Division of Forensic Science
2024 Annual Report

May 27, 2025

State of Delaware
Department of Safety and Homeland Security
200 South Adams Street
Wilmington, DE 19801

John Evans, Director

Melissa Newell, Deputy Director

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DEPARTMENT OF SAFETY AND HOMELAND SECURITY
OFFICE OF THE SECRETARY
P.O. BOX 818
DOVER, DELAWARE 19903-0818
302-744-2680

The Honorable Matthew Meyer
Governor

The Honorable Joshua Bushweller
Cabinet Secretary

May 22, 2025

It is with great pride I present the 2024 Annual Report of the Division of Forensic Science (DFS), highlighting its achievements in scientific excellence, integrity, and public service. The Division is a cornerstone of our department that provides crucial scientific analysis to ensure that justice is served.

Over the past year, DFS has made significant achievements in many areas. Notably, it continued its lifesaving drug monitoring initiative by partnering with state agencies to share actionable information to address the drug epidemic in Delaware. This included critical data on emerging substances like xylazine, nitazine, and metadomidine to support law enforcement and healthcare response efforts, which helped identify additional treatment needs and new programs. Thanks to these efforts, Delaware experienced a 36 percent reduction in opioid-related fatalities in 2024.

Additionally, division staff refined disaster response strategies by collaborating with the Division of Public Health on the State Mass Fatality and Family Assistance Center Plans through multi-agency drills and exercises, ensuring effective support in times of crisis. The Medical Examiner and related forensic units continued to uphold high standards of quality by maintaining ISO certification and adhering to national accreditation protocols. Furthermore, DFS has collected comprehensive data on violent deaths to inform policymakers and improve prevention strategies. To foster community engagement and scientific understanding, DFS also maintained its successful outreach efforts by providing lectures and tours to high school and college students. It also offered job shadowing across all units, which resulted in 27 successful opportunities for college-level students.

None of these accomplishments would be possible without the dedication and expertise of the forensic scientists, technicians, and support staff who work tirelessly behind the scenes. I extend my deepest gratitude to the dedicated professionals of the Division of Forensic Science for their commitment to excellence and service. Their work not only solves crimes but strengthens the foundation of trust upon which our justice system rests.

Sincerely,

Secretary Joshua Bushweller

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Cabinet Secretary

To My Fellow Delawareans:

On behalf of the men and women of the Division of Forensic Science (DFS), I am happy to present the 2024 Annual Report, which highlights the outstanding work and critical role that the DFS plays in the criminal justice process in Delaware.

The Mission of the DFS is to provide the most reliable scientific analysis of evidence for the administration of justice. Sound and timely pathology and forensic science services are provided for the justice system, driven by crimes committed and deaths occurring in the State of Delaware.

The organizational structure of the Division is a collaborative model where each discipline is equally invested in the overall success of the Division. A stratified model of accountability is used, where each team member has a specific role toward meeting the overall mission. I am proud to report that the DFS continued to meet the mission in 2024 despite any challenges presented throughout the year, which is a testament to the commitment and professionalism of the team at DFS.

By continuing to meet accreditation standards and certifications, the DFS maintains the highest scientific standards and ensures both organizational and individual integrity. The work ethic of the employees of the DFS is strong and we hold true to our core values of Integrity, Honesty, Thoroughness, Timeliness and Professionalism.

The DFS recognizes the significance of data sharing and works together with the Department of Health & Social Services, the Division of Public Health, the Department of Justice, the Delaware Information and Analysis Center, Law Enforcement, and Federal partners to combat the on-going opioid epidemic and any other public health issues.

The Division continues to expand its interface with the Delaware academic community by promoting forensic internship programs and participating in quality data collection and research. The Division firmly believes these efforts will promote interest in forensic science disciplines among Delaware students and lead to stronger information sharing projects. These outreach efforts, coupled with data sharing and collaboration led to the Division being established as a key contributor across state agencies for the development of policies and initiatives to safeguard the health and safety of all Delawareans.

In 2024, the Division continued to pursue both state funding and federal grant opportunities, which allowed the DFS to expand its data sharing capacity by enhancing testing capabilities. I would like to thank the Criminal Justice Council for their continued support in providing grant funding in 2024, which provided much needed supplies, equipment, and training opportunities for the valued staff at DFS. Also in 2024, we enjoyed support from our partners at the CDC and the Division of Public Health through the Overdose to Action (OD2A) grant, which provided funding for additional supplies and equipment.

I am happy to report that funding through the Bureau of Justice Assistance FY ’24 Byrne Discretionary Grant was approved to purchase a sophisticated lab instrument for the Toxicology Unit, which will provide a more comprehensive and sensitive testing of new and emerging drugs including novel psychoactive substances.

I look forward to the support of Governor Matt Meyer and the General Assembly toward continuing the positive momentum of the Division of Forensic Science in 2025.

I take great pride in the hard work and dedication of the men and women of the Division of Forensic Science and for their continued focus on providing the level of service that our customers and stakeholders deserve and expect. I remain confident that our staff will meet any challenge to fulfill our mission.

Sincerely,

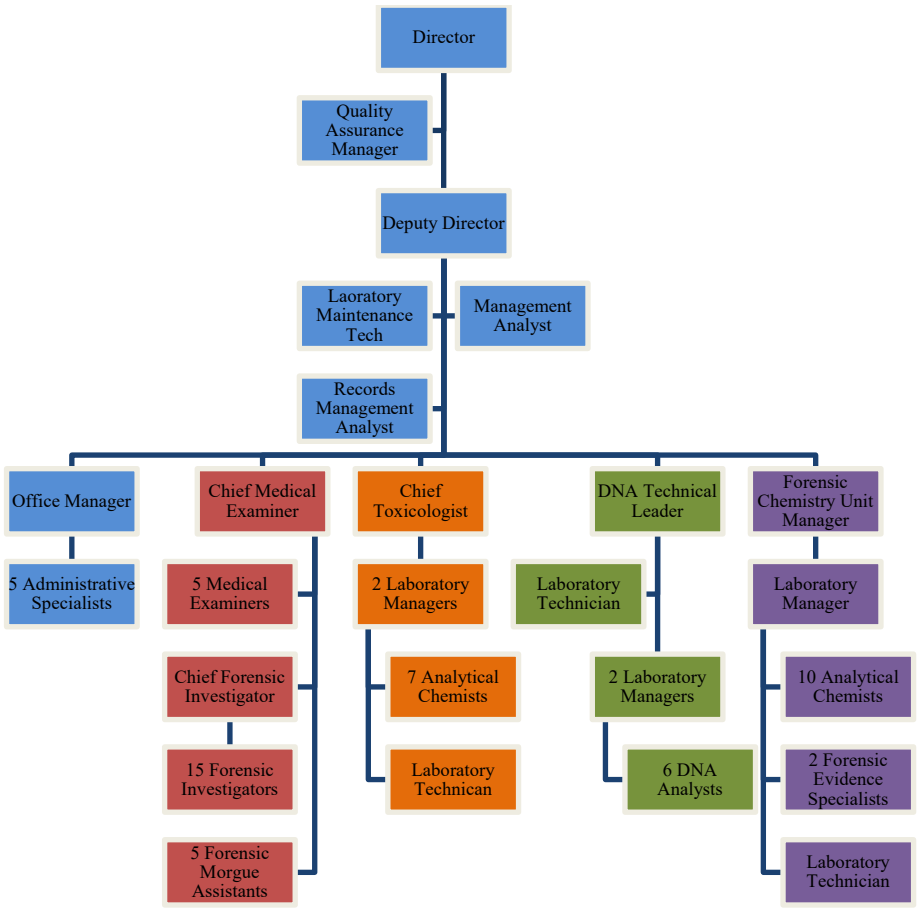
John R. Evans, Director

The Division of Forensic Science

The Division of Forensic Science is comprised of four units including the Medical Examiner, Toxicology, DNA, and Forensic Chemistry. It is the mission of the Division of Forensic Science to provide the most reliable scientific analysis of evidence for the administration of justice. The Medical Examiner Unit serves the State of Delaware with objective medicolegal death investigations in order to provide accurate death certification that complies with the standards set by the National Association of Medical Examiners (NAME) and the Delaware statutes. The Toxicology Unit performs analyses on biological specimens submitted by the medical examiner and Delaware law enforcement agencies for the presence (or absence) of volatiles and drugs. The Toxicology Unit is committed to providing state-of-the-art, timely forensic analyses that comply with the standards set by ISO/IEC 17025:2017 and the American Board of Forensic Toxicology (ABFT). The DNA Unit provides Delaware law enforcement agencies with a forensic DNA testing program that complies with the standards set by the DNA FBI Quality Assurance Standards and ISO/IEC 17025:2017. The Forensic Chemistry Unit tests physical evidence seized by Delaware law enforcement agencies, for the identification of controlled substances and fire debris analysis. Like the other Laboratory Units, the Forensic Chemistry Unit is committed to providing state-of-the-art, timely forensic analyses that comply with the standards set by ISO/IEC 17025:2017.

Division of Forensic Science, Wilmington, DE

During 2024, the DFS continued to enhance operations and administration, embracing every challenge as an opportunity to improve. The DFS has maintained accreditation with the ANSI National Accreditation Board (ANAB). Additionally, the Medical Examiner Unit continues to be accredited through the National Association of Medical Examiners (NAME) and the Toxicology Unit meets the standards established by the American Board of Forensic Toxicology (ABFT). The dedicated staff at the DFS continues to demonstrate a professional commitment to providing accurate, timely, and responsive forensic science service to all members of the criminal justice community in Delaware.



2024 DFS Organizational Chart. (Note that vacant positions are included in totals.)

Divisional Initiatives, Collaboration, and Information Sharing

Overview

The Division of Forensic Science believes that sharing of data and DFS information adds value to multiple governmental and academic initiatives. Working together across agencies, federal and state governments, and other stakeholder organizations supports the health and safety of the citizens and visitors of Delaware. Currently, DFS participates on two statewide commissions related to child death and overdose death, two CDC funded projects, the Delaware Drug Monitoring Initiative, and several other forensic data driven projects with both our public health and law enforcement partners.

To forward the mission, the Division is continuously working on a comprehensive reporting system aimed at producing standardized information to key government and private sector stakeholders statewide. This work is identified as the Delaware Forensic Science Reporting Project (DFSRP).

National Violent Death Reporting System

Created by the Centers for Disease Control and Prevention (CDC) in 2002, the National Violent Death Reporting System captures extensive information about incidents, such as death certificates, mental health history, life stressors, job information, weapons used, victims and suspects, incident location, and other characteristics, to provide a clearer understanding of violent deaths. This surveillance system, implemented in all 50 states, the District of Columbia, and Puerto Rico, links the "who, when, where and how" to inform decision makers and develop prevention efforts to reduce violent deaths in our communities.

DFS remains a key partner in the National Violent Death Reporting System (NVDRS) and the Delaware violent Death Reporting System (DVDRS) by providing autopsy and toxicology information on homicide and suicide deaths in Delaware. This work requires abstractors to collect key data from the DFS for the purposes of supporting effective prevention strategies to reduce violent deaths in Delaware.

Centers for Disease Control Biorepository Program

Funded by the National Institutes of Health (NIH) and the Centers for Disease Control and Prevention (CDC), The Sudden Death in the Young Case Registry (SDY) gathers information to learn about sudden death in children and find ways to prevent future fatalities. Delaware is one of 13 participating states in the project and collaborates with the staff of the Child Death Review Commission to identify causes of sudden death in our Delaware Children. A DNA sample is collected by the Medical Examiner Unit and the genetic information is used by researchers to identify causes of death in the hopes of preventing similar deaths in the future, as well as provide valuable information for the health and well-being of surviving siblings.

Delaware Drug Monitoring Initiative

The Division of Forensic Science collaborates with the Office of Emergency Medical Services (OEMS), the Delaware Information & Analysis Center (DIAC) and the Division of Substance Abuse and Mental Health (DSAMH) to produce a report that is being distributed quarterly to stakeholders both statewide and federally.

The Delaware Drug Monitoring Initiative (DMI) utilizes data derived from the DFS, Delaware Emergency Medical Reporting System (DEMRS), Delaware Information and Analysis Center (DIAC), and the Delaware Division of Substance Abuse and Mental Health (DSAMH) to be used for situational awareness. The purpose of this initiative is to share consistent, actionable information to address the issues related to the drug epidemic affecting Delaware. The data provided in this report is aimed at assisting multiple agencies across Delaware in an effort to identify those in jeopardy of addiction and/or

overdose. These efforts will help inform both law enforcement and public health officials as they work to identify additional treatment needs or programs. While all the data is housed under the respective agencies, the DMI report is created collaboratively within the DIAC for broader reach to key stakeholders. This work has opened the door for collaborative reporting statewide.

Disaster Preparation

The statewide Mass Fatality Plan is an ongoing effort in collaboration with the Division of Public Health to be prepared for a disaster. The Division of Forensic Science continues to participate in table-top disaster drills and on-scene disaster drills. The purpose of these exercises is to identify areas of strength and weakness, and to test the Mass Fatality Plan before the occurrence of a state disaster. As part of this work, DFS has developed internal Critical Incident Standard Operating Guidelines (SOG). These guidelines provide DFS staff with a framework for emergency operations that falls within the scope of other statewide disaster plans.

The second step of disaster preparation is the development of a statewide Family Assistance Center (FAC) plan. This plan is being modeled after the National Transportation & Safety Board efforts to promote a centralized location for multiple agencies to assist families during a disaster.

Overall Reporting & Collaboration

Data collected by the DFS is used in collaboration with other agencies such as Department of Health and Social Services, the Division of Public Health, the Division of Substance Abuse and Mental Health (DSAMH) the Department of Justice, DIAC, and other law enforcement organizations to promote the health and safety of the citizens of Delaware. In 2024, the DFS continued to expand its data sharing capacity by providing information regarding dangerous fentalogues and additives such as xylazine, nitazine, and medetomidine.

The Division has also increased our academic interface with the Delaware academic community by opening our doors to tours, promoting forensic job shadow programs, and participating in quality data collection and research. The Division firmly believes these efforts will promote interest in forensic science disciplines among Delaware students and lead to stronger information sharing projects.

Overall, these external relationships have two goals: to educate stakeholders and collaborators on the principles and processes of the DFS, and to establish the Division as a key contributor across state agencies for the development of policies and initiatives to safeguard the health and safety of all Delawareans.

Community Engagement

One of the goals of the Division is to engage community partners by providing informational resources and encouraging scientific learning. Community outreach this year included lectures and tours given to both college and high school level students, including Odyssey Charter, Newark Charter, Salem Community College, and Delaware State University. Job shadow opportunities across all of the units at the DFS continue to be offered to college level students, resulting in 27 successful opportunities in 2024. The professional staff of the Division of Forensic Science is committed to promoting scientific knowledge and community collaborations.

Assessment, Accreditation, and Quality Assurance

Accreditation is a key component of the quality assurance program at the DFS. To be accredited means that the various units within the DFS are routinely inspected by outside organizations who ensure that the policies, procedures, and/or practices within the Division adhere to strict national or international standards. Standards followed by the DFS include those set forth by the International Organization for Standardization (ISO), the American National Standards Institute National Accreditation Board (ANAB), the American Board of Forensic Toxicology (ABFT), the National Association of Medical Examiners (NAME), and the Quality Assurance Standards (QAS) established by the Federal Bureau of Investigation (FBI).

ISO 17025:2017 Accreditation

The International Organization for Standardization is the world's largest developer and publisher of international standards. Laboratories use ISO 17025 to implement a quality system aimed at improving their ability to consistently produce valid results. Since the standard is about competence, accreditation is a formal recognition of the demonstration of that competence.

The DFS was originally ISO 17025 accredited in 2004 and has continually achieved the highest level of quality standard competency for testing with annual re-accreditation. The current ISO 17025 accreditation was provided by ANAB, which also publishes additional standards that must be adhered to for accreditation, and the DFS remains in good standing.

American Board of Forensic Toxicology Accreditation

ABFT is dedicated to enhancing and maintaining standards of practice in the field of forensic toxicology.

The toxicology laboratory at the DFS is accredited to the ABFT standards, provided by ANAB and the DFS remains in good standing.

National Association of Medical Examiners Accreditation

The purpose of the NAME accreditation standards is to improve the quality of the medicolegal investigation of deaths in this country. NAME accreditation is an endorsement by NAME that the Division provides an adequate environment for medical examiners to practice their profession and offers reasonable assurances that the ME office serves its jurisdiction well.

The DFS has been NAME accredited since 1980 and continues to be in good standing with this organization.

FBI Quality Assurance Standards

The FBI's Quality Assurance Standards (FBI QAS) describe the requirements that laboratories performing forensic DNA testing or utilizing the Combined DNA Index System (CODIS) shall follow to ensure the quality and integrity of the data generated by the laboratory. The DFS has been compliant with the FBI QAS since 1997.

Medical Examiner Unit

Overview

The duties of death investigation for the State of Delaware fall to the Medical Examiner Unit (MEU), led by the Chief Medical Examiner (ME), Assistant MEs, Forensic Morgue Assistants, and Forensic Investigators. This Unit is responsible for investigating all suspicious and violent deaths in the State and performs postmortem examinations on cases that fall under its jurisdiction. The Unit operates out of three locations: the main office in Wilmington, the Tobin Building on the Stockley campus in Georgetown, and a satellite office in Dover (Kent County).

In 2024 the MEU investigated 3479 deaths, which is a 0.9% decrease in deaths investigated when compared with 2023. In 2024, the MEU accepted jurisdiction for and certified 1479 (42%) of the deaths investigated. The deaths certified by the MEU represents 13.79% of all deaths registered in the State of Delaware. In 2024, the deaths from drug intoxication saw a decline from the previous year. The accidental deaths from drug intoxication decreased by 35.9% from 527 deaths in 2023 to 338 deaths in 2024.

