



2013

Forensic Laboratories Annual Report

Regional Forensic Science Center
1109 North Minneapolis St.
Wichita, Kansas 67214
p (316) 660-4800
f (316) 383-4535

LABORATORY LEADERSHIP

All laboratory managers are case-working and proficiency tested scientists.

Director and Chief Toxicologist

Timothy P. Rohrig, Ph.D., DABFT

Chief of Criminalistics

Justin Rankin

Toxicology Lab Manager

Lydia Harryman

Forensic Biology/DNA Manager

Shelly A. Steadman, Ph.D.

Quality Assurance Manager

Robert Hansen, M.S.F.S.

HIGHLIGHTS

The Forensic Laboratory Division made application for the ASCLD/LAB-*International* accreditation program. The assessment was performed during the week of October 21, 2013 and evaluated the laboratory's conformance to the ISO/IEC 17025:2005 standards, all applicable ASCLD/LAB Supplemental requirements, as well as conformance to the laboratory's own documented management system.

The Forensic Science Center Laboratory Division receives 95% of its casework from law enforcement agencies within Sedgwick County.

Methamphetamine/Amphetamine, Marihuana, and Cocaine continued to be the most commonly detected drugs by the Drug Identification Laboratory.

The prescription drug Hydrocodone was the fourth most commonly detected drug by the Drug Identification Laboratory and the number of Heroin cases detected increased by approximately 19% from the previous year.

CODIS continued to be a valuable tool by providing law enforcement agencies with investigative leads for cases that may otherwise go unsolved.

Sex Crimes continue to be the most commonly worked type of crime against person in the Biology / DNA Section. They account for 31% of all casework in the section.

The Toxicology Laboratory saw an increase in the number of cases submitted for analysis. This is due to both an increase in the number of post mortem and human performance case submissions.

The majority (64%) of DUI cases worked were negative for alcohol in the blood; however, the vast majority (81%) DUID cases worked were positive for drugs.

A trainee in the Firearms Section was accepted into the ATF National Firearms Examiner Training Academy. Once concluded, the examiner will be the first in the State of Kansas to complete Academy training.

The Forensic Laboratory Criminalistics Section reinstated the Fire Debris Laboratory in the fall of 2013 and resumed accepting evidence from fire investigation agencies.

LABORATORY MISSION

To serve the citizens of the Sedgwick County Kansas Region, by ethically providing accurate and unbiased scientific analysis of evidence to the law enforcement and judicial communities.

INTRODUCTION

The Regional Forensic Science Center officially opened on December 21st, 1995. The Center houses the Office of the District Coroner and the Forensic Science Laboratories [FSL]. The Forensic Science Laboratories are comprised of three major sections: Criminalistics, Forensic Biology/DNA and Forensic Toxicology. Within the Criminalistics Section are the Drug Identification Unit, Firearms / Tool Mark Unit, and the Trace (Fire Debris) Unit. Laboratory staff currently consists of 18 scientific/proficiency tested personnel and 3 support personnel.

The FSL is staffed with highly-trained and experienced forensic scientists, many who have advanced scientific degrees [MS, MSFS, Ph.D.]. The technical staff has well over 219 years of combined professional experience.

In April of 1996, the Forensic Science Laboratories began accepting cases for firearms examinations. Three months later, the Biology Section provided forensic examinations for the identification of biological fluids. After mandatory accreditation by the State of Kansas, the Toxicology Laboratory began producing comprehensive examinations in post-mortem toxicology in support of the District Coroner in September of 1996. This was followed by the FSL providing forensic drug identification for local and regional law enforcement agencies. In November of 1996, fire debris analysis was added to the Criminalistics Section. In January of 1997, The Center opened the first STR DNA Laboratory in the State of Kansas.

Since 2003, the Forensic Science Laboratories have been accredited by the American Society of Crime Laboratory Directors/Laboratory Accreditation Board [ASCLD/LAB] under the ASCLD/LAB-*Legacy* program. During the latter part of 2012 and all of 2013, the Laboratory Division completed a management system, and technical procedures and practices update in order to conform to the ASCLD/LAB-*International* accreditation program. The ASCLD/LAB-*International* accreditation program evaluates the laboratory's management system, and technical procedures and practices against criteria set forth in *ISO/IEC 17025:2005*, the testing laboratory requirements of the ASCLD/LAB-*International* Supplemental Requirements.

In April 2013, the Laboratory Division submitted all required documents of our management system, and technical procedures and practices for evaluation by ASCLD/LAB. An on-site assessment by 5 discipline experts occurred the week of October 21, 2013.

Striving for and meeting the requirements of the ASCLD/LAB-*International* program demonstrates the Center's commitment to excellence in the services we provide to our submitting agencies.

SIGNIFICANT ACHIEVEMENTS

- The laboratory presented :
 - T. P. Rohrig, January 21 – 24, 2013, lectured 25 hours, Post-mortem Toxicology: Interpretive Considerations and Challenges, University of Lincoln (United Kingdom).
 - MidAmerica 2013 Forensic DNA Conference, Columbia, MO, April 10, 2013. Oral presentation: *S. Steadman*, "Preliminary extraction efficiency studies aimed at addressing arguments considered by the court during sample consumption hearings in Sedgwick County."

- Laboratory Staff enhanced their technical/professional expertise by attended several workshops / training sessions at conferences / symposiums:
 - 65th Annual Scientific Meeting of the American Academy of Forensic Sciences, February 18 – 23, 2013, Washington, DC.
 - Mid-America 2013 DNA Conference, April 10 & 11, 2013, Columbia, Missouri.
 - DNA Mixture Interpretation workshop & webcast, April 12, 2013, National Institute of Standards and Technology.
 - Measurement Traceability (100A), July 23, 2013, ASCLD/LAB.
 - Measurement Assurance (100B), July 24, 2013, ASCLD/LAB.
 - Measurement Uncertainty (100C), July 25, 2013, ASCLD/LAB.
 - 24th International Symposium on Human Identification, October 7 – 10, 2013, Atlanta, GA.
 - SOFT 2013 Annual Meeting, October 27 – November 1, 2013, Orlando, FL.
 - Ethics: The Intersect of Law and Science, Sedgwick County Deputy District Attorney / Ethics Coordinator, Ron Paschal, December 2, 2013.

- 2013 Grant Funding:
 - Justice Assistance Grant [JAG] - \$77,700
 - Firearms Comparison Microscope
 - Drug Standards for Drug Identification Unit
 - NIJ DNA Backlog Reduction Program - \$100,000
 - DNA profile analysis software
 - Instrument upgrades

FORENSIC SCIENCE LABORATORIES SERVICE OVERVIEW

Case Submissions

The Forensic Science Laboratory continues to experience a significant demand for its expert services. While the total number of case submissions slightly decreased compared to last year, the number of items and the complexity of evidence examined remains high. The five year average of cases submitted is 4924. **Figure 1** illustrates the number of forensic laboratory cases submitted for examination for the past 5 years.

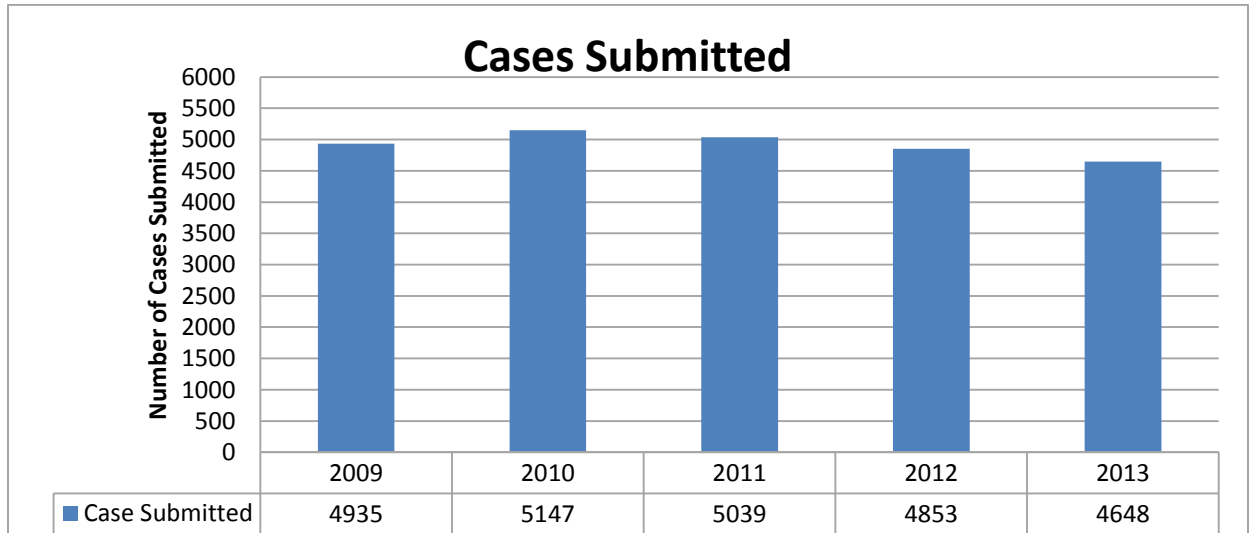


Figure 1 Illustrates the number of forensic laboratory cases submitted for examination (law enforcement and District Coroner post-mortem evidence submissions).

2013 Case Submissions

Cases are submitted for forensic examination to our three analytical sections, Criminalistics, Biology / DNA, and Toxicology. Toxicology receives evidence from law enforcement through the evidence unit and post-mortem submission from the District Coroner.

