



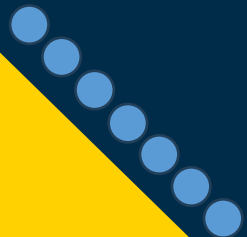
2024

# Sedgwick County

REGIONAL FORENSIC SCIENCE CENTER

## 2024 PATHOLOGY DIVISION ANNUAL REPORT

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## HISTORY/OVERVIEW

The Regional Forensic Science Center officially opened on December 21<sup>st</sup>, 1995. The Center houses the Pathology Division (including the Office of the District Coroner) and the Forensic Science Laboratories. The Pathology Division is organized into two sections: Medical Investigations and Autopsy Services.

As mandated by law [KSA 22a-231], the District Coroner has the responsibility for investigating deaths within Sedgwick County that occur as a result of violence, by unlawful means, suddenly when in apparent health, in a suspicious or unusual manner, or when in police custody. The Coroner's jurisdiction also applies to deaths of individuals not regularly attended by a physician and when the determination of the cause of death is held to be in the public interest. The primary goal of investigation and the postmortem examination is to determine cause and manner of death in order to generate a death certificate.

Cause of death is the injury or disease that results in death. Manner of death is determined by circumstances in which the death occurred and can be categorized as natural, accident, homicide, suicide, and undetermined. Undetermined manner of death is used when circumstances are unknown or are unclear.

The Pathology Division has been accredited by the National Association of Medical Examiners (NAME) since 2001.

## MISSION

The Forensic Science Center strives to provide the highest quality medicolegal and advanced forensic laboratory services to Sedgwick County. Death Investigation and Forensic Autopsy services are conducted in a compassionate and objective manner to achieve accurate certification of cause and manner of death. The Forensic Laboratory services provide unbiased and accurate analytical testing to support the resolution of criminal cases. As an independent agency operating under the Division of Public Safety, the Forensic Science Center collaborates with public health and criminal justice stakeholders to reduce crime and prevent deaths.

## PATHOLOGY LEADERSHIP

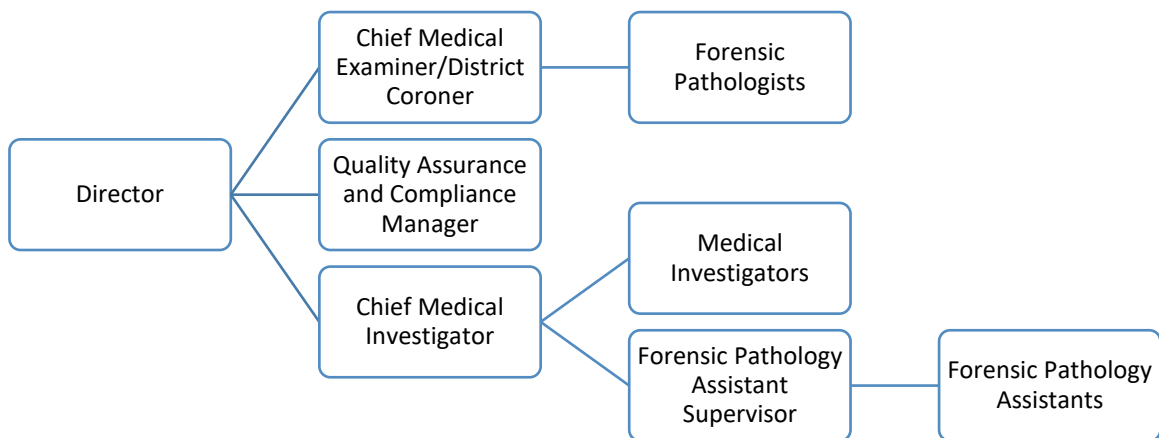
Director  
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District Coroner-Chief Medical Examiner  
*Timothy S. Gorrill, MD, PhD*

Chief Medical Investigator  
*Shari L. Beck, F-ABMDI*

Quality Assurance and Compliance Manager  
*Robert C. Hansen II, M.S.F.S.*

## PATHOLOGY ORGANIZATION





## MEDICAL INVESTIGATIONS

The Pathology division has a Chief Medical Investigator and six Medical Investigators. The Medical Investigators provide service every day, twenty-four hours a day, and seven days a week. On behalf of the District Coroner, the Medical Investigators triage all reported deaths, which totaled 4110 in 2024. When a death is determined to be under the jurisdiction of the Coroner they report to death scenes to document the scene and collect any evidence pertinent to the death investigation.

The District Coroner accepted jurisdiction or assisted in 992 [Figure 3] of the deaths reported. On average, over the last 10 years, the coroner accepted cases cumulatively constitute 26.5% of the total number reported to the office. Also, when compared to 2015 there has been approximately a 19.8% increase in the number of reported deaths and approximately a 10.3% increase in the number of coroner cases accepted for examination in 2024.

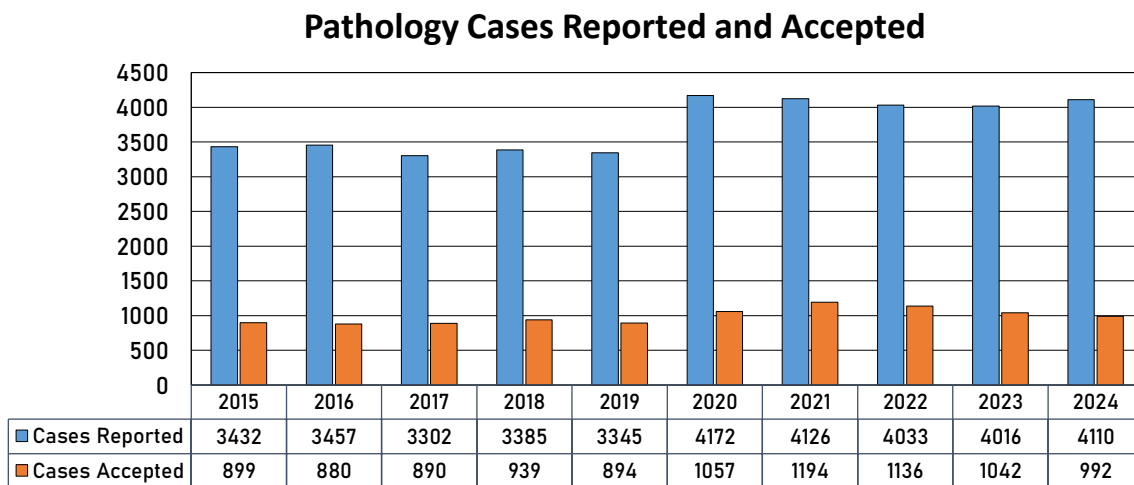


Figure 3: Pathology cases reported include all deaths that were reported to the Center. Pathology cases accepted include Full and Partial Autopsies, External Examinations, Human and Non-human Skeletal Remains, Death Certificate Investigations and Records Reviews.

Medical Investigators may attend the scene of a death when it occurs outside of a hospital setting. Pertinent circumstantial and physical observations are documented and photographed, and items of evidence are collected in accordance with state law, good forensic principles and accreditation requirements established by the National Association of Medical Examiners [NAME]. The number of scene investigations by Medical Investigators per year [Figure 4] has shown a steady increase over the last 10 years, although the number has decreased since the peak of 2021. Between 2015 and 2024 there has been approximately a 45.3% increase in the number of death scenes attended by medical investigators.

## Scene Investigations

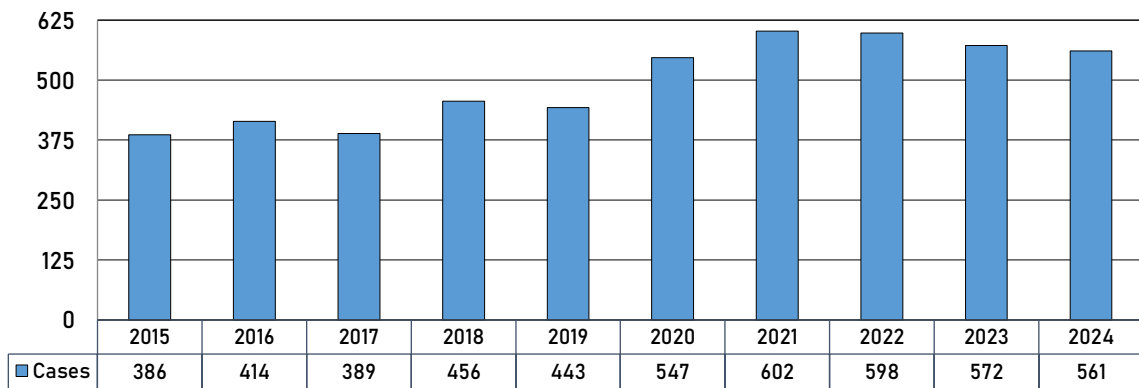


Figure 4: Number of scenes attended by Medical Investigators.