	2020	2021	2022	2023	2024
Autopsies	760	920	878	940	811
Inspections	331	374	412	327	313
Total Examinations	**1091**	**1294**	**1290**	**1267**	**1124**
Inquiries*	504	485	470	435	355
Total Deaths Certified	**1595**	**1779**	**1760**	**1702**	**1479**
Non-Jurisdiction Investigations*	1606	1661	1874	1808	2000
Total Medical Death Investigations	**3201**	**3440**	**3634**	**3510**	**3479**
In Custody Deaths				27	23

*Note that inquiries are cases under the ME jurisdiction which did not require an examination and non-jurisdiction cases are investigated but determined not to be under ME jurisdiction.

The MEU reviews and approves all requests for cremations for decedents expiring in the State. In 2024, The MEU reviewed 4644 requests for cremation in 2024 for decedents that were not investigated by the medical examiner.

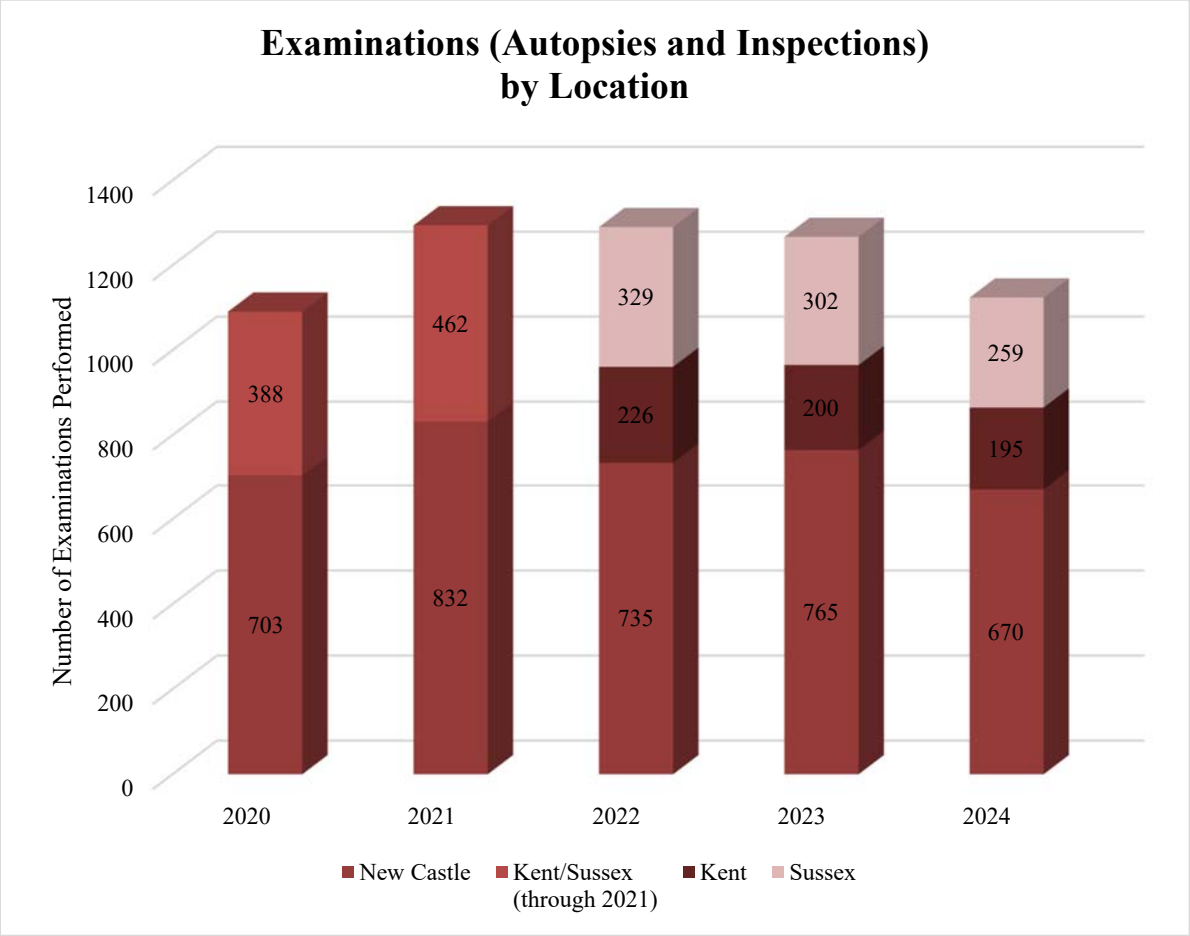
The Medical Examiner collaborates with the Gift of Life Organ Donor Program to approve organ and tissue donations in Delaware. In 2024 the DFS-MEU approved donations from 296 organs and tissue donations. Organs procured included heart, liver, kidneys, lungs, and pancreas. Tissues procured included cornea, skin, long bones, heart valves, and veins.

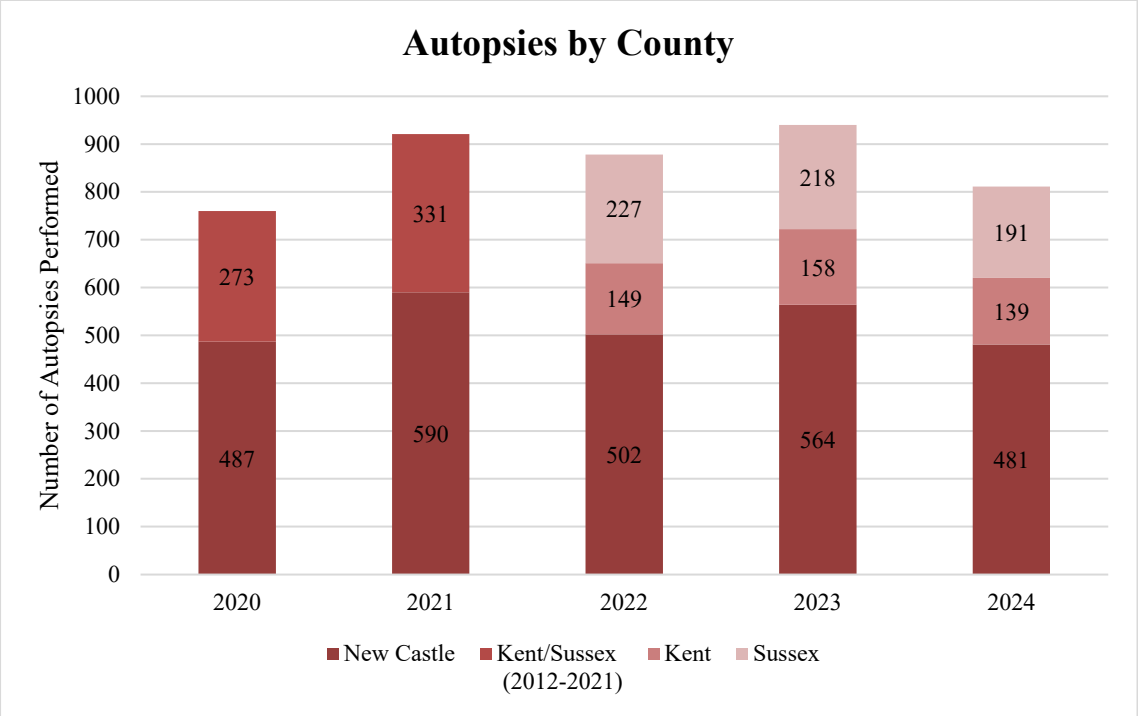
Partners

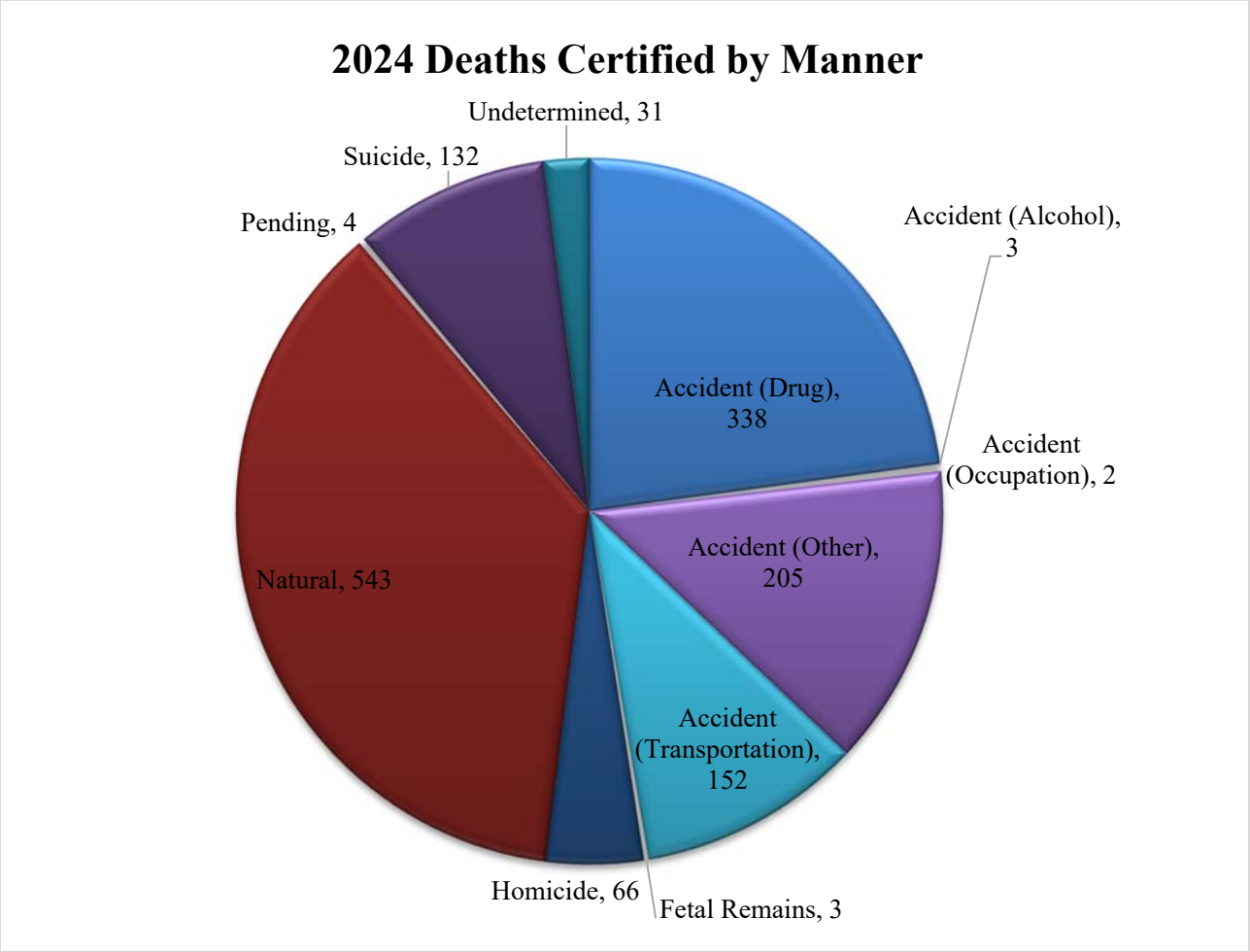
The MEU would not be able to accomplish our mission without the support of the Department of Safety and Homeland Security and the Delaware General Assembly. In addition, it is important to note the many agencies who assist in providing services to the MEU. These agencies include Delaware law enforcement agencies, the Attorney General's Office, Fleet Services, Office of the Child Advocate, the staff of all our Delaware hospitals, the Delaware Funeral Directors Association, the Gift of Life Donor Program, the Office of Vital Statistics, and all the funeral homes and health care practices that work with the Division. The MEU and Division values our relationships with all these agencies.