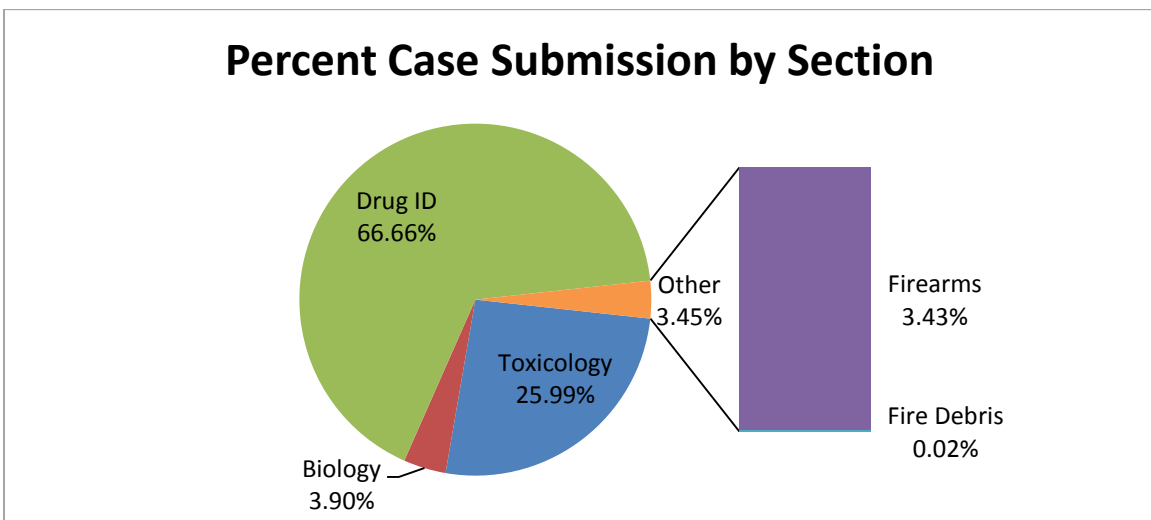


Figure 2 Illustrates the percentage of case submissions per laboratory section. The Criminalistics Section continues to receive the majority of evidence submitted.

Expert Testimony

The professional staff is frequently called upon to present expert testimony in the courts. The amount of time spent by staff preparing for testimony, waiting to testify at courthouses, and time spent on the stand providing testimony is significant.

In 2013, the FSL received 2646 subpoenas for court appearances, an approximate 22% decrease from last year.

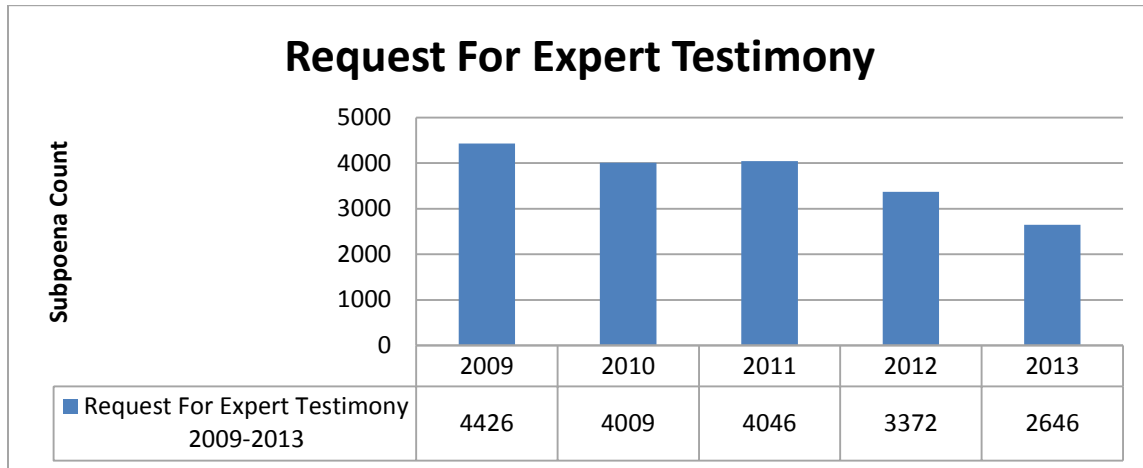


Figure 3 Illustrates the number of subpoenas received by professional staff over a five year period.

Agencies Served

The Forensic Science Laboratories provides expert testing services and consultation for a variety of law enforcement agencies within and outside Sedgwick County. In 2013, the FSL provided expert testing services and consultations to 43 Law Enforcement Agencies, Fire Departments, and District Coroners. **Figure 4** indicates [yellow highlight] the counties within the state in which forensic laboratory services were provided.

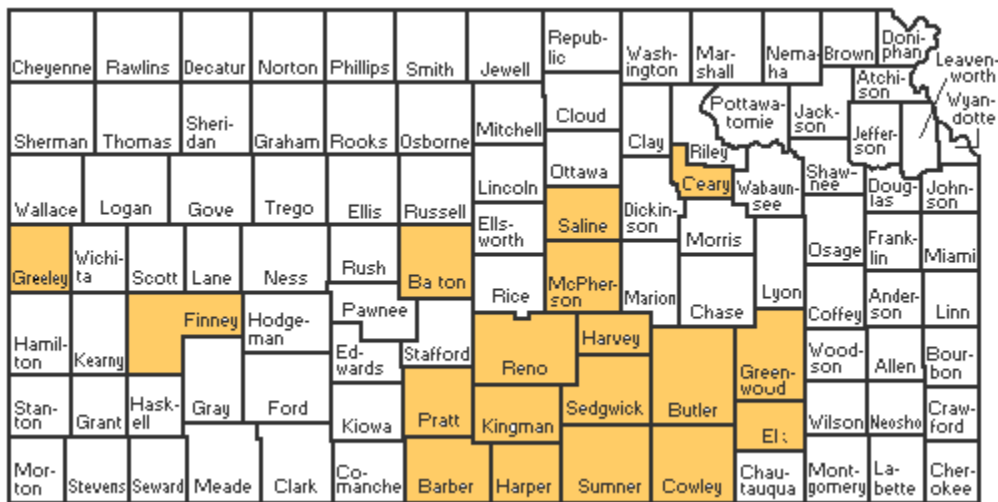


Figure 4 Illustrates the counties that had forensic laboratory services provided to them by the Sedgwick County Regional Forensic Science Center in 2013.

Sedgwick County vs. Out-of-County Cases

The Sedgwick County Regional Forensic Science Center serves as the principle Forensic [Crime] Laboratory for all of Sedgwick County Law Enforcement Agencies and provides forensic services to many other counties and municipalities within the state of Kansas. However, the vast majority of forensic laboratory services were provided for Sedgwick County Law Enforcement agencies. **Figure 5** illustrates the relative percentages of In-County [Sedgwick] and Out-of-County cases submitted to the Forensic Science Laboratories. A significant portion of the out-of-county cases was in support of the Sedgwick County Coroner’s out-of-county autopsies.

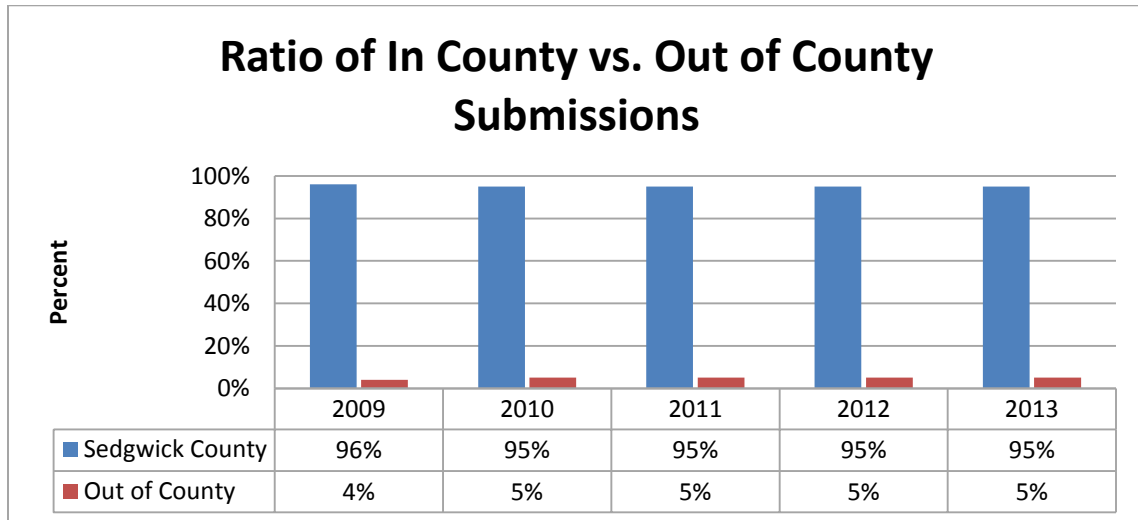


Figure 5 Illustrates the percentage of in-county versus out-of-county cases examined in the laboratories over a five year period.

Table 1 is a list of law enforcement agencies, fire departments, and county coroners the forensic laboratories provided services for in 2013.

Alcohol Tobacco and Firearms
 Barber County Coroner
 Barton County Coroner
 Bel Aire Police Department
 Butler County Coroner
 Clearwater Police Department
 Cowley County Coroner
 Derby Police Department
 Eastborough Police Department
 Eldorado Correction Facility
 Elk County Coroner
 Finney County Coroner
 Goddard Police Department
 Greeley County Coroner
 Greenwood County Coroner

Harper County Coroner
 Harvey County Coroner
 Haysville Police Department
 Hutchinson Correction Facility
 Junction City Police Department
 Kansas Dept. of Corrections
 Kansas Highway Patrol
 Kechi Police Department
 Kingman County Coroner
 Maize Police Department
 Maize USD266 Police Dept.
 McPherson County Coroner
 Mulvane Police Department
 OSI McConnell Air Force Base
 Park City Police Department

Pratt County Coroner
 Reno County Coroner
 Saline County Coroner
 Saline County Sheriff
 Sedgwick County Coroner
 Sedgwick County Fire Dept.
 Sedgwick County Sheriff
 Sumner County Coroner
 Valley Center Police Department
 Wichita Fire Department
 Wichita Police Department
 Wichita State Univ. Police Dept.
 Winfield Police Department

CRIMINALISTICS SECTION

The Criminalistics Section receives the majority of the cases submitted to the Forensic Laboratories. The Criminalistics Section provides forensic examinations in Drug Identification, Open Container [Beverage Alcohol] Analysis, Firearms & Tool Marks, Serial Number [Firearms] Restoration and Trace Evidence [Fire Debris]. **Figure 6** illustrates the trend in forensic case volume submitted to the Criminalistics Section.