## CASE EXAMINATIONS

Figure 5 shows the number of postmortem exams conducted on the body of decedents, which includes full autopsies, partial autopsies, and external examinations. The figure does not include administrative examination types, which include record reviews and death certificate reviews.

Full autopsies are comprehensive examinations of the entire body. Partial autopsies are postmortem examinations that focus on specific organs, areas, or systems of the body. External examinations are performed in cases where scene investigation, circumstances, medical history, and the exam are sufficient to certify the death. In 2024, approximately 65.4% of the examinations were full autopsies, 29.4% were external examinations, and 5.0% were partial examinations.

## Autopsy, External, and Partial Examinations

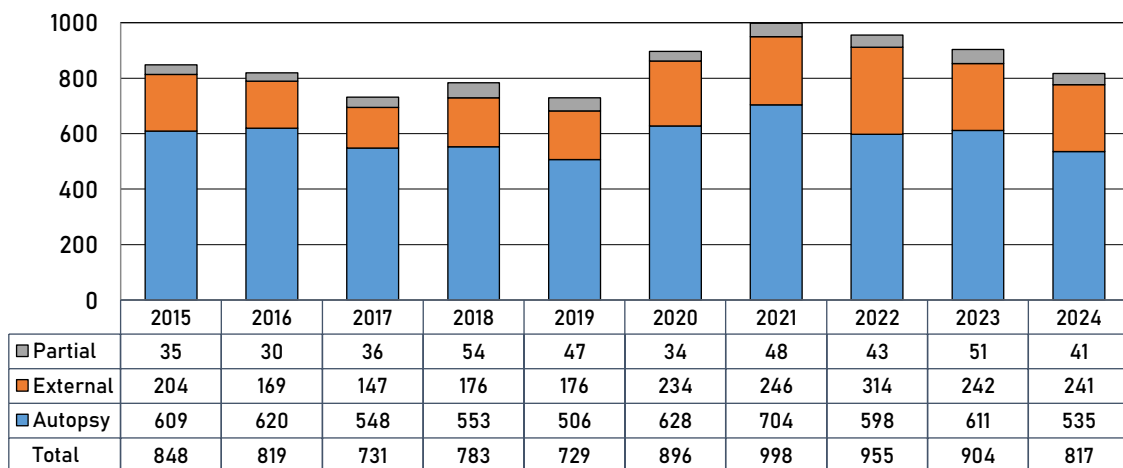


Figure 5: Postmortem examination type excluding records reviews, and human and non-human skeletal remains.

## AUTOPSY REPORTS

One important metric to monitor the work efficiency of the Pathology Division is the percentage of autopsy reports completed within 90 days of the examination. Usually, the percentage of cases that meet this mark is dependent upon how quickly the Toxicology Laboratory can complete testing and how quickly the case pathologist can complete his/her autopsy reports following the issuance of the toxicology report. In 2024, the pathology division saw an increase in the percentage of cases that meet the goal of 90% cases completed within 90 days from examination [Figure 6].

Percent of Autopsy Reports Issued Within 90 Days per Examination Year and Percent of Toxicology Post-mortem Reports Issued Within 60 and 90 Days per Submission Year

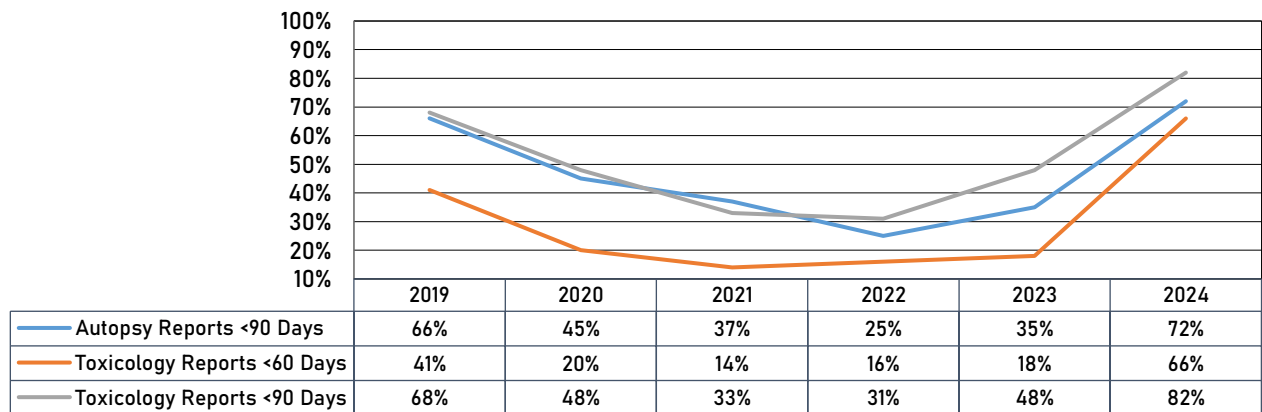


Figure 6: Percentage of autopsy reports issued within 90 days from examination per examination year and the percentage of Toxicology Postmortem reports issued within 60 days of submission per submission year. The goal for the autopsy reports is to have 90% of reports issued within 90 days from examination and the goal of the Toxicology Laboratory is to complete 90% of cases within 60 days from submission.

## CAUSE AND MANNER OF DEATH

### Cause of Death

The cause of death is a term used to indicate the medical cause of death. It lists the disease(s) or injuries that caused death. Specific cause of death information is recorded on the death certificate and is entered into the Vital Statistics System of the State of Kansas.

The reason(s) why an accident occurred, a person took their own life, or why one person killed another person are not investigated by the medical examiner for the purpose of death certification.

### Manner of Death

The District Coroner's Office is responsible for determining the manner of death, which is a way to categorize death as required by the Kansas Department of Health and Environment. The classifications of manner of death are natural, accidental, suicide, homicide, and undetermined.

Figure 7 shows the breakdown of the deaths by manner from all case types, including full autopsies, partial autopsies, external autopsies, and records reviews. Human and non-human skeletal remains are not included.



Homicides are deaths that result from injuries caused by the actions by another person. Homicides constituted 5.4% of the cases for 2024. The majority (90.7%) of these deaths resulted from gunshot wounds.

Suicides are defined as deaths that result from a purposeful action to end one's own life. In 2024, approximately 11.0% of the cases were certified as suicides.

Approximately, 48.2% of deaths were certified as accidents, which are those that resulted from an unintentional event or chain of events. This category includes most motor vehicle accidents, falls, and accidental drug overdoses.

Natural deaths are those that are solely caused by natural disease and constituted approximately 30.9% of the cases. The most common cause of death in cases of sudden, unexpected natural death is coronary artery disease.

Cases that were classified as an undetermined manner of death constituted approximately 4.3% of the total caseload.

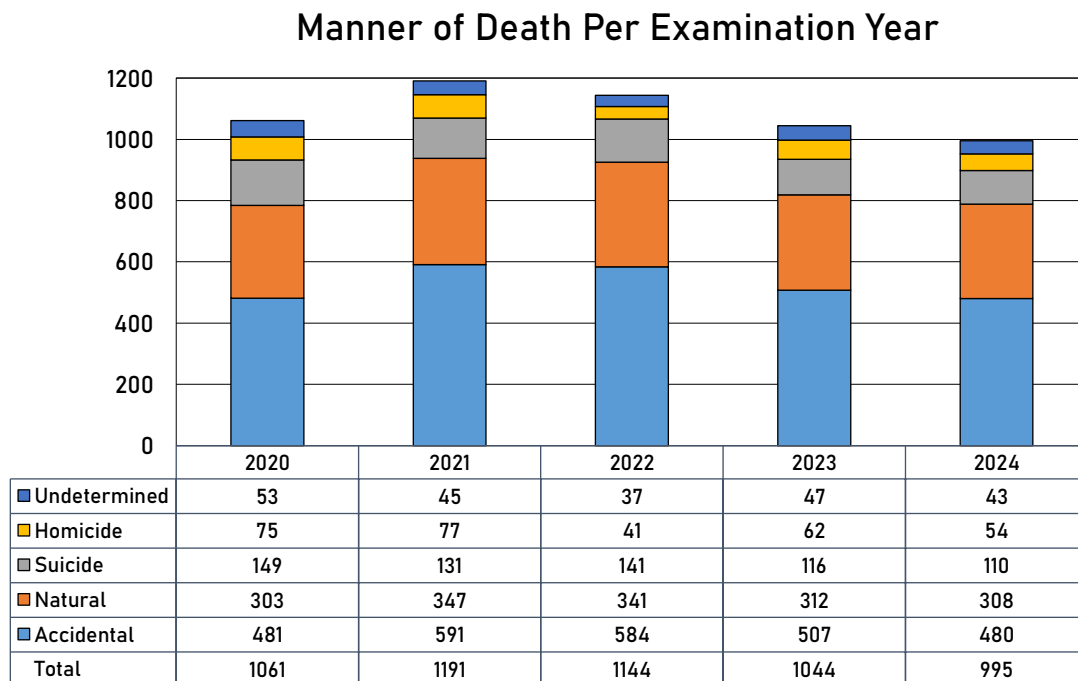


Figure 7: Count of each manner of death per examination year.