Data

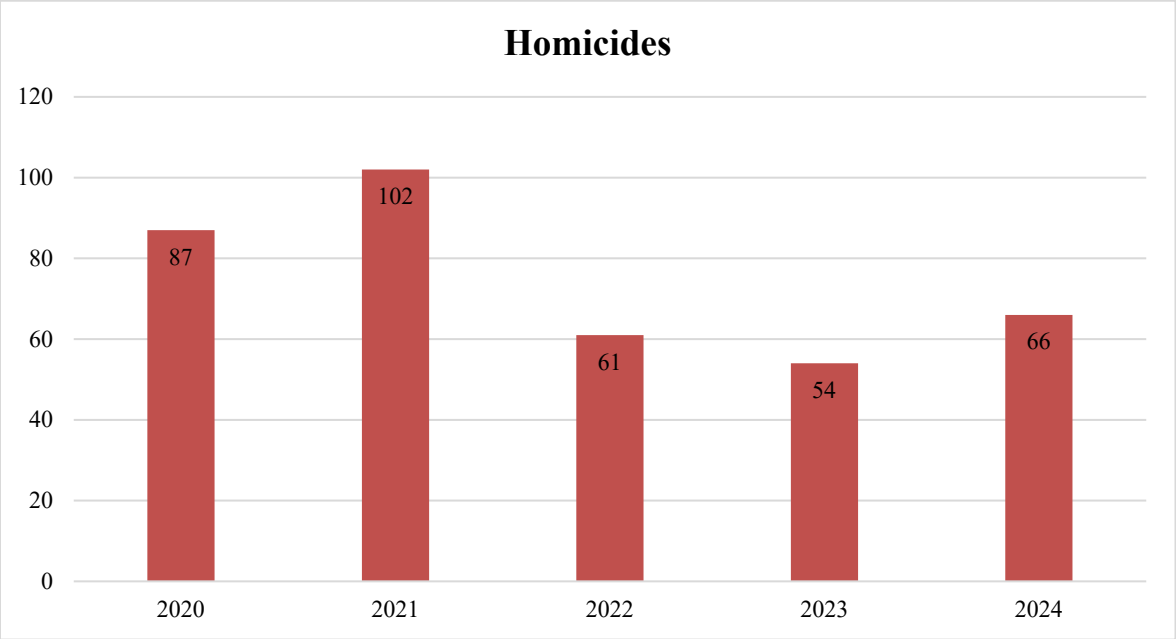
Cases Reviewed

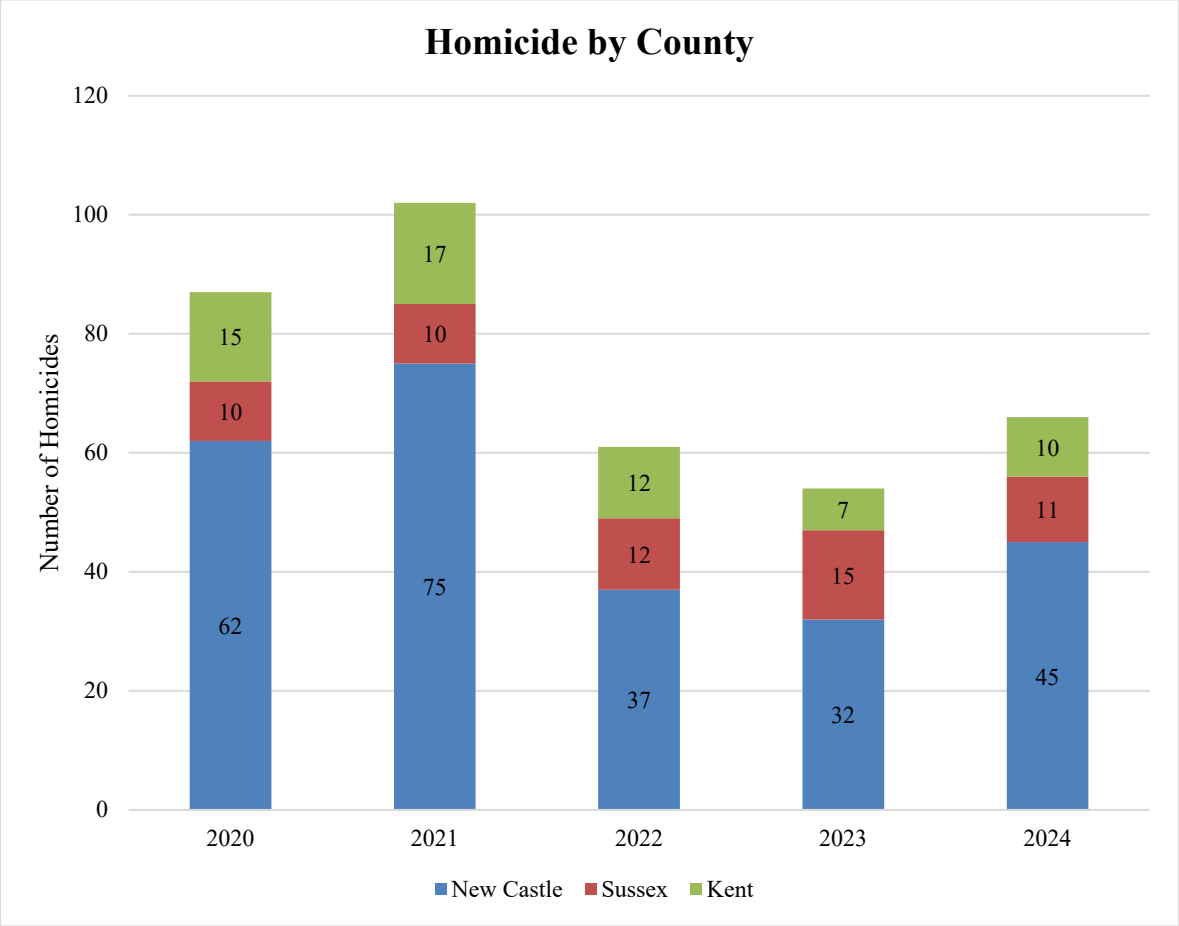


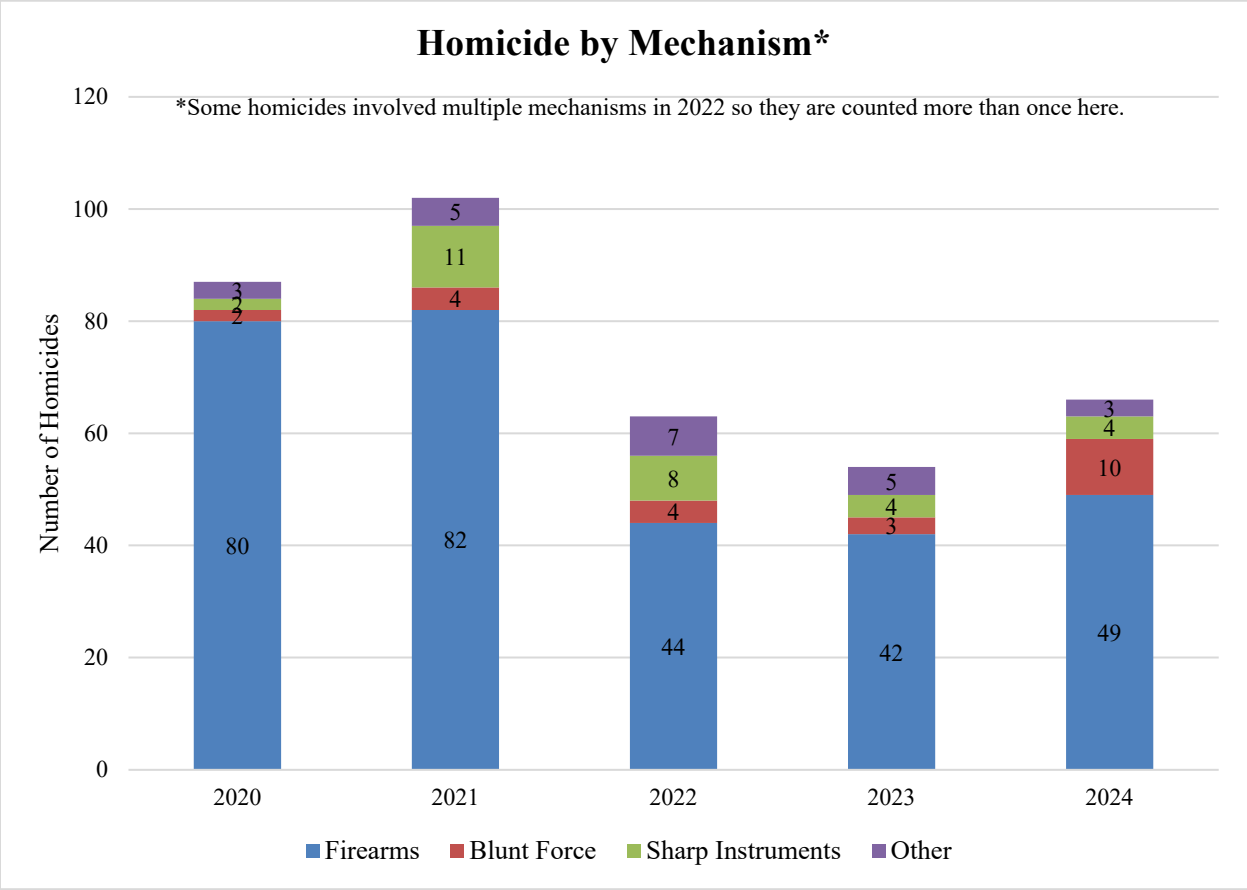

Autopsies by County
Number of Autopsies Performed
1000
900
800
700
600
500
400
300
200
100
0
2020
2021
2022
2023
2024
273
487
331
590
227
149
502
218
158
564
191
139
481
New Castle
Kent/Sussex (2012-2021)
Kent
Sussex

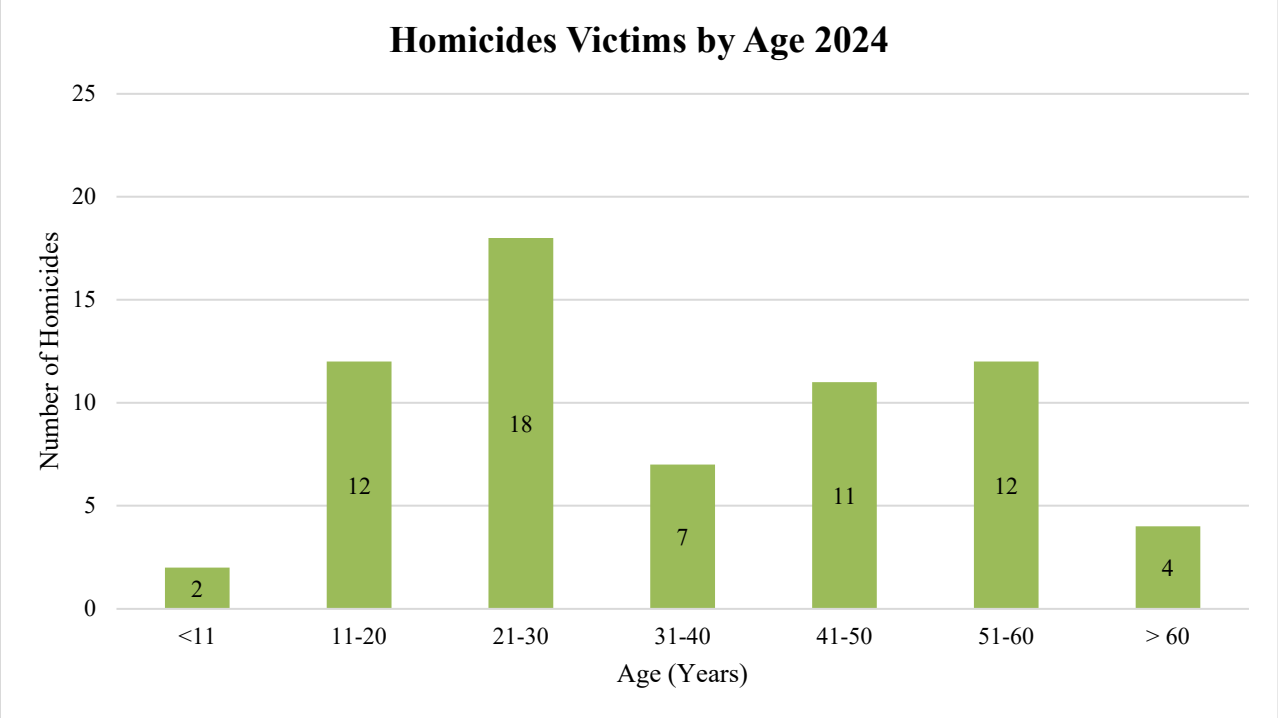

2024 Deaths Certified by Manner
Undetermined, 31
Suicide, 132
Pending, 4
Accident (Alcohol), 3
Accident (Drug), 338
Accident (Occupation), 2
Accident (Other), 205
Natural, 543
Accident (Transportation), 152
Homicide, 66
Fetal Remains, 3

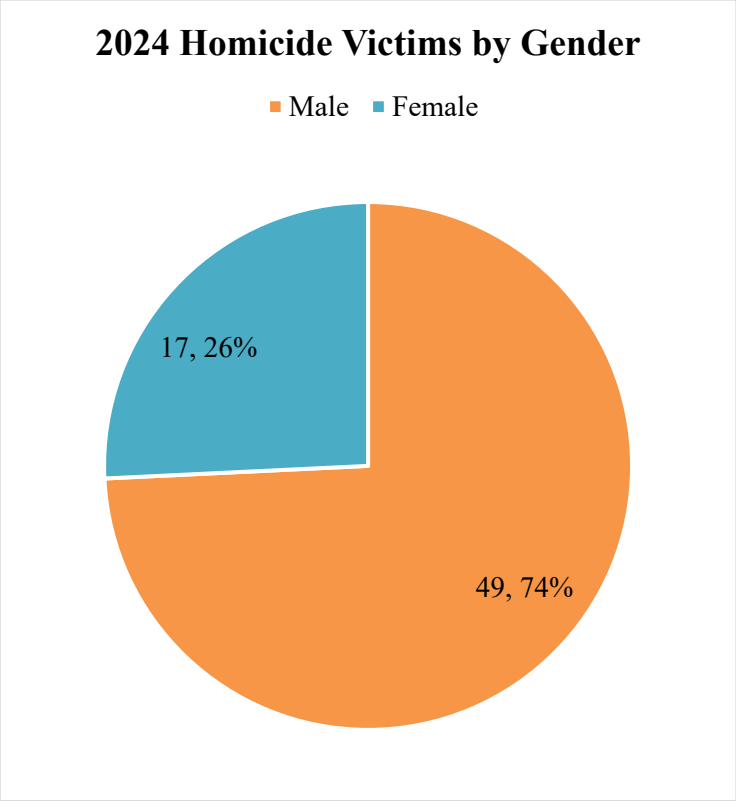
Homicides

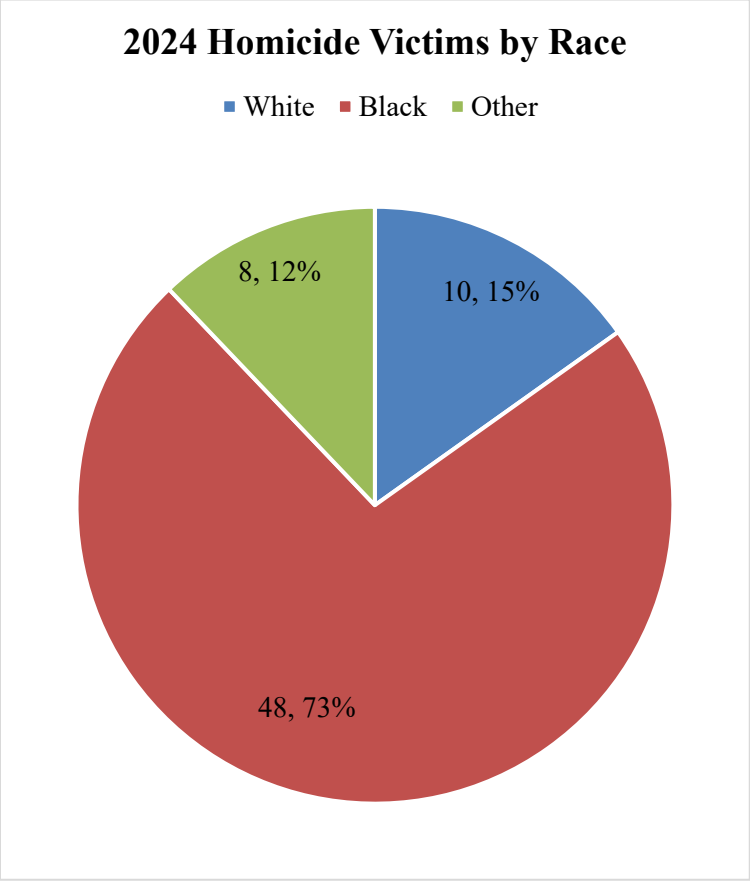

Homicides
120
100
80
60
40
20
0
87
102
61
54
66
2020
2021
2022
2023
2024


Homicide by County
Number of Homicides
120
100
80
60
40
20
0
15
10
62
17
10
75
12
12
37
7
15
32
10
11
45
2020
2021
2022
2023
2024
New Castle
Sussex
Kent

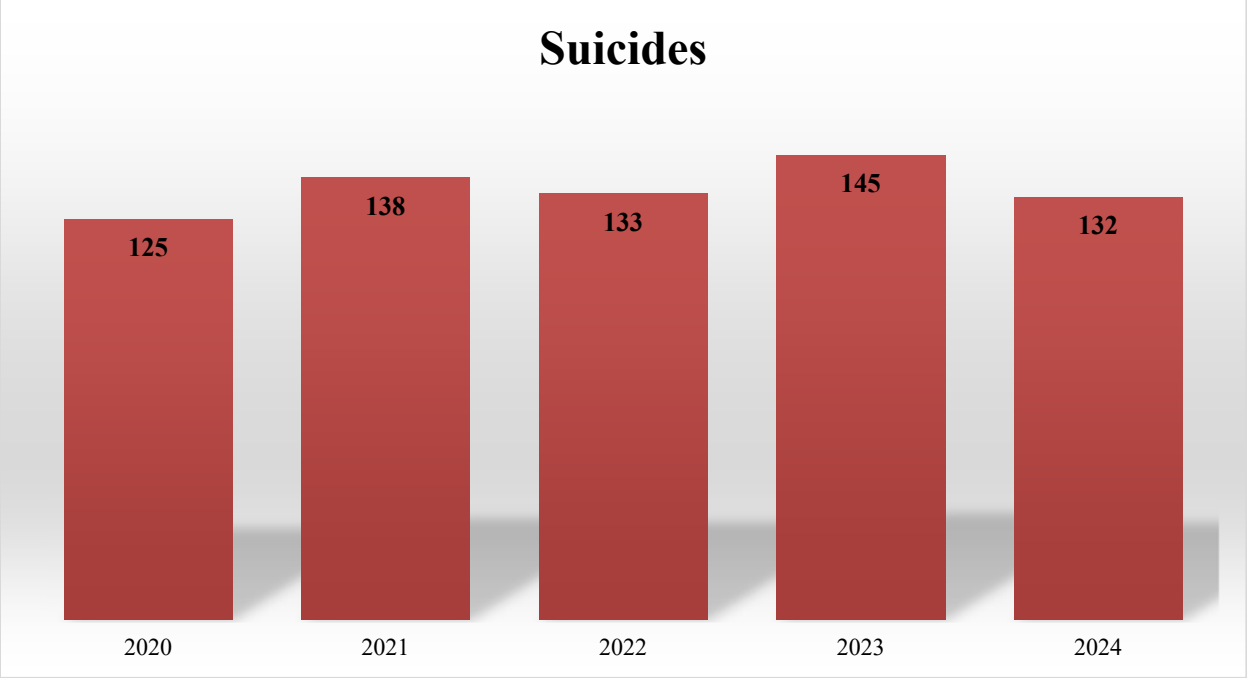

Homicide by Mechanism*
*Some homicides involved multiple mechanisms in 2022 so they are counted more than once here.
Number of Homicides
120
100
80
60
40
20
0
2020
2021
2022
2023
2024
80
2
3
82
4
11
5
44
4
8
7
42
3
4
5
49
10
4
3
Firearms
Blunt Force
Sharp Instruments
Other

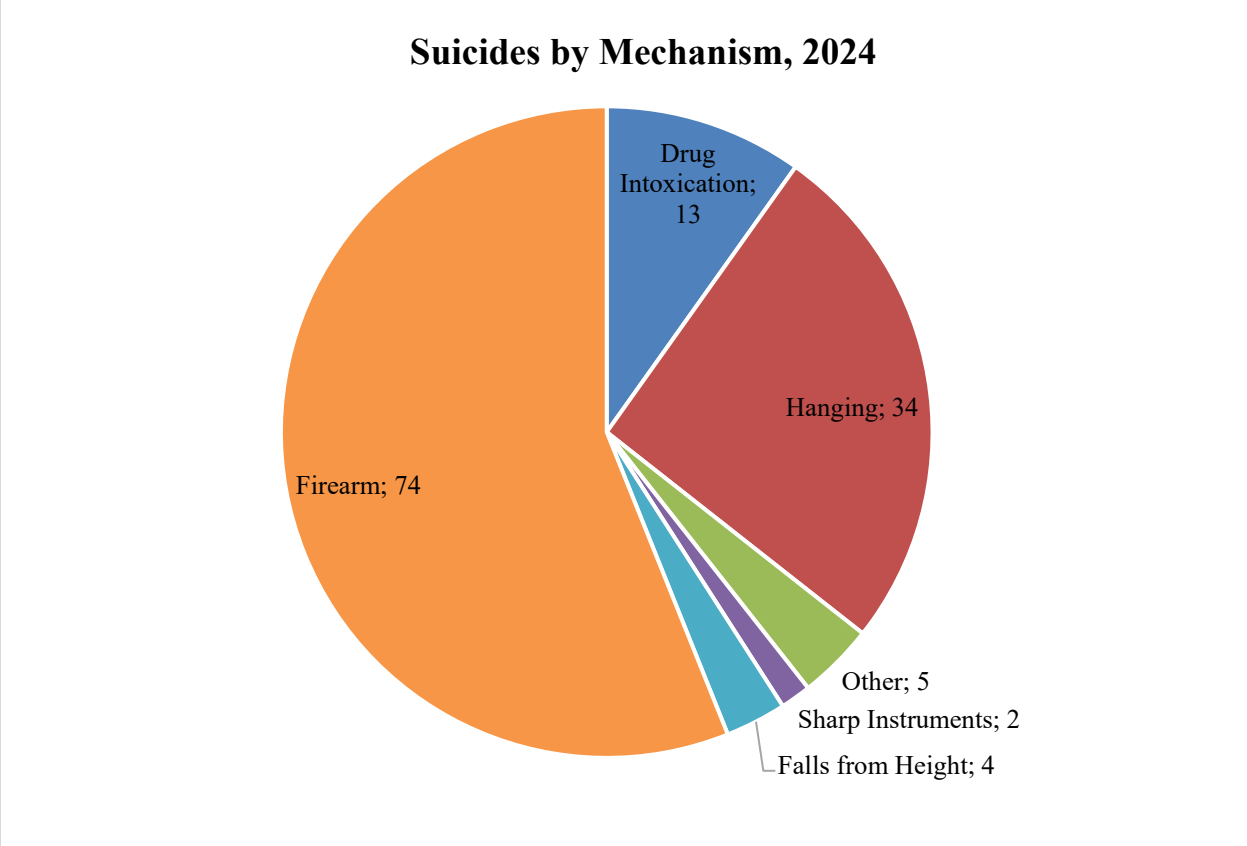

Homicides Victims by Age 2024
Number of Homicides
25
20
15
10
5
0
<11
11-20
21-30
31-40
41-50
51-60
> 60
Age (Years)
2
12
18
7
11
12
4