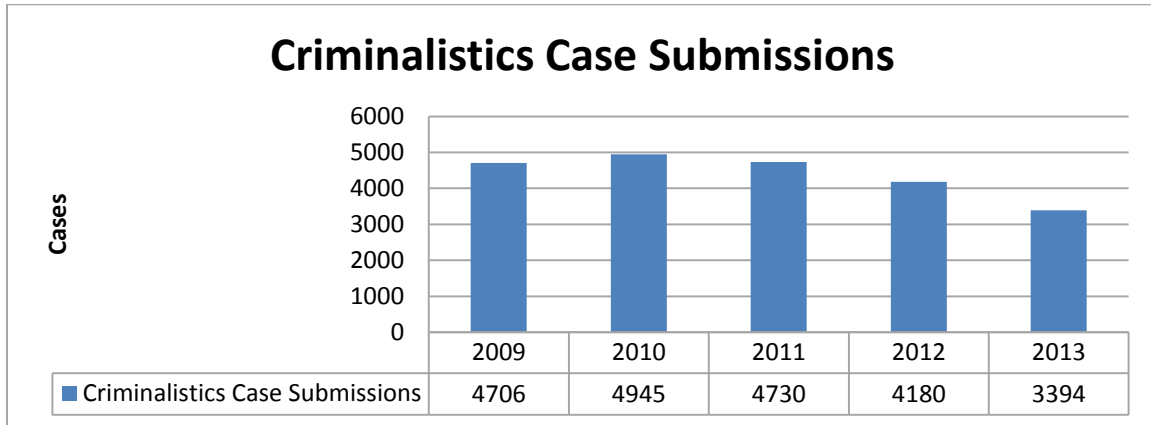


Figure 6 Illustrates the number of cases submitted for analysis to the Criminalists Section, which includes Drug ID, Firearms / Tool Marks, and Fire Debris over a five year period.

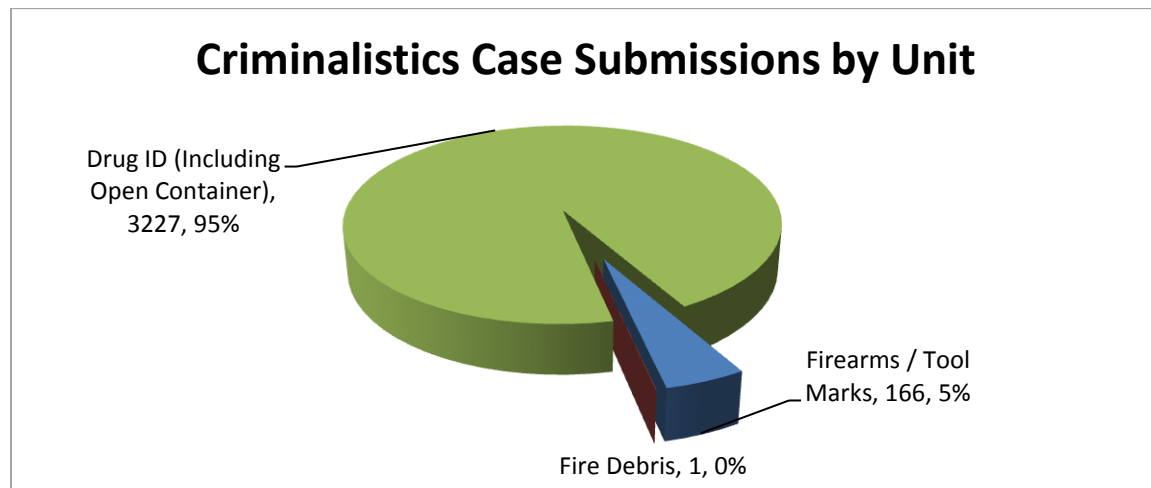


Figure 7 Illustrates the number and percentage of cases submitted for each Laboratory Unit. Note that the Center postponed receiving fire debris cases until November 2013.

Drug ID Unit

The majority of cases submitted to the Criminalistics Section [**Figure 7**] are for illicit drug identification. Open Container is the second most abundant case type, accounting for approximately 10% of the cases submitted for analysis to the section, and includes cases with and without associated drug evidence. Open container cases submitted without associated drugs accounted for 2.5% of total cases submitted to Drug ID.

The agency that submits the greatest volume of drug evidence is the Wichita Police Department [WPD]. This is apparent in **Figure 8**, as nearly 87% of cases received are from the Wichita Police Department. Agencies other than the Wichita Police Department and the Sedgwick County Sheriff's Office comprise approximately 5% of the total cases submitted.

Drug ID Case Submissions by Agency (%)

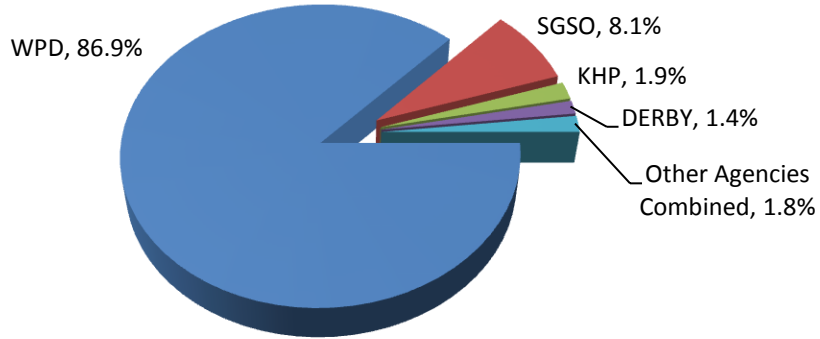


Figure 8 Illustrates the percentages of cases submitted from the largest contributing agencies to Drug ID.

In 2013, the Drug Identification Unit examined thousands of exhibits for the presence of controlled substances. Consistent with years past, the majority of drug exhibits were identified as marihuana, cocaine, and methamphetamine. The section continues to see a steady submission of synthetic cannabinoids (“K2”, “Spice”, “potpourri”) and designer stimulants (substituted cathinones aka “bath salts”). Also, the unit performed 37 methamphetamine quantitations and 25 cocaine base / salt form determinations (FTIR), which are required for federally charged cases. **Figure 9** illustrates the count for each of the seven most commonly detected drugs by the Drug ID Unit.

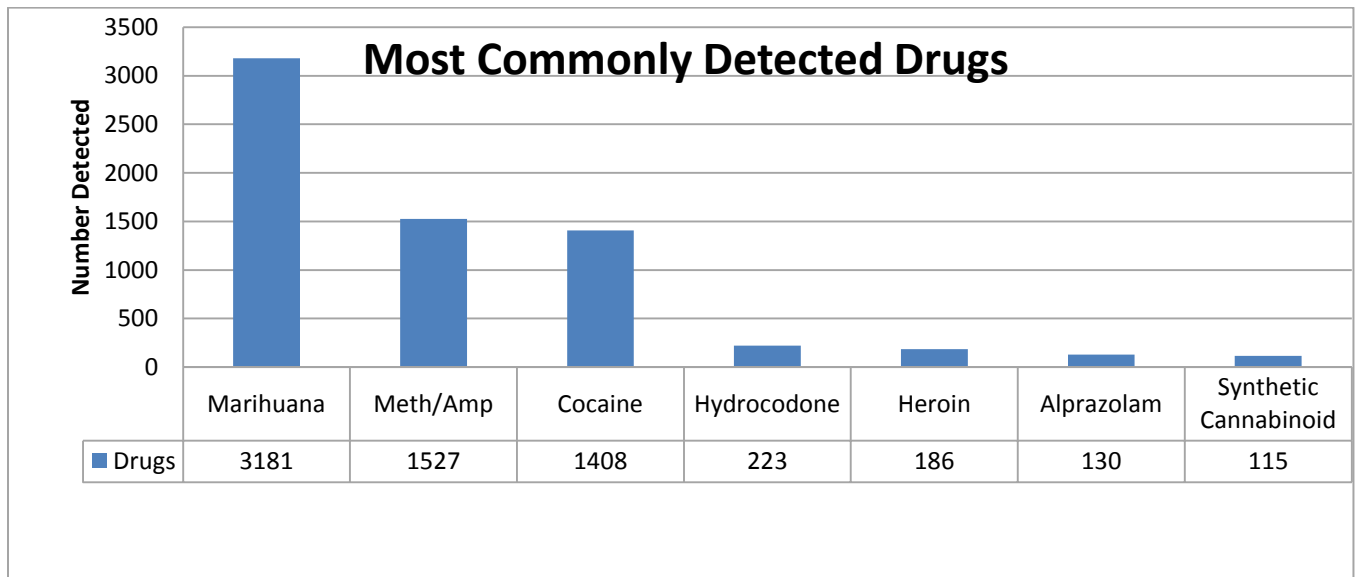


Figure 9 Illustrates the seven most commonly detected drugs from 2013 examinations. The next most commonly detected drug was clonazepam (49).