The manner of death (MOD) can be placed into two general categories, determined or undetermined. Figure 8 illustrates the percentages of these two categories for cases with a cause of death that is non-natural. Undetermined deaths are further broken down into those where the cause of death is known or cause of death is unknown.

## Determined vs. Undetermined MOD in Non-natural Death Cases

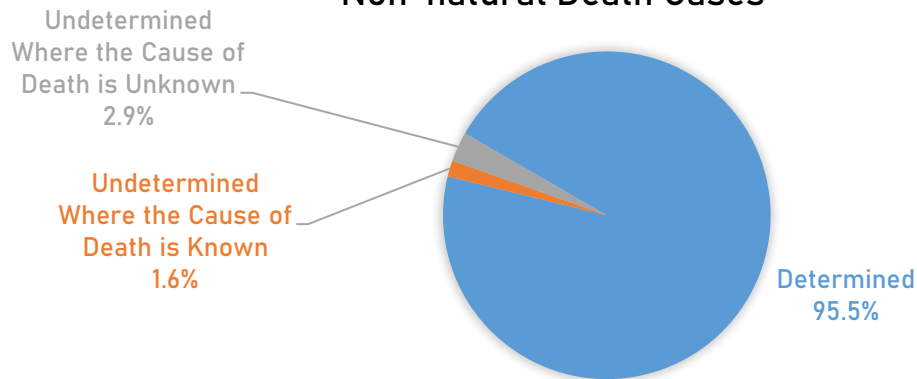


Figure 8: Percentage of determined versus undetermined manners of death.

### Accidents

In 2024, there were 480 autopsied cases that were determined to have an accidental manner of death. Table 1 illustrates that approximately 17.7% of all accidental deaths were related to motor vehicle accidents (MVA) and approximately 39.5% were overdoses/drug related. With manner of death determined for 995 cases in 2024, this means 19.1% of all cases were overdose/drug related.

<i>Method of Death</i>	Number of Deaths	Percentage of Total
<i>Overdose/Drug Related</i>	190	39.5
<i>Fall</i>	98	20.4
<i>Motor Vehicle (MVA)</i>	85	17.7
<i>Medical Miscellaneous</i>	19	3.9
<i>Cardiovascular Disease</i>	14	2.9
<i>Drowning</i>	12	2.5
<i>Blunt Force Related</i>	8	1.6
<i>Thermal Injuries</i>	8	1.6
<i>Ethanol Toxicity</i>	6	1.2
<i>Fire Exposure</i>	6	1.2
<i>Mechanical Restraint</i>	5	1.0
<i>Other</i>	5	1.0
<i>Hypothermia</i>	4	0.8
<i>Cancer</i>	3	0.6
<i>CO Poisoning</i>	3	0.6
<i>Sepsis</i>	3	0.6
<i>Suffocation Asphyxia</i>	3	0.6
<i>Diabetes</i>	2	0.4
<i>Firearm Related</i>	2	0.4
<i>Childhood SIDS/Co-Sleeping</i>	1	0.2
<i>Electrocution</i>	1	0.2
<i>Environmental Exposure</i>	1	0.2
<i>Hyperthermia</i>	1	0.2

Table 1: Number of accidental deaths and the respective percentage of each mechanism of injury for all accidental deaths.

## Homicides

There were 53 homicides reported in 2024 that were examined by the District Coroner's Office, a decrease of approximately 12.9% from the prior year. As illustrated in Figure 9, most homicides originated within Sedgwick County. Figure 10 and Figure 11 classify 2024 homicide victims by sex and race.

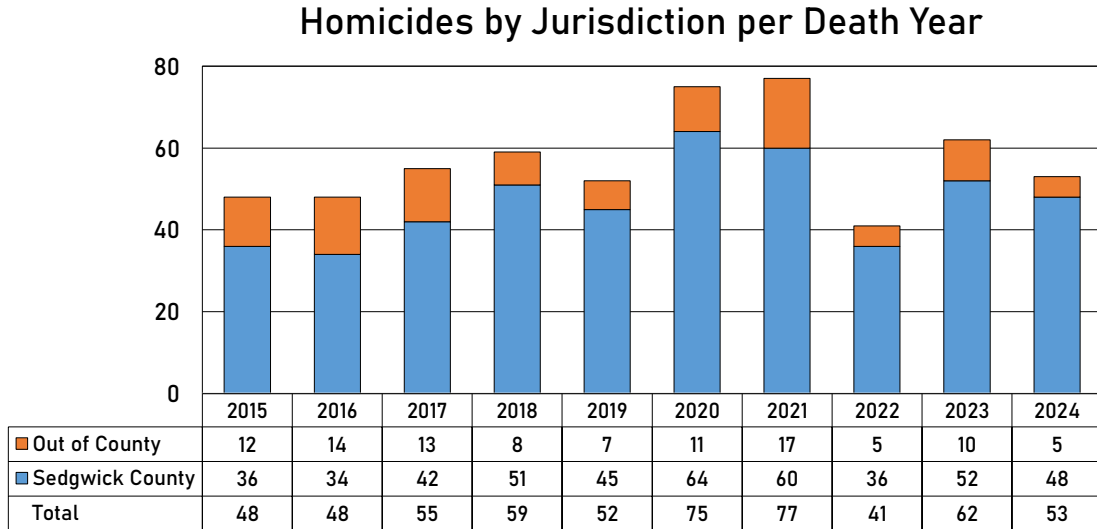


Figure 9: The number of homicides examined categorized as originating in Sedgwick County versus all other counties served per death year.

Figure 10 illustrates the percentage of homicides by decedent sex per death year.

## Homicides Categorized by Sex of Decedent per Death Year

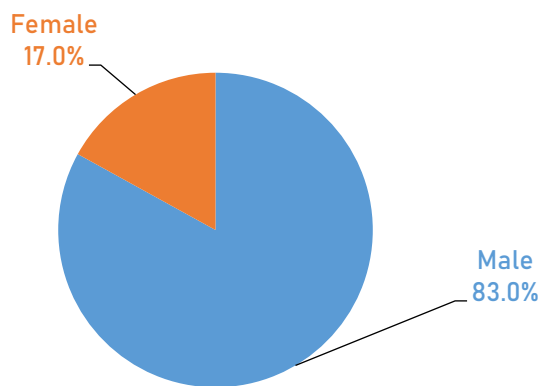


Figure 10: Percentage of homicides in 2024 categorized by sex of the decedent per death year.

Figure 11 illustrates the percentage of homicides by race per death year.

## Homicides Categorized by Race of Decedent per Death Year

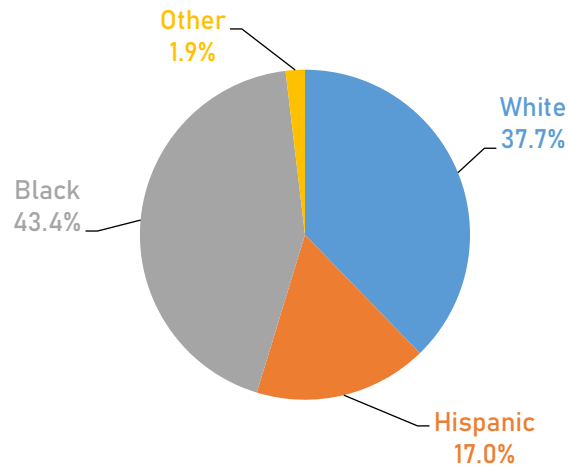


Figure 11: Percentage of 2024 homicides categorized by decedent race per death year.

Figures 12 and 13 illustrate the number of homicides categorized by decedent sex and race over the past 10 years.