2024 Homicide Victims by Gender
Male
Female
17, 26%
49, 74%

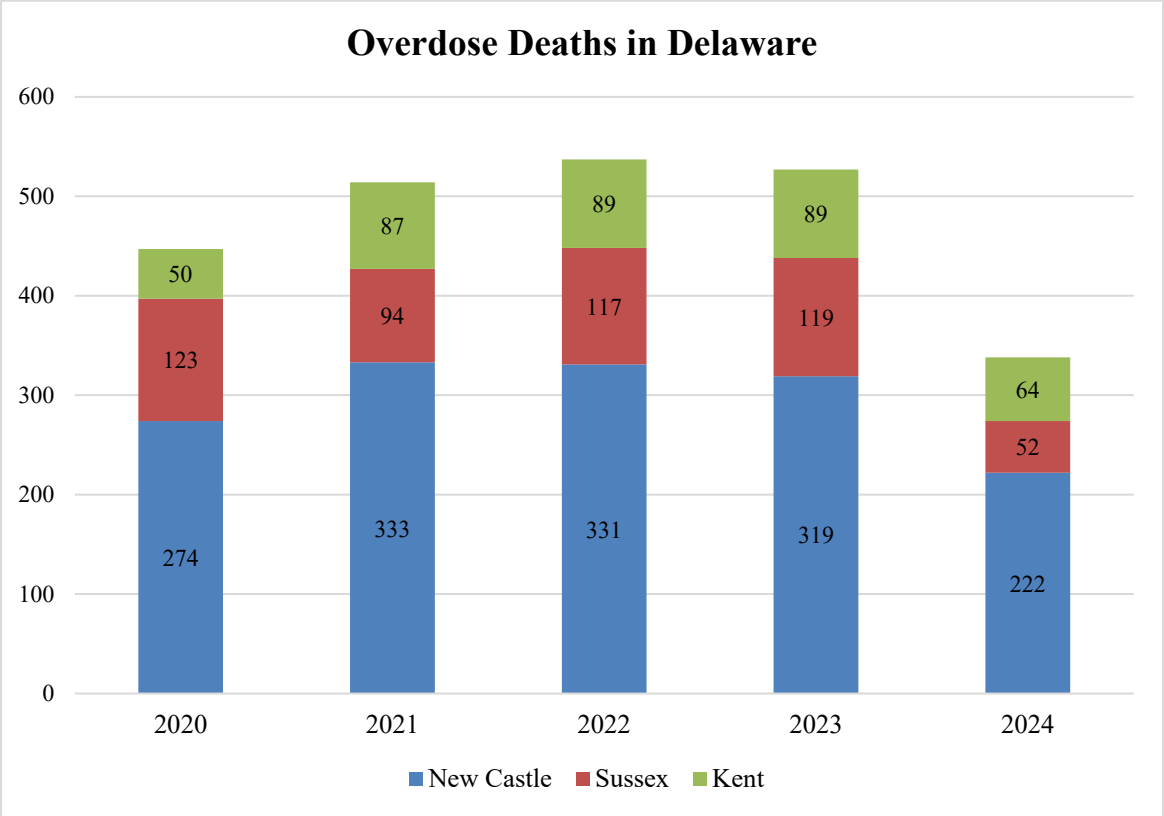

2024 Homicide Victims by Race
White
Black
Other
8, 12%
10, 15%
48, 73%

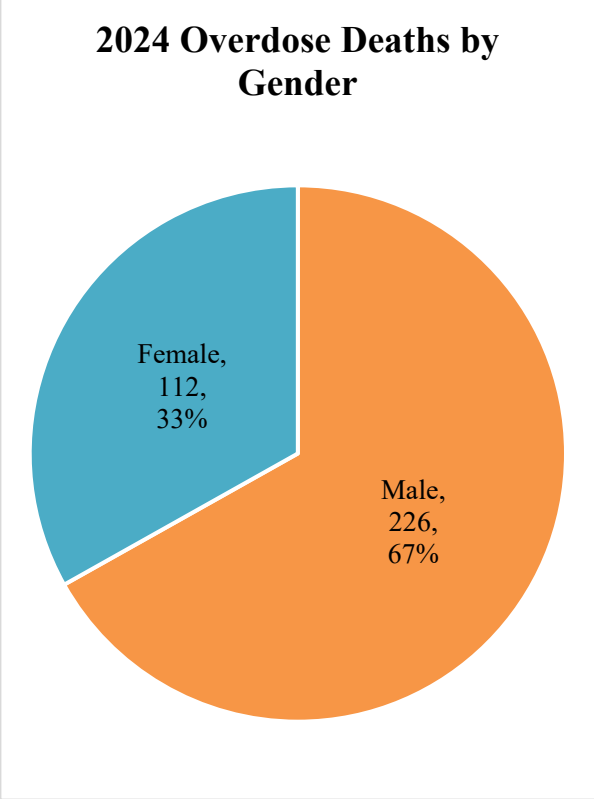
Suicides

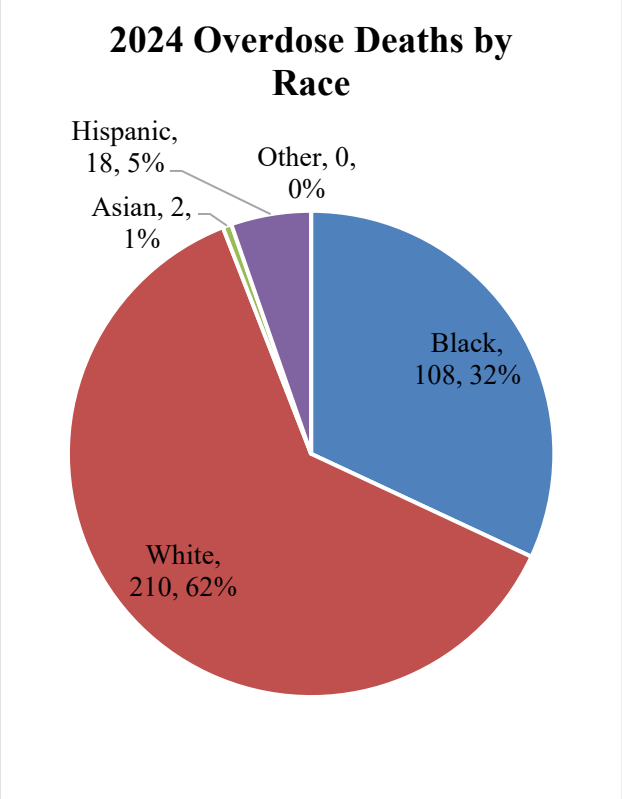

Suicides
125
138
133
145
132
2020
2021
2022
2023
2024

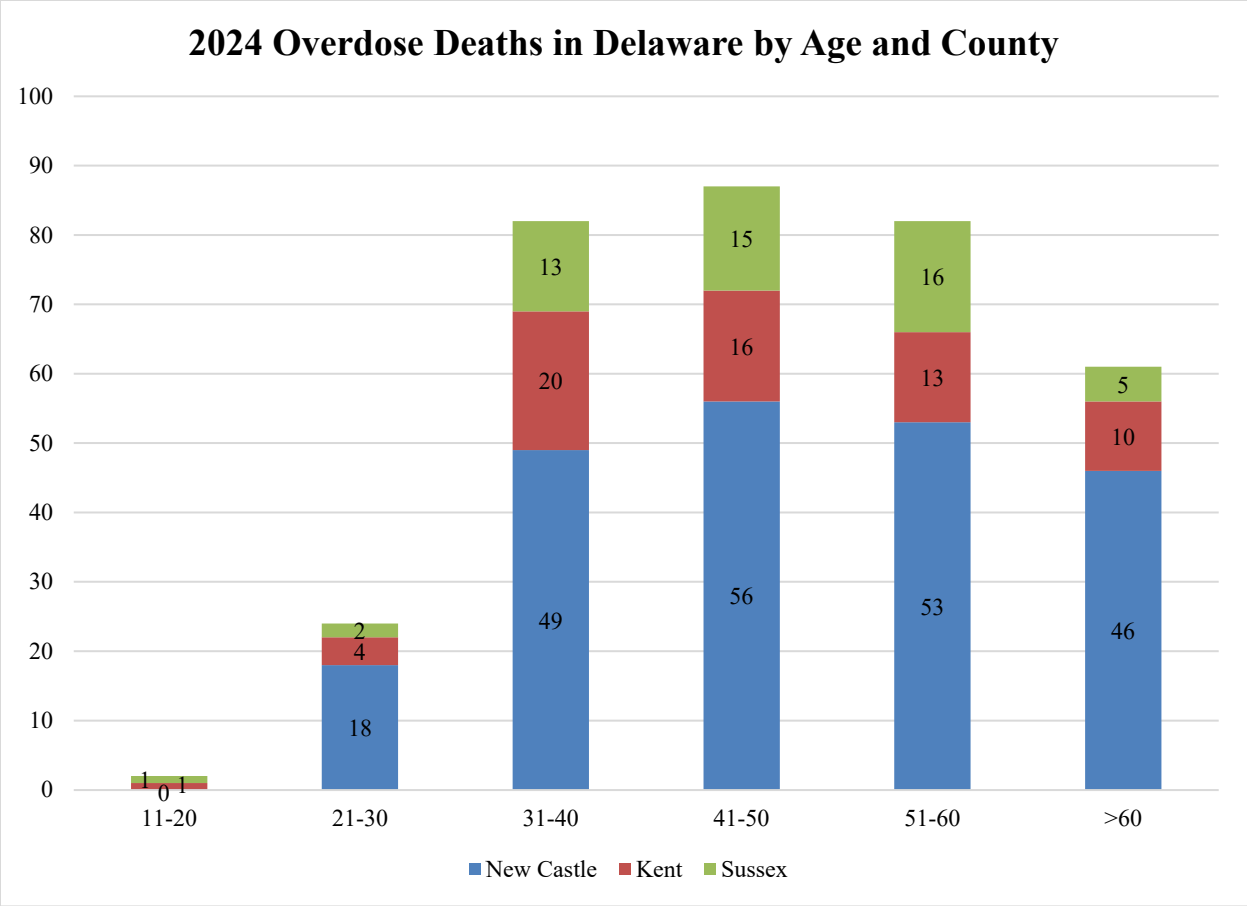

Suicides by Mechanism, 2024
Drug Intoxication; 13
Hanging; 34
Firearm; 74
Other; 5
Sharp Instruments; 2
Falls from Height; 4

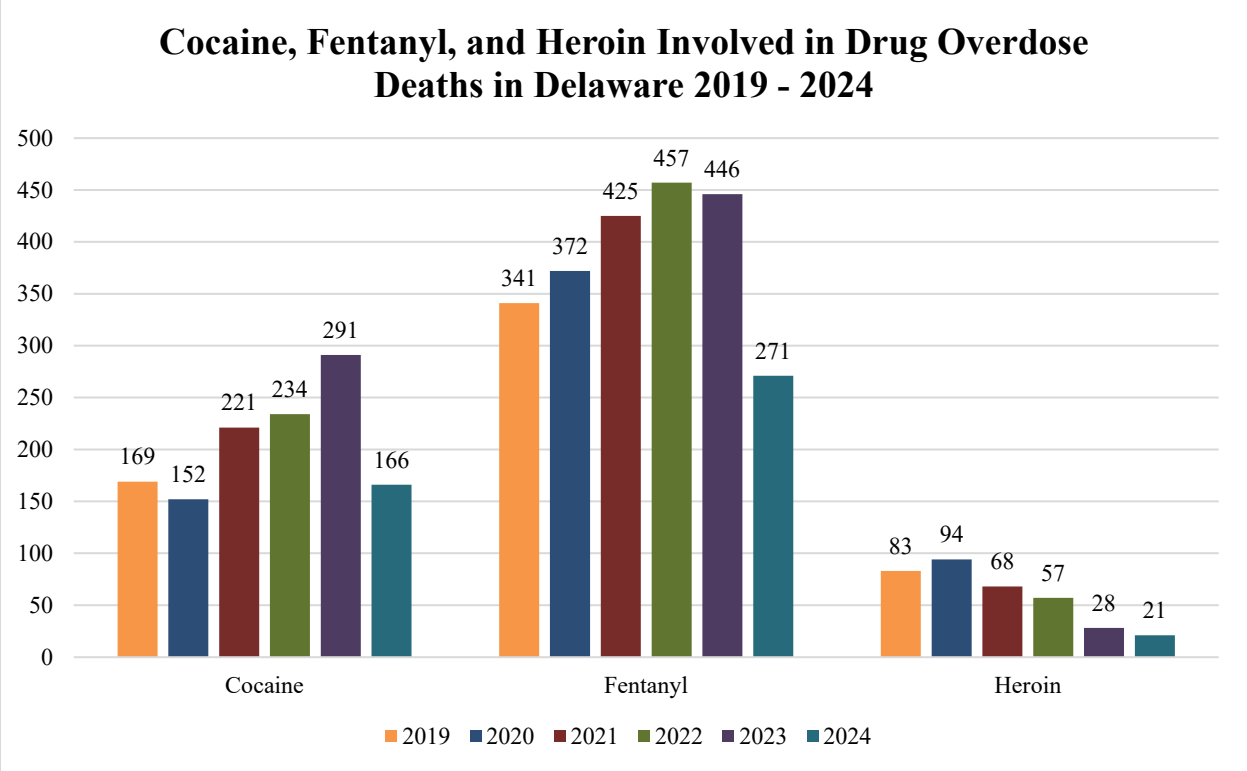
Drug Overdose Deaths

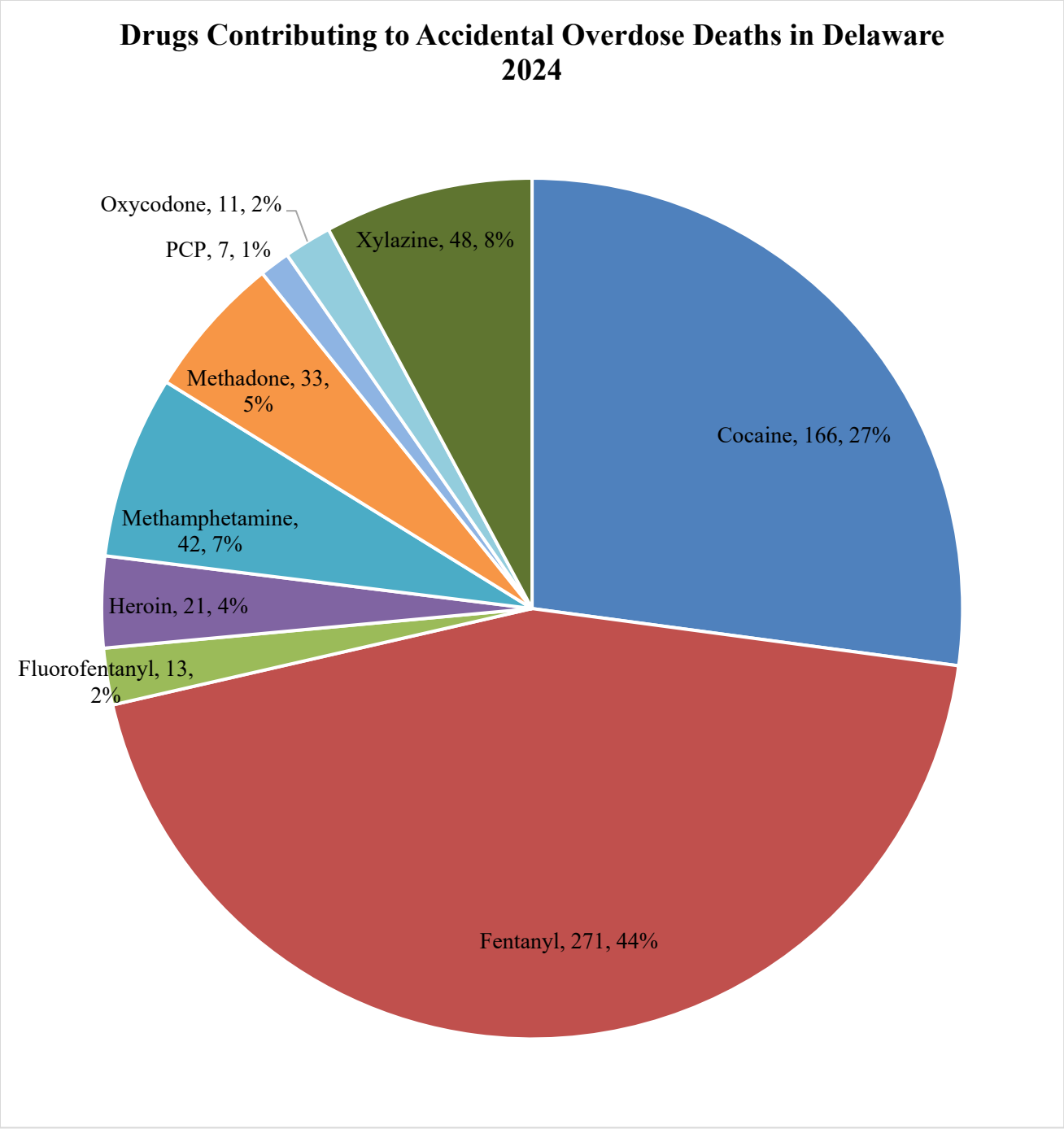







2024 Overdose Deaths in Delaware by Age and County
100
90
80
70
60
50
40
30
20
10
0
1
0
1
2
4
18
13
20
49
15
16
56
16
13
53
5
10
46
11-20
21-30
31-40
41-50
51-60
>60
New Castle
Kent
Sussex


Cocaine, Fentanyl, and Heroin Involved in Drug Overdose Deaths in Delaware 2019 - 2024
500
450
400
350
300
250
200
150
100
50
0
169
152
221
234
291
166
341
372
425
457
446
271
83
94
68
57
28
21
Cocaine
Fentanyl
Heroin
2019
2020
2021
2022
2023
2024


Drugs Contributing to Accidental Overdose Deaths in Delaware 2024
Oxycodone, 11, 2%
PCP, 7, 1%
Xylazine, 48, 8%
Methadone, 33, 5%
Cocaine, 166, 27%
Methamphetamine, 42, 7%
Heroin, 21, 4%
Fluorofentanyl, 13, 2%
Fentanyl, 271, 44%

Toxicology

Overview

The Toxicology (Tox) Unit of the State of Delaware Division of Forensic Science handles both postmortem and Driving Under the Influence (DUI)/Other cases. The unit is comprised of a team of 11: the Chief Forensic Toxicologist, the Casework Laboratory Manager I, the Research Laboratory Manager I, seven Analytical Chemists (three for casework and four for research), and one Laboratory Technician.