Open Container / Beverage Alcohol

Open Container/Beverage Alcohol analysis is conducted in support of the state and local DUI laws, prohibition of minors to possess alcohol, and other liquor law violations. As shown in **Figure 10**, the number of open containers submitted remains somewhat constant over the most recent five year period.

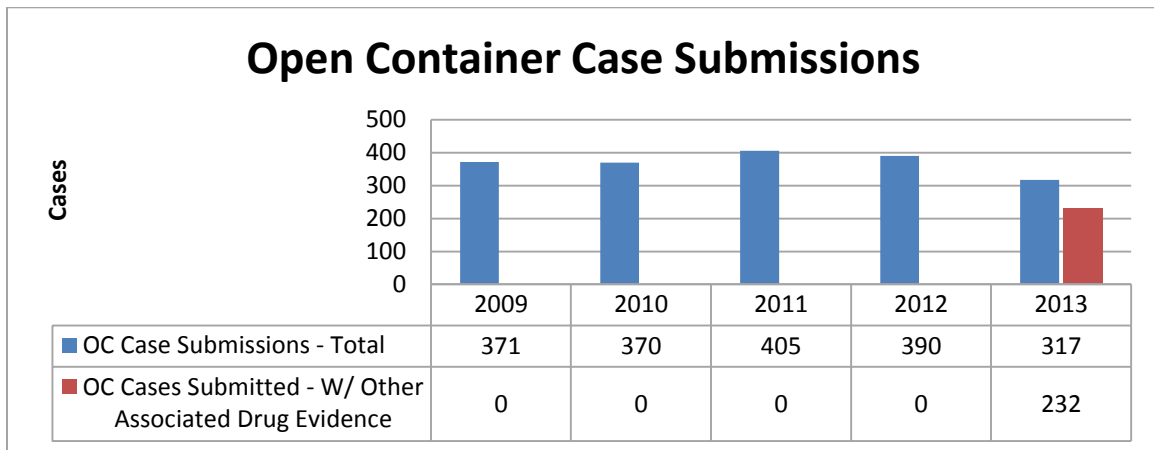


Figure 10 The total number of open container cases submitted remained somewhat constant. Data for 2013 includes the number of open container cases submitted that also had other controlled substances submitted (i.e. marihuana, cocaine, etc.). The 0's in the chart indicate that there is no data for this calculation for the previous four years.

Firearms/Tool Marks Unit

The Firearms/Tool Marks Unit conducts many types of forensic examinations. The majority of examinations involve operability (function) tests on the submitted firearms.

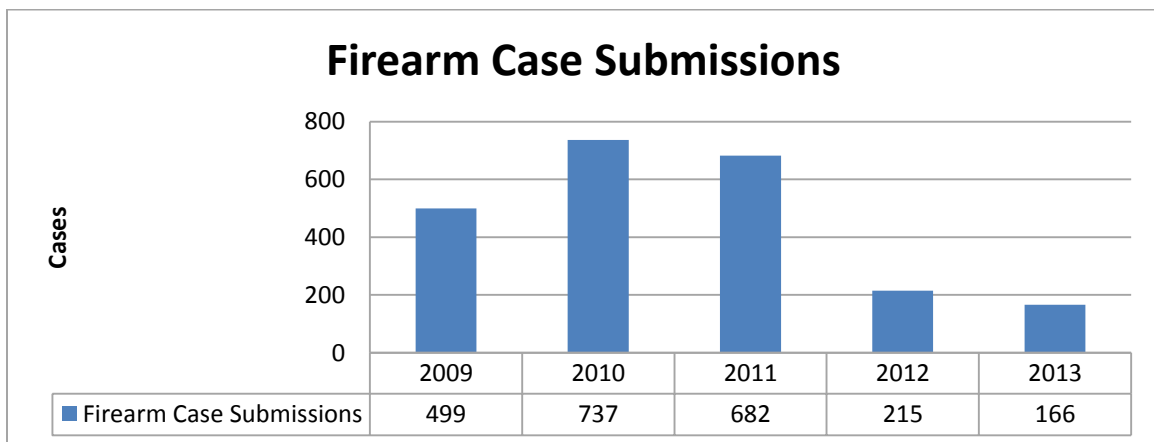


Figure 11 The “drop” in the number of cases from 2011 to 2012 is due to the use of an updated/uniform method of calculating case submissions. Subsequent submissions under the same case number are no longer included when counting case submissions within this Unit.

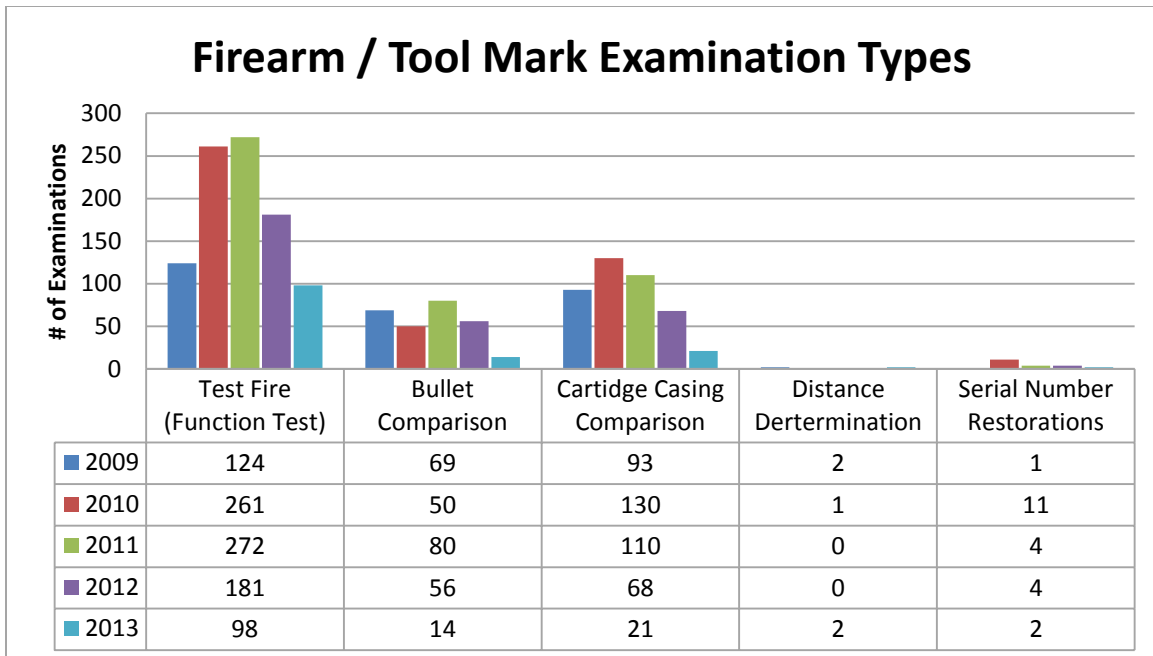


Figure 12 Illustrates the case types examined in the unit; classified as test fires, bullet comparisons, cartridge case comparisons, distance determinations, tool mark exams, and serial number restorations.

Trace Evidence Unit

The Trace Evidence Unit at the Center examines fire debris cases in support of fire investigations. The information provided to the investigator aids in determining if a fire was accidentally or intentionally set for purposes ranging from insurance fraud to homicide. Due to the absence of a qualified scientist, fire debris evidence was not accepted, nor was analysis performed for most of 2013.

In August 2013, the unit commenced performing analysis on cases submitted prior to 2013 in order to clear the backlog. **Figure 13** illustrates the number of fire debris cases reported by the Trace Evidence Unit.

In November 2013, the unit completed all backlogged cases and resumed receiving evidence for analysis. Now that the unit is performing fire debris analysis, the Center anticipates a steady influx of cases consistent with prior years.

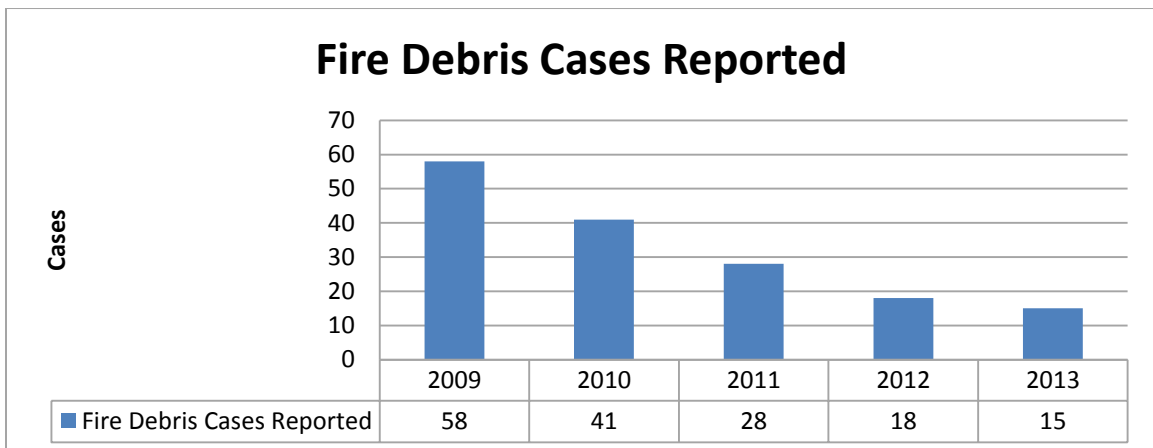


Figure 13 Illustrates the number of case reports issued over a five year period. Note: The unit was not performing analysis until August 2013 and resumed receiving evidence in November 2013.

FORENSIC BIOLOGY/DNA SECTION

The Biology/DNA Section examines evidence from a variety of cases including, sex crimes (rape, indecent liberties, incest, etc.), homicides, property crimes, assaults, and forensic identifications (unidentified bodies).