## Male Homicides Categorized by Race

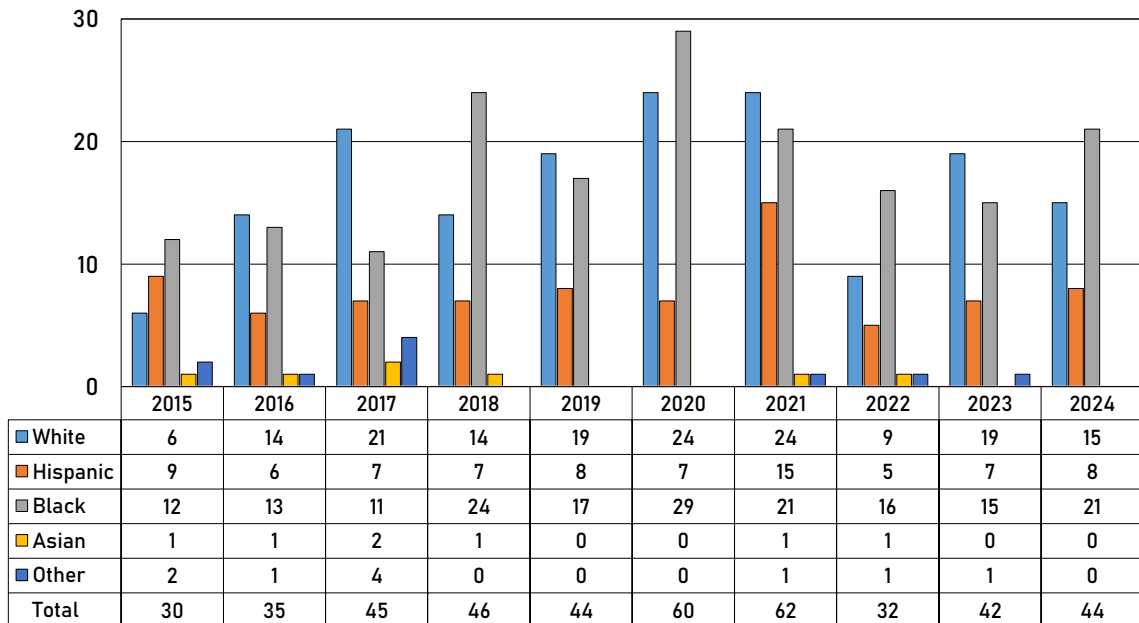


Figure 12: The number of males that died by homicide categorized by race over the past 10 years.

## Female Homicides Categorized by Race

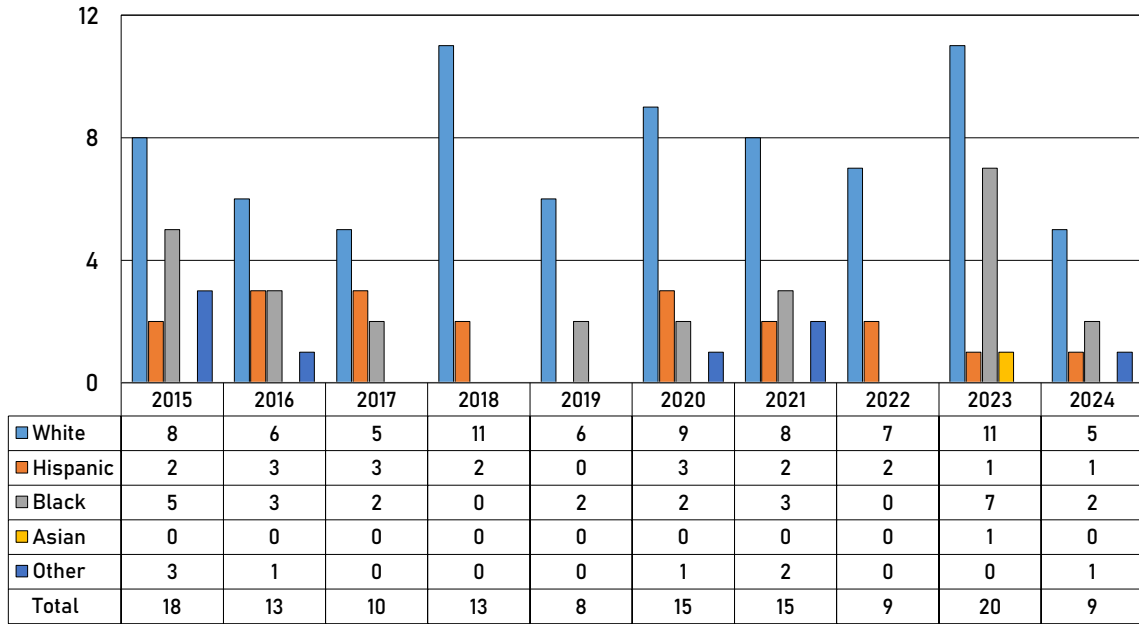


Figure 13: The number of females that died by homicide categorized by race over the past 10 years.

Figure 14 illustrates the number of homicide cases reported that are categorized by age group and death year. As depicted, most homicides involved decedents within the age group of 19-29 years old in 2024.

## Homicides Examined Categorized by Age Group per Death Year

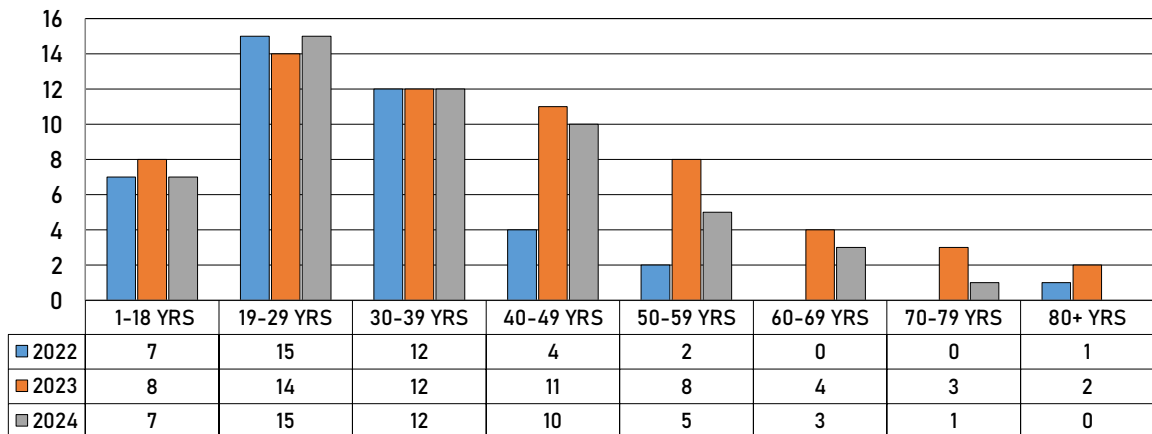


Figure 14: The number of homicides examined categorized by the decedent age per death year.

Figure 15 illustrates the percentage of homicides occurring in 2024 categorized by what was determined to be the cause of death. As depicted, most homicides were caused by the use of firearms.

## Homicides Categorized by Method of Death per Death Year

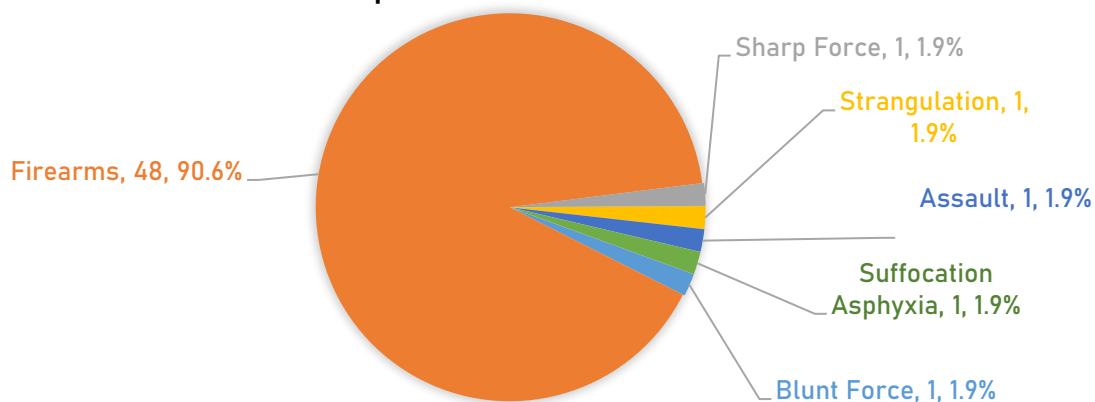


Figure 15: Homicides by cause per death year.

## Suicides

There were 108 cases certified as suicide occurring in 2024. Figure 16 shows a range of 108 to 150 total suicides, representing various suicide rates, over the past 10 years.

