drug Combinations

## Drug-Caused Deaths by Manner