The section screens evidence for the presence of biological evidence (blood, semen, saliva, feces, and urine). For DNA analysis, the section generates short tandem repeat (STR) profiles from biological material left at crime scenes. Once profiles are established from the scene exhibits, they can be compared to reference standards collected from individuals believed to have some association to the scene (victims, suspects, or other known individuals). Ultimately, results are interpreted and a conclusion drawn as to whether the reference standard profiles are consistent with or excluded from the crime scene profiles. The nature of forensic samples collected at crime scenes vary greatly and can result in high quality single source profiles (fresh blood stains) or may have been left by multiple individuals or exposed to environmental elements (low quantity/degraded samples. All of these factors affect the laboratory's ability to obtain a comparable profile and statistical analysis is performed by analysts so that power of discrimination can be clearly presented to a jury when an association is made between a reference sample and a scene exhibit.

In 2013, the Biology/DNA section received 189 cases for forensic DNA examination. While there has been a decline in the number of cases submitted since 2011, this does not reflect the number of exhibits per case, nor does it reflect the complexity of those exhibits.

The challenging nature of the DNA samples submitted for DNA analysis is illustrated by the routine need to consume the evidence for testing due to the limited size and/or compromised nature of samples collected at crime scenes. In 2013, 49.6% of Biology Section cases involved consumptive testing and 43.9 % of all items submitted were consumed. Notification processes involved with consumptive testing lengthen the timeline for conducting the analysis, and the associated judicial processes generally commence after the submission to the lab has been made.

Also, the increasing number of CODIS entries, associated hits generated, and oversight of this database, entails a large amount of scientist time. Samples compared as a function of database management are not reflected in the number of cases submitted or accounted for as a separate "case type" in the figures below.

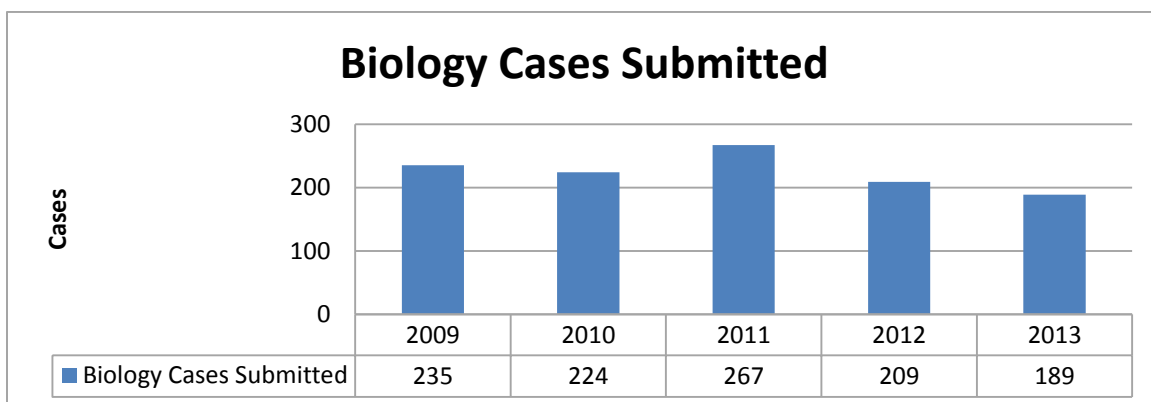


Figure 14 Illustrates the number of cases submitted to the Biology / DNA Section over a five year period.

As depicted below, over half of the cases submitted for biological examination are robbery/burglary with sex crimes being the second overall.

Property crimes continue to be processed if the evidence submitted has a high likelihood of resulting in a profile suitable for CODIS entry. Given that these crimes have a high recidivism rate, they have an exceptional solvability factor when crime scene profiles are searched against the database.

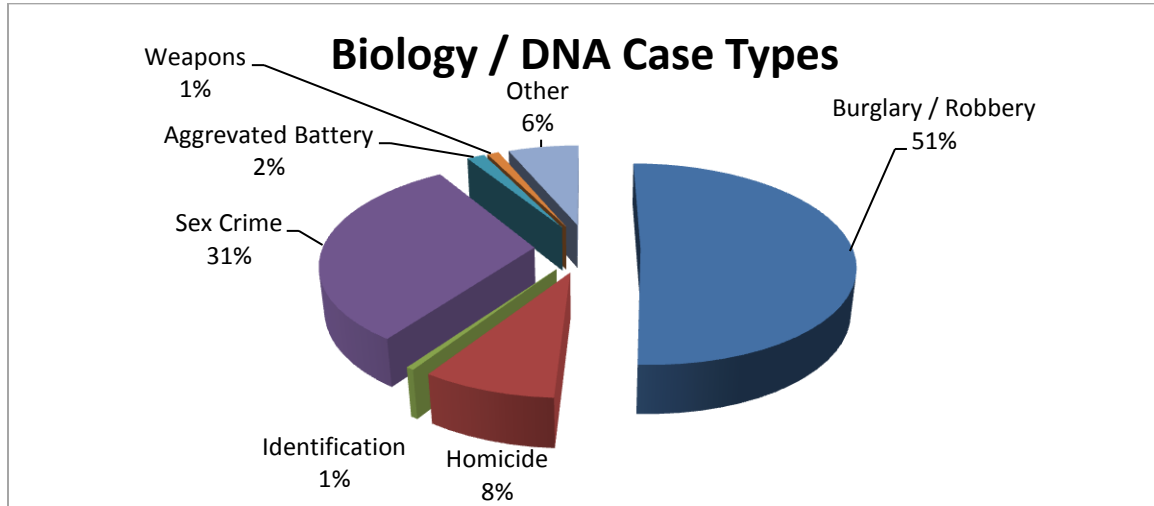


Figure 15 Illustrates the classification of cases submitted for Biology/DNA analysis. Six percent of the case types are categorized as other. This category includes cases involving arson, vandalism, auto theft, attempted murder, vehicular homicide, narcotics, stalking, etc. The section identified human remain(s) in one case through Forensic DNA analysis.

CODIS

In 2007 Kansas became an all arrestee state, meaning that law enforcement will collect DNA samples for any person arrested for qualifying offenses. The DNA profile generated from the arrestee/offender is inputted into the state database (SDIS) in Topeka, KS and is available to be searched against with the unknown profiles the section enters into our local database (LDIS). As a result of this and the anticipation of new national database (NDIS) participation requirements, in late 2009, the Sedgwick County DNA Laboratory adopted new procedures for the release of investigative lead information, to include formal written and reviewed reports for database associations.

Ultimately, the increased number of associations resulted in an increase in reports generated, as well as an increase in the number of known samples processed to confirm and prosecute these additional CODIS hits. All factors taken together caused a spike in workload that was realized in 2010 and continued throughout 2011. By 2012, the vast majority of the backlogged offender samples had been added to the database and the increase in workload due to CODIS investigative leads begins to level off.

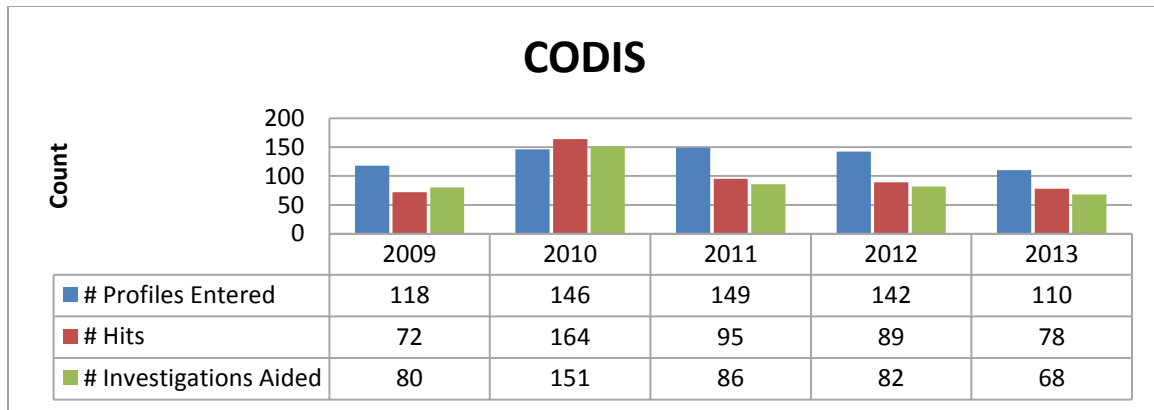


Figure 16 2010 indicates an increase in the number of reports issued by the Biology / DNA section due to new NDIS participation requirements. As the CODIS database increases in the number of profiles the number of reports is expected to increase.

Each report and associated case record goes through a review process. While the process has always included a technical review when a record contains technical data and an administrative review on all case records, accreditation requirements mandate that with each hit a formal notification be provided to the investigating agency. This new requirement has increased the time spent reviewing case records substantially.