## Suicides by Jurisdiction per Death Year

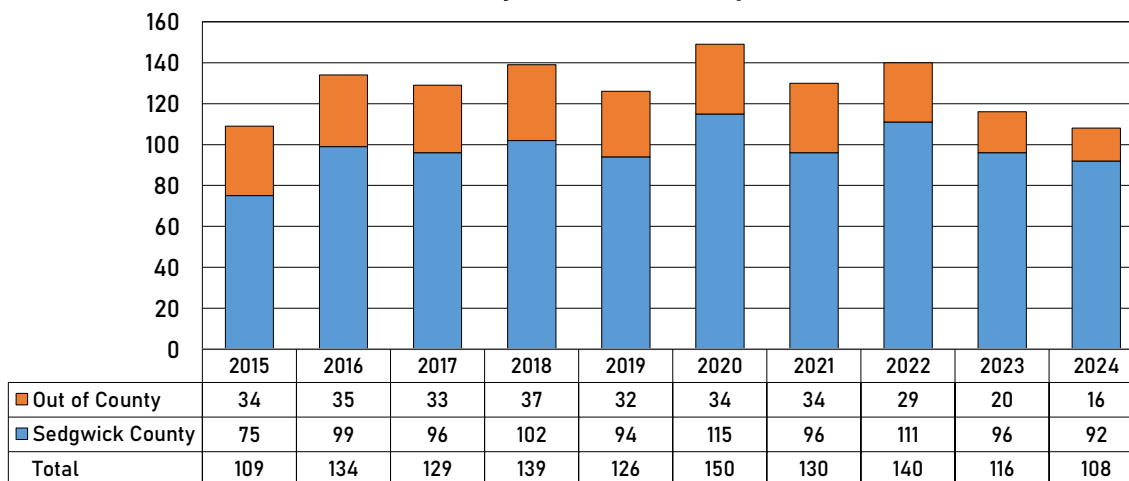


Figure 16: Suicides by county jurisdiction (Sedgwick County vs. Out of County) per death year.

Figure 17 provides the percentage of suicides by gender per death year. In 2024, males committed approximately 76.85% of suicides and females committed 23.15%.

### Suicides by Categorized by Decedent Sex per Death Year

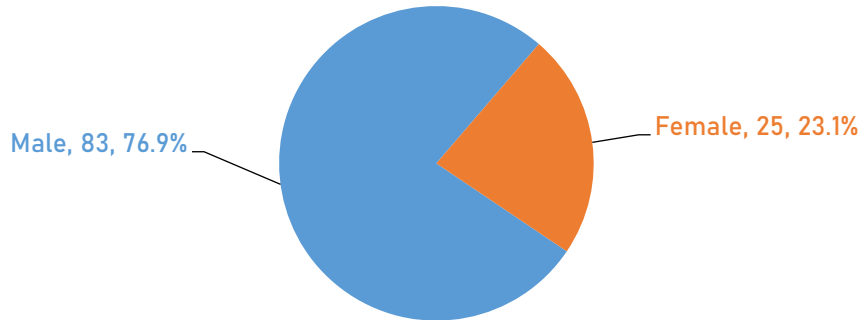


Figure 17: Percentage of 2024 suicides categorized by decedent sex.

Figure 18 provides the percentage of 2024 suicides by race. The race that committed the greatest percentage of suicides is White.

### Suicides Categorized by Decedent Race per Death Year

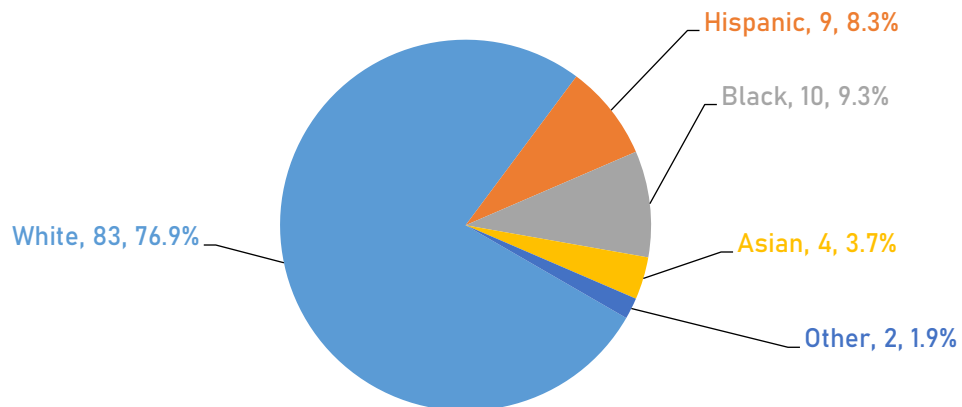


Figure 18: Percentage of 2024 suicides categorized by decedent race.

Figures 19 and 20 provide the number of suicides of each male and female, broken down by race per death year.

### Male Suicides by Race per Death Year

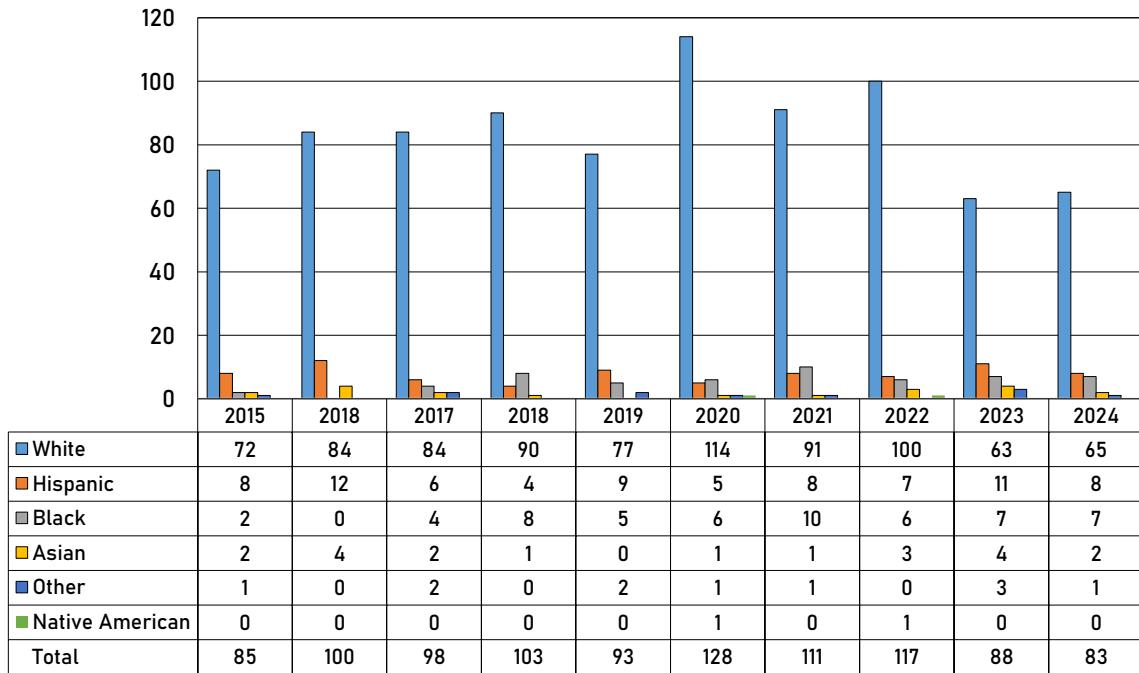


Figure 19: Number of suicides committed by males categorized by race per death year.

### Female Suicides by Race per Death Year

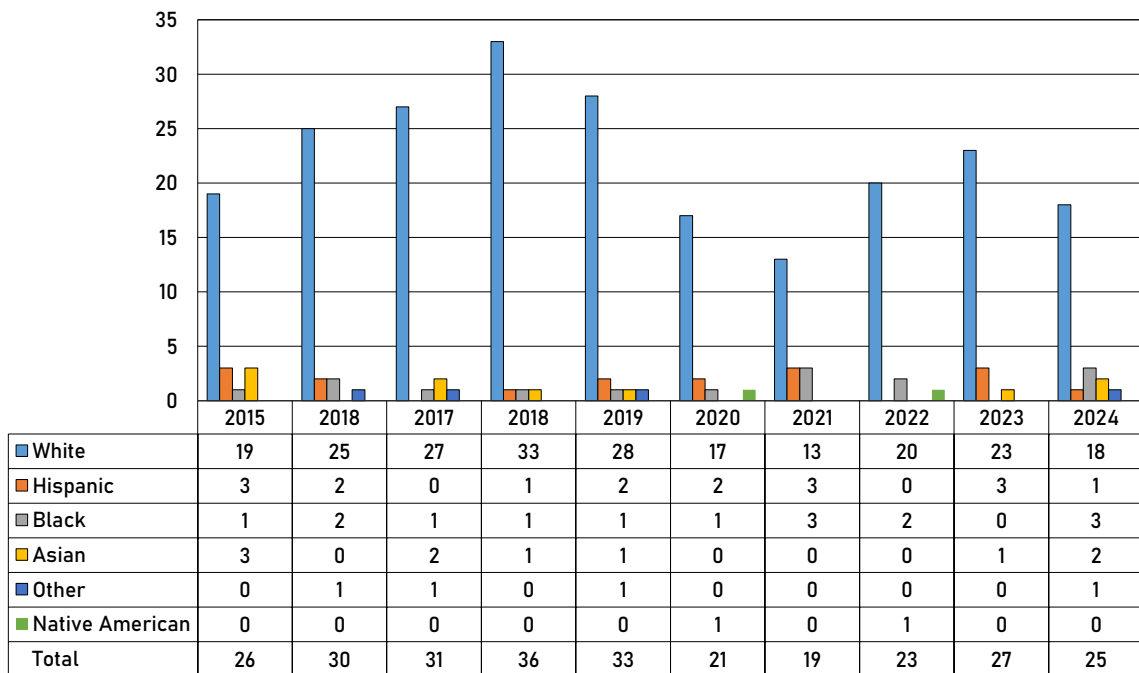


Figure 20: Number of suicides committed by females categorized by race per death year.