Most cases (including all DUIs) begin with a preliminary ELISA (Enzyme-linked Immunosorbent Assay) Drug Screen, which tests qualitatively for the following 19 drugs/drug classes: Amphetamine, Methamphetamine, Opiates, Phencyclidine, Buprenorphine, Methadone, Benzodiazepines, Cocaine, Barbiturates, Cannabinoids, Oxycodone, Fentanyl, Carisoprodol, Diphenhydramine, Ketamine, Meperidine, Tramadol, Zolpidem, and Xylazine[1]. Positives from this screen are entered for additional confirmatory testing. A Special Testing ELISA panel is also available, which includes Acetaminophen and Salicylates.

The Toxicology Unit has five confirmatory procedures for the following drugs/drug classes (and their metabolites), which provide quantitation (concentrations or amounts of drugs): Amphetamine-type Stimulant and Bupropion (AMP); Antidepressant, Antihistamine, and Cyclobenzaprine (ADP); Benzodiazepine, Z-drug, and Quetiapine (BENZ); Cannabinoid (THC); and Multidrug Panel 1 (1MP). All confirmatory procedures utilize Liquid Chromatography-tandem Mass Spectrometry (LC-MS/MS) except the THC method, which uses Gas Chromatography-Mass Spectrometry (GC-MS).

In addition to the ELISA Drug Screen, the Toxicology Unit has two confirmatory (but qualitative) drug screens. The Alkaline Drug Screen (ALKDS) procedure covers approximately 200 different compounds, and the Acidic/Neutral Drug Screen (ANDS) covers another approximately 20 compounds. Alcohol/Volatiles Analysis (VOL) using Headspace Gas Chromatography with Flame Ionization Detection (GC-FID) is another routine procedure used by the unit. In addition to ethanol, this procedure provides quantitation of acetone, isopropanol, and methanol and qualitative identification of acetaldehyde and 1,1-difluoroethane.

[1] Note that this addition to the ELISA screen was implemented with all cases received as of 10/01/24, as will be detailed later.

Staffing and Accreditation

The Toxicology Unit had one resignation in 2024 (an Analytical Chemist III in June). This vacancy was filled at the very end of December.

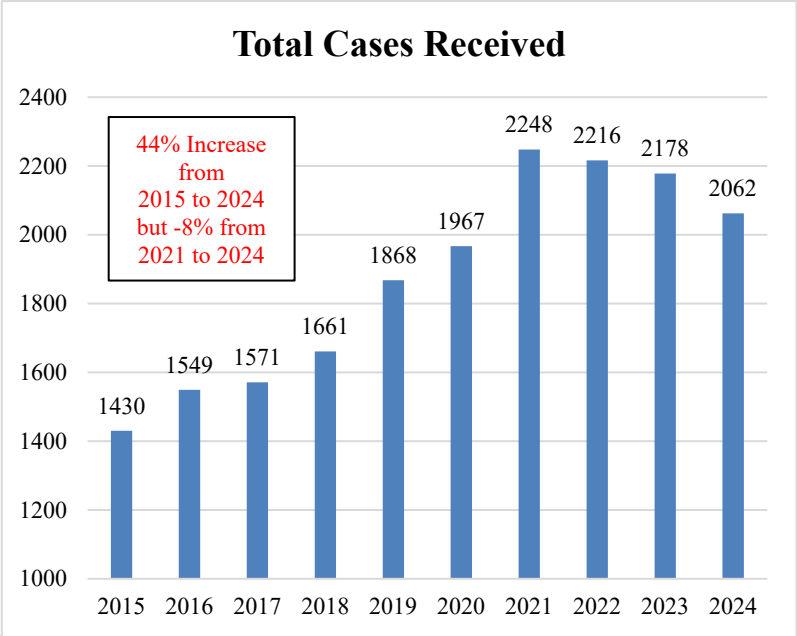
The Tox Unit is an accredited laboratory—both to the standards set by ISO/IEC 17025:2017 and to those by the American Board of Forensic Toxicology (ABFT). The unit had a surveillance assessment in Spring 2024 and maintained its laboratory accreditation requirements.

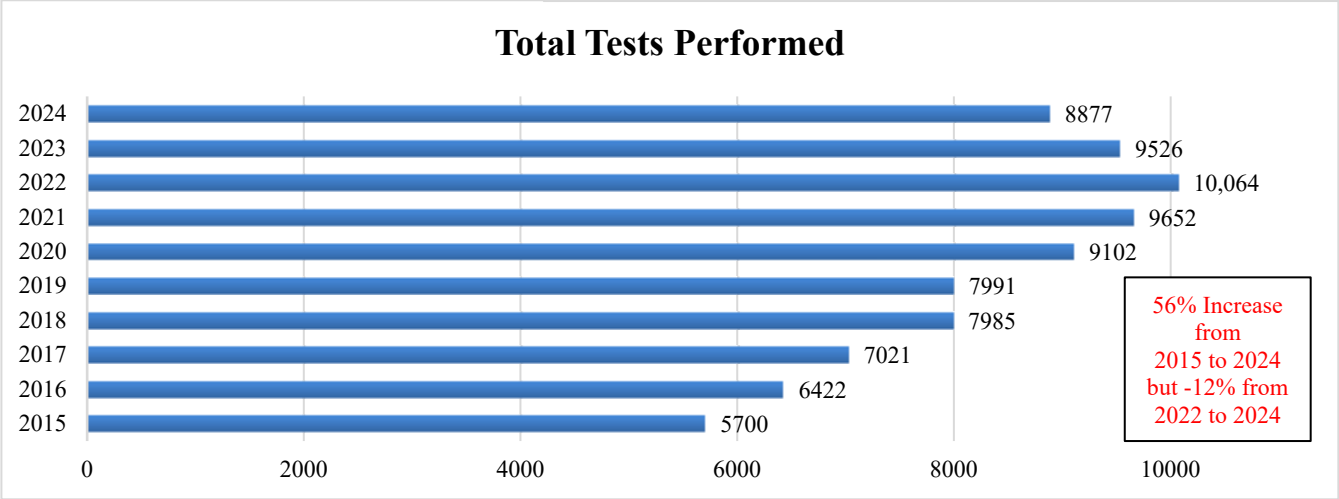
Data

The below statistics have been hand-gathered and hand-tallied.

Total Cases Received and Total Tests Performed

In 2024, the Toxicology Unit received **1017 DUI/Other cases** and **1045 postmortem cases**[2] for testing. This equated to **2062 total cases received** and **8877 total tests run in 2024**. This bar graph shows how the number of cases has increased **44% over the past ten years, although the past three years have seen declines compared to 2021**.





[2] Note that this total does not include an additional 115 cases that were received by the Tox Unit as "Save Only" cases and for which no testing was completed.

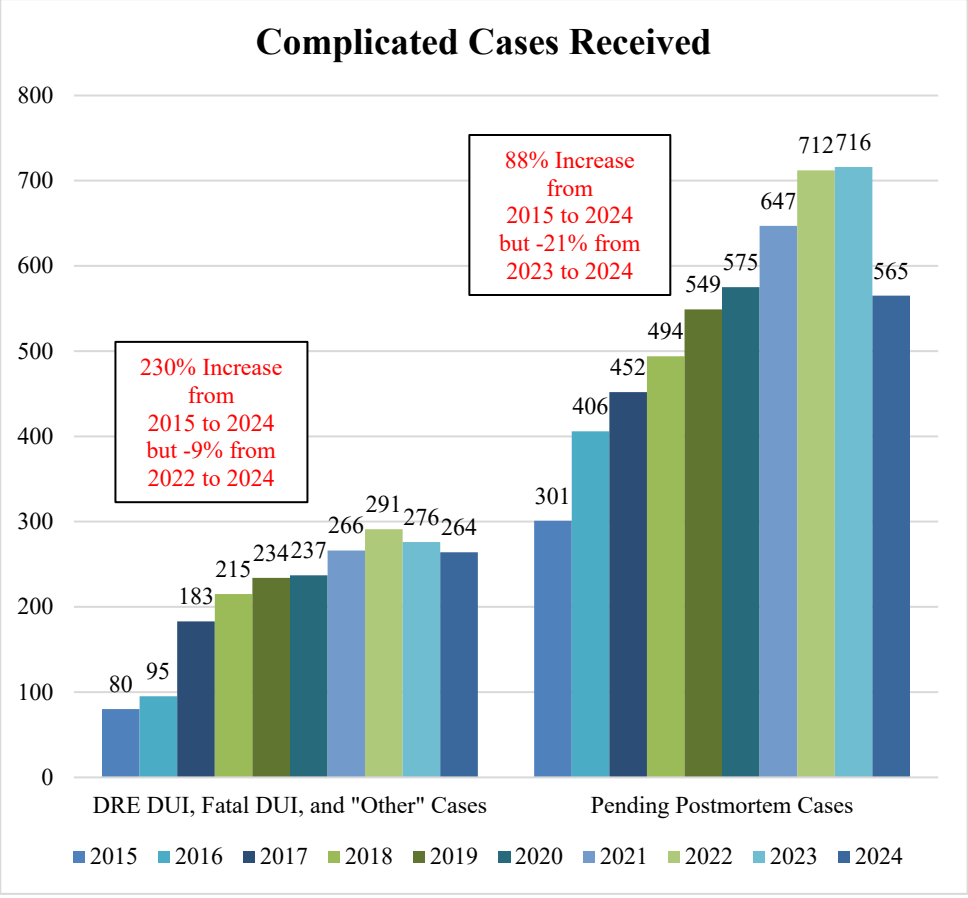
Because each case may have multiple samples and/or require more than one test, and because the unit also runs 38 proficiency test samples each year (as well as verifications and sometimes repeat samples), the number of tests performed far exceeds the number of cases received each year. In 2024, there were 8877 tests performed in the Tox Unit—a **56% increase since 2015** (when 5700 tests were performed). However, the number of tests are **-12% compared to 2022**, showing that the 1MP panel, which was implemented in September 2023, is working as planned to decrease the number of extractions at the bench.

While the number of cases and tests have decreased from 2023 to 2024, the Tox Unit's scope (and number of drugs they are testing for) have majorly increased. Thus, even if we are signing out fewer reports/cases, they are taking significantly longer because way more data must be reviewed. For example, the 1MP method covers 69 compounds; prior to this method, the largest quantitative method had just 28 compounds, and 1MP is the panel that runs the most often. Despite this more complex testing and losing their most senior Analytical Chemist in June, the Tox Unit managed to keep turnaround times at acceptable levels.

Complicated Cases Received

DRE DUI, Fatal DUI, and "Other" Cases

To really get a handle on the amount of work being done in the unit, one needs to examine the number and type of tests that are being completed. DUI cases received from Drug Recognition Experts (DREs), for example, generally require significantly more testing than non-DRE cases. The same is true for fatal and "Other" cases such as inquiries into child death or



endangerment (including children who have died while caregivers were drug-impaired and children consuming drugs themselves). As the chart shows, the number of DRE, Fatal, and "Other" cases are **up 230% since 2015, although again, there have been decreases these past two years**.

Pending Postmortem Cases

Similarly, different types of postmortem cases require varying amounts of time to complete. Pending cases, so named because the cause and/or manner of death is/are pending further investigation (and which include suspected drug deaths), comprised **54% of the postmortem cases received in 2024**. These pending cases often require multiple tests, including time-consuming ALKDS procedures and/or advanced quantitative confirmations. The Tox Unit often receives hospital samples from drug overdose deaths for complete testing. The number of postmortem pending cases is **up 88% compared to 2015, but there was a significant drop of -21% from 2023 to 2024**.

ELISA Drug Screening Data

The below tables display the ELISA Drug Screen results to show the number of positives for each drug/drug class for all cases as percentages of the total cases received. It is important to note that this is screening data, so these are strictly preliminary/presumptive results.

Of the DUI/Other cases received in 2024, 49.8% screened positive for cannabinoids (marijuana), and 34.5% screened positive for fentanyl. Cannabinoids have remained at the top for the past five years, as shown in the below table. It is encouraging to see that the percentage of cases screening positive for fentanyl dropped again for the fourth straight year. Cocaine and benzodiazepines have been the next top two categories for the past four years. Xylazine was added to this screen, effective for all cases received 10/01/24 and onward. As shown, 13.5% of the DUI/Other cases tested for xylazine screened positive.

DUI/Other Cases:

Drug/Drug Class (Cross-Reactives) on ELISA	Percentage of DUI/Other Cases that Screened Positive				
Result	**2024**	**2023**	**2022**	**2021**	**2020**
Cannabinoids	49.8%	53.5%	55.4%	52.6%	55.3%
Fentanyl	**34.5%**	38.3%	42.0%	44.2%	41.5%
Cocaine	28.5%	30.2%	27.8%	24.1%	20.8%
Benzodiazepine	21.1%	19.9%	21.2%	20.9%	26.3%
Xylazine*	**13.5%**	N/A	N/A	N/A	N/A
None Detected	12.3%	10.4%	8.5%	9.1%	6.4%
Methamphetamine	11.3%	13.3%	14.1%	14.4%	11.8%
Methadone	10.5%	12.4%	11.9%	13.5%	13.2%
Amphetamine	10.1%	11.5%	10.0%	12.8%	12.2%

Drug/Drug Class (Cross-Reactives) on ELISA	Percentage of DUI/Other Cases that Screened Positive				
Result	**2024**	**2023**	**2022**	**2021**	**2020**
Opiate	7.9%	8.9%	16.4%	17.2%	24.5%
Buprenorphine	5.0%	4.8%	3.5%	5.4%	5.4%
Oxycodone	4.2%	3.9%	3.5%	5.2%	6.6%
Diphenhydramine	3.5%	5.6%	6.2%	5.4%	6.3%
Phencyclidine	1.8%	2.0%	3.5%	6.2%	7.7%
Ketamine	1.5%	1.2%	1.3%	0.6%	1.4%
Zolpidem	0.9%	0.9%	1.1%	0.8%	1.1%
Tramadol	0.5%	0.3%	0.7%	0.4%	0.8%
Barbiturate	0.2%	0.7%	0.6%	0.4%	0.2%
Carisoprodol	0.2%	0.1%	0.1%	0.6%	0.5%
Meperidine	0.0%	0.0%	0.0%	0.0%	0.0%

*** Note that this is the percentage for the number of cases tested for xylazine (not received) since this was only effective for the 229 cases tested 10/01/24 and onward.**

The #1 category for postmortem cases was None Detected, and just as was seen with DUI/Other cases, the number of postmortem cases screening positive for fentanyl significantly dropped in 2024 (from 39.3% in 2023 down to 26.8% in 2024). This is the lowest positivity rate that has been seen for fentanyl in the past 7+ years, which is very encouraging. Cannabinoids were actually the second highest category in 2024 at 28.3%. After fentanyl, the next highest percentages, which were all greater than 10%, were as follows: cocaine, diphenhydramine, and amphetamine. The percentage of postmortem cases tested for xylazine that were positive (9.8%) was less than that of DUI/Other cases (13.5%).

Postmortem Cases:

Drug/Drug Class (Cross-Reactives) on ELISA	Percentage of Postmortem Cases that Screened Positive				
Result	**2024**	**2023**	**2022**	**2021**	**2020**
None Detected	28.4%	21.8%	22.4%	27.1%	24.2%
Cannabinoids	28.3%	33.4%	33.4%	31.0%	32.6%
Fentanyl	**26.8%**	39.3%	40.4%	36.5%	39.1%
Cocaine	21.0%	28.9%	25.2%	21.8%	18.2%
Diphenhydramine	15.0%	14.8%	16.6%	17.2%	17.8%
Amphetamine	12.6%	13.6%	15.6%	14.4%	12.7%
Xylazine*	**9.8%**	N/A	N/A	N/A	N/A
Benzodiazepine	9.0%	8.2%	11.8%	10.9%	11.9%
Opiate	7.9%	8.8%	13.7%	15.5%	21.3%
Methamphetamine	7.4%	7.4%	9.1%	8.4%	7.8%
Oxycodone	5.5%	6.6%	5.8%	6.5%	7.4%
Methadone	5.3%	5.8%	4.5%	5.2%	6.2%
Buprenorphine	3.6%	4.4%	4.1%	2.7%	3.7%

Drug/Drug Class (Cross-Reactives) on ELISA	Percentage of Postmortem Cases that Screened Positive				
Result	**2024**	**2023**	**2022**	**2021**	**2020**
Tramadol	1.1%	1.3%	1.0%	1.1%	1.7%
Phencyclidine	1.0%	0.6%	1.0%	0.9%	1.0%
Barbiturate	0.7%	0.7%	0.7%	0.6%	0.8%
Zolpidem	0.7%	0.6%	1.7%	1.3%	1.2%
Ketamine	0.6%	1.4%	1.0%	0.7%	1.1%
Carisoprodol	0.3%	0.2%	0.3%	0.6%	0.3%
Meperidine	0.0%	0.0%	0.0%	0.0%	0.1%

*** Note that this is the percentage for the number of cases tested for xylazine (not received) since this was only effective for the 244 cases tested 10/01/24 and onward.**

Top Ten Reported Compounds from Confirmatory Procedures

The below tables show confirmatory results. The inactive marijuana metabolite, delta-9-carboxy-tetrahydrocannabinol (THC-COOH), was confirmed positive in 38.5% of the DUI/Other cases received, in the #1 spot as the top reported compound from confirmatory procedures in 2024, and the active parent compound of marijuana, delta-9-tetrahydrocannabinol (THC), was confirmed positive in 25.4% of DUI/Other casework, in the #5 spot. Fentanyl was the second top-reported compound for DUI/Other cases at 33.7%, and norfentanyl was third (30.8%). Interestingly, xylazine made it on this list at #9 (11.8%).