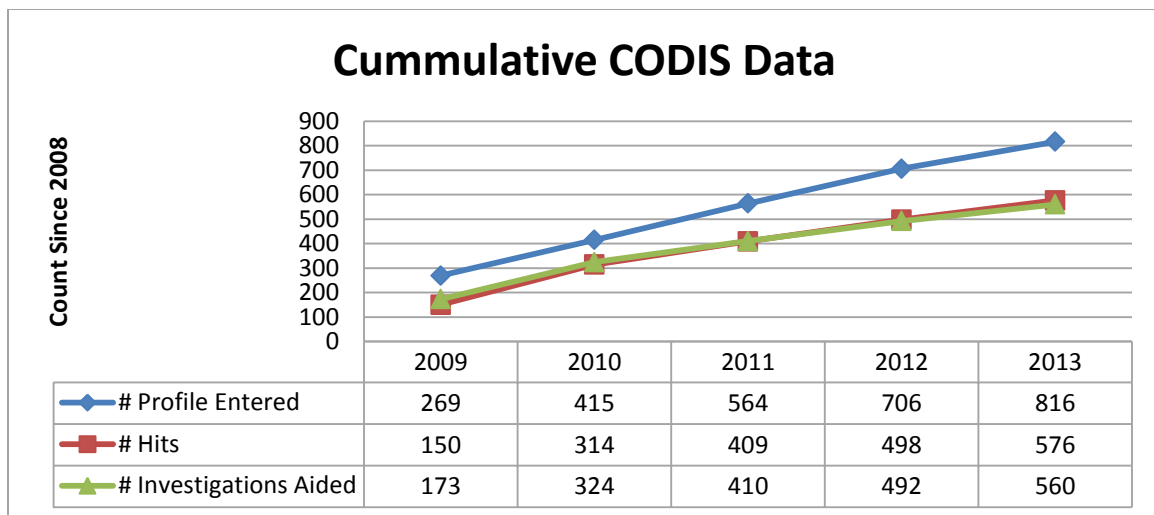


Figure 17 Outlines the number of profiles entered, number of hits, and the number of investigations aided beginning in 2008. The average number of profiles entered into CODIS annually is 136 per year. The number of hits (average 96 per year) and investigations aided (average 93 per year) closely track one another.

Biology/DNA Reporting

The Biology / DNA section issued 331 reports in 2013. Of those, 59 were Offender Hit Notifications, which is when a forensic unknown sample hits to a convicted offender sample at the state or national level, and 19 were Local DNA Index System (LDIS) match reports, which is when a local forensically unknown sample hits to another sample previously entered into the local database.

FORENSIC TOXICOLOGY SECTION

The Forensic Toxicology Section provides comprehensive examinations of post-mortem [autopsy] samples to assist in the determination of cause and manner of death. Specimens collected during the investigation of driving-under-the-influence-of-drugs/alcohol cases and drug-facilitated sexual assault cases are also examined by this section. The Toxicology Laboratory also provides drug testing on children removed from clandestine methamphetamine laboratories.

The section continues to expand the number of drugs and poisons it can detect and quantitate.

The Forensic Toxicology Section has experienced a moderate increase in casework over the last few years. As illustrated in **Figure 18**, the number of cases submitted in 2013 was the highest in the most recent five year period.

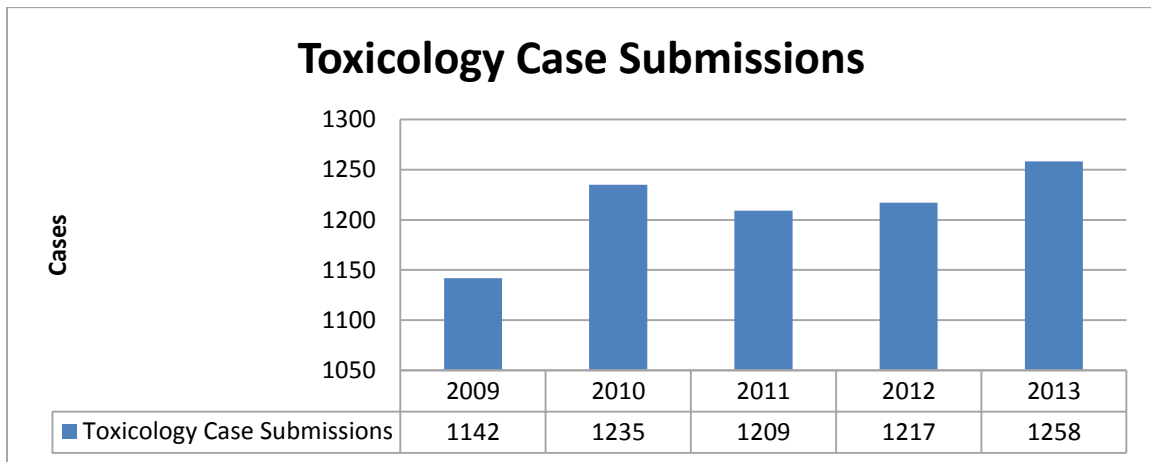


Figure 18 Illustrates the number of cases submitted to the Toxicology Section for analysis over a five year period. A significant portion of samples submitted are post-mortem cases, the number of which is dependent upon the number of autopsies performed at the Center.

Figure 19 depicts the percentage of toxicology cases submitted by case type. Toxicological examinations in support of the District Coroner (PM) account for approximately two-thirds of the forensic case work performed by the section.

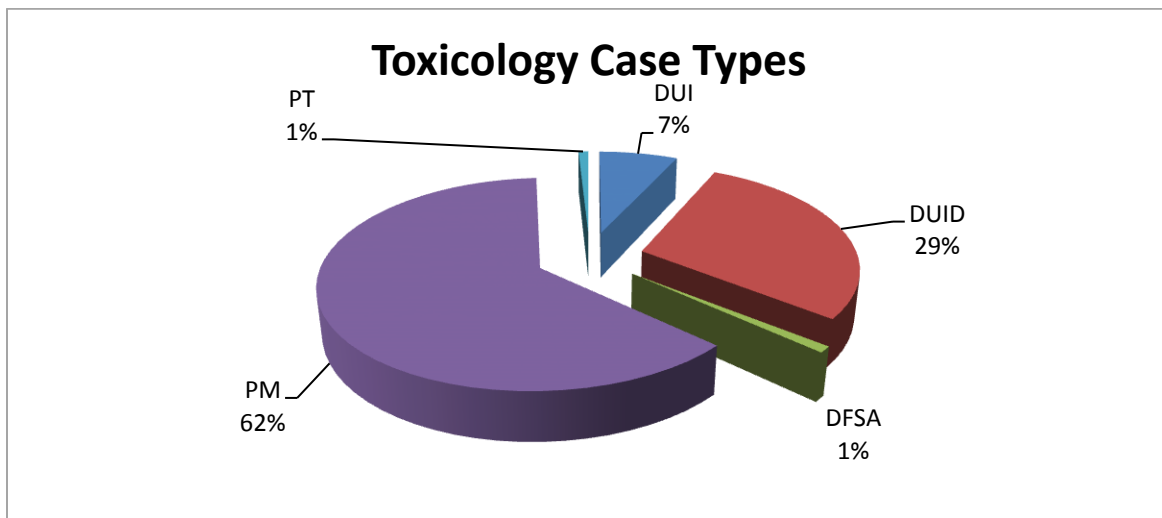


Figure 19 DUI (Driving Under the Influence of Alcohol), DUID (Driving Under the Influence of Drugs), PM (Post-Mortem), DFSA (Drug Facilitated Sexual Assault), and Proficiency Tests (PT).

Alcohol and Drugs

Alcohol continues to play a significant role in all of the FSL toxicology case types [Figure 20]. In more than 53% of the toxicology alcohol positive cases, the driver/decedent was greater than twice the legal limit (0.08 gm%).

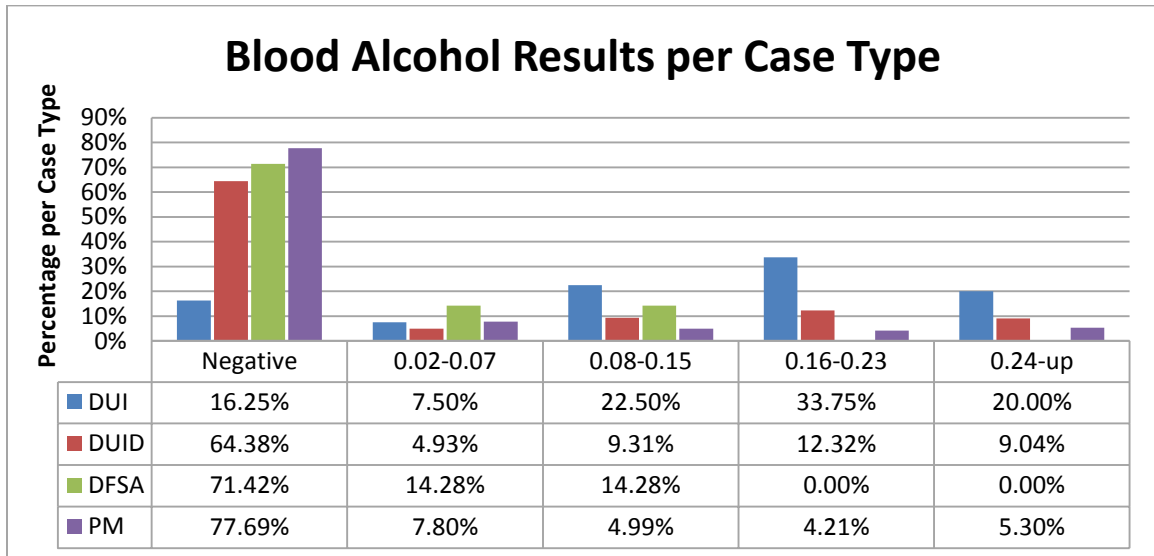


Figure 20 Illustrates the percentage of alcohol test result ranges for each category of cases worked.