As shown in Figure 21, most 2024 suicides were committed by people between the ages of 40 to 49, with ages 19-29 and 30-39 close to follow.

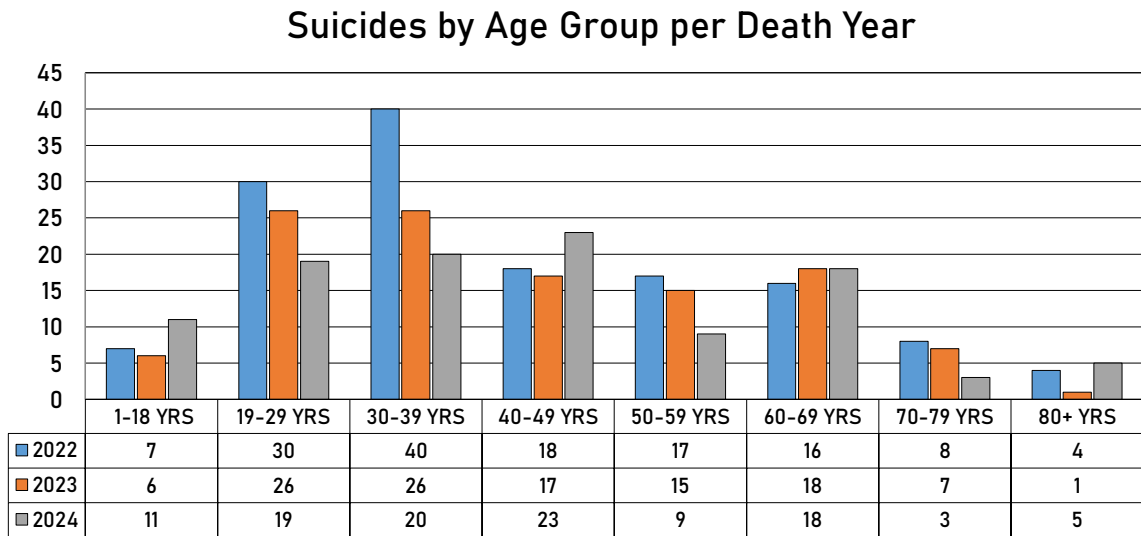


Figure 21: The number of suicides categorized by the decedent age per death year.

In 2024, the most common suicide method was use of firearms (60) followed by asphyxia (hanging, strangulation, suffocation, or CO poisoning) (37) [Figure 22]. The category of other includes drowning (1 count, or 0.9%), fire exposure (1 count, or 0.9%), and motor vehicle (2 count, or 1.9% ).

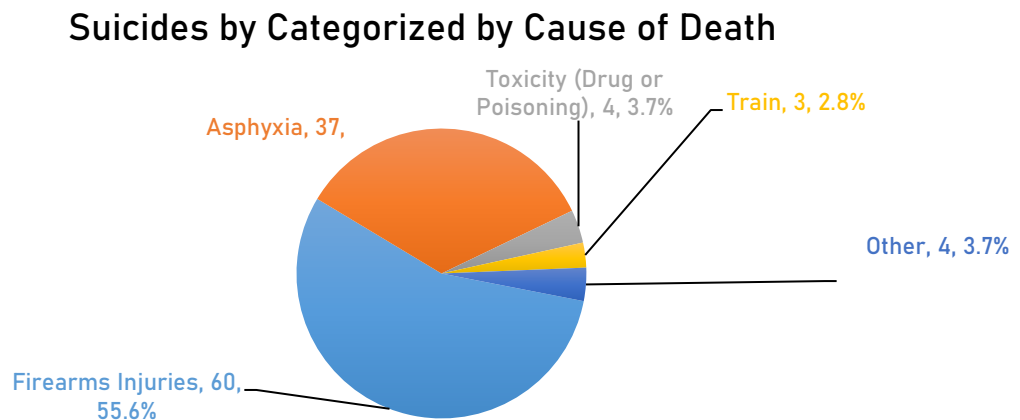


Figure 22: 2024 suicide cases categorized by cause of death.

## TOXICOLOGY

The Toxicology Laboratory analyzes samples from deceased individuals to assist the medical examiners in determining the cause and manner of death by identifying the presence and quantity of toxic substances.

In 2024, there were 815 pathology cases submitted to the toxicology laboratory. The chart shows a range of 728 in 2017 to 975 in 2022 [Figure 23]. The laboratory analyzed 789 of the 815 submitted cases; the remaining 26 did not require analysis [Figure 24].

### Number of Postmortem Cases Submitted to the Toxicology Laboratory

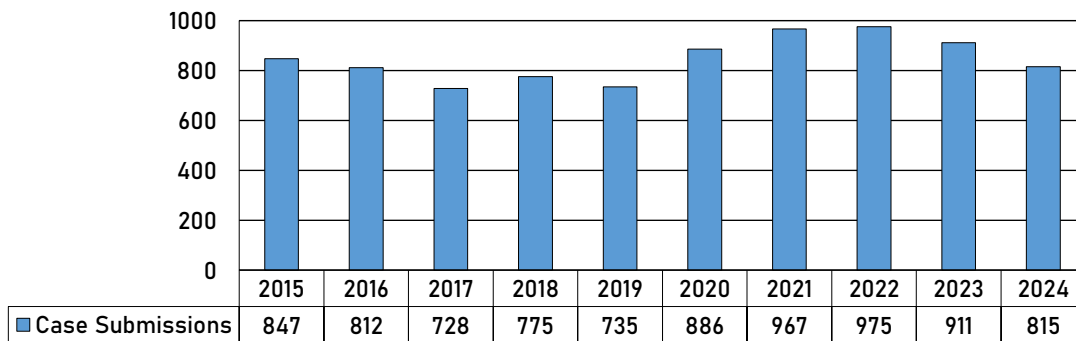


Figure 23: Number of postmortem cases submitted to the Toxicology Laboratory since 2015.

### Cases Analyzed per Submission Year

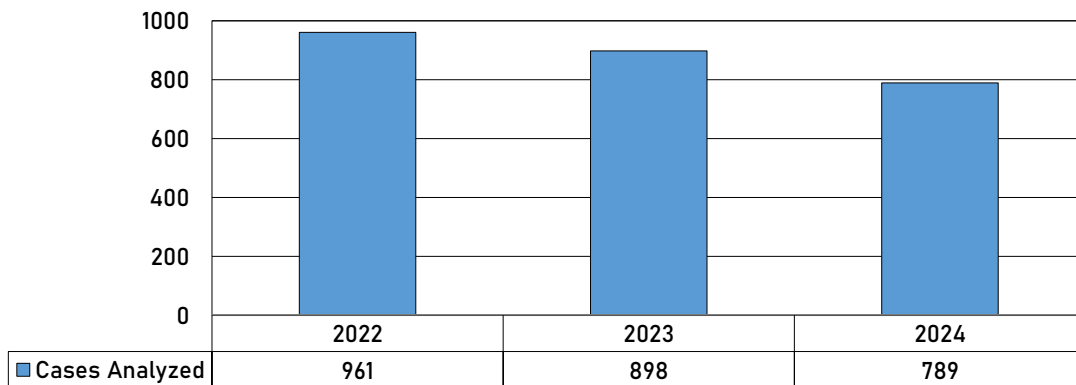


Figure 24: The number of cases analyzed by the Toxicology Laboratory per submission year.

## Drivers

In 2024, there were specimens from 71 postmortem cases submitted for analysis to the toxicology laboratory from decedents of motor vehicle related deaths. Figure 25 depicts the results of testing for ethanol (EtOH) and drugs from the 67 cases that were examined.

Fifteen (15) decedents from motor vehicle related deaths tested positive for drugs with no EtOH detected, 13 were positive for EtOH with no drugs detected, 18 were positive for EtOH and drugs, and in 21 decedents neither EtOH nor drugs were detected. Additionally, there were 4 vehicle-related cases that did not undergo toxicological testing.