DUI/Other Cases:

Top Ten Order	Confirmatory Method	Compound	As a Percentage of Total DUI/Other Cases Received
1	THC	Delta-9-Carboxy-Tetrahydrocannabinol	**38.5%**
2	1MP	Fentanyl	**33.7%**
3	1MP	Norfentanyl	**30.8%**
4	1MP	Benzoylecgonine	**28.7%**
5	THC	Delta-9-Tetrahydrocannabinol	**25.4%**
6	1MP	Cocaine	**22.0%**
7	1MP	Ecgonine Methyl Ester	**19.9%**
8	1MP	4-ANPP (Qual)	**18.7%**
9	1MP	Xylazine	**11.8%**
10	AMP	Methamphetamine	**11.0%**

For postmortem cases, fentanyl was in the #1 spot (at 26.4% of all postmortem cases received), followed by ethanol (24.4%), benzoylecgonine (an inactive metabolite of cocaine, 21.2%), and norfentanyl (a

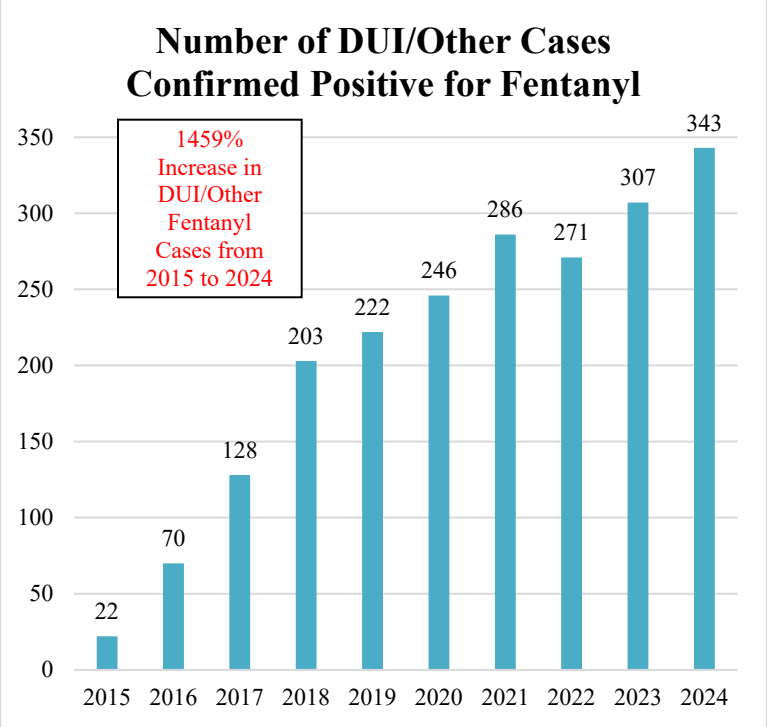
metabolite of fentanyl, 18.7%). Cocaine (16.8%) and xylazine (13.3%) both made the list too, and naloxone was actually in the #10 spot (6.2%).

Postmortem Cases:

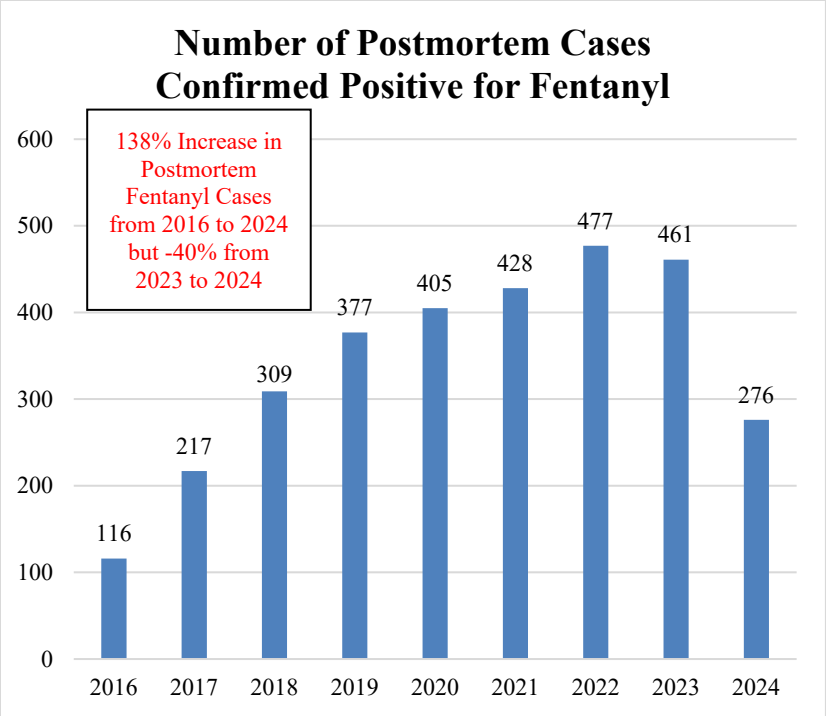
Top Ten Order	Confirmatory Method	Compound	As a Percentage of Total Postmortem Cases Received
1	1MP	Fentanyl	**26.4%**
2	VOL	Ethanol	**24.4%**
3	1MP	Benzoylecgonine	**21.2%**
4	1MP	Norfentanyl	**18.7%**
5	1MP	4-ANPP	**18.4%**
6	1MP	Ecgonine Methyl Ester	**17.4%**
7	1MP	Cocaine	**16.8%**
8	1MP	Xylazine	**13.3%**
9	ADP	Diphenhydramine	**6.6%**
10	1MP	Naloxone	**6.2%**

Fentanyl Data

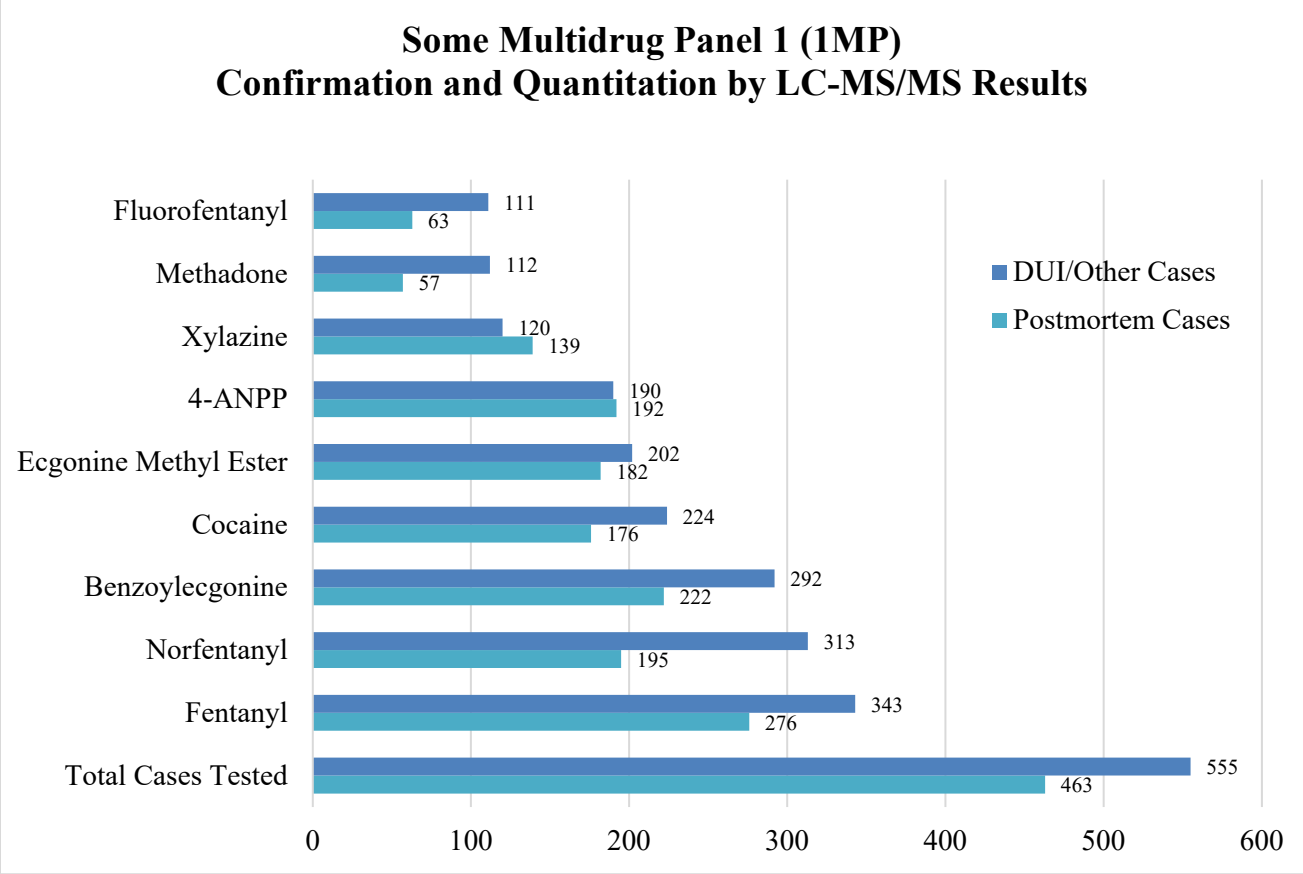
Fentanyl confirmations in the Tox Unit have steadily increased for DUI/Other cases; they have **increased 1459% for DUI/Other cases since 2015**, as the chart illustrates.



It is hard to believe, but as the two fentanyl charts show, there were actually **more DUI/Other cases that confirmed positive for fentanyl (343) than postmortem cases (276)**—this is the first time this has happened. While fentanyl confirmations have **increased 138% for postmortem cases from 2016 to 2024, there was a significant -40% difference compared to 2023**. Of the total postmortem cases received, 26% were reported for fentanyl, which is the same percentage that was seen seven years ago in 2017. Between 2018 and 2023, that percentage was always between 35% and 40%.



2024 was the first year that we had an entire year's worth of 1MP data for statistics. Of the 69 compounds included on this method, fentanyl was the #1 confirmed drug for both DUI/Other cases and postmortem cases. As the below chart shows, some of the top reported drugs from this panel were as follows: fentanyl, norfentanyl, benzoylecgonine, cocaine, ecgonine methyl ester, 4-ANPP, xylazine, methadone, and fluorofentanyl. Again though, it is surprising to see that more DUI/Other cases required this confirmation than postmortem cases.



Projects and Grants

The Toxicology Unit completed several projects in 2024. As previously mentioned, our most notable project was the addition of xylazine to our ELISA panel, bringing it to 19 drugs/drug classes. We are using a Randox kit on our Tecan instrument for this. This was effective for all cases received 10/01/24 and onward. We also revalidated our ADP method to use a reduced volume onto the supported liquid extraction (SLE) plate. Lastly, we completed 16 more validation runs for our 1MP panel, including dilution and autosampler stability studies.

The Tox Unit received grant funds from three different programs in 2024—Congressionally Directed Spending (CDS) grant funds, the Paul Coverdell Forensic Science Improvement grant, and the Centers for Disease Control and Prevention's (CDC's) Overdose Data to Action (OD2A) grant. These funds greatly support the Tox Unit in their efforts in response to the opioid/fentanyl epidemic and also to Delaware's marijuana legalization to bring on new methods and equipment and to expand their scope. A new LC-MS/MS was purchased with the CDS funds, which will be used to move the unit's cannabinoid panel from GC-MS onto this and to add more compounds to this method. Method development for this project is ongoing. With our grant funds, we were also able to purchase new laboratory supplies and equipment, including pipettes.

DNA

Overview

The DNA laboratory consists of two sections, the Databasing or CODIS (COmbined DNA Index System) section and the Casework section. The Databasing section processes all the convicted offender samples submitted to the laboratory from the Delaware State Police/State Bureau of Identification (DSP/SBI), Probation and Parole, and the Department of Corrections (DOC), then uploads the generated DNA profiles into the CODIS database. The Databasing section is also required to confirm all potential hits. The Casework section examines evidence, conducts preliminary testing for body fluids, performs DNA testing, and interprets data derived from the tests to draw and support conclusions. The laboratory accepts all types of cases ranging from theft and property crimes to homicides and sexual assaults. The DNA profiles generated from processing casework may also be entered into CODIS at either the State or National index (level).

CODIS

At the beginning of 2024, 64 offender samples had not been uploaded to CODIS. All, but seven, of these samples were received at the laboratory in December of 2023. All these samples were uploaded into CODIS in 2024. In 2024, the CODIS section received 1173 offender samples. This number includes 281 samples that could not be tested due to incomplete submission information. The laboratory received approximately 7.3% fewer samples in 2024 than in 2023.

The average turnaround time (TAT) for uploading offender samples into the National database decreased slightly in 2024 from an average of 21 total days in 2023 to an average of 20 total days in 2024. We continue to get offender samples with incomplete submission information. For these samples and samples that do not produce a usable DNA profile, we continue to work with DOC.

In 2024, 976 offender samples and 169 casework samples were uploaded into the State and National indexes. It should be noted that some offender samples only gave a partial DNA result. These samples were re-processed and uploaded again, once additional DNA information was obtained from them. Offender samples were processed monthly, and by the end of the year all samples, except the ones received in the last quarter of 2024 had been uploaded into CODIS. Those final samples were upload in the 1st quarter of 2025.

In 2024, the DNA laboratory had 65 CODIS hits or “matches” from either the State or National index. The national hits include DNA profiles from several states that either hit to DE convicted offenders or where DNA profiles uploaded by DFS hit to cases, offenders, or arrestees from other states. The CODIS

hits included theft, motor vehicle theft, carjacking, home invasion, person prohibited, burglary, robbery, sexual assault, and homicide cases. In 2024 as in past years, there were instances in which a convicted offender's sample was collected by DOC and uploaded on good faith into CODIS. When the offender's DNA profile hit on an evidence sample, during the confirmation process, it was realized that the offender profile had to be removed from CODIS because the offender did not have a qualifying offense under Title 11. We have been in contact with DOC about proper collection. Additionally, we have proposed a legislative initiative to collect samples from all felonies. We are still currently waiting on direction from the U.S. Department of Justice as to whether the individual's names can be released.

The table below reflects the types of cases that have hit in CODIS for 2024.

CODIS Hits	Type of Case	CODIS Hits	Type of Case
16	Burglary	3	Robbery
7	Homicide/Attempted Homicide	2	Unidentified Remains
15	Sexual Assaults	2	Home Invasion
2	Assault	5	Theft/criminal mischief
7	Carjacking/stolen/theft of motor vehicle	3	Attempted ID theft
1	Reckless endangerment	2	Person Prohibited

Casework

In the beginning of 2024, there were 179 cases that were either assigned but not completed, or unassigned from 2023. Ninety-eight (98) of those cases were unassigned at the end of 2023, this included cases with suspects and unknown suspects. In 2024, the DNA unit received 635 new case submissions and 34 subsequent submissions for a total of 669 submissions. Subsequent submissions are defined as those cases requiring additional testing after a report has been issued or those cases where a report was held until additional evidence had been submitted and tested. There was an approximate 11% decrease in the total number of submissions from the previous year. By the end of 2024, there were 95 cases that were either assigned but not completed (58) or unassigned (37).

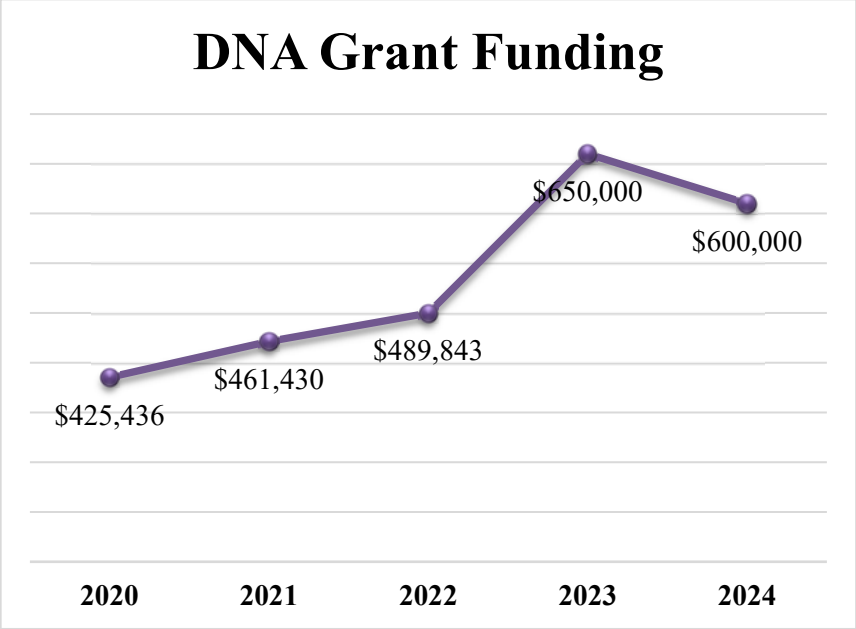
This is a decrease from the previous year. All those cases were completed by February 2025.

The table provides a breakdown of the types of cases received during 2024.

Types of Cases Received in 2023	New Submissions	Supplemental Submissions
Homicide / Att. Homicide	48	12
Sexual Assault	199	8
Assault	17	1
Burglary	75	7
Robbery	11	3
Missing Person/Death Investigation	12	1
Miscellaneous	101	0
Possession of Firearms	156	2
Proficiency Tests	16	0

Our average turnaround time (TAT) increased approximately 41% from 49 total days in 2023 to 69 total days in 2024. Although, in 2024, we had a decrease in the number of cases submitted, the increase in the TAT was due the 179 cases from 2023 that needed to be completed. The average TAT in January 2024 was 94 days but in December 2024 it decreased to 50 days.

In April of 2022, the Sexual Assault Kit Initiative (SAKI) Testing Policy was implemented by the State of Delaware. It should be noted that some of these cases could have additional evidence that may need to be tested by DFS. Of the 199 sexual assault cases submitted for testing, 24 were from years prior to 2023 or 2024. The average completion TAT for sexual assault cases (includes kits and other evidence) is 73 days. This is well within the 90 days noted in the SAKI policy.



The Casework Manager continues to handle the DNA Capacity Enhancement and Backlog Reduction (CEBR) Grants. On September 30, 2024, the CEBR Grant for FY2022 was to end but due to the finalization of the validation regarding a new quantitation procedure, PowerQuant® and Quant Studio™ 5 instrument, the grant was extended. The closeout documentation by the laboratory was due to the Bureau of Justice Assistance (BJA) by January 30, 2025. The laboratory is currently managing 2 DNA CEBR Grants. The FY2023 CEBR grant for $650,000 closes on September 30, 2025. The FY2024 CEBR is for $600,000 closes on September 30, 2026.

The amount of grant funds has fluctuated over the years. Grant funds have allowed the DNA unit to function. In 2023, about 92% of the DNA Unit's operational costs are from grant funds. Only 8% of the DNA laboratory's expenses (not including salaries/compensation) was from DE state funds.

Grant funding has increased when compared to 2017. This increase is due to the fact that the DNA Unit uses all the grant funds allotted.

With the DNA grant funds, the laboratory continued to purchase reagents, consumables, and other supplies for processing casework and convicted offender samples, provide required continuing education training for each DNA Analyst, pay for external laboratory audits, purchase proficiency tests for each analyst and purchase new laboratory software. Aside from the daily operational supply purchased with grant funds, the DNA unit purchased a new instrument for the database section and paid for the validation of a new quantitation method.

Validation or performance checks are a critical part of forensic DNA work. Validations are done on new testing procedures. While performance checks are done to determine if there are any effects from upgrades or modifications to previously validated procedures. As noted in previous DFS annual reports, the DNA Laboratory does not have an individual primarily dedicated to performing validation/performance checks studies. Validation/performance checks can be done by the staff in the DNA Unit but can also be done by outside vendors when funding is available. Validations and performance checks done in 2024 include: additional validation of CPI calculations (DFS staff), validation of BSD Ascent for database (DFS staff), validation of new quantitation system, using PowerQuant® and Quant Studio™ 5 instrument (vendor), and software upgrade for the CODIS database and statistical software (DFS staff). The validation of the new quantitation system was reviewed by the end of 2024 and new policies and procedures are currently being drafted. Majority of the validation of the BSD instrument was completed in 2024, and the instrument was in use at the end of the first quarter of 2025. The validation of the CPI calculations and CODIS software was approved in 2024 and was in use immediately after approval.

We continue to use a chemistry kit that examines 27 DNA markers, 7 more than the FBI requirement.

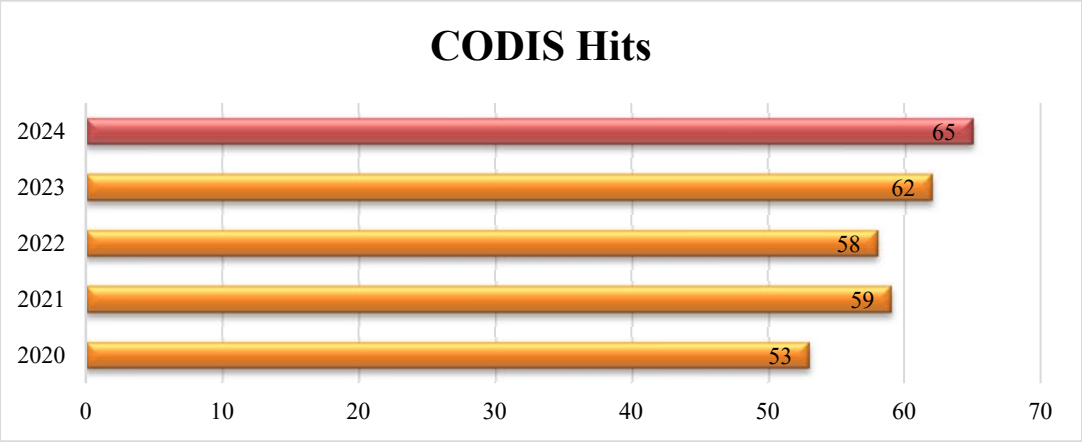
The DNA laboratory underwent on-site external audits for casework and databasing based on the FBI's Quality Assurance Standards additionally this audit was also 5 year re-accreditation assessment for ISO 17025 in March 2024. The FBI Quality Assurance Standards were effective as of July 1, 2020. Any finding remediations were accepted and approved by our accrediting body, ANAB. The DNA analysts and managers reviewed 4196 cases that were previously reported to ensure the results were consistent with reporting of a 2- or 3-person mixture. This review was due to a policy update. Only 0.4% of cases needed an amended report. An addition 1076 cases that were previously reported were re-examined to ensure that the results were consistent with the updated CPI calculations. This study concluded in 1st quarter of 2025 and resulted in 8% of cases needing amended reports. The Office of Defense Services and the Dept of Justice were informed of the additional reviews that were being done.

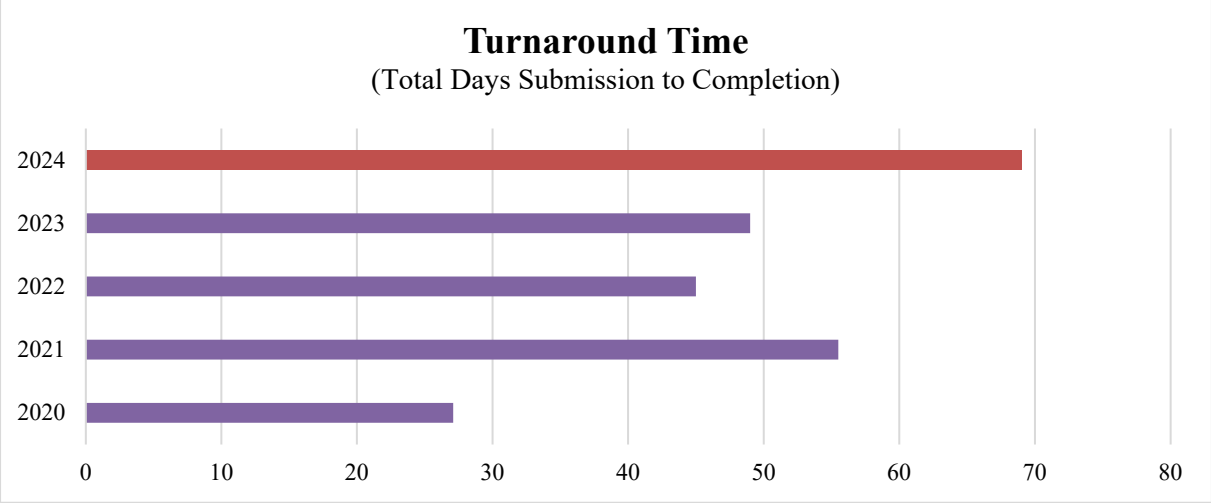
The following chart provides a comparative analysis of casework for 2020, 2021, 2022, 2023, and 2024 (the percentages in parenthesis show year-over-year changes):

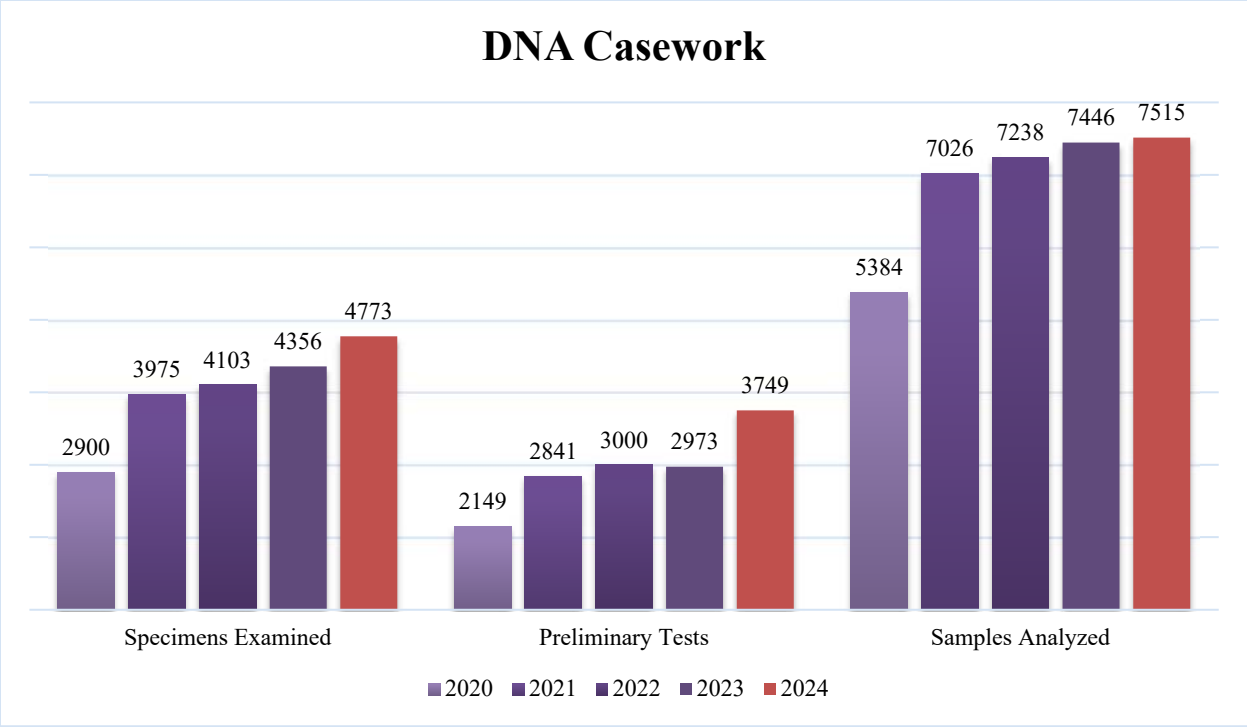
	2020	2021	2022	2023	2024
Total Case Completions	548 (-12%)	627(+14%)	665(+6%)	682 (+3%)	753 (+10%)
Turnaround Time (Total days submission to completion)	27.1 (-22%)	55.5 (+104%)	45(-18%)	49 (+8%)	69 (+41)
Case Submissions	561(-5%)	612 (+9%)	726(+19%)	751 (+3%)	669 (-11%)
Staffing (Full-time casework)	4.8 (-14%)	5 (+4%)	5.5(+15%)	5 (-9%)	5.6 (+12%)

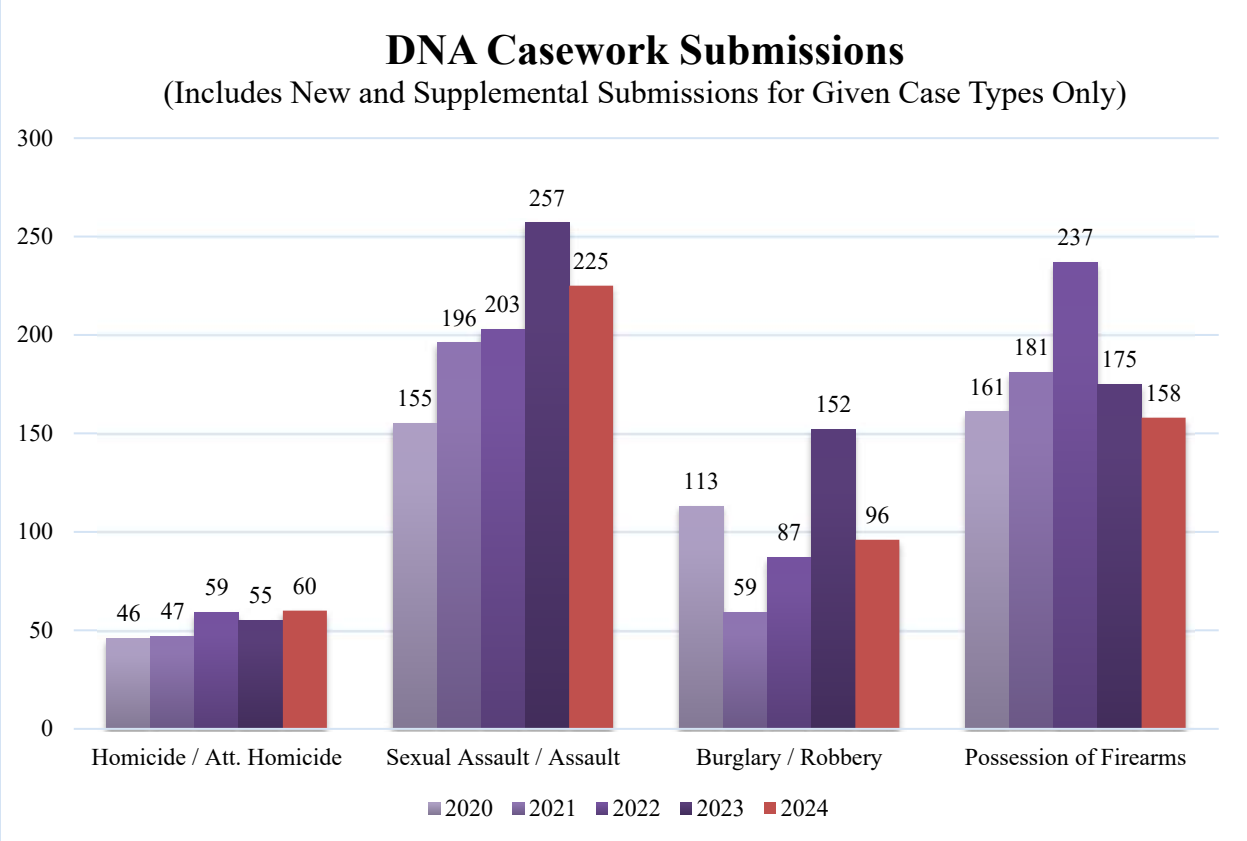
In summary, during 2024, the DNA laboratory received 11% fewer cases but examined 9% more evidence specimen than in 2023. The number of cases completed by the DNA laboratory in 2024 outnumbered the total case completed in any previous years. We hope to and are working towards keeping our backlog to a manageable number in the next year.

Data






DNA Casework
2900
3975
4103
4356
4773
2149
2841
3000
2973
3749
5384
7026
7238
7446
7515
Specimens Examined
Preliminary Tests
Samples Analyzed
2020
2021
2022
2023
2024


DNA Casework Submissions
(Includes New and Supplemental Submissions for Given Case Types Only)
300
250
200
150
100
50
0
46
47
59
55
60
155
196
203
257
225
113
59
87
152
96
161
181
237
175
158
Homicide / Att. Homicide
Sexual Assault / Assault
Burglary / Robbery
Possession of Firearms
2020
2021
2022
2023
2024

Forensic Chemistry

Overview

The Forensic Chemistry Unit (FCU) is comprised of two distinct sections. The Controlled Substances Section analyzes evidence submitted by Delaware law enforcement agencies for the presence of controlled substances. These controlled substances may be present in substances such as powders, liquids, food products, oil, waxes, plant material, paper, mushrooms, commercially produced pharmaceuticals and clandestine tablets or capsules. This section follows the Scientific Working Group for the Analysis of Seized Drugs (SWGDRUG) recommendations regarding analytical schemes for the identification of controlled substances, as well as an internationally accepted statistical sampling plan that allows the chemist to make an inference about populations by testing a set portion of exhibits with a 95% level of confidence; this sampling plan reduces the amount of time processing cases while providing scientifically valid results. The Fire Debris Section works directly with the Delaware State Fire Marshal's Office and other local offices to analyze evidence associated with arson investigations. Fire Debris case types include all fire-related deaths, incendiary fires, and arson-related offenses. Evidentiary samples are prepared and analyzed according to ASTM International Standard Practice and Test Methods and follow the Organization of Scientific Area Committees (OSAC) standards for fire debris analysis. Fire debris analysis determines the classification of any ignitable liquids present in the submitted evidence.

Staffing

The full complement of the Forensic Chemistry Unit includes a Laboratory Manager II (vacant for the last quarter of the year), a Laboratory Manager I, 10 full-time analytical chemists, and two Forensic Evidence Specialists positions (one of which was vacant part of the year).

Casework and Accomplishments

Controlled Substances

The controlled substances section received 1460 cases, completing 1447 cases, in 2024. In the cases analyzed there were approximately 73,900 exhibits submitted and, of those, about 19,500 were tested. The average turn-around-time for cases completed in 2024 was approximately 12 days.

Fire Debris

In 2024, the DFS received 9 cases for fire debris testing and completed 11. In the 11 cases completed, there were 23 cans to be analyzed. Due to the complexity of the fire debris evidence, analysis of this evidence takes a considerable amount of time as compared to controlled substance evidence. The average turnaround time for fire debris was 57.5 days in 2024. This was due, in part, to the resignation of our fire

debris technical reviewer in October, at which point cases were sent out for technical review to another accredited laboratory, which added time to the process.