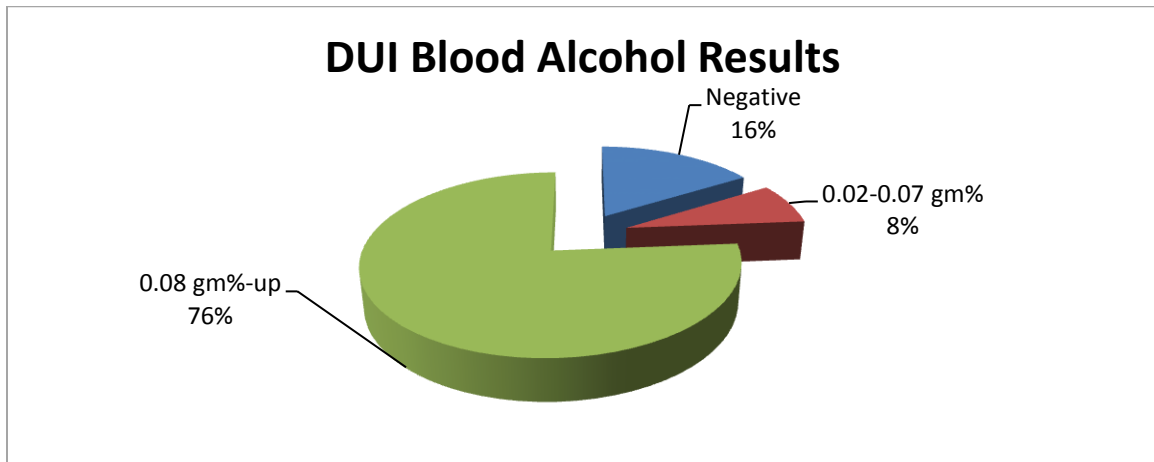


Figure 21 The vast majority of samples submitted in Driving-Under-the-Influence [DUI] cases were found to have alcohol concentrations at or above the legal limit of 0.08 g%.

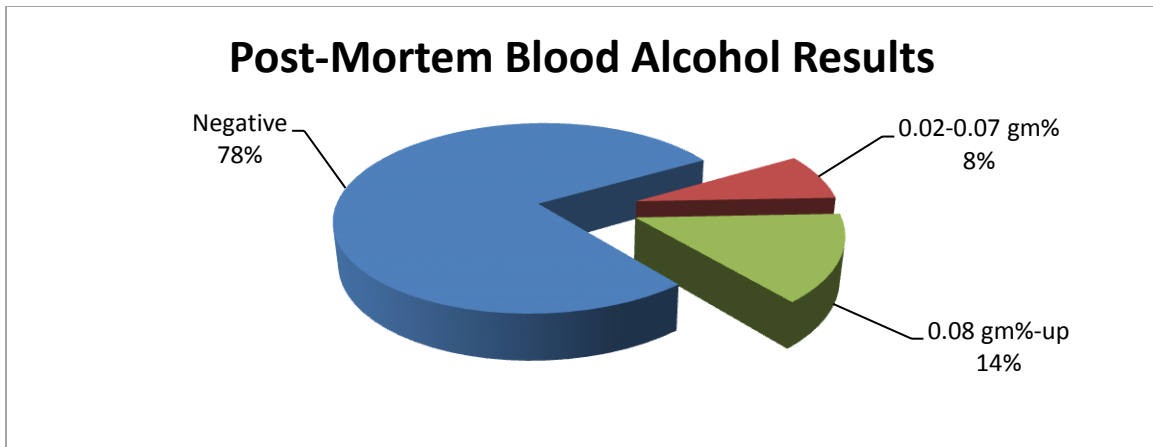


Figure 22 In approximately 22% of the postmortem (PM) case investigations there was a positive finding of alcohol.

Drug-Related Deaths

Aside from alcohol, tetrahydrocannabinol / carboxytetrahydrocannabinol [THC: psychoactive ingredient found in marijuana] is the most commonly found drug in post-mortem cases.

Table 2 depicts the 10 most common drug findings in post-mortem Toxicology cases [excluding ethyl alcohol] for 2013.

10 Most Commonly Detected Drugs / Metabolites (Post-Mortem)

- Alprazolam / a-Hydroxyalprazolam
- Amphetamine / Methamphetamine
- Citalopram / Desmethylcitalopram
- Cocaine / Benzoylcegonine / Cocaethylene
- Diazepam / Nordiazepam
- Hydrocodone / Hydromorphone / Dihydrocodeine
- Methadone / Normethadone / EDDP / EMDP
- Morphine / Codeine
- Oxycodone
- Tetrahydrocannabinol / Carboxytetrahydrocannabinol

Alcohol Positive Drivers

Alcohol plays a significant role in driving under the influence cases. In 2013, 55.73% of tested samples in DUI and DUID cases were negative for the presence of alcohol. **Figure 23** shows that approximately 88% of alcohol positive drivers were at or above “per se” limit of 0.08 gm%.

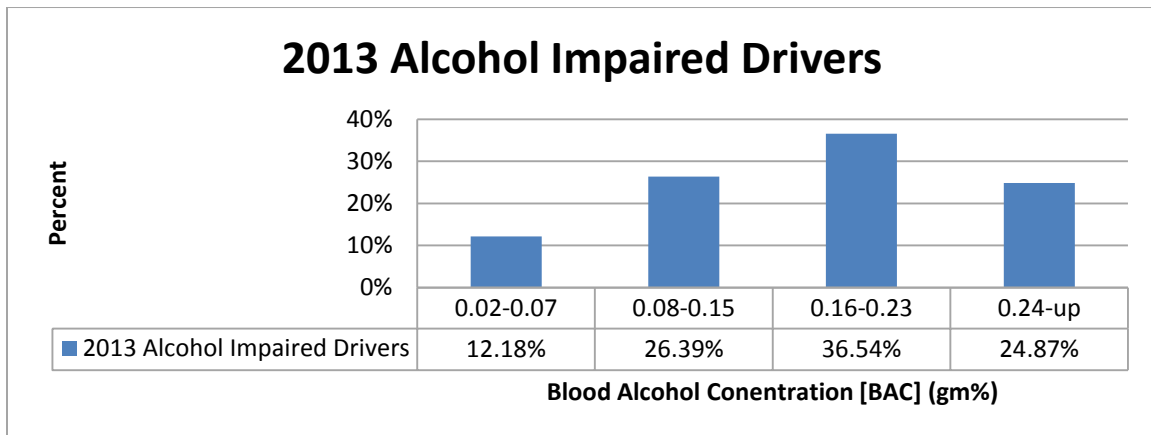


Figure 23 Illustrates the alcohol test result ranges of positively tested samples submitted for DUI and/or DUID.

Alcohol Positive Drivers – Under the Age of 21

The legal age for possession of alcohol is 21 years old. In 2013, 9% of all motor vehicle drivers testing positive for alcohol were under the age of 21 [**Figure 24**].

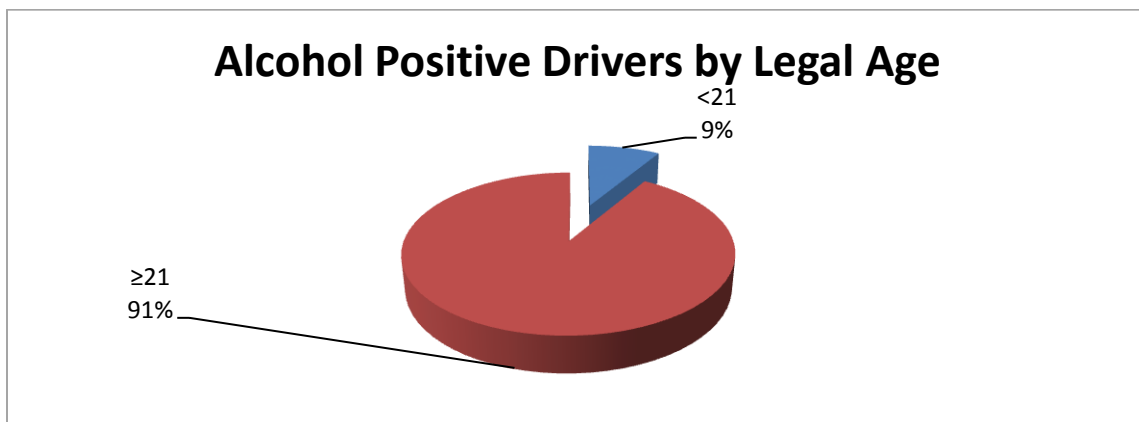


Figure 24 Illustrates the percentage of alcohol positive drivers that were <21 years old versus the percentage that were ≥ 21 years old.

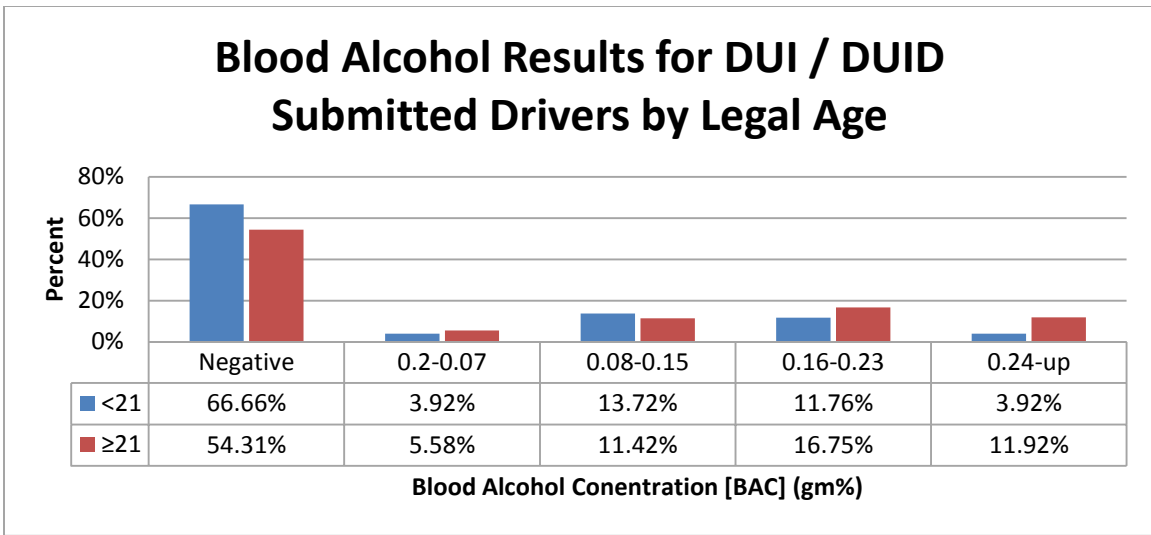


Figure 25 Illustrates the percentages of suspected alcohol impaired drivers by age. For drivers tested that were < 21, 29.40% had alcohol concentrations $\geq 0.08\%$.