## Toxicology Results From Motor Vehicle-Related Deaths

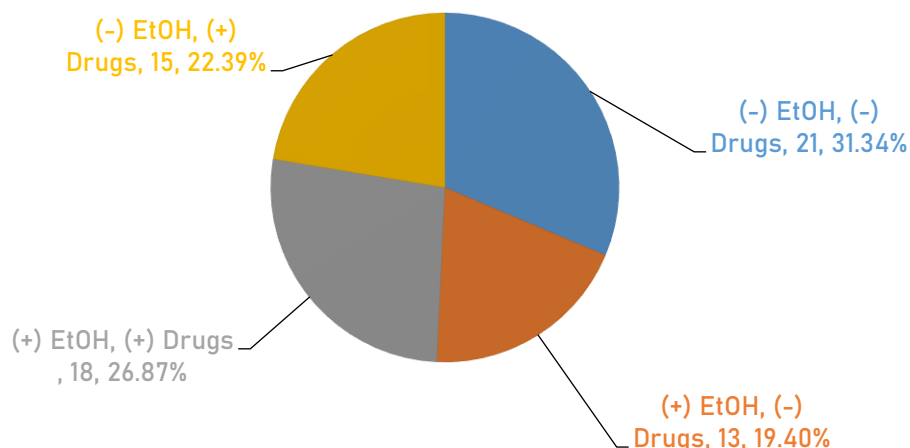


Figure 25: Ethanol and drug results from fatally injured drivers and/or occupants.

Of the EtOH positive blood specimens [Figure 26], the vast majority exceeded the legal limit of 0.08 gm%. The highest blood alcohol result was 0.338 gm%.

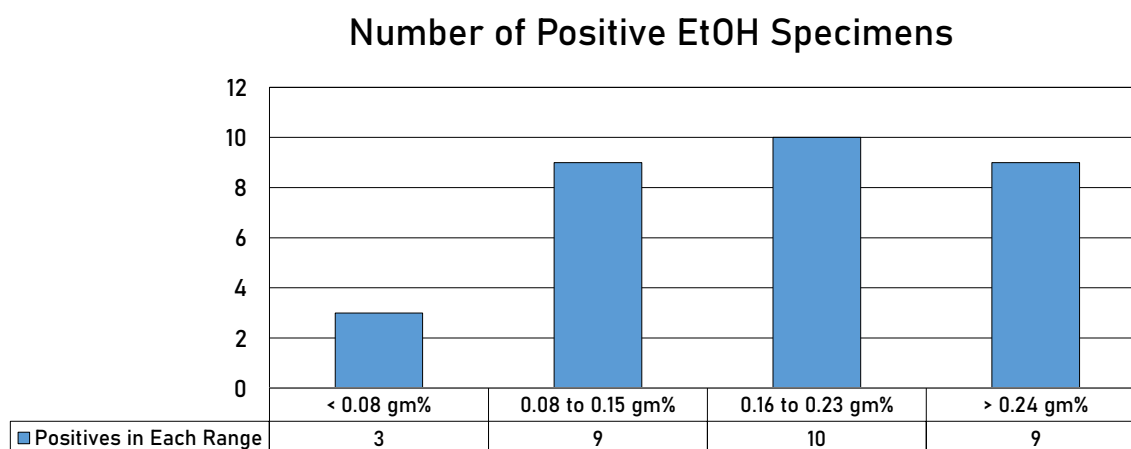


Figure 26: Illustrates the number of positive EtOH specimens within categorized as below the legal limit (< 0.08 gm%), above the legal limit (0.08 to 0.15 gm%), twice the legal limit (0.16 to 0.23 gm %), and three times or more over the legal limit (> 0.24 gm%).

## Drug Related Deaths

Drug related deaths is a general term for deaths caused by drug use. These deaths may include, but are not necessarily limited to, overdoses, deliberate poisonings, accidental poisonings, suicides, health issues related to drug use, deaths due to accidents, or other deaths where a drug is detected in a postmortem specimen.

In drug related deaths, it is very common for the Toxicology Laboratory to detect opioids, methamphetamine, and/or a benzodiazepine in the specimens collected at autopsy or at the hospital prior to death. These drugs are especially common in cases determined to be overdoses, although they are not necessarily detected in every case.

Of particular interest for public health and public safety are overdose deaths and other death types that had either an opioid, methamphetamine, or a benzodiazepine detected. Information about these are provided below.

Overdoses

Overdose deaths are a type of drug related death that can be either accidental or intentional. In 2024, there were a total of 190 overdose fatalities, which equates to an approximate 48.4% increase since 2015 [Figure 27]. However, in 2024 the number of these case types decreased by approximately 36.2% compared to 2021 [Figure 27].

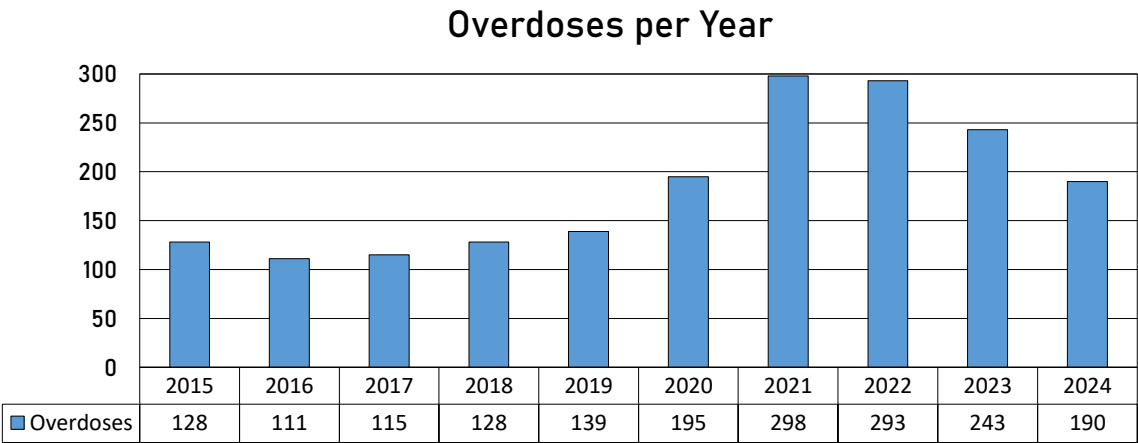


Figure 27: The number of overdose deaths for the past 10 years, includes Sedgwick County and surrounding counties.

Table 2 illustrates the count of overdose deaths in 2024 within various age groups. The greatest number of overdose deaths occurred in the 30- to 39-year-old age group.

	Age Group	Number of Deaths (All Counties)	Number of Deaths (Sedgwick County)
2024	0-18	3	3
	19-29	25	22
	30-39	62	60
	40-49	39	36
	50-59	39	38
	60-69	21	20
	70-79	1	1

Table 2: Illustrates the number of overdose deaths within each age group for all cases examined and how many of those were from Sedgwick County.

Opioid Positive Postmortem Cases

Deaths where an opioid was detected were at an all-time high in 2022 with a total of 298 (previous high was 259 in 2021); however, cases continued to trend downward in 2024 with a total of 202. The range of opioid positive postmortem cases over the past 10 years is 136 to 298 with an average of approximately 192. Figure 28 provides the count of opioid related deaths with the number of fentanyl positive cases being highlighted.

## Opioid Positive Cases per Death Year

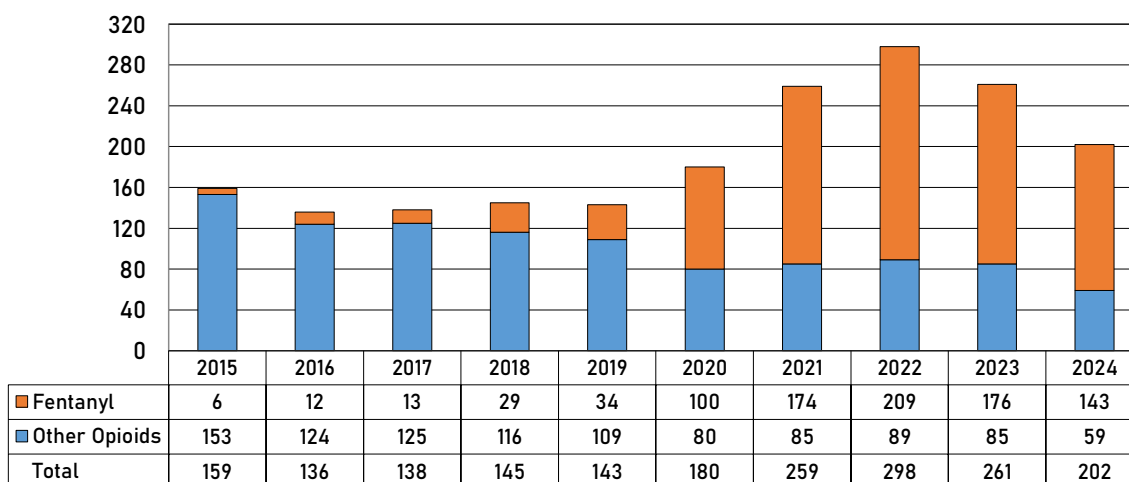


Figure 28: Opioids detected in postmortem toxicology cases per death year. The graph depicts all opioid positive cases with the number of fentanyl positive cases indicated.

Table 3 illustrates the count of fentanyl positive drug related/overdose postmortem cases in 2024 within each age group. The greatest number of deaths in which fentanyl was detected occurred in the 30- to 39-year-old age group.