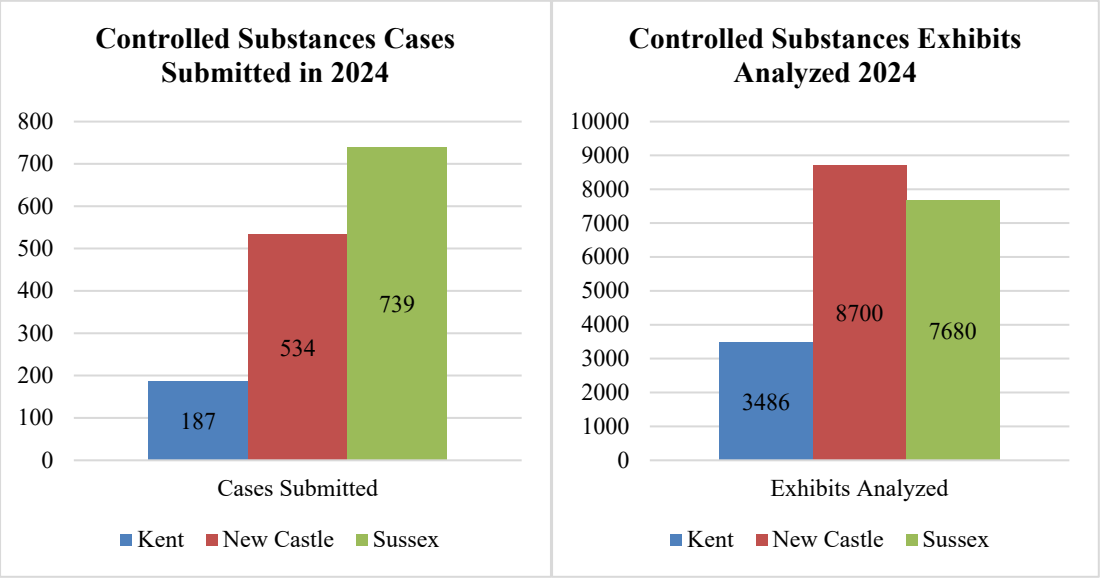
The FCU completed a study for the Delaware Division of Substance Abuse and Mental Health (DSAMH) to determine the validity of xylazine and fentanyl test strips, helping DSAMH identify the most effective product. Additionally, the FCU made progress on several projects in 2024 including the purchase and installation of a new Gas Chromatograph/Mass Spectrometer (GC/MS) for fire debris, an HPLC method for the quantitation of Δ9-THC, and an improved extraction for chocolate mushroom samples.

The unit also remained committed to community outreach, participating in presentations to local elementary and high schools, college students, law clerks, and a chemist alumni college.

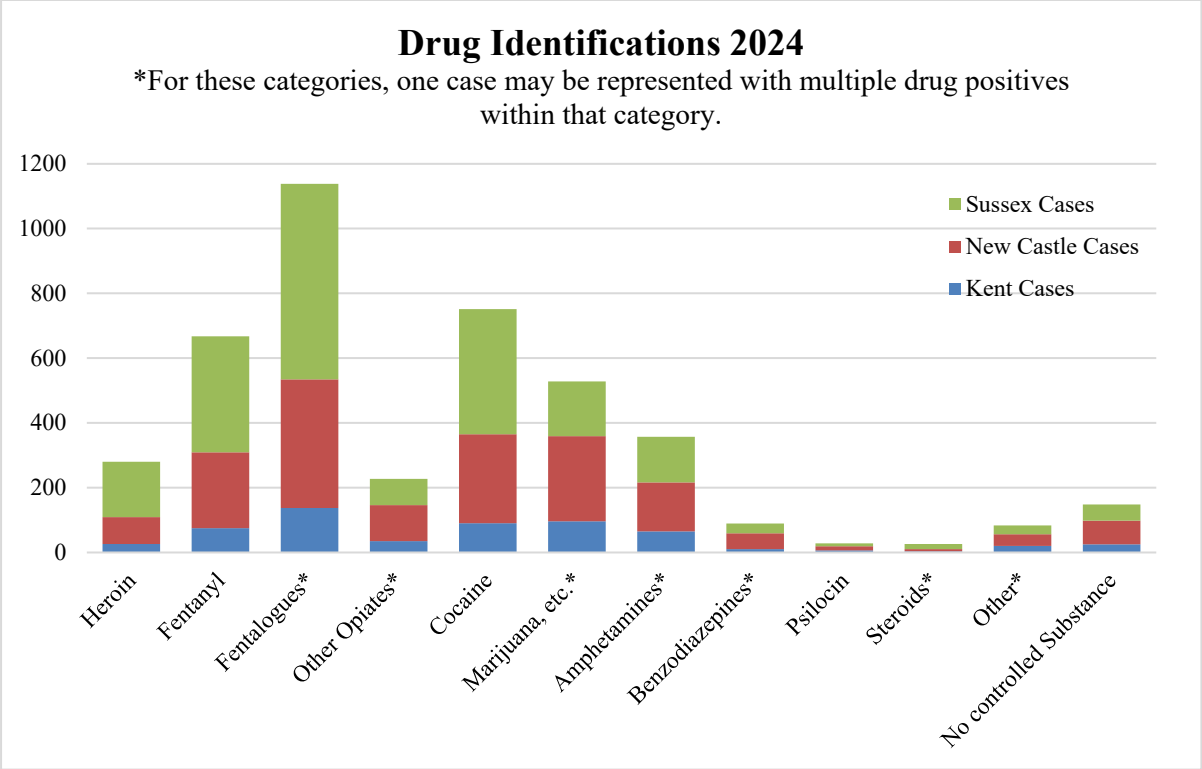
Data

Controlled Substances

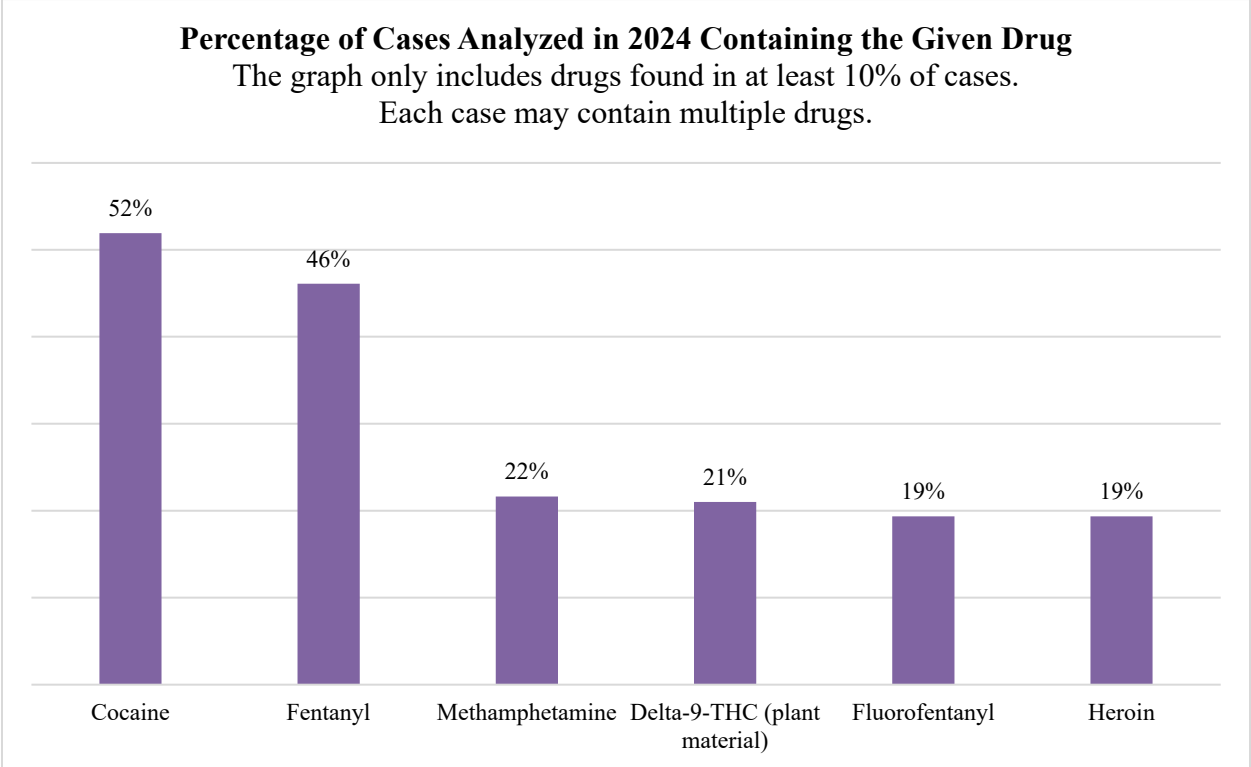
The charts below illustrate the breakdown, by county, of the cases submitted to the DFS Controlled Substances Section and the exhibits analyzed. In 2024, Sussex County again submitted the most cases, accounting for 51% of the total cases submitted to the section, but only 39% of the evidence analyzed. New Castle County brought in 37% of the cases but accounted for 44% of the items tested, submitting more items per case. Again, Kent County trailed in cases submitted (13%) and exhibits tested (18%).

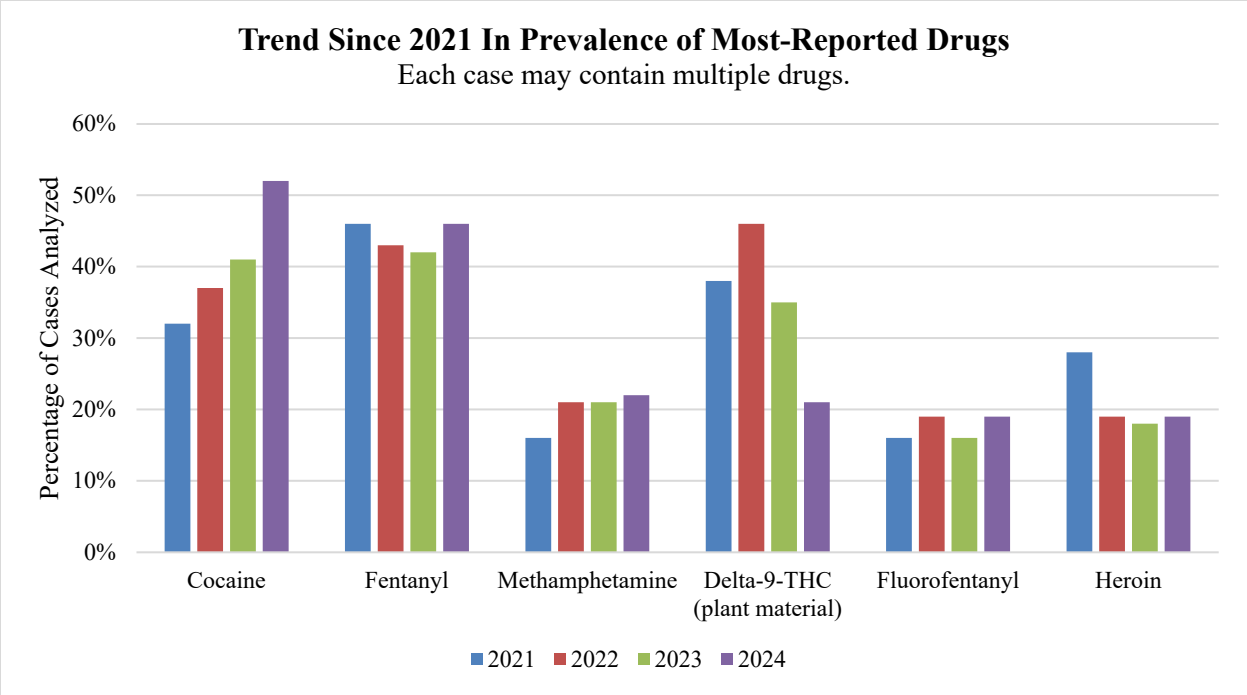


The chart below shows the number of cases found to contain the given substances in 2024. Note that one sample will often contain multiple drugs. For categories of drugs (such as fentalogues or steroids), one case may contain multiple drugs that fall into that category and each individual compound would be counted separately in the total for that category.



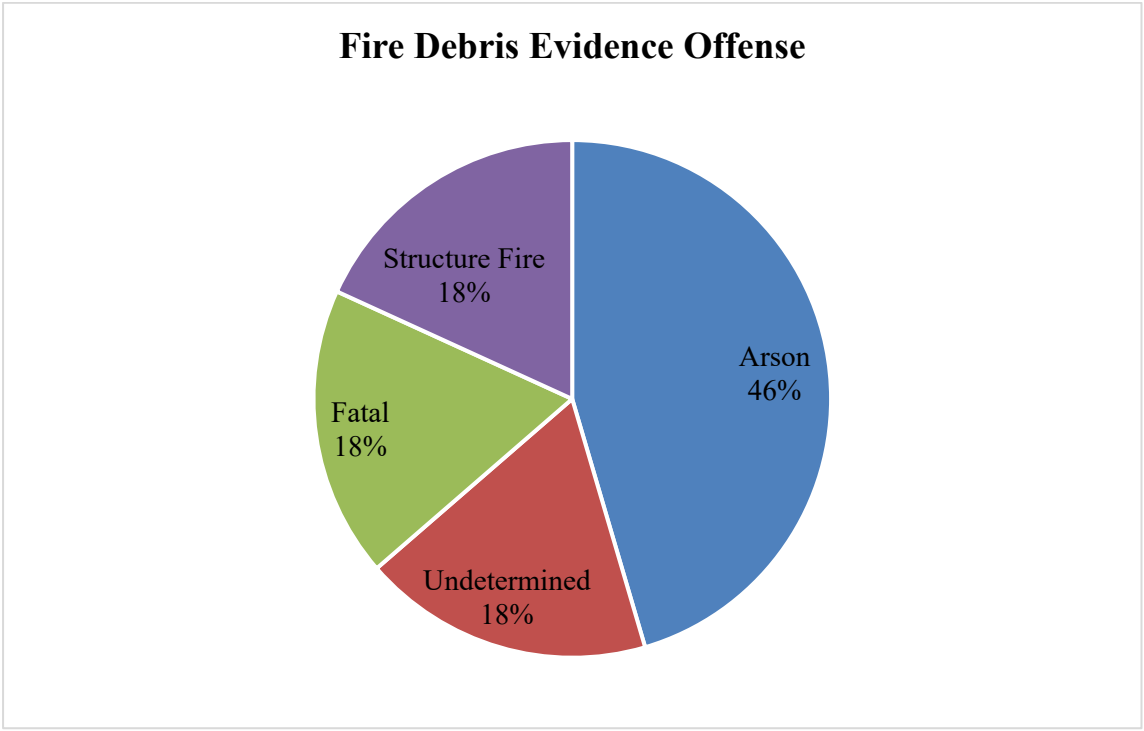
The following tables illustrate the percentage of cases analyzed in 2024 containing the most prevalent drugs, meaning those found in at least 10% of cases, and how the percentage has changed over time.



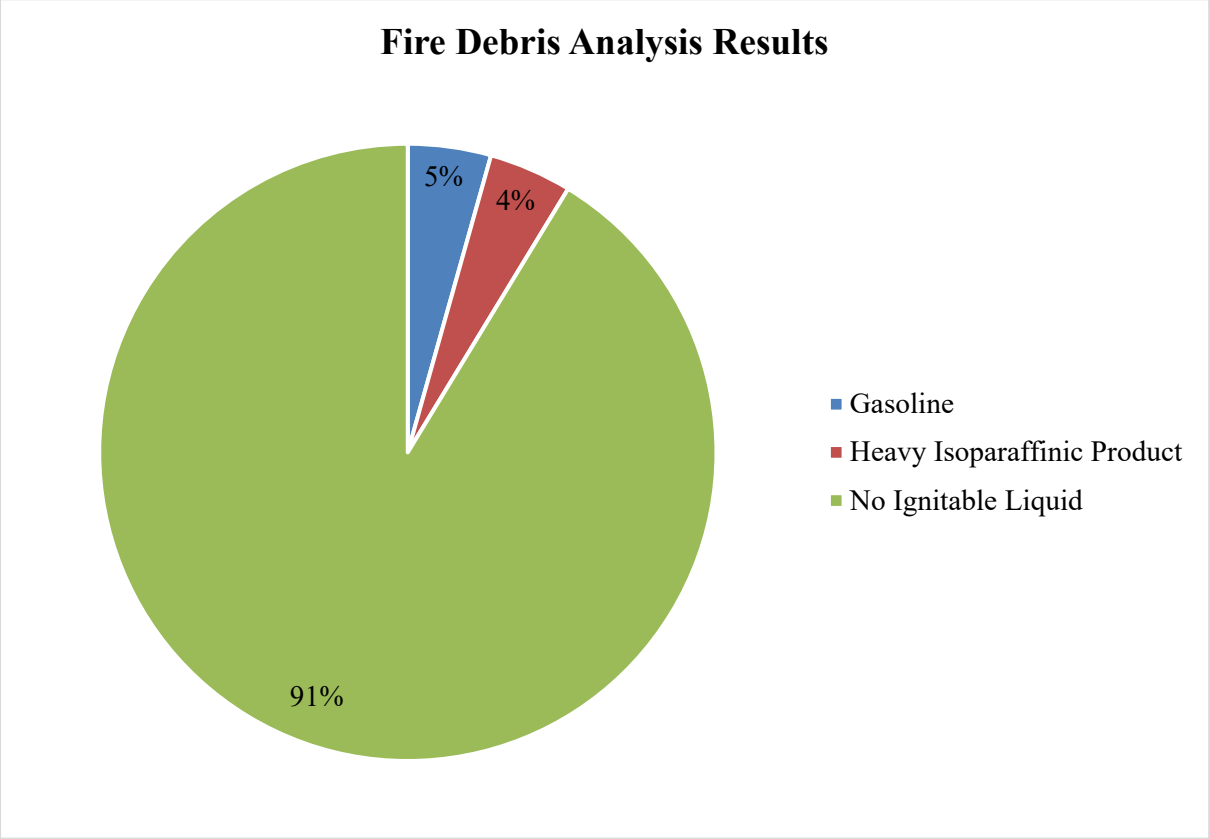


Fire Debris

Evidentiary analysis is prioritized based on the offense associated with the evidence. The below chart displays the offenses of the evidence analyzed in 2024.



Testing for fire debris analysis results in a classification based on ASTM standard test methods. The following chart breaks down the classification results from analysis in 2024.



Conclusion

For answers to further questions, please see the DFS Website at https://forensics.delaware.gov/.