Sixty-four percent of DUID cases were found to be negative for alcohol upon pre-screening, 5% were cases involving blood alcohol levels at or below the legal limit and 31% of the cases were above the legal limit (0.08% and up) [Figure 26].

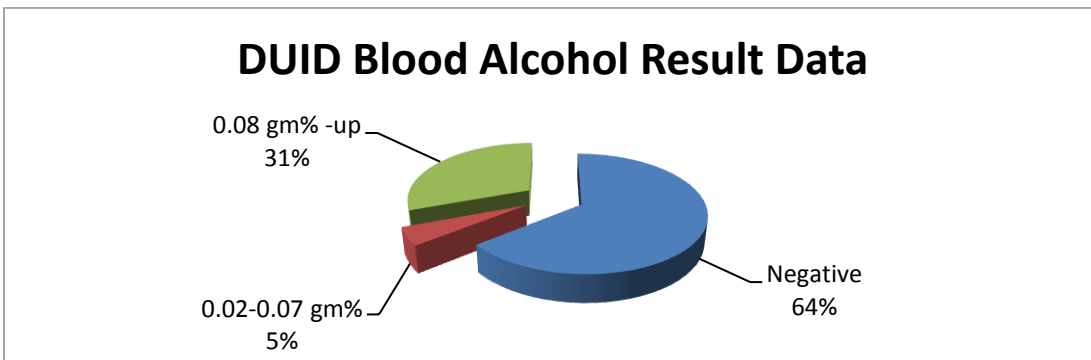


Figure 26 Illustrates the general alcohol testing result ranges for DUID submitted cases.

Drugs and Driving

Drugs play a significant role in driving under the influence cases and can cause different levels of impairment. As depicted in **Figure 27**, the majority of DUID cases tested positive for the presence of drugs.

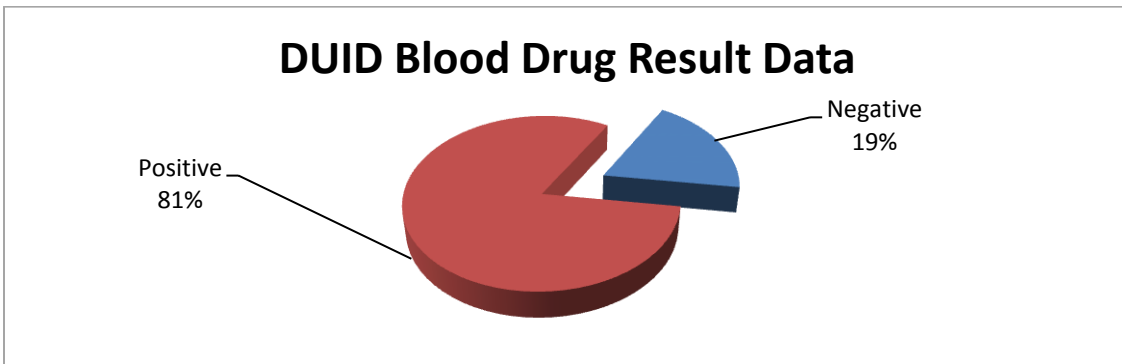


Figure 27 Illustrates that 81% of individuals suspected of driving under the influence of drugs tested positive.

Driver Drug Usage: Controlled Substance, Prescription, and Over The Counter Drugs

In DUID cases where drugs were detected, 99% were Controlled Substances [Figure 28].

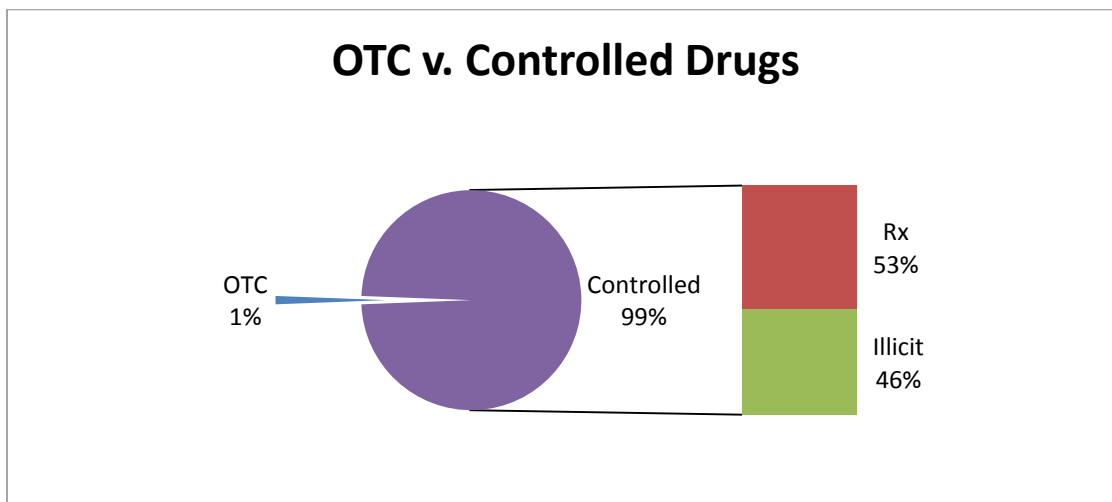


Figure 28 Illustrates the percentage of over the counter drugs (OTC) detected in DUID cases versus controlled drugs. Controlled drugs are drugs that can be used as directed prescriptions (Rx) or illicit.

Table 3 depicts the 10 most common drug detected in driving-under-the-influence-of-drugs [DUID] toxicology cases [excluding ethyl alcohol] in 2013. Citalopram / Escitalopram / Desmethycitalopram and morphine / codeine were equally detected and were the tenth most common.

10 Most Commonly Detected Drugs / Metabolites (DUID)

Alprazolam / a-Hydroxyalprazolam
Amphetamine / Methamphetamine
Carisoprodol / Meprobamate
Citalopram / Escitalopram / Desmethycitalopram and Morphine / Codeine
Cocaine / Benzoylcegonine / Cocaethylene
Diazepam / Nordiazepam
Hydrocodone / Hydromorphone / Dihydrocodeine
Methadone / Normethadone / EDDP / EMDP
Tetrahydrocannabinol / Carboxytetrahydrocannabinol
Zolpidem

Drug-Facilitated Sexual Assaults

Drug-Facilitated Sexual Assaults [DFSA] continue to be difficult forensic investigations. The cases often involve a perpetrator who will surreptitiously administer a drug to a victim to render them unconscious and sexually assault them. In 2013, the Toxicology Laboratory investigated 9 suspected DFSA cases. In 2013 alcohol was detected in 56% of the cases [Figure 29]. In DFSA cases, the drugs detected were alprazolam / a-hydroxyalprazolam, cyclobenzaprine / norcyclobenzaprine, diphenhydramine, and hydrocodone / hydromorphone / dihydrocodeine.

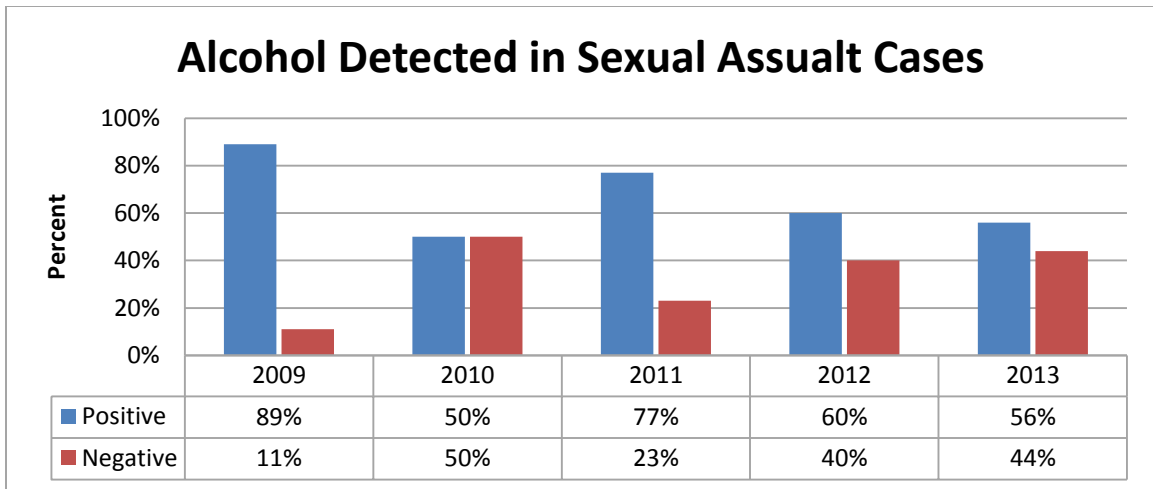


Figure 29 Illustrates the percentage of samples from DFSA cases that tested positive for the presence of alcohol over a five year period.

Table 4 lists drugs detected in Drug-Facilitated Sexual Assault (DFSA) toxicology cases [excluding ethyl alcohol] in 2013.

Detected Drugs / Metabolites (DFSA)
 Alprazolam / a-Hydroxyalprazolam
 Cyclobenzaprine / Norcyclobenzaprine
 Dextromethorphan
 Diphenhydramine
 Doxylamine
 Hydrocodone / Hydromorphone / Dihydrocodeine
 Levorphanol