	Age Group	Number of Deaths (All Counties)	Number of Deaths (Sedgwick County)
2024	0-18	3	3
	19-29	19	18
	30-39	41	41
	40-49	24	24
	50-59	25	25
	60-69	9	8
	70-79	1	1

Table 3: Illustrates the number of fentanyl positive drug-related postmortem cases within each age group for all cases examined and how many of those were from Sedgwick County.

Table 4 illustrates the count of opioid positive postmortem cases per non-natural manner and cause of death. Additionally, there were 40 cases determined to be natural that the decedent had an opioid detected in their toxicology specimens.

	Manner of Death	Cause of Death	Number of Deaths
2024	Accidental	OD Substance Toxicity	136
	Accidental	Medical Miscellaneous	7
	Accidental	MVA	4
	Accidental	Drowning	2
	Accidental	Thermal Injuries	2
	Accidental	Blunt Force Injuries	1
	Accidental	CO Poisoning	1
	Accidental	Fall	1
	Accidental	Other	1
	Homicide	Firearm Injuries	4
	Suicide	Firearm Injuries	10
	Suicide	Hanging Asphyxia	3
	Suicide	OD Substance Toxicity	2

Suicide	Fire Exposure	1
Undetermined	MVA	1
Undetermined	OD Substance Toxicity	1
Undetermined	Undetermined	1

Table 4: Number of non-natural opioid positive postmortem cases categorized by manner of death and cause of death.

### *Methamphetamine Positive Postmortem Cases*

There was a total of 165 methamphetamine positive postmortem cases that had a non-natural manner of death. The range of methamphetamine positive non-natural death postmortem cases over the past 10 years is 71 in 2015 to 199 in 2022.

Table 5 illustrates the count of methamphetamine related deaths per non-natural manner and cause of death. Additionally, there were 10 cases determined to be natural where methamphetamine was detected in the decedent's toxicology specimens.

	Manner of Death	Cause of Death	Number of Deaths
2024	Accidental	OD Substance Toxicity	107
	Accidental	Medical Miscellaneous	10
	Accidental	Motor Vehicle-Related	9
	Accidental	Drowning	4
	Accidental	Mechanical Restraint	2
	Accidental	Suffocation Asphyxia	1
	Accidental	Thermal Injuries	1
	Accidental	Environmental Exposure	1
	Accidental	Fall	1
	Homicide	Firearm Injuries	14
	Suicide	Firearm Injuries	5
	Suicide	Hanging	5
	Suicide	Drowning	1
	Suicide	OD Substance Toxicity	1
	Undetermined	Undetermined	2
	Undetermined	Motor Vehicle-Related	1

Table 5: The number of non-natural methamphetamine positive postmortem cases categorized by manner of death and cause of death.

### *Benzodiazepine Positive Postmortem Cases*

There was a total of 58 benzodiazepine positive postmortem cases that had a non-natural manner of death. The range of benzodiazepine positive non-natural death postmortem cases over the past ten years is 38 in 2015 to 118 in 2022.

Table 6 illustrates the count of benzodiazepine related deaths per non-natural manner and cause of death. Additionally, there were 12 cases determined to be natural where a benzodiazepine was detected in the decedent's toxicology specimen(s).

	Manner of Death	Cause of Death	Number of Deaths
2024	Accidental	OD Substance Toxicity	29
	Accidental	MVA	6
	Accidental	Fall	4
	Accidental	Medical Miscellaneous	2
	Accidental	Blunt Force Injuries	1

Accidental	Drowning	1
Accidental	Hypothermia	1
Accidental	Other	1
Accidental	Thermal Injuries	1
Homicide	Firearm Injuries	1
Suicide	Firearm Injuries	7
Suicide	MVA	1
Suicide	OD Substance Toxicity	1
Undetermined	OD Substance Toxicity	1
Undetermined	Undermined	1

Table 6: The number of non-natural benzodiazepine positive postmortem cases categorized by manner of death and cause of death.

## INDIGENT BURIALS AND CREMATIONS

Bodies that are under the jurisdiction of the Coroner shall be delivered to the immediate family or the next of kin of the deceased. If after a diligent search, no family member or concerned party is found that is willing to claim the remains, pursuant to KSA 22a-215, Sedgwick County is required to provide final disposition for the bodies of unclaimed deceased persons. In accordance with this statute, a procedure has been established by the Center to facilitate the necessary arrangements regarding indigent cremations. The Center maintains a contract with a local mortuary service to handle the disposition of the remains.

As of 2016, the Center cremates all unclaimed bodies under its jurisdiction [Figure 29]. The cremains are retained indefinitely in a respectful manner.

Compared to 2015 there was an approximate 238.1% increase in the number bodies provided a final disposition by the Center in 2024.

### Indigent Burials and Cremations

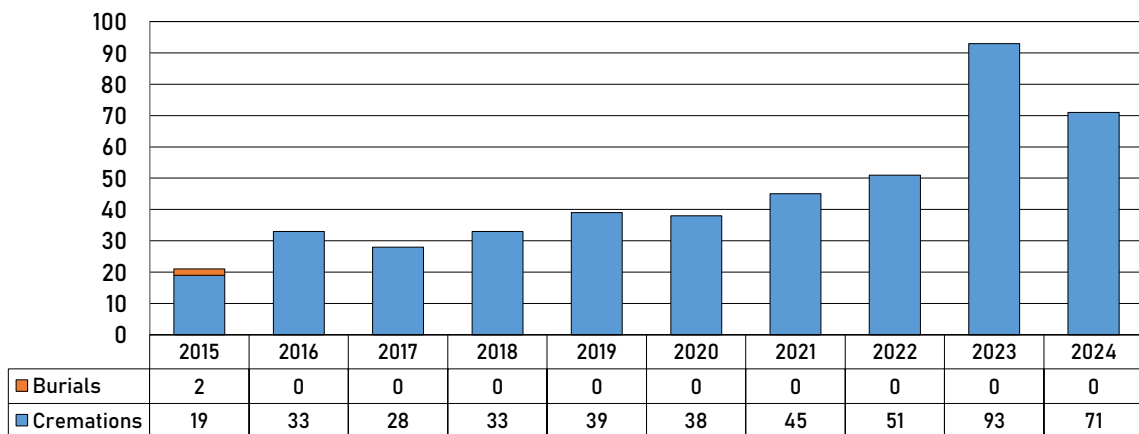


Figure 29: Number of Indigent Burials/Cremations for which the Center was responsible. In 2016, the County changed policy to cremation only for final disposition.

## Cremation Permits

In the state of Kansas, the Coroner is also charged with the investigation of death if the body is to be cremated. The investigation involves confirmation that the death certificate is appropriately executed, and that no further circumstances exist which may have contributed to the death. This may involve interviews with medical personnel, families or other interested parties, and/or a review of medical records. If the cause of death is unclear or falls under the jurisdiction of the Coroner, a postmortem examination and issuance of a revised death certificate may be required prior to cremation. Figure 30 illustrates the number of cremations over the past 10 years. While the number of cremation permits in 2024 were similar to the previous 3 years, the permits did increase approximately 54.5% since 2015.

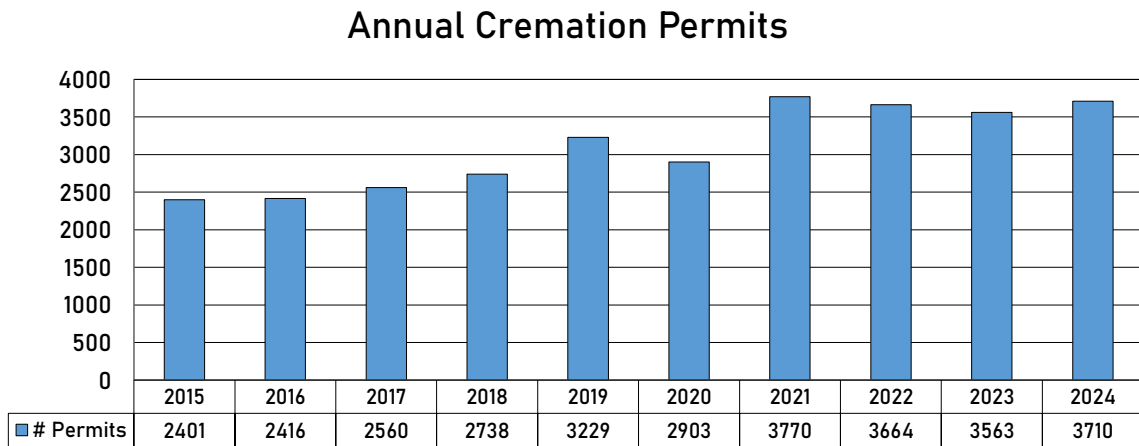


Figure 30: The number of cremation permits per year over a 10 